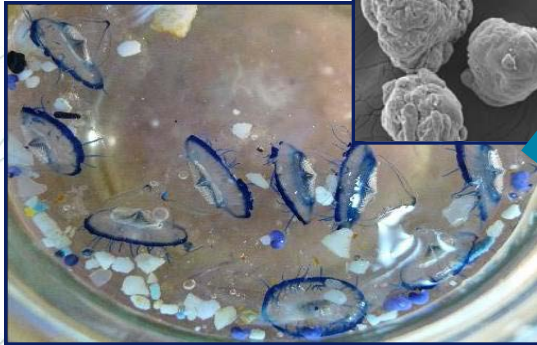


# Selective uptake of microplastics by a marine bivalve (*Mytilus edulis*)

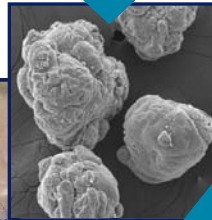
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# Plastics in the environment



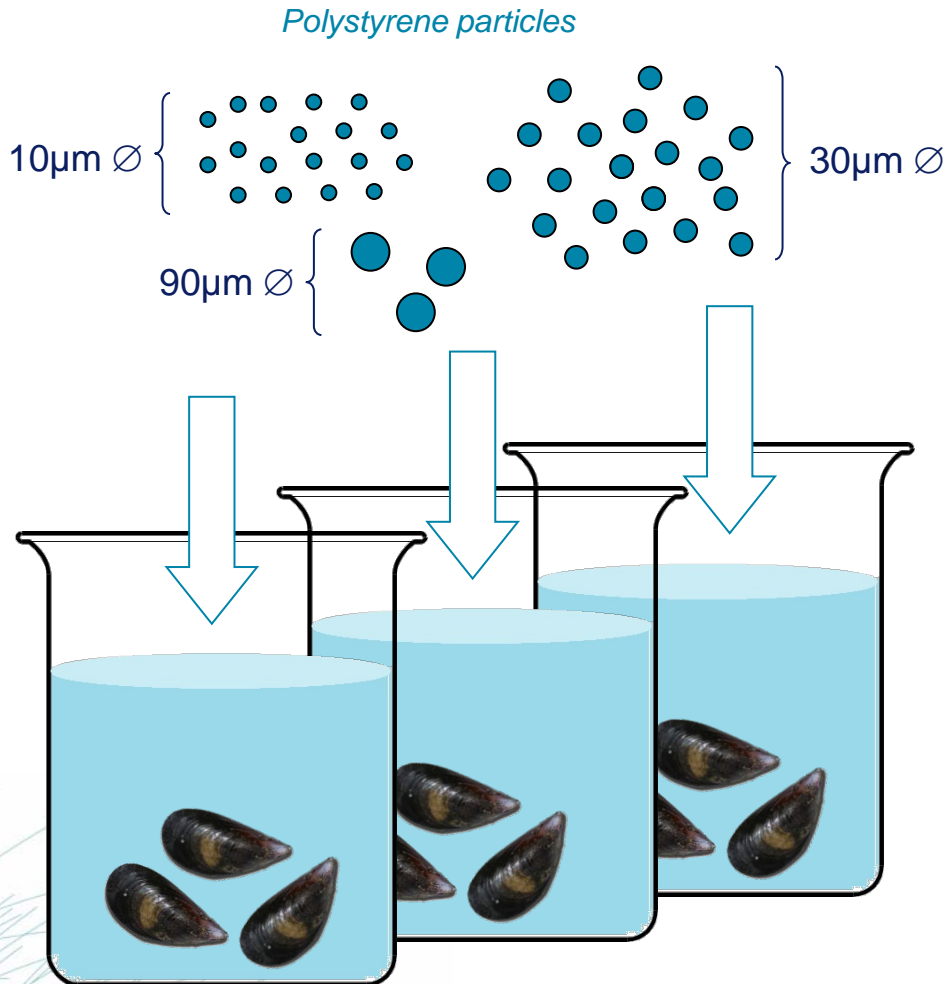
*Microplastics*



**Plastics on our Plate?**

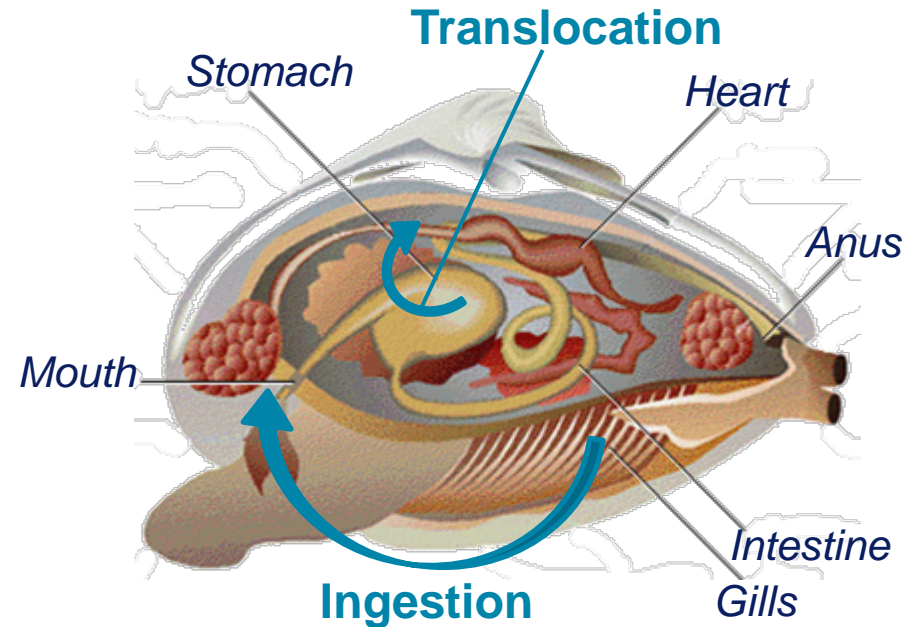


# Ingestion and Translocation



**TOTAL CONCENTRATION**  
110 part.ml<sup>-1</sup>

**HYPOTHESIS**



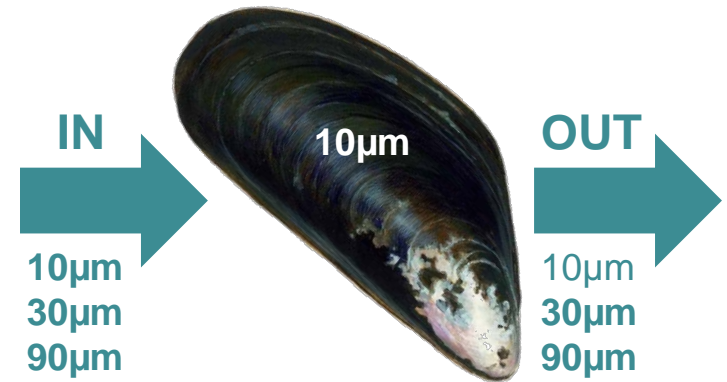
**Effects?**

# What about mussels?

- **All particle sizes are ingested**

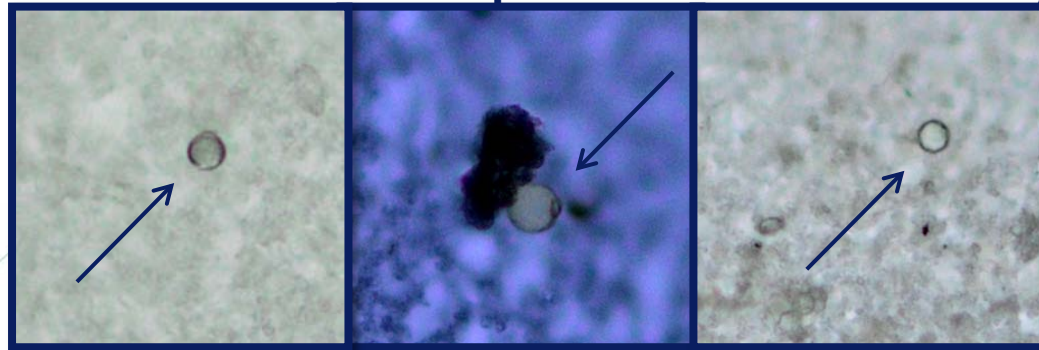
- **Faeces**

Some **10 $\mu$ m** particles seem to be **missing...**



- **Acid-destructed tissue and haemolymph**

**Translocation of the smallest particles to the circulatory system**



But **less than 0.3%** translocate

- **No significant effect** observed in Cellular Energy Allocation



# And what about humans?

We know:

1 particle/g mussel tissue (actual value!!)  
300 g 'mussel meat' per portion

→ **Per portion we ingest 300 plastic particles**

This corresponds to approx. 1.5 µg plastic

We also know:

concentration of PCBs in marine plastics 169 ng.g<sup>-1</sup>

→ **Per portion we ingest ~0.00025 ng PCB's**

Tolerable daily food intake PCBs = 20 ng.kg<sup>-1</sup> body weight .d<sup>-1</sup>

**No exceedance of the Tolerable Daily Intake**



# Take home message...

1. No significant adverse short-term effects of exposure



2. Microplastics do end up on our plate!

## Raisins

13 whole insects and 45 fruit fly eggs per 300g

## Chocolate

180 or more insect fragments per 300g

or

3 rodent hairs per 300g



(Source: FDA USA)

3. Pollutant load associated with microplastics