

Biology

In my skin

RecyCOOL Lessons

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In my skin

Description of the lesson

Firstly, we will introduce what textile dermatitis is and explain what chemicals in production or manufacture can cause textile dermatitis. Then we will explore allergies to polyester. We will examine our own clothing and consider what can we do to have clothing as clean and healthy as possible.

Objective

Objective of this lesson is to explain possible skin reactions to textiles and make learners aware of the differences of fabrics by touch, with the aim to lead them towards more conscious purchasing of new clothing.

After this lesson you will be able to

- understand why it is good to wash your new clothes before you wear them
- this will also teach learners that some fabrics create reactions with some people's skin (we will explore which fabrics these are and which fabrics are safer options)
- you will know how to avoid some allergic reactions to fabric

Tools and materials:

your closet, pen and paper

TEXTILE DERMATITIS:

Textile contact dermatitis or clothing dermatitis can be defined as caused by wearing clothing and/or other fabrics that come into contact with skin.

The source of the skin problem may be the fabric itself (i.e. reaction to textile fibres) or more commonly a contact allergy to the chemical additives used in processing the fabric, e.g. textile dyes and finishing agents.

Do you have something inside your closet you don't like to wear just because of the fabric it is made from?

Have you ever had or heard of an allergic reaction to fabric?

Since clothing is in close contact with your skin most of the day, it's no surprise that your shirts, pants, and undies can cause skin problems. Any kind of fibre can bring on a rash, but you're more likely to get textile dermatitis from clothes made with synthetics such as polyester, rayon, nylon, spandex, or rubber. They don't breathe as well as natural fibres, and they make you sweat more.

Often the source is the dye or other chemicals in the clothing. Formaldehyde resins used to make garments wrinkle-free or dirt-repellent can cause problems. So can dyes, glues, and chemicals used to tan, or create, leather.

If you're allergic to nickel, you might get a red, itchy reaction where your blue jeans button touches your skin. It has its own name: nickel dermatitis. Jewellery with nickel can cause it, too.

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How can I prevent textile dermatitis?

The first thing is to stop wearing the item that bothers you.

You can also:

- Wear natural fibres and loose clothes to help cut how much you sweat.
- Avoid items labelled "wash separately." They're more likely to bleed dye.
- Avoid textiles that are advertised as "crease-resistant", "non-iron" or similar - this can only be achieved by using particularly high levels of chemicals. They're likely to have chemicals.
- Wash clothes before wearing them for the first time. During the first wash the most chemicals are released from fibre. You might think new clothes are safe if they look unsoiled, but they could actually be harmful to your skin if they contain toxins, which can leach into your skin. Harmful chemicals are often used during the manufacturing process.

Most apparel manufacturing factories are located in highly trafficked urban industrial areas with a high concentration of people, trucks and manufacturing. According to Lee W. Johnson, founder of the men's clothing company Old Bull Lee these factories tend to have "questionable air quality" and are cooled by open windows, which allow pollutants to circulate and attach themselves to the fabrics.

"A lot of airborne industrial pollutants are flying around and they likely settle onto things during that time spent while they are being manufactured. By the time the clothes get to you, they might look OK but there's a lot of stuff sitting on them that you might not see," he says.

Even if a factory has better air circulation, the chemicals used in the process can be dangerous.

According to Johnson, we should worry about:

- Lead, a fairly common ingredient in many brightly coloured dye pigments.
- Formaldehyde, a known carcinogen often used in non-wrinkle garments.
- PFCs, a fluorocarbon-based water repellent.
- AZO disperse dye, a carcinogenic synthetic dye that is easily absorbed by the skin and is linked to contact dermatitis.



Fashion Revolution's Global Fashion Transparency Index which evaluates 250 of the world's largest fashion brands and ranks them according to their public disclosure of information across various human rights and environmental indicators finds that only **32% of brands publish their Manufacturing Restricted Substance Lists**, which inform suppliers what substances are prohibited in their raw material and product manufacturing processes.

Publicly disclosing an MRS� signals brands' commitment to restricting the usage of toxic chemicals, irrespective of whether the end product is made with natural or synthetic fibres, or whether those chemicals end up in the final garment.

Nearly half, 46% of brands, disclose their Restricted Substances List (RSL) which is a list of chemicals which are not permitted to end up in the finished product. Without transparency on what chemicals are banned from being in the end-product, there is little awareness of what's in our clothes, and little accountability for brands who may be responsible for toxic chemicals and irritants on our skin.

Polyester allergy

An allergy to polyester is a type of fabric allergy, also referred to as textile dermatitis. It occurs when your skin changes after coming into contact with certain clothing or other fabrics. **The textile fibres or the fabric may cause skin irritation, or more commonly, a contact allergy to the chemical additives used to process the fabric.**

This can include laundry detergent and the dye that textile manufacturers use. Perspiration or animal furs caught in between the woven fibres of the fabric can also cause a skin reaction. The symptoms of a polyester allergy, like most contact allergies, show predominantly on the skin.

If you suspect you have an allergy to polyester, keep an eye out for the following symptoms:

- rashes from areas that came in contact with polyester
- skin tenderness
- an abnormally warm feeling on your skin
- red marks on your legs
- hives around the upper body
- hands turning bright red in colour
- mild to severe itching

Other than skin reactions, fabric allergies can result in:

- tightness or pain in the chest
- breathing difficulties
- swelling

Fabric allergy symptoms can be made worse by:

- overheating of the skin
- obstructed skin ventilation
- tight clothes
- poor hygiene
- obesity
- too much moisture

The combination of tight-fitting fabric and sweat can irritate your skin as it rubs against you. **Doctors call this less common condition irritant dermatitis.** It may look a lot like textile dermatitis, but the cause is different.

Task

Choose 2 pieces from some type of clothing (2 t-shirts, 2 hoodies...) and compare the materials, then say which materials you prefer and why.

Read the labels and use those support questions

What is it made from?

Is it comfortable to wear it?

Have you ever had an allergic reaction to them or any other clothing?



Reflection

Have you ever had textile dermatitis? What kind of steps will you take to avoid the textile allergies by shopping/swapping/thrifting?

Be curious, find out, do something!

To do your best and try this

- Be really careful and look for those certificates:

Bluesign

Oeko-tex

GOTS

IVN BEST

Zero Discharge of Hazardous Chemicals (ZDHC)

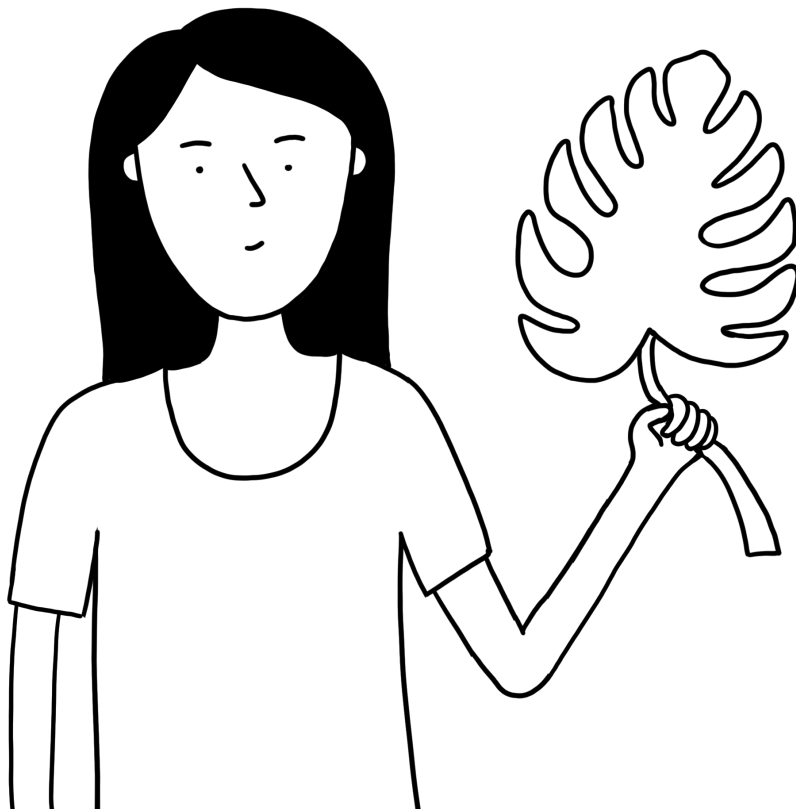
These organisations are forging a way forward and promoting a cleaner future for textile dyeing. They provide a framework that companies and regulators can use to create a cleaner and safer system. **They certify for the end-user that clothes are safe to wear and free from toxic chemicals.**

- It is better to avoid buying brand new clothes because by thrifting most of the chemicals will be released out of textile before you buy the garment in a second-hand store.

- Try to avoid buying clothes that are dyed black

Black is one of the colours most commonly used to dye clothing. **At the same time, black is also one of the most harmful textile dyes to humans and the environment.** This is because black is not actually a colour, but must be mixed together from several complementary pigments such as blue, orange, or yellow.

In addition, there are many manufacturing processes for black, increasing the likelihood that questionable ingredients creep in. Textiles dyed in Europe have been subject to the EU's REACH chemicals regulation since 2007, which requires registration of the substances used. **For textiles imported into the EU, however, there is still a lack of transparency.**



- Use natural washing detergents

Similar to clean beauty and blue beauty products (products made of safe, sustainably sourced ingredients, ocean-safe ingredients and reused, recyclable or refillable packaging) or any of the many concoctions we rely on every day, finding non-toxic laundry detergent boils down to making the right choice for our health and for the environment.

And just like everything else, conventional detergents tend to feature harmful chemicals like you wouldn't believe. Things like fragrances (and their undisclosed chemical contents), synthetic dyes, surfactants, bleach, phosphates, and even harmful bi-products like 1, 4-Dioxane.

Though we know these ingredients to be harmful to humans, they are somehow okay in products that come into contact with our skin and our ecosystems and remain on the shelves at our local supermarkets. And in fact, natural detergents do the same effective job just like conventional detergents.



Resources

Ester Akutekha. Why Experts Reco 2015. Available from: Washing Your New Clothes Before Wearing Them. 2022. Available from: https://www.huffpost.com/entry/why-you-should-wash-new-clothes-before-wearing_l_6234cab6e4b019fd812db5f1

Dyeing textiles black in a sustainable process. 2022. Available from: <https://innovationorigins.com/en/dyeing-textiles-black-in-sustainable-process/>

Vanessa Ngan, Staff Writer. Textile contact dermatitis. 2022. Available from: <https://dermnetnz.org/topics/textile-contact-dermatitis>

Denis Newman. Am I Allergic to My Clothes? 2020. Available at <https://www.webmd.com/allergies/textile-allergy>

Scott Frothingham. Polyester Allergy. 2018. Available from: <https://www.healthline.com/health/polyester-allergy>

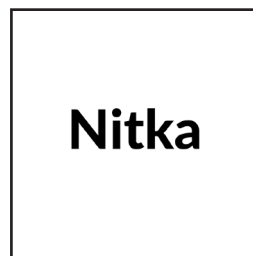
Candice Batista. The best natural laundry detergent 2022. 2022. Available from: <https://theecohub.com/natural-laundry-detergent/>



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