

# Care for clothing – care for the planet

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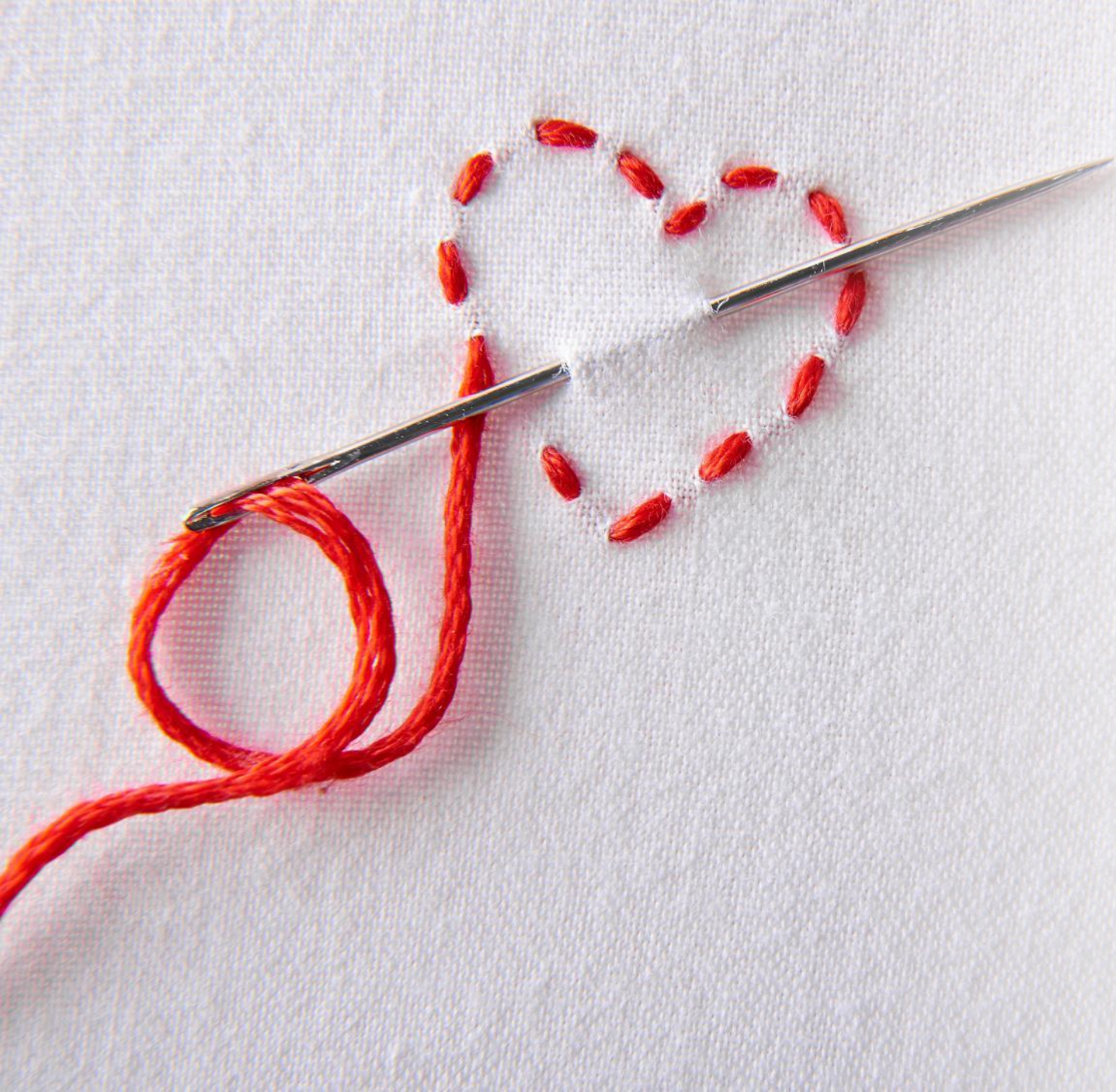
<https://lasting.world/>

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# Structure

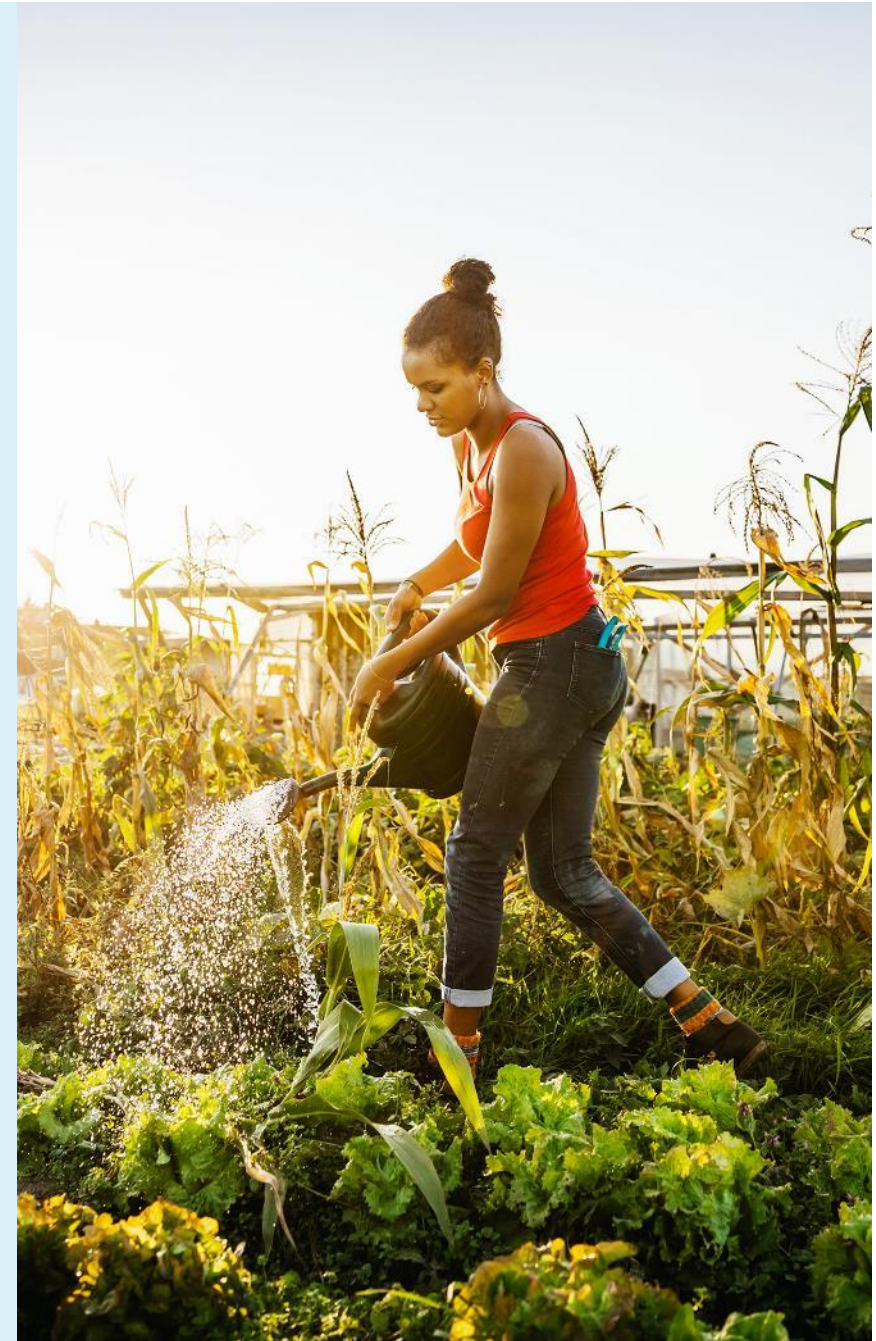
1. Why care?
2. Mindful use
3. Keeping clean
4. Spread of microplastics
5. Repair and refresh
6. Consumer rights
7. Slowing the cycle



# Why care?

- Care includes activities to “maintain, continue, and repair our ‘world’ so that we can live in it as well as possible” and impacts how we think about living sustainably.
- We can care for other people, the environment, and the spaces around us, as well as materials and objects such as clothing.
- Caring for your belongings is a key to keeping them in good condition but it requires skills, tools, and determination.

Sources: Fisher & Tront 1990, Godin 2022, Godin & Langlois 2021, Eckermann et al., 2018





# Clothing care

- Care of clothing encompasses various practices such as how we touch, wear, store, and hang up our clothes and how we air, wash, repair, and assess them.
- Clothing is used to show care, for example when dressing children, but also when we select clothing to safeguard ourselves and our bodies.
- In working towards more sustainable clothing consumption, we need to buy fewer clothes and use what we have more. This requires more care - both understood concretely as washing and repair, but also in a wider sense that we appreciate and thus also "care for clothes" we have.

# Clothing care considerations in all consumption stages



## Planning

- Need
- Selection



## Acquisition

- Channel
- Economy



## Use

- Suitability
- Wear



## Maintenance

- Cleaning
- Repair



## Disposal

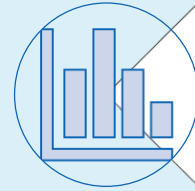
- Timing
- Destination



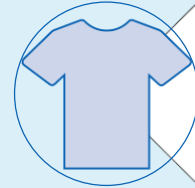
# Sources

## Ongoing research projects

- **Lasting** - Sustainable prosperity through product durability
- **Wasted textiles** - Reduced synthetic textile waste through the development of resource-efficient value chains. Includes PhD by Anna Schytte Sigaard "Want not, waste not"
- **Change** - Environmental systems shift in clothing consumption
- **Reduce** - Rethinking everyday plastics
- Book chapter: Haugsrud, Ingrid, Klepp, Ingun Grimstad & Laitala, Kirsi (In press). **Clothing Care**. In C. E. Henninger, et al., (Eds.), *Handbook on Sustainability in Fashion*. Springer.



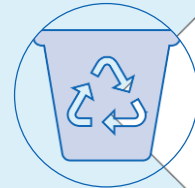
Consumer surveys



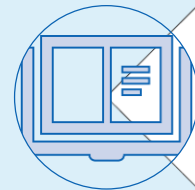
Wardrobe studies



Focus group interviews



Textile waste audits



Literature reviews



# Care in acquisition

1. Consider needs – possible to use something you already have?
2. Borrow or rent?
3. Second-hand?
4. Be sure to select a good fit that can be used for a long time
5. Can it be washed?
6. Suitable material for the use area
7. Preferably ethically produced and with official eco-label (watch out for greenwashing)





# Mindful use and storage

- A range of daily practices such as dressing and undressing, putting clothing away, dropping them or folding them neatly, and keeping them clean.
- There are several small nuances and subconscious hand movements, for example in how a zip is pulled up, shoes tied, or clothes hung to dry.
- Keep an overview! Our wardrobes are constituted of active and passive garments to varying degrees. Studies indicate that around 15-30% of clothing in wardrobes has not been worn during the past year.
- Fold clothes lightly or roll them to prevent hard crease lines.
- Hanging can stretch and distort clothes, especially when storing vintage or delicate pieces, cashmere sweaters, heavy knits and other articles with stretch.

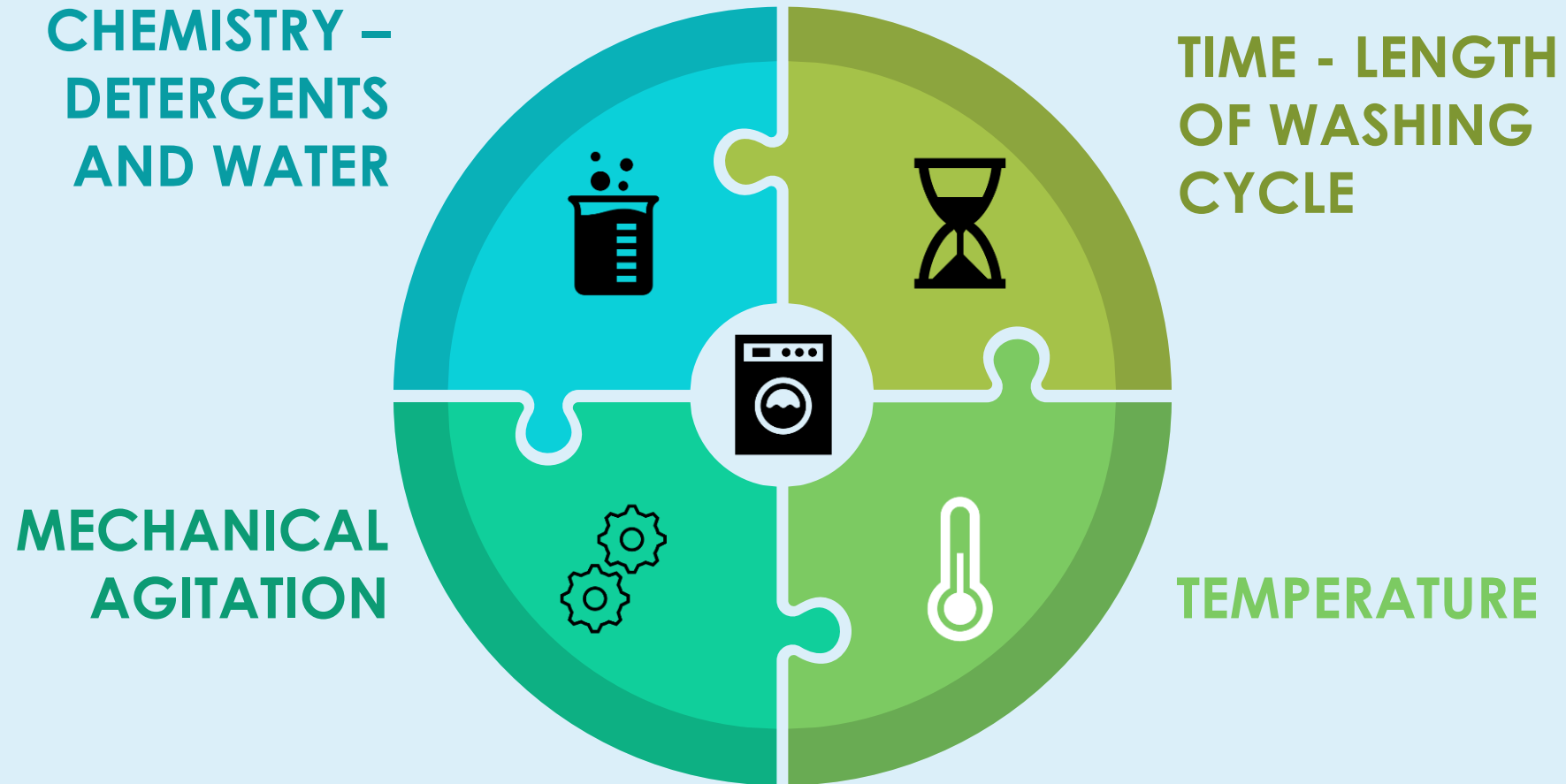


# Cleaning

- Cleaning helps to extend the life of the clothes and make them usable again and again, but it also has a significant environmental impact.
- Clothes get dirty through external influences, such as spills, soot, and sweat.
- Traditionally, clothing was protected by using aprons and other protective clothing. Today, laundering is a more common way to keep clothes clean.
- Besides washing machines, other cleaning techniques have been stain removal, airing, shaking, brushing, and using natural cleaning agents such as snow, sun, and even ants and other insects to eat the dirt and unwanted smaller insects.
- Modern alternatives include the use of various types of dry-cleaning chemicals and new methods, such as machines that use steam, ozone or ultrasonic cavitation bubbles instead of or in addition to liquid water.



# Four cleaning factors: Sinner's circle





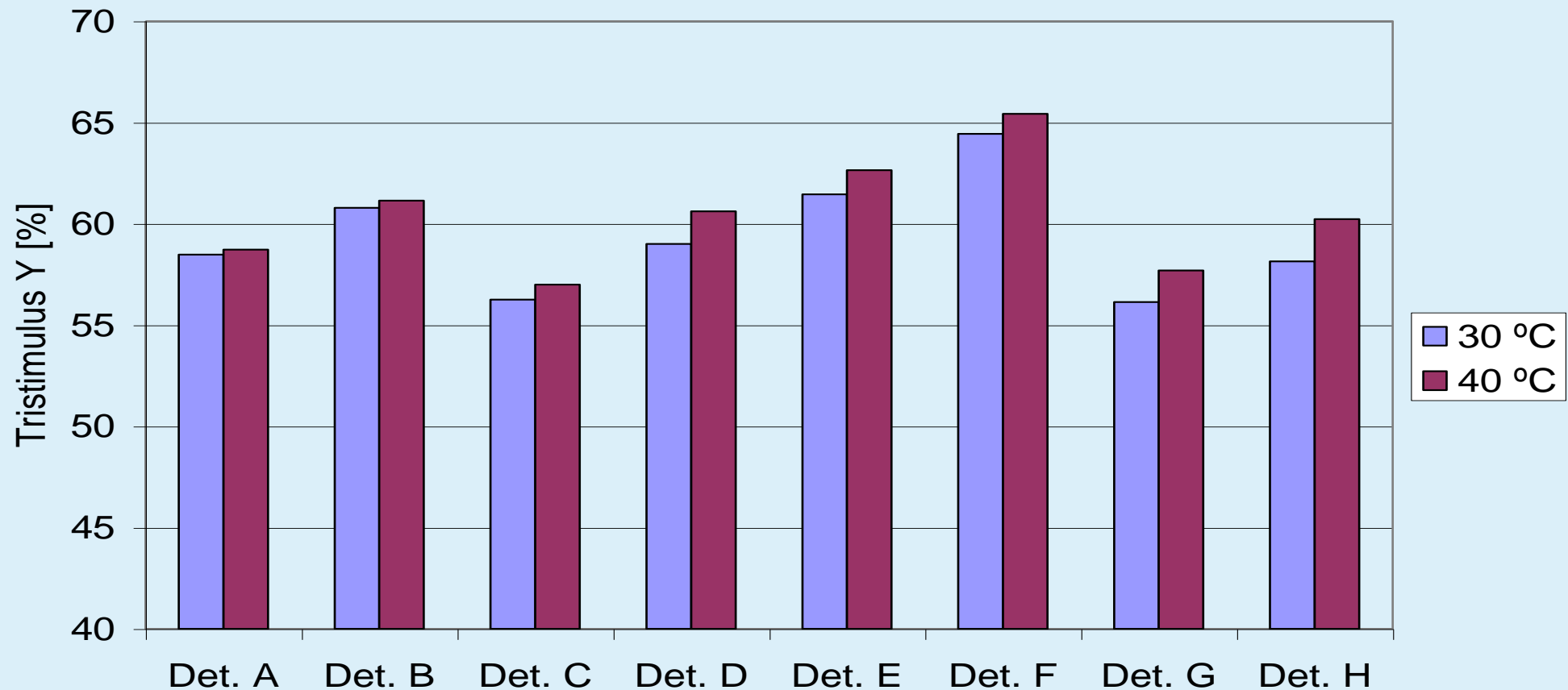


# Reducing environmental burden from laundering

- Decreasing washing frequency – evaluate need, remove stains, refresh with airing
- Lowering washing temperature
- Using eco-programs
- Using the full capacity of the machine
- Correct detergent dosing
- Line drying instead of tumble-drying
- Avoiding ironing
- Avoiding fabric softeners
- Fiber odour intensity from lowest to highest: wool < cotton < polyester and polyamide

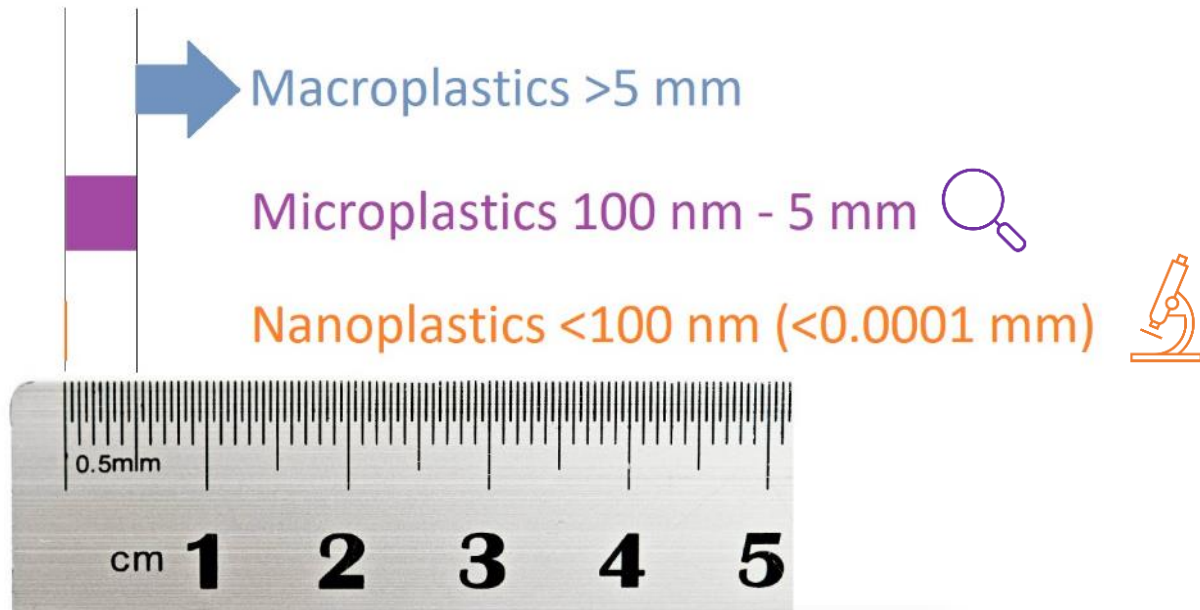
# Comparison of cleaning effect of washing at 30°C and at 40°C

Average cleaning effect of eight detergents at two temperatures





# What are microplastics?



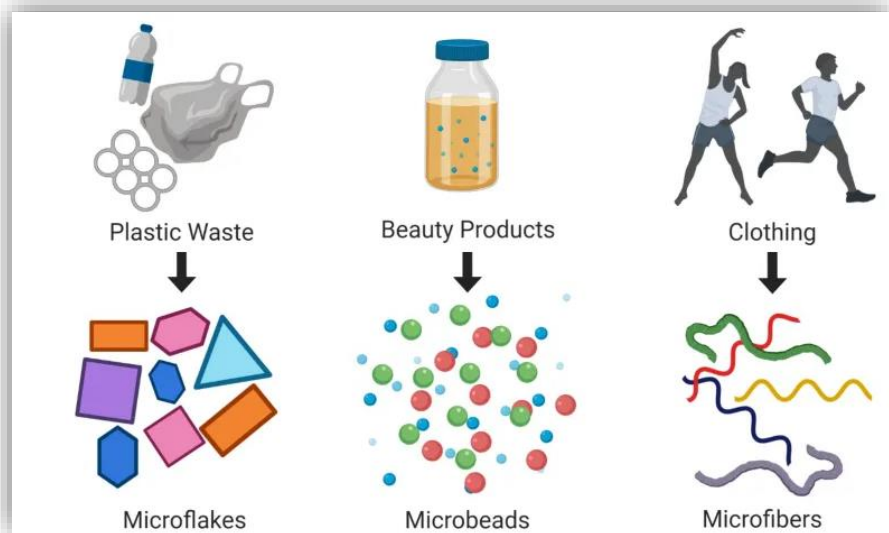
**Primary** microplastics are directly released into nature as small particles



**Secondary** microplastics result from degradation and fragmentation processes in nature



**Microfibres** are a subcategory of microplastics, but not all microfibres are plastic



# Issues with synthetic microfibers

Microfibers can spread during production, use, laundering and drying through air and waterways

Several environmental issues, such as the spread of microfibres and the use of non-renewable and non-biodegradable materials.

Washing of synthetic clothing generates up to 46,175 tonnes equal to 600 quadrillion individual fibers yearly in Europe.

Microplastics have been found everywhere, in blood and breast milk, at the top of Mount Everest and deep in the Mariana Trench, as well as in the air we breathe.



# What affects the release and spread of microplastics?



## Textile

- Fiber type
- Yarn (tightness)
- Fabric knit/woven
- Finishing
- Manufacture quality
- Age and condition of article



## Washing machine

- Machine type (axis direction, agitator/impeller)
- Machine capacity, load ratio and water use
- Rotation speed
- Filtering system



## Consumers' laundry practices

- Frequency
- Wash cycle & temperature
- Detergent type and amount
- Conditioner
- Use of dryer
- Use of filters



# Repair

- Definition: the correction of a malfunction of a product
- In practice: maintenance, adjustment, upgrade, redesign, etc.
- There is a strong association between garment longevity and repair. In the UK, it was shown that a repair adds between 0.6 (median) and 1.3 (mean) years to the life of a garment (WRAP, 2022)





# Repair or not to repair?

- Value of garment (functional, symbolic, aesthetic, sentimental, monetary, etc.)
- Type of clothing (holes on sportswear or children's wear more often repaired than on more formal clothing)
- Visibility of mending
- Competence (level of difficulty: sew on a button ⇒ repair a seam ⇒ patch/darn holes ⇒ replace a zipper)

"I would use my clothes longer if I was better at repairing them." (Male, 49 years)

# Repair examples

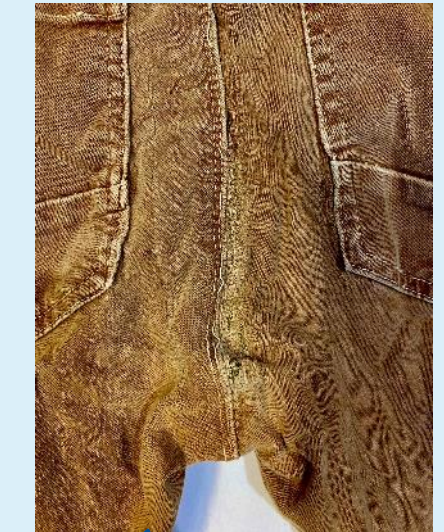
“It doesn’t look very nice, but it’s good enough for a few more uses.”  
- Karina, 31 y.o.



“My mother-in-law has fixed it once already. I could cut off the sleeves, but I don’t really need another short-sleeved shirt.”  
- Otto, 43 y.o.



“I have fixed them several times, but now I give up. The quality of the fabric is just too poor. It’s not worth it.”  
- Ilse, 39 y.o.



“The upside is that my mom will fix our clothing, the downside is that she doesn’t fix it very nicely.”  
- Peter, 45 y.o.



# Repairability scale

**1) Simple repairs /  
home repairs**



**2) Demanding repairs /  
professional repairs**



**3) Impossible repairs /  
permanent damages**



Source: Wasted textiles wardrobe studies, PhD by Anna Schytte Sigaard





# Learning to repair and redesign

- You come a long way with just a needle and a thread.
- Self-adhesive repair patches
- Many books and online tutorials
- Help: Repair cafes, friends or family members
- Sewing machines in some libraries
- Trial and error
- Use professionals when needed

# When care is not enough: Consumer rights

- The length of consumers' statutory rights based on the Consumer Purchases Act varies but is a minimum of two years in the EU/EEA countries.
- You'll have legal rights if the item is:
  - broken or damaged (not of satisfactory quality)
  - unusable (not fit for purpose)
  - not what was advertised or doesn't match the seller's description
  - shelf-life/longevity is less than to be expected when purchasing such an item
- You might be entitled to a repair, refund, replacement, or cancellation.
- Cancellation Act: Applies for off-premises sales, 14 days right to return
- We found general lack of use due to several barriers, such as knowledge, required effort, types of failures, missing receipts and uncertainty of success
- Reference: Laitala, Løvbak Berg and Strandbakken (2023) Why won't you complain? Consumer rights and the unmet product lifespan requirements. Plate, Helsinki.

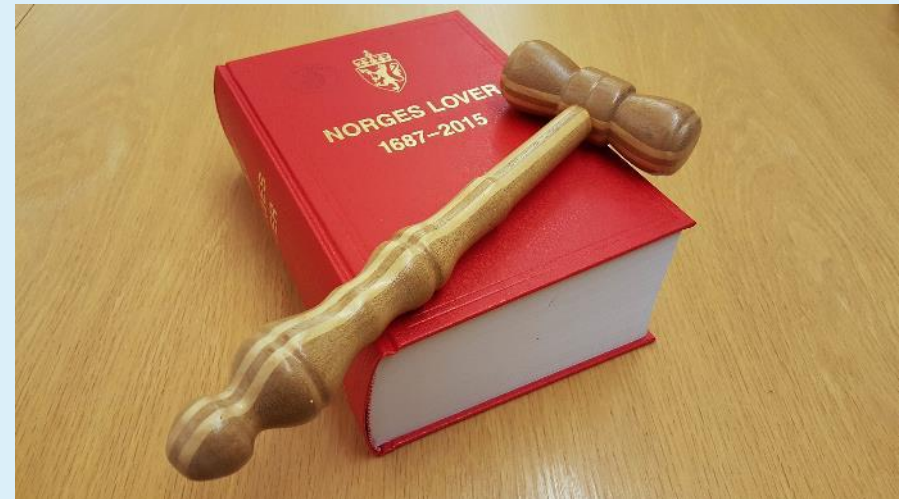
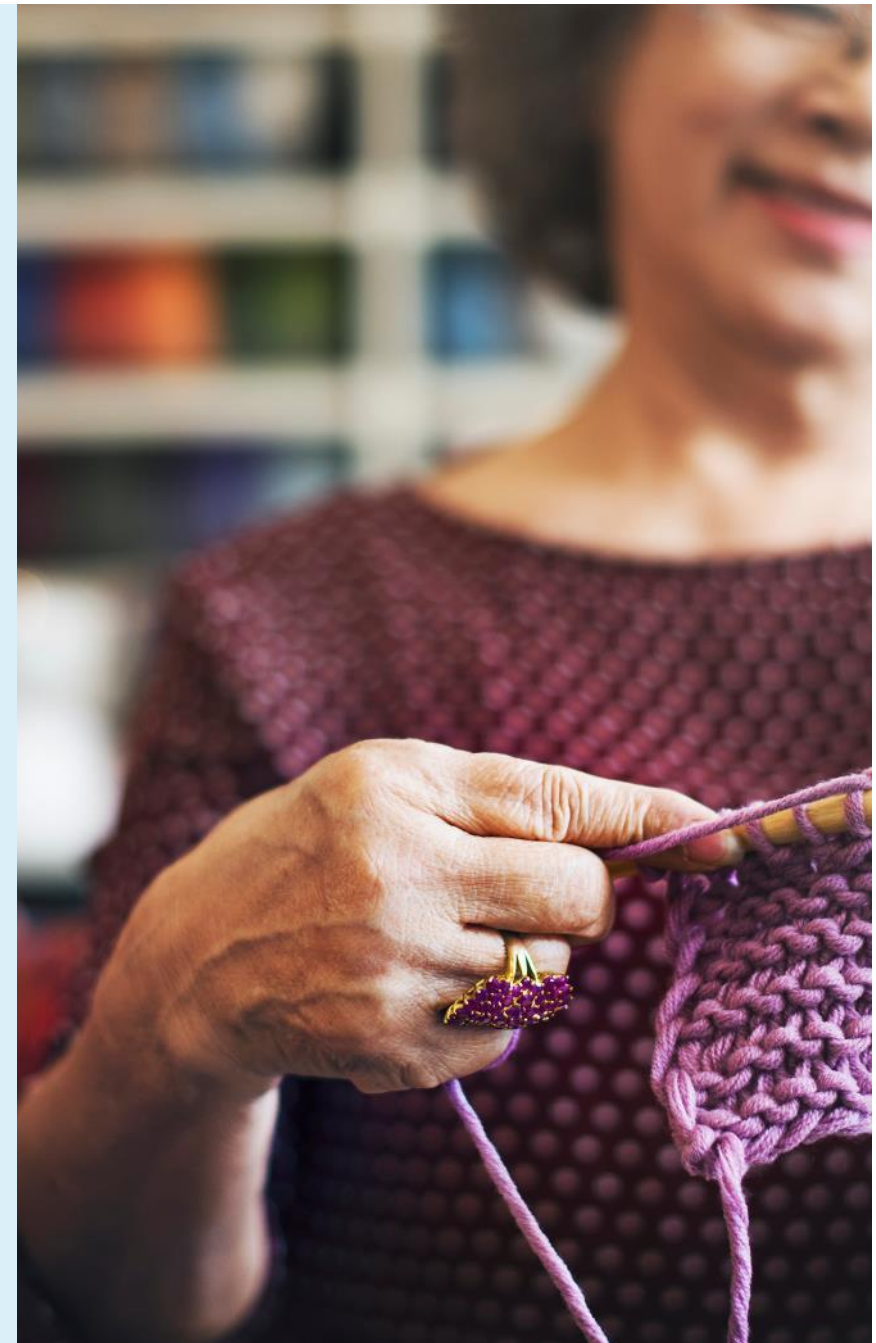


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# Slowing down the cycle

- Reduction in consumption volumes is necessary.
- An increase in care and maintenance is needed when we acquire fewer clothes and keep them for a longer time.
- Producers and other stakeholders can contribute:
  - Caring about the production conditions and people making the clothes.
  - Enabling care practices for consumers through the choice of materials, techniques, labelling, and instructions related to cleaning and repair.
  - Services for those tasks that are difficult for consumers or require special equipment
  - The products that are put into the market should be found valuable enough and worth repairing and taking care of.





# References

- Ackermann, L., Mugge, R., & Schoormans, J. (2018). Consumers' perspective on product care: An exploratory study of motivators, ability factors, and triggers. *Journal of Cleaner Production*, 183, 380-391. <https://doi.org/10.1016/j.jclepro.2018.02.099>
- Cesa, F. S., Turra, A., Checon, H. H., Leonardi, B., & Baruque-Ramos, J. (2020). Laundering and textile parameters influence fibers release in household washings. *Environmental Pollution*, 257, 113553. <https://doi.org/10.1016/j.envpol.2019.113553>
- Eunomia (2018) Investigating options for reducing releases in the aquatic environment of microplastics emitted by (but not intentionally added in) products. <https://www.eunomia.co.uk/reports-tools/investigating-options-for-reducing-releases-in-the-aquatic-environment-of-microplastics-emitted-by-products/>
- Fisher, B., & Tronto, J. (1990). Toward a feminist theory of caring. In E. K. Abel & M. K. Nelson (Eds.), *Circles of care: Work and identity in women's lives* (pp. 35-62). State University of New York Press.
- Godin, L. (2022). Care and consumption. *Consumption and Society*, 1(2), 398-406. <https://doi.org/10.1332/iuyx1774>
- Godin, L., & Langlois, J. (2021). Care, Gender, and Change in the Study of Sustainable Consumption: A Critical Review of the Literature. *Frontiers in Sustainability*, 2. <https://doi.org/10.3389/frsus.2021.725753>
- Haugrud, I., Klepp, I. G., & Laitala, K. (In press). Clothing Care. In C. E. Henninger, P. J. Alevizou, H. Goworek, & D. Ryding (Eds.), *Handbook on Sustainability in Fashion*. Springer.
- Henry, B., Laitala, K., & Klepp, I. G. (2019). Microfibres from apparel and home textiles: Prospects for including microplastics in environmental sustainability assessment. *Science of The Total Environment*, 652, 483-494. doi:10.1016/j.scitotenv.2018.10.166
- Laitala, K., & Klepp, I. G. (2018). Care and Production of Clothing in Norwegian Homes: Environmental Implications of Mending and Making Practices. *Sustainability*, 10(8), 2899. <https://doi.org/10.3390/su10082899>
- Laitala, K., Klepp, I. G., & Haugrønning, V. (2022). Textile Cleaning and Odour Removal. In G. Thilagavathi & R. Rathinamoorthy (Eds.), *Odour in Textiles: Generation and Control* (pp. 197-222). CRC Press. <https://doi.org/10.1201/9781003141426-10>
- Laitala, K., Klepp, I. G., Haugrønning, V., Throne-Holst, H., & Strandbakken, P. (2021). Increasing repair of household appliances, mobile phones and clothing: Experiences from consumers and the repair industry. *Journal of Cleaner Production*, 282, 125349. <https://doi.org/10.1016/j.jclepro.2020.125349>
- Sigaard, A. S., Laitala, K., Tobiassen, C. E., & Klepp, I. G. (2023, 7.9.2023). Repairability of Textiles and Clothing The 11th international conference on life cycle management, Lille.
- Sigaard, A. S. (2023). Want Not, Waste Not: Preliminary findings. SIFO note 2-2023. <https://hdl.handle.net/11250/3064950>
- Syversen et al., 2024. Dypdykk i materialstrømmene for tekstiler fra husholdninger i Norge. [https://mepex.no/wp-content/uploads/2024/01/05.01.24\\_Mepex\\_Dypdykk-i-materialstrommene-for-tekstiler-fra-husholdninger-i-Norge-1.pdf](https://mepex.no/wp-content/uploads/2024/01/05.01.24_Mepex_Dypdykk-i-materialstrommene-for-tekstiler-fra-husholdninger-i-Norge-1.pdf)
- WRAP 2022 Citizen Insights: Clothing Longevity and Circular Business Models receptivity in the UK. <https://wrap.org.uk/resources/report/citizen-insights-clothing-longevity-and-circular-business-models-receptivity-uk>

# Thank you for your attention!

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Questions or comments?

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