

Occupations under chemical review

- a future occupation for occupational therapists?

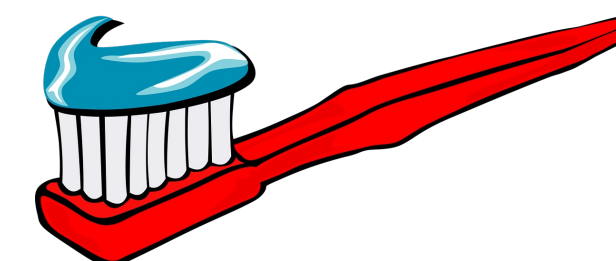
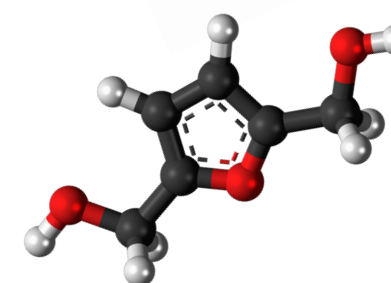


PFAS



PET

BPA



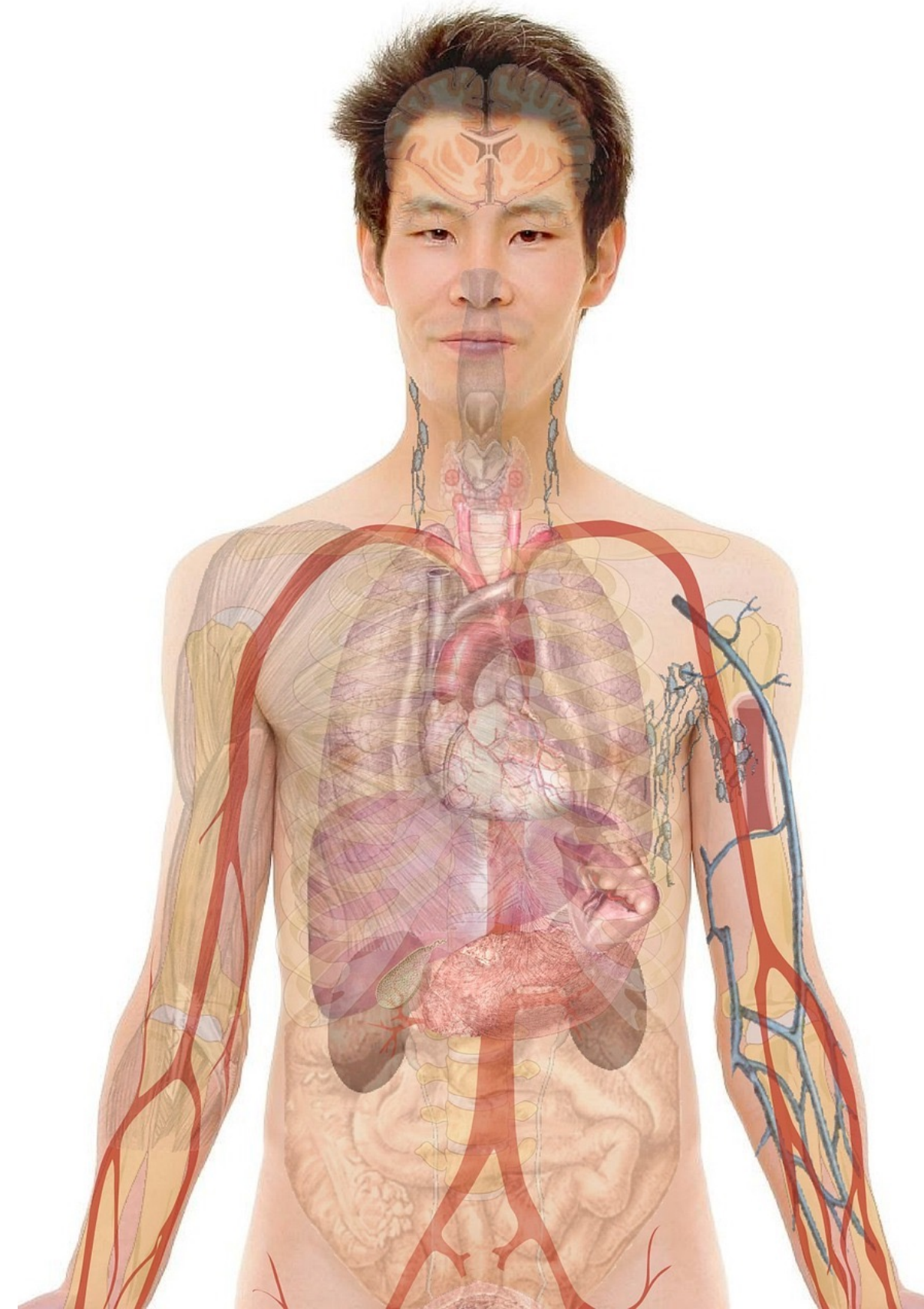
No financial disclosure.

Special thanks to my friends, family, private OT & my chemical network!

What do we know and where are knowledge gaps? (chemical, medical and environmental science)

Plastic is fantastic

- light
- flexible
- greaseproof
- waterproof
- cheap



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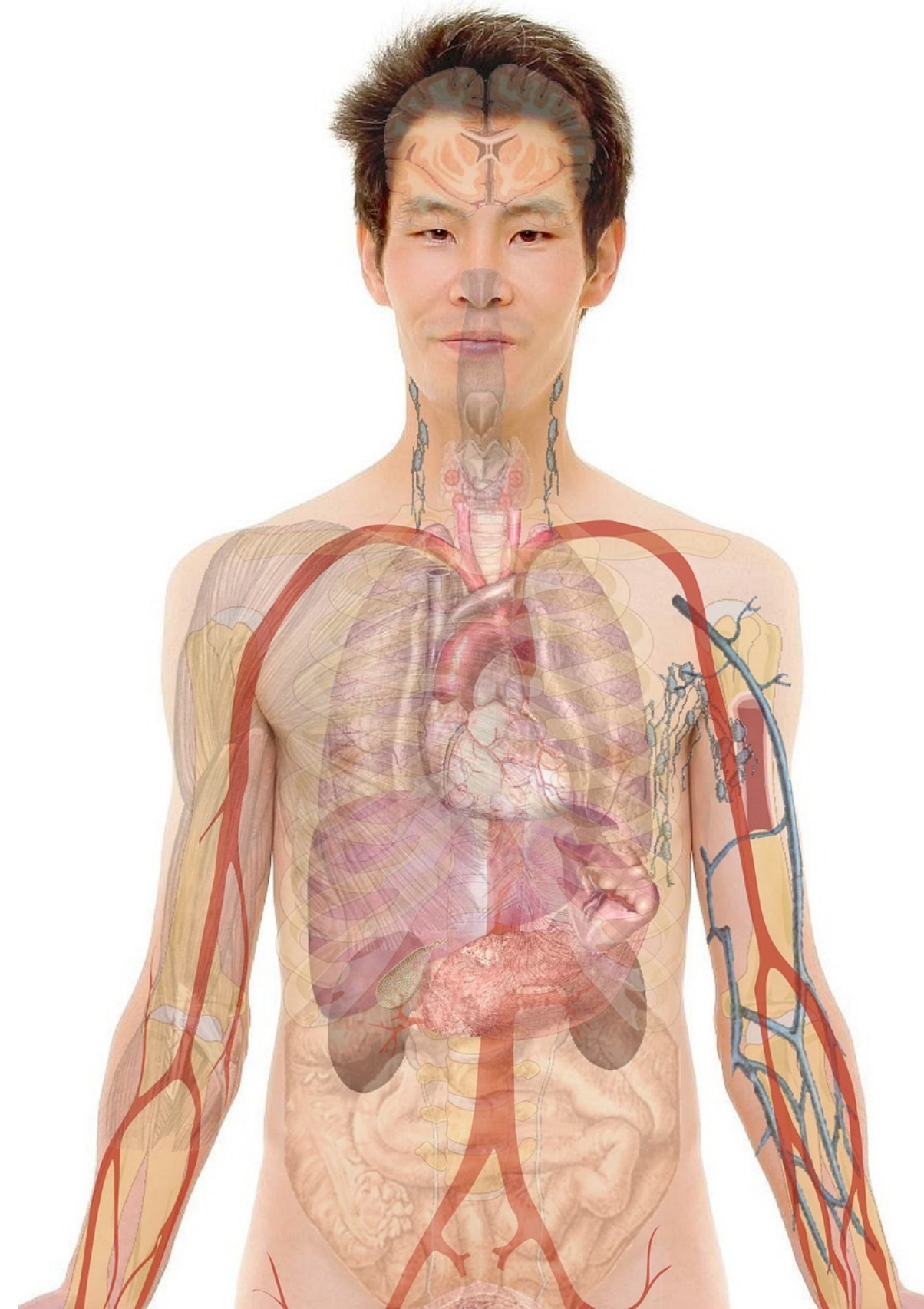
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Everyday lives became easier:

- washing machine
- vacuum cleaner
- air conditioner
- mobile phones
- synthetic clothes



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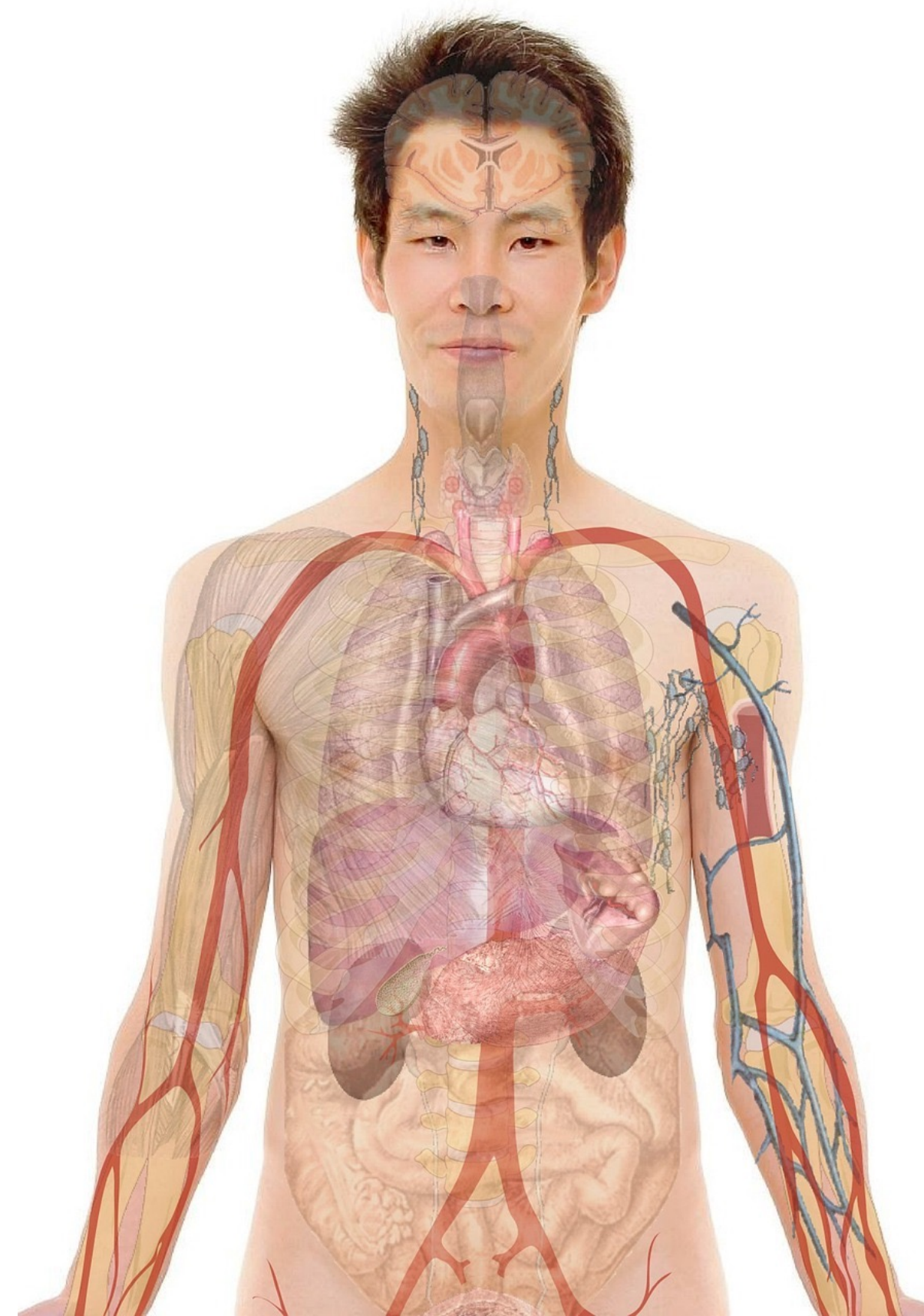


Plastic production is rising Trash as well



Few trash is recycled,

Trash pollutes nature, harms natural ecosystems worldwide on a huge scale



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„We [humans] are all a little plastic now“ (Freinkel, 2011)

Exposure pathways

(Sutkar et al., 2025; Zuri et al, 2023)

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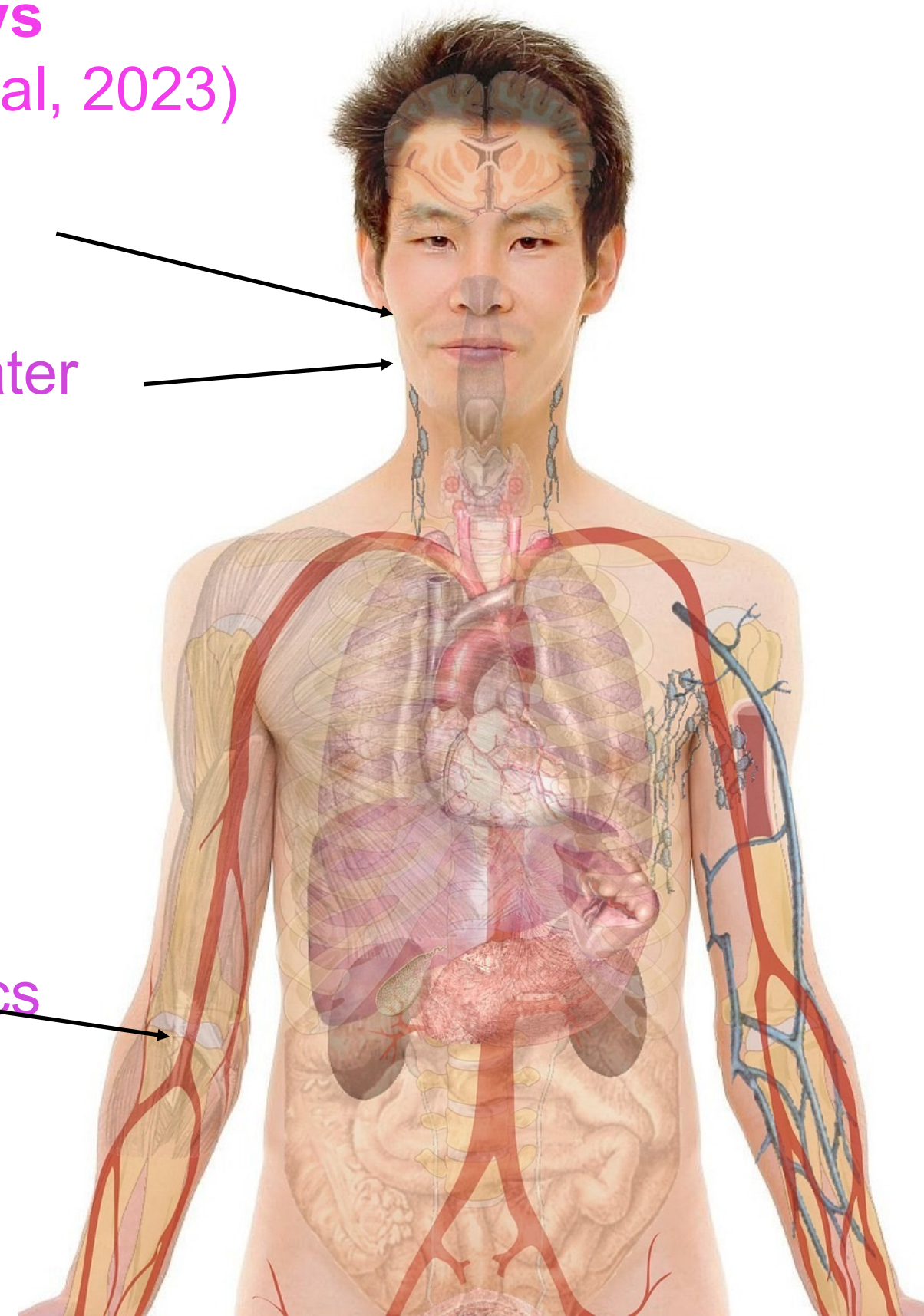


Inhale polluted air

Ingest polluted food/water



Chemicals migrate through the skin from clothes & cosmetics



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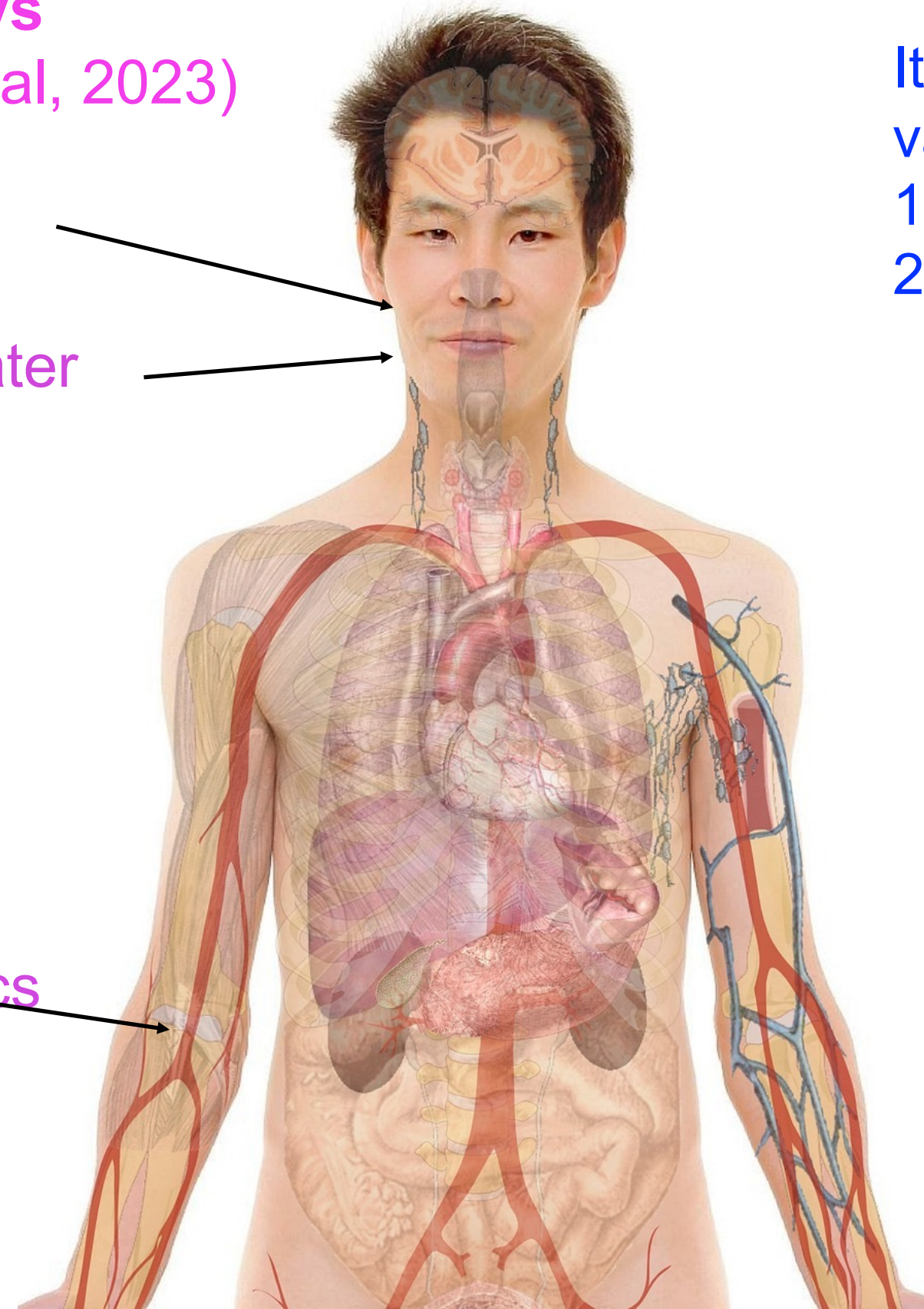
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Ingest polluted food/water

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It is difficult to conduct scientifically reliable and valid studies (Sutkar et al., 2025)

- 1) as plastic is present everywhere
- 2) it is a relative new topic, and standards have to be agreed on

It is proven that nanoplastic was found in the blood, sputum, urine, in most organs, even in the brain, as nanoparticles can cross the brain-blood barrier (Sutkar et al., 2025; Thompson et al., 2024)

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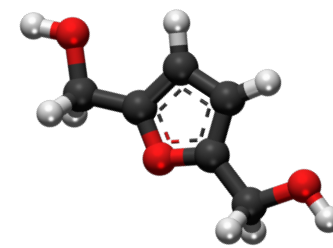
Microplastic and chemicals potentially can cause:

Physiological Changes

- cell death
- mitochondrial dysfunction
- Neurotoxic effects and neurotransmitter disruption
- endocrine disruption

- oxidative stress
- inflammation

- —> catalyst for many chronic diseases



BPA



Potential illnesses

- Asthma
- Dementia
- Cancer
- Chronic Inflammation of the digestive system
- Neurodevelopmental disorders
- Thyroid disorders
- Reproductive disorders/Infertility
- Cardiovascular problems
- Chronic Inflammation of the digestive system

Sources:

- Sutkar et al., 2025
- Thompson et al., 2024
- Jahedi & Fard, 2025
- Sun et al., 2024
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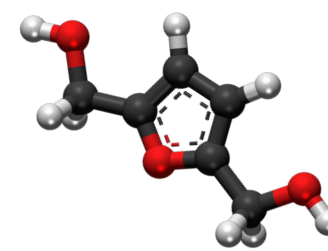
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Studies suggest many health risks, but further studies are required



Preventative Ban of BPA from baby bottles by law in many countries



BPA free Baby bottles are produced

Occupation: Making a cup of tea



1st Boil: 3,000,000 particles

150 Boils later: 100,000 particles

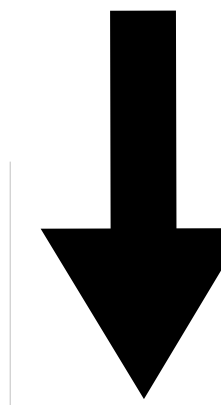
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Occupation: Making a cup of tea



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Change to glass or metal kettle instead



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Occupation: Playing with therapy putty



- 100% Silikon
- Bor : is responsible for different strengths and that it jumps
 - 1,0– 2,5 % allowed, as it is a mineral oil, that is toxic to reproduction
 - Don't swallow & wash your hands after use
- Formaldehyd or MOAH (mineral oil), which can cause allergies and cancer, these are not normally allowed in medical therapy putty.
- Latexfree (Spina Bifida)
- Glutenfree (Celiac disease)



Occupation: Going shopping for food and cosmetics

„More investigations on the presence of microplastics and plastic-additives in food and beverage are urgent needs to a better assessment of potential human exposure and human health risk“
(Sewwandi et al 2022)

Inspiring
Change,
Innovating
Futures

Duftreis Royal Thai 1 KG Thai Jasminreis
Royal thai
94/100 Ausgezeichnet

Positiv	pro 100 g
Keine Zusatzstoffe Ohne schädliche Inhaltsstoffe	✓
Bio Ohne synthetische Pestizide	✓
Eiweiß Ein wenig Eiweiß	6.9g
Ballaststoffe Ein wenig Ballaststoffe	1.05g
Gesättigte Fettsäuren Wenig gesättigte Fettsäuren	0.3g
Zucker Kein Zucker	0g
Salz Kein Salz	0g
Kalorien Geringe Menge	353 kcal



Scanner
SUNDANCE Sonnenspray sensitiv LSF 30
Vegan

Inhaltsstoffbewertung
1 Problematisch
1 Palmöl: WWF 15,01 von 24 Punkten
31 Im grünen Bereich

Inhaltsstoffe
Alle 32
1 Hydrogenated Palm Glycerides
1 Diethylamino Hydroxybenzoyl Hexyl Benzoate
1 Ethylhexyl Salicylate
1 Phenylbenzimidazole Sulfonic Acid
1 Potassium Hydroxide
1 Potassium Phosphate

Inhaltsstoffe
1 Aqua
1 Ascorbyl Palmitate
1 BIS-Diglyceryl Polyacyladipate-2
1 BIS-Ethylhexyloxyphenol Methoxyphenyl Triazine
1 C12-15 Alkyl Benzoate
1 Caprylhydroxamic Acid
1 Caprylyl Glycol
1 Cellulose Gum

„Publication state that there is:

- Migration of plastic-additives from packaging by leaching
- the presence of plastic-additives in food and beverages.

Bisphenol A and bis(2-Ethylhexyl) phthalate were the most frequently reported both in food and beverages,“ (which are both Endocrine Disruptors). (Sewwandi et al 2022).



Assessing the environment: with guidelines and online tools - EU Project to detoxify European households

CHECKED

CheckED – Your compass
for a healthier tomorrow



check-ed.eu

Feeling worried about your exposure to harmful chemicals lurking in everyday products? Look no further!

In just a few minutes, you will receive personalized results and recommendations tailored to your home environment, lifestyle, and everyday habits.

Our cutting-edge algorithms will analyze your data to provide real-time insights into your estimated exposure levels to endocrine disruptors (EDs), the so-called hormonal

Brominated flame retardants
Bisphenols, Phthalates
Alkylphenols

Do your first check ✓	Continue with your check ▶	Check again and see how your exposure is changing ↻
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check-ed.eu

Available in many languages e.g.
Turkish, Finnish, Portuguese,...



DIY GUIDEBOOK:
DETOX YOUR HOME

A possible role for Occupational Therapists?

Choosing safe everyday items

- kitchen items
- toys
- cosmetics

Educate clients

- to create smart home environments in regards to their medical and occupational needs

Adapt home environments for clients e.g. asthma

- with collaboration of other professionals if available
- as already performed by the occupational therapists in the past (Spell et al., 2024; Frisk, 2002)

More OT studies are required to follow this up

OTs are well equipped to address huge overwhelming problems by offering small individual steps.

What do you think ?

*Inspiring
Change,
Innovating
Futures*



Thank you for your attention !



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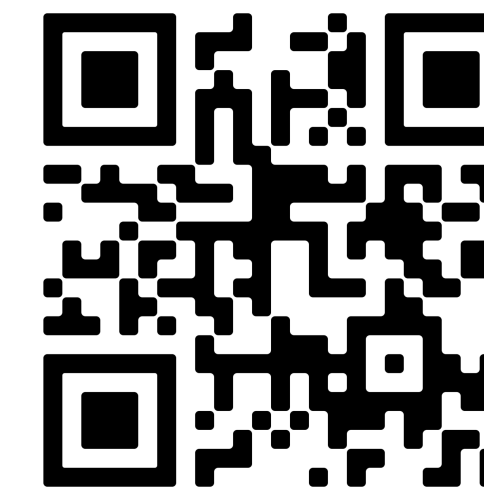
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Do you have any Questions?



References



Contact:
viktoriapeter@posteo.de

- OT since 15 years
- B.Sc.(Hons) Occupational Therapist (Scotland)
- Since worked in Germany in neurology and pediatrics in clinical and private settings.
- Currently in a school setting.
- Courses, publications about goal setting, innovative OT