gut microbiome vs environmental exposures

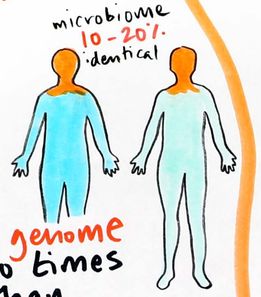
I'm interested in how gut bacteria interacts with different environmental pollutants... so why should we care about our gut microbiota?

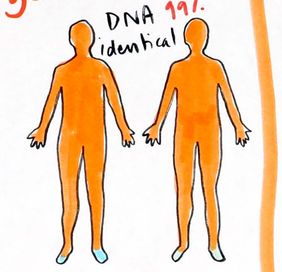
1 Simply the sheer number of bacteria in our body

38 trillion bacteria in our gut

more than the number of stars in our galaxy...

2 Bacterial genome about 30 times larger than human genome





HUGE metabolic capacity!

microbiota contributes to many different aspects to our physiology...

e.g. can impact how our immune system responds to an infection or how well a drug might work on us...

2 common environmental factors is diet & medication...

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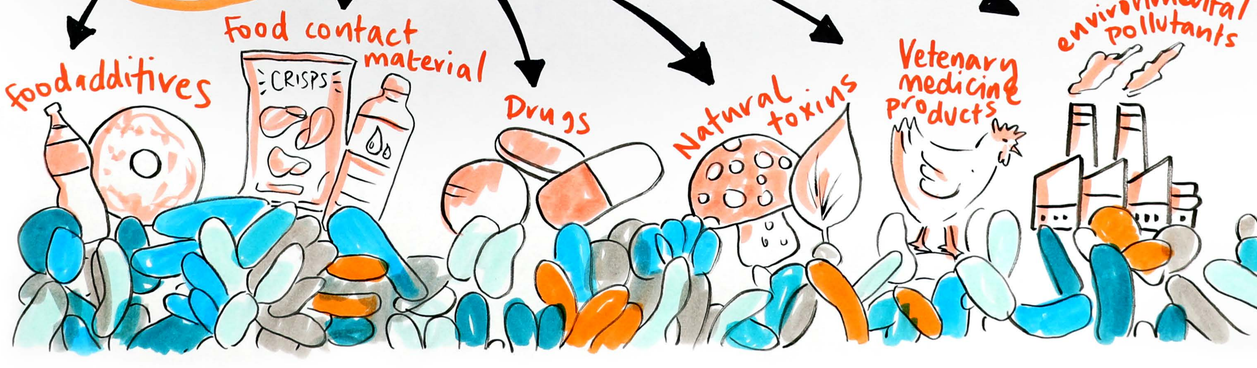
...but also

Xenobiotics

(substances not naturally produced by the body or aren't expected to be in the body)



I've been on doxycydine for some time, how can I get my bacteria healthy in my gut?

no straightforward answer... in general though we want a very **Diverse** microbiome

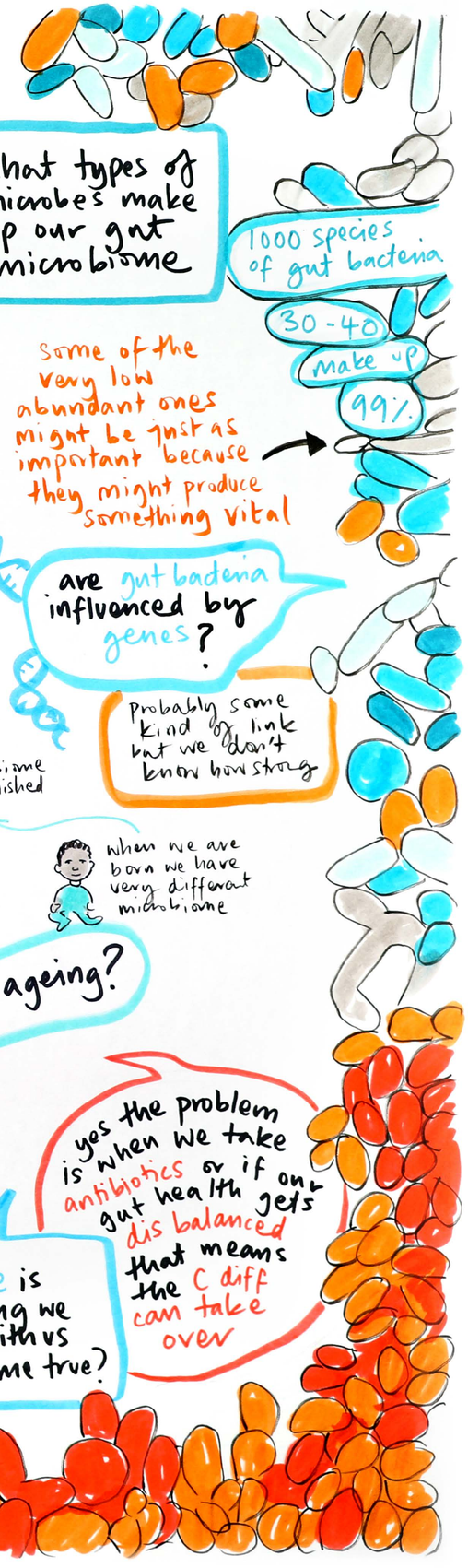
easiest way is have a balanced & varied diet

many different ways...

- bacteria growth
- changing microbiota composition
- might affect bacterial metabolism
- gut bacteria could modify or accumulate pollutants.

how can these Xenobiotics interact with gut health?

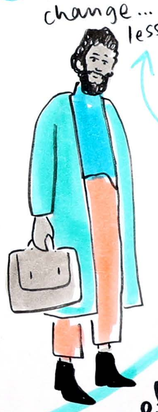
what types of microbes make up our gut microbiome



Some of the very low abundant ones might be just as important because they might produce something vital

are gut bacteria influenced by genes?

Probably some kind of link but we don't know how strong



also throughout age, the microbiome has been shown to change... gets less diverse

most of the adult microbiome will be established age 2

when we are born we have very different microbiome

what is the effect of ageing?

yes the problem is when we take antibiotics or if our gut health gets dis balanced that means the C diff can take over

C difficile is something we carry with us all the time true?