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Sustainable light incontinence protection for women



Master's thesis in Industrial Design Engineering
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Cover: [An illustration picturing the three final concepts of reusable incontinence protection. For further information, see chapter six. Final concepts]

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Abstract

Light urinary incontinence is a prevalent condition many women experience sometime during their lifetime. To be able to go on with their everyday life many of them use incontinence protections on a daily basis. The protections are single-use pads which result in enormous amounts of waste that currently cannot be recycled properly. In addition, some of the raw materials used to produce the protections are fossil-based which creates a rather high carbon footprint per daily use.

The master thesis aimed to identify inspiring ways to increase the environmental sustainability of light incontinence protections for women, that have the potential to get accepted by the users and not conflict with their wellbeing.

Interviews, literature studies, and a competitor analysis were conducted to understand the topic and identify a suitable sustainability strategy. The strategy shown to have the most potential was to create a reusable protection, mainly due to it lowering the use of material needed and the potential to possibly give added value for the users.

In the following process, users were included to develop concepts with the potential to be accepted by them. A sensitising workbook and a workshop were performed to understand the users' needs and wishes connected to a reusable incontinence protection. The subsequent steps included development of concepts and evaluation of them with users and experts at Essity.

The final result is three concepts of reusable protections for women with light incontinence. The concepts are named Rosenbladet, Skuggan and Snäckan. They challenge the way of cleaning a reusable protection by being able to refresh in the sink. The protections are presented on a conceptual level and need to be evaluated and tested further to make sure they do not conflict with the users' wellbeing. Further, the carbon footprint needs to be calculated to know how much the environmental impact is lowered.

Terminology

Wellbeing

“Wellbeing is the experience of health, happiness, and prosperity. It includes having good mental health, high life satisfaction, a sense of meaning or purpose, and ability to manage stress. More generally, wellbeing is just feeling well.” (Davis, 2019).

Urinary Incontinence

“Urinary Incontinence is the inability of the body to control the evacuative functions of urination: partial or complete loss of bladder control“ (Merriam Webster, 2020). In this report, the term incontinence will be referring to urinary incontinence and not other types such as faecal incontinence.

Reusable

“Able to be used more than once” (Cambridge Dictionary, 2020).

Sustainability

“Sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs. The concept of sustainability is composed of three pillars: economic, environmental, and social” (Grant, 2020).

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Chapter one

Introduction

This chapter introduces the subject, background and aim of the thesis as well as presents the design process and framework used.

1.1 Background

Light urinary incontinence is a widespread condition many people experience during their life. For women, common reasons are childbirth, menopause, ageing and medical conditions. Absorbing protections are essential for the women who live with incontinence to be able to go on with their daily lifestyles as usual. The most common absorbing protections are disposable, single-use pads and pantyliners. These are used daily which creates a lot of waste that currently cannot be recycled properly. In addition to this, some of the raw materials used to produce the pads are fossil-based which creates a rather high carbon footprint per daily use. According to internally available information from Essity, the weight of products that will go to waste for an average person who uses a mix of 50% pantyliners and 50 % pads for light incontinence will be 7,7 kg a year. This means the total weight of waste for light incontinent women in Sweden, assuming all of them use protections, would be 5700 tons per year.

The master thesis was performed at Essity AB (www.essity.se) a company that works with health and hygiene products. The brief from Essity restricted thesis to the target group women who use light incontinence protection. TENA is the Essity brand creating these protections.

TENA defined light incontinence by two factors:

Type of accident: When sneezing, coughing, laughing or because of some extra effort which is most common for people with stress incontinence.

Type of leakage: A few drops or about a tablespoon.

The reference products which was given in the brief from Essity are TENA discreet Normal and TENA discreet Mini (www.tena.nu).

Essity works with sustainability through three pillars wellbeing, addressing the quality of life of women with incontinence, circularity and more from less which address the environmental aspects. These pillars are based on the United Nations sustainable development goals, 3 - good health and wellbeing, 5 gender equality, 12 responsible consumption and production, 13, climate action and 15 life on land (United Nations, 2015). Essity works with these pillars by developing products and services to be circular, closing the product life cycle loops and with resource efficiency in all life cycle phases while at the same time optimizing them to give the highest customer value.

TENA needs inspiring ideas and design concepts of more environmentally sustainable solutions in forms of new products, alternatively services which have a high possibility to reach user acceptance.

1.2 Aim

This thesis aims to identify inspiring ways to increase the environmental sustainability of protection for light incontinence, that have the potential to get accepted by the users and do not conflict with their wellbeing.

1.3 Research questions

- In which ways can the environmental impact of incontinence protections be reduced?
- Which user needs and attitudes are important to consider when developing a new, more environmentally sustainable protection for light incontinence?
- How can protections for light incontinence that reduces the environmental impact be designed to not conflict with the users' wellbeing?

1.4 Deliverables to TENA

- Give TENA new inspiring, conceptual solution(s) to improve the sustainability for protections for light incontinence which have been evaluated and influenced by the users. The solution(s) could potentially include a service.
- To present insights about the customer's needs and attitudes which influence the development and use of a new, more environmentally sustainable protection.
- Deliver requirements and guidelines which would need to be fulfilled and followed to reach a high possibility of user acceptance, for protections which are more environmentally sustainable than TENA discreet Normal and TENA discreet Mini.

1.5 Design process

The framework which will guide the design and product development process is the double diamond framework (Design Council, 2020). The framework is developed to help designers to innovate and deal with complex social, economic and environmental problems which is the case for this thesis and therefore makes it suitable to use. The thesis aimed to work with a so-called "Sustainability-oriented innovation". The idea is that the solution is seen as innovative if it is decreasing the negative impact the existing solution has and does not need to be original or radical to be seen as innovative (Plieth, Bullinger and Hansen, 2012).

The process of the double diamond framework consists of four phases; discover, define, develop and deliver which are divided into two processes phases, the two diamonds. Both phases start more open, exploring the issue by divergent thinking to later go towards narrowing the view by convergent thinking. It's an iterative process where information or insights in a later phase could make the design process jump back to an earlier stage. Because the iterative nature of the process the methods suggested and made in the different phases were not made at the same chronological time and phase of the project.

Discover: The discover phase is to explore the issue and to gain a deep understanding of the issue along with the stakeholders and contexts affecting and affected by the issue.

Define: The define phase is to gather insights from the discover phase and define what the challenge with the issue is in a clear and defined way.

Develop: The develop phase is made to gain inspirations, to co-design with other people and to get different answers and ideas for solutions to the problem.

Deliver: The deliver phase is to test the different solutions and dismiss the ones which are found to not work and develop the ones that are found to have potential.

See figure 1 to see which methodology was used in the different phases.

The framework has identified some principles to follow which is to put people first, communicate visually and inclusively, collaborate and co-create and iterative. This thesis has tried to follow these principles by including users and experts in all design phases, communicating to them visually and iterating as many times as possible (Design council, 2020).

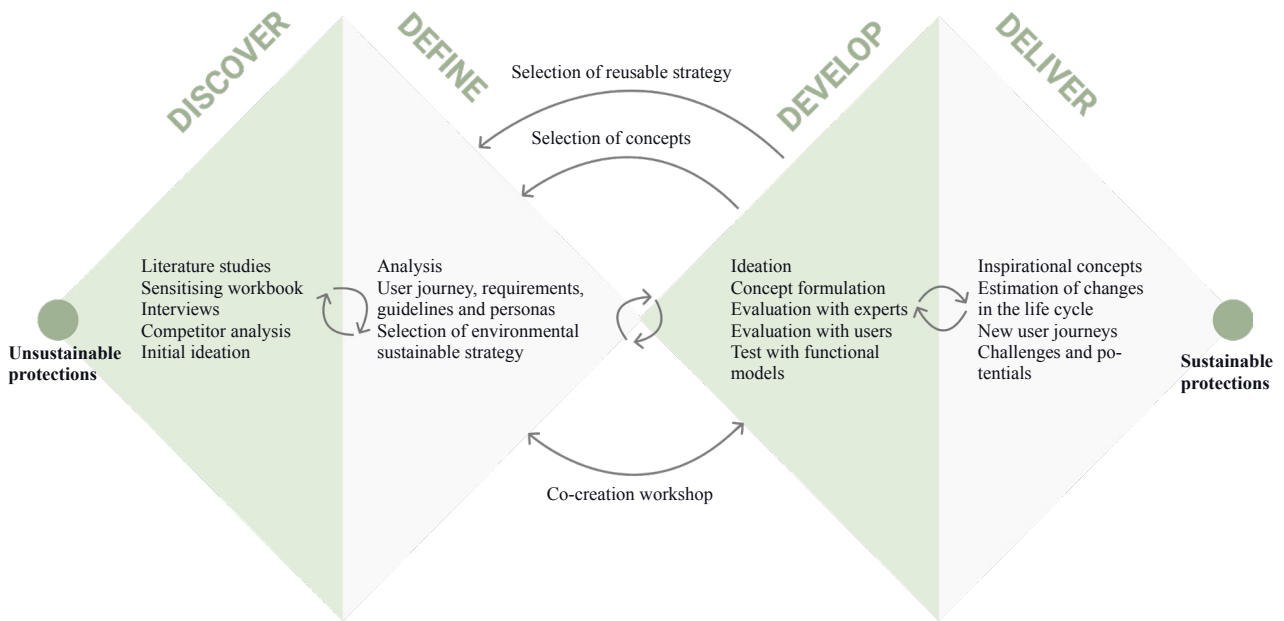


Figure 1. Illustration of the design framework Double Diamond.

1.6 Reader guide

The thesis is presented in six parts, following the design process in chronological order, even if it was done iteratively. The first, being the second chapter, present the current situation and explores and evaluate different ways of decreasing the environmental impact of protection for light incontinence. Based on this, a strategy to make reusable protection is taken forward. The third chapter presents ideation on different strategies to make protections reusable. The reusable strategies are then evaluated and developed together with users in the following part, chapter four. In chapter five concepts of reusable protections are further developed and evaluated. The selected three final concepts are presented in the last part, chapter six, followed by discussion and conclusions.

Chapter two

Current situation and establishing environmental sustainable strategy

This chapter establishes an understanding of the current situation of women with light incontinence, their relation to their current protections and explores different strategies to make incontinence protections more environmentally sustainable. The chapter explores and describe how incontinence affects wellbeing, the environmental aspects of incontinence protections and an analysis of competitor products. The collected information is used to determine the most suitable sustainable strategy for the proceeding of the thesis.

2.1 Methodology

A literature study was made on incontinence and wellbeing, with material from Essity, websites of other companies working with incontinence, earlier made user and life cycle assessment studies by researchers. In addition, semi-structured interviews (Bligård, 2015) were performed with Saari, a Swedish district nurse specialized in incontinence, Hughes, an American nurse working with female healthcare and Dahlenborg, a Swedish physiotherapist specialized in incontinence. The data was collected to understand how incontinence affects the wellbeing of the users and what requirements the protection needs to fulfil, to not interfere with the wellbeing of the user. Areas of interest were how incontinence is affecting the wellbeing, the role of the protection and other ways that exists to prevent incontinence and improve the wellbeing among women with incontinence.

To understand what makes single-use pads environmentally unsustainable and in what ways the impact can be lowered, a literature study and interviews with Essity employees were conducted. The data collection concerned information about the reference products, the current environmental impact of pads for light incontinence and its life cycle, as well as evaluating strategies on how to make incontinence protections more environmentally sustainable.

Lastly, a competitor analysis (Entrepreneur, 2020) was made to analyse what the competitors have to offer to get inspiration when designing concepts. It was made through searching on the internet for other companies making products for light incontinence. Two of the competitors products were bought and tested to evaluate their functionality. The analysis was mainly focused on the actual products and not connected areas such as marketing, since it was decided that it was the most useful way of analysing them rather than doing a complete competitor analysis. In addition to incontinence protections, both disposable and reusable, the competitor analysis included closely related areas such as reusable menstrual protections, products to prevent incontinence, reusable diapers and portable urinary toilets were studied. This was made to gain inspiration from areas which has similar functionality as incontinence protections and where a lot of development and innovation has been made.

The collected data was sorted and important results and insights can be found under respective heading in section 2.2. The full table of all the products from the competitor analysis can be found in Appendix 1. From the data and insights some conclusions (see section 2.3) were made on how to proceed the thesis.

2.2. Incontinence and wellbeing

2.2.1 Incontinence

Urinary incontinence, even called urine leakage, is a widespread condition among both men and women. For women, common reasons are childbirth, ageing and medical conditions. Being overweight is also a common factor that increase the risk and level of incontinence (Norton and Brubaker, 2006). A prevalent physiological reason for incontinence is that the pelvic floor muscles gets weak or injured. 25% to 45 % of women over 30 have sometime in their life experienced urinary incontinence, even if the precise number is hard to identify due to the difference in studies (Coyne, Kvasz, Ireland, Milsom, Kopp, Chapple, 2012). This means that 200 million people in the world suffer from urinary incontinence, but because the condition is estimated to be highly unreported and untreated, the number is probably higher (Norton and Brubaker, 2006).

There are mainly three types of urinary incontinence; stress, urge and a mix incontinence. Stress incontinence is defined as *“The involuntary leakage of urine from the bladder accompanying physical activity, such as laughing or coughing which places increased pressure on the abdomen.”* (Merriam Webster 2020). Urge incontinence is *“The involuntary leakage of urine from the bladder when a sudden strong need to urinate is felt.”* (Merriam Webster 2020). The third type is mix incontinence which is a mix of urge and stress incontinence (TENA, 2020). According to internally available information from Essity, the amount of urine women with light incontinence leaks can vary a lot, both from person to person, but also for the individual.

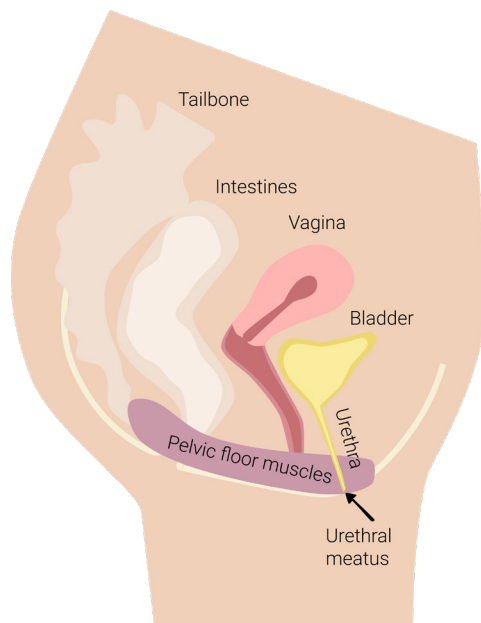


Figure 2. Illustration of the anatomy connected to incontinence.



Figure 3. Illustration of stress incontinence.

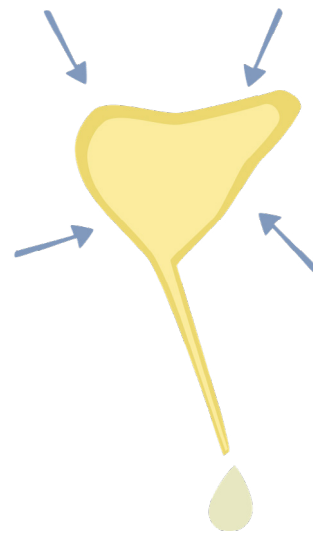


Figure 4. Illustration of urge incontinence.

Hughes (personal communication, 12 February 2020) explains that protections for incontinence and menstruation may look similar, but that there are a few major differences between the characteristics of incontinence and menstruation. One difference is that urine has a lower viscosity than the menstrual fluid, which requires the protection to absorb a higher flow of liquid. The amount of leakage varies for incontinence and usually happens every day, while the amount of menstrual fluid is more periodically consistent and occur only a few days every month. Another difference is that incontinence is perceived as a condition of dysfunction and menstruation as a sign of health.

2.2.2 Wellbeing and treatments for incontinence

Incontinence has been shown to reduce the quality of life, including reduced participation in physical activity and exercise (Sigurdardottir, et al. 2019). It is common among women with incontinence to experience anxiety, depression and social isolation and the social stigma around incontinence is making the situation for these women even worse (Coyne, Kvasz, Ireland, Milsom, Kopp Z, Chapple, 2012). Many of them suffer from incontinence in silence and for the women that decide to seek help often wait for several years before they do so (Coyne et al. 2012).

A common treatment for urge incontinence is bladder training, where the patient is guided to train her bladder to improve the ability to control the urge and increase bladder capacity. This often includes pelvic floor training and distraction or relaxation techniques (Norton and Brubaker 2006). Another common treatment is fluid management, where the patient is guided to drink certain fluids and amounts to support bladder control (Norton and Brubaker 2006). A common treatment for stress incontinence is training of the pelvic floor muscles. It has shown to decrease the rate of urinary incontinence if is done both before, during and after childbirth (Sigurdardottir et al. 2019). The women that train their pelvic floor muscles are seven times more likely to get rid of their incontinence, compared to those who do not train their pelvic floor muscles at all (Norton and Brubaker 2006). However, some conditions cannot be treated through training.

Dahlenborg (personal communication, 12 February 2020) often needs to help her patients locate their pelvic floor muscles to make sure they are activating the right muscles. This can be very hard, especially for women that have injuries in the lower abdomen e.g. due to giving birth. Many of her patients have performed pelvic floor muscle training but in an incorrect way, which makes them frustrated when not noticing any improvements. Because of this she recommends the women to use products that gives feedback if the right muscles are activated. It is very crucial that the pelvic floor training is done regularly to be effective. The recommendation is to train for five minutes, three times a day, on a daily basis. Many women get better from the training in six weeks and most within six months, but that implies that require that the training is done correctly. Surgery is sometimes offered to patients who have tried the earlier mentioned treatments without getting better or for some injuries which will not get better through treatments. There are also some medicines to prevent incontinence, some by supporting muscles to relax or contract and some working with estrogen increases (Mayo Clinic, 2017).

2.2.3 Protection

A common type of incontinence protection is single-use pads. Many women use pads that are not adapted to their amount of leakage because they do not know which protection and absorbency level that suit their needs best. According to internally available information from Essity, it is common to use protections for menstruation instead of incontinence, partly because they are cheaper and partly because many women think it is less embarrassing to buy menstrual protections.

In some countries, incontinence protections are part of the reimbursement system and some women get protections prescribed by their nurse. These protections are often not the ones with the highest performance, but the ones that fulfill the health sector requirements for the cheapest price (Saari, personal communication, 13 February 2020).

2.2.4 Protection and user experience

A study made by Getliffe, Fader, Cottenden and Jamieson (2007), where 99 women with light incontinence were interviewed, showed that the main purpose of using pads is to be able to carry on with everyday life without being disturbed by their leakage and not be limited in what they can do. If the women stop trusting the pad, they easily stop doing things they want to do and lose confidence in themselves. The women did not expect the pad to improve or prevent their incontinence but mainly to make it easier to live with it.

The study showed that the aspect of the pad having the most impact on the women's lives was to effectively and in a discrete way absorb and retain urine. The risk of lack of performance, discreteness and if it required a high level of effort to handle the pads were connected to anxiety among the women interviewed. The trust for the pads is easily damaged and many are constantly worried about leakages and visibility of the pad. All women thought a crucial function to hide their incontinence were the pads' ability to contain odour and be discrete. The selection of pad size was described as a balance between effective absorbency and discreteness. They expressed that they do not want people to see their protection and that it would be very embarrassing if people knew that they have urine leakage. Many women used thinner pads than they needed, which they instead changed more often. They thought the higher frequency of changes was inconvenient but better than having a thicker one (Getliffe et al. 2007).

The aspects influencing the ease of use was the pad size, how easy it was to discreetly carry it in their handbag and the length of time required to change the pad. A pad which was easy to use and change was shown to promote a higher degree of independence among the women. Some pads and packets were shown to be difficult to open and put on, especially for some women who had limited hand motoric. If the pad was wet, it was experienced as more uncomfortable, bulky and heavy and that the person wearing the pad got more aware of it. A pad which was wet for a long time created worries about developing skin rashes (Getliffe et al. 2007).

The women in the study got to rank different characteristics for the pads and the most important ones when using the pads during the day was:

- hold urine
- contain smell
- stay in place
- be discreet
- be comfortable when wet

During the night, discretion was less important and to keep skin dry was instead a higher priority. Other important aspects of the pad were the comfort when it was dry, the fit of the pad, how kind it was to the skin, how easy it was to put on, ability to stay in place, ease of disposal and ease of opening and carrying the pack (Getliffe et al. 2007).

2.2.5 Insights from Incontinence and wellbeing

Incontinence has a high impact on the wellbeing of the individual and a good protection can enable women to go on with their everyday life without being affected negatively by their incontinence. Important aspects connected to incontinence protections that affects the users' wellbeing are discretion, simple to handle, carry with you and change. Factors affecting the discreteness were the protection ability to hold urine and repress odour, its thickness and the possibility to carry it with you in a discreet way.

There is a lot that can be improved just by education and information. Both to decrease social stigma and also to educate in bladder and pelvic floor exercises, along with giving advice on suitable protections.

2.3 Environmental sustainability of incontinence protections

2.3.1 Reference products

The reference products are TENA Discreet Mini and TENA Discreet Normal, single-use pads made for women that have light incontinence. The products are similar to each other but the main difference is that TENA Discreet Mini is made for small leakages and TENA Discreet Normal is made for medium leakages. The pads are sold in 20 units per package and can be purchased online and in regular grocery stores. (TENA, 2019)

The reference products are designed to provide a secure and discreet protection for urine leakage through impeding leaks, odour and moisture. They control odour through micro-fresh pearls that encapsulate the urine and prevent bacterias from thriving. The pads are individually wrapped in plastic covers to keep them clean and dry and to wrap the old pad in before disposal. They are also dermatologically tested and perfume free to be gentle and safe to the skin. (TENA, 2019).



Figure 5. Tena Discreet Normal (Tena.nu).



Figure 6. Tena Discreet Mini (Tena.nu).



Figure 7. Tena Discreet Normal (Tena.nu).

In general, single-use incontinence pads are built up by several layers with different materials and properties, as presented below (Incontinence.co.uk, 2019):

Part of the pad	Properties	Material
Topsheet	The layer closest to the skin. It absorbs the urine quickly to keep the skin dry.	Plastic such as polypropene/polyethene.
Acquisition layer	Transport the urine from the surface to the centre of the pad.	Porous material made of polyester or wood fibre.
Absorbent core	Absorbs the urine and makes it stay in the pad without rewetting during pressure. Encapsulate odour.	A mix between SAP (super absorbent polymers) and wood pulp fibres.
Backsheet	To prevent leakage to the underwear.	Plastic such as polyethene.
Adhesive strip	Attach the product to underwear.	Various plastics.
Release paper	Protect the adhesive strip before attaching to underwear.	Paper with silicone coating.



Figure 8. Layers of Tena Discreet Mini (Internally available information from Essity) Presented with permission.

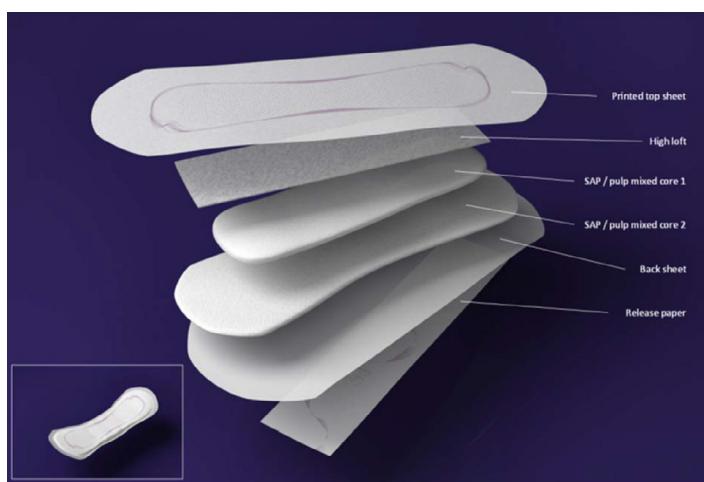


Figure 9. Layers of Tena Discreet Normal (Internally available information from Essity) Presented with permission.

2.3.2 Environmental impact of single-use incontinence protections

According to internally available information from Essity, the reference products contain a high percentage of fossil-based plastics, which result in a rather high carbon footprint per daily use. However, the fossil-based plastics provide several important functions, which are to quickly absorb and retain urine and make sure the pad is odour proof. In addition to the fossil-based plastics, single-use pads generate a lot of waste. On average, a woman with light incontinence use three pads per day which add up to 1095 pads per year and person. In Sweden, most of the disposed pads end up in incineration, but in many other countries where the waste handling system is not as developed, they end up on landfills.

For an average individual that use only pantyliners, corresponding to TENA Discreet mini, the weight that will go to waste is 5,5 kg per year. When using only pads, corresponding to TENA Discreet normal, the weight that will go to waste is 8,8 kg per year. When using a mix of 50% pantyliners and 50 % pads, the weight of protections that will go to waste is 7,7 kg per year. The total weight of waste for light incontinent women in Sweden, assuming all of them use protections, is 5700 tons per year.

According to internally available information from Essity, the reference products are appreciated by the users and supports their wellbeing and a normal lifestyle, but from an environmental perspective, the reference products are not optimal. Customers have started to react to this and some are asking for more environmentally friendly options. Essity needs to answer to that demand to stay attractive for those customers.

Only a few studies have been made specifically on the environmental impact of incontinence pads. One study, by Willskytt and Tillman (2018), investigated the environmental impact of pads for light incontinence, similar to the reference products. They used life cycle assessment and studied three different measurables; global warming potential (kg CO₂-eq.), fossil resource depletion (kg oil-eq.) and agricultural land use (m²). year annual cropland.

For the pads for light incontinence that were used together with regular panties, which is the reference case for this thesis, the phase in the life cycle that had a clear majority of the environmental impact was the material production. The phase accounted for 60–90% of the impact, depending on measurable. The second-largest impact was in the disposal phase, followed by transport, manufacturing and last washing and drying (Willskytt and Tillman, 2018).

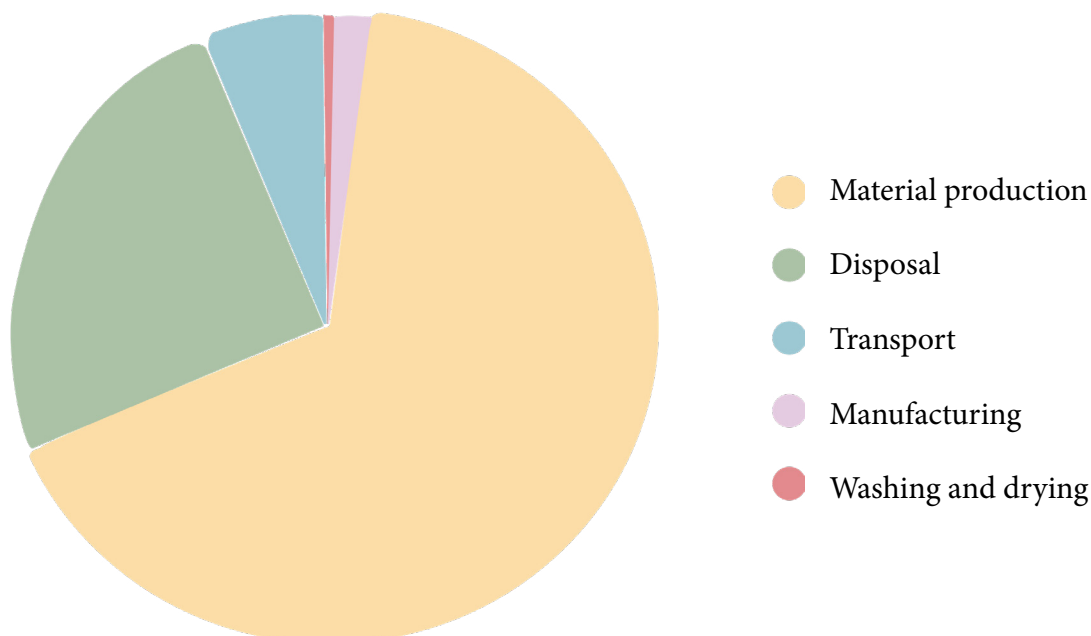


Figure 10. Life cycle assesment of single use pads for light incontinence and use of own panties, measurable GWP (kg CO₂ -eq.) Numbers for figure from a study made by Willskytt and Tillman (2018).

2.3.4 Insights about Environmental sustainability and incontinence

The reference products are designed to prevent leakage and the users needs except that they are not environmentally friendly enough due to being single-use single-use pads, partly containing fossil-based plastics.

The phases with the highest carbon footprint in the life cycle of the reference case are the material and disposal phase which makes strategies to reduce the footprint on them a suitable focus.

2.4 Strategies to make incontinence protections more environmentally sustainable

Different ways of making incontinence protections more environmentally sustainable are discussed and evaluated in this section. The high share that the material production and disposal had in the life cycle resulted in that the environmental design strategies Cooper (1994) describe in his model Hierarchy of waste management was regarded to evaluate ways to make the protection for light incontinence more environmentally sustainable. The strategies discussed and evaluated are different ways to reduce the energy and material use, reuse the protections and material recycling.

2.4.1 Reduce

Lower the amount of material per protection

As mentioned, the production of materials is the phase in the life cycle of single-use pads that has the highest carbon footprint. This means that reducing the materials used would have a high potential to decrease the environmental impact. A lower amount of material in the actual pad would likely mean that it would become smaller or thinner. This could have a positive effect for the users who desire discreteness. However, it is crucial for the users that the pad retain the same ability to hold and absorb urine which would be a challenge concerning material characteristics.

More use of renewable material

The study made by Willskytt and Tillman (2018) evaluated what a change of the material composition in the products to a higher share of renewable material would mean for the environmental impact. It was shown to decrease the impact on global warming and fossil resource depletion but because pads for light incontinence contain wood-based materials it has a higher land-use impact. This could indicate a higher risk of the environmental burden not disappearing but just shifting place.

To produce protections that are made of renewable materials, a high level of material knowledge would be required. In addition, knowledge about development and finding suitable suppliers that can deliver such materials would be needed.

Use fewer protections

If women were to use fewer protections per day it would mean a decrease in amount of protection produced which would result in less environmental impact. It could also be motivating for the users who have the possibility to do something about their incontinence themselves. Both Dahlenborg (Personal communication, 12 February 2020) and Saari (personal communication, 13 February 2020) thought that many of their patients get less motivated to do their pelvic floor and bladder exercises because they can take the easy way out and instead wear protections. They implied it would be better if they use their protections less often, especially when they are at home where they are less exposed to others.

It would be the best option for both the environment and the wellbeing of the users to get rid of their incontinence and not use any protections at all. However, to design a protection that would somehow nudge or motivate the user to use their protection less would probably mean complex ethical dilemmas, both towards trying to influence the users decisions and other aspects of the users wellbeing.

Make the protections compostable

To make a protection compostable would mean that the impact of the after use phase and the handling of the waste would be lowered. The users would also be able to continue using single-use protections, as they do today. Due to that many protections do not end up in waste stations, it would be crucial that the pro-

tections are, not only industrial compostable, but possible to dispose in the compost at home. However, to make the protection completely compostable would require a development in material rather than a change of the design. A possibility identified was to do part of the protection compostable and the rest reusable.

Make the use more effective through customization

The study by Willskytt and Tillman (2018), evaluated how more effective use of products through customization to users' needs would change the environmental impact. They looked at how the impact changed when patients switched protection after getting expert advice and individual customization. Customization appeared to be a promising way to decrease environmental impact and when the users changed from their current protection to the recommended, it resulted in a 23% decrease in global warming potential, a 20% decrease in fossil depletion and a 18% decrease in land use. However, in this case, it was rather large products that were considered. The impact would probably not have the same impact if it was smaller protections, such as the reference products, because the change would be relatively small.

2.4.2 Recycle

To recycle means turning the protection into raw materials which can be used again, and recycling the materials of the protection would mean a decrease in virgin material needed. However, recycling is an energy consuming procedure, and imply more energy needed for transport, the process and reassemble the recycled materials (Rufus, 2015). Recycling the material could mean that the used protections are collected, and the materials are recycled to be used to make new protections, or other types of products.

To recycle the protections, the users would need to somehow be a part of a collection system, or store their used single-use pads until the protections could be collected, which probably would mean more energy spent on the handling of their protection. The upside with recycling from the users perspective is that it would mean that the users could continue to use the protections as the single-use pads they do today, and still be more environmentally friendly.

There are many barriers in recycling incontinence protections because it is classified as medical device, which by EU requires the material to be traceable, and of high purity (EC, 2017). This would mean that if the protections would be recycled, the material would probably, at least in the start, be used for making other products. A used protection often contain residues of medicines that the user consumes, which becomes an issue for people that will be working with the recycling of the protections.

A recyclable protection would make the life cycle circular on a system level, and would change most steps in the life cycle. Changes on a system level would probably have a high risk of bringing complex unidentified issues, compared to a reusable protection, which would make the life cycle circular on the usage level. It is easier to get an holistic view and identify challenges when the circle is smaller and include less steps in the life cycle. To design a recyclable protection, a whole system would need to be designed, to both collect and recycle them. To be able to do this in a feasible way, experts on all the phases of the life cycle would be needed.

2.4.3 Reuse

One of the principles Ellen MacArthur foundations (2013) describes to follow when creating value through circulation is the power of the inner circle. It means that the smaller the circles are in the life cycle, the larger the saving should be in terms of material, labour, energy, capital and environmental impacts. A reusable protection would mean that the life cycle loops would be closed many times in the use phase and entail smaller circles in the life cycle. This goes in line with the principle of the power of inner circle. In addition, compared to a making the protections recyclable, making reusable protections would be easier to design for, because it is less actors and factors involved which could create issues.

In the future, a reusable protection could be recycled as well and would be easier to collect than single-use pads because reusable protections means that it will be much fewer ones to collect.

Another principle Ellen MacArthur Foundation (2013) presents is the principle of the power of longer circulations which means maximising the number of consecutive cycles. A reusable protection would mean a longer lifetime but also require more energy, such as cleaning. It could also require reconditioning after a period of use. A longer lifetime for the material would reduce the use of material which, as mentioned, would have the potential to decrease a high share of the carbon footprint. Reuse can be done by either reusing the whole protection though cleaning it, or reusing part of the protection and throw away part of it. In one perspective the reference products are partly reusable by making the users use their own panties.

The study by Willskytt and Tillman (2018), evaluated the difference in environmental impact between regular panties with a single-use absorbent pad for light incontinence, and a completely single-use all-in-one product. The reusable pants with the single-use absorbent light pad were shown to have a significantly lower impact than the single-use one. The environmental impact when looking at the global warming potential and fossil-resource depletion was almost 50 % lower, while the difference in land use was rather small.

A reusable protection could mean that it somehow needs to be cleaned or washed, which would imply an increase in the required effort to handle the protection. The washing and drying phase of the reusable pants was almost negligible and was only around 1% of the whole life cycle impact. However, it can vary depending on how it is washed, where the electricity production mix played a rather small role, but instead how loaded the machine was could have larger impact. Changing from a regular 3,2 kg laundry load to a 1 kg, was shown to not influence the impact to any extent but when the panties were washed and dried as the only garment in the machine, the impact increased so significantly that it would not be more sustainable than the fully single-use product. (Willskytt and Tillman, 2018)

Looking at the wellbeing aspects of the protection, a reusable protection could be more expensive per protection and still become cheaper per use because it is used more times. This would also entail that it would be possible to give a higher quality and a higher possibility to make them customized, which often is more expensive. A reusable protection would be needed to be bought less often which would be desirable by the customers, who often think buying incontinence products are embarrassing and inconvenient. It would also mean that they do not have something they need to leave behind in the trash bin, which is desirable for customers who worry about other people noticing or smelling their used protection in the trash bin.

How hygienic the protection will be during the use phase could differ depending on how the users succeed with cleaning it. This means that the producer would get lower control over the protections security when it comes to hygiene, compared to a single-use pads.

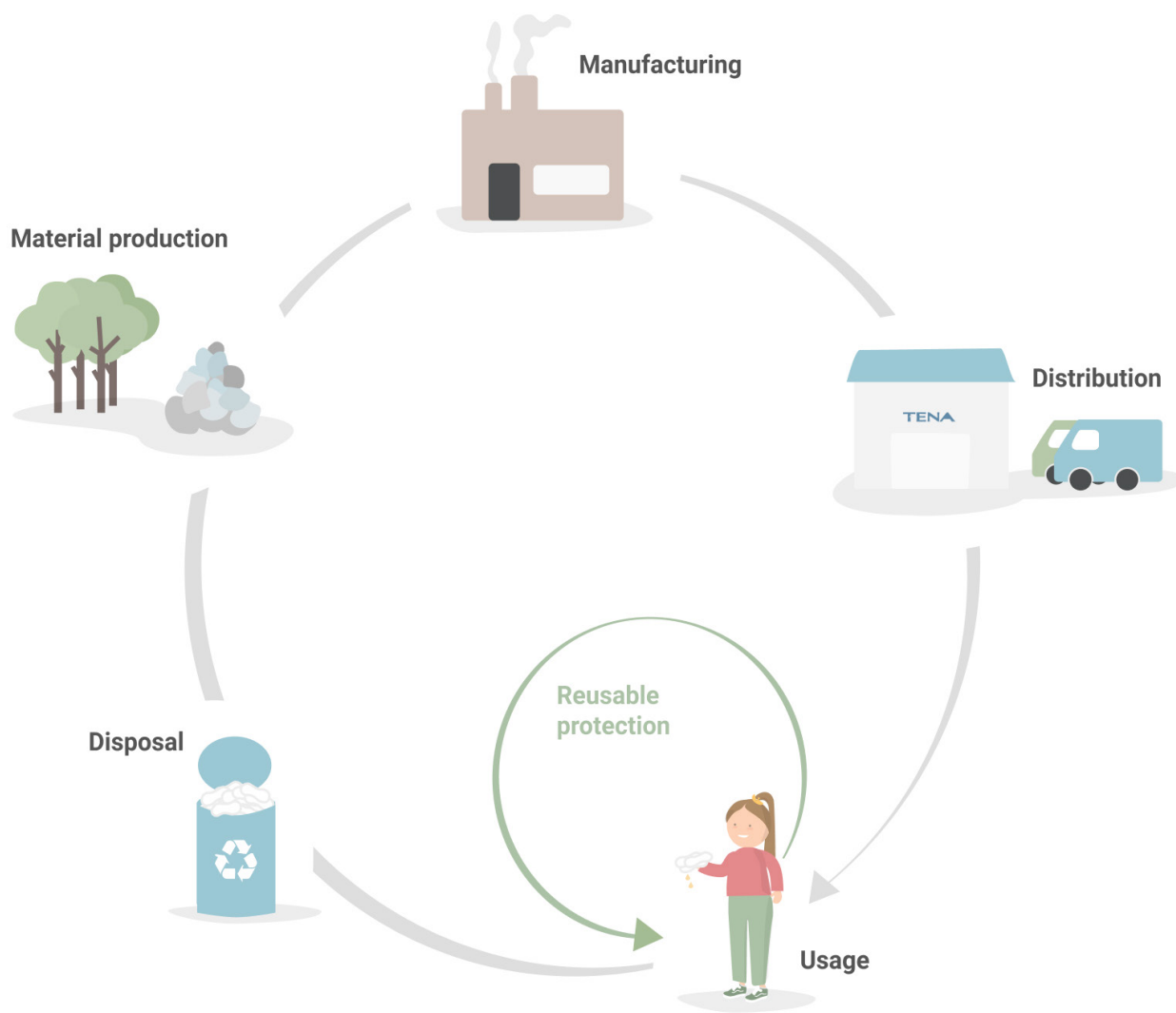


Figure 11. Illustration of the loops of reusable protections.

2.4.4 Insights about strategies

Looking at the different ways to make a protection more environmentally sustainable, to design a reusable protection is concluded to have the highest potential successfully decrease the environmental impact. The protection can be fully, or partly, reusable and possibly consist of a compostable part.

To make the use more effective through customization has the potential to decrease the carbon footprint, but not enough to be a solution on its own. However, it could be a feature on other solutions, by for example making a protection possible to adapt to individual needs.

2.5 Competitor analysis

The competitors assortment can be divided into several areas; single-use and reusable incontinence protections, reusable menstruation protections, products to prevent incontinence and other closely connected areas. What type of products that have been found in respective area can be seen below and the full competitor analysis can be found in Appendix 1.

2.5.1 Single-use incontinence protections

Single-use pads and liners is the category that the reference products belong to and according to the research done, it is the most common type of incontinence protections for women. Some of the largest brands that make single-use pads are Always Discreet (www.alwaysdiscreet.com), Abena (www.abena.com), Poise (www.poise.com), Hartmann (www.hartmann.info) and Attends (www.attends.co.uk). Some brands claim to produce more environmentally friendly single-use pads, one of them is Natracare. According to their website, the product is free from plastics and is biodegradable (www.natracare.com). The comparing test of Natracare pads and the reference product, TENA Discreet normal, showed that TENA Discreet Normal was by far better, when it comes to absorbing and retaining the liquid, see figure 17 below. This shows that the SAP (super absorbent polymers) in the reference products have an important function when it comes to absorb and retain the urine.



Figure 12. Always Discreet pads (Always, 2020). Reprinted with permission.



Figure 13. Abri-San 1A pads (Abena, n.d.).



Figure 14. Attends Contours pads (Attends, n.d.). Reprinted with permission.



Figure 15. Poise pads (Kimberly-Clark, n.d.).



Figure 16. Natracare pads (Natracare, 2020). Reprinted with permission.



Figure 17. Test between TENA discreet normal, mini and Natracare.

Single-use protections to insert into vagina function by pushing on the urethra and act as a support for the bladder neck to prevent leakage. One of these protections is named Impressa and is made by the brand Poise (www.poise.com). It looks and is handled similar to a tampon and comes in different sizes for the user to choose how much support they need (Poise, n.d). According to Norton and Brubaker (2006) a big tampon can be enough to reduce stress urinary incontinence when exercising, since it is supporting the bladder neck.

Protections to insert into the urethra and function by plugging the channel to prevent leakage. These types of protections seem to be less common on the market compared to the products above. Norton and Brubaker (2006) argues that intraurethral products have good efficacy, but that the user's acceptance is not high enough for the products to be successful on the market. One protection that is inserted into the urethra is the Femsoft, which is a silicone plug that is placed with an insertion device (Rochester-medical, 2020).

2.5.2 Reusable incontinence protections

According to internally available information from Essity, reusable protections account for approximately 5 % of the market for both light incontinence and menstrual protections.

Reusable panties which are washable in machine and look similar to normal panties but with an absorbent part between the legs. Some are made with cotton and terry cloth and some are made with more sustainable material such as bamboo fiber. A study made by Clarke - O'Neill, Etersson, Fader, Dean, Brooks, Ottenden (2002) showed that the reusable panties are found discreet because they are perceived as regular panties and do not have an 'incontinent' image, which is appreciated by the users. The reusable panties entail a high initial cost and the user needs to buy many new pairs of panties depending on how many times per day she wants to change. A company that takes it one step further is Carin wear (www.carinwear.com) that combines their incontinence panties with a sensor that tracks the users' leakage and measures the contraction of the pelvic floor muscles to guide and motivate the user to prevent incontinence.



Figure 18. Speaxs Hi-Waist Pee-Proof Panty (Thinxs, 2020).



Figure 19. Wearables for healthy pelvic floor muscles (Carin Wear, 2018).

Reusable pads which are washable in machine and work in the same way as single-use pads by absorbing urine to prevent leakage. Many variants are attached to the panties with wings and a button. Some people that want a cheap and more environmentally friendly option to single-use pads make these types of pads themselves at home, there are lots of DIY guides on youtube on how to create a reusable pad. The pads sometimes come with a small case to store used pads until they can be cleaned in the washing machine. The test of reusable pads from the brand Hesta Organic (Hesta organic, 2017) see figure 22, showed that the absorbency capability of the reusable pad compared to the reference products was by far worse when it comes to absorbing and retaining the liquid.



Figure 20. Reusable cloth pads (Hesta Organic, 2017).



Figure 21. Do it yourself pads (Mamma can do it, 2020).



Figure 22. Test between TENA discreet normal and Hesta organic.

Reusable silicone protections to insert in vagina which are washable in the sink and function by pushing on the urethra, and act as a support for the bladder neck to prevent leakage. There are different variants of the protections, some are placed in the vagina for a longer period, called pessaries. The pessaries are primarily used for pelvic organ prolapse, but can also be used to prevent incontinence (Women's health, 2019). Other protections look similar to a menstrual cup and are also used in a similar way. They can easily be inserted and removed from the vagina by the user herself. One of the protections from C&G Medicare, named Incostress (C&G Medicare, 2012) helps the user to identify her pelvic floor muscles.



Figure 23. Incostress, product and placement (C&G Medicare, 2012).



Figure 24. Dr Arabin Urethra pessary (C&G Medicare, n.d). Reprinted with permission.

Interlabial pads that are washable in machine. Interlabial pads are small, petal-shaped pads in fabric that can be attached in between the interlabials. These pads are not very common on the market according to the conducted research, but there are videos on youtube on how to make the interlabial pads oneself. The pads are primarily made as a menstrual protection but it can be used as a protection for light incontinence as well.



Figure 25. Interlabial pads (Gaspar, 2019). Reprinted with permission.

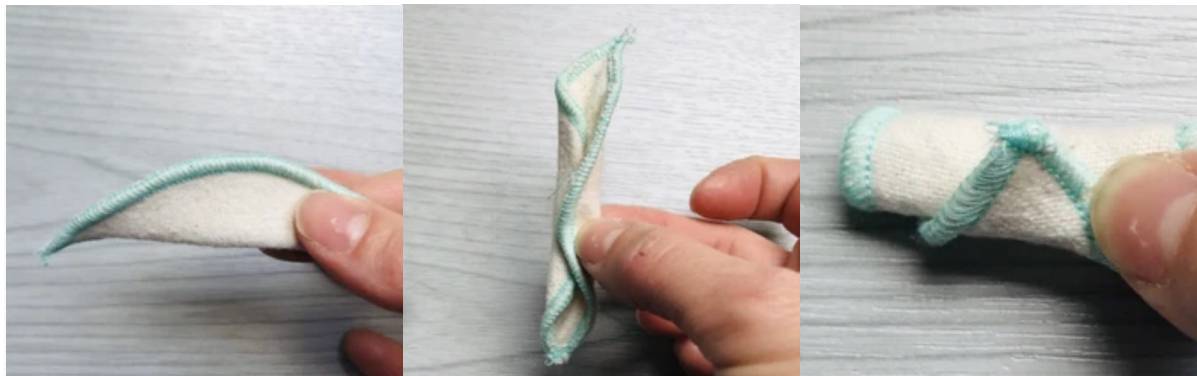


Figure 26. How to fold Interlabial pads (Gaspar, 2019). Reprinted with permission.

2.5.3 Reusable menstrual protections

Reusable pads and panties that are washable in machine and function by absorbing the menstrual fluid. The pads and panties are very similar to reusable pads for incontinence, the main difference is that the ones made for incontinence needs to be able to absorb more liquid. However, some of the pads and panties are marketed to be used for both menstruation and incontinence.

Menstrual cup in silicone that are washable in the sink and are inserted into the vagina to collect the menstrual fluid in a cup. The cup can be emptied in the toilet and cleaned through drying it with paper or rinsing it in the sink. Between every period the cup should be boiled to become sterilised and free from bacteria. According to the nurse Hughes (personal communication, 28 February 2020) the menstrual cup is very appreciated among the younger generation and in the US it is a very common menstrual protection due to being convenient and environmentally friendly because it last for several years.

2.5.4 Products to prevent incontinence

According to Dahlenborg (Personal communication, 12 February 2020) strengthen the pelvic floor muscles and can be done without any equipment, the problem is that it can be hard to know when the right muscles are activated. This is one reason why it sometimes requires additional products to get feedback if the muscles are contracting.

Vaginal cones are weighted cones that are inserted into the vagina and forces the pelvic floor muscles to contract to avoid the cone from slipping out (Herbison, Dean N. 2013). Dahlenborg (Personal communication, 12 February 2020), argues that the vaginal cones are great because they come in different weights, which makes it easy to see improvement.

Products that manually give feedback on training which are inserted into the vagina. One product in this category is the Neen Educator, which is inserted into the vagina and by the visual aid of a stick the user can see if her pelvic floor muscles contract in the right way (Neen, 2020). This product was highly recommended by Dahlenborg (Personal communication, 12 February 2020) because it is very simple and gives direct feedback to the user when the exercises are correctly performed.

Electrical devices for vagina. There are many upcoming products on the market that consist of one part that is inserted into the vagina and a connected app, where the user can get feedback of how her muscles are contracting and track their progress to stay motivated. One product takes it one step further and uses gamification to motivate the user to train, by making it fun to train the pelvic floor muscles.

2.5.5 Related areas to incontinence protections

Reusable diapers. Before the single-use diapers were invented, it was common to use reusable diapers that were washed between uses. To collect the feces and urine, rice paper was put in the diaper which could be thrown away (Nilsson, Personal communication, 20 February 2020). Another more recent reusable diaper is made out of the material Seacell, which is a mix of eucalyptus and seaweed. The producer claims that the material is more sustainable to produce than the more common reusable cotton diapers (Aouf, 2019). In Spain they have tested to make reusable diapers part of a service, where the parents can leave dirty diapers at the kindergarten and get back new, clean ones (Simon, 2011).

Portable urinary toilet. Pipinette (www.pipinette.com) is a brand that creates products for women to make it easier to pee when there is no access to a toilet. One of their products is made for traveling and consists of a plastic bag filled with SAP-beads that quickly transforms the urine into a gel which makes it easy to dispose of.

Menstrual protections in history. According to 85 year old Nilsson (Personal communication, 20 February 2020), women used candlewick yarn to make reusable pads in the 1940 decade. They knitted the pads with the candlewick yarn and to clean them between uses they cleaned them as they did with other clothes in boiled water. Some of the pads were attached to the body by hanging it up in a rope around the waist.

2.5.6 Insights from competitor analysis

The most common type of protection on the market is single-use pads. It is also the type of product that is sold in regular grocery stores which makes it very accessible.

Reusable panties seem to be an upcoming area with several different brands marketing them.

All reusable incontinence protections found, except for the silicone products which are inserted into the vagina, are cleaned through machine wash which means they cannot be refreshed during the day without changing to a new protection.

Many products on the market such as training devices, both independent and integrated in the protections, are moving from treating the symptoms of incontinence i.e. urine leakage, towards improving the wellness of the patient.

2.6 Conclusions from chapter two

The competitors From a sustainable perspective, the relationship between the protections and the women's wellbeing is rather complex. The most sustainable option would be to prevent incontinence from occurring in the first place, or supporting the women to improve their condition. That would entail less or no use of protections, and would therefore be the most environmentally friendly option. It would also be the best option for the women's wellbeing, since they would not need to worry about leakages. From one perspective, using protections can decrease their motivation to improve and get rid of their incontinence. On the other hand, using protections enable the women to be active, which in turn supports a healthy lifestyle and helps them to cope while they train their pelvic floor muscles. By not using any protection the risk of mental illness and inactivity could increase, which could lead to overweight which in turn often increases incontinence. For now, a protection plays an important role in the women's wellbeing and for some of them there is no treatment that will help for their condition. This entails that a good, more environmentally sustainable protection, could be a suitable solution.

Making reusable protections are concluded to have great potential to decrease the environmental impact compared to the single-use reference products. This implies that the focus for this thesis will be to develop reusable, or partly reusable, protections. In addition, the users attitudes towards making the reusable protections recyclable will be explored, since that is considered a possible scenario that would lower the impact further.

The functionality of the protections is concluded to be of higher priority than if the protections are environmentally sustainable, since it has a great impact on the user's wellbeing. Therefore, the focus from this point will be to develop concepts of reusable protections - but with the focus on making the user experience of the protections and its effect on the wellbeing, as good as possible.

A reusable protection needs to somehow be possible to refresh before using it again. All of the existing reusable incontinence protections found in the competitor analysis, used outside of the body, are washed in machine. To make the handling more convenient there is an opportunity in designing a protection that is possible to quickly fresh up during the day, without the need to change protection. Hence, the possibility to refresh something and use it directly again afterwards will be considered.

Chapter three

Initial ideation to explore reusable strategies

This chapter describes the initial ideation where the area of preventing incontinence and different reusable strategies is explored.

3.1 Methodology

The initial ideation was made because it was important to come up with conceptual ideas to make it easier for the workshop participants to imagine future designs of reusable protections and to understand what type of protection they could potentially like (Sanders & Stappers, 2016). The initial ideation consisted of an ideation session and a digital document where ideas that came up during the research phase were collected.

First, the method Backcasting was used to identify what a desired future could look like and what role reusable protections would have in that future. Backcasting is described by Per Grankvist (2018), and the first step is to define the desired future (see Appendix 2) and the second to work backwards and define the steps which need to be taken in order to reach that future, in relation to the current situation.

The ideation session continued with a Brainstorming to explore the area in a broad way and get out of the box ideas. Brainstorming, described by Ericson, Törlind and Wikberg-Nilsson, (2015) and was used to quickly generate a large number of ideas where no criticism is allowed to establish a creative environment. The ideas from the digital box became a part of the brainstorming session where they were developed further.

When the initial idea flow stopped, Brainstorming cards were used by using 52 cards the Board of Innovation (2020) has created to inspire and drive creativity by the information on the cards.

After this Analogies was used to gain inspiration from other successful solution of reusable products which also exist as single-use. Analogies is a method where inspiration from other solutions and areas are applied to the current issue (Board of innovation, 2020).

The ideation was built on the knowledge gained from the initial research and competitor analysis. Different reusable strategies and cleaning strategies were identified in the ideation. The cleaning strategies focus on ways beside to clean the protections by washing them in machine because most existing solutions are cleaned that way.

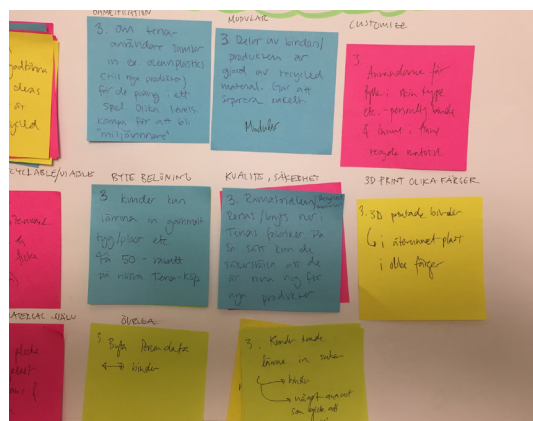
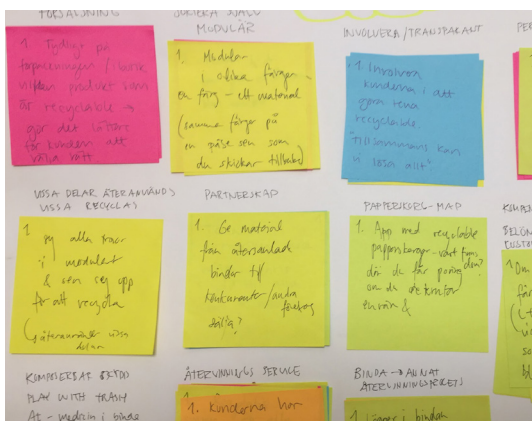
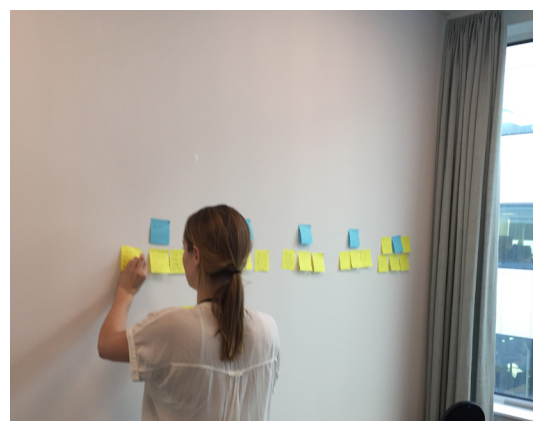


Figure 27, Pictures from ideation.

3.2 Ideas from initial ideation

The reusable and cleaning strategies identified during the initial ideation are presented below and the connected ideas in figures 30-41 in chapter 4.

3.2.1 Reusable strategies

Inside the urethra. Prevent leakage by plugging the urethra.

Inside the vagina. Prevent leakage by having something inside the vagina that pushes on the bladder neck and hinder urine from leaving the bladder.

On the urethral meatus. Prevent leakage by having something covering the urethral meatus making the urine stay in the urethra.

Reusable padcase or panty with cleanable absorbent sponge. Absorb the urine when it comes out of the urethra, by having something absorbing attached to- or inside the panty. The absorbent sponge or both the padcase and absorbent sponge can be cleaned.

Reusable case with refillable absorbent. Absorb the urine when it comes out of the urethra, by having something absorbing attached to- or inside the panty. The absorbent part can be thrown away and refilled, while the case is cleanable.

Padcase with the possibility to empty the urine. Absorb the urine when it comes out of the urethra, by having something absorbing attached to- or inside the panty. The padcase can be emptied from urine.

3.2.2 Cleaning strategies

- **Clean in sink.** By rinse and wring out the whole or part of protection in the bathroom sink. Requires access to sink.
- **Wipe off with toilet paper** - Wipe off urine and fill it with toilet paper. Requires access to toilet paper but not to sink.
- **Clean with cleaning products such as wipes, towel or spray,** Requires cleaning products to be brought but not access to sink.

3.2.3 Related areas

- **Bring along case.** Reusable protections could potentially need a bag to be brought in and stored in when switching between different protections.
- **Service.** Reusable protections could potentially be part of a larger system.
- **Community.** Being able to connect with other people having incontinence can be important for the wellbeing.
- **Training.** Training the pelvic floor muscles can lower incontinence problems and in turn, the wellbeing of the user. Could it be combined with reusable protections?

3.3 Conclusions from chapter three

The important output from this phase is the ideas related to the identified reusable and cleaning strategies present in 3.3. These were to be explored during the workshop to understand what designs of reusable protections the users potentially would want to use, needs and attitudes connected to them and what they think is important when it comes to other areas related to incontinence.

Chapter four

Development and evaluation of ideas and reusable strategies

This chapter describes the process of including users in exploring, developing and evaluating reusable and cleaning strategies and ideas through a sensitising workbook and a co-creation workshop. The insights gained from analysing the results from the process are presented in lists concerning needs, wishes and attitudes to a reusable protection, personas, a user journey and a list of requirements and guidelines.

4.1 Methodology

4.1.1 Participants

To find participants for the study, the recruiting company Origo Group (www.origogroup.com) was enlisted to recruit people. A screener (see Appendix 3) was created to find people who matched the profile of desired participants, as suggested by Sanders & Stappers (2016). The requirements for the participants were:

- Female, 30-65 years.
- Have light incontinence.
- Currently using TENA Discreet Mini, TENA Discreet Normal or corresponding products from other brands, several times a week.
- Be eco-conscious, to reach a motivated part of the target group.
- Live in Gothenburg.

Origo reached out to potential participants through telephone interviews, and the screening and recruiting process resulted in 12 participants. Seven of the participants were to participate in both the workbook and the workshop and the remaining five, in the workbook. All of the participants were also recruited to take part in an evaluation survey later on in the process, which is presented in section 5.1. The recruited participants were between 50-65 years. All of them were concerned about the environment and acted upon it in some way, some of them were involved in organizations working with environmental issues.

4.1.2 Procedure of user inclusion

The study was designed based on the method path of expression (see figure 28). It is a method that can be used to help people imagine and communicate their dreams, hopes and fears for the future through a four-step procedure. The first step is to sensitise the participants by immersing them into their current experiences and the second to make them reflect upon their memories and past experiences. The third step is to share past and current experiences. The three first step are made to facilitate the last step, which is to access underlying values and needs, which becomes a basis for them to understand what they would wish for in future experiences (Sanders & Stappers, 2016). The path of expression was decided to be a suitable method because through including users in the process and facilitate them to imagine future needs regarding a reusable protection, the goal of developing concepts with high user acceptance had the possibility to be reached.

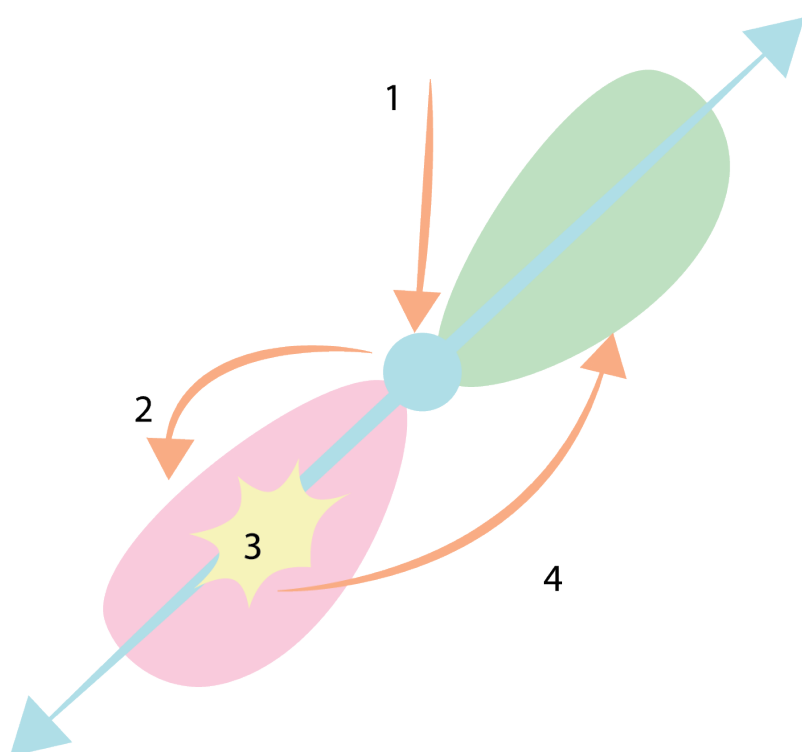


Figure 28. Reconstruction of Path of Expression (Sanders & Stappers, 2016).

4.1.3 Sensitising workbook



Figure 29. A few pages from the workbook.

The workbook (see Appendix 4) was iterated several times, and pilot tested and evaluated with Essity employees and the final version consisted of five chapters. In the first chapter, the participants were posed questions about; what kind of protection they use, if they had considered the environmental impact of the protections, how satisfied they were with them and other questions connected to their incontinence. In the second part, they were to describe the different steps of their use of their current protections, from how they stored them to how they dispose of them.

In the third chapter, the participants were to fill in two UX-curves concerning their experiences, one when they use the protection in private and one in public. The UX-curve is a method where the participant draws a curve to describe how the experiences with e.g. a product, evolve during the different stages in the use (Kujala, Roto, Väänänen-Vainio-Mattila, Karapanos and Sinnelä, 2011).

In the fourth chapter, they were to complete a mind map, as described by Ericson, Törlind and Wikberg-Nilsson, 2015, about a future, reusable protection and a future, recyclable protection. The mind map was pre-designed and had questions concerning the future protections.

The fifth and last chapter was a love letter to a future “dream” protection where the participants were to imagine their dream protection and write a love letter to it. This is a method which is described by Gerber (2012) and helps the participant to focus on the most meaningful situation in a relationship with their product.

The workbook was printed out and sent as a physical booklet to all the 12 participants, together with emoji stickers that they could use to describe their feelings. All the participants filled the workbook and sent it back five days later. The answers were then compiled to get an overview, see Appendix 5.

4.1.4 Co-creation workshop

As a preparation for the co-creation workshop, several guides and articles were studied to understand how to design the session in the best way possible. A workshop is a way to gather the collective creativity in order to explore possible future solutions and capture their attitudes, needs and ideas regarding a reusable protection (Ericson, Törlind and Wikberg-Nilsson 2015). The workshop was designed as a co-creation session and the participants were approached as co-designers rather than only listen to their needs and wishes, even if that was an important deliverable of the workshop as well. By having users co-creating it is more likely that they will adopt the solution because they have been part of developing it and it will also result in gaining valuable information about all aspects of the design solution (Ideo Org, n.d.).

The arrangement of the session was iterated several times and discussed, pilot-tested and evaluated together with the supervisors from Chalmers and Essity. The co-creation workshop was held at Chalmers University. It was documented through sound recording and by collecting and photographing the produced material.

The whole session was performed in five parts:

Fika (30 min). The purpose of the initial Fika was to welcome the participants and make acquaintances. The also filled in a consent form.

Introduction (10 min). The purpose was to introduce the participants to the topic for the workshop and to present the arrangement of the session. The introduction, and the rest of the information during the workshop, were presented verbally and through a powerpoint presentation.

Exercise 1 - Brainstorming (20min). To quickly generate ideas the ideation method brainstorming as described by Ericson, Törlind and Wikberg-Nilsson (2015) was used with the purpose was to capture the participants' initial thoughts and ideas about the subject, without them influencing each other. One at a time, some questions or statements (see Appendix 6) were read out loud and they had one minute to write down their thoughts and ideas on post-it notes. After each question, the notes were discussed in the group and additional comments were written down on new post-it notes. An important rule was that criticism was not accepted in order to create a more open and creative environment.

Exercise 2 - Analogies (20 min).

To identify features from other successful solutions in other areas and apply them on a reusable protection, analogies were used (Board of innovation, 2020). The participants got to work together and use analogies to apply good qualities from reusable products from other areas, on a reusable incontinence protection. The participants had gotten an assignment to bring a reusable product that they like, and present it in front of the group. After they had presented, some more reusable products from other areas were given as inspiration. The participants were then divided into three groups and got five minutes to try to come up with a reusable protection using analogies from the products that they had brought themselves, and from the other products for inspiration. In the end, they presented their result in front of the group with the purpose to share their ideas and inspire the others.

Exercise 3 - Into the future (50 min). The purpose of the last exercise was to understand what needs and requirements are connected to a reusable protection as well as make the participants come up with their own ideas. The purpose was also to evaluate the different ideas (see figures 30-41 and Appendix 6 for cards) and reusable strategies that were developed during the initial ideation, to see which ideas that would have high potential to be accepted by future users and to collect information and ideas regarding the other reusable strategies. To perform the exercise, a make-toolkit was used. A make-toolkit is a generative technique used to help people express their feelings and thoughts by making things, (Sanders & Stappers, 2016). The make-toolkit consisted of pictures and descriptions of the ideas, statements about the reusable strategies, where the participants were to in their answer, and blank notes for them to fill in their own ideas. Everything was printed on small notes and the assignment was to place all the notes on the backdrop, where they were to rank which ideas/statements they liked the least, and the most. The participants were divided into two groups and they discussed each note and then placed it on the backdrop.



Figure 30. Brainstorming at workshop.



Figure 31. Into the future at workshop.

4.1.5 Analysis and compilation

To compile and gain insights from all data from the workbook and the co-creation workshop, a KJ-analysis (Bligård, 2015) was conducted. The sound recordings from the workshop were transcribed and the data was sorted out and put on digital notes and then organized into themes. The themes were divided into the reusable and cleaning strategies, defined earlier in the process, along with the users thoughts about existing solutions and possible benefits, issues and attitudes towards a future reusable protection. The information were then analysed and the results and insights can be found in section 4.2.

In addition, the important use-requirements and guidelines found were formulated in a list, see section 4.2.7. A use-requirement describes the requirement the users, and surroundings have on the product and guidelines describe information which should guide the design (Bligård 2015). The list was made to keep in mind during the concept development and as a recommendation to help future development to not forget important aspects. Because of the conceptual level of the result, the list should be considered as a first draft, rather than as a complete requirements- and guidelines list.

Three Personas (see Pérez-Montoro and Codina, 2017) representing different customer segments in the target group were created to be able to make decisions based on their different needs and wishes.

From the insights from the KJ-analysis, a user journey was made to better understand how the users experience each step in the interaction with the current protections, and to capture the holistic experience. A user journey is a path showing all steps of the use and how the user experience them (Ericson, Törlind and Wikberg-Nilsson, 2015). The user journey was also used later on in the process, as a reference when doing new user journeys for the final concepts.

4.2 Insights from user inclusion

In this section, the results and insights from the KJ-analysis are summarised connected to the different areas identified. It includes how the participants are experiencing the current situation of living with incontinence, what needs and attitudes are connected to reusable protections and the participants opinions on the ideas connected to the reusable strategies and cleaning strategies. The chapter also concerns their opinions on the reusable protections that exist today and some additional questions connected to incontinence and wellbeing and pelvic floor muscle training.

Three personas and a user journey for the reference products are also presented, followed by a requirement and guidelines list that summarizes all the requirements and guidelines identified. The conclusions from the result and insights can be found in section 4.3, and create the basis for the concepts described in chapter 5.

4.2.1 Current user situation

This section includes the participants' feelings and thoughts connected their experiences of the current single-use protections and living with incontinence.

Use and experiences of current pads

- Most of the participants were satisfied with their pads and thought they met their needs, but sometimes the protections are not absorbent enough when they leak more than usual.
- Think it is easy to apply their pads.
- The pads sometimes chafe, rolls together during usage and the glue destroys clothes.
- Many of them wrap their used pads in toilet paper and throw in the trash, or in the sanitary bin if that is available.
- Worry about someone noticing their used pad in the trash bin.

Having incontinence

- Their leakage varies depending on their health condition and they usually know when the leakage increases, because it is often due to colds and periods of cough.
- The participants have tried different protections to find the ones that suit them.
- It is important not to blame people with incontinence, a lot of shame and guilt is already connected to the issue.
- To get rid of the taboo about talking about incontinence is desired.
- When travelling long distances, they want to know where the next toilet is to be able to plan when they can change their pad. Some use the toilet very often "just in case".
- The current pads provide the opportunity to live a normal life in almost all occasions and situations.
- The pads are not as discreet as they want them to be, especially when they work out, wear tight clothes and are at the beach.

4.2.2 Needs and attitudes

This section includes the participants' attitudes towards reusable and recyclable protections, what they think is positive with reusable protections, followed by necessary properties that reusable protections should have to have to fulfil the users' needs.

Attitudes towards the environmental aspects of reusable or recyclable protections

- Reusable protections need to be as good as the protections they are using today, environmental friendliness does not vanquish function and comfort.
- Five of the participants have considered the environmental impact of their current pads, seven have not.
- Most of the participants think that the pads they use today are not very environmentally friendly.
- Would like to recycle the plastic and packaging.
- Want to recycle by sorting and throwing it in the regular waste station. They are critical towards sorting the pads out in their household bin because then everyone in their household will notice that there is a separate bin for incontinence protections.
- Positive towards using reused material in future protections if the materials are quality checked.

Positive aspects and potentials with reusable protections compared to single-use pads:

- Environmentally friendly and less waste of resources which contributes to a circular society.
- Low cost per use, which can make it economically beneficial. It also enables them to be affordable even if they are more expensive per protection. This could enable it to be more affordable with for example individual adaptation which otherwise can be expensive.
- Needs to be bought less often.
- Less waste to handle.
- Easier to use in public because they do not need to worry about someone noticing dirty protections in the trash bin.
- No need to carry along and refill single-use protections in the handbag every day.

Necessary properties of reusable protections:

Protect from leakage. The most important thing is that it protects from leakage. It should feel safe even during large movements and it should not rewet once the urine is absorbed.

Convenient and simple to handle, use and clean. Since a reusable protection needs to be cleaned it adds steps in the handling compared to a single-use pads, This makes it very important that the added steps not become too complicated and inconvenient. The participants expressed that they are willing to spend a little, but not much more effort just because a reusable protection is more environmentally friendly, the incentive is not enough. They do not want the handling to require any extra stuff such as a cleaning gel. It needs to be easy and intuitive to handle and use.

Be discreet. To achieve discretion the protection needs to be thin, not bulky, to not show through clothes; and not be perceived as a protection for incontinence by others. It also needs to be possible to purchase and be handled with discretion to lower the risk of someone noticing it. Except for preventing leakage, discretion is the highest priority for the users.

Ensure integrity and privacy. The protection needs to enable to continue with everyday life and be sure the leakage not intrudes and not violate personal integrity. This plays an part in supporting the wellbeing.

Comfortable. The protection needs to be comfortable and not chafe when doing all kinds of activities.

Possible to fresh up during the day. The protection needs to be possible to fresh up during the day, to be experienced as fresh, hygienic and convenient as the single-use pads. It is important to be able to be sure that the protection and the bathroom is clean after the cleaning. It is important that no one can notice that they have been cleaning their protection.

Be hygienic and easy to know if it is clean enough or smells. It needs to be easy to know if the protection needs to be cleaned to be and feel fresh and hygienic.

Kind to the skin. The protection needs to be kind to the skin, meaning it should be dermatologically tested, hygienic, keep the skin dry and breathable. This is important to make the user feel safe when using the product and to avoid irritated skin.

Possible to use directly after cleaning. If there are parts of a reusable protection that can be cleaned in the sink they need to be possible to use directly after cleaning. This could be by it being dry quickly for example. Otherwise they would need to carry their used one with them which would be inconvenient.

Adaptable. The protection should be adaptable when it comes to placement in the panty and absorbency level so it is possible to modify it depending individual needs. The protections colour and style should preferably be possible to choose and adapt for the individual needs.

Provide case for used protection to bring along. A case to be able to bring along used protections is needed. The bring along case needs to be easy to clean, discrete, not look like a case for incontinence pads, be leakage and odour proof and be environmentally friendly. It is important that the bring along the case can be carried without anyone noticing that they are carrying a case for incontinence protections.

4.2.3 Reusable Strategies

In this section, the ideas connected to the reusable strategies can be found, together with the participants' opinions towards the strategy as a whole and in relation to each idea. The reusable strategies are, as presented in chapter 3; Inside the urethra, Inside the vagina, On the urethral meatus, Reusable case with refillable absorbent, Reusable padcase or panty with absorbent sponge and padcase with the possibility to empty the urine. In addition, some other ideas to prevent incontinence are presented together with the participants' attitudes towards them.

Inside the urethra

- Negative towards the idea of having something in the urethra, because it is a narrow and sensitive area.
- Worried about infections and that it must be sterile.
- Worried about if they could do it themselves or if they would need a doctor to insert the protection.
- A high threshold for initial use because they had not tried anything similar before.
- Having something inside the urethra was connected with a higher degree of disability and illness.

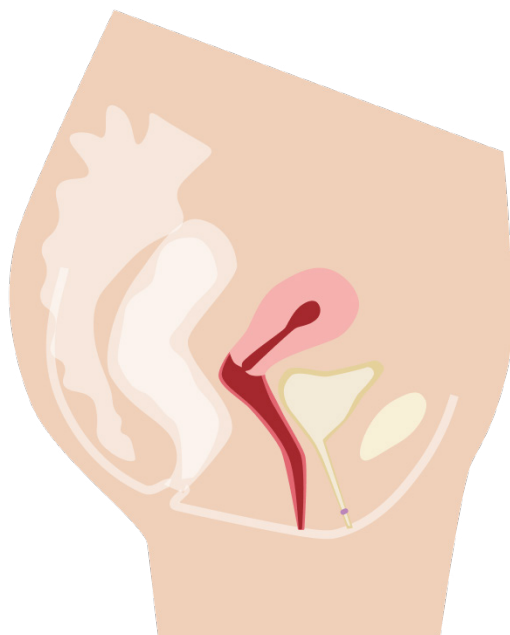


Figure 32. A small plug to insert in the urethra. The plug can easily be removed before peeing and put back afterwards.

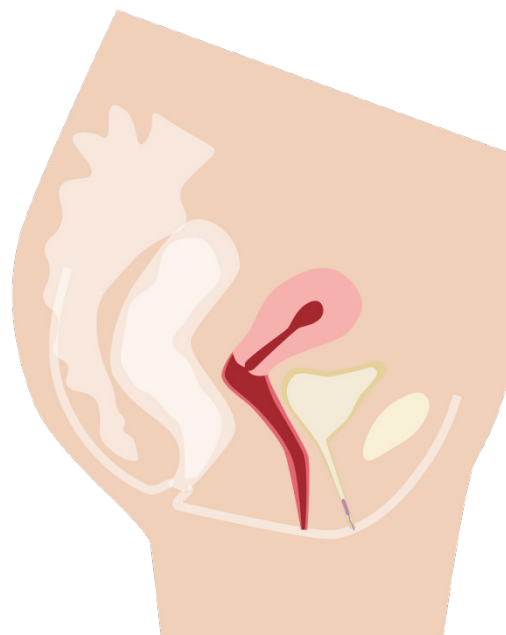


Figure 33. A small plug to insert in the urethra. The plug can easily be removed before peeing and put back afterwards.

Inside the vagina

- Worries that it would not be safe enough to protect from leakage, especially when doing big movements.
- Worries that it might hinder their ability to move freely.
- Negative towards having something inserted into the vagina if it is not necessary, mostly due to dry mucous membranes.

Dry mucous membranes might not be as big of an issue for younger women which means that a protection for the vagina might have a higher potential to be accepted by them.

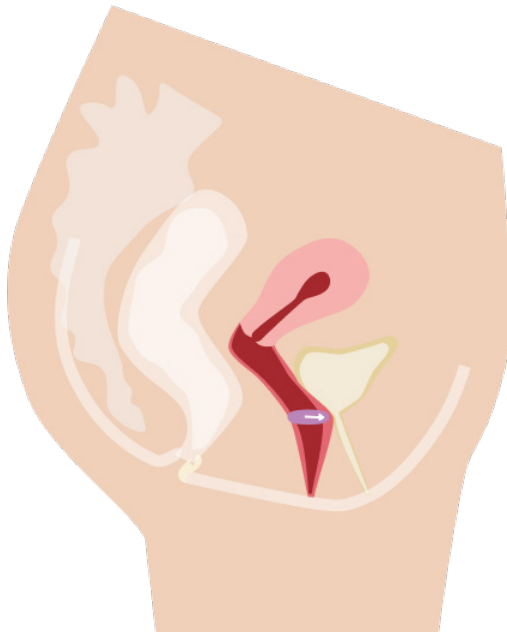


Figure 34. Small reusable silicone protection to insert into the vagina. Prevents leakage by pushing against the bladder neck. Needs to be changed once a month.

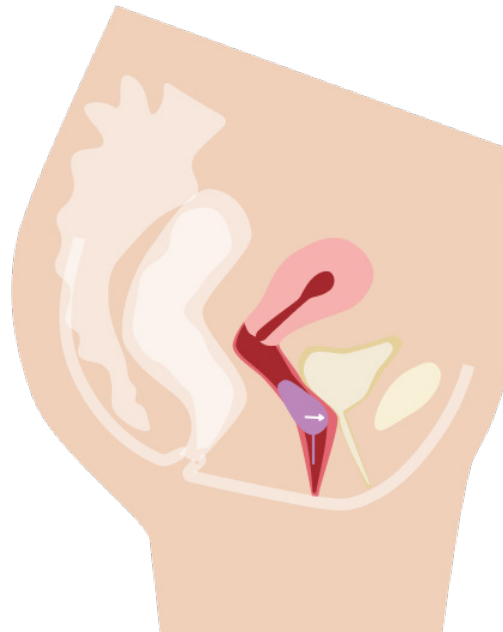


Figure 35. Soft and flexible cylinder that sits in the vagina and prevents leakage by pressing against the bladder neck. Cleaned in the sink and sterilized once a month through boiling it.

On the urethral meatus

- Positive response because it has the potential to be very discreet and simple.
- Uncertainty whether it would hold tight and not leak.
- Not sure what it will be and feel like when moving around.
- One participant expressed: “It is often when you do the big movements that you leak”.
- Far from their current protection.
- Might work without doctor’s assistance, which is desirable.

A container outside the urethral meatus attached as a tampon, shaped as an L

- Not appreciated to have something in the vagina due to dry mucous membranes.

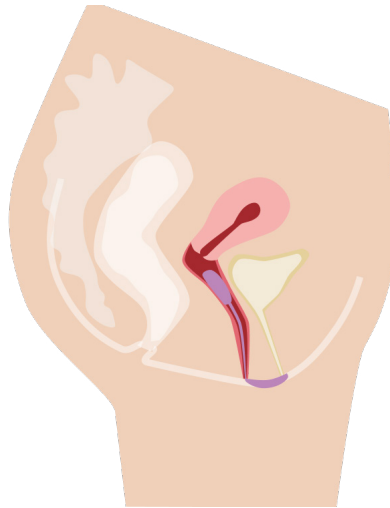


Figure 36. L-shaped protection which is inserted into the vagina. The part of the protection that is outside the urethral meatus captures the urine and collects it inside the hollow L-shape.

A cream that plugs the urethral meatus

- The participants liked it because they thought it would be convenient to have something as small, simple and smooth as a cream.
- Liked that it is far from what their current protections function and look like.
- Worried about if the cream would smear or get stuck in pubic hair.

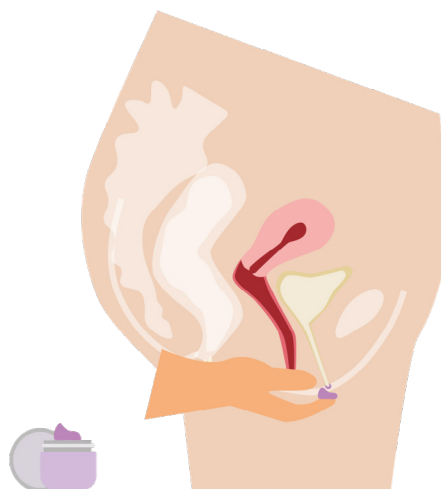


Figure 37. A cream that is applied to the urethral meatus that stiffens and creates a plug. The plug can endure small amount of leakages. When peeing, the plug drops into the toilet.

Reusable case with refillable absorbent

- A refillable absorbent would add a step in the handling which is not desired.
- Thought it would be a big part to throw away which was considered wasteful and created worries about it getting noticed or smelling in the trash.
- Would need extra stuff to bring with them which is not desired.

A pocket in the panties, with place for a small absorbent pillow

- Positive attitude towards the idea.
- Would prefer to be able to throw the pillow in the compost because if it was made of biodegradable materials it would not feel as wasteful.
- Would like it even more if the absorbent would be some type of reusable sponge.

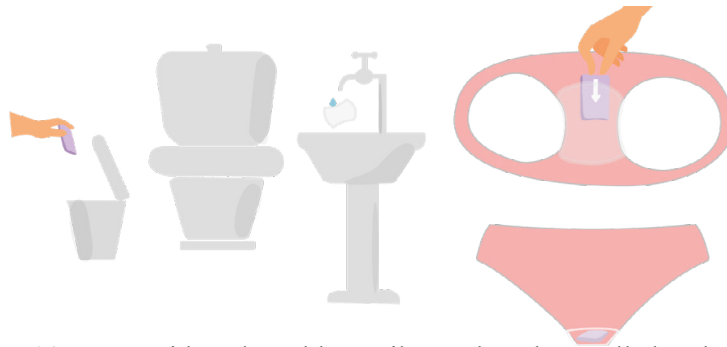


Figure 38. Panty with a cleanable textile-mesh and a small absorbent pillow to throw away, and refill with a new one.

A reusable pad-case for a small absorbent pillow

- Liked the idea with an absorbent pillow but would prefer if it would be combined with their panties.
- Negative towards having to open the case and pull out the pillow since it could be fiddly.

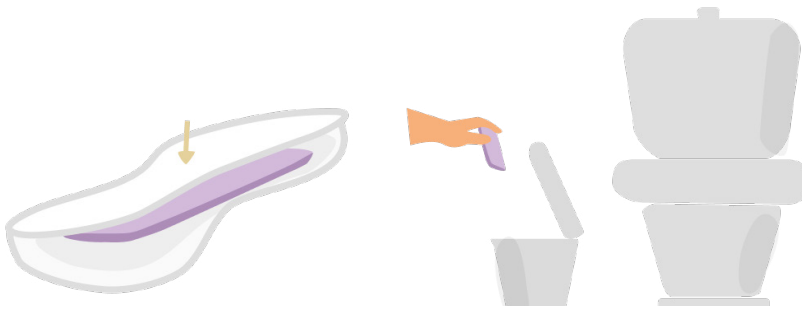


Figure 39. Reusable pad-case with small absorbent pillow to throw away and refill with a new one.

Reusable pad with refillable gel-absorbent

- Would like to be able to throw the absorbent gel in the toilet so they would not have to worry that it could be seen by someone else in the trash bin.
- Negative towards needing to refill the gel because it adds a step in the handling.
- Would like to have a pipette with portions to refill the absorbent gel into the pad.

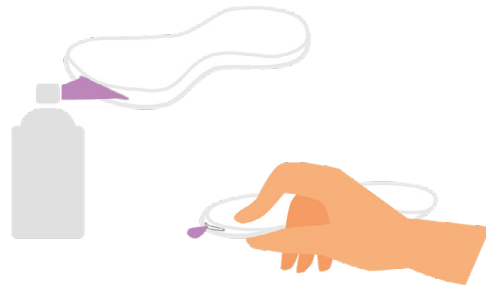


Figure 40. Reusable pad-case with absorbent gel to throw away and refill.

A reusable pad-case for absorbent toilet paper

- Liked the convenience since toilet paper always is available at bathrooms.
- Concerned about if the toilet paper is malleable enough, would make the pad bulky and would not keep away odours or absorb the urine effectively.
- Would prefer an absorbent powder or gel over toilet paper.



Figure 41. Reusable pad-case with toilet paper to throw away and refill.

Padcase with the possibility to empty the urine

- Worried that the urine would splash on themselves and the surroundings because of the viscosity.
- Wanted the urine to be mixed with something absorbing to make it more solid to make it stay in the pad and don't leak.
- Feels inconvenient to fill with something.
- Liked that the cover could be used immediately again after the urine is rinsed out.

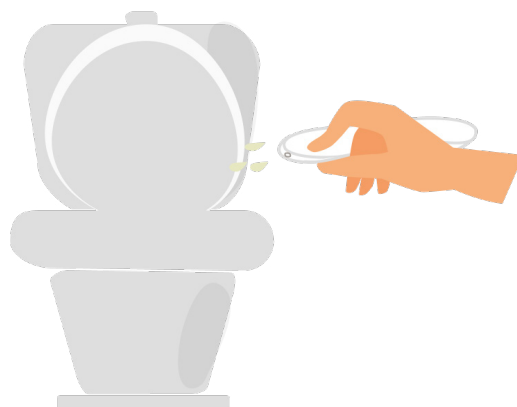


Figure 42. Reusable pad-case that collects the urine in a small compartment. The urine can be emptied into the toilet by pressing on the pad.case.

Reusable padcase or panty with cleanable absorbent sponge

- Favoured these ideas.
- Positive attitude towards using a cleanable absorbent since they felt that they would be able to freshen it up during the day.
- Positive towards silicone as a material in the protection because of it being experienced as easy to clean, but there were concerns about the breathability and how warm it would be.
- The absorbent material could come in different sizes to use for different occasions.
- Prefer to have the absorbent combined with their panties rather than in a pad due to it being more convenient and fewer things to handle.
- Liked the idea that the absorbent would dry quickly after rinsing and be ready to use directly.
- This was similar to one of their own ideas and therefore it is close to their mental model of how a reusable protection could function.

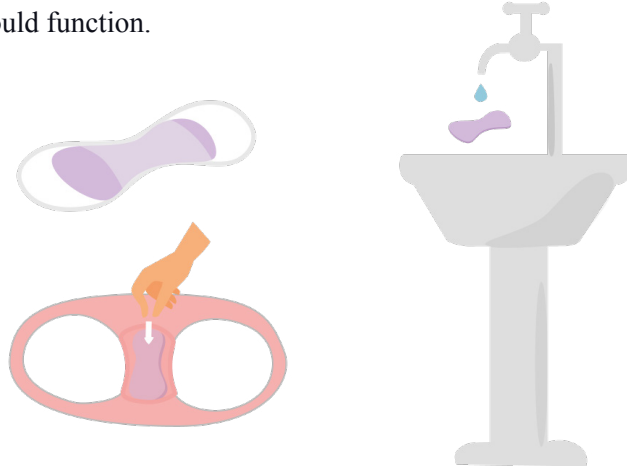


Figure 43. Reusable padcase or panty with a textile-mesh with place for an absorbent. The absorbent can be cleaned in the sink and dries quickly to be able to put it back again.

Other strategies

- Did not like an idea to add hormones to the body to affect the function of the bladder and there was a general resistance to tamper with the body's hormones.
- There was a positive attitude to a moulded and personalized protection, which was one of their own ideas that they mentioned several times.
- Positive attitude towards using electrical signals to activate the pelvic floor muscles and bladder, they came with this idea themselves.
- Positive towards pants that absorbs urine and removes odours but worried about if the pants would stay totally dry.
- Using the urine to cultivate plants in their own garden was something that they were positive towards. However, it was discussed more as a fun idea.

4.2.4 Cleaning strategies

This section concern the participants' opinions towards the different cleaning strategies defined in chapter three.

To clean in the sink

- Thought it would be easy and convenient to clean the protection in the sink and also came as their own idea.
- It was desired that the protection or absorbent should dry quickly if it needs to be wrung out, to get rid of the water.
- Could be an issue with public toilets that do not have a private sink.
- Positive towards rinsing it in the sink by using hot water and soap because they felt that it would become clean enough.
- Wanted to be able to leave the bathroom in a clean condition and so that no one can notice that they have rinsed it in the sink.

To clean with cleaning products such as wipes, towel or spray

- All negative to have to carry something extra with them, their handbags are already full.

Wipe off with toilet paper

- All were negative towards it, they were worried that it would not get rid of the smell of urine.

4.2.5 Existing reusable solutions for incontinence

This section includes the participants' thoughts and feelings towards the reusable textile pads and panties that exist today.

Reusable panties

- Some were very positive towards the reusable panty and some more negative.
- Thought it would be easy.
- Did not think it would be laboursome to machine wash it.
- Did not like to need to buy a whole new panty wardrobe.
- Did not like to stop wearing their own choice of panties. To be able to wear their own choice of panties makes them feel free to live their life as they want and be independent.
- Worries about how many times they can be used before they do not absorb and encapsulate odour anymore.
- Thought it will be a different kind of wear and tear compared to regular panties.
- Felt that it would be inconvenient to not be able to refresh it during the day. If they would want to change protection they would need to bring a new pair of panties.
- Comments from participants:

“The panty protection you have today makes you feel dry and fresh but if you have a pair of panties that you have peed in, it doesn't feel like that fabric would keep being dry and fresh.”

“I have noticed that urine can settle in textiles if it is not soaked in water or cleaned right away.”

Reusable textile pads

- Everyone was negative toward them.
- Think it would be more indiscreet and thick than their current single-use pads.
- Concerned that they would smell.
- Thought it would be inconvenient and were concerned about how it would be to bring along a used pad.

4.2.6 Related areas

In this section, the participants' opinions on wearing reusable protections for different occasions, pelvic floor training and possibly including a sensor into the protection are presented.

Different occasions

- The participants wanted a protection that works for all occasions or/and to have different sizes of absorbents sponges/cloths but not several protections for different occasions.

Characteristics that are important for different occasions:

On trips

- The protections need to have good absorbency due to not knowing when the next time to change protection appears.
- It must be easy to use and easy to change protection.
- The packaging should be flexible and small to be easy to bring along.

During exercise

- It must be flexible and not hinder their ability to move.
- Be and feel very safe since big movements can result in leakage.

At parties or social event

- It must be odour proof.
- It must be thin and discreet to not show through clothes.

Pelvic floor exercises

- The participants often forget to train their pelvic floor muscles because they think it is hard to remember and would like to have something that reminds them to do it and to make it a habit.
 - Several of the participants exercise regularly or occasionally.
 - Motivation to train could be if it was more fun, to get a treat or award and getting a better sex-life.
- Sensor assistant as a possible add-on to the product
- Positive attitude towards having a sensor to help them with e.g. pelvic floor exercises.
 - Uncertain about if it would be an unnecessary and expensive add-on.
 - They know when they need to change protection by themselves and do not think they need any indication to remind them.
 - Features which they would like an assistant to have are; tell if there is a strong odour, visual guidance for pelvic floor training and statistics on the amount of leakage per day and if they could wear a thinner pad.

4.2.5 Personas

This section describes the three personas, Sandra, Elsa and Marianne, covering different parts of the customer segment.

Sandra.

Age: 34 years.

Social status: Married with 1 kid.

Has had incontinence for: 6 months.

Occupation: Work as a management consultant focusing on sustainability.

Personality: Active, social, works out a lot, likes to be open about things and to look good and stylish.

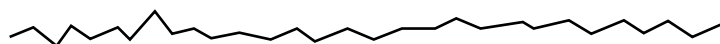
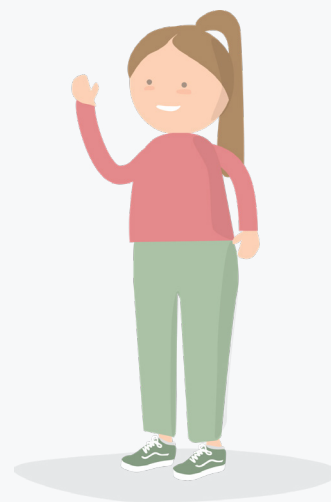
Needs concerning wellbeing:

Sandra likes when she does not need to think or worry about her incontinence. She wants her protection to be comfortable to wear and at the same time so thin to not show through her clothes. She wants to be free in her choice of clothing because she enjoys being stylish.

Needs concerning the environment:

Sandra cares and worries a lot about the environment and has no problem to put effort into being more environmentally friendly. She has used a menstrual cup since she was young and would love to have a reusable protection that fulfils her other needs as well. She really dislikes the trash her incontinence creates. It makes her feel bad about the environmental impact it creates and she worries about someone noticing it in the bin.

Bladder leakage curve showing the variety of leakage during two weeks:



Elsa.

Age: 57 år

Social status: Married, 4 grown up kids.

Has had incontinence for: 20 years.

Occupation: Works as an engineer with infrastructure.

Personality:

Pragmatic and has a lot of plans. She is a do-it-yourself person and always has a new project going on at home.

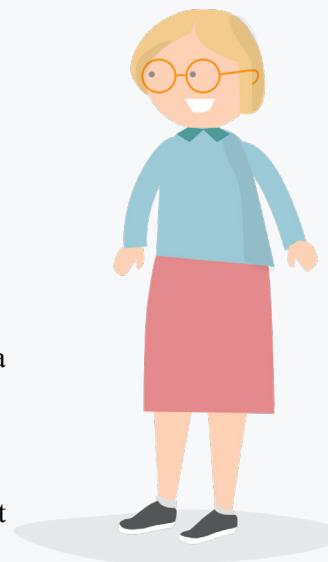
Needs concerning wellbeing:

Elsa does not like to talk about her incontinence but is not very concerned about people finding out. She lives a busy life and needs her protection that enables her life to flow smoothly. It is important for her to be sure that her protections are hygienic.

Needs concerning the environment:

Elsas' kids have made her more aware of how her choices affect the environment and she tries to act more environmentally friendly. She would like a more environmentally sustainable protection but it is important that it feels familiar and does not make her worry about it being hygienic.

Bladder leakage curve showing the variety of leakage during two weeks:



Marianne.

Age: 45 years.

Social status: Divorced, 2 kids.

Has had incontinence for: 3 years.

Occupation: Works as an architect.

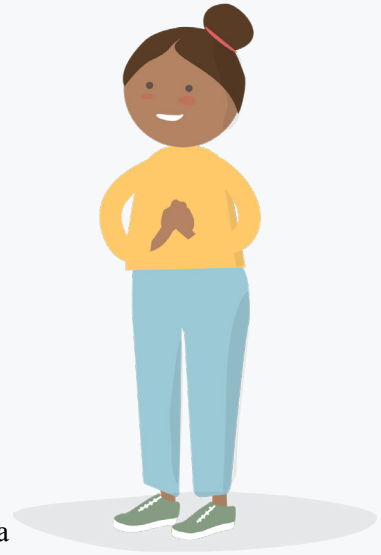
Personality: Structured, worried, caring and down to earth. Likes to read and being out in nature.

Needs concerning wellbeing:

She is nervous about what other people think about her incontinence. It is very important that her protection does not leak, smell or show. Her leakage varies a lot, especially when she has a cold. Sometimes she needs a more absorbent protection when she is out on a hike and feels uncomfortable to change out in nature.

Needs concerning the environment:

She lives close to nature and would appreciate if she felt that her protection would be a part of a circular system. She has no problem with paying more for a sustainable protection but she would not use a protection that would increase the risk of someone noticing her having incontinence.



Bladder leakage curve showing the variety of leakage during two weeks:



4.2.6 User journey for the reference pads

In this section, the user journey for the reference pads is presented, including the actions and experiences connected to each step in the interaction with the pads.

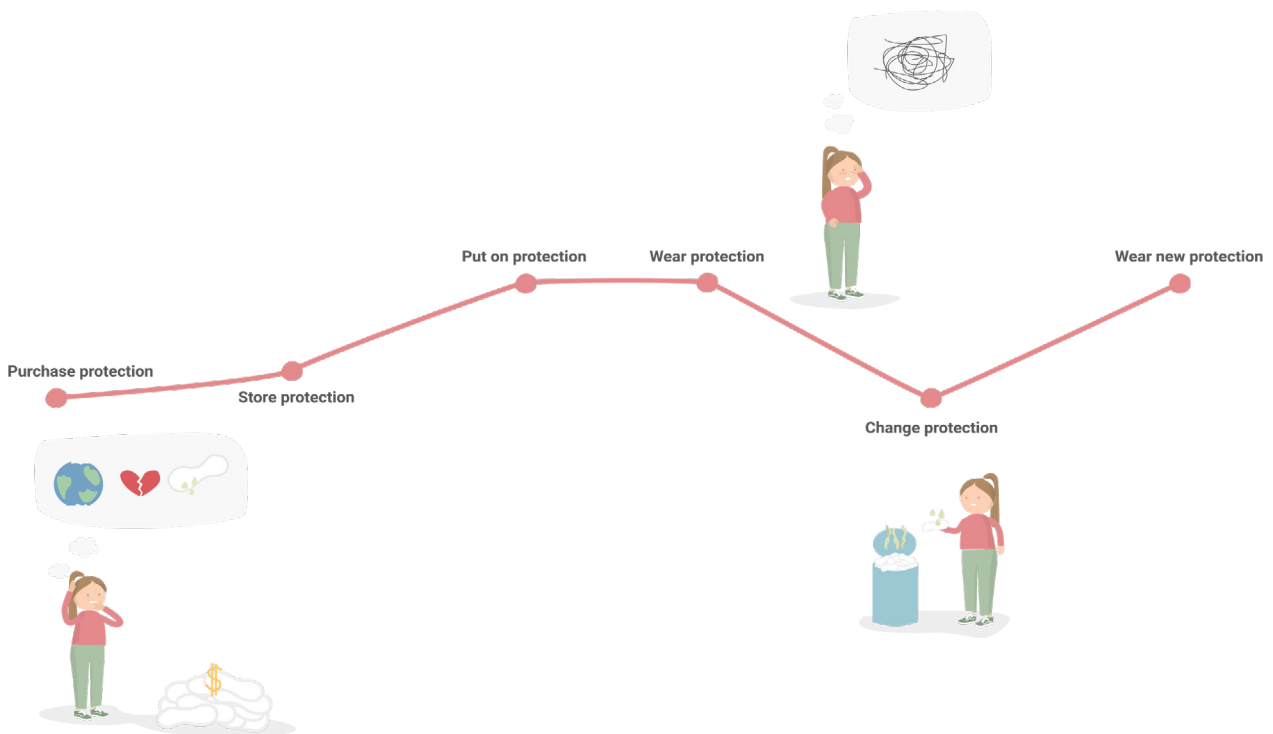


Figure 44. Illustration of the Sandra's journey.

Sandra's journey with the reference product

Start leaking urine

She notices that she has started to leak a few drops every day since she gave birth to her child.

“Oh, I have a urinary leakage and I need a protection.”

Purchase pads

She searches for information online and decides to go for single-use pads. She purchases the pads online and get them delivered to a delivery point, or goes to a store to buy them. When she gets home she unpacks the pads.

“It is hard to know which pads I should buy. I do not know which ones would suit my amount of leakage best.”

“I need to use pads every day and it becomes very expensive.”

“I worry about someone noticing me buying incontinence pads in the store and when I bring them home. Sometimes I buy pads for menstruation just to avoid feeling embarrassed.”

Store pads

She stores them at home in a hidden place and brings them along in a small case, or solely in their single wraps, in her handbag.

“I try to store the pads where no one can notice them at home. When I bring them along I often keep them in a small case, so no one can notice that I have them in my handbag.”

“It always have so many things in my handbag and I have to remember to refill with new pads.”

Put on pads

She put on the pad by attaching it to her panties with the glue on the backside and throw away the release paper.

“I think it is easy to apply the protection. In the beginning, it was a little hard to know what was the front and back of the pad.”

Wear pad

She wears the pads in daily life, at work, during workouts and when travelling and sometimes when sleeping.

“I sorry about others noticing me wearing the pads, especially when I have tight clothes on, which I wear less often nowadays. I use thinner pads than I need because they are more discreet. I make it work by changing protection more often instead.”

“My physiotherapist tells me to not use protection at home because she thinks it does not motivate me to do my pelvic floor and bladder exercises...She is probably right but I do not want to risk leaking and I just want to be able to not worry about it.”

Change pad

She decides that she needs to change, finds a bathroom and brings the pad. She applies a new pad and throws away the old one wrapped in the new one's plastic cover or bring it with her to throw somewhere else later. She applies a new pad and cleans her hands and leaves the bathroom.

“I feel fresh when I put on a new pad!”

“All the waste my protection creates makes me sad. I know it is bad for the environment but at the same time, I need to be able to live my life.”

“I often worry about someone coming into the bathroom after me and noticing, or even worse, smelling my used protection in the trash bin.”

“Sometimes when there is no suitable trash bin I take the protection with me, but then I worry that it will smell or leak in my hand-bag.”

4.2.7 Requirements and guidelines list

The requirements and guidelines identified in the process are summarised in a list that can be found in Appendix 7. The requirements and guidelines are divided into subgroups based on if they are concerning the functionality, user experience, sustainability of the protection or add-ons to it. The requirement and guidelines are ranked on a scale from 1 to 5 on how important they are, where 5 is most important.

4.3 Conclusions from chapter four

4.3.1 Attitudes and needs

Motivators to start using reusable protections are that it could be more sustainable, economical and convenient because it needs to be purchased fewer times and creates less waste than using single-use pads.

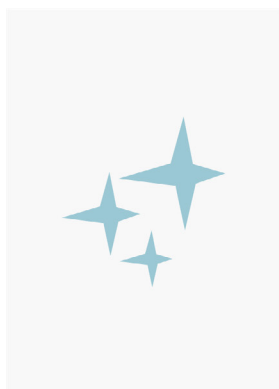
The most important needs and aspects to consider when developing a reusable protection, concerning the user acceptance of a reusable protection, can be divided into four areas:

Feel and be fresh, which means to be hygienic, dry and odourless, both during use and handling. An important desired feature we identified was that for reusable protections to be perceived as fresh as single use pads, they needed to somehow be possible to fresh up during the day.

Easy to handle and intuitive to use. It needs to be easy to clean and to know that it is correctly done. If the protection can be refreshed, it needs to be possible to use directly again afterwards. The protection should be easy to bring along when it is not used and not require any extra stuff. If the daily handling becomes more labourious it needs to be compensated by bringing additional value or require less effort in other parts of the handling.

Feel and be safe. The protection needs to feel and be safe when it comes to preventing leakage, even during large movements and it should not rewet once the urine is absorbed. The protection also needs to keep skin healthy and hinder odour.

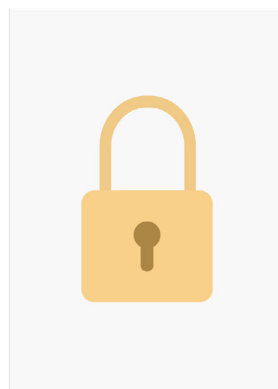
Be discreet and ensure integrity. The protection needs to enable to continue with everyday life and be sure the leakage does not intrude and not violate personal integrity. To achieve discretion the protection needs to be comfortable; thin to not show through clothes; and not be perceived as a protection for incontinence by others. It also needs to be possible to purchase and be handled with discretion to lower the risk of someone noticing it. Except for preventing leakage, discretion is the highest priority for the users.



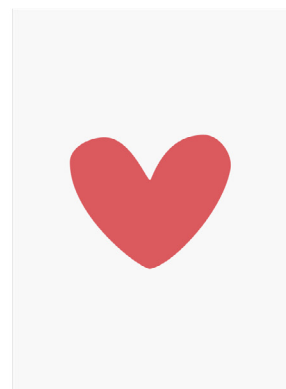
Feel and be Fresh



Easy to handle



Feel and be Safe



Feel and be Discreet

4.3.2 Ideas taken forward

Ideas on reusable protections that will be taken further in the strategy of reusable padcase or panty with cleanable absorbent sponge and a padcase which is possible to rinse out the urine from.

A reusable protection to have on the urethral meatus, inspired from “the cream”, will be taken forward but on a more futuristic level because it’s very far from today’s protection and is a very unexplored area and many issues concerning safety and hygiene were identified.

The rest of the ideas of a reusable protection will not be taken further.

The cleaning strategy that will be taken further is to rinse the absorbent in the sink and wring it out to dry, because it is a way to clean the protection which does not require machine washing which makes it differentiate itself more compared to existing reusable solutions.

Add-ons such as an app, a sensor or a service to give guidance about training and statistics of amount of leakages and work against taboo will be considered on a highly conceptual level but because it’s outside the scope it will not be in focus. Something to decrease the taboo around incontinence and create community among women having incontinence were seen as having potential to support a sustainable life for the women and would also be further considered.

Chapter five

Development and evaluation of concepts

This chapter describes the process to develop and evaluate the concepts of five reusable protections. It includes a description and development of the concepts, testing of functional models, evaluations with users and experts and the collected insights. The insights are presented in challenges, potentials and user opinions, both concerning all concepts and more specific ones connected to each concept. The chapter concludes which three concepts to select for further development. At last, a futuristic concept and add-on features to contribute to the users' wellbeing are presented.

5.1. Methodology

5.1.1 Development of concepts

Concepts were formulated by putting the earlier ideas and insights together and by discussing solutions to the identified challenges. This resulted in five main concepts, of reusable protection which are freshened up in the sink. Four of the concepts were based on the ideas from the workshop but one of the concepts appeared as a new idea. Additionally, one idea to have a protection that is put on the urethral meatus was taken forward but on a higher conceptual level. Some other ideas and concepts, such as platforms to decrease the taboo, create community and to support the women to train their pelvic floor, were also discussed, but the focus was on the concepts of protections.

Functional models (Ericson, Törlind and Wikberg-Nilsson, 2015) of the five main concepts were built. They were used to test the changes in handling, to identify the challenges and evaluate the potential of the concepts. The focus was on the user experience rather than how the concepts technically would work. The models were made by sewing, 3D-printing, modelling in clay and putting together different materials through glueing them together. The materials used were plastic, fabric, clay and different types of cloths and sponges.

The functional models were tested through experience prototyping, a method that helps the designer to understand how the user is experiencing a product or service, by trying it out themselves (Ericson, Törlind and Wikberg-Nilsson, 2015). The experience prototyping was performed by wearing and using the functional models. The aspects of highest interest were how it feels to clean the protection in the sink since that interaction is crucial for the user experience and is different from the handling and changing of single-use pads.

5.1.2 Evaluation and Analysis of concepts

The next step was to evaluate and analyse the concept. Semi-structured interviews (Bligård, 2015) with Essity employees, (see questions asked in Appendix 8) was made to understand what challenges and possibilities they saw with concepts, based on their area of expertise. In the following parts, they are referred to as experts and the people interviewed are:

- Christian Bremer - User experience and product development
- Ulrika Libander - Product development
- Anna Knöös - Sustainable product development
- Charlotta Hansson - Material development

The five concepts were evaluated against important criteria in a Pugh-matrix (see Appendix 9). The criteria were based on information from the expert interviews, the experience prototyping and earlier research. A Pugh-matrix is a method to evaluate concepts against several criteria and it is used to find the best solution to a problem systematically and objectively (Burge, 2009).

The next step was an online survey (Appendix 10), which is a method used to gain information and insights from users (Bligård (2015)). The ones doing the survey were the 12 participants that had taken part earlier in the study. The survey was programmed by the recruiting company Origo (www.origo.com) and pilot tested and iterated before it was sent out. The purpose of the survey was to get the users' opinions on the five concepts to understand which concept has the most potential from a user perspective. Additional connected features and services such as how the participant would like their bring along a bag to look like and how sending back used protections for recycling would feel were also included in the survey. The concept of having something outside the urethral meatus was not in the survey, but where evaluated from the experts and the users at the workshop.

The insights gained from the experience prototyping, interviews and the user survey are summarized in section 5.2 and the data from the user survey are compiled in Appendix 11.

Based on the insights gained, three of the five concepts were selected to develop further. These were developed by evaluating them against the personas (see chapter 4), redefine the user journey of the reference product (see chapter 4), analyse what changes the concepts would mean for the life cycle assessment (Slu, 2019) as well as identifying the material challenges connected to each concept. The personas were used to

adapt the concepts to fit different subgroups in the target group and the user journeys were created to identify the changes the concept would imply. The material challenges were identified to guide future development on what requirements needs to be fulfilled for the protections to function as thought. The analysis of the life cycle assessment were made to see how the new concepts affect environmental sustainability, compared to the reference products, rather than to calculate the exact impact.

5.2 Development and evaluation of concepts

At the beginning of this chapter, the five concepts are presented. It is followed by the insights concerning reusable protections in general and why three of them were selected for future development. Next, the development, challenges, potentials and user opinions connected to each concept is presented. At last, a more futuristic concept and add-on features to contribute to the users' wellbeing are described.

5.2.1 Five concepts of protections which are cleaned in the sink.

Concept Svanen

The protection consists of:

A thin and soft sponge-like absorbent which absorbs the urine and a case where you put the absorbent. The top of the case is soft and stays dry against the skin by quickly passing through the urine to the absorbent. The underside of the case is leakproof and prevents it from leaking on the panties. The absorbent and the case are odour repressive.

How it works:

1. The absorbent is put in the case by attaching the hole protection with a small button around the panties. The pocket is closed like a zip bag on the side. The case does not leak when it is closed.
 2. The protection is refreshed in the bathroom by removing the absorbent from the case and washing it with warm water in the sink. The absorbent can be put back after being wrung, as the absorbent is quick-drying.
- It is easy to see on the absorbent when it is clean as the urine dyes it in another clear colour and when the urine is washed out it returns to its original colour.
3. The case is washed in the washing machine, either separately or together with the panties.

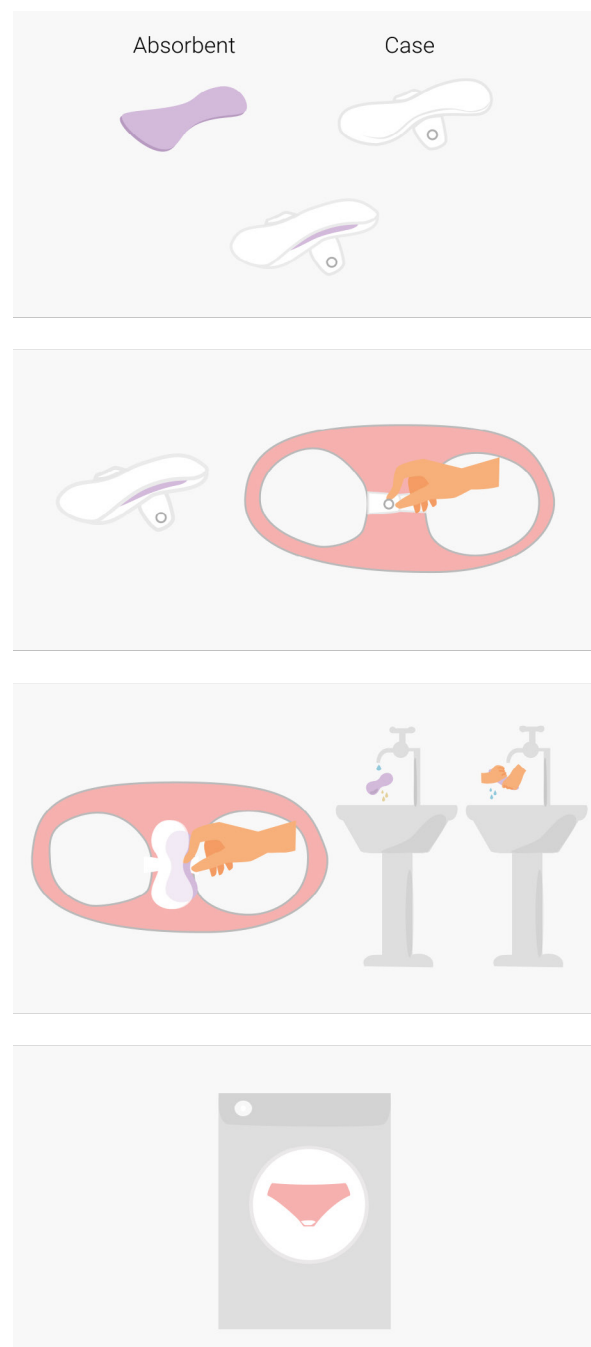


Figure 45. Illustration of Svanen.

Concept Rosenbladet

The protection consists of:

A thin and soft sponge-like absorbent which absorbs the urine and a pair of panties with a sewn “tunnel” in between the legs. The tunnel is soft, flexible and lets the urine pass through quickly stay dry and to avoid leakages on the side. The absorbent is put in the tunnel. The bottom of the panty has a layer which is leakproof and prevents it from leaking through. Both the absorbent and the tunnel are odour repressive.

How it works:

1. The absorbent is placed in the tunnel, from the back or the front, in the way the user finds easiest. The tunnel is elastic and stretchable, holding the absorbent in place and making it easy to put in.
2. The protection is refreshed in the bathroom by removing the absorbent from the tunnel and rinsing it with warm water in the sink. The absorbent can be put back in the tunnel after being wrung out, as the absorbent is quick-drying. It is easy to see on the absorbent when it is clean as the urine dyes it in another clear colour and when the urine is washed out it returns to its original colour.
3. The panty is washed in the washing machine, with or without the absorbent.

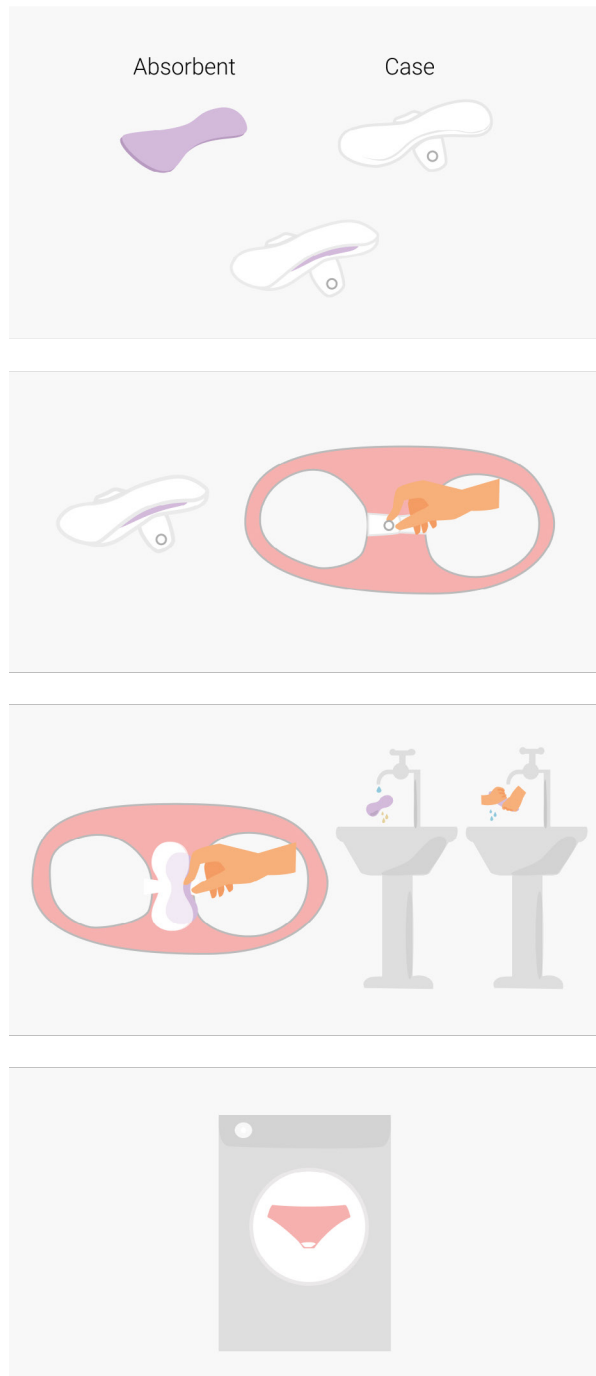


Figure 46. Illustration of Rosenbladet.

Concept Skuggan

The protection consists of:

A pad that absorbs urine, stays dry to the skin and prevents the urine from leaking out. The stiff part of the velcro is attached to the underside of the pad. A strip with the soft part of the velcro on one side and glue on the other and has a similar form as the pad but thinner and smaller. The velcro part is attached to the user's regular panties by glueing it on. Because it is the soft part of the velcro that sits on the panties it won't ruin other clothes in the washing machine.

How it works:

1. The pad is easily attached to the velcro.
2. The pad is refreshed in the bathroom by washing the pad with warm water in the sink. The pad can be put back after being wrung out because it is quick-drying.

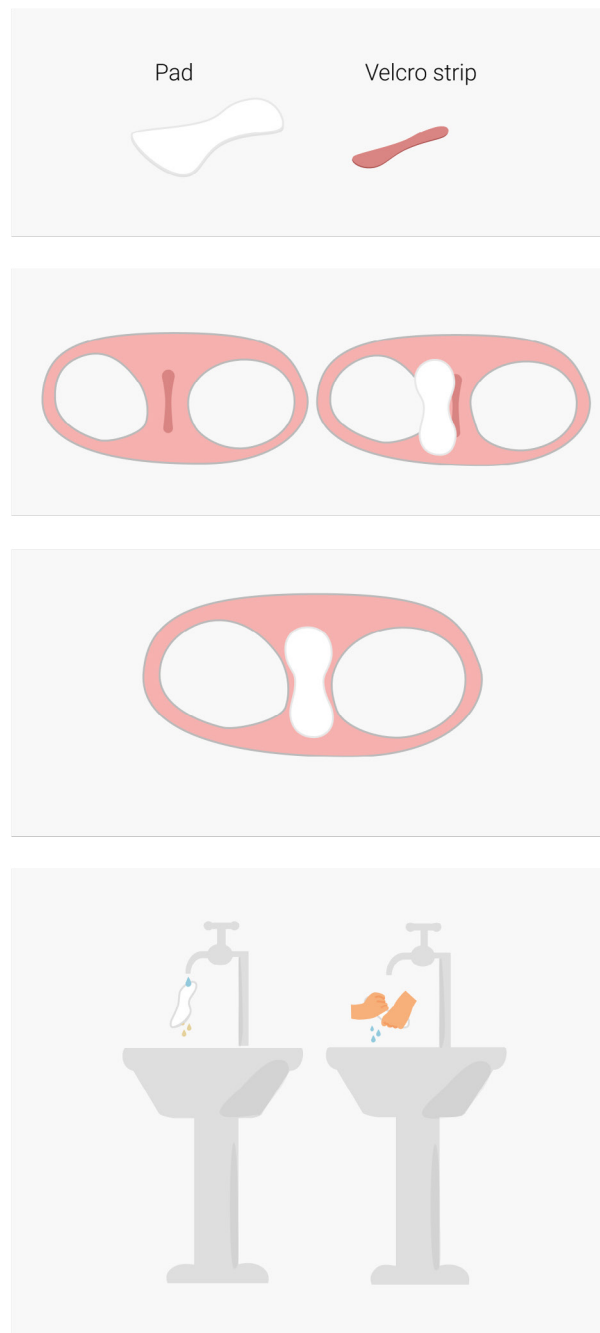


Figure 47. Illustration of Skuggan.

Concept Fjärilen

The protection consists of:

A pad which absorbs urine and keeps it dry against the skin and a case with two pockets, one front and one back. The case is leakproof and prevents urine from leaking through.

How it works:

1. The pad is attached to the case by inserting it into the front and back pockets. The case is attached with a small button around the users own panties.
2. The pad is refreshed in the bathroom by washing the pad with warm water in the sink. The pad can be put back after being wrung out because it is quick-drying.

The case can also be rinsed and cleaned in the sink but is washed less often because it does not come in direct contact with the urine. The case is quick-drying as well.

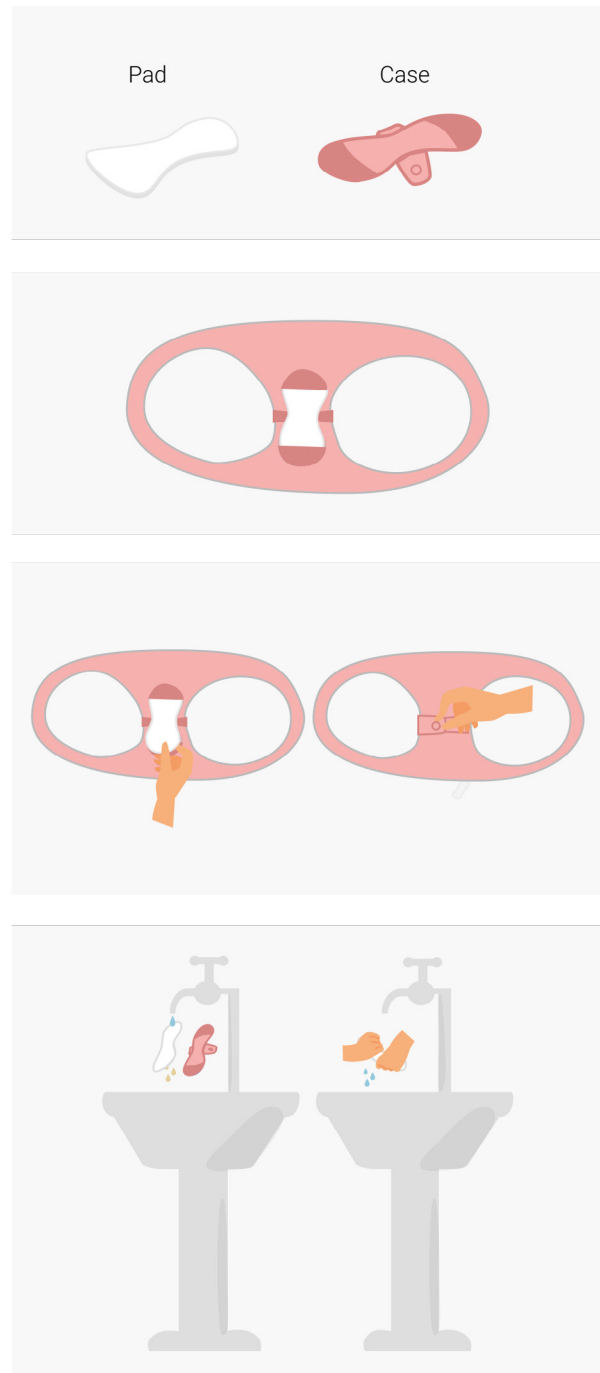


Figure 48. Illustration of Fjärilen.

Concept Snäckan

The protection consists of:

A clamping shell that attaches to the outer labials and prevents the urine from leaking through. In the case is a soft absorbent sponge that absorbs the urine. The sponge sits tightly against the vulva and urine hole but contributes to good flora and pH value thanks to the absorbent properties.

How it works:

1. The cover is clamped on the outer labials - which are not as sensitive as the rest of the vulva. It is flexible and stays in place even when doing large movements. It distributes the pressure on the hole outer labials and is comfortable when attached and used.
2. The case and the sponge is refreshed in the bathroom by rinsing them with warm water in the sink. Both the shell and sponge can be put back after being wrung out because it is quick-drying.

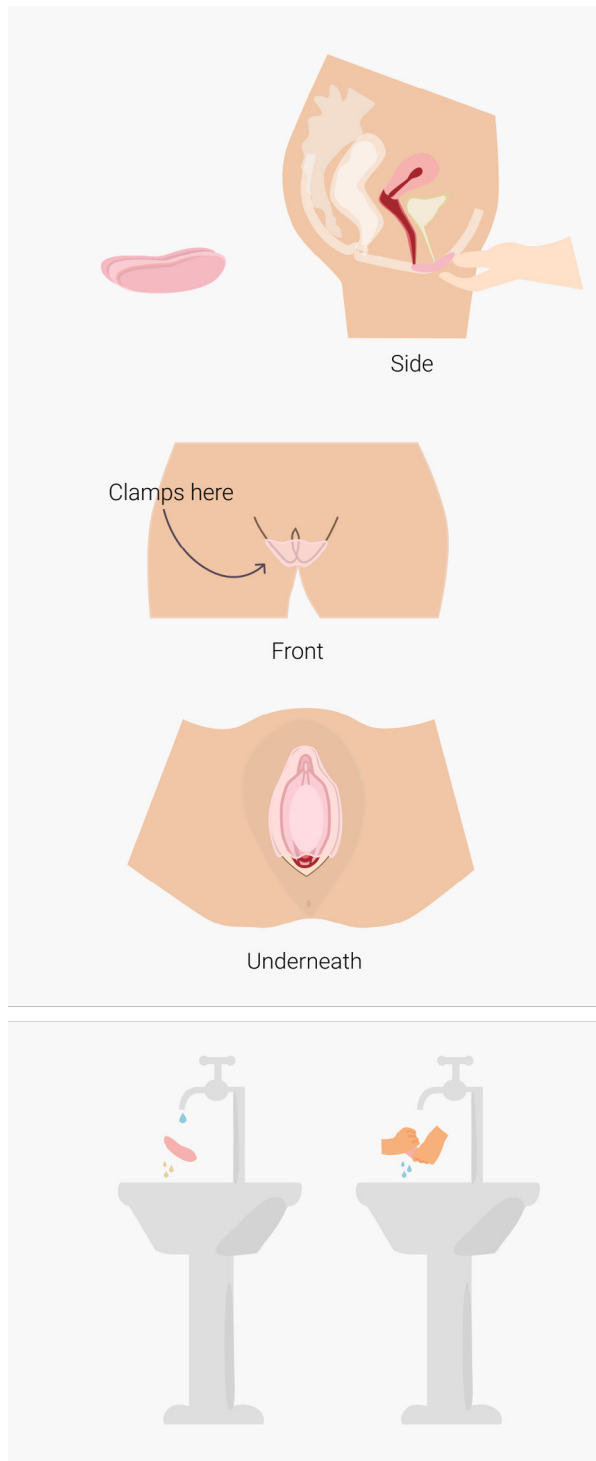


Figure 49. Illustration of Snäckan.

5.2.2 General insights and evaluation of all five concepts

During the development, some general challenges and potentials for all the five concepts presented above were identified and are listed below.

Challenges for all five concepts

- Make it feel and be fresh and hygienic to clean the absorbent or protection in the sink.
- Make the use and handling of the protection easy and intuitive.
- Make it easy to leave the bathroom clean after cleaning in the sink.
- Make the users feel safe it is leak and odour proof.
- Make the users buy and try the protections in the first place because it is a new type of products.
- Make it work or be adaptable to all kinds of bathrooms.
- Make the protection dry quickly enough so the users think it is dry enough to use again.
- Make it possible to wring out the protection but not make it release urine while using and doing activities such as running.

To see all challenges and material challenges (see Appendix 12)

Potentials for all five concepts

- Possible to get higher acceptance among younger customers because they are more prone to adopt new products due to a fast-changing way of living and take action because of environmental reasons. Many are used to rinsing menstrual protections in the sink since it is more common for them to have used menstrual cups.
- The protections are possible to freshen up during the day which is important for the users to feel fresh.
- Compensate for more effort spent on handling the protection by decreasing the effort spent on purchasing and by giving additional value such as being economically beneficial, enable a higher discretion and make it easier for the users to keep their integrity and privacy.

What the participants think about all the concepts

Generally about the concepts

- Would like to have several absorbents with different absorbency ability to change between.
- Most of the participants thought it was very important to be able to fresh up reusable protection during the day to feel fresh and avoid the smell.
- Information about how the protection is handled should preferably be found on the package when buying the protections.

About refreshing protection in the sink

- Simple and quick to clean it in the sink.
- Discreet and convenient to refresh it themselves which supports feelings of being independent.
- A sink is usually available in most bathrooms, which makes it convenient.
- Like that it becomes fresh again after rinsing it.
- Likes that it is good for the environment to feel fresh without having to throw away protection and use a new one.
- Maybe would not want to refresh where the sink is public.
- Risk of it being messy.
- It adds a step in the handling compared to using single-use protection.
- Comment from participant:
“Might feel unfresh to be in contact with the urine and rinsing it off in the sink but you always wash your hands after going to the toilet so it should not be a problem.”

5.2.3 Selection of final concepts

Out of the five concepts, Svanen, Fjärilen, Snäckan, Rosenbladet and Skuggan the evaluation declared no clear winner, but to narrow the scope Rosenbladet, Skuggan and Snäckan were selected to develop further. The concepts were selected partly because they were seen as different types of protections; pad, panties and attach to labials. The brief from Essity requested inspirational concepts and to choose three different types of concepts was seen as most inspirational and show a wider width of ideas.

Motivation to why each concept was chosen:

Rosenbladet: The concept with the highest score in the Pugh-matrix (see Appendix 9), shows that it fulfils important criteria for reusable protections. It was a concept that the experts from Essity liked most due to being discrete, intuitive, easy to use and enables the designer to get a high control over the user experience because the protection is integrated into the panties.

Skuggan: The concept with the second-highest score in the PUGH-matrix. It was one of the concepts which the users liked the most because they thought it was discrete and liked to still be able to use their own panties. However, they did not like that they needed to iron on the velcro before first use, but this was something that was designed away after the evaluation survey to ease the user experience.

Snäckan: The concept with the highest level of innovation, no other similar product was found during the competitor analysis and the experts found it interesting, but they also identified a lot of challenges. It got rather low scores in the PUGH-matrix and a wide spectrum of reactions among the users, most of them were sceptical of how it would be to use it, but also expressed some very positive feelings about it being very neat and discrete. Even if the concept has many challenges, the potential to be very discreet, which is a high priority among the users, made it an interesting solution to develop further. The concept could possibly have higher user acceptance among younger generations since they are more used to trying new things and the concept has the potential to be used as a product for menstruation.

5.2.4 Development and evaluation of the five concepts

Development of Svanen

The first model, made of old panties and a cloth, (see figure 50) and the second one (See figure 51) tested to put in the absorbent on the shorter side and on the longer side which showed that it was much easier to put in the absorbent on the longer side, especially when it was wet. The second functional model of Svanen was made by glueing an old textile pad and a plastic zip bag. The buttons were found to be a little fumbling to attach which changed the concept to have larger, but still very thin buttons.

The pocket in the function model had holes in it and were found to feel dry even when the absorbent was a little wet. The zip was found to potentially chafe if it was worn for a long time which gave a requirement for it, needing to be very smooth and thin zip. Another way to close and open the pocket which was discussed was to have one more button which was attached to the backside of the button which attaches the pad wings. The buttons were found to be indiscreet and one more button would make it even less discreet, which made it a bad choice. Different ways to clean the case of Svanen discussed where to clean it in the washing machine, boiling it or just clean it in the sink as well. To clean it in the washing machine was found to be the best option because the case already is attached to the panties and it was found to be the option which required the least energy from the user.



Figure 50. First model of Svanen.



Figure 51. Second Functional models of Svanen.

Challenges for Svanen

- Make the zip easy and intuitive to use, feel comfortable and not chafe against skin.
- Assure the user that the zip is closed correctly.
- Make the user feel that the protection is fresh even if it's not possible to freshen up the case in the sink.

To see all challenges see Appendix 13.

Potentials for Svanen

- Enable adaptation for different situations and occasions by different sizes of absorbent which the user can change between.
- Easier to make it feel dry even when the absorbent is a little wet because the sheet of the case which is closest to the skin stays dry.
- Users can use their own choice of panties.

What the participants think about Svanen

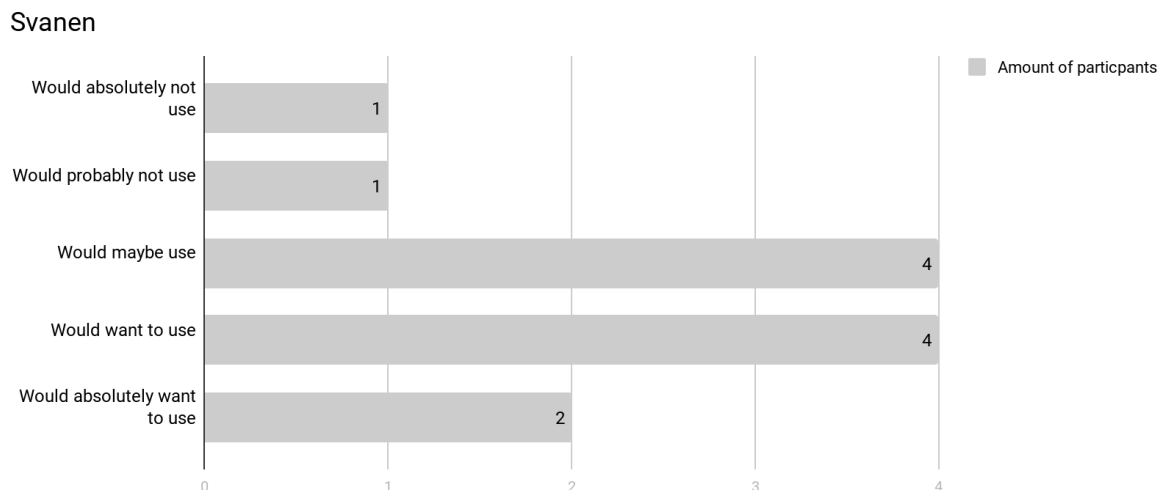
Positive:

- Convenient to use and easy to clean the absorbent.
- New and innovative idea and similar to their own ideas.
- Like the possibility to change the size of the absorbent to different situations and occasions.
- Like to be able to use their own choice of panties.

Negative:

- Buttons can chafe and are perceived as clumsy and indiscrete.
- Troublesome to use and messy to rinse the absorbent. Good hand motoric is needed.
- Do not feel fresh and hygienic.
- Insecure about how much leakage it can handle.

The participants' answers to how likely it was that they would use Svanen:



Development of Fjärilen

The first function model of Fjärilen (see figure 52) was a case with a place for an absorbent and with the top-part in a mesh structure to let the urine through. The edges on the bottom part made were to make it feel safe that no urine would not leak on the sides. It was found that the opening of the case, to fully separate the top-part from the bottom-part was a little fumbling and that the protection was quite thick and uncomfortable especially when sitting down, because of the edges.

The second model of Fjärilen (see figure 53) was changed to be an open case with two pockets, one in the front and one in the back where an absorbent is attaching in. This was to be easier to put in and take out the absorbent and to make the protection experienced not as thick. Because of the absorbent now being in contact with the skin, the top sheet was decided to be integrated into the absorbent and therefore it's further on called a pad.

The testing showed that it was easy to put in and out the pad in the pockets, but it was a little fumbling when the pad was wet and softer. It was decided that the pad needed to be a little bit stiffer to make the handling easier. The testing revealed that the two pockets could potentially chafe against the skin when wearing the protection for a longer time and an alternative solution that was discussed was to get rid of the pockets and instead attach the pad to the case with velcro. The velcro should be big enough to make the pad stick to its position but small enough to not require too much force when pulling on and off the pad.

The buttons attaching Fjärilen (see figure 53) to the panties were found to be quiet small which makes it harder attach them. It was decided that the buttons should be bigger and thinner to be easier to attach, especially for people with bad hand motoric.

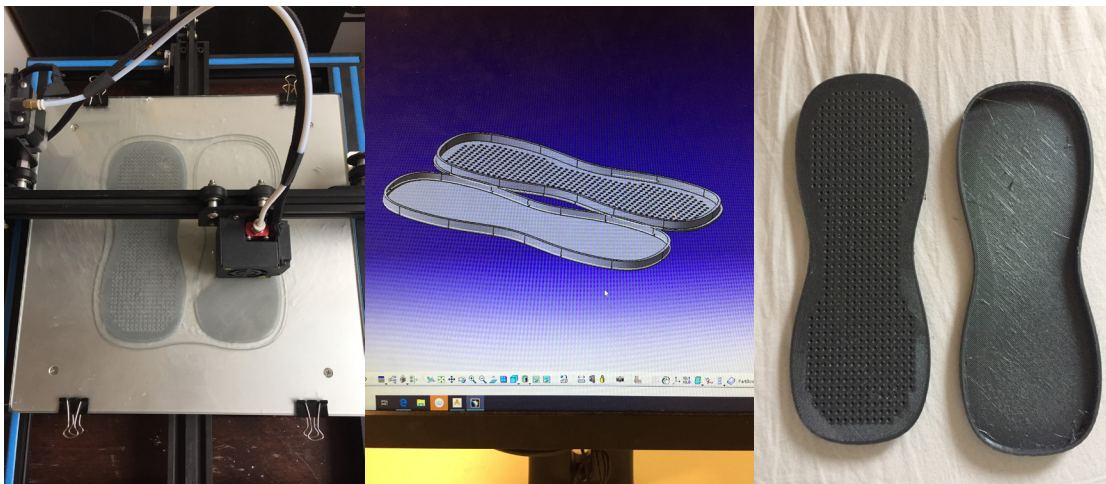


Figure 52, First functional model of Fjärilen.



Figure 53, Second functional model of Fjärilen.

Challenges for Fjärilen

- Make it be experienced as thin and discrete even though it consists of two parts.
- Make the case be dry when rinsed because it's put directly on the panties.

To see all challenges see Appendix 13.

Potentials for Fjärilen

- Compared to a small absorbent, a pad is bigger and therefore easier to get a good grip of when rinsing and wringing it out.
- Easy to attach and detach the pad from the case.
- Good to be able to use own panties.

What the participants think about Fjärilen

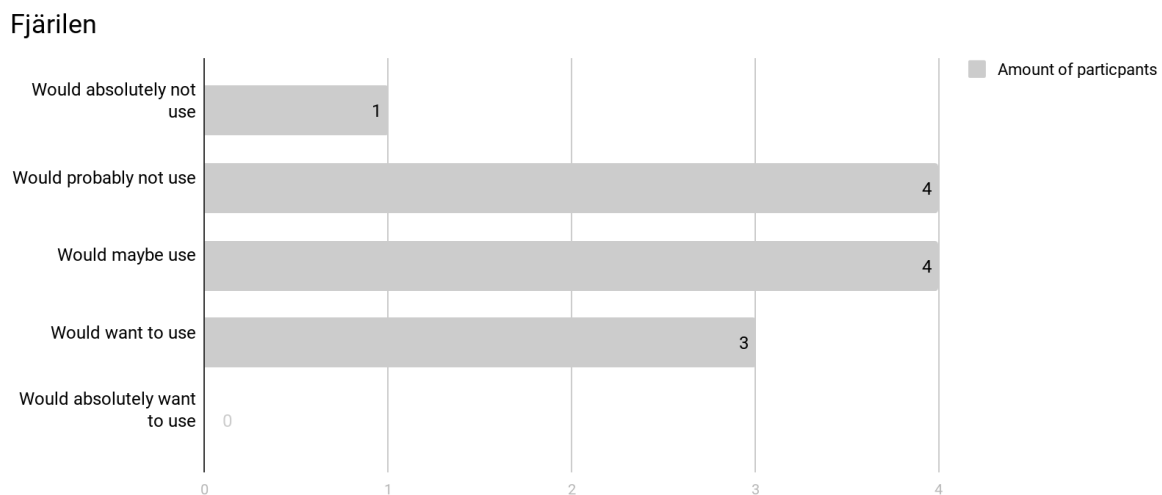
Positive:

- Seems easy to handle and to attach the pad into the case.
- Similar to the pads they use today.

Negative:

- Worries that the panties will get wet when putting the rinsed pad back.
- Inconvenient to attach case with buttons, especially for women with impaired hand motoric.
- Two-part protections is too much to handle.
- Worries about leakage on the sides.
- Worries the case and pad not will stay in place.
- Risk of it becomes messy, bulky and that the case can chafe.

The participants' answers to how likely it was that they would use Fjärilen:



Development of Snäckan

The idea for the concept Snäckan came after the workshop and was not based on a specific idea presented in the workshop, but was inspired by the interlabial pads present in section 2.2.4. but are safer because it also is attached on the outer labials.

The first sponges, paper and clay models (See figure 54) of Snäckan gave the form and measurements for the functional models. Issues found when trying the sponge models was that the sponge needed a back sheet which would be leakage proof for the urine not to leak out. Another issue was that the material needed to attach to the outer labial stronger than the sponge did.

These issues were solved and tested by making a 3D printed model with flexible material which clamps the labials and which had a backside which holds the sponge (see figure 55).

The function models of Snäckan (see figure 55) was found to stay in place surprisingly well both when doing bigger movements and in different positions such as standing up, sitting and laying down.

An issue identified through the test of the first 3D-model (see figure 55) was that the urine could leak out in the front. Another issue was that it was a little hard to understand how far front or back the protection was supposed to sit. To solve these issues the form was changed to go further up on the front of the vulva as a cup and was applied to the next model (see figure 56, last model). This model however became too small to try.

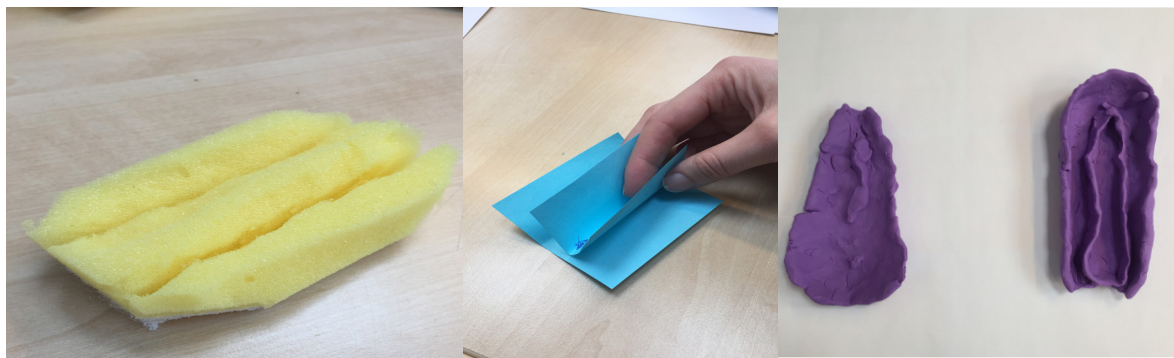


Figure 54. Sponge, paper and clay models of Snäckan.

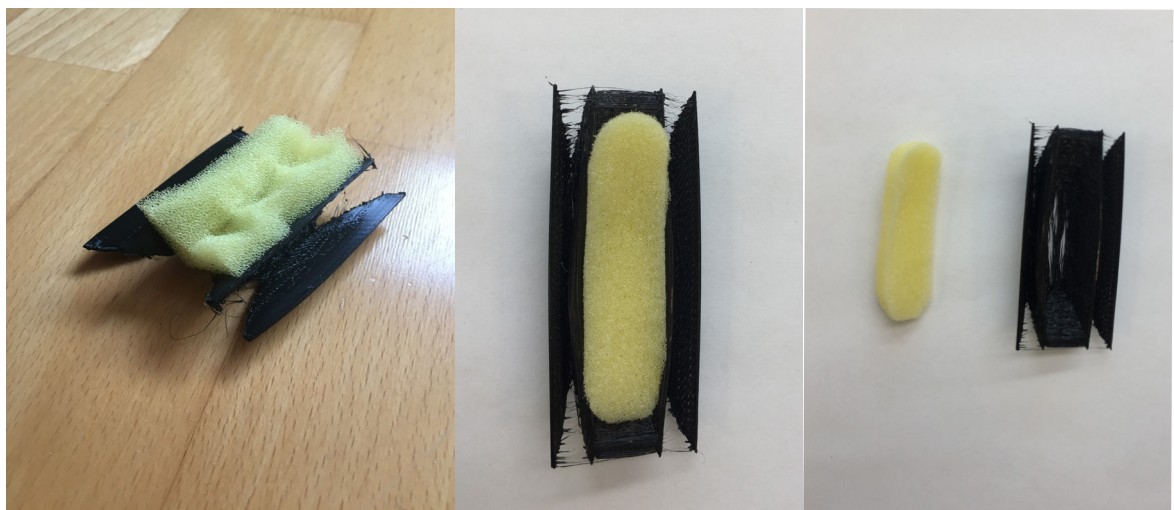


Figure 55. First 3D printed shell and sponge model of Snäckan.



Figure 56. Second 3D printed shell and sponge model of Snäckan.

Different ways to make Snäckan suit different forms of vulvas and body forms were discussed. One solution identified was to give the customers an adjustable form which they could form themselves to their vulva and send back to be the base for their customized one. Another one was letting the customer scan their vulva through an app on the mobile camera which then would be the base for a customized one. One solution was that the customer could choose between different forms and sizes which they think would suit them best and order it online. Other solutions were to make Snäckan possible to shape by the customers themselves, by heating it in their ovens, or to make the protection in a material which easily would be shaped to the labials and then stay in that shape. The solution which was found in the current situation to be most realistic and economically beneficial was the one where the customer get to choose between different sizes and forms online.

The testing showed that it was easier to wash the sponge and case separately. It made it easier to be sure they become clean and no dirt is stuck in between.

An issue discussed with the experts was to make the protection create a good environment for the vagina, since it sits so close. Solutions discussed were to use lactic bacteria in the sponge and using Snäckan only for short periods of times. This could for example, be on special occasions where discretion is highly desirable.

A new form of the protection which was discussed was to change from fully covering the labials to clamping stripes to give a higher breathability. This would need to be tested to see if it would give an even pressure which was identified as important to make it comfortable to wear over time.

Challenges for Snäckan

- Make the user feel comfortable and safe that it stays in place in all positions, kinds of movements and for longer periods.
- Make it be and feel breathable and healthy for the vulva and skin.
- Make it absorb enough liquid on a limited and quite small area.
- Make women to initially try it even if it's very far away from the mental model for their current protection.

To see all challenges and material challenges see Appendix 13.

Potentials for Snäckan

- User can wear their own choice of panties.
- Possible getting higher acceptance among younger and upcoming generations because they are more prone to adapt new products
- Close fitted to the body without being in contact with the vaginal mucous membranes which was undesirable because many users have dry mucous membranes.
- Very discrete due to it being close to the body.
- Could be adaptable for menstruation.
- Was found to have potential to stick well, even with big movements.
- Was experience easy to clean.

- The way to attach has been shown to work well.
- To have something in the vulva have been applied in menstrual protections such as interlabials pads and been shown to work well.

What the participants think about Snäckan

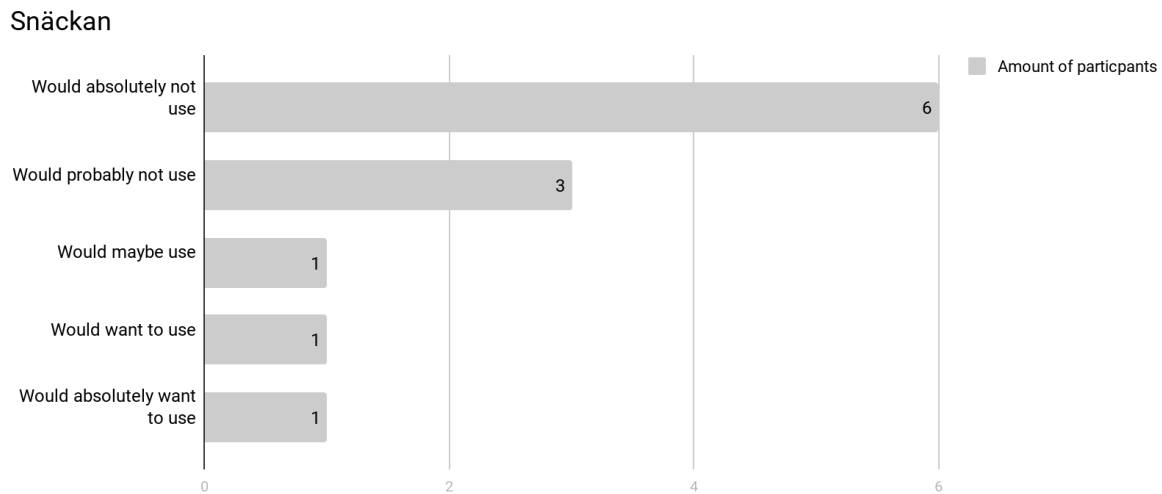
Positive:

- Discreet, neat and possible to use small panties without the protection showing.
- If it is convenient and comfortable there is no problem with having something so close to the body.
- Likes to be able to use their own choice of panties.
- Likes to be able to customize and make it suit their own body. They think they all look different and there's a bigger change than it would work if it is suited to their own body.
- Some thought that it is about exercise and habit. If you have tried it and got used to it, it might be great.
- Might want to use it but only when they workout because then they prioritize discretion.

Negative:

- Worried about how it would be to attach to labials, know how to attach it right and that it would stay in place.
- Did not think it seemed comfortable to attach to labials, worries it would chafe.
- Some do not like to have something so close to the body.
- Most of them do not like to boil the shell because they think it feels inconvenient and some of them would rather wash it in the washing machine at 90 degrees.

The participants' answers to how likely it was that they would use Snäckan:



Development of Rosenbladet

The functions models were made by sewing a piece of textile on panties. The test of the models of Rosenbladet (see figure 57) showed that it was a little hard to get the absorbent into the tunnel when it was wet. A solution to this was to make the tunnel in a flexible and elastic material to make it easier to lift and put in the absorbent.

Another issue found was that it was hard to know where the absorbent was supposed to be placed and which was front and back. Solutions to this were to design the form only to be possible to put in one way and with indications which would guide the user.



Figure 57. Functional models of Rosenbladet

Another issue was to know if it was clean and that all the urine was gone when rinsing it. A solution identified was to make the urine react with the absorbent and create a clear colour such as clear pink, blue or purple and when the urine is rinsed out it changed back to its original colour.

A challenge is that the user may need to put the absorbent somewhere when they are putting on and off panties and pants because it is hard to hold at the same time. To solve this, the absorbent in Rosenbladet could be in a form or in a material that makes it foldable and possible to stand up. In that case, only the short side, which is a rather small part of the absorbent, would need to come in contact with the surface it would stand on.

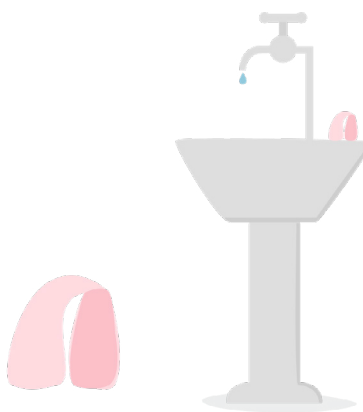


Figure 55. Functional models of Rosenbladet.

An opportunity found was to have absorbents in different sizes to change between depending on occasion and situation. This is possible due to the tunnel being in an elastic and flexible material and therefore could adapt to different sizes.

Challenges for Rosenbladet

- Make the tunnel be and feel fresh even if it is not possible to fresh up during the day.

Making the users feel that they have enough options for panty models even when they can not use their own ones.

- Make the initial purchase cheap enough for the users to purchase.
- Make it easy to put in the absorbent even when it is wet and softer.
- Assure the user that the absorbent stay in place in the tunnel.

To see all challenges and material challenges to see Appendix 13.

Potentials for Rosenbladet

- Easier to make it feel dry even when absorbent is a little wet because the tunnel stays dry.
- Enables the user to keep her incontinence for herself because it looks like regular panties.
- Allows more control for the developers because they can control both panty and absorbent while other concepts need to be adaptable for all kinds of panties.
- No need for extra attachment arrangements such as zip or velcro.

What the participants think about Rosenbladet

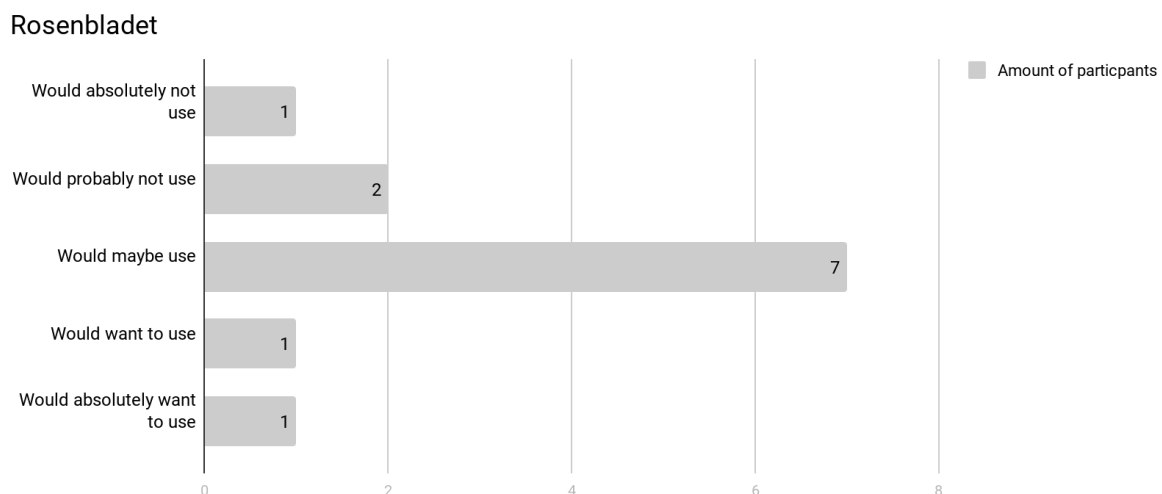
Positive:

- Seems easy to make stay in place.
- Seems easy to handle and is similar to their own ideas.
- Discreet because the absorbent is hidden inside the panties.
- Liked to be able to see if it is clean or not through it changing colour, makes it feels safer.

Negative:

- Worries it might chafe or be too warm and unbreathable.
- Did not like to need to buy a whole set of panties and change from their own favoured panties. Makes them feel less free and would feel expensive.
- Thought it was not environmentally friendly to change from their own panties for new ones.
- Worries about that it will be hard to put in the absorbent in the tunnel, especially when it is wet.

The participants' answers to how likely it was that they would use Rosenbladet:



Development of Skuggan

The function model of Skuggan was made by glueing one part of the velcro on panties and the other on an absorbing textile. Testing the model (see figure 58) showed that the handling was easy and felt similar to how the reference products are attached. It was found that it was hard to detach the pad once it was placed because the velcro was very strong. To make it easier to detach, the velcro-parts were made smaller but still large enough to keep the pad in place.

The tests revealed that the velcro could chafe if the panties were worn without the pad. This was partly solved by having the soft part of the velcro attached to the panties. Furthermore, a solution discussed was to provide an additional piece of fabric-shaped as a pad, to protect the skin against chafe or to make it possible to detach the velcro strip by for example heating it.



Figure 58. Functional models of Skuggan.

In the function model, the velcro strip that is attached to the panties had a backsheet to protect the panties from getting wet. The test showed that if the velcro-strip was attached in the wrong position the pad could not be adjusted without revealing the velcro underneath, which could chafe the skin. The solution was to make the velcro strip smaller. This makes it possible to change the position of the pad much easily. It made it not possible to have a backsheet on the backside of the velcro strip so instead, the backsheet became integrated into the pad itself.

The tests revealed that it can be hard to wring out the pad because the velcro can hurt when squeezed. A solution that was discussed was to create some type of indication e.g. arrows, lines or colours on the pad that shows how it can be folded to avoid getting hurt by the velcro.

The survey revealed that many users liked the idea of attaching the pad with velcro but to iron it onto the panties, which was an earlier idea was seen as complicated. The concept was therefore changed after the user survey to use a glue that doesn't need to be heated to get stuck.

The users expressed that they are concerned about velcro destroying their clothes in the washing machine. Solutions to this could be to have a mechanical velcro or by washing it in a washing bag.

Many wanted to be able to wash the pad on high degrees in the washing machine to sometimes sterilize it. Washing the pad in the machine will potentially wear out the odour inhibitive functionality. However, this would be done fewer times than for example the existing reusable textile pads and panties, present in section 2.2.4. A solution discussed was to a washing detergent that can restore the odour inhibitive functionality to make the pad last longer.

A solution to make Skuggan more discreet were to produce it in several colours for it to match the users own panties colours.

Challenges for Skuggan

- The velcro should only be found in the middle part of the pad to make sure it does not risk to chafe the skin.
- Make it possible for the user to remove the velcro strip if she wishes but at the same time make it stick.
- Make it possible to adapt to different panty models.

To see all challenges and material challenges see Appendix 13.

Potentials for Skuggan

- User can wear their own choice of panties.
- Discrete because the colour of the pad can match the colour of the panty.
- Make it possible to adapt to different panty models.
- Possible to customize where to put the velcro strip.
- After initial attachment, the pad is very easy to put on and of.
- Compared to a small absorbent, a pad is bigger and therefore easier to get a good grip of when rinsing and wringing it out.

What the participants think about Skuggan

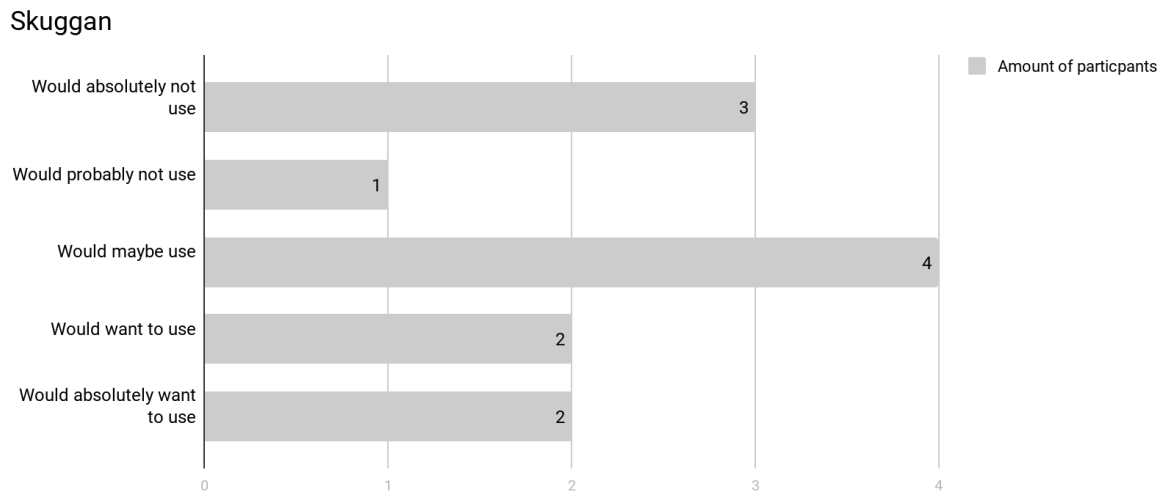
Positive:

- Convenient, safe and easy to place the pad in the panties by velcro.
- Similar to the reference products.
- Likes to be able to use their own choice of panties.
- Easier to apply these protections in their current panties than to buy new panties, it would be easy to replace the velcro if it wears out.
- Quote from participant: "Great! Genius, because it is so simple and fun to Do It Yourself."

Negative:

- Worries about tearing of the velcro and if it would attach good enough in the long run.
- Inconvenient to use Likes to be able to use their own choice of panties.
- Worries that the velcro will destroy clothes if it comes close to sensitive materials.
- Did not like if the panties are destroyed once the velcro is fastened and if the panties cannot be worn without the protection because it will chafe the vagina.

The participants' answers to how likely it was that they would use Skuggan:



5.2.5 Futuristic concept - Krämen

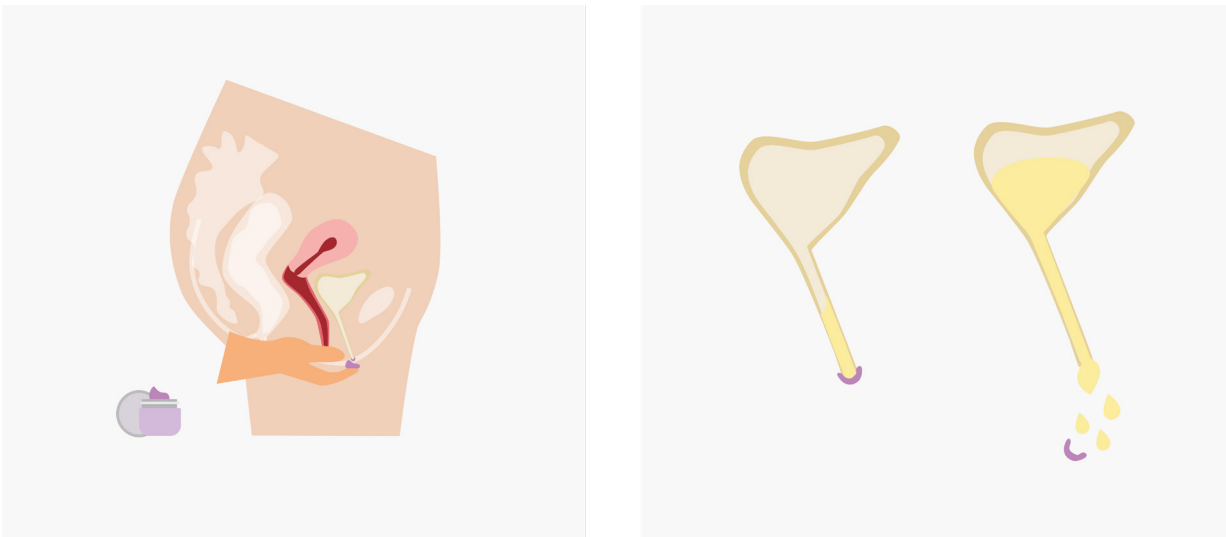


Figure 59. Illustration of Krämen.

Krämen is a degradable incontinence protection. It is in the form of a cream that is put on the urethral meatus, and stiffens quickly, which creates a plug that prevents from leakage. When the user pees the plug will drop into the toilet and can be flushed down. The cream is degradable and can be flushed down without disturbing the natural flows. Once the user has emptied the bladder, some new cream can be put onto the urethral meatus. Krämen is stored in a small and discreet can and can easily be brought along anywhere in the user's handbag.

Challenges with Krämen

- Make it hold tight and prevent smaller leakage but not when peeing.
- Making it feel and be safe when making bigger movements e.g. when working out.
- Make the users adopt the protection even though it is far from their current mental model what incontinence protections are like.
- Make the cream not smear or get stuck in pubic hair.
- Guide the user to know where to put the cream on since it can be hard to locate the urethral meatus
- Lower the risk of getting an infection in the urethra due to stopping the downward flow, which is important for bacteria not to thrive.

Potentials with Krämen

- The participants expressed in the workshop that they really liked Krämen.
- Being able to plug the urethra without needing a doctor's assistant.
- Can be extremely discreet because once the cream is put on it will not show through the panties.
- Can be simple to apply once the user has learned how to do it.
- Can be very easy and convenient for the user to carry along in their handbag being so small.

5.2.6 Ideas in related areas

The inco support

The inco support is an app for smartphones and a sensor to clamp onto the panties. The app and sensor help the users to perform their pelvic floor training correctly through visual guidance and helps them to remember to do the exercises regularly by sending reminders. The reminders can be controlled by the user to suit their everyday life and can e.g. send a notification whenever it senses that the user is riding with public transport and there is extra time to perform the exercises. The app can help the user to track their progress when it comes to strengthening the pelvic floor muscles, as well as remind them of all the benefits connected such as the possibility to get a better sex life.

The sensor measures the amount of leakage which helps the user to know when and how much they leak, to identify patterns and to find protections that suits their needs best. In the app, the users can get in contact with other women that have incontinence and discuss and share tips and experiences. The user can book pelvic floor yoga sessions at connected gyms, where they can train their pelvic floor muscles and meet other women.

During the workshop, the users expressed that they train their pelvic floor muscles sometimes but that they need a reminder to do it more frequently. They also expressed a wish to keep track on their leakage amount. The inco support app and sensor enable the users to make their pelvic floor muscles training a habit, which in turn can lower their leakages and thereby improve their wellbeing. To track their progress and provide incentives to train can also help the users become more motivated to train.

What the participants think

- Sisterhood! It is incredible strength in helping and supporting each other and sharing experiences.
- Some of the participants express that they would not use such an app due to e.g. having one more app is stressful, unnecessary and that it might be expensive.
- Would like to have a reminder to do pelvic floor exercises.

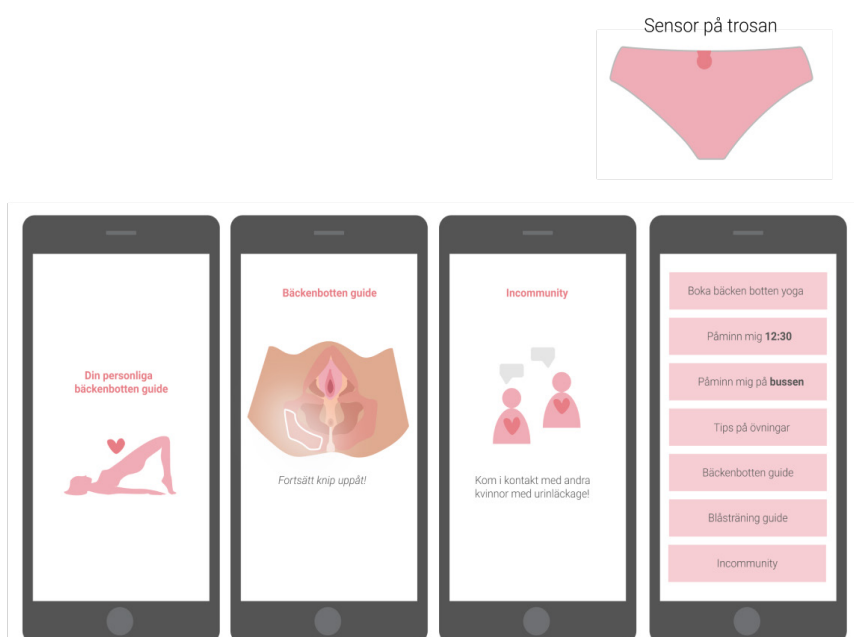


Figure 60. Illustration of the Inco support app.

The sisterhood store

The sisterhood store is a physical place where women can buy products connected to the female body, such as incontinence, pelvic floor training, menstruation, menopause, sex, pregnancy and lower abdomen health. The women can get personal advice concerning all areas mentioned above, take part of information, tips and attend seminars as well as meet and connect with other women that want to talk about the same things.

The concept of a sisterhood store was developed because the interactions with the users revealed that they thought it is of great value to be able to connect with other women with the same issues. During the workshop, the participants were really outspoken and enjoyed to share experiences, while they expressed that they rarely talk about their incontinence in their everyday life. Connecting with other women have the potential to contribute to their wellbeing by making them feel that they are not alone and that there other women that can listen and support them. The sisterhood store was created to build a physical platform that enables women to do this.

What the participants think

- Many expressed that a sisterhood store is something that they would appreciate. It would be convenient to have everything in the same place.
- Some expressed that it would feel to intimate and personal with a sisterhood store and would not like to visit it.
- Would like the store to be online instead, it would be more convenient and accessible.
- Some thought a sisterhood store could help women to decrease the taboo of talking about women related issues and upgrade the view of themselves, their bodies and each other fit into a new, healthier era.

Chapter six

Final concepts

This chapter presents pitches of the final concepts together with each concepts user journey and persona which represents the most promising target group for the concept.

6.1 Snäckan



Figure 61. Visualisation of Snäckan in the context of a bathroom.

Snäckan consists of a shell with an absorbent sponge inside. Snäckan is easily attached by clamping the shell onto the outer labials, as illustrated in figure 62. It is a flexible material which firmly forms around the labials. It is possible to buy in several different forms, to be able to perfectly fit the individual vulva. Due to its clamping on a quite big area, it distributes the pressure which makes it feel comfortable, even when using for longer times.

Snäckan is inspired by the interlabial pads presented earlier and the sponge inside the shell goes in between the interlabials just like them, to absorb the urine. The sponge absorbs the urine as soon as it comes out of the urethra which decreases the risk of the urine ending up somewhere else, making the user feel safe. Snäckan is made in breathable material to be kind to the skin.

Snäckan is easily freshened up daily, by cleaning the protection in the sink and is sterilized once a week by boiling it in a boiling pot that comes along when buying it. Snäckan is very neat and discreet and because it is so closely fitted to the body it makes the user able to have tight clothes or even a bikini without it showing.

Snäckan is attached in a whole new way which has not been seen before and was shown to work well in the testing of functional models. Snäckan does not interfere with the mucous membranes inside the vagina which makes it good even for women with dry mucous membranes.

Snäckan is reusable protection that allows the user to stop worrying about trash and the impact the protection has on the environment. Snäckan can be used several times which makes it much cheaper in the long run than single-use pads. It also means fewer times needing to risk being seen purchasing protection fewer times.

The handling and use are simple and is similar to menstrual cups which have been shown to get a high user acceptance and are becoming more common among younger generations (Jones, 2018). This makes Snäckan potentially more popular among future target groups such as these younger generations. Snäckan could possibly be for menstruation.

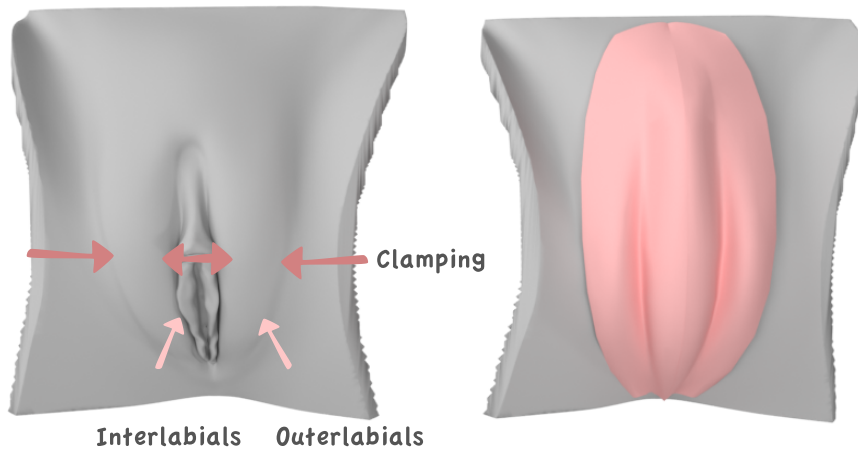


Figure 62. Illustration of how Snäckan is attached.



Figure 63. Visualisation of Snäckan.

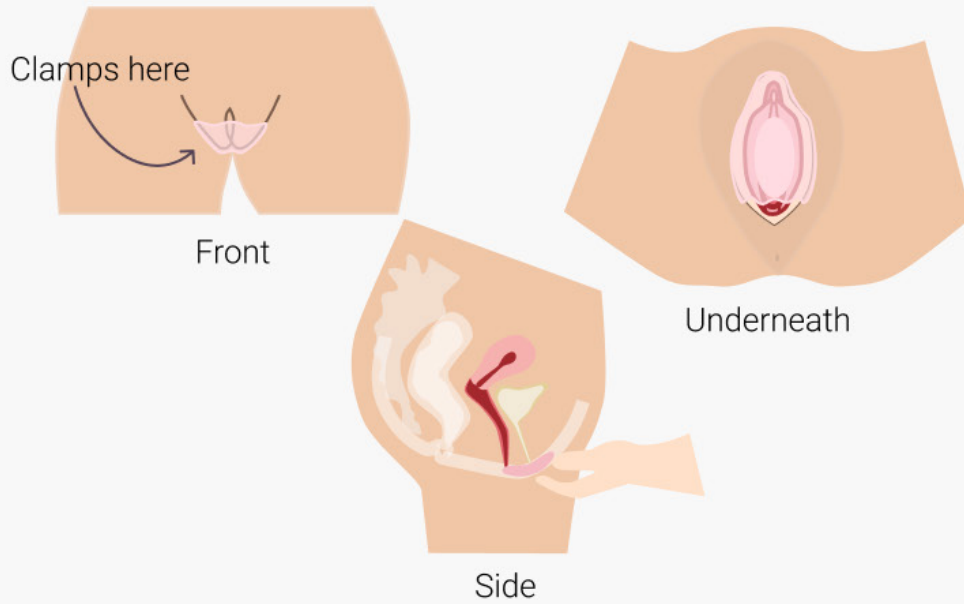
Purchase Snäckan



Store Snäckan



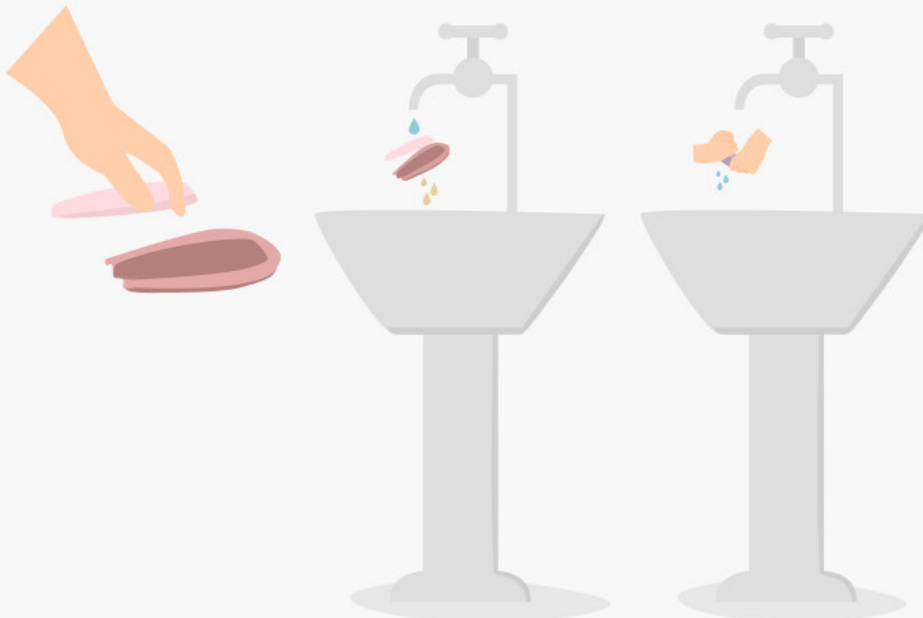
Put on Snäckan



Wear Snäckan



Refresh Snäckan



Boil Snäckan



Sandra's journey with Snäckan

Sandra has been waiting a long time for a more environmentally friendly protection that is very discreet so she can keep her stylish clothes. Sandra's friend recommended Snäckan, and as an early adopter Sandra becomes really excited to try a new type of protection, so she decides to buy it.



Purchase Snäckan

Sandra visit TENAs website where she fills in a onlineform about the forms and sizes of her vulva to get a protection that fits her. She can choose what colour she likes and decides to go for pink.

Sandra gets home a package with snäckan, including one shell and two sponges. It also comes with a small boiling pot and a bring along case. The case is smell and leak proof and easy to clean. She opens the package and read fun, easy and visual instructions on inside of the package. She can buy new absorbents in grocery stores or order online, one sponge lasts for one month.

Store Snäckan

She stores Snäckan in the case in her handbag when she does not use it. She always has a extra sponge in there as well, to always have it with her.

"A relief to not needing to go to the store so often so people can see me buying the product.

It feels good to be able to customize my own product to my own body.

It feels a little bit scary to try something so different and new but also really fun because I like to be a pioneer on stuff like this and I trust TENA a lot.

The initial cost is a bit expensive but I know in the long run it will be much cheaper.

I feel good about using reusable protections

"It is easier to make no one notice my protections because they are so few and takes less space."

I do not need to remember to put new single-use pads in my handbag every day because I have everything I need in my bring along case.

Feel scared that the absorbent or shell will smell or leak in the bag but the case gives comfort. "

Put on Snäckan

She puts Snäckan by fasten it on her outer labials by stretching out the flexible shell and place it around the outer labials where it will clamp without hurting. The form guides her where to attach it.

"It feels easy to put it on right due to the form but a little bit tricky to get it in place."

"I wonder how much I can let my pubic hair grow and still use this product. It is good that there is no glue which makes it stick though."

Wear Snäckan

Sandra wears Snäckan in all parts of her life. When a private sink is not available for longer times she change between sponges. She does not use it when she sleeps because she does not leak so much then.

"I love to be able have whatever the panties and clothes I like because the protection does not show and does not stick to the panties!"

"It feels super neat and very discreet and that it can not be seen through clothes."

"It is nice when I need to change in front of others then it feels like it less likely that someone notice that I have a protection."

"I worry that it does not stay in place when I do big movements but I got pleasantly surprised when I tried dancing with it and it did!"

"I worry that I will squeeze the sponge out when I do some exercises and that it will leak."

"I worry it will irritate my skin or hurt if I use it for long."

"I worry I suddenly will leak a lot and that the protection will not be enough."

Refresh or/and change Snäckan

Before she sits on the toilet she drags down her panties and take out Snäckan to put on the sink or somewhere else, sometimes on some paper. She use the toilet and depending on distance from toilet or availability to sink:

If sink is just by the toilet:

- She takes out sponge and rinse the sponge and the shell while sitting on the toilet in hot water to get rid of urine and until it feel fresh. She wrings the sponge and Snäckan put it back because it dries instantly.

If sink is far away from toilet but in the bathroom:

- She goes to the sink and rinse the sponge and the shell in hot water to get rid of urine and until it feel fresh. She wrings the sponge out which dries instantly. She drags down her panties and put on Snäckan on again standing by the sink.

"I think it is nice to be able to fresh it up without having to change to a new protection. It feels simple to just rinse it but I want to be sure the bathroom is totally clean when leave."

"It feels a little unfresh to put the sponge on the sink both for me and if it makes the sink dirty."

"It feels good to not throw any waste. For environmental reasons but also because It is nice that there is no trash which the the person who goes into the bathroom after can notice."

If sink is outside bathroom:

- She takes out Snäckan at the toilet and put it in the shell and take a new sponge to put in. She then clean it when she has having access to a private sink.

She sometimes clean both the shell and sponge, but often only the sponge. The shell is liquid resistant and does not need to be wrung out to dry instantly. She leave the toilet and make sure it is clean.

Boil Snäckan

Once a week Sandra boil the sponge and shell in the boiling pot to sterilize them.

“It feels simple because I am used to do the same with my menstruation cup I used when I was younger

It would feel unfresh to use the same boiling pot which I use for my food so it is nice to have a seperate one.”

Throws away Snäckan

After she has used the sponges for a month she throws away the sponge with plastic with the other waste separation. She get a new ones in store or by ordering them online.

“I think it is nice to be able to throw it out with the rest of my trash, it makes it feel less of a big thing.”

6.2 Skuggan



Figure 64. Visualisation of Skuggan in the context of a bathroom.

Skuggan consists of a pad with velcro on the backside and a velcro strip with glue on which the user glues on to their panties. After attaching the strip, the user can easily put on the pad on the velcro and drag it off as easily. The pad is possible to fresh up daily by rinsing it in the sink and is sterilized by washing it in the machine in a washing bag which comes along when buying it.

The similar forms on the strip and pad makes it intuitive to know how to put it and what is front and back on the pad. Skuggan is intuitive, simple and safe to use because it is except for being reusable similar to the single-use pads which many are satisfied with. It is safe and stays well in place through the velcro.

Skuggan will be available in different colours to make it possible to match the colours of the users own panties to be more discreet.

Skuggan is a reusable protection which creates no trash to worry about and feels kinder to the environment. Skuggan can be used several times which in the long run becomes much cheaper than single-use pads. It also means fewer times needing to risk being seen purchasing protection fewer times.

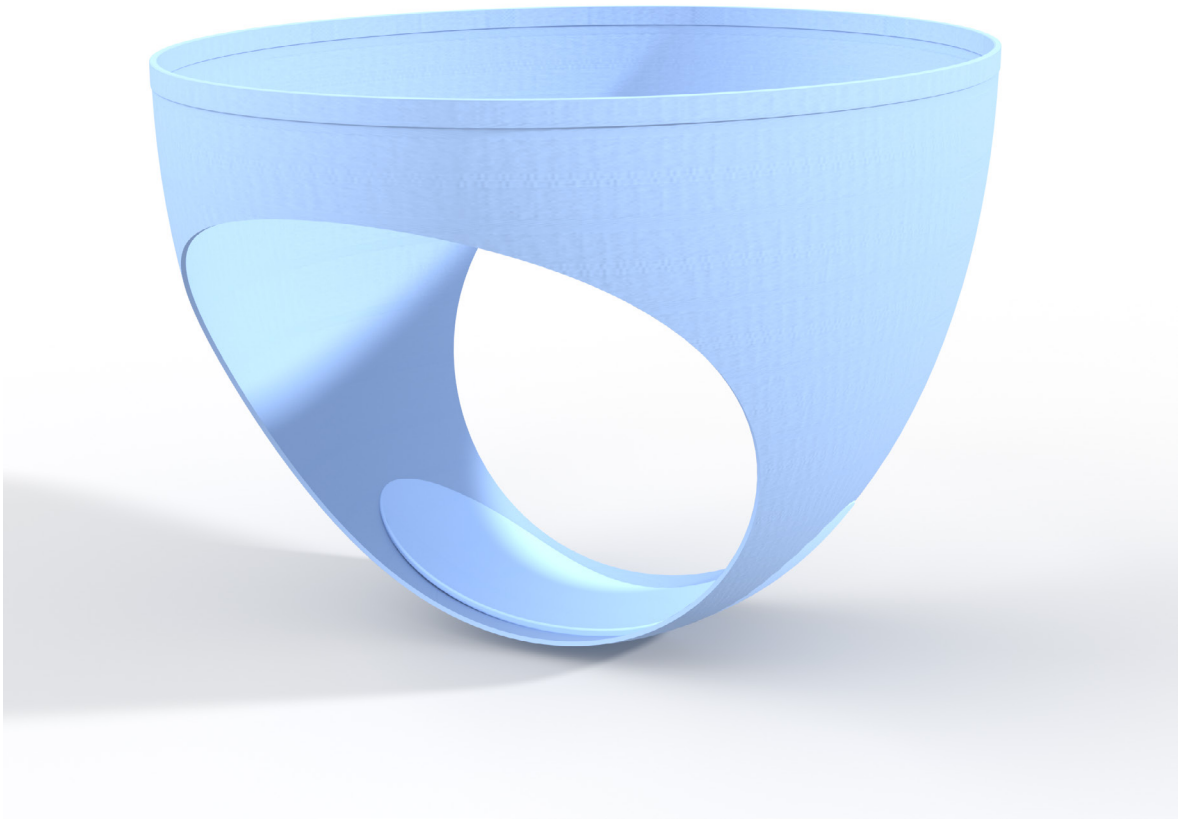


Figure 65. Visualisation of how Skuggan is attached.

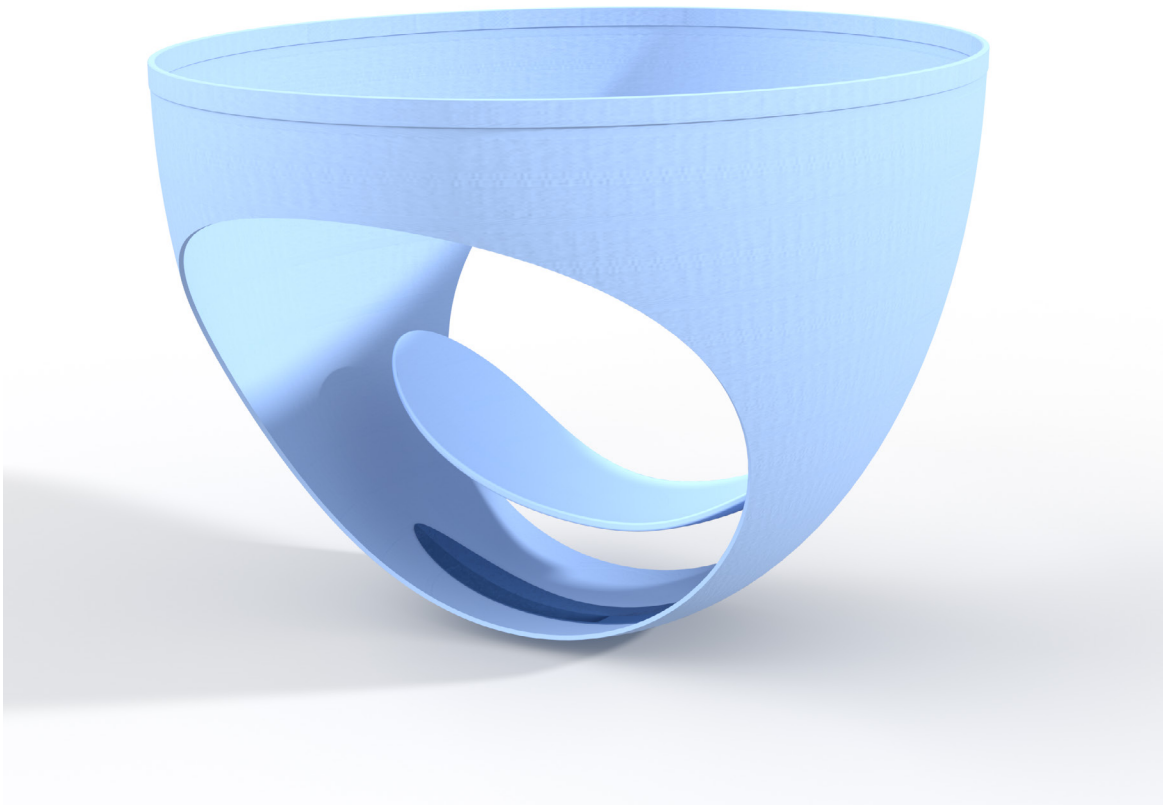
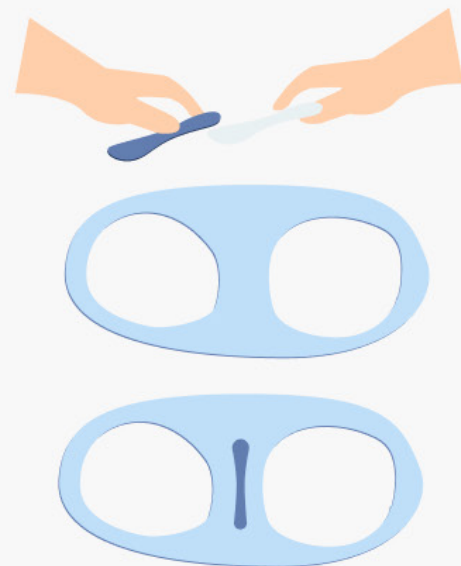


Figure 66. Visualisation of how Skuggan is attached.

Purchase Skuggan



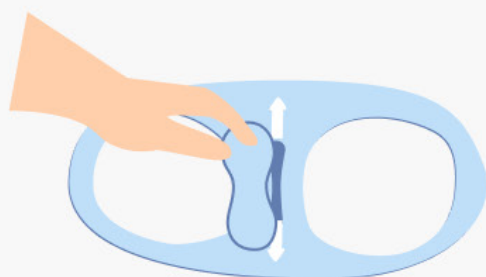
Attach velcro strip



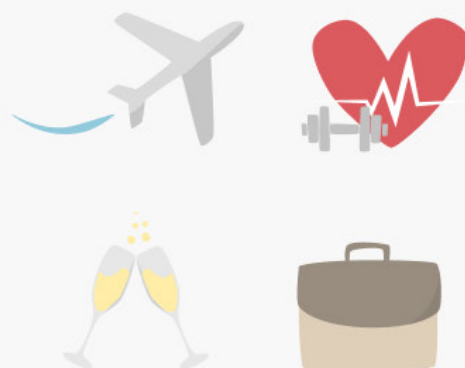
Store Skuggan



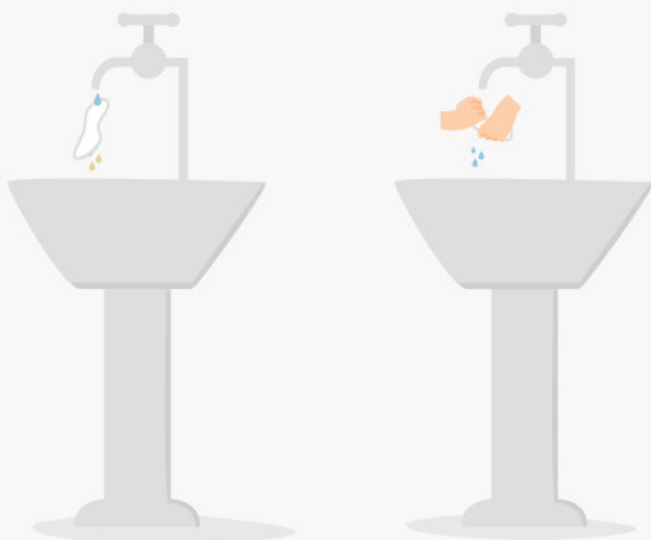
Put on Skuggan



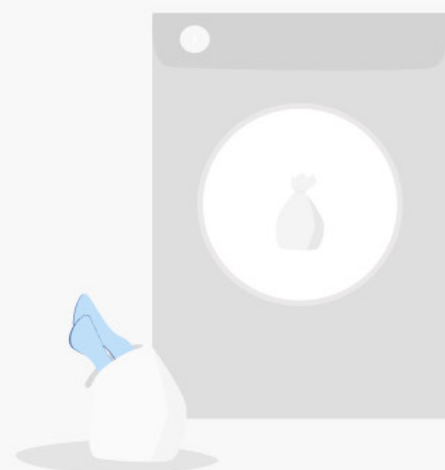
Wear Skuggan



Refresh Skuggan



Wash Skuggan



Elsa's journey with Skuggan

Elsa has long waited for a more environmentally friendly protection that is similar to the one she always has used. She hears about skuggan, thinks it sounds promising and goes and buys it.



Purchase Skuggan

She order Skuggan online and gets three different colours of Skuggan to match her favorite panties together with a bring along case and a washing bag delivered home.

"I feel a little bit worried about if it would be possible or not to get prescribed protections for free from my nurse.

The initial cost is not so expensive and I know in the long run it will be cheaper than single- used pads.

I feel good about using reusable protections since it creates less waste and is more environmentally friendly.

It is nice to be able to choose among different colours to match the panties I like."

Attach the velcro strip

Elsa follows the instructions on the package on how to glue on the velcro strip to her panties. She attach the velcro strip on the panties by taken off a plastic cover and gluing it on. She puts on the pad on the velcro and can adjust the placement of it how she likes.

"I like to be able to use my own panties"

"The attachment feels similar to my old single-use pads but it is even better because the velcro does not get worn out as glue does."

"I think it is fun to Do It Yourself"

I like that if I put it in a way I do not like I can just take it of and easily put it where I want it."

Stores Skuggan

She stores the pads in the bring along case which she has in her purse.

"It is easier to make no one notice my protections because they are fewer and takes less space.

I do not need to remember to put new single-use pads in my handbag every day because I have everything I need in my bring along case.

Feel scared that if I put a used pad in the case it will smell or leak in the bag but the case gives comfort."

Wears Skuggan

She wears Skuggan in all parts of her life, even when she sleeps. When a private sink is not available for longer times she change between pads she has in her case.

“It feels just as discreet as my single-use pads

It is nice when I need to change in front of others then it feels like it less likely that someone notice that I have a protection because it match the colour of my panties.

It feels like it is staying well in place”

Refresh and/or change refresh Skuggan

At the bathroom she rinse and wrings the pad out to fresh it up. She does this in a similar way that describe for Snäckan in section 6.1. She makes sure the bathroom is cleaned and leaves the bathroom. If there only is a public sink she just change to another pad and put the used one in the case to clean later.

“I think it is nice to be able to fresh it up without having to change to a new protection. It feels simple to just rinse it but I want to be sure the bathroom is totally clean when leaving.

It feels a little unfresh to put the pad on the sink both for me and if it makes the sink dirty. It feels a little bit more inconvenient when the sink is far away from the toilet or outside the bathroom.

It feels good to not throw any waste. For environmental reasons but also because It is nice that there is no trash which the the person who goes into the bathroom after can notice.

It is very easy to detach and attach the pad from the panties”

Wash Skuggan in machine

She wash the panties with her regular clothes and sterilized the pad by washing it at 90 degrees in the washing bag. She does not need to worry about the velcro destroying her clothes due to the velcro on the panties being the soft part of the velcro and the pad being in the washing bag. After a month use she throw away pad with plastic with the other waste separation and buy new pads in store or get it delivered home.

“It is nice to need to buy protections fewer times. I do not like going to the store and buy incontinence protection, it is embarrassing that people can notice that I buy it.

Quote from participant: *“Because the urine doesn't stick to the panties it I don't think it feels dirty when i wash them together with my other clothes.”*

6.3 Rosenbladet



Figure 67. Visualisation of Rosenbladet in the context of a bathroom.

Rosenbladet consists of panties with a flexible tunnel between the legs and an absorbent which is easily inserted into the tunnel.

The tunnel keeps fresh by letting urine through to the absorbent quickly and by not rewetting. It is possible to daily fresh up the absorbent in the sink. The user does not need to worry about sterilizing because she gets new absorbents delivered home every month and can choose to send her used on back for recycling.

The tunnel can hold different sizes of the absorbent, which allows the user to adapt the absorbing ability to the situation and can for example use a bigger one when she has a cold and a smaller one when she wants to use tight clothes.

Rosenbladet looks like normal panties which support the user to keep her incontinence for herself. It comes in different models and colours to increase the users options.

It is simple and intuitive to use and handle and feels just like wearing normal panties. The protection is safer than single-use pads because the absorbent stays in place well by being integrated into the panty.

Rosenbladet is a reusable protection which makes the user both not needing to worry about trash smelling from the trash bin and feel kind to the environment. Even if Rosenbladet has a quite high initial cost it becomes cheaper in the long run than the single-use pads she used to buy. She never needs to go the store because she just get everything delivered home which is nice because she thinks it is embarrassing to buy incontinence products.

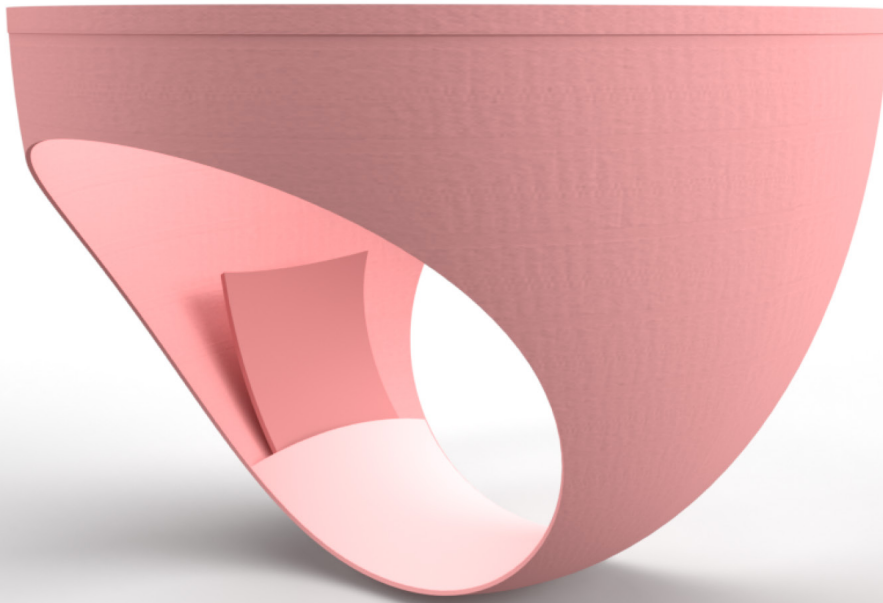


Figure 68. Visualisation of how Rosenbladet is attached.

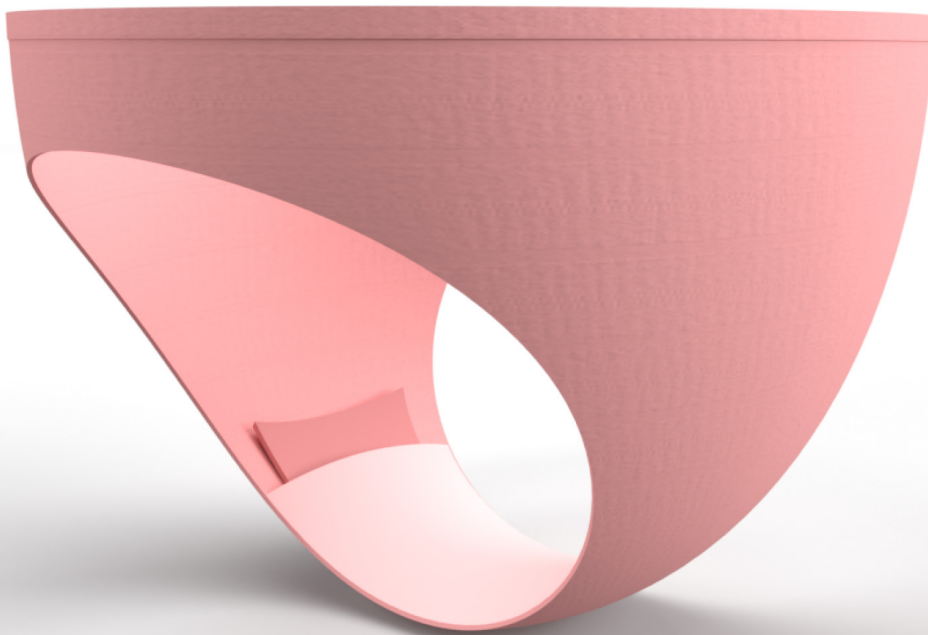


Figure 69. Visualisation of how Rosenbladet is attached.

Purchase Rosenbladet



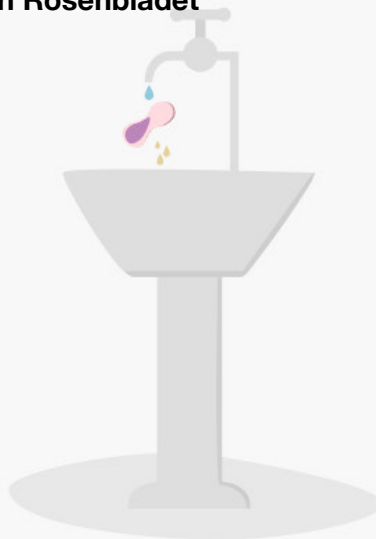
Store Rosenbladet



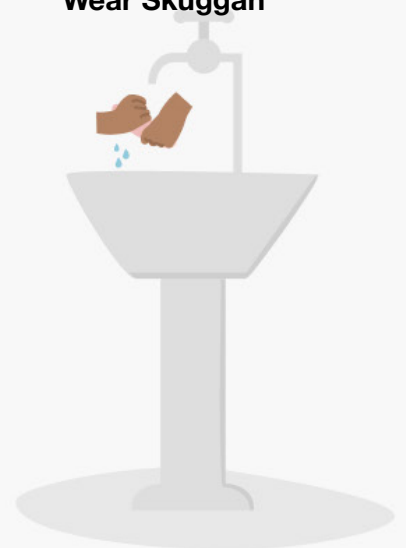
Put on Rosenbladet



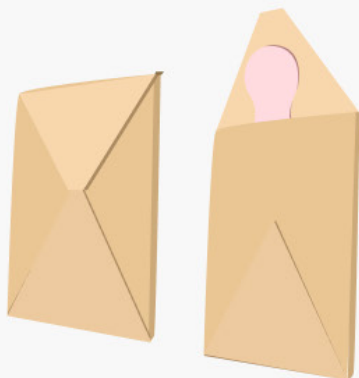
Refresh Rosenbladet



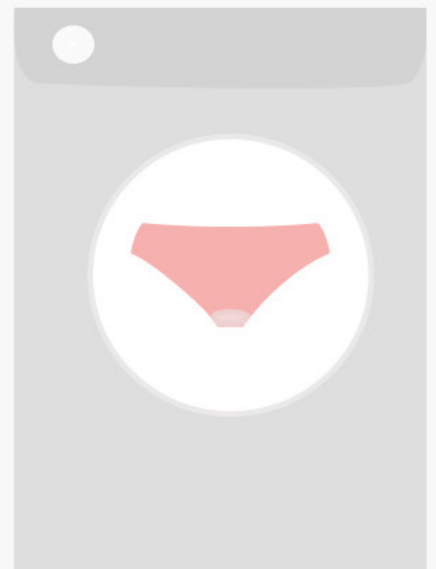
Wear Skuggan



Get and send back absorbents

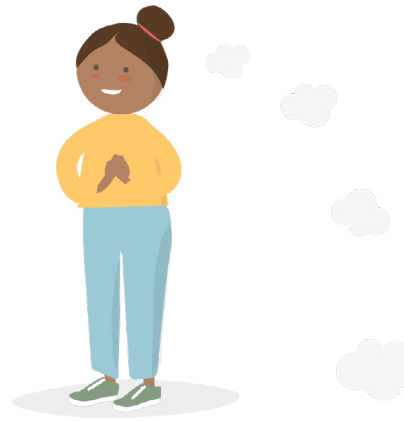


Wash Rosenbladet



Marianne's journey with Rosenbladet

Marianne has long waited for a protection which enable her to keep her incontinence for herself and which she can adapt to her various leakage. So when she hears about Rosenbladet she gets excited and order three Rosenbladet in her favourite panty models.



Purchase Rosenbladet

She order a test sample of Rosenbladet and gets a discreet package with Rosenbladet three panties and three (S fröet, M bladet, L blomman) different sizes on the absorbent to be able to find the right size together with a little bring along case. She opens it and read fun, easy and visual instructions on inside of the package.

It feels good to be able to try out different adsorbents to find the right sizes and to have one with more absorbing ability when I need that.

The initial cost is expensive, I hope it will be cheaper in the long run.

I feel good about using reusable protections since it creates less waste and is more environmentally friendly.

It is nice to be able to choose the model of panties I like.

It feels environmentally unfriendly and a expensive to buy a full set of new panties”

Stores Rosenbladet

She store the absorbents in the bring along case and the panties together with her other panties.

“It is easier to make no one notice my protections because they are fewer and takes less space.

I don't need to remember to put new single-use pads in my handbag every day because I have everything I need in my bring along case.

Feel scared that if I have a used absorbent in the case it will smell or leak in the bag but the case gives comfort.”

Puts on Rosenbladet

She puts the absorbent in tunnel from the front or back. The tunnel is flexible which makes it easy to put in the absorbent. The absorbent only fit in the tunnel in the one way which makes her certain it is correctly-inserted and will stay in place.

“It feels easy to know how to put the absorbent in but it can be a little tricky to get it in.”

Wears Rosenbladet

She wears Rosenbladet just like her regular panties. When she does not have access to bathrooms for long or has a cold, she wears a bigger absorbent and when she has tight clothes on a smaller one to not make it show. She often knows when she is about to leak more a day, because she is very aware on what conditions and activities which makes her leak more or less.

“It feels discreet and nice that it do not show through clothes.”

It is nice when I need to change in front of others then it feels like it less likely that someone notice that I have a protection.

Nice to be able to have the same protection but adapt it easily for different occasions. Because my leakage often varies a lot. When I have a cold it is really nice to use the same protection but only change absorbent size.

Refreach or/and change Rosenbladet

She rinse and wrings the absorbent out to refresh at the bathroom in a similar way which is describe for Snäckan in section 6.1. She leaves the bathroom after making sure the bathroom is clean. If there only is a public sink she just change to an other absorbent and put the used one in the case to clean later.

“I think it is nice to be able to fresh it up without having to change to a en new protection. It feels simple to just rinse it but I want to be sure the bathroom is totally clean when leaving.”

It feels a little unfresh to put the absorbent on the sink both for me and if it makes the sink dirty. It feels a little bit inconvenient when the sink is far away from the toilet or outside the bathroom.

It is a relieve to not need to worry about trash

Wash the panties in machine

She wash the panties in the machine with the rest of her panties.

“Because the urine does not stick to the panties it I do not think it feels dirty when i wash them together with my other clothes.”

I like that I can reuse the panties as many times as I like but that I can replace only the absorbent, to feel fresh and it is also environmentally friendly.”

She starts a subscription

She starts a subscription on absorbent by selecting sizes and amount of absorbents she things she needs. She then gets new adsorbents every month and sends back her used absorbents in the same pre postage paid envelope she got the new ones in. Sometimes she used throws the absorbent with her other plastic trash.

“I think it feels nice to send my used one back and contribute to a circular cycle.”

I do not want to send it back if the mailbox is far away.. and I want to able to throw it out with the rest of my trash, it makes it feel less of a big thing.

A subscription feels like a convenient way to get new ones and it is a relief to not needing to go to the store so people can see me buying them and not worry about buying them so often at

6.4 Changes in life cycle assessment

6.4.1 Estimated use

Protection/esit- mation	Should last for	Used products per year	Use
Reference prod- uct - single use pads	One use	1095 pads 1095 release paper 1095 plastic covers	Single use
Skuggan	1 month of use, 90 sink and 4 ma- chine washes	12 pads 12 velcro strips 1 washing bag 1 case	1 machine wash/ week 3 sink washes/day
Rosenbladet	Absorbent: 10 days, 30 sink washes Panty: 100 ma- chine washes	3,6 panties 36 absorbents 1 case	3 sink washes/day 1 panty machine wash/day use.
Snäckan	1 absorbent: 90 sink washes 5 boilings 1 shell: 26 boilings 548 sink washes .	2 shells 12 absorbents 1 case 1 boiling pot	1 boiling/week. 3 sink washes/day

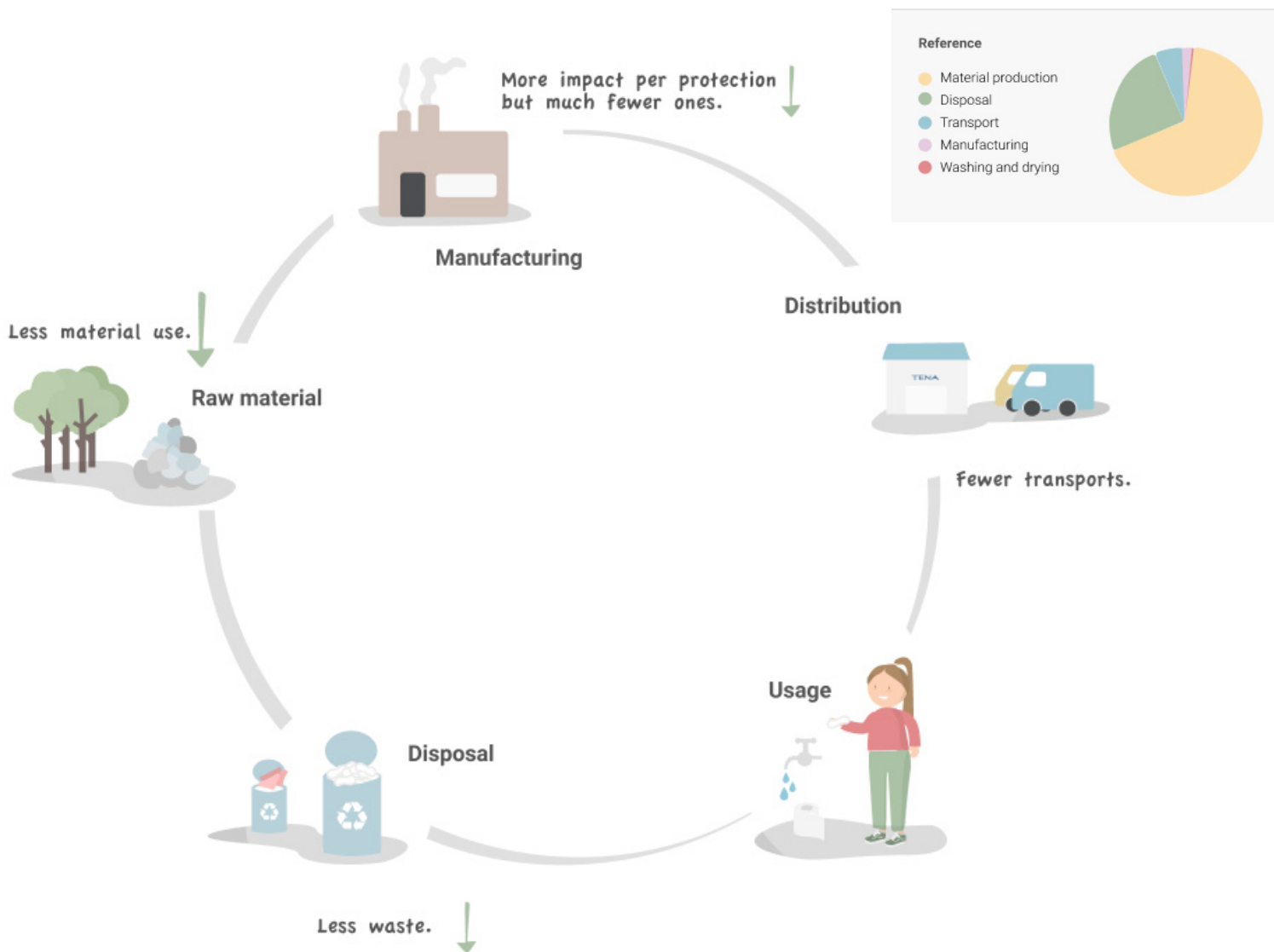


Figure 70, Illustration of the estimated changes in environmental impact.

6.4.2 Estimated changes in environmental impact

The impact of the material production- and disposal phases, which had the highest impact for the reference products, will probably be the phases where the concept lower the environmental impact the most, due to less material per use. The concept Rosenbladet require more material compared to the other two concepts and will have the highest impact on the material production- and disposal phases. The users' old panties, which most likely will be thrown away if they start using Rosenbladet, would increase that impact. However, the impact will probably still be lower than for the reference products, because the amount of material required for the reference products is still significantly higher. The usage phase will have a higher impact than the reference products because of the cleaning. Concerning the insignificant impact of the washing and drying phase in the reference life cycle assessment of the case with single-use pads and use of own panties, the extra cleaning is highly unlikely to increase the impact remarkably. If the user chooses to wash the protection alone and not with her other clothes the impact would increase, as shown in earlier studies. (see 2.2.2)

The impact of the manufacturing depends on how the concepts will be produced, which still is unknown, and therefore makes it hard to estimate. The impact will however, probably be higher per protection, but could become lower in total because much fewer ones needs to be produced.

Chapter seven

Discussion

This chapter includes a response to the research questions, followed by contributions and a discussion regarding choice of methodology, selection of participants, ethical considerations and future development.

7.1 Contributions

The aim of this thesis was to identify inspiring ways to increase the environmental sustainability of protection for light incontinence, that have the potential to get accepted by the users and do not conflict with their wellbeing.

We believe that this thesis has contributed to this aim by:

- Evaluating ways on how to make more environmentally sustainable protections, considering their effect on the wellbeing and potential to give added value to the users, and concluded that to make reusable protections is the strategy with the highest potential.
- Three concepts of reusable protections and connected challenges that need to be solved in order to not conflict with the wellbeing of the users. The concepts have been evaluated to have the potential to reach user acceptance because they have been developed by the inclusion of users and every design decision has been taken with the users' wellbeing in focus, rather than the environmental impact.
- Needs and attitudes connected reusable incontinence protections, and what they imply for a protection that is cleanable in the sink.
- Challenging the existing way to refresh a reusable protection, that is outside of the body, by a new way to clean and handle it.
- In more detail, the thesis has also provided the following answers to the research questions posed.

7.1.1 In which ways can the environmental impact of an incontinence protection be reduced?

The environmental impact of incontinence protections could be reduced, as for all products, in all phases of the life cycle, such as increasing use of green energy in the production and distribution. However, earlier studies and life cycle assessment made on protection for light incontinence has shown that the material production- and disposal phases account for the majority of the carbon footprint. This makes a suitable focus to lower the environmental impact to lower the use of virgin material, which is the main impact in both the material production- and disposal phases.

Three strategies to lower the use of raw material are to reduce, reuse or recycle. The different ways to reduce raw material that were evaluated in the thesis was to; lower the amount of material per protection, use more of renewable material, use fewer protections, make the protections compostable and make it more effective to use through customization. The strategies to reuse a protection was to; reuse the whole protection by somehow cleaning it, or to reuse part of the protection and throw away the other part. The strategy to recycle the material concerned to collect the used protections and either use the material for something else or for new protections. The thesis concluded that to make a reusable protection would have the highest potential to decrease the environmental impact and with the potential to give additional value to the customers.

Reusing the protection implies a large decrease in the amount of new raw materials that needs to be extracted. In addition, reusable protections creates less waste compared to the single use reference products,, which is beneficial since the waste handling also has a significant impact on the environment. However, exactly how much the protections improve the environmental sustainability cannot be calculated because they are still on a conceptual level. They will likely increase the environmental impact in the use-phase because they will require hot water to be cleaned. How much that adds to the total impact needs to be calculated when it is decided what type of materials they will consist of. Washing and drying the panties had almost an insignificant impact in the Life cycle assessment for the reference products, which makes it unlikely to increase the impact significantly for the new protection.

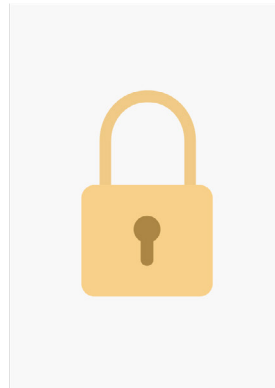
7.1.2 Which user needs and attitudes are important to consider when developing a new, more environmentally sustainable protection for light incontinence?



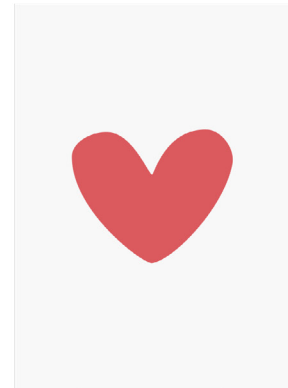
Feel and be Fresh



Easy to handle



Feel and be Safe



Feel and be Discreet

Being environmentally friendly is something that the participants in thesis studies think is important in their everyday life and they would appreciate if their protections could be more sustainable. However, having a protection that fulfils their needs when it comes to convenience and leakage prevention is seen as the first priority, and cannot be tampered just because a reusable protection is more environmentally friendly.

The focus of the thesis became to design reusable protections and to identify the needs and attitudes concerning these. The needs and attitudes found are similar to single-use protections but thesis present what these would mean for a reusable protection and the developed concepts. A feature addressed that the existing reusable solutions lack was to be able to fresh up the protection during the day and due to this, needs and attitudes towards cleaning it in the sink was investigated too. The main needs and attitudes that was found are related to feel and be fresh, discrete, easy to handle and safe. Feel and be fresh includes feeling and being clean and dry and not smell when wearing the protection, as well as during, and after the handling of the protection. Be discreet and ensure integrity concerns being able to live life as usual without being hindered by having incontinence, and that no one should notice that one has incontinence. It entails having a protection that is discreet and does not show through clothes, and that the users can buy, and get rid of their protections without tampering their dignity and privacy. Easy handling represents that it should be easy to use and handle the protection. To adopt a new protection, the handling needs to be as easy as for the reference products, even if it can be handled differently or bring additional value. Be and feel safe is of significant importance and implies feeling confident that the protection prevents leakage and being kind to the skin.

7.1.3 How can a protection for light incontinence that reduce the environmental impact be designed to not conflict with the users' wellbeing?

The users' wellbeing needs to be a higher priority than the environmental impact and a protection with lower environmental impact needs to provide the same value to make the users want to buy and use them. A reusable protection has the potential to decrease the environmental impact by being used more times. At the same time, it has the potential to compensate for more effort spent on handling the protection by decreasing the effort spent on purchasing and by giving additional value such as being economically beneficial, enable a higher discretion and ensure the users' integrity.

Discretion and ensured integrity are highly valued by the users and the concepts presented have the potential to provide that. All the final concepts do it by taking away the risk of someone noticing or smelling the used protection in trash bin and through fewer times to risk being seen purchasing incontinence protection in the store. Additionally, the concept Snäckan does it by being fitted close to the body and not being visible under clothes and Rosenbladet by being part of the panty and be perceived as a regular panty. Skuggan's form and volume would be as discreet as the reference products. Skuggan will also, compared to Rosenbladet and Snäckan, require lower the effort spent in understanding how to handle the protection because it is very similar to the reference products.

The thesis concluded that an important aspect for keeping the wellbeing of the users was to be able to fresh up the protection during the day. This was decided to be done best through making it possible to clean it in the sink and dry quickly, to be able to use it directly again. This challenges the current way of cleaning the existing reusable protections.

The requirements that needed to be fulfilled for the wellbeing of the user to be kept is partly presented in the design, challenges and potential of the concepts which includes challenges to make it a good experience to freshen up the protection up in by rinsing it in the sink. It is also presented in the requirements- and guidelines list for all concepts and the user journey connected to the different concepts.

The concepts have been developed by closely regarding the users' needs, as well as having the users as co-creators in the workshop, and evaluating the concepts in the workshop and survey. The wellbeing of the users has always been prioritised over the environmental impact of the protection, except for choosing to do a reusable one. This brings them the potential to not conflict with the users' wellbeing. However, the concepts will interfere with the use and user experience in several ways, which needs to be evaluated with fully functional prototypes. A crucial thing is that the handling becomes a bit more laboursome, mostly due to the need to fresh up the protection. It is a new way of handling a protection, outside of the body, and it will require time before the users will adopt and accept it. The users have uttered that cleaning the protection in the sink could be a good way of refreshing the protection. According to the user evaluation, the concepts have issues but also potentials.

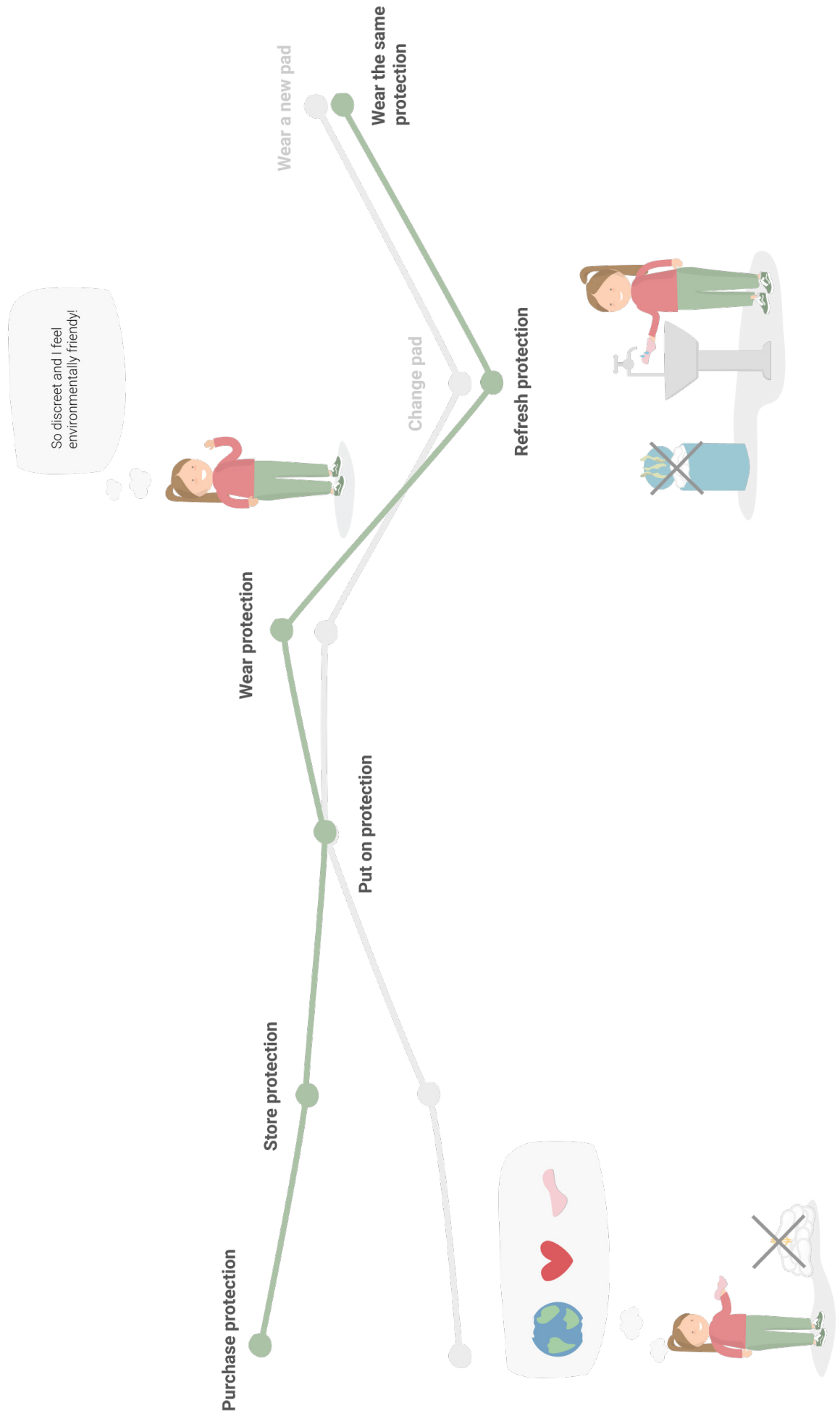


Figure 71., Illustration of the estimated changes of the user experience

7.2 Choice of methodology

The “path of expression”, which was used to learn about the users’ needs regarding future products is a proven method. However, it is always a challenge to make users express something about things that do not exist yet and to know if those needs will be the same once the product is finalised. In addition, it is hard to evaluate how a product will be experienced only based on pictures and texts, which was how the users evaluated the concepts in the survey. It would have been preferable to produce the products or make fully functional prototypes so that the users could test them in reality, but due to time- and economical limits this was not possible. For example, to see how the participants would feel about cleaning the protections in the sink would be very interesting to see because it is crucial that it works well, for the concepts to gain acceptance.

Something that could have affected the result and validity of the workshop was that the researchers had a positive attitude towards reusable protections, and expressed that to the participants. This might have affected their view to a more positive one which could have resulted in that negative aspects of reusable protections were not expressed, and therefore important data might have been missed. A similar issue could have occurred due to the users affecting each other’s opinions. However, the upside of this is that the users could build on each other’s ideas compared to having separate interviews, and this was seen as providing more value than to be sure the participants did not influence each other.

The participants were told to approach the ideas presented in the workshop as if they lived in a dream world and that all the ideas worked ideally. This was done because the aim was to find ways to design reusable protections to get user acceptance and good user experience, rather than detailly technically making them work. By having this approach there could potentially be aspects and details that have been missed regarding the users’ needs which in turn could have had an impact on the development phase, and questions the validity of the study. However, this was a deliberate choice because in order to reach innovation the focus needs to be directed away from details and put on possibilities. In addition, the users got the chance to express negative aspects of the ideas and concepts in the survey, which increase the chance of reaching all aspects of the users’ opinions.

7.3 Selection of participants

The fact that it was a qualitative study with 12 participants that gave no quantitative data may have affected the outcome. It can be questioned if the validity is high enough with 12 participants and if the spectra of them can represent the target group.

The participants fulfilled the requirements for taking part in the study, but all of them were in the upper part of the age range which made the study narrowed down not reaching the younger women's needs and prerequisites. All of the recruited participants were between 50-65 years old, while the target group stretches from around 30 years and onwards. As an example, the participants were negative towards products inserted into the vagina, due to dry and sensitive mucous membranes, but this would likely not be a problem for the younger part of the target group. This resulted in skipping all ideas that were inserted into the vagina after the user input on the workshop, even though a protection inserted into the vagina was concluded to have the potential to become a good reusable protection.

Another potential drawback with only being able to include 12 participants was that the same participants took part in several parts of the user studies. The participants could then have been affected by the other participants and the researchers in the workshop and then have been biased when answering the evaluation survey. On the other hand, having a dedicated group of participants allowed us to get more in-depth insights from them.

7.4 Ethical considerations

Incontinence is a subject that is taboo and can be sensitive to talk about since it concerns such a private issue and can affect the users' wellbeing. Therefore it can be oppressive enough to live with incontinence which made it a balancing act to ask the users about their view on incontinence and environmental sustainability, without intruding on their integrity. In the interactions with the participants, it was handled through being very careful with how questions were posed and to express that the users' wellbeing always was the highest priority. Even though it was handled cautiously, the users might have felt offended without the researchers noticing.

Incontinence is a condition of dysfunction and the most sustainable option would be to help the women back to good health, both when it comes to the environmental factor but also for the wellbeing of the users. However, the brief of the thesis was to develop concepts that are more environmentally sustainable, but it can be questioned if making another protection is the right path to head for, or if it is just treating the symptoms. At the same time, there are cases where the incontinence cannot be treated or users who for different reasons do not engage in being treated and where a protection is crucial to support the users' wellbeing. If the focus would be put on preventing incontinence, it would become an ethical dilemma to design a product that e.g. can help the users to train their pelvic floor muscles because it can be seen as the users are blamed if they do not act and do something about their situation themselves. On the other hand, it can be viewed as a way of motivating and empowering the users to take responsibility for their own wellbeing, which in turn is positive since the users expressed that feeling independent is important.

7.5 Future development

The research questions posed in this thesis are concluded to be answered. However, exactly how the new concepts would affect the user experience and usage once they are real products would need further research with fully functional prototypes.

The master thesis has resulted in several concepts of reusable incontinence protections but since they are on a rather high conceptual level and there is a lot to be investigated and developed before they potentially can result in a product on the market. Things that need to be investigated and developed in future work:

The materials need to fulfil the material challenges addressed in appendix 12 and 13.

Highly functional prototypes need to be built in the right materials to test if the protections are viable when it comes to the performance and design of the protections, and the user experience. This will likely be needed to be iterated several times before reaching a protection that is sufficient.

The environmental impact needs to be calculated to know for certain if the reusable protections improve the environmental sustainability compared to the reference products.

Reusable protections require an entirely different business model compared to single-use protections, which needs to be developed before the protections enter the market. This includes finding a way to market the protections and making people try them in the first place.

It needs to be calculated how expensive the protections can be, which is a trade-off, among others, between making a profit and the users feeling of what the protection is worth.

Other areas that were identified in the thesis that does not directly concern the protections, rather the subject incontinence as a whole and that was concluded to be of interest for future research are:

The taboo that concerns talking about incontinence is a subject that can affect the users' wellbeing. In the workshop, it was discovered that the participants were talking openly about their incontinence, probably because they felt that they were in a safe situation. Afterwards many expressed that they felt encouraged and one participant afterwards wrote "It has been incredibly fun to be together, to meet you and the other workshop participants. I still live on those meetings at the workshop. To be seen and heard was so lifting!". This elicited an idea, to create a community where women can speak freely about their incontinence and the issues that comes with it. If this is something that would be desired by the women is something that needs to be investigated, to understand how this could be made in the best way possible to support their wellbeing.

If it in the future would be possible to recycle single-use protections it would be crucial to do research to find a way to collect the used protection without conflicting with the users' dignity and privacy.

It was discovered that many do not get the help they need to prevent or treat their incontinence in a good way. Many do their pelvic floor training incorrectly and many have a protection which may not be the most suitable solution for them. Further research should be done to find good ways to guide people living with incontinence - both to help them find the most suitable way to prevent or treat their incontinence and if they need a protection - guide them on what is the most suitable protection for them.

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Appendices

Appendix I - Competitor analysis

Disposable incontinence pads

Abena - <https://www.abenaab.se/produkter/inkontinens>

Similar to TENA reference protections.

Always - <https://alwaysdiscreet.com/en-us>

Similar to TENA reference protections.

Attends - <https://www.attends.se/>

Similar to TENA reference protections.

Soffisoff - <http://www.soffisof.it/>

Similar to TENA reference protections.

Poise - <https://www.poise.com/en-us/>

Similar to TENA reference protections.

Hartmann - <https://www.hartmann.info/sv-se/products/inkontinens>

Similar to TENA reference protections.

Natracare - <https://www.natracare.com/products/incontinence/>

Claim to be made from natural materials, no plastic and that they are biodegradable.

Disposable incontinence protections

Contrelle - <https://www.stressnomore.co.uk/contrelle-activguard-pessary-80868.html>

Pessary to insert into vagina.

Impressa - <https://www.poise.com/en-us/products/impressa/introduction>

Protection to insert into vagina.

Femsoft - <https://www.medicalexpo.com/prod/rochester-medical/product-69869-515324.html>

Protection to insert into urethra.

Reusable incontinence protections

Hesta - <https://www.hestaorganic.com/incontinence-pads/>

Reusable pads made of cloth. Claim to be made out of organic materials.

Conni - <https://shop.conni.com.au/ladies/women-s-incontinence-pads>

Reusable pads made of fabric. Comes with a waterproof zipbag.

Conni - <https://shop.conni.com.au/ladies>

Underwear to protect from leakage, washable in machine. Comes in different models and colors.

Finatex - <https://www.finatex.se/finatex-kvinna/64>

Underwear to protect from leakage, washable in machine. Comes in different models and colors.

DIY pads

Some people sew incontinence pads themselves at home made often made by layers of cloth and other fabric, and buttons to attach the pad around the panties.

Incostress - <https://www.incostress.co.uk/shop/>

Reusable silicone cylinder to put in the vagina that presses on the bladder neck to prevent leakage.

Milex -

https://webshop.solann.se/nb_NO/shop/product/milex-flexible-incontinence-ring-pessary-11550?category=97

Reusable silicone pessarie to put in the vagina to prevent from leakage. Can also be used for preventing pelvic organ prolapse.

Training devices

Carinwear - <https://carinwear.com/>

Reusable panties combined with a sensor and an app to help train the pelvic floor muscles.

Innovo - <https://www.myinnovo.com/us/>

Shorts that claim to train the pelvic floor muscles for the user.

Elvie - <https://www.elvie.com/en-us/shop/elvie-trainer>

Product to insert into vagina connected to an app to train the pelvic floor muscles.

Perifit - <https://www.perifit.co>

Product to insert into vagina connected to an app to train the pelvic floor muscles. Motivates training by trying to making it fun through playing games.

Educator - <http://www.neenpelvichealth.com/products/Educator-r/>

Manual pelvic floor exercise indicator, gives feedback on the training through visual aids.

Reusable menstruation protections

OrganiCup - <https://www.organicup.com/>

Reusable menstrual cup inserted into the vagina.

Spacerpad -

https://www.medtechmagazine.se/article/view/694190/utvecklar_ateranvandningsbar_binda

Collects the menstrual fluid between the fibres in the pad. Can be washed and rinsed in the sink. Comes with a drying bag.

Ecome - <https://edcome.org/ecome/>

Reusable menstrual pad made out of seasponge and silicone.

Interlabial pads - https://www.etsy.com/market/interlabial_pads

Small and petal-shaped pads to put between the interlabials.

Sea pearls - <http://jadeandpearl.com/sea-pearls-reusable-sea-sponges/>

Reusable sea sponge to insert into vagina.

Imsevimse - <https://imsevimse.se/produkt/tygtamponger-8-pack/>

Reusable tampons made of cloth.

Femtis -

https://www.femtis.de/en/?gclid=CjwKCAjw26H3BRB2EiwAy32zhS8jwYGCzjd3T2r2ZasgJg0u-u3y7A-LIUcwk_DOgVL4qqiLVHKtnBoCYcEQAvD_BwE

Reusable period panties.

Dear kate -

<https://www.dearkates.com/collections/homepage/products/activewear-the-go-kommando-yoga-capri-black>

Dear kate -

<https://www.dearkates.com/collections/homepage/products/activewear-the-go-kommando-yoga-capri-black>

Absorbing training tights.

Loon cup - <http://www.looncup.com/>

Reusable menstrual cup that is connected to an app that tells when the cup is full and time to change.

Glad rags - <https://gladrags.com/>

Reusable pads that are part of a subscription service.

Cora - <https://cora.life/>

Provides different protections for menstruation and incontinence as a subscription service.

Other products**Livia -** <https://mylivia.com/>

Small device that sends signals to the nerves to block menstrual cramps.

Bella beat -

<https://shop.bellabeat.com/collections/shop/products/leaf-urban?variant=12428413861950>

Small jewelry that can track health-related things such as stress levels.

SeaCell Diaper - <https://www.globalgradshow.com/projects/seacell-diaper/>

Reusable diaper out of the material SeaCell that is absorbent, biodegradable and antibacterial.

Reusable diapers -

<https://zerowasteurope.eu/2011/07/reusable-nappies-a-zero-waste-solution-to-an-european-problem/>

Reusable diapers part of subscription service and the parents can leave and get clean diapers at the kindergarten.

Appendix II - Backcasting

The dream scenario

Environment, sustainability

Only recycled or reused material

0 Eco foot print

0 waste to landfill, water or burned

No single use

Not require effort from user

Increase well/being

Use and user experience

You feel like you are environmentally friendly

Not need to buy so often

The protection is there when I need it

Effort-less

No need to be afraid

Feels fresh

Feels dry and good for your skin

Personal, personalized

Indicate when needing to change

Smell good

Intuitive

Fit all types of customers

Socially

Attitude It is not the incontinence fault

No mental unacceptance but quick and easy acceptance

No tabu, shame or guilt

No isolation due to incontinence

Being caught up if you have it by people who care/health care/Tena

Feeling like it is easy to gain your independence and control of your incontinence

Not feeling alone, being part of community

Not feeling like a minor, underage due to incontinence, but just as many other

Campaigns - lets talk about it, what is normal, getting rid of biases

Society

School taking responsibility

Education

Incontinence education and pelvic floor exercise part of education and school sports

Child birth supports

Support to care homes

Sexual education

Incontinence certified cafes, restaurant, companies etc. where there is protection and such on toilet.

Pelvic floor training

Feels fun and easy to do right

Active (not passive) training - good for general health and sex life

The protection should not make you lazy, but give you very good protection when you need it

Part of your every/day life, like brushing your teeth

Secret yoga - part of yoga, trendy

Common - do it together

Preventive - start early

Store

Online / or in connection to work out and education center

Premenation

Not hidden

Easy to get and know what you need

Pick up your own kit

Clear information

General knowledge

Everyone knows about incontinence and reasons behind it.

Everyone know how to get help

Everyone knows what biases is wrong

Incontinence

Noone has incontinence if they have the possibility to get rid of it

They feel like they are being very good taking care of by TENA, and health care

Easy to get help

The helps comes to you, you do not need to seek it

Not adjusting your life to it

They get operation if needed

Almost no time between getting inco and accepting it and getting help

Easy to accept incontinence, maybe do to more openness and awareness?

Throw away

No smell or easy to detect

Not thinking it away, and when done using leaving it at recycle station

A trashbin always accessible, special made for incontinence or the protection does not feel scare to through in bin

In toilet

Package

Kit- all you need

Customize your packet / with all the different kinds of protection you need

Feels like a treat and nice, not associating with incontinence

Of recycled or reused material

No package needed?

A part of an other thing like make up case or period case

Appendix III - Screener

NB. Information i rubriken bör behandlas med största försiktighet och förstöras så snart den inte längre behövs för studien.

10 rekryteringar, minst 6 stycken (som kan komma på samma dag) till workshopen

LÄTT URININKONTINENS HOS KVINNOR - HÅLLBARHET

SCREENER FRÅGEFORMULÄR

Hej, jag heter XX och jag kommer från Origo Group i Göteborg. Origo Group arbetar med marknadsundersökningar och genomför på uppdrag av kunder olika typer av undersökningsuppdrag. Det här uppdraget handlar om hygienprodukter för kvinnor och jag undrar om du skulle vilja svara på några korta frågor? Det tar 5-10 minuter.

Studien är anonym, informationen vi samlar kommer att presenteras i statistik och dina svar kommer att presenteras tillsammans med andras uttalanden.

1. Ja
2. Nej, kan inte eller vill inte för tillfället AVSLUTA
3. Nej, vill inte delta i några tester alls AVSLUTA

Q1 Arbetar du eller någon i din familj inom något av följande områden?

Om respondenterna frågar varför?: Vi frågar detta för att nå vanliga konsumenter och undvika människor med ett professionellt perspektiv på ämnet

1. Reklam
2. Marknadsundersökningar
3. PR (Public Relations)
4. Journalistik / Radio / TV
5. Tillverkning av hygienprodukter eller blöjor

Om ja till någon av dessa

AVSLUTA

Q2. Hur gammal är du? (Skriv exakt ålder, önskad ålder är 30-65 år, AVSLUTA annars):

Q3a. Vi vet från tidigare forskning att en hel del kvinnor i olika åldrar då och då upplever olyckor när det gäller att "hålla blåsan" eller urinläckage. Det kan yttra sig i små mängder (bara

skvättar) eller större läckage. Det kan t.ex. hända när du tränar, nyser, hostar, skrattar etc. Är det något du personligen känner igen eller har upplevt?

Ja

Nej

AVSLUTA

Q3b. Om ja

Hur ofta skulle du säga att du upplever dessa olyckor? (läs 1-4)

1. Varje dag
2. Ett par gånger i veckan
3. En gång i veckan
4. Mer sällan

AVSLUTA

AVSLUTA

Q3c. Hur länge har du upplevt detta?

1. Mindre än en månad
2. 1-6 månader
3. 6 månader - 2 År
4. Mer än 2 år

AVSLUTA

Q4. Använder du för närvarande något slags skydd mot urinläckage?

Med skydd menas alla typer av skydd, dvs, trosskydd, bindor, tyg, hemmagjorda skydd, eller absorberande underbyxor, toalettpapper eller annat papper!

Ja, jag använder skydd dagligen

Ja, jag använder skydd ett par gånger i veckan

Ja, jag använder skydd en gång i veckan eller mer sällan

Nej, jag använder inget skydd just nu

AVSLUTA

AVSLUTA

Q5a. Vilken typ av skydd använder du oftast i nuläget?

Byxskydd/ Pants, Protective underwear, absorberande engångsunderkläder AVSLUTA

Bindor: produkter tillverkade för urinläckage;

Bindor: produkter gjorda för menstruation

Trosskydd; produkter gjorda för lätt menstruation

Trosskydd; produkter gjorda för lätt urinläckage

Toalettpapper eller annat papper

AVSLUTA

Hemgjort skydd

Övrigt (SKRIV): _____

Q6. Hur många skydd använder du under 24 timmar?: _____

Q7. När använder du skydden?

Endast på dagtid

Endast under natten

Både dag och natt

AVSLUTA

Q8. Hur skulle du beskriva mängden som du läcker? LÄS ALLA ALTERNATIVEN

1. Små droppar (teskedar)
2. Små mängder (matskedar)
3. Mellanstora mängder (0,5-1dl)
4. Större mängder (2 dl eller mer)
5. Varierar

AVSLUTA

Q9. Hur skulle du beskriva din vardag när det gäller hur aktiv du är? (LÄS 1-4)

1. Jag är väldigt aktiv / tillbringar mycket tid utomhus
 2. Jag är aktiv / tillbringar en del tid utomhus, som de flesta gör
 3. Jag är inte så aktiv / lämnar inte huset så ofta
 4. Jag har begränsad rörlighet på grund av fysiska skäl/sjukdom AVSLUTA
 5. Annat, vad; ___
-

Q10. Vilket av följande påstående passar bäst in på dig? (LÄS 1-5)

1. Jag är väldigt orolig över miljön och vår påverkan på den.
 2. Jag är orolig för miljön och vår påverkan på den.
 3. Jag är ganska orolig för för miljön och vår påverkan på den.
 4. Jag är inte särskilt orolig för miljön och vår påverkan på den. AVSLUTA
 5. Jag är inte orolig för miljön och vår påverkan på den. AVSLUTA
-

Q11. Stämmer något eller flera av följande påstående överens med dig? (LÄS 1-8)

1. Jag sorterar och återvinner det mesta av mitt skräp hemma.
2. Jag har köpt kläder på Second hand de senaste året.

3. Jag väljer ofta att ta cykel, kollektivtrafik eller samåka framför att ensam ta bilen.
 4. Jag köper ofta ekologiska eller miljö- och rättvisemärkta produkter.
 5. Jag har minskat hur ofta jag flyger på grund av min oro över miljön.
 6. Jag stöder en organisation som arbetar med miljö eller hållbarhet.
 7. Jag är en del av ett engagemang som jobbar med miljö eller hållbarhet.
 8. Jag gör andra saker i mitt dagliga liv för miljön, vad;
-

Q12a. Vad är din huvudsakliga sysselsättning? _____

12b. Vilket av följande påståenden stämmer bäst överens med dig på "Svar på fråga 12a)" (skolan, jobbet etc)? Svara på en skala mellan 1-5, där

- 5 - Stämmer överens helt
- 4 - Stämmer ganska bra
- 3 - Stämmer delvis
- 2 - Stämmer inte så bra
- 1 - Stämmer inte alls

1. Jag leder gärna diskussionen och uttrycker vad jag tycker och tänker. 1-5
2. Jag är eftertänksam och lyssnar hellre mer än jag pratar. 1-5
3. Jag uttrycker och kommer gärna med nya ideer. 1-5
4. Jag utvärderar och analyserar gärna andras ideer. 1-5

Instruktioner för studien

De som utför studien är, Anna och Johanna, två 27-åriga designstudenter från Chalmers som gör sitt examensarbete. De är intresserade av att få reda på dina upplevelser och tankar kring de skydd som du använder för urinläckage.

Vi vill därför bjuda in dig till att delta i en användarstudie som kommer bestå av tre steg, där första delen är ett häfte med frågor, den andra en workshop på Chalmers tekniska högskola i Göteborg och den tredje en kort utvärderingsenkät online.

Den första delen är som sagt ett häfte som du kommer att få hem i brevlådan. I häftet får du svara på lite frågor och göra några uppgifter. Häftet är till för att få igång dina tankar kring ämnet och för att vi ska få en inblick i dina upplevelser. Häftet består av fem uppgifter som tar ca 10 min vardera som du kan göra i sträck eller utspritt under några dagar. När du är klar skickar du tillbaka häftet till oss i ett förfrankerat kuvert.

Deltagande i den här studien är frivilligt och kan när som helst avbrytas. All information om dig kommer att behandlas konfidentiellt, det är bara vi och de två studenterna som har tillgång till dina kontaktuppgifter. När projektet är avslutat, Augusti 2020 kommer dina kontaktuppgifter att raderas både hos oss och hos vår uppdragsgivare.

Vi tycker det hade varit väldigt kul, och värdefullt om du skulle vilja vara med och dela dina tankar!

Du får 1 500 kr i form av ett presentkort som tack för hjälpen, efter att du fullföljt alla tre steg i studien. Om du bara är med på det första och sista steget får du istället 1000 kr, också i form av ett presentkort. Presentkortet skickas till dig efter avslutad studie.

Har du fått tillräckligt med information?

Skulle du vara intresserad av att delta i studien?

JA - Kan du komma på workshoppen den 10 Mars kl 18-20? Om personen inte kan, fråga om det skulle fungera torsdag 12 Mars 18-20. (ta kontaktuppgifter och skriv in svar nedan.)

NEJ - Skulle du vara intresserad av att vara med på bara den första och sista delen av studien? OM JA, ta kontaktuppgifter nedan

Namn: _____

Adress: _____

Postnummer: _____

Mobilnummer _____

Email adress: _____

Fyll i vilken/vilka dagar som IP kan

Tisdag 10 mars
kl 18-20

Torsdag 12 mars
kl 18-20

Vi kommer att skicka en bekräftelse via mail till dig med information om allt som du behöver veta tillsammans med den information som du redan fått. Du kommer att få häftet skickat till dig under vecka 9 tillsammans med information som guidar dig igenom hur du ska utföra uppgifterna samt detaljerade uppgifter om hur du tar dig till Chalmers tekniska högskola. Vi kommer också att kontakta dig dagen innan workshopen för att bekräfta att allt är ok. I mailet får du namn, mobilnummer och mailadress till en kontaktperson så att du när som helst kan höra av dig om du undrar över något.

Appendix IV - Workbook

Hej,

vad roligt att du vill dela med dig av dina tankar!

Vi är Anna och Johanna, två designstudenter från Chalmers som gör vårt examensarbete i vår.

Framför dig har du en dagbok som består av fem delar som tar ca 10 min vardera. Dagboken är till för att få igång dina tankar om ämnet. Skriv, rita, stryk över, ändra, lägg till och klistra på de medföljande klistermärken om du vill - vi vill veta dina tankar precis som de är och det finns inga rätt eller fel!

Fyll i häftet mellan **26 feb - 4 mars** och när du fyllt i häftet skickar du tillbaka det i det förfrankerade kuvertet som följde med brevet. Skicka tillbaka senast **onsdagen 4:e mars**.

Du är välkommen på workshop tisdagen den **10:e mars kl 18.00** i en abonnerad designstudio på Chalmers tekniska högskola. Vi bjuder på fika en halvtimme innan, **17.30** och vi hade tyckt det var roligt om du vill komma redan då! Du kommer då att få träffa oss två och fem andra, kvinnliga deltagare. Du är välkommen precis som du är och behöver inte förbereda dig mer än att ha fyllt i och skickat in dagboken!

Några veckor efter workshopen kommer ett formulär på mailen som du kan fylla i digitalt.

Kom ihåg att vi inte vill bedöma dig på något sätt, vi vill bara veta hur du tänker!

Stort tack för att just Du deltar i den här studien, det är av stort värde för oss.

Varma hälsningar, Anna & Johanna

**Vi bjuder på
fika, hör av dig
om du har några
allergier eller
någon favoritfika!**

Om du har några frågor är du välkommen att kontakta oss via telefon eller mail:

Anna: 0703 606342
Johanna: 0707 294978

Email: annajohannaexjobb@gmail.com



Anna & Johanna

Hitta till workshopen

Workshopen kommer att hållas i en lokal på Chalmers som heter Loftdet. Lokalen har ingen egen adress men den ligger mellan **Chalmers tvärgata 4** och **Chalmers tvärgata 6**. Se kartan nedan för att hitta dit.

Hur tar jag mig dit?

Åka bil

Om du åker bil kan du parkera på Chalmersparkeringen. Det är en betalparkering och biljettautomater finns på parkeringen.

Gå från Chalmersparkeringen till workshopen: Följ **blå** bana (2 min)

Åka kollektivt

För att åka kollektivt till workshopen kan du åka till någon av hållplatserna "Chalmers" eller "Chalmers tvärgata".

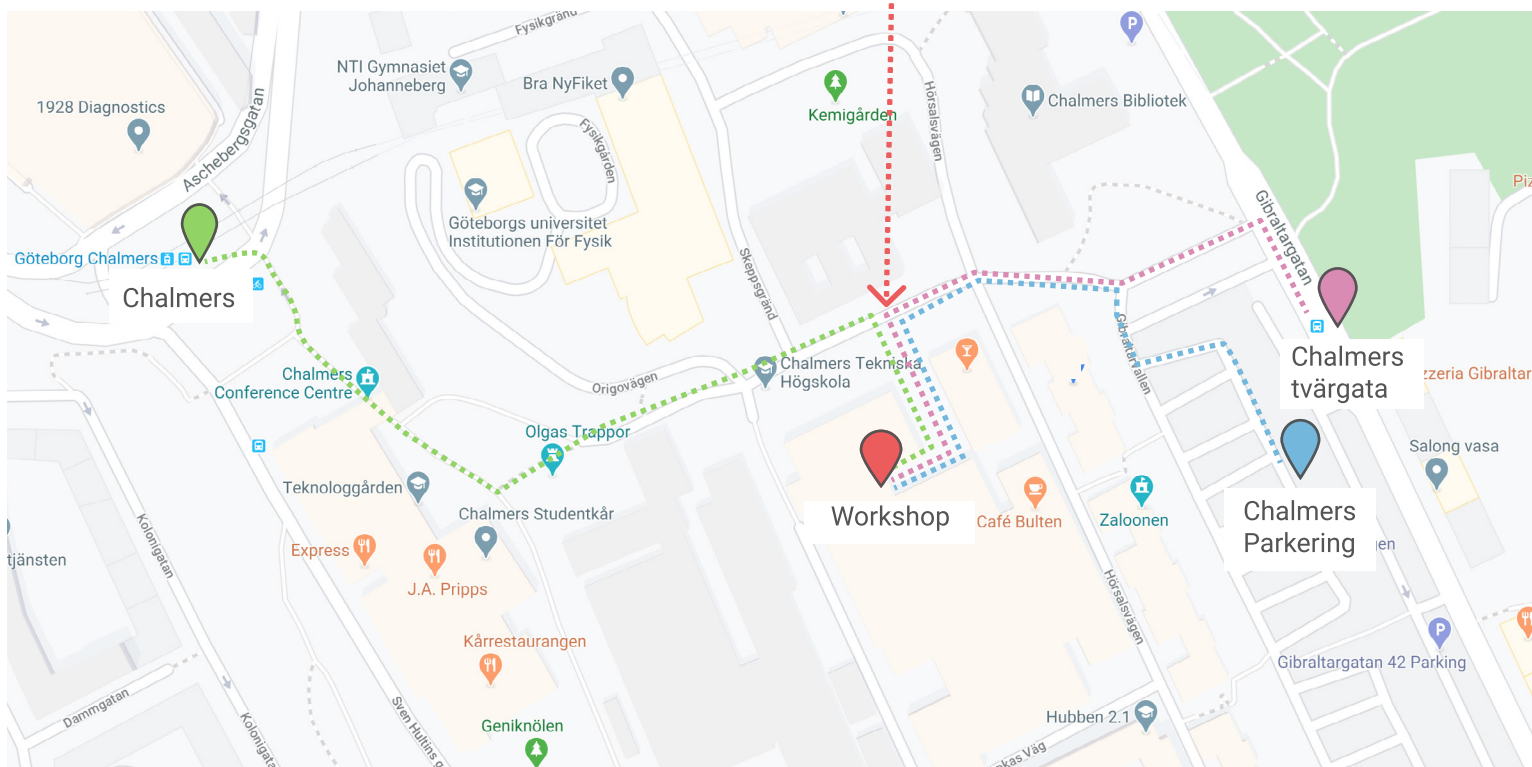
Använd Västtrafiks reseplanerare för att ta reda på vilken buss eller spårvagn du kan ta.

Gå från hållplatsen Chalmers: följ **grön** bana (4 min)

Gå från hållplatsen Chalmers tvärgata: följ **rosa** bana (2 min)

Hjärtligt välkommen tisdagen den 10:e mars kl. 17.30 på fika. Workshopen startar 18.00!

Om du inte hittar, ring:
Johanna, 0707-294978
Anna, 0703-606342



Hej,



På nästa sida börjar dagboken!
Vi har försökt att göra uppgifterna så tydliga som möjligt, men om något känns oklart får du gärna höra av dig till oss.

Ring eller maila, vi är alltid tillgängliga och hjälper dig gärna.

Stort tack för att du är med och deltar!



Min dagbok

Skriv ditt förnamn
här

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Min användning

hur länge har du använt skydd för läckage?

Vad för typ av skydd använder du dig av? Vilket märke?

hur många skydd använder du ungefär per dag eller vecka?

...per dag ...per vecka

Var köper du skydden och hur ofta?

hur nöjd är du med dina skydd? Ringa in ditt svar.



Mycket nöjd Nöjd Varken nöjd eller missnöjd Ganska missnöjd Mycket missnöjd

Varför känner du så?

Vad är det viktigaste för dig med skydden?

Har du någon gång funderat kring att göra ditt egna skydd? Berätta!



Uppfyller skydden dina behov? Ja? Nej? Varför?

Gör du några övningar, ändrar diet eller något annat för att stärka din botten och blåsa?

Anpassar du din vardag på något sätt på grund av dina läckage?

Har du funderat kring om de skydd du använder är miljövänliga?

Hur miljövänliga tror du att dina skydd är? Sätt ett kryss på skalan.

Miljövänliga

Inte miljövänliga

Varför tror du det?



Hur använder du skydden?

Skriv, rita och använd klistermärkena i rutorna för att berätta!



2. Förvaring hemma

Var och hur förvarar du skydden hemma?

3. Medtag av skydd

Hur gör du för att ta med dig skydden, t.ex. i handväskan? Har du någon särskild förvaring eller egen lösning? Hur är skydden förpackade?

4. Byte av skydd

Varför byter du? Hur ofta byter du? Är det skillnad på när du är hemma, hos vänner eller på en offentlig toalett?

5. Göra dig av med använt skydd

Hur gör du när du slänger det? Är det skillnad på när du är hemma eller borta?

6. Göra dig av med omslagplasten och skyddspappret

Var och hur slänger du dem? (Alla produkter har inte detta)

7. Applicera nytt skydd

Hur gör du?
Vad är svårt och vad är lätt?

8. Förbereda dig för att gå ut från toaletten

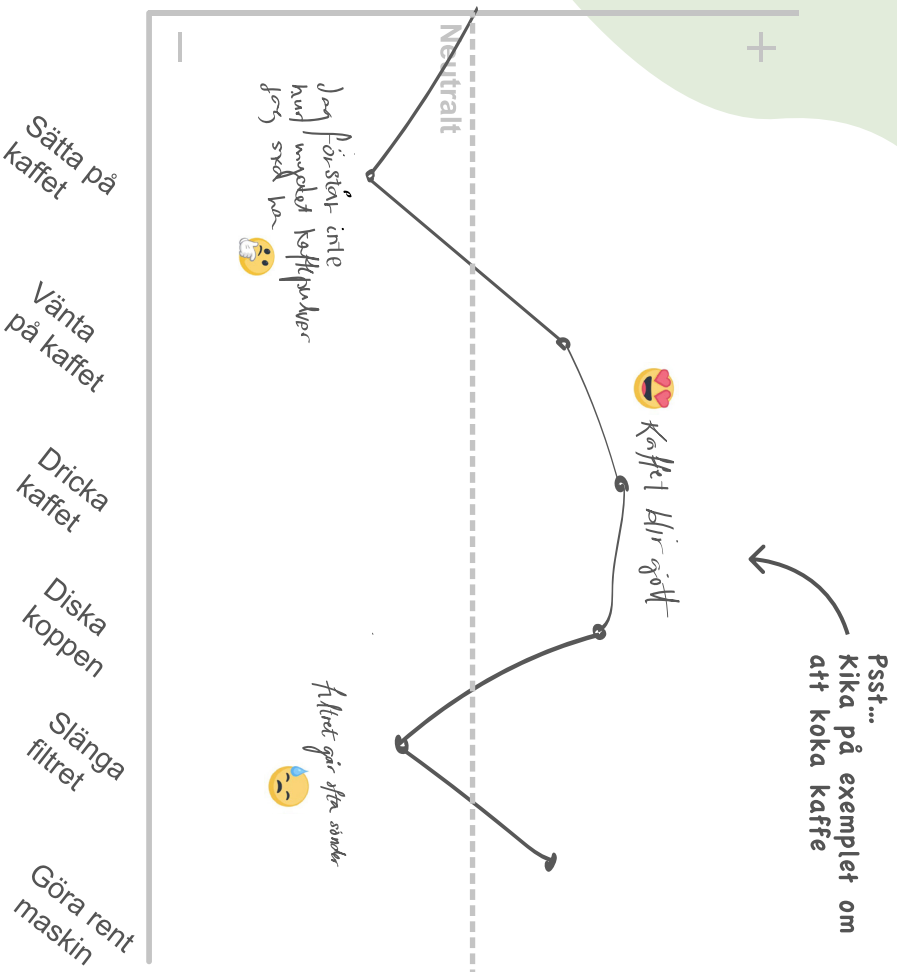
Gör du något särskilt?
Är det skillnad på när du är hemma eller borta?

Övriga steg eller kommentarer

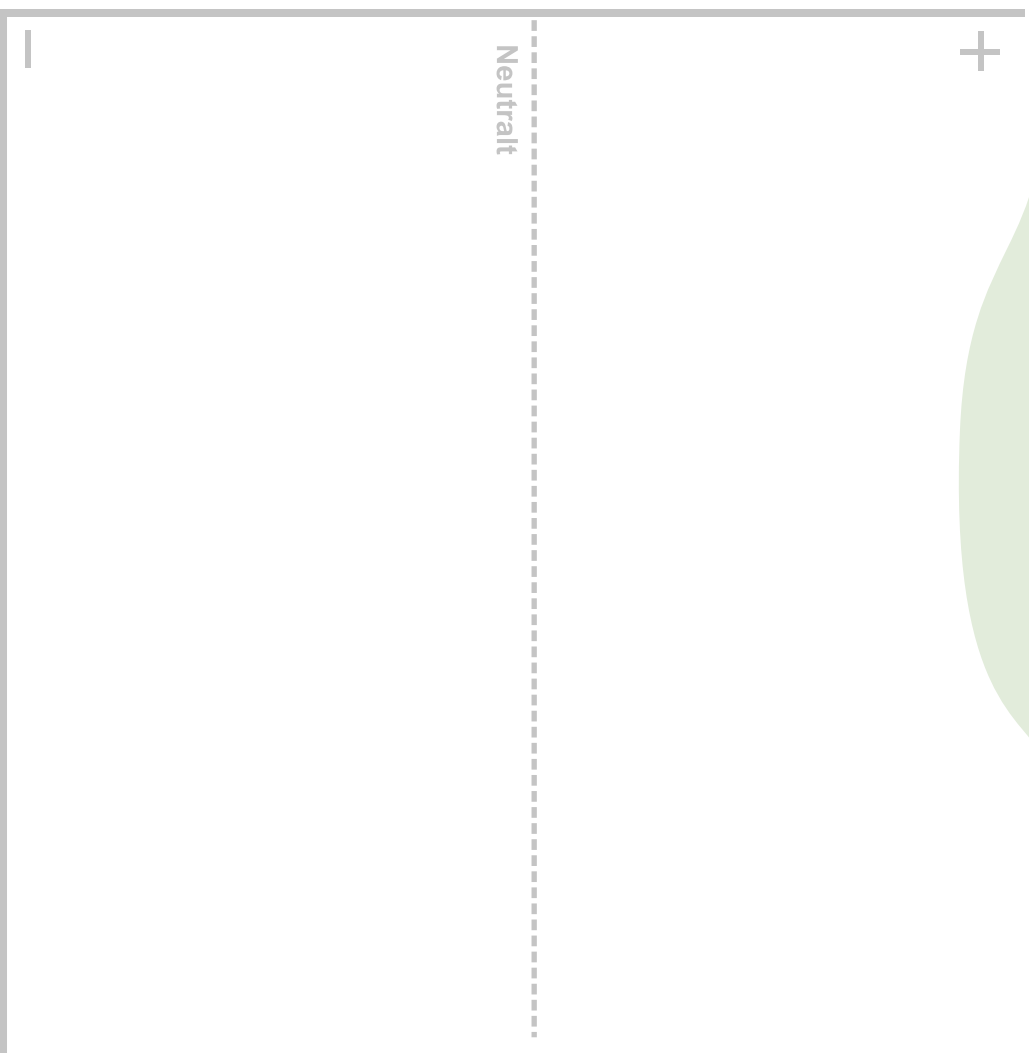
Din upplevelsekurva

På följande sidor finns två diagram där du kan beskriva dina upplevelser. Den första är för hemmet och den andra när du är borta t.ex. på stan eller hos en vän.

I diagrammen ritar du en kurva för hur du upplever användandet av skydden. Med kurvan beskriver du om det känns positivt eller negativt. Skriv gärna korta kommentarer och använd klistermärkena för att förklara dina känslor och tankar.



Vad känner du när du använder skydden när du är hemma?



Vad känner du när du använder skydden när du är borta?

+

Neutralt

-

6. Slänga skyddspapper

7. Applicera nytt skydd

8. Förbereda för att lämna toalett

Övrigt steg

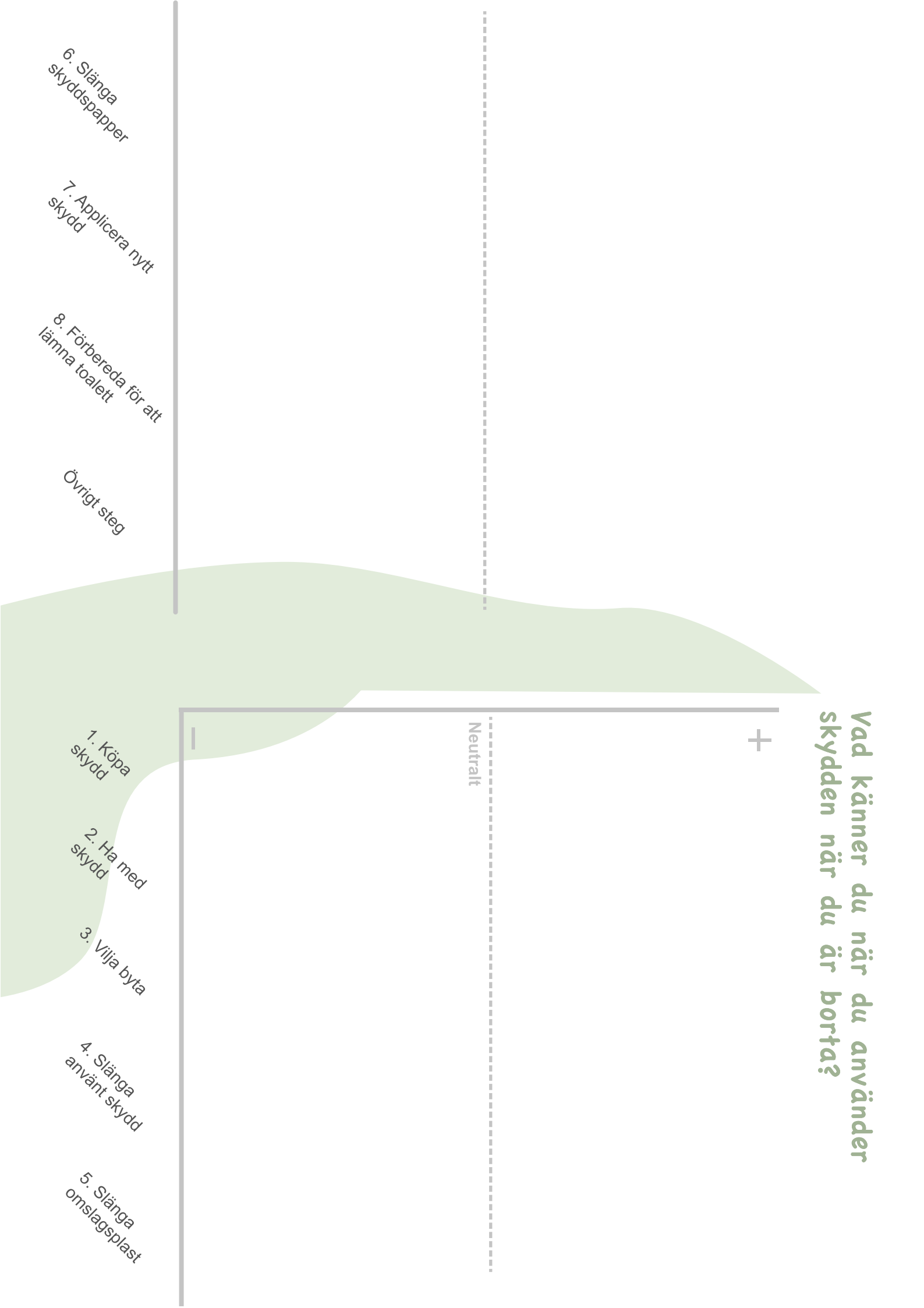
1. Köpa skydd

2. Ha med skydd

3. Vilja byta

4. Slänga använt skydd

5. Slänga omslagsplast



Välj ett
tillfälle:

Hos vänner

På stan/jobbet

Återanvändbart skydd

mtiden skulle skydden kunna se annorlunda ut. Det kanske inte ens är en
la eller trosskydd såsom de ser ut idag, utan något helt annat! Kanske
änder du det på ett helt annat sätt?

det hade funnits en helt eller delvis återanvändningsbar produkt som gick
invända flera gånger, hur hade dina tankar gått då?

**Hur skulle ett återanvändbart skydd
se ut eller fungera?**

**Vad tror du att du
skulle gilla?**

**Vad tror du skulle
kunna bli jobbigt?**

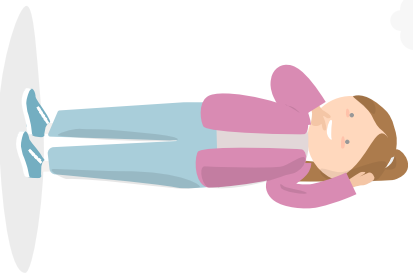
6. Slänga
skyddspapper

7. Applicera nytt
skydd

8. Förbereda för
att lämna toalett

Övrigt steg

Hur hade du förvarat och tagit med dig det?

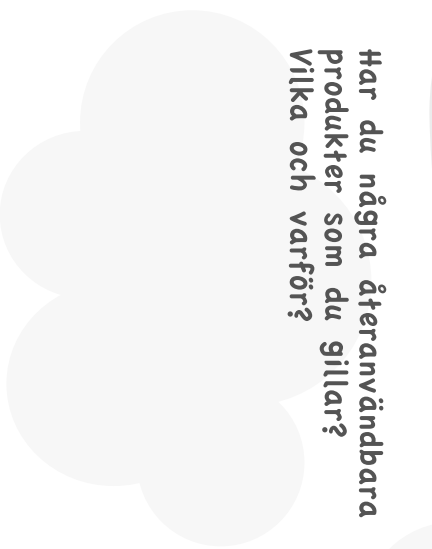


Hur hade det hållit sig fräscht?



Känner du till något skydd som är återanvändbart? Vad för något?

Har du några återanvändbara produkter som du gillar?
Vilka och varför?



Återvinningsbart skydd

Om det hade funnits någon typ av produkt som var helt eller delvis återvinningsbar, alltså där materialet går att återvinna, hur hade dina tankar gått då?

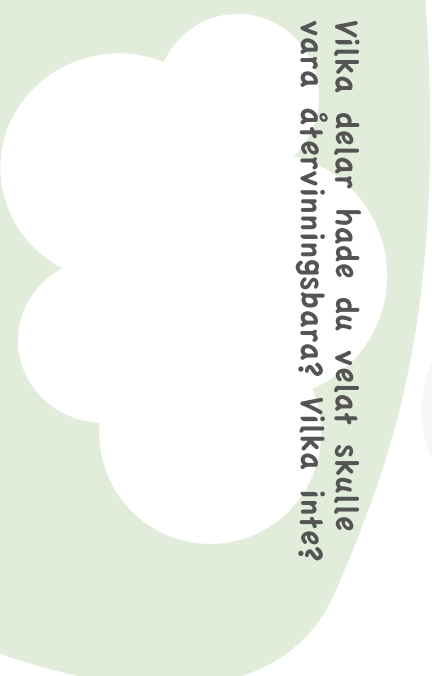
Hur skulle ett återvinningsbart skydd se ut?



Vad tror du skulle kunna bli jobbigt?



Vilka delar hade du velat skulle vara återvinningsbara? Vilka inte?



Hur hade du förvarat och tagit med dig det?

Hur hade skyddet kommit till en återvinningsstation?

Vad tror du att du skulle gilla?

Har du några återvinningsbara produkter som du gillar? Vilka och varför?

Ett kärleksbrev

Nu får du chansen att skriva ett kärleksbrev till ditt drömskydd! Tänk dig att ditt drömskydd var en person, vad skulle du vilja berätta då? Vad skulle du tacka det för? Vad uppskattar du hos det? Är det bara ett skydd eller hjälper det dig med något mer? Hur skulle du beskriva hur du använder det? Hur känner du för det? Vad skulle du fråga skyddet? Skriv, rita och använd klistermärken! Känn dig fri att göra det på ditt sätt!

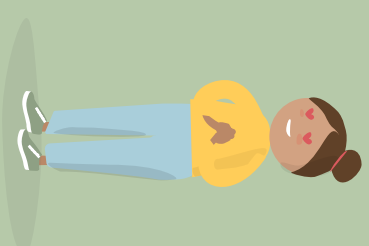
Kära drömskydd,



Varma hälsningar,

Tack!

Nu är det bara att skicka tillbaka dagboken.
Vi ses på workshoppen!



Appendix V - Compiled answers from workbook

Hur länge har du använt skydd för läckage?	Vad för typ av skydd, vilket märke?	Hur många skydd använder du per dag/ per vecka?
ca 15 år Olika sorter	just nu är det TENA lady extra plus och har varit så i flera år	4 per dag, men kan bli mer en dålig period
ca 2 år	lite olika, just nu libresse. beror även på priset	2 per dag, 15 per vecka
kanske 8-10 år	trosskydd, TENA mini Magic	1-2 per dag, 10-12 per vecka
ca 2år	trosskydd, always dailies fresh	2 per dag
25 år	libresse eller apotekets	2 per dag, 14 per vecka
30 år	bindor (icas) och libresse	1-2 per dag, 7-12 per vecka
ca 10 år	trosskydd från always	1-2 per dag
2år	TENA	5 per vecka
ca 5 år	ICA basic	1-2 per dag
5-6 år	TENA lady +	2-3 per dag
15 år	TENA trosskydd, TENA lady mini, TENA lady plus	1-2 per dag, 10 per vecka
ca 2år	Always trosskydd eller libresse trosskydd	2 per dag

Var köper du skydden? hur ofta?

Beställer genom distrikssköterskan på vårdcentralen.

Får mkt per gång så beställer inte så ofta.

I vanliga mataffärer

I min dagligvarubutik ca 1 ggr per månad eller när de börjar ta slut

Min närmsta butik, 2ggr per månad

Butik eller nätet

ICA, en gång varannan vecka

Matvaruaffär, 2 ggr per månad

apoteket, varje månad

ICA, varannan månad

Får på recept via distriktsköterskan

Apoteket eller Netto och Gekås, 1 gång per månad

I mataffären. brukar passa på när det är erbjudande.
varannan månad ungefär

Hur nöjd är du med dina skydd? Varför känner du så?

1. Mycket nöjd 2. Nöjd 3. Varken nöjd eller missnöjd 4. Ganska missnöjd 5. Mycket missnöjd

2. Har testat olika märken och utformningar. Det finns i mina funderingar, utredningsmöjligheter just för TENA lady extra plus.

2. Jag känner mig tryggare när jag har dem. Men lite skämmigt att behöva använda skydd och pinsamt att inte hålla tätt.

2. Bra för dagligt bruk. Enkla att hantera och ta med. mindre nöjd vid större läckage tex förkylning m hosta. då räcker de ej.

2. Räcker så det inte läcker i trosorna, luktar inte.

2. Håller sig på plats. funkar bra.

2. Dom passar mig så att jag känner mig säker. Jag använder nattbindor när jag tränar

3. Det beror på hur mycket jag läcker

3. Inte så mycket skillnad med binda/trosskydd

2. De fyller sin funktion för det mest men ibland så räcker de inte till.

2. De fyller sin funktion, dämpar minimera doft/ är små och smidiga. Räddar kläder från att bli sjöblöta(?). De ger mig säkerhet och självspekt.

2. De gör sitt jobb

3. De funkar ok. Ibland korvar dom ihop sig eller lossnar helt. Ibland blir huden irriterad.

Vad är det viktigaste för dig med skydden?

Har du någon gång funderat kring att göra ditt egna skydd? berättat!

Att det är tätt och så diskret som möjligt

Reklamerna för mensskydd talar om att kvinnor är olika och det tycker jag ska börja tillämpas på inkontinensskydd också.

Att jag kan känna mig trygg att det inte kommer droppar i trosan, att de sitter bra och bekvämt.

Nej det verkar komplicerat och är inget jag är intresserad av.

Att känna mig trygg, bekväm och luktfri. Enkla att hantera.

Nej inte direkt. Diskuterat med andra kvinnor vid något tillfälle hur man skulle kunna göra , men har inte kommit på något bra.

Hålla trosorna torra, inte känna mig "fuktig", inte lukta

Nej

Att de ej läcker. Att de ej rullar sig. bra tejp(?)

Att känna sig säker och "våga" röra sig, hosta, skratta, nysa m.m.

Ja. Men i dagsläget jobbar jag (för mycket). Svårt att förvara "använda" i väskan.
Nej, aldrig.

Att det inte känns blött eller luktar

Nej.

Att det känns bekvämare och torr(?)

Nej.

Att de håller tätt.

Nej.

Funktion. Använder smidigt.

Ja, tvättbara skydd är intressant. Jag är inte helt 100 på hur jag löser absorption och dofteliminering, smidigt påsprång.

Förhindra urinläckage och börja lukta, bra uppsugningsförmåga.

Aldrig funderat på det.

Att dom inte läcker. Är enkla att användas. Att dom känns bekväma.

-

Uppfyller skydden dina behov? Ja, Nej, varför?

Gör du några övningar, ändrar diet eller något annat för att stärka din bäckenbotten eller blåsa?

Ja ibland, nej ibland. Mitt läckage varierar med någon slags cykel i kroppen så ibland är det mycket rinnande och svårt med läckage tätt. Ja, jag har bara behov av trosskydd så för mig är det ok.

Testat övningar men har överaktiv blåsa så det fukar ej. Åter medicin för att dämpa reflexer. Lite bäckenbottenövningar men har slarvat i så många år och pga det har det blivit såhär.

Både jag och nej som jag tidigare skrivit räcker de ej vid hostattacker.

Försöker med övningar för bäckenbotten, men tyvärr

Vid dessa tillfällen har jag använt andra skydd med bättre förmåga.

mycket sporadiskt. anv medel för torra slemhinnor.

Ja, håller torrt.

Ja, knipövningar.

Ja, ofta.

Ja, knipövningar.

Ja, nu gör dom det, förr räckte inte dom kraftiga bindorna till när jag sprang typ gbg-varvet men jag springer inte längre utan sysslar bara med ostudsiga träningsformer.

Ja, jag tränar både yoga och gym men inga knipövningar. Men det har blivit bättre.

Ja, om jag inte läcker mer än ett par droppar. Nej, om jag inte hinner hålla det första urinet som kommer.

Tyvärr ej.

Ja, det är ok. Helst vill man inte ha något.

Oftast men ibland så räcker de inte till.

Nej.

Ja

Ja, gör regelbundet knipövningar samt stärka bäckenbotten och bålen.

Ja, de gör sitt jobb och det är viktigt.

Gå ner i vikt och bäckenbottenövningar.

-

Tänker på att inte springa på toa i förebyggande syfte utan mer när det verkligen behövs.

Anpassar du din vardag på något sätt på grund av dina läckage?

Har du funderat kring om de skydd du använder är miljövänliga?

Jag måste ha med bindor och kunna gå och byta så en toalett är nödvändigt att ha koll på. Mycket klocktid(?) går åt till dessa procedurer.

Nej.

Nej, jag gör allt precis som vanligt. Men blir jag kissnödig måste jag direkt på en toalett, annars sker en olycka.

Nej, det viktiga är att det är effektivt.

Är noga med toalettbesök inför olika aktiviteter, kanske lätt att det blir psykologiskt, påfrestande, oro, rädsla att skydden inte räcker till. När jag arbetade, hade jag tur som kunde arbeta hemifrån när jag hade hosta. Jag går och kissar oftare utifall att.

Ja, av och till. Osäker på hur de påverkar miljön önskar de skulle gå att komposterat!!

Nej.

Ja, kollat så att det ej har läckt.

Ja.

Nej, jag gör allt jag vill så länge bindor finns!

Inte en tanke på det.

Nej.

Nej.

Nej.

Ja.

Nej.

Nej.

Ja, jag vet vad som triggar extra kissnödhhet, jag undviker sådant tex vid längre förflyttning där jag inte vet hur möjligheterna är.

Jaj lom att jag "får" genom landstinget kan jag inte påverka så mycket själv.

Har alltid trosskydd i min vardag.

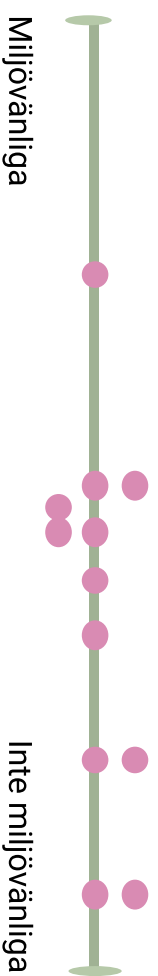
Nej.

Nej, inte direkt. Försöker nog hålla koll var toaletterna finns om jag är på ett nytt lite större ställe tex konferens.

Ja, tanken har slagit mig och då slog jag bort den igen. Förmodligen inte alls miljövänliga.

Hur miljövänliga tror du att dina skydd är? Sätt ett kryss på skalan.

Varför tror du det?



Mitten - Det är plast i förpackningen.

Mitten - Tror de innehåller plast.

Mitten - Papper, men ej komposterbart?

Höger - står inget om det på förpackningen

Mot vänster - Hoppas på det!

Höger - Dom innehåller plast och slängs i soporna, sorteras ej.

Mitt - Jag vill inte tro att de är alltför omiljövänliga.

Mitt - har hört så.

Mitt - Har ingen aning då det inte står något på paketet. Detta är ren gissning.

Mitt, höger - Plast, Klisterremsor, svar att återvinna på annat sätt än brännbart.

Höger - Det känns inte så miljövänligt

Höger - Innehåller klister, plast för att förhindra läckage. Blekmedel för att vara vita?

Hur använder du skydden?

1. Köpa skydd

Var och hur köper du skydden?

Mataffär
beställer på nätet
får utskrivet av sköterska

2. Förvara skydden

Hur och var förvarar du skydden?

Badrumsskåpet har de allra flesta i.
Någon som beställer mer har den stora kartongen i källaren. Någon förvarar i sovrummet och en annan i träningsväskan.

3. Medtag av skydd

Hur gör du för att ta med dig skydden?

De flesta har en litet tygfodral eller necessär i väskan. Några lägger dem löst men i sina engångsförpackningar några har dem löst i väskan utan skydd på. En har med en plastpåse om hon måste ta med det använda skyddet.

4. Byte av skydd

Varför byter du? hur ofta? Skillnad på hemma och borta?

De flesta byter vid behov, alltså när de känner att de skydd de har är "fullt". Några när det känns ofräscht. Några byter när de duschat, en annan byter när det är dags att träna (olika typer av skydd).

Nästan alla skriver att det inte är någon skillnad på att byta hemma eller borta.

5. Göra dig av med använt skydd

Hur gör du när du slänger det? Skillnad på hemma eller borta?

Många virar in i toapapper och slänger i vanliga papperskorgen, eller i sanitetspapperskorgen om de finns när de är borta.
Hemma slänger många i papperskorg på toaletten.

Några virar in i det nya skyddets omslagspapper och slänger sen. Någon rullar ihop och slänger som det är.

Om de är borta och det inte finns bra ställe att slänga är det några som tar med skyddet, en har alltid med en plastpåse, en annan virar in skyddet i omslagspapper och lägger i sitt lilla fodral i väskan.

6. Göra dig av med omslagsplasten och skyddspappret

Var och hur slänger du dem?

Alla slänger det i papperskorgen. Några säger att de lägger det i sanitetspåsen om den finns. Någon säger hon sorterar skyddspappret i papperssorteringen hemma.

7. Applicera nytt skydd

Hur gör du? Vad är svårt och vad är lätt?

De tycker att det är lätt att applicera nytt skydd. De svårigheter som några/någon av dem nämner är:

- svårt att veta var i trosan de ska sitta för att skydda bäst
- ibland fastnar de inte så bra pga tros materialet eller dålig kvalitet på klistret
- kan vara lite fumligt att fästa det rätt direkt, med klisterremsan
- kanterna kan vika sig under skyddet och fastna i hårstrån

En person "laddar" alla sina trosor med skydd efter tvätt, så att hon inte behöver sätta på nya när hon ska använda dem.

8. Förbereda dig för att gå ut från toaletten

Gör du något särskilt? Skillnad på borta och hemma?

De flesta skriver "nej".

Några nämner att det blir lite jobbigare när man är borta och vad man ska göra av det använda skyddet. Några skriver att de kontrollerar att de fått med sig allt, vill inte råka lämna kvar något.

En skriver att hon kollar så att skyddet inte syns, när hon bytt till träningstights.

Övrigt

"hade velat ha ett skydd som inte syntes men som var lika effektivt som en kraftig binda när man har träningstights."

"Det är klart att man inte vill behöva använda skydden, men man vänjer sig"

"Bra att de är styckförpackade"

Återvinningsbara skydd

Hur skulle ett återvinningsbart skydd se ut?

Likadant, fast gärna plattare, mindre. Mindre plast

Svårt att sätta fast

Lätt att hantera, förvara och återvinna

Hur hade du förvarat och tagit med dig det?

I en:

tygpåse, plastpåse, fodral, ask i handväskan eller/och hemma på toaletten.

Tät, välförsluten.

Risk för lukkt och ofräshet.

Biopåse, i bambu eller likande.

Vad tror du att du skulle gilla?

Flera: vet ej, frågetecken, förstår inte riktigt frågan,

Att det är återvinningsbart - allt borde vara det

Miljövänligt,

Nej

Mindre obehag

Vad tror du skulle kunna bli jobbigt?

Skillnad på om man bara läcker lite och om det rinner. Tror det är svårt att komplicera det för dem som har mycket läckage.

Förvaring innan återvinna OM man inte kan återvinna det där man byter.

Lukt, ofräshhet och tvätt.

Hur hade det kommit till en återvinningsstation?

Precis som den andra soppсорteringen, samtidigt som jag går med den går jag med dem. Som metall, plast etc. I brännbart

Har du några återvinningsbara produkter som du gillar? Vilka? Varför?

Nödvändiga förpackningar för frukt och sånt som jag sedan kan ha till komposten!

Tvålpump som jag fyller på med tvål

Kaffefilter, menskopp, tygbinda, tesilar, avsminkningsserveter, de går att tvätta och väta

Får gärna vara dyrt så länge det blir billigt i längden!

Vilka delar skulle vara återvinningsbara? Vilka inte?

Vissa sa hela

Vissa bara tejp, omslagspapper och plasten

Ej klister Ej absorberande biten

Någon inget alls

Återanvändbara skydd

Hur skulle ett återanvändbart skydd se ut eller fungera?

1. I min livssituation skulle det inte fungera. Jag har hemtjänst och är relativt ung. Nej, jag vill ha det som det är.
2. Jättesvårt! Det måste ju hålla tätt, vara "tvättbart", enkelt att applicera och hantera. Någon typ av recycled plast som är miljövänlig och kan komposteras.
5. Tyg
6. Kanske ett par trosor med rejäl uppsugningsförmåga
9. Vet inte, som en tampong kanske?
11. Tvättbart, flera gånger.
12. Någon form av textil. Vingar så att man kan vika på sidorna så att det sitter kvar.

Ide: En trosa med en ficka i grenen där man stoppar in ett absorberande skydd

Liknande ide: En trosa med dubbel tygrem där man kan skjuta in ett inlägg som är tvättbart

Ide: ett absorberande tyg med ett plastunderlag som går att separera. Tyget tvättar man och plastunderlaget byter man ut och går att återvinna.

Hur hade du förvarat och tagit med dig det?

2. Det beror ju på hur det är utformat, men troligen på samma sätt som nu med pappersskydd.
3. I någon större necessär.
5. I väskan.
6. Handväskan... begagnade i en plastpåse..
7. I handväskan
8. Som engångsskydd eller i en liten tygpåse
9. I en speciell ask
11. I en plastpåse i handväskan. I en engångsförpackning.
12. Förhoppningsvis fått plats i handväskan. Förvarat några på jobbet kanske.

Hur hade det hållit sig fräscht?

2. Vet ej. Nogrann rengöring efter varje användning. Osäker.
3. Det hade varit svårt att hålla det fräscht och för mycket jobb.
6. Tvättat ofta. Vet inte, uppfinna ett tyg som suger upp och kapslar in
7. Jag kan inte tänka mig ett trosskydd/incoskydd som går att återanvända
8. Tvätta, torka?
11. Byta ofta.
12. Någon form av fodral som är lätt att ta med.

Känner du till något skydd som är återanvändbart? Vad då för något?

1. Mensskydd.
2. Menskopp, men har aldrig använt.
6. Tygblöjor?
10. Tygbinda, menskopp.

Vad tror du skulle kunna bli jobbigt?

1. Personliga integriteten.
2. Att hålla rent, att ta med sig på ett enkelt sätt. förvaringen?
3. Jobbigt att behöva tvätta dem, osmidigt och xxx? Mycket bättre med engång för mig
5. Att ta med "tvätten" i väskan
6. Ifall dom läcker eller luktar.
7. Att det skulle lukta
8. Ska tvätta? Hur?
9. Hygienen
10. Doft, fukt
11. Tvätta ofta. Kan lukta, inte fräscht.
12. Att transportera hit och dit och hem för att tex tvätta utan att lukta synas eller bli glömda.

Vad tror du att du skulle gilla?

2. Att det är återvinningsbart och återanvändbart. Att man inte behöver slänga. Gör det enklare vid toabesök borta. Att man använder flera gånger.
6. Att det skulle se ut som vanliga trosor.
8. spara pengar?
9. Att det blir miljövänligt och färre skräp
10. Återanvändningen, miljöhänsyn
11. Kunna använda, flera gånger
12. Jag tvättar tom wettexdukar i 60grader vecka efter vecka så jag skulle inte ha något emot det.

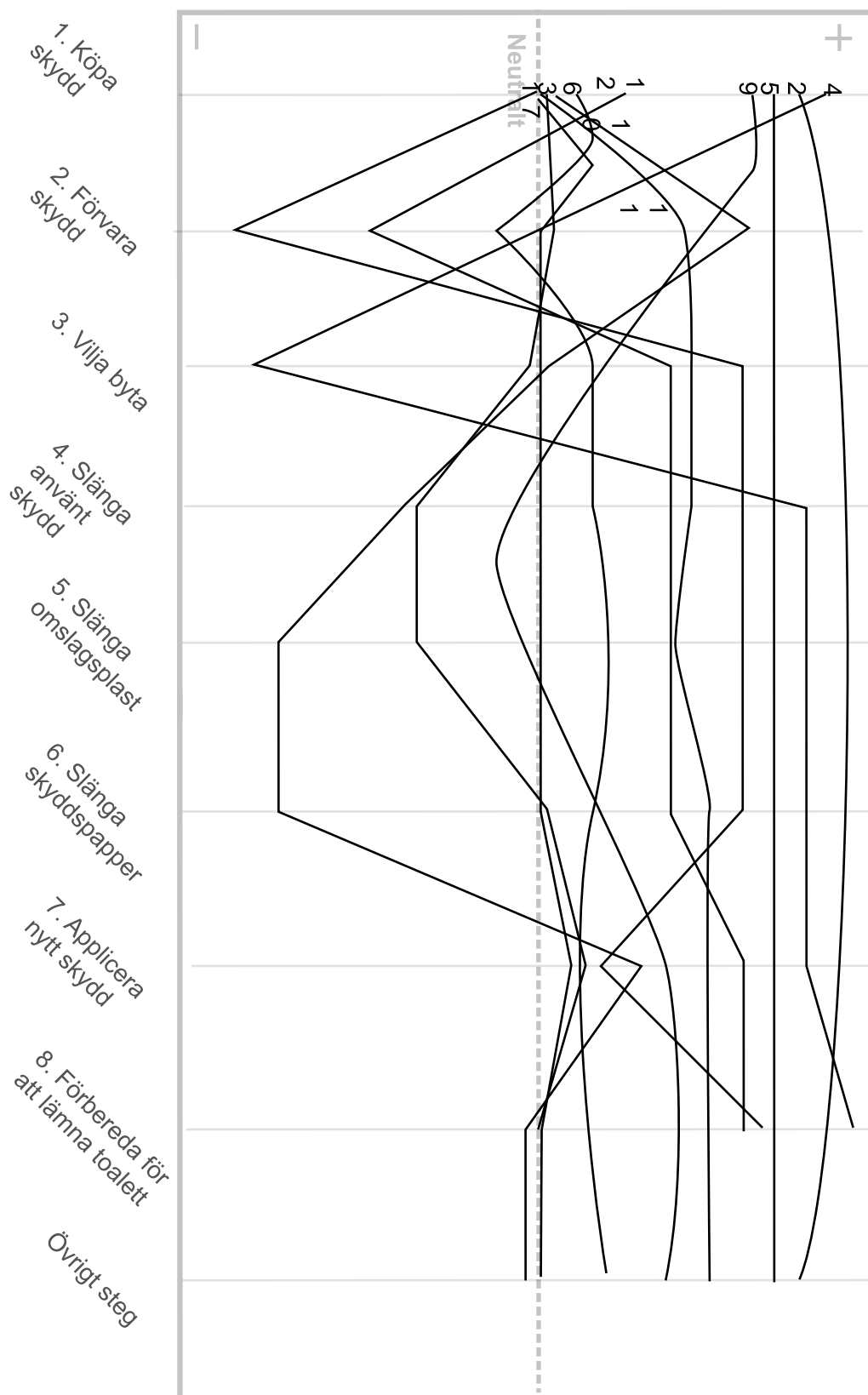
Har du några återanvändbara produkter som du gillar? Vilka och varför?

2. Vattenflaskor, plastburkar och lock. Men inte när det gäller hygienprodukter. Har hört talas om flergångstopz som går att tvätta. Funderar på det och att sy pads av gamla handdukar.
9. Bara shoppingkasse, inga hygienprodukter.
12. Nej. Såg ett program på tv från finland där de gjorde tyg med bivax för att använda i köket istället för plastfolie, intressant!

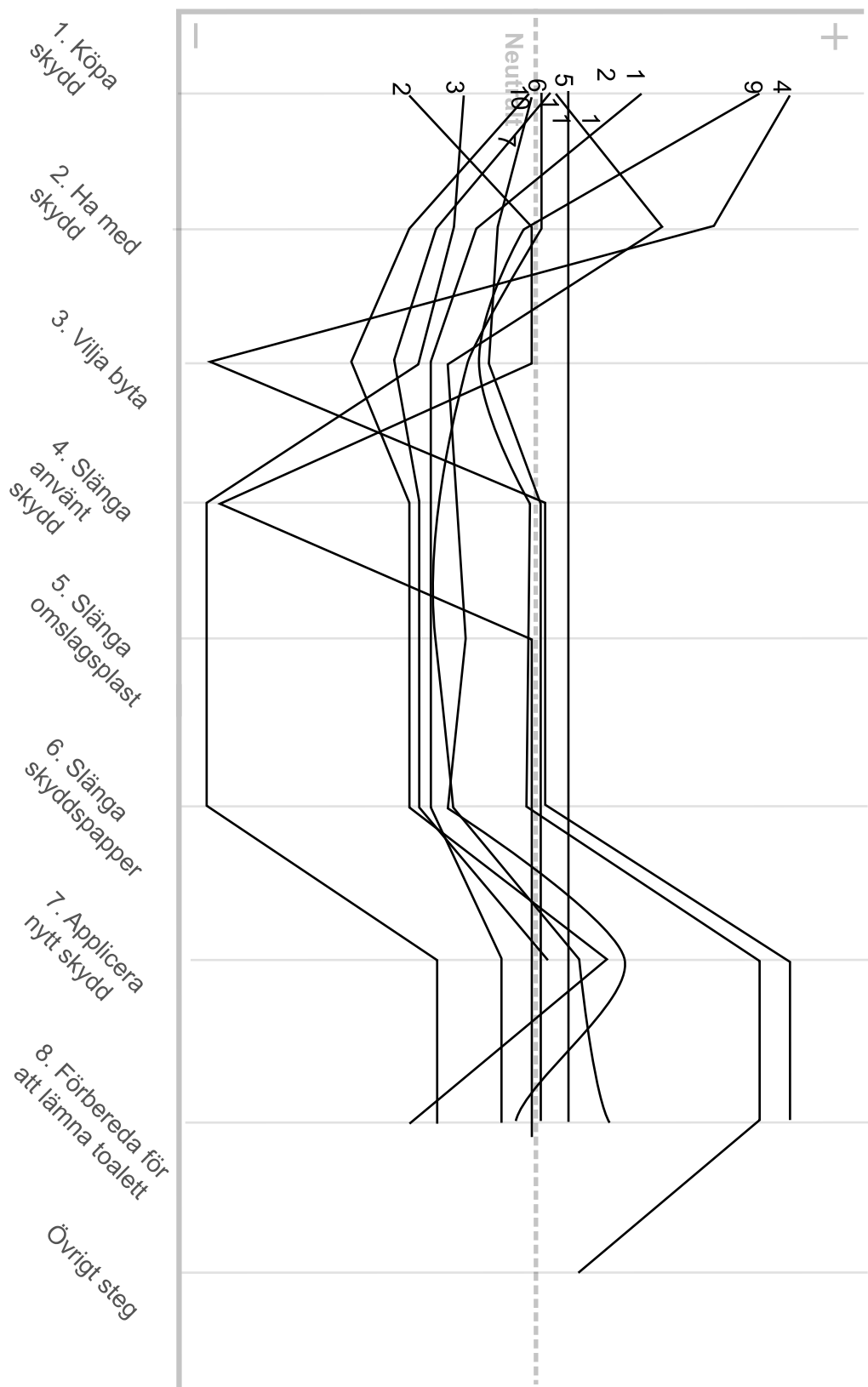
Sammanfattade kärleksbrev

- Begränsar inte livet - gör att man kan leva ett normalt liv
- Känns säkert även vid fysisk aktivitet, stora rörelser
- Känns torrt och fräsht
- Ingen oro
- Känna sig bekväm
- Oavsett vad jag gör, resa, träna etc.
- Några få: miljövänligt går att kompostera
- len mot hud
- formad efter min kropp väl
- Liten, tar liten plats både i stort paket och i litet omslagspaket
- Omslaget inte är i plast
- Vill vet hur stor vätska skyddet kan ta
- Har märkeringar på vart den extra uppsugningsytan är
- det är bra att man kan köpa hem test för då slipper jag också slänge de skydd som inte funkar för mig.
- Det ska vara jättefint!
- Du ska inte vara onämnbart, du satt med vid bordet och man pratade om dig!
- du var hållbart och transparant med hur hållbart du var allt från vilka resurser som du tog till förpackning och du funkade lika bra ändå!
- Sitter fast väl,
- lätt att rulla ihop
- köptes i storpack - billigare
- Du är ett med mina trosor
- Ingen plastkant som skaver när jag tränar
- Ganska osynlig så man kanske t.o.m- kan ha dig när man har bikini, man kanske t.o.m. kan bada med dig
- När jag har träningstajt ska jag inte behöva oro mig över att ha en stor t-shirt över för att dölja det med.
- Hålla hela gbg varvet och ändå kännas trot och fräshed mot huden.
- jag behöver inte dig längre för jag har gjort operation
- passar precis mig

Upplevelsekurvan - Hemma



Upplevelsekurvan - Publikt eller hos vänner



Upplevelsekurvan

Kommentarer till hemma

1. Köpa skydd: Dyrt
2. Förvara skydd: Kartonger tar stor plats. Trångt i skåpet.
3. Vilja byta
4. Slänga använt skydd: Inte svårt men tänker på miljön (1 person). Papperskorgen lättillgänglig.
5. Slänga omslagsplasten: ska vi verkligen använda plast?
6. slänga skyddspappret
7. applicera nytt skydd: Hamnar inte alltid rätt i trosan
8. Förbereda för att lämna toalett:
9. Övrigt steg: Brukar oftast inte använda hemma, behövs inte (läcker väldigt lite)

Kommentarer till publikt eller hos vänner

1. Köpa skydd: Dyrt. Ny affär, var finns skydden där?
2. Ha med skydd: Alltid tänka på att ta med i väskan och med in på toan. Trångt i väskan.
3. Vilja byta: Vilja och möjlighet inte alltid på samma plats. Var finns närmsta toa? Kan bli kris. Byter nästan bara skydd hemma.
4. Slänga använt skydd: Tar allt med mig så har en omständigare procedur. Tänker på miljön (samma person som brydde sig om miljön på "hemma". Känns lite sidodär att slänga i papperskorg.
5. Slänga omslagsplasten
6. slänga skyddspappret
7. applicera nytt skydd: Det inte inte alltid skyddet hamnar på rätt ställe. Inga problem.
8. Förbereda för att lämna toalett: Procedur, kolla så att allt är med ut. Fräsch igen.
9. Övrigt steg

Appendix VI - Transcription from workshop

Transkribering av introduktion, brainstorming och analogier.

Tips till någon som precis fått inco

- Du är inte ensam
- Jag har inte stora problem, de begränsar inte livet för mig. Tips om inco: det är bara att leva med det.

Hur många på bilden har problem med inco?

- 50%,
- 75%
- 60%

Det är faktiskt 40%

Ni fick svara på hur miljövänliga era skydd var i dagboken, här är hur ni svarade. Hur mycket plast tror ni skydden innehåller i snitt (bara skyddet)?

- 50
- 30

Det är mellan 45-50%

Vi blev förvånade, trodde att det var mer cellulosa.

- Det trodde nog jag också.

1. Vad tänker ni på när ni tänker på ett återanvändbart skydd?

- Miljö
- Tänker på tygblöja
- jag med!!
- Jag tänker på jobb!
- Jag ser evighetsloggan som konsum hade när jag var liten. Tecken för oändlighet.

Vi ska försöka tänka på något som inte tvättas i maskin.

2. Vad hade varit bra med ett återanvändbart skydd?

Post-it	kommentarer
Lågt pris per användning	
Kretslopp	
resurssnålt	
Mindre miljöpåverkan- är det viktigt för er tycker ni?	några svaga jaa, mmm...
Miljön får mindre att ta hand om, billigare	
enkelt, enkelhet	<p>enkelhet är hanteringen av den och då har jag en liten idé. Om man hade något som var mer svampliknande så hade det varit mycket lättare att skölja ur också för då behöver man ju inte tvätta det utan då räcker det att man doppar det och sköljer ur som man gör med en svamp, och ändå är den absorberande.</p> <p>A just, det typ som en wettexduk duk. Eller som handdukar som är pyttesmå och så blir dom stora.</p> <p>(Anna skriver lapp med idén)</p> <p>Du sköljer antingen med tvål eller kokhett vatten. För då behöver man ju inte tvätta i maskin för då blir det ju rent ändå.</p>
Individanpassad	<p>Då kanske man kan göra som när man beställer fotinlägg. Formpressat.</p> <p>Då måste man ju lämna avtryck först... (alla skrattar)</p>
Miljövänlig	
Mindre resursslöseri	
Billigare, mindre per användning	

I dagboken fick ni tänka på er drömprodukt, hur skulle det vara att kombinera er drömprodukt och en återanvändbar?

Svår fråga i dagboken säger en deltagare	Minns ej vad jag skrev, incosarna är ju på
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	ett sett ett nödvändigt ont eftersom man har ett behov av dom, så de fyller ju en funktion oavsett om man vill ha dom eller inte. Men när man väl har dom så ger dom en annan luft under vingarna, så det är mer det här aja, men jag har inte så mycket val, att så utan är inget val...
Anna - så du tänker att en drömprodukt skulle inte vara att du inte skulle behöva ha inco?	Det skulle ju vara det optimala, men det gäller ändå att acceptera att det finns saker, situationer, sjukdomar och åkommor som det gör. Så det ska inte vara att man skammar sjuka eller skadade... jaja " det bästa skulle vara att inte ha det alls" .. a men nu behöver jag kunna leva med att ha det, men hur ska det då va (skyddet).
Kanske som ett inlägg i trosfickan	
Tunn	
Mjukt material som ger mindre irritation mot huden	
Tunn med hög absorberingsförmåga	
trygg, säker, etisk.	ja det är ju det.. mina tankar runt det där..jag kan leva med att jag är sjuk men det är uppenbarligen fler som har problem med att jag är sjuk, som säger " men tänk vad bra om du vore frisk" , jaja men jag kan leva med det här säger jag, du får lära dig att acceptera det här. Jag kan leva med att jag har en sjukdom som ger mig behov av skydd, jag har också märkt att " jaha, jag fick nysdroppar här nu", jag som gör yoga, jag som har sånt bra rotlås - uppenbarligen räcker det inte hela vägen. Så att balansen, jag kan ha det men jag vill liksom inte bli skammad för att jag har behov.
lätt att rengöra och torika snabbt	inne på den svampen, som en anna pratade om förut. snabbt gör man rent den och så är den torr igen.
Anna - det finns ju dom här små som man kan ha med sig..	ja och det finns ju som en badhandduk också, som är väldigt snabbtorkande. och väldigt absorberande.
odlarvärlden	urin är känt som kvävehaltigt guldsvatten...använda det till odling (alla skrattar och skojar)

	<p>(en annan lite mer seriös) - fast urin luktar inte i sig, det är bara i kontakt med bakterier. ..</p> <p>Det kan lukta beroende på vad man har ätit också...</p>
Möjligt att rengöra korrekt	<p>Så att man vet att det är hygieniskt, bakterier är borta så att de inte kan börja lukta.</p> <p>Eller lägga den i mikron! Såsom man gör med disktrasor. jag bara sköljer ur och..mikron dödar bakterierna..</p> <p>luktar det inte i mikron då?</p> <p>nej det gör det inte.</p> <p>Men på sjukhus får man inte värma vetekuddar i mikron och så för det odlas så mycket bakterier, så att rengöra i mikron skulle jag aldrig våga..</p>

Vad skulle få dig att träna din bäckenbotten muskler oftare?

Mindre lättja	om jag inte var så lat hade jag tränat mer
Nödknipa -absolut kissnödig	Man ska knipa åt strålen när man kissar, (öva?), men sen så går det inte när man väl är jättekissnödig då är det kört.
lite roligare	
kombinerat med annan vinning	Ja, eller något man tycker är roligt, så att man får någon nytta av det. belöning kanske?
minnet	komma ihåg att göra det är svårt för mig med
ha någon som påminner mig	
bara göra det så att det blir en vana	
goare sexliv, knip	
bra hållning, bålstabilitet	då gör jag rotlås och jobbar härifrån. När jag yogar mycket har jag bättre bålstabilitet...

Hur skulle ett återanvändbart skydd behöva vara för att du skulle använda det?

Formpassat (formidabelt)	så att det inte ska se ut som en stor jävla blöja. formanpassat, diskret.
Samma funktionalitet	
inte för tjockt, kännas tryggt och fräscht	
bekvämt	
tunt, luktfritt	
lättillgängligt	
tätt , luktfritt, enkelt att hantera, osynligt utifrån, genomskinligt (lätt att få tag på)	
okomplicerat	
lätt att använda	
lätt och enkelt att hantera	
lätthanterlig	

Om det skulle finnas en sensor i skyddet med tillhörande app, vad skulle det kunna hjälpa dig med då?

lättare att byta i tid	ja för den känner av mängden vätska
säga till om det luktar	
mängden man läcker per dag	.. aaa det var ju bra..
överfullt , "you smell"	
varna vid risk för läckage stor mängd	
doftsäkra	
säga till att det är dags att byta	

Övning 2 - Analogier - återanvändbara produkter

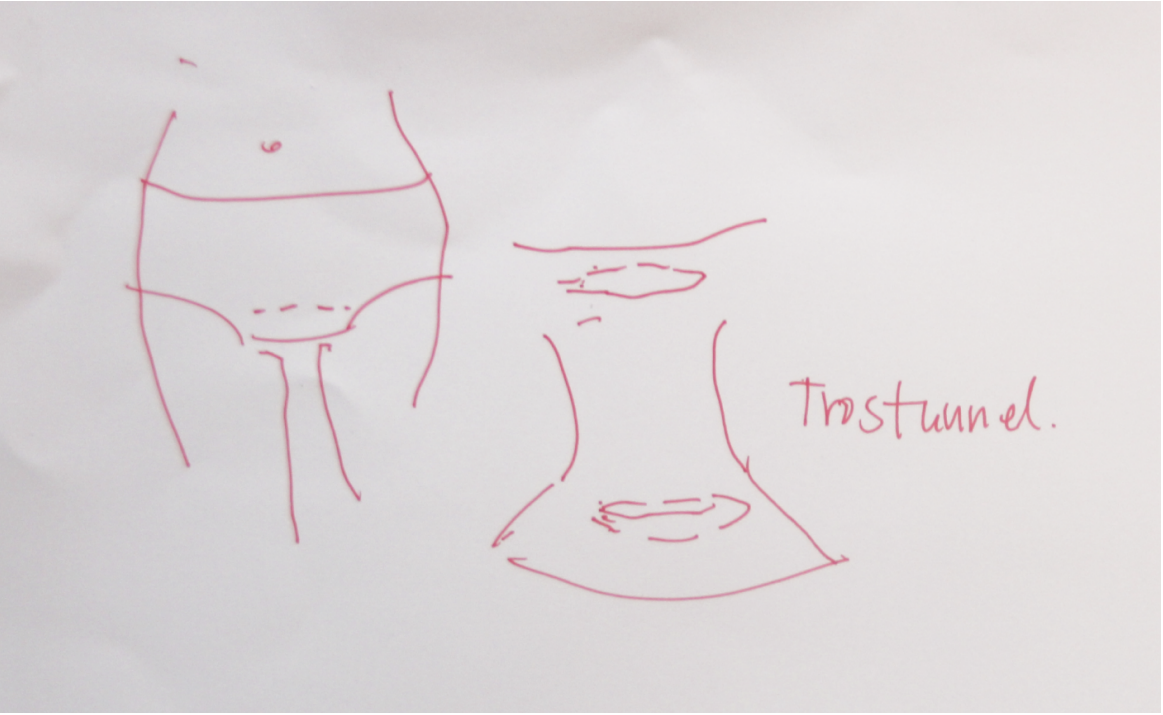
1	kaffefilter	såna man tvättar av och använder flera
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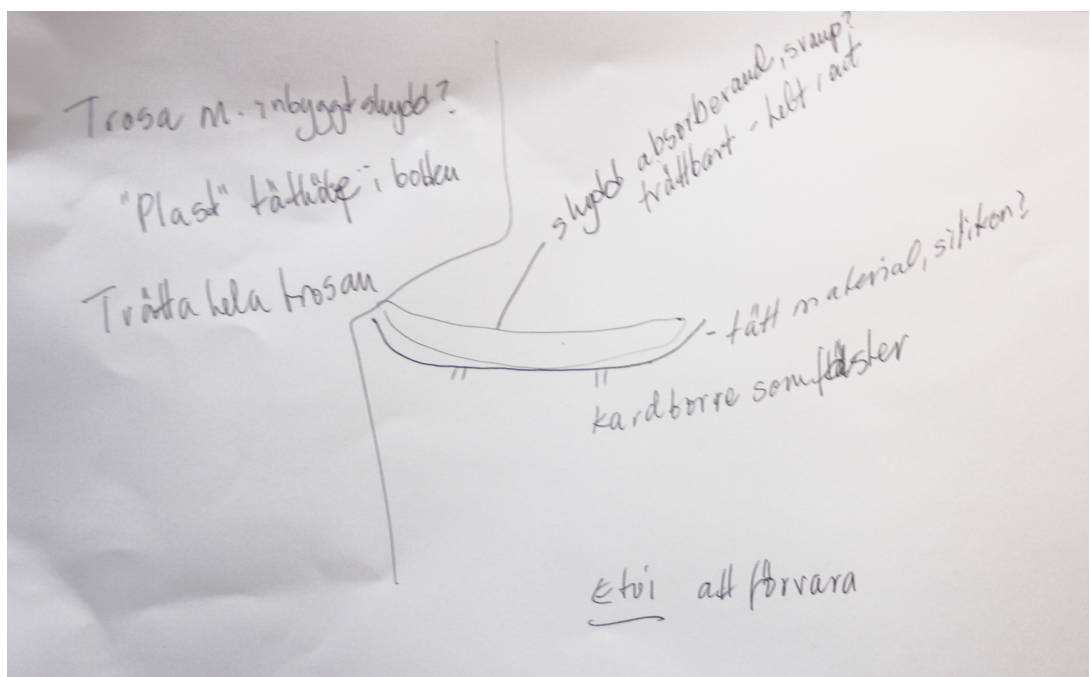
		ggr, nylon bla bla.. gillar att jag inte behöver slänga det.. och att man inte behöver köpa nya.
2	flergångs shoppingkasse	användbar, inte bara jag utan hela familjen använder den. Det är inte bara miljön utan det blir också billigare, köper man kassar i butiken varje gång kostar de snart 5 kr st.
3	kaffemugg	tycker den är fin, bra form, skön att hålla, lagom mycket kaffe i.
4	“godislådor”matlåda	använder hemma som matlåda, diskar och använder igen. kontrollerar att plasten är godkänd för livsmedel, det är inte all plast som man får förvara livsmedel i. och att den både kan frysas och köras i micron. har flera storlekar på jobbet också. bra att använda dom hela tiden, jag gillar inte att slänga saker.. jag gillar inte att shoppa, det är nog därför egentligen.
5	2 st, burk för suketter. TurkiskYoghurt burk. (med handtag)	Köper påsar till och så fyller man på då. Kan ta med sig den överallt. Använd mycket, har flera. har mat i. gör bra för många ändamål. (andra säger, för soppa, plocka bär på sommaren..)
6	uppladdningsbar tändare	en favorit. de enda man måste tänka på är att göra rent “här emellan” när det kommer stearin på. Men sen laddar man den i datorn med usb. elektronisk. känner av när det är en veke emellan och tänder då. Har även en liten shoppingkasse att ta med och en vattenflaska i bioplast. (flera säger och visar upp att de har shoppingkasse med sig i väskan)

7	kaffefilter	<p>sytt av spillbitar från ett plagg jag sytt. Det är äldre bomullslärf som man hade i lakan förr. Tvättar genom att när det är fuktigt försöker "smurffa ut det" så får det ligga och torka på diskbänken, för när det är torkat så är det lättare att vränga den över kompostpåsen och borsta ut rätt bra. jag har flera så när det gått några dagar och jag använt flera så har jag dom i en bytta och när jag ska tvätta kokar jag vatten och sedan försiktigt hänga upp dom så att man inte skållar sig. Tyckte att jag kunde återanvända tyg och använda spillbitar från något jag sytt.</p> <p>Hur tätt är det?</p> <p>det är en "hipster-kanna" så vet inte hur det fungerar i en vanlig kaffekokare. Men det funkar bra för mig.</p>
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Hur ska de återanvändbara produkternas egenskaper appliceras i ett skydd. (våldigt svårt att höra deras diskussion i denna uppgiften, pga alla grupper pratade samtidigt)

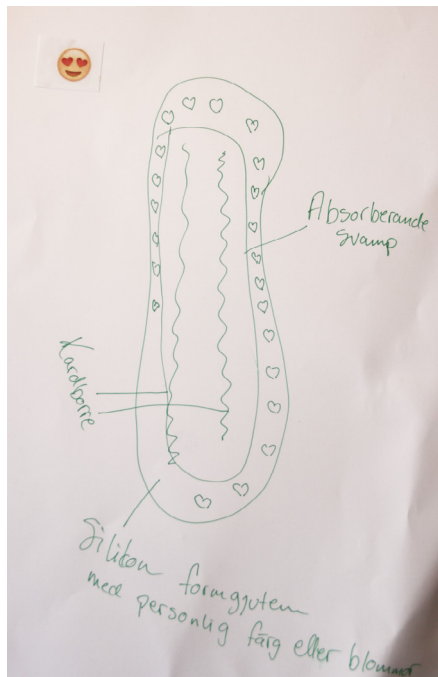
Grupp	
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<p>1</p>	<p>Trostunneln. Vi tänker oss en form av trosa (som ser likadan ut bakifrån och framifrån) med en insydd ficka. I fickan kan man stoppa i den (skyddet?) och så täcker den både fram och bak. som man hade i gamla blöjor då, som en plast aa, precis.. Det skulle kunna vara ett högabsorberande material så får du även lite höjd på det och det blir inte obekvämt och skav och du slipper det här med klisterremarna som kan fara runt i tvättmaskinen efteråt om du inte får loss dom från trosan. och så skaver inte byxorna när man har trosskyddet heller. Grensömmen på jeans kan skava ibland.</p> 
<p>2</p>	<p>Vi hade 2 idéer. Dels en trosa med ett inbyggt skydd. Det är ett fastsatt, tätt material i botten, precis i grenen och också något absorberande så att allting sitter i trosan och man tvättar den som vanligt på något sätt.</p> <p>Det andra är att man har en botten av något, kanske silikon, men jag vet inte hur varmt eller tungt det blir, och sen så lägger man sitt trosskydd som är något absorberande, vi var ju lite inne på det här med svamp och så, och att fästena är i kardborre istället för tejp och att man tvättar sin silikonficka och även svampen kan också tvättas. och så har man något litet etui att förvara det i väskan.</p>



3

vi var inne på liknande. Det som är i silikon är formgjutet. Då har man suttit på en form innan hos någon. Så kan man välja mönster, här har vi hjärtan runt. Så är det kardborre precis vid silikonet och sedan hennes käcka svampar för att då kan man byta om man känner att det läckte - för då kan man snabbt bra av dom, skölja av dom och så är dom torra igen och så sätter man på dom. Man måste ju ändå ha silikonet för att det inte ska läcka igenom. Då kan man ha sin personliga, så om man är på en arbetsplats så vet man vem som har glöm sin där (skojar) . Kan även finnas S,M,L även i absorberingsförmåga.



Appendix - VII Requirements and guidelines

Group	Where does the requirement or guideline come from?	R/G	Requirement/guideline	Weight
Sustainable	Breif	R	Be more than X% (not yet defined) or fully reusable	5
Sustainable	Breif	R	Decrease carbon footprint / waste per daily use with X% (not yet defined)	5
Sustainable	Breif	G	Make reusable protection out of recycled material	2
Information	User studies/research	G	Be intuitive and pedagogic	2
Information	User studies/research	G	Only require initial introduction from the user to handle correctly	2
Head function	User studies/research	R	Make sure the users can live their life without getting effected by their leakage more than handling and use the product	5
Functional/experience	User studies/research	R	As easy to handle as reference product	3
Functional/experience	User studies/research	G	Easy to handle and change	4
Functional/experience	User studies/research	G	Easy to keep the bathroom and user clean	4
Functional/experience	User studies/research	G	Reasure the user that the protection is clean enough from smell and bakterias after it being freshed up	2
Functional/experience	User studies/research	G	The protection should fit personal preferences (looks, form and/or add-ons)	1
Functional/experience	User studies/research	G	Well adjusted to fit body	3
Functional/experience	User studies/research	G	Well adjusted to fit the specific user body	1
Functional	User studies/research	G	Adjusted for dry skin and mucous membrane	2
Functional	User studies/research	G	Be as fresh (or even more fresh) as reference product	4
Functional	User studies/research	R	Be clean enough from smell and bakterias after instructed fresh up	3
Functional	User studies/research	R	Be safe when doing large movement	3
Functional	User studies/research	R	Needed to buy less often than single-use products	4
Functional	Essity's knowledge	R	Dermatologically tested	5
Functional	User studies/research	R	Dry quickly, after 10 seconds	3
Functional	Essity's knowledge	R	Enable airflow to skin	5
Functional	User studies/research	R	Keep clothes and panties dry (not leak)	5
Functional	User studies/research	R	Keep skin dry and healthy	5
Functional	User studies/research	R	Neutralize odours	5
Functional	User studies/research	G	Not be dependent on add-on product	3
Functional	User studies/research	G	Not show when having under tight clothes	2
Functional	User studies/research	G	Possible to adapt to different absorbaton level	1
Functional	Breif	R	Possible to freshen up without machine washing	4
Functional	User studies/research	R	Protect the user from leakage as good as the reference product	5
Functional	User studies/research	G	The protection can be handled by the user herself	2
Functional	User studies/research	R	Not leak urine when using	5
Functional	User studies/research	R	Be safe and hygienic to use	4
Functional	User studies/research	G	The protection should be able to reuse after 10 seconds after freshen up	2
Functional	User studies/research	R	The urine should not move up while sitting	5
Experience	User studies/research	G	As comfortable as the reference product	4
Experience	User studies/research	G	Decrease the risk of embarrassment during usage compare to reference product	2
Experience	User studies/research	G	Feel as fresh (or even more fresh) as reference product	4
Experience	User studies/research	G	Feel certain that the protection is hygenic to use and no unwanted bakterias are thriving	2
Experience	User studies/research	G	Feel reasure that product protect from leakage	2
Experience	User studies/research	G	Feel safe when doing large movements	3
Experience	Breif	G	Higher ranked by users than exisiting reusable soultions	2
Experience	User studies/research	G	Make the user feel good about that they are using an environmentally friendly protection (another incentive to use it)	3
Experience	User studies/research	G	Make user feel safe that the product protects them	4
Experience	User studies/research	G	Reassure the user the protection does not smell	2
Experience	User studies/research	G	The protection and the handling of it should not be mucky	4
Experience	Breif	G	Easy to adopt	1
Add-on	User studies/research	G	Encourage training of pelvic floor with a non blaimable postive approach	1
Add-on	User studies/research	G	Support openeness and awareness	1
Add-on	Essity's knowledge	G	Support decreasing of isolation due to incontinence	1
Add-on	User studies/research	G	Support a lifestyle which prevents leakage or improve the bladder	1
Add-on	User studies/research	G	The case should support personal intregity, not show that it is a case for inco products	1
Add-on	User studies/research	G	The bring along case should be convinient, envivromentally friendly, easy to clean and capsulate odour	1
Add-on	User studies/research	G	Decrease the risk of embarrassment during when buying compare to reference product	1
The requirements and guidelines are divided into different groups:				
Sustainable: requirements which are connected to the sustainable aspects of the product.				
Functional: which are requirements connected to the performance of the protection and needed functions.				
Experience: which are connected to how the user experience the protection.				
Add-ons: requirements which are connected to possible add-ons to the product.				
The requirements and guidelines have been weighted where 5 is most important and 1 least important,				

Appendix VIII - Questions to experts

- Vad jobbar du med nu?
- Vad har du jobbat med tidigare på Essity?

Vi berättar om våra 5 koncept och användar-kraven vi fått fram kring återanvändbara inkontinensskydd i användarstudierna.

- Vilka utmaningar ser du i de olika koncepten?
- Vilket/a koncept tror du på mest? Varför?
- Hur tror du att användarna hade reagerat på dem?
- Vilka utmaningar ser du i användandet?
- Vilka fördelar ser du med dem jämfört varandra?
- Vad tror du skulle behövas för att Essity ska blir inspirerade /haka på tåget?

Appendix IX - Pugh matrix

ANVÄNDARUPPLEVELSE	VIKT	SVANEN	x vikt	ROSENBLADET	x vikt	SILUJETTEN	x vikt	FJÄRILEN	x vikt	SNÄCKKAN	x vikt	REFERENS
Discretion (not show)	4	-1	-4	1	4	0	0	-1	-4	2	8	0
Feel hygienic	4	-1	-4	-1	-4	0	0	0	0	-1	-4	0
Feel Leakage safe (large movement)	5	0	0	1	5	0	0	0	0	-1	-5	0
Feel Smell safe	4	-2	-8	-2	-8	-1	-4	-1	-4	-1	-4	0
Feel Environmentally friendly	5	2	10	1	5	2	10	2	10	2	10	0
Feel comfortable	4	0	0	2	8	1	4	0	0	1	4	0
Easy to handle - everyday	4	-1	-4	-1	-4	0	0	-1	-4	-1	-4	0
Easy to handle - hole experience	3	0	0	0	0	0	0	0	0	0	0	0
Keep skin healthy (dermatologically, dry, airflow)	5	1	5	1	5	1	5	1	5	-	0	0
Not rewet	4	1	4	1	4	0	0	0	0	-	0	0
Feel fresh	3	0	0	0	0	0	0	0	0	0	0	0
Feel dry against skin	3	1	3	1	3	0	0	0	0	1	3	0
Adaptable (placement)	1	0	0	0	0	2	2	0	0	2	2	0
Adaptable (abs)	1	2	2	2	2	0	0	0	0	0	0	0
Adoptable initial (intuitive)	3	-1	-3	0	0	-2	-6	0	0	-2	-6	0
Adoptable long term (intuitive)	3	1	3	1	3	2	6	1	3	1	3	0
Easy to keep context and user clean	4	2	8	1	4	1	4	1	4	1	4	0
Inspirational	4	1	4	1	4	1	4	4	4	2	8	0
TOTALT			16		31		25		14		19	

Appendix X - Evaluation Survey

Hej,

Nu är en stor del av studien klar och här kommer den sista delen där vi behöver din hjälp! Det är en enkät och den kommer ta ungefär 30-40 minuter att fylla i. Om du inte vill fylla i hela enkäten på en gång kan du pausa och sedan återgå till enkäten, dina tidigare svar kommer att sparas.

I enkäten kommer du få presenterat fem olika koncept på hur ett återanvändningsbart skydd skulle kunna vara och fungera i framtiden. Med återvändningsbart skydd menar vi ett skydd som går att använda mer än en gång. Föreställ dig att skyddet fungerar som beskrivet, även om du är skeptisk till om det verkligen skulle fungera. Till varje koncept kommer du få svara på några frågor. I slutet på enkäten kommer ytterligare några frågor som inte är kopplade till koncepten.

Tänk på att det är konceptuella skydd och bilderna är till för att hjälpa dig att enkelt kunna förstå koncepten snarare än att visa de former och färger som slutprodukterna skulle ha.

Tänk på att det är koncepten vi vill utvärdera och inte dig eller hur du svarar. Svara gärna så utförligt och ärligt som möjligt, vi är intresserade av att veta vad du tycker!

Om det är något du inte förstår så tveka inte att höra av dig till oss.

Anna: 0703-606342

Johanna: 0707-294978

Mail: annajohannaexjobb@gmail.com

Tack för att du deltar i studien, dina tankar och åsikter är av stort värde för oss. Nu kör vi!



Koncept SVANEN

Skyddet består av:

En absorbent som suger upp urin. Absorbenten är som en mjuk, tunn svamp/wettexduk.

Ett hölje där du lägger absorbenten i. Översidan av höljet är mjukt och håller sig torrt mot huden genom att urinen rinner igenom till absorbenten utan att fastna. Undersidan av höljet håller tätt och förhindrar att det läcker ut på trosorna.

Absorbenten och höljet är odörhämmande.

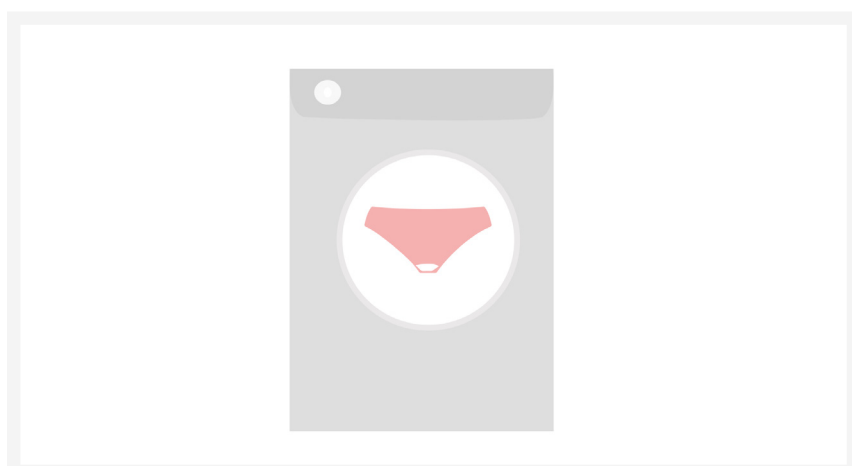
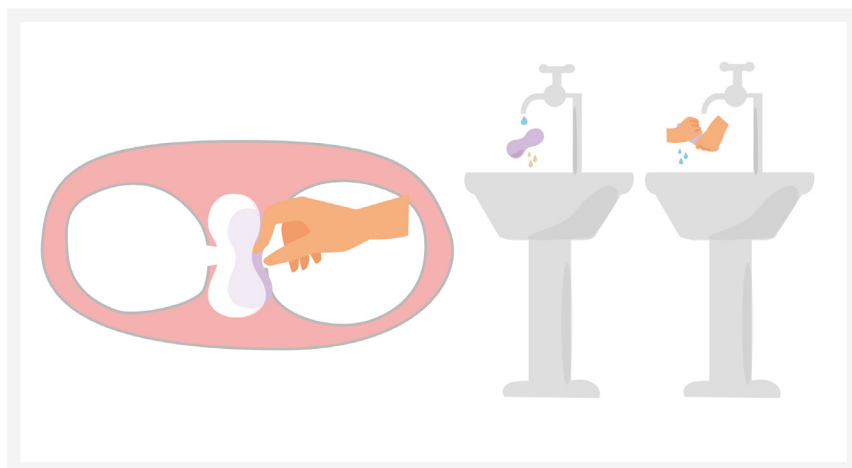
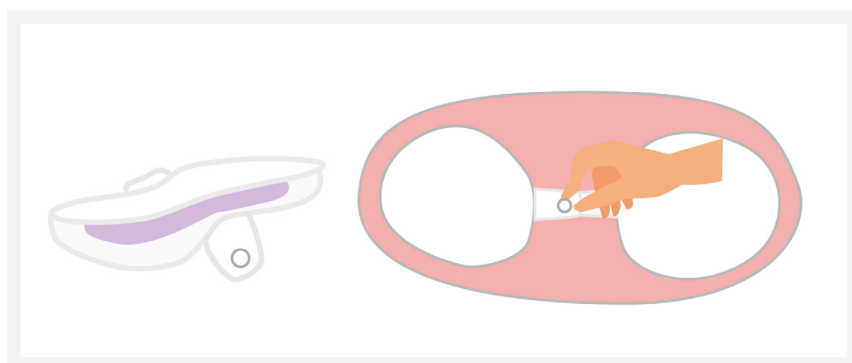
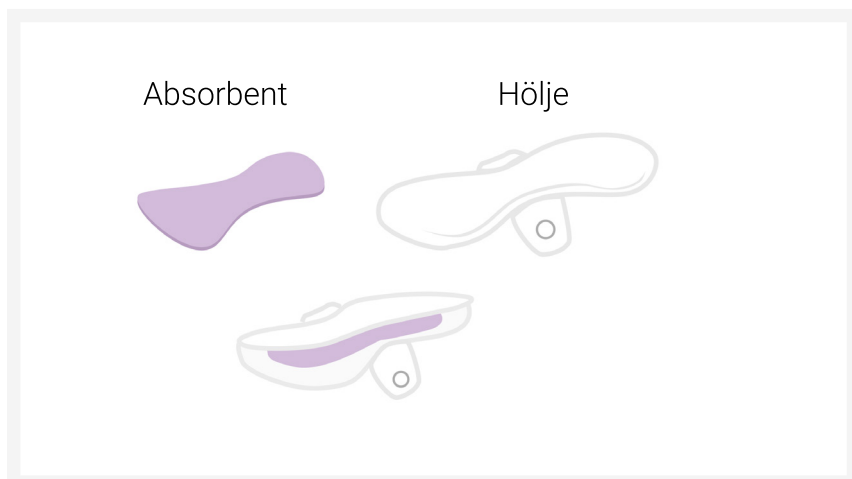
Så här fungerar det:

1. Du lägger i absorbenten i höljet och fäster hela bindan med en liten knapp runt dina egna trosor. Du stänger fickan som en zippåse på sidan. Höljet läcker inte när det är stängt.

2. När du är på toaletten kan du fräscha upp ditt skydd genom att ta ut absorbenten ur höljet och tvätta ur den med varmt vatten i handfatet. Sedan vrider du ur den och lägger tillbaka den i höljet igen, eftersom absorbenten är snabbtorkande.

Du kan enkelt se på absorbenten när den är ren då urinen färgar den i en klar färg och när urinen är urtvättad återgår den till sin ursprungliga färg igen.

3. Höljet tvättar du i tvättmaskin, antingen separat eller tillsammans med dina trosor.



Vad gillar du med "SVANEN" och vad gillar du inte? Varför?

Vad är dina tankar kring att ta ut och lägga in absorbenten inuti höljet som i en ficka och stänga som en zippåse? Ser du några svårigheter med det?

Markera det påstående som passar bäst om huruvida du hade velat använda "SVANEN" om den fanns och fungerade:

■
Hade absolut
inte velat
använda

■
Hade troligtvis
inte velat
använda

■
Kanske hade
velat använda

■
Hade velat
använda

■
Hade absolut
velat använda

Vad är anledningarna till att du svarar så?

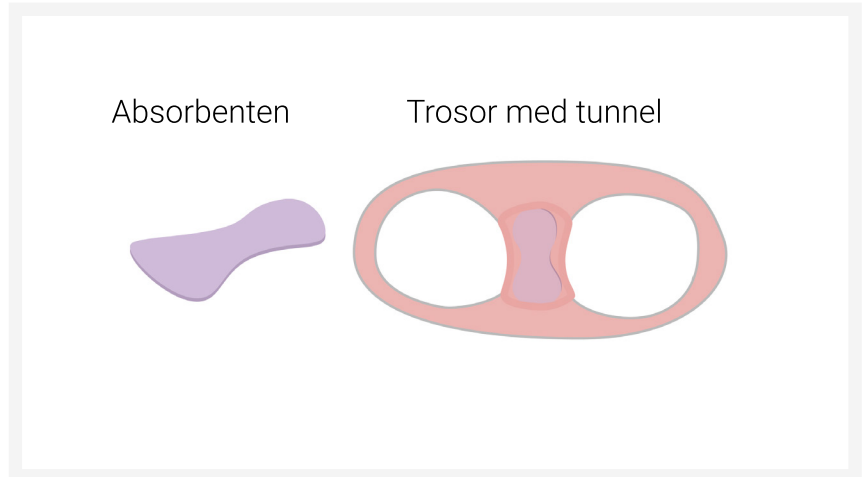
Koncept ROSENBLADET

Skyddet består av:

En absorbent som suger upp urin. Absorbenten är som en mjuk, tunn svamp/wettexduk.

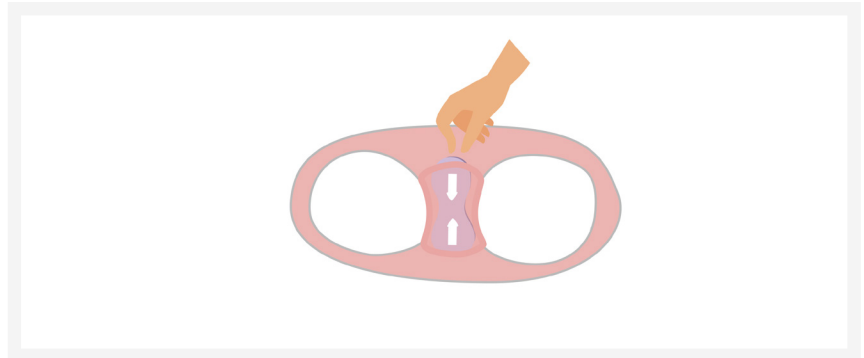
Ett par trosor med en insydd "tunnel" i grenen. Tunneln är mjuk och torr mot huden och släpper igenom urin utan att det fastnar. I tunneln lägger du absorbenten som suger upp urinen. Trosan har även ett lager längst ner som håller tätt och förhindrar att det läcker igenom.

Både absorbenten och tunneln är odörhämmande.

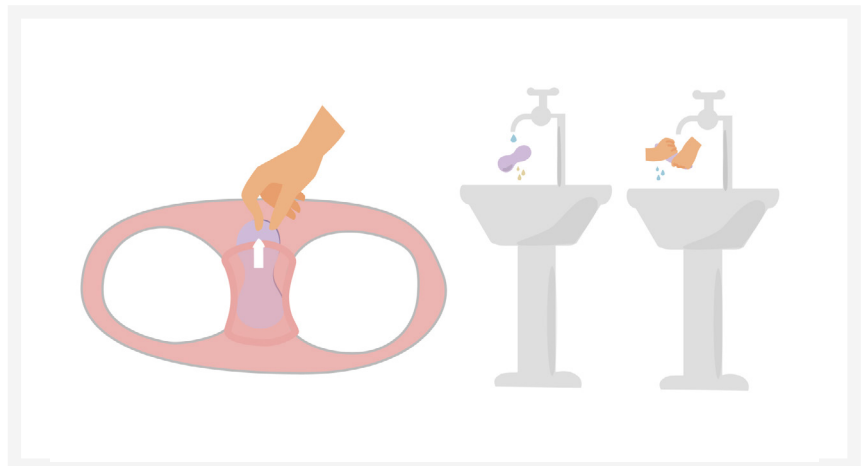


Så här fungerar det:

1. Du lägger i absorbenten i tunneln, bakifrån eller framifrån, på det sätt som du tycker är enklast. Tunneln är spänstig och töjbar vilket gör att absorbenten hålls på plats och är enkel att stoppa i.

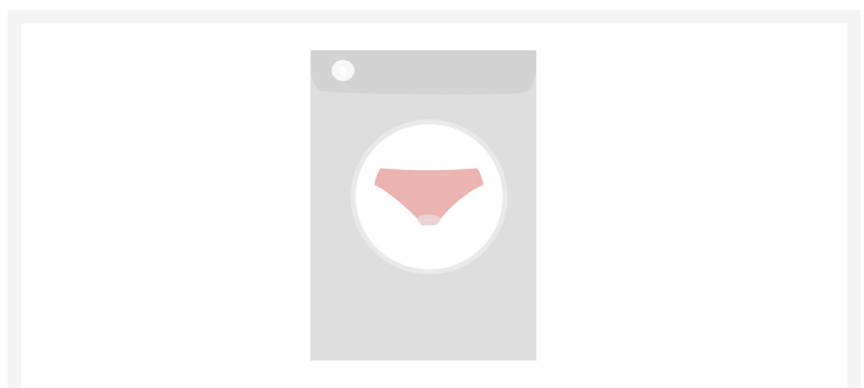


2. När du är på toaletten kan du fräscha upp ditt skydd genom att ta ut absorbenten ur tunneln och tvätta ur den med varmt vatten i handfatet. Sedan vrider du ur den och lägger tillbaka den i tunneln igen, eftersom absorbenten är snabbtorkande.



Du kan enkelt se på absorbenten när den är ren då urinen färgar den i en klar färg och när urinen är urtvättad återgår den till sin ursprungliga färg igen.

3. Trosan tvättar du precis som dina vanliga trosor i tvättmaskin, med eller utan absorbenten.



Vad gillar du med "ROSENBLADET" och vad gillar du inte? Varför?

Vad är dina tankar kring att sätta in absorbenten i en "tunnel"? Ser du några svårigheter med det?

Konceptet innebär att du inte längre har dina vanliga trosor, vad tänker du om det?

Markera det påstående som passar bäst om huruvida du hade velat använda "ROSENBLADET" om den fanns och fungerade:

■
Hade absolut
inte velat
använda

■
Hade troligtvis
inte velat
använda

■
Kanske hade
velat använda

■
Hade velat
använda

■
Hade absolut
velat använda

Vad är anledningarna till att du svarar så?

Koncept SILUETTEN

Skyddet består av:

En binda som absorberar urin och håller torrt mot huden och förhindrar att urinen läcker på undersidan. På undersidan sitter det kardborre.

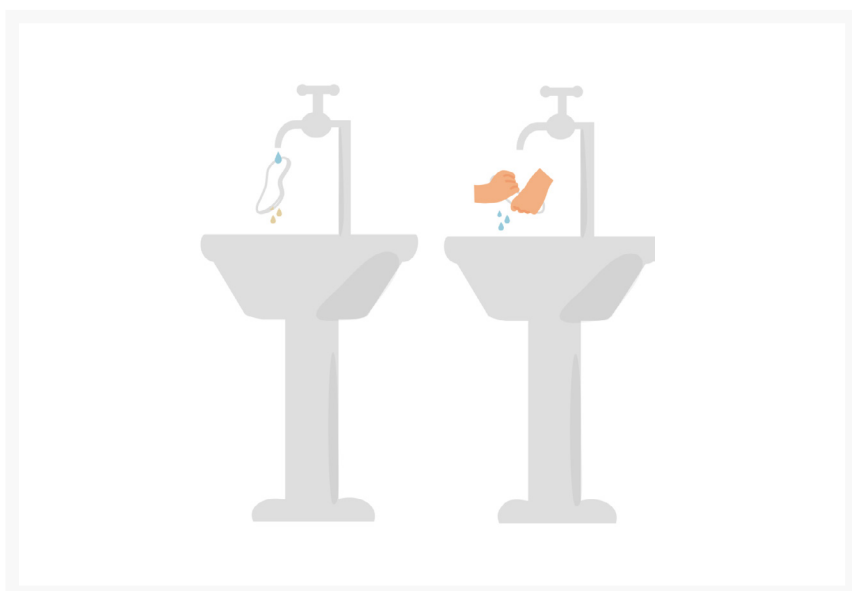
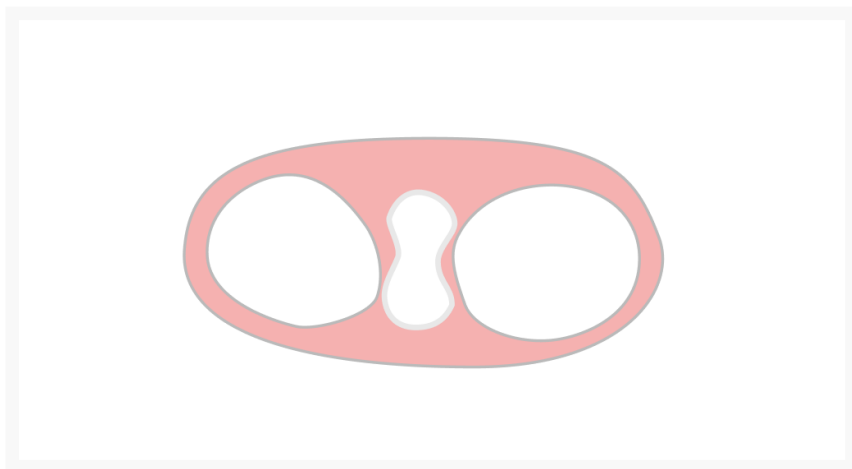
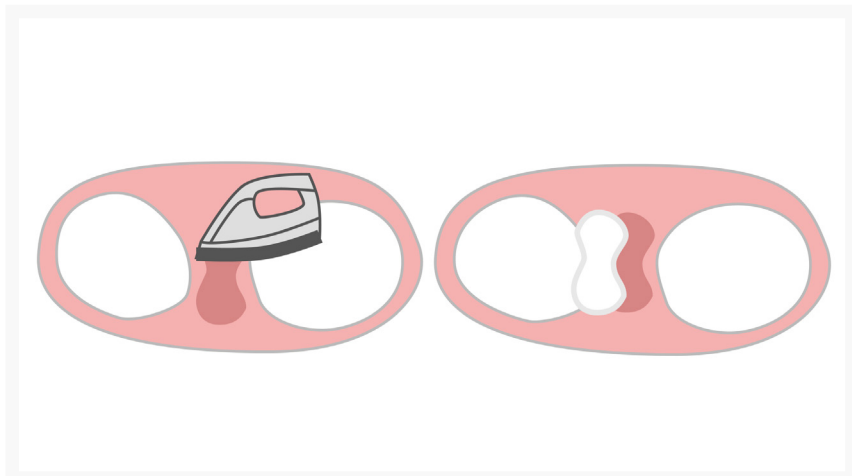
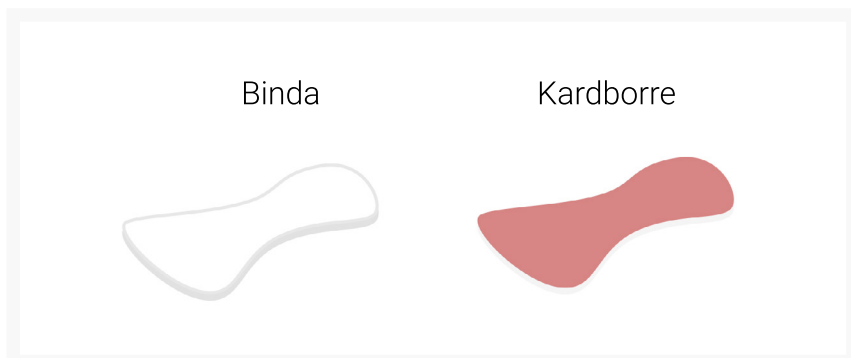
En kardborredel som är i samma form som bindan. Kardborredelen fästs på dina vanliga trosor genom att du stryker fast det med strykjärnet och det fastnar med ett lim som aktiveras av värmen. Kardborredelen sitter därefter fast permanent i trosan.

Det är den mjuka delen av kardborren som sitter på trosorna så den kommer inte förstöra andra kläder.

Så här fungerar det:

1. Du tar av och på bindan genom att sätta fast den på kardborren.

2. När du är på toaletten kan du fräscha upp ditt skydd genom att tvätta ur den med varmt vatten i handfatet. Sedan vrider du ur den och sätter tillbaka den, eftersom bindan är snabbtorkande.



Vad gillar du med "SILUETTEN" och vad gillar du inte? Varför?

Vad är dina tankar kring att fästa den med kardborre? Ser du några svårigheter med det?

Konceptet innebär att du modifierar dina egna trosor, vad tänker du om det?

Markera det påstående som passar bäst om huruvida du hade velat använda "SILUETTEN" om den fanns och fungerade:

Hade absolut inte velat använda

Hade troligtvis inte velat använda

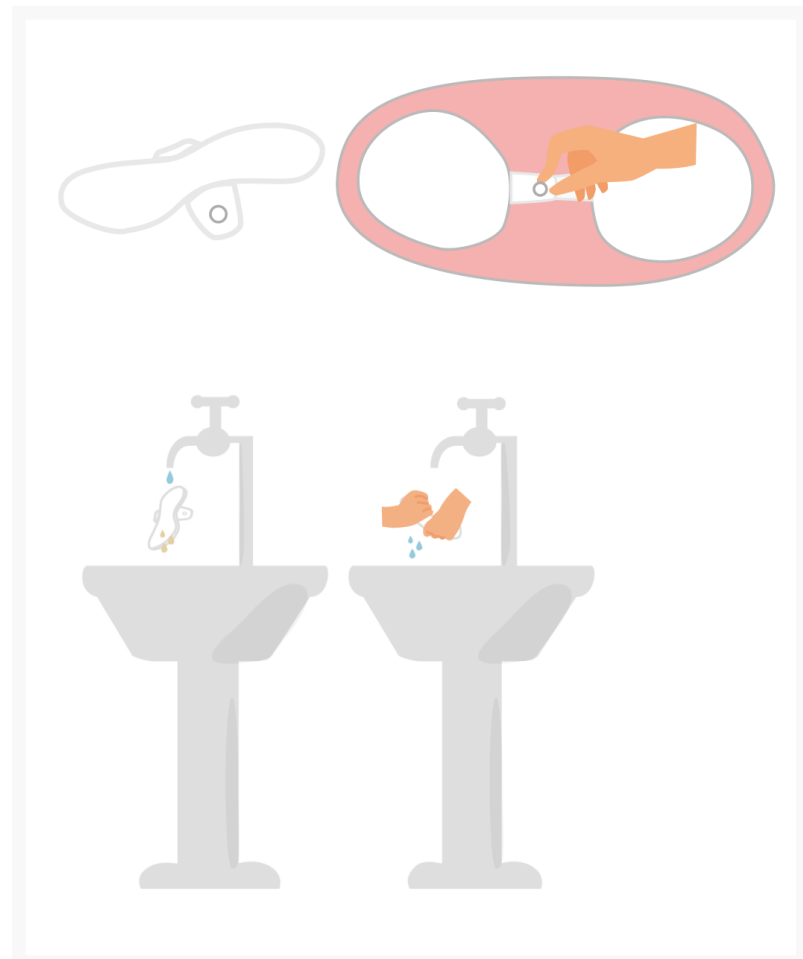
Kanske hade velat använda

Hade velat använda

Hade absolut velat använda

Vad är anledningarna till att du svarar så?

Om bindan istället skulle fästas med vingar med en knapp runt trosan och hela bindan (inklusive vingarna) tvättas i handfatet, hur skulle det vara? Hade du gillat det mer eller mindre än att fästa bindan med kardborreband? Varför?

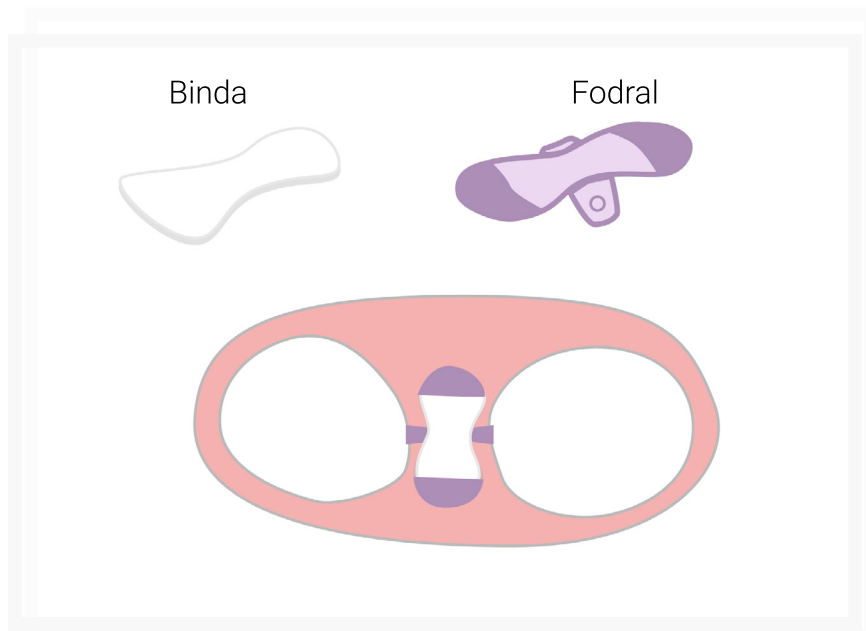


Koncept FJÄRILEN

Skyddet består av:

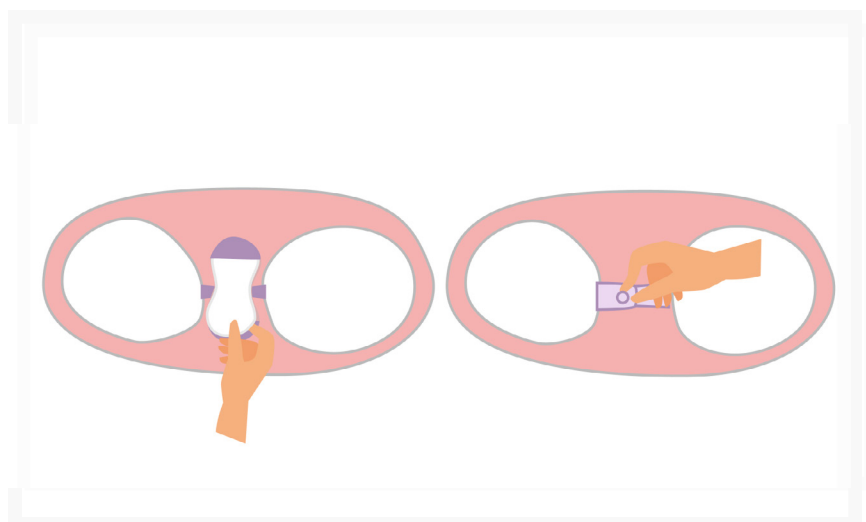
En binda som absorberar urin och håller torrt mot huden.

Ett fodral med två fickor, en fram och en bak. Fodralet håller tätt gentemot trosorna och förhindrar att urinen läcker igenom.



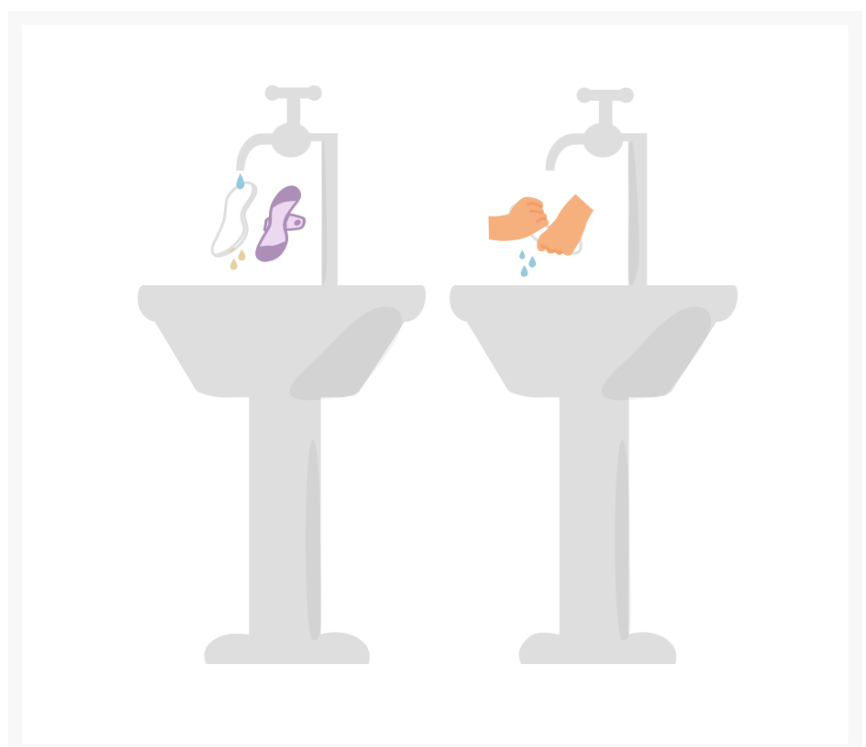
Så här fungerar det:

1. Du sätter fast bindan i fodralet genom att sätta in den i fickorna fram och bak. Fodralet fästs med en liten knapp runt dina egna trosor.



2. När du är på toaletten kan du fräscha upp bindan genom att tvätta ur den med varmt vatten i handfatet. Sedan vrider du ur den och sätter tillbaka den, eftersom bindan är snabbtorkande.

Fodralet kan också sköljas av och rengöras i handfatet, men tvättas mer sällan eftersom det inte kommer i direktkontakt med urinen. Fodralet torkar snabbt.



Vad gillar du med "FJÄRILEN" och vad gillar du inte? Varför?

Vad är dina tankar kring att bindan fästs i ett fodral? Ser du några svårigheter med det?

Markera det påstående som passar bäst om huruvida du hade velat använda "FJÄRILEN" om den fanns och fungerade:

■
Hade absolut
inte velat
använda

■
Hade troligtvis
inte velat
använda

■
Kanske hade
velat använda

■
Hade velat
använda

■
Hade absolut
velat använda

Vad är anledningarna till att du svarar så?

Koncept SNÄCKAN

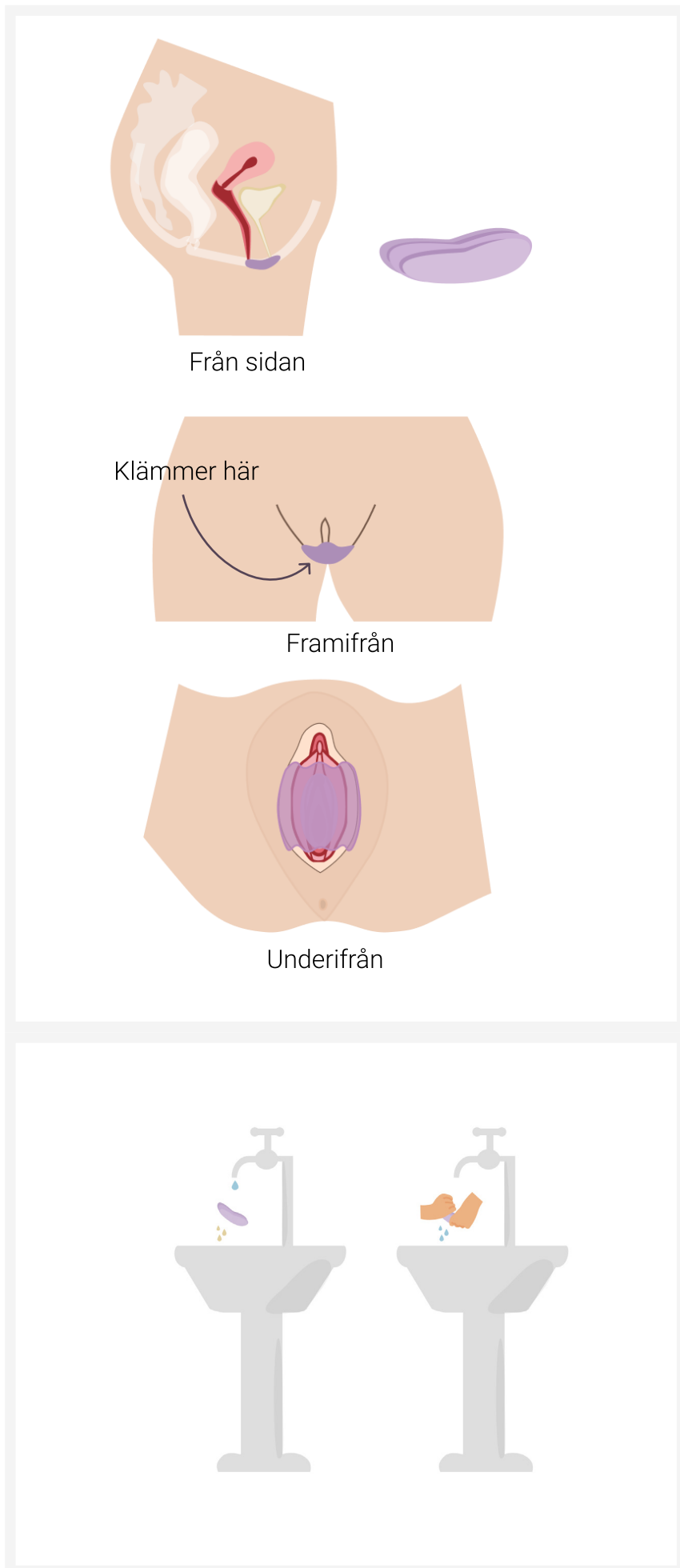
Skyddet består av:

Ett klämmande hölje som fästes på de yttre blygläpparna och förhindrar att urinen läcker igenom. I höljet sitter en mjuk absorberande svamp som suger upp urinen. Svampen sitter tätt mot vaginan men bidrar till en bra flora och ph-värde tack vare absorbentens egenskaper.

Så här fungerar det:

1. Du klämmer fast skyddet på dina yttre blygläppar - där du inte har så mycket känsel. Det är flexibelt och sitter fast även vid stora rörelser. Det gör inte ont när den sätts fast eller används.

2. När du är på toaletten kan du fräscha upp skyddet genom att tvätta ur den med varmt vatten i handfatet. Sedan vrider du ur den och kan sätta tillbaka den direkt, eftersom den är snabbtorkande.



Vad hade du gillat med "SNÄCKAN" och vad hade du inte gillat? Varför?

Vad är dina tankar kring att skyddet sitter fast i de yttre blygläpparna? Varför?

Vad är dina tankar kring att ha produkten så nära kroppen? Vilka fördelar och nackdelar ser du med det?

Vad hade du tyckt om du hade kunnat få produkten individanpassad efter ditt eget underliv? Varför?

Markera det påstående som passar bäst om huruvida du hade velat använda "SNÄCKAN" om den fanns och fungerade:

Hade absolut
inte velat
använda

Hade troligtvis
inte velat
använda

Kanske hade
velat använda

Hade velat
använda

Hade absolut
velat använda

Vad är anledningarna till att du svarar så?

Vilket koncept gillar du mest?

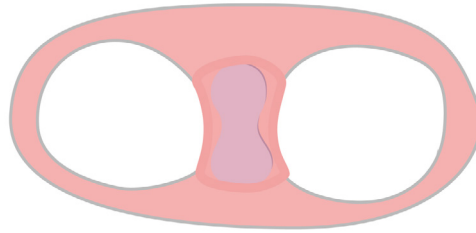
Markera det/de koncept du gillar mest? (välj max 2)

■ SVANEN



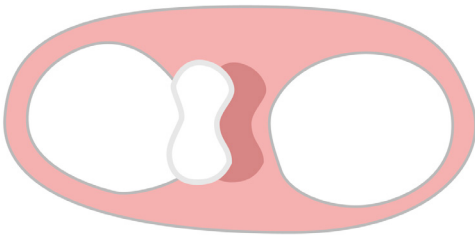
En absorberent som sätts i ett hölje och stängs med ett ziplås. Höljet rengörs i maskinen och den absorberande delen rengörs i handfatet.

■ ROSENBLADET



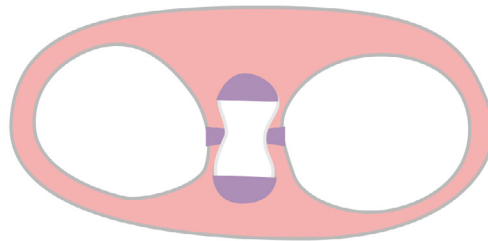
Färdigsyddas trosor med en tunnel där du lägger i en absorberande del. Trosan tvättas i maskin, den absorberande delen tvättas i handfatet.

■ SILUETTEN



En binda som fästs på dina egna trosor och rengörs i handfatet. Bindan fästs på trosan med karborre eller knappar runt trosan.

■ FJÄRILEN



Ett fodral med två fickor som fästs runt trosan. I fodralet läggs en binda. Bindan rengörs i handfatet flera gånger per dag och fodralet mer sällan.

■ SNÄCKAN



Ett klämmande hölje som fästs på de yttre blygläpparna. I höljet ligger en absorberent. Hela skyddet tvättas i handfatet och torkar snabbt.

Vad är anledningarna till att du svarar så?

Vilket koncept gillar du mest?

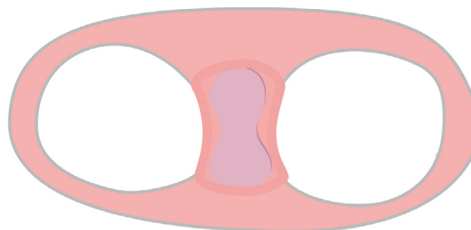
Markera det/de koncept du gillar minst? (välj max 2)

■ SVANEN



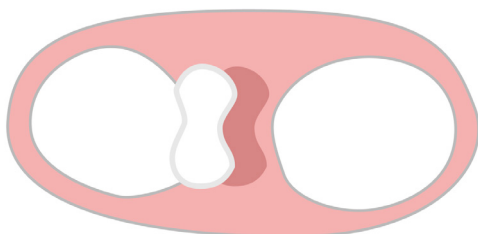
En absorbent som sätts i ett hölje och stängs med ett ziplås. Höljet rengörs i maskinen och den absorberande delen rengörs i handfatet.

■ ROSENBLADET



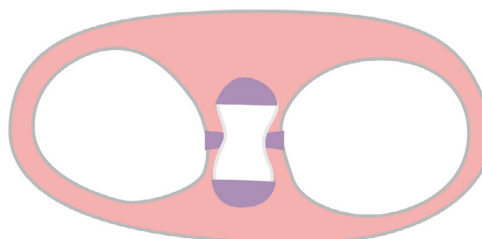
Färdigsydd trosor med en tunnel där du lägger i en absorberande del. Trosan tvättas i maskin, den absorberande delen tvättas i handfatet.

■ SILUETTEN



En binda som fästs på dina egna trosor och rengörs i handfatet. Bindan fästs på trosan med karborre eller knappar runt trosan.

■ FJÄRILEN



Ett fodral med två fickor som fästes runt trosan. I fodralet läggs en binda. Bindan rengörs i handfatet flera gånger per dag och fodralet mer sällan.

■ SNÄCKAN



Ett klämmande hölje som fästs på de yttre blygläpparna. I höljet ligger en absorbent. Hela skyddet tvättas i handfatet och torkar snabbt.

Vad är anledningarna till att du svarar så?

Vad tycker du om koncepten jämfört med de skydd du använder idag? Är de bättre eller sämre? Varför?

Hade du velat ha något av skydden vid något speciellt tillfälle, t.ex. när du tränar eller går på fest? Varför?

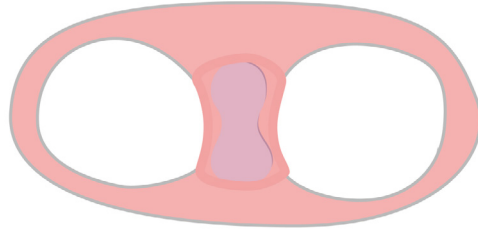
Vilket koncept gillar du mest?

Markera det/de koncept du gillar mest? (välj max 2)

■ SVANEN

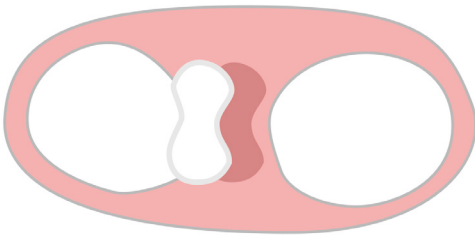


■ ROSENBLADET



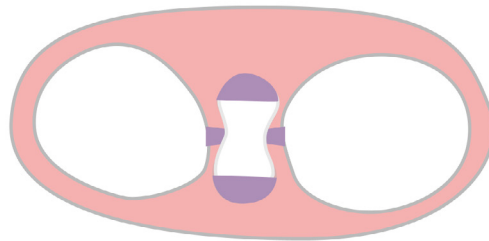
Färdigsyddas trosor med en tunnel där du lägger i en absorberande del. Trosan tvättas i maskin, den absorberande delen tvättas i handfatet.

■ SILUETTEN



En binda som fästs på dina egna trosor och rengörs i handfatet. Bindan fästs på trosan med karborre eller knappar runt trosan.

■ FJÄRILEN



Ett fodral med två fickor som fästs runt trosan. I fodralet läggs en binda. Bindan rengörs i handfatet flera gånger per dag och fodralet mer sällan.

■ SNÄCKAN



Ett klämmande hölje som fästs på de yttre blygläpparna. I höljet ligger en absorbent. Hela skyddet tvättas i handfatet och torkar snabbt.

Vad är anledningarna till att du svarar så?

Service

Vad hade du tyckt om att få en ny absorbent eller nytt skydd med jämna mellanrum genom att få hemskickat en (eller flera) på brevlådan varje månad? Du hade kunnat skicka tillbaka dina använda absorbenter eller skydd och få rabatt för att dem återvinns. De skickas i ett tätt luktfritt och säkert kuvert och du kan skicka tillbaka dina använda i samma förfrankerade kuvert.

Är det en service du hade velat ta del av? Hade du velat skicka tillbaka din använda?

Hade du velat kunna välja mellan olika färger, tryck och dofter och designa ditt egna personliga skydd?

Förvaring

Till det återanvändbara skyddet skulle det eventuellt behövas en förvaring för att bära med dig det när du inte använder det.

Är det något du hade velat ha?

Vilken/vilka typer av förvaring gillar du mest av förslagen nedan? Markera den/de du gillar mest (välj max 2)!



Annan: Beskriv

Vad gillar du med just den/de du markerat?

Skulle du vilja ha en förvaring med plats för flera absorbenter? (om du någon gång inte vill eller kan tvätta ur den på toaletten)

Om du skulle ha flera absorbenter skulle du vilja ha olika absorberingsförmåga på dem då? Varför?

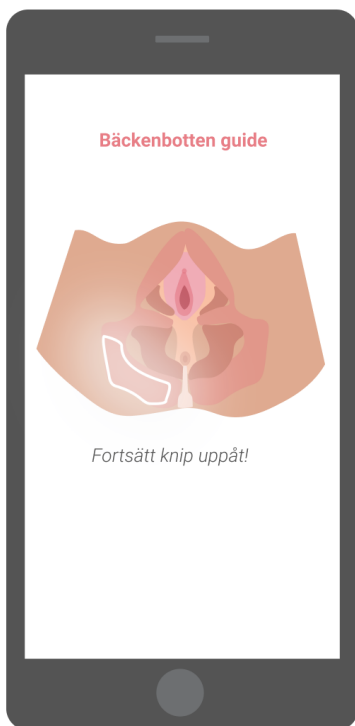
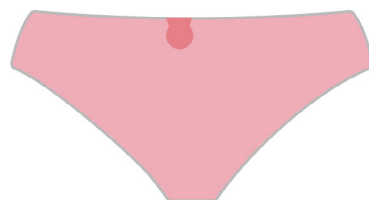
Tillhörande tjänster och produkter

Tänk dig att det fanns en app med en tillhörande liten sensor som sätts fast som en klämma på trosorna som hjälper dig med bäckenbottenträning. Appen hjälper dig med både påminnelser och guiding. Du hade även kunnat boka in bäckenbottenyoga och träningspass tillsammans med andra kvinnor på ett gym. Du kan också få kontakt med andra kvinnor som har urinläckage och tipsa varandra och dela med er av erfarenheter.

Är det en app du hade velat ha? Varför?

Hade du velat att appen skulle hjälpa dig med något mer? Vad i så fall?

Sensor på trosan



Tillhörande tjänster och produkter

Tänk dig att det skulle finnas en systerskapsbutik. I butiken kan du köpa produkter för allt för kvinnokroppen så som mens, urinläckage, bäckenbottenträning, sex, graviditet, underlivshälsa och underkläder. Du kan få personlig rådgivning och ta del av information, tips och seminarium och träffa andra kvinnor.

Är det något du skulle vilja besöka? Varför?

Har du något mer du skulle vilja att butiken skulle erbjuda? Vad isåfall?



Har du några övriga kommentarer skriv här:

Stort tack för ditt deltagande! Nu är den sista delen av studien avklarad. Vi tycker att det har varit väldigt roligt och givande att få ta del av dina tankar under studiens gång!

Bästa hälsningar, Anna & Johanna



Appendix XI - Compiled answers from evaluation

Svanen

Positive:

- Easy to clean absorbent
- Easy with buttons
- Convenient to use
- Use several times
- Similar to own idea
- Good for the environment
- New idea

Negative:

- The button can chafe
- Not discrete
- Experienced as clumsy
- Troublesome to use
- Messy to rinse absorbent
- Doesn't feel fresh
- Insecure about how much leakage it can handle
- Doesn't fit in her life

About zip:

- The zip can chafe
- Doesn't feel hygienic
- Feels like it would be thick
- Good
- No
- Worried for sensitive skin
- Worried about hand motoric

Score:

- Would absolutely not use 1
- Would probably not use 1
- Would maybe use 4
- Would want to use 4
- Would absolutely want to use 2

Siluetten (later called skuggan)

Positive:

Velcro feel safe to keep pad in place

Easy to place

Convenient with velcro

Similar to reference product

Great! Genius!

Use own panties

“Det låter så enkelt-genialiskt! Det låter enklare att applicera dessa skydd i befintlig trosgarderob än skaffa helt ny. Det borde vara lätt att förnya om man slitet ut/växer ur..”

Negative:

Insecure if it would be safe

Do not like that it needs to be iron on

Not practical

Need to be washed

To much work before initial use

Inconvenient. Do not like velcro

The panties are destroyed

Not possible to adjust placement of pad

About velcro:

Easy & Practical

Worried it wont attach enough

Hard to use

Worries about long term use and tearing

If no need to have protection there would be velcro in the panties and directly to the vagina.

About adjusting their own panties:

Better then buying new ones

Good to own style and use my own

Fun to DIY

Do not like it

Score:

Would absolutely not use 3

Would probably not use 1

Would maybe use 4

Would want to use 2

Would absolutly want to use 2

About Siluetten with attachment with buttons:

More risk of not staying in place

Velcro more practical

More risk of chafe

Less beforehand work

Buttons and velcro could be good

Would be more nice then velcro

Rosenbladet

Positive:

It will keep in place
Easy to handle
Similar to own idea
Seemse easier to use then Svanen
Less steps in handeling
Work nicely
Seemse practical
Not so visual
Discreet

Negative:

Worries that the absorbent wont take so up larger amount of leakage
Worries it might shafe
Seems expensive
Do not want to change from their own panties
It requires hands with good hand motoric
Not enviromentally friendly to change panties wordrobe

About tunnel:

Semse practical
Worries about that it will be hard to put in right, specially when it is a little wet
Seemse like it could be messy

Score:

Would absolutly not use 1
Would probably not use 2
Would maybe use 7
Would want to use 1
Would absolutly want to use 1

Fjärilen

Positive:

Easy handling with absorbent but not to have the shell in place with buttons
Worries that the pad won't stay in place
Worries that the case won't stay in place
More practical
Two things to much to handle
Similar to pads they use today

Negative:

Risk that the panties will get wet
Unconvenient with buttons and case
More steps in the handling
Needs good hand motoric
Worries about leakage on the sides

About case:

Simple to put in but risk to get messy
Unconvenient
Easy to use
Worries about it not staying in place
It needs to not chafe

Score:

Would absolutly not use 1
Would probably not use 4
Would maybe use 4
Would want to use 3
Would absolutly want to use

Snäckan

Positive:

Discreet and small

Can use small panties without the product showing

If it is convenient and comfortable there is no problem to having something close to the body

Negative:

Worried about how it would be to attach to labials

Doesn't seem comfortable to attach to interlabials

Hard to attach it in the right place. Worried that it will chafe

Don't like to have something that close to the body

Don't like the idea at all

Far from mental model of a inco-product

About customization:

Good because we all look different

Would not like something customized

Bigger chance that it will work as wished if its suited for own body

Score:

Would absolutly not use 6

Would probably not use 3

Would maybe use 1

Would want to use 1

Would absolutly want to use 1

Which concepts the participants preferred most and least:

Prefer most:

Svanen 4

Rosenbladet 1

Siluetten 4

Fjärilen 3

Snäckan 1

Most affecting factors: Easy to handling, price and if it possible to custimized

Prefer least:

Svanen

Rosenbladet 2

Siluetten 1

Fjärilen 2

Snäckan 9

Most affecting factors: To attach so close to body and price

Compared to disposable pads:

Positive:

Environmentally friendly
Absorbent better
Good to be Reusable

Negative:

Unconvenient compared to disposable
More energy on handling

Different occasions:

Not really - same but nice to adapt the absorbent

To clean the protection in the sink:

Unfresh because you do not pee in the sink?
Good for environment
Like that it becomes fresh again
Maybe would be unfresh
Need to have access to sink
Risk of it being messy
No worries, simple and quick!
Easy, discreet and convenient to do it myself, would make me feel more independent!
Many steps in the handling
Good if there is water
Could be hard if I am out in the nature
No problems with it but would maybe not want to wash it at all kinds of toilets.

How important is it to be able to fresh the protection up during the day:

Not at all important
Not important 3
Somewhat important 1
Important 2
Very important 4

It depends on if you have leaked a lot so maybe it is full in the absorbent when you refresh it

If there is only a little leak, it will last during the day

You don't want it to smell

It needs to be fresh otherwise it will not work

I'd rather change.

Afraid that it will smell and sting if there is urine that may lie on the skin

To feel safe, secure and independent provides a security.

You do not want to go a whole day and smell urine it feels fresh

So that you feel naughty

Hopefully it will be dry.

What type of bring along case they would prefer:

(The numbers show how many that would like the connected case)

1



2



3



3



2



2



2



5



Own suggestion: a selfsealing case

Important factors for a bring along case:
Small, discreet, safe and good looking

The change of color or know if it is clean or not:

They like it! They like to know if it is clean or not. Less worries more safety

About a drying case:

A lot to carry with you

More steps in the handling

A good idea until the absorbents are fully developed

Where they would like information about how the product work:

On the package: 10

On website: 3

On the inside of the case: 4

Booklet: 0

Self-instructing: 4

Other: 1 from district nurse and 1 from tv commercials

About cleaning the product/absorbent through boiling it:

Most of them don't like the thought, feels inconvenient

Some of them would rather wash it in the washing machine at 90 degrees

About the service:

Like premenstruation and that it comes the mailbox

Good if it could fit personal need.

Many did not want to send back their used one, especially if the mailbox is far away but a few did.

" Like to send it back and be a part of the circular loop."

About if they would like to be able to customize their protection (smell, colour, pattern)

Some would like it

It is not necessary

Some would not like it

About if they would like a case with place for several absorbents:

Almost everybody would like that

About if they would like to have absorbents in different sizes:

Most of them would like that because of varying leakage

Some does think that it is necessary

About the app:

No I probably hadn't used it

Yes to be able to share each other's experience

Doubtful to clamp on the panty

maybe yes, maybe not

Perhaps.

I strongly dislike apps, know that this is the future but today there are sooo many apps that you can easily get app tired o it can also cause stress. I try to consciously reduce my mobile usage, remove unnecessary button sounds, notification sounds, etc.

Yes! Sisterhood! It is an incredible strength in helping and supporting each other.

Maybe with the reminder to do pelvic floor exercises but not having contact with others it feels strange to me I would rather talk to my girlfriends

no thanks

It is well thought out and located in time. But I'm not prepared to do that.

Kind of not super into an app.

About sisterhood store

Yes it sounds interesting

Perhaps! Convenient to have everything in the same place

I would visit and get advice

Honestly, my answer is no, I can't handle it

Yes. It becomes a feeling of convenience.

Yes absolutely. now I have reduced my shopping and rarely visit physical stores, partly because of time and even convenience. shop a lot more online or most online really. gladly a sisterhood online store :-)

Yes Yes! There is so much scam around the women's body, how we push down and also depress each other .. if we upgrade our view of ourselves, our bodies and each other fit into a newer healthier era.

No, nothing that interests me instead makes me feel odd and strange instead of the other way around

No. It's too personal

I would like to visit. Being able to ask and get advice when shopping is good

Online is better! Klimateriet råð

Other things the store could have?

Bras or swimwear for women

Klimakteriepreparat

Lectures seminars

A safe room

Appendix XII - General challenges for all five concepts

Challenges for all concepts

- Before the absorbent and protection are rinsed in the sink it contains urine and it might feel unfresh to handle it because urine is something that is seen as not very hygienic and fresh.
- Make the user feel as fresh as when they get a new single-use protection after handling and cleaning the reusable protection.
- To fresh up the protections and clean or absorbents requires access to a private bathroom with sink.
- Make it possible to fresh up the protection in different kinds of bathrooms.
- Make the protections intuitive to use.
- Make it work for all body forms and sizes either by being available in different sizes or being adaptable.
- Make the absorbent or protection easy to wring out, it can't be too small because it becomes fiddly.
- Make the users buy and try the protections in the first place, because it is new type of products.
- Decrease the risk of wetting the bathroom and clothes with urine or water.
- Make the user feel sure the bathroom is totally clean when they leave it and nobody can notice that they have refreshed their protection.
- Two or more absorbent or protections to change between could be needed if there is no access to a sink to clean them, however, this would require some type of storage.
- When the absorbent or protection is going to be rinsed in the sink the user might need to put it somewhere when putting on and off panties and pants because it's hard to hold it at the same time which can feel unfresh and inconvenient. However, the same issue happens for people using a menstrual cup and according to the research this is a problem easy to overcome by going to the sink with panties down, when possible cleaning it while sitting on the toilet, changing to a new one or putting it on some tissues. (Appendix X)
- Create a business model which makes a reusable protection beneficial to both the customers and TENA.
- Before the materials are fully developed a solution could be drying case which the absorbent or protection is wrung out in. If so, it would mean one more thing to carry with you as well as one more step in the handling, which is not desired since they want it to be as easy as possible to use.

Material challenges for all concepts

- The topsheet needs to let the urine pass through quickly to avoid leakages, for the topsheet to be clean and fresh against the skin.
- The topsheet needs to protect from rewet during usage to keep it dry against the skin. For some protections the topsheet is joined to other parts in the protection and for some is it a separate.
- The material in the protections that are rinsed in the sink needs to have the property to absorb urine (hydrophilic) and at the same time be easy to wring out to make the material dry (hydrophobic). These properties are contradictory which puts high requirements on the material.
- Prevent other body liquids such as discharges which often has higher viscosity than urine to get stuck into the topsheet because it can make the user feel unfresh.
- Make the protection or absorbent dry quickly for it to be able to use directly again, otherwise a new protection or absorbent is needed which requires storage for it and an extra step in the handling.
- Be odour repressive.

Appendix XIII - Challenges connected to each concept

Challenges for Svanen

- Make the user feel that the protection is fresh even if it's not possible to freshen up the case in the sink.
- Make the user easily understand how to put in absorbent in the pocket.
- Make the zip to not chafe and feel comfortable against skin.
- Make the buttons feel discrete and so thin so they are not visible from outside.
- Assure the user that the zip is closed correctly.
- Make it easy to open and close the zip - it needs to be small to be discrete and comfortable but still big enough to be able to handle.
- Make the protection to fit all body sizes.
- Make the absorbent be "stiff" enough to be easy to put in the pocket but soft enough to be comfortable when wearing.
- Make the user know when it is time to refresh or change absorbent through the pocket.
- Decrease the risk of wetting the panties or surroundings when pulling out the absorbent.

Challenges for Fjärilen

- Make it be experienced as thin and discrete even though it consists of several layers.
- Make case become totally dry when rinsed because it's put directly on the panties.
- Make case be experienced as clean and fresh because it's not supposed to be cleaned as often as the pad.
- Make the case stay in place and the pad to stay in place in the case.
- The case needs to be in a material that is kind to the skin and doesn't cause chafe.

Challenges for Snäckan

- Make it stick and make the user feel safe that it sticks even when doing big movements and different activities (ex. biking).
- Make it feel comfortable when the user sits, lays down or moves.
- Make it be comfortable both when used for a short and long period of time.
- Make it stuck well over time.
- Investigate what happens if the user makes movements which could make the sponge be squeezed out, for ex. running.
- Make it be and feel breathable and healthy for the vulva and skin.
- Make it absorb enough liquid on a limited and quite small area.
- Make it feel safe that it doesn't leak.
- Make it fit or be adaptable to all vagina types
- Make the form adapted to cover the urine hole not vagina.
- Make it not get stuck in pubic hair and to be as leakproof with all kinds and length of pubic hair.
- Make the absorbent easy to wring out even if it's small.
- Make the user not forget to take the protection of before going to pee otherwise she risk dropping it into the toilet.
- Make women to initially try it even if it's very far away from the mental model for their current protection.
- Make it safe but still keep the discreteness of it.

Materials challenges for Snäckan

- Liquids need to be directed in to the center of absorbent.
- The outer part of absorbent needs to create a good environment for the vagina both in PH value and breathability in order to be used for a longer period of time.
- The sponge needs to have a healthy humidity for the vagina. It's probably best to not be all dry.
- Sponge should dry when it wrings out properly after 10 seconds.
- The backside of the shell needs to be breathable but still be leakage proof.
- Liquids needs to not get stuck in the shell and it should be dry after rinsing it.
- Absorbent should absorb 15 ml of urine at the same time and as quickly as the reference products.
- Should have capability to absorb two times 15 ml during 4 hours without wash.
- The sides on the shell needs to climb enough but with an even pressure to make it stick but not so it irritates the skin or hurt.
- The absorbent needs to keep be odour repressive for 5 boilings and 90 sink washes.
- Absorbent should be as odour repressive as the reference products.

Challenges for Rosenbladet

- Make the topsheet/tunnel be and feel fresh even if you can not fresh it up during day.
- Making the users feel that they has enough options of panty models even when they can't use their own ones.
- Make the initial purchase cheap enough for the users to purchase.
- Make it easy to put in the absorbent even when it is wet and softer.
- Make the absorbent stiff enough to easy be put in the tunnel but soft enough to be comfortable when wearing.
- Make the absorbent to stay in place inside the tunnel both to avoid leakage and make users feel assured that the absorbent stays in place.
- Decrease the risk of the user wetting their panties when the user pull out and in the absorbent.
- Make the user know they need to change if they can't feel that the absorbent is wet through the tunnel.
- Make it environmentally beneficial even if the adsorbents is changed every month.

Materials challenges for Rosenbladet

- Liquids needs be passed through quickly in the topsheet/tunnel to avoid leakages.
- Topsheet/tunnel can't rewet.
- Topsheet/tunnel should always be experienced as dry.
- Topsheet/tunnel needs to feel soft and supporting a good environment for vagina.
- Topsheet/tunnel needs to be safe for leakage back and forth.
- Topsheet/tunnel needs to be flexible and elastic enough to make it easy to put in absorbent.
- Absorbent needs to be stiff enough to be easy to place in tunnel.
- Absorbent should dry when it is wrings out properly after 10 seconds.
- Absorbent should absorb 15 ml of urine at the same time as quickly as the reference products.
- Should have capability to absorb three times 15ml during 4 hours without wash.
- Backsheet should be leakage proof and breathable
- Absorbent should be as odour repressive as the reference products.
- Topsheet/tunnel need to stay odour repressive for 100 machine washes.
- Absorbent need to stay odour repressive for 30 sink washes (3 x 10 days).

Challenges for Skuggan

- Guide on how to attach the velcro to the panties to fit their body.
- The velcro makes the pad feel stiff when squeezing/wringing out the pad.
- The velcro should only be in found in the middle part of the pad to make sure it doesn't risk to chafe the skin in the groins.
- Make the pad feel dry, both against the skin and for the user to feel confident that the washed pad won't wet their panties.
- The pad needs to be possible to adjust after gluing on the velcro, without the velcro risking to chafe the skin.
- Make the user feel that they can keep using their own panites with a discrete protection rather than destroying their own panties.
- To not make the velcro or the pubic hair getting stuck in the velcro make it feel uncomfortable when wearing the panties without the pad. This was tested and concluded as good for a short while but not a hole day. A solution to it could be the piece of fabric mention above.
- To make it possible for the user to remove the velcro strip if she wish but not make it lose grip if she does not.
- Material challenges for Skuggan
- The topsheet needs to let the urine through quickly for the topsheet to be clean and fresh against the skin.
- The topsheet needs to protect from rewet during usage to keep it dry against the skin.
- Topsheet needs to feel soft and support a healthy and antibacterial environment for vagina.
- Pad should dry within 10 seconds after it is rinsed and wrung out to be able to use the protection directly again.
- Absorbent should absorb 15 ml of urine at the same time as quickly as the reference products.
- Should have capability to absorb three times 15 ml during 4 hours without wash.
- Backsheet should be leakage proof and breathable.
- Should be as odour repressive as the reference products.
- Needs to stay odour repressive for 4 machine washes and 30 sink washes.
- The velcro should not get stuck in clothes, both when using the product and washing it in the washing machine.
- The velcro needs to be able to clean for no dirt to get stuck in it.