mitochondria & 'forever chemicals'

sausage shaped organelles...
really tiny organs
Present inside each and every cell

actually it's like a network...

life as we know it would probably be impossible without them

also very important in the process of **cell death**

commercially known as **PFAS**

a group of synthetic chemicals... used to make coatings that are... oil proof, grease proof, waterproof, stain proof

Problem is they are very long lasting

they persist in the environment for a very long time

we don't know which ones are worse than others.

have been found in the blood of...

do they declare it??

... which possibly have entered via food & water

water is one of the main ways so if there is ground or soil contamination in a certain area, the ground water will be contaminated

Some of the common PFAS are used in textiles

need to go back to cottons

you can have food materials that come in contact with packaging

even if some are banned now they are already in our environment

so we still need to understand their potential effects on our bodies...

known effects... thyroid problems... cholesterol level change... cancers like breast, testicular & kidney cancer...

many chemicals, drugs or toxins that we come across in our daily lives have a very direct or sometimes indirect effect on the mitochondria

how do we study the different kinds of toxins?

different model systems

one of the model systems is using fruit flies (or drosophilia)

fast generation time...
easy to culture...
eggs to adult - 12 days...

biggest drawback is flies are still not humans

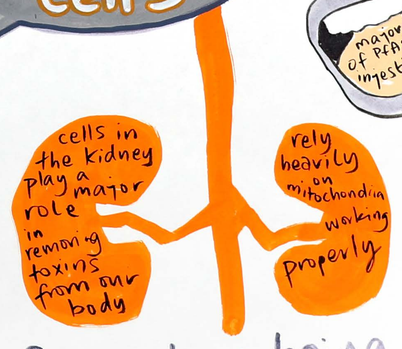
certain drugs may not affect flies in exactly the same way as in humans...

Can anyone guess how many genes are similar between humans & fruit flies?

50-60%

AMRITA MUKHERJEE

I'm working on a new project - environmental toxins on specifically **kidney cells**



So end up being exposed to toxins

I've started working with these PFAS on the kidney cells, & initial results show that they have DETRIMENTAL EFFECTS

There is lots of regulations & talk so people are aware which is great

there are different filters that can actually deal with PFAS