



Spuds and good bugs!

(how potatoes help our microbiome)



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Teagasc Sequencing Centre



Our microbes - Some impressive facts

-Microbes are a part of human life, living on all the surfaces and cavities of the human body.

-More microbes than human cells

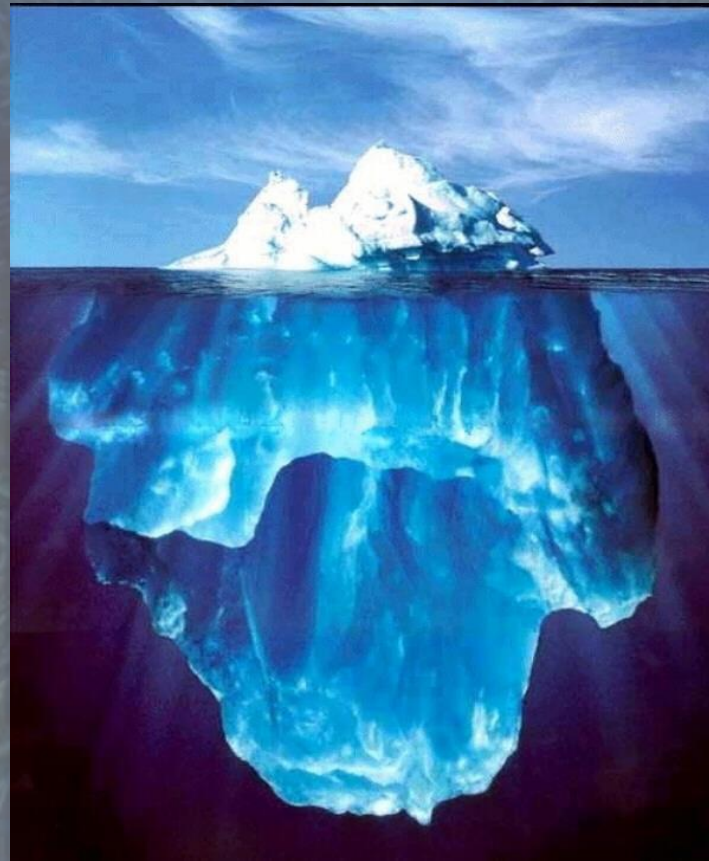
-Microbe genes : human genes (regarded as the 'other' genome)

**-Majority of these microbes are found in the gut
(but those located at other sites can also have significant roles)**



THE PLATE COUNT ANOMALY

Culturable fraction < 30%



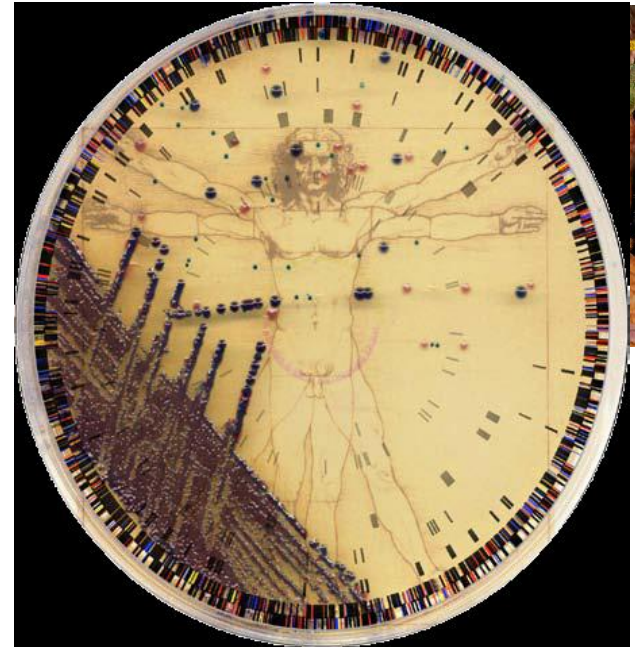
Our microbes – what do they do?

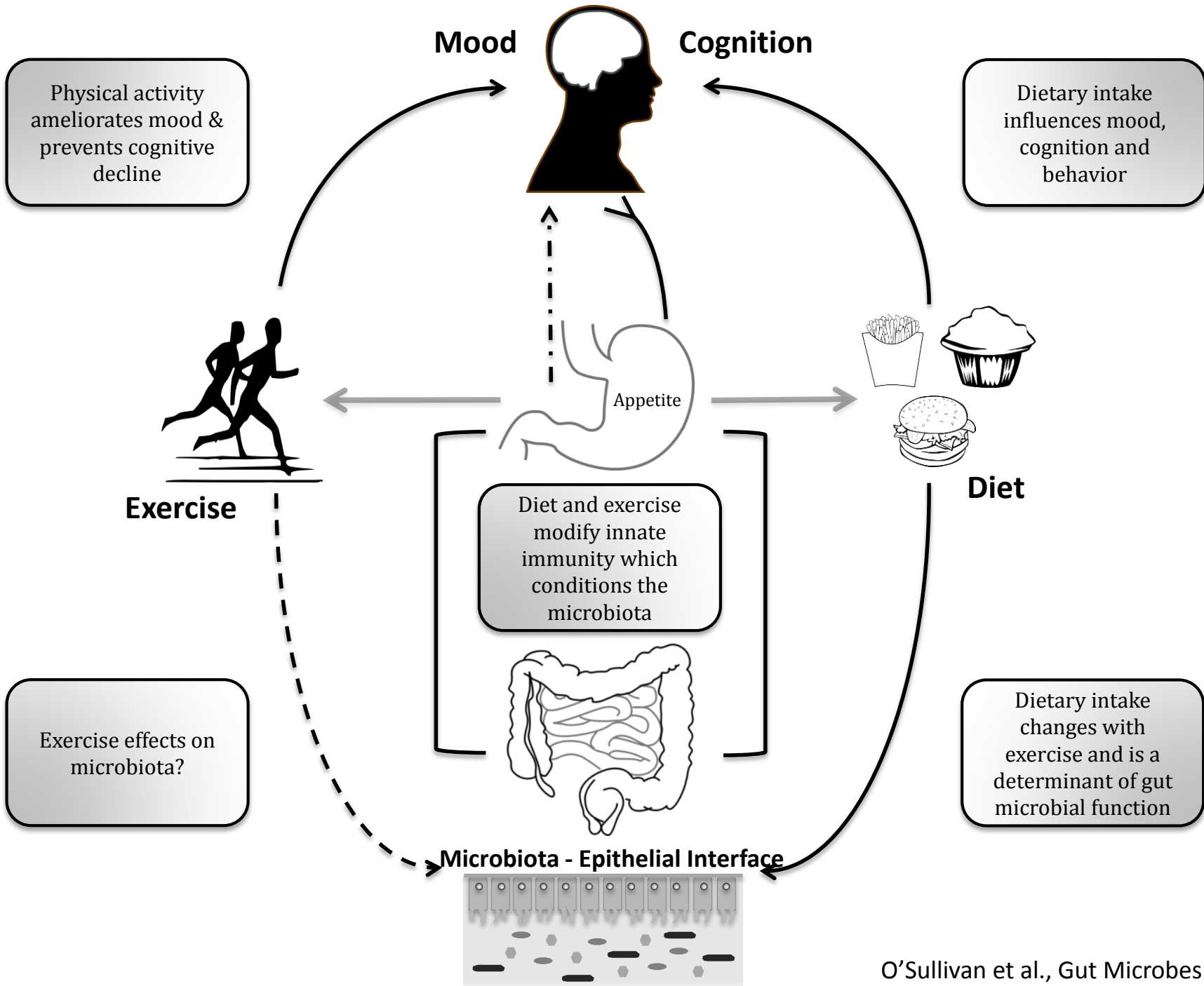
Unlike our human genome, our

- Harvest energy from foods
- Produce short chain fatty acids
- Produce vitamins

Some things that alter our gut

- Microbes (gut microbiota) include diet (+ or -), probiotics (+), prebiotics (+), antibiotics (usually -)







Elite Athletes n=40
Control BMI <25 n=23
Control BMI >28 n=23



Data collected

- Fasting blood sample (metabolic & inflammatory markers)
- Clinical blood tests
- Diet (FFC)
- Body composition
- Faeces (microbial sequencing)



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ORIGINAL ARTICLE

Exercise and associated dietary extremes impact on gut microbial diversity

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Low to
desirable
allergic



micro
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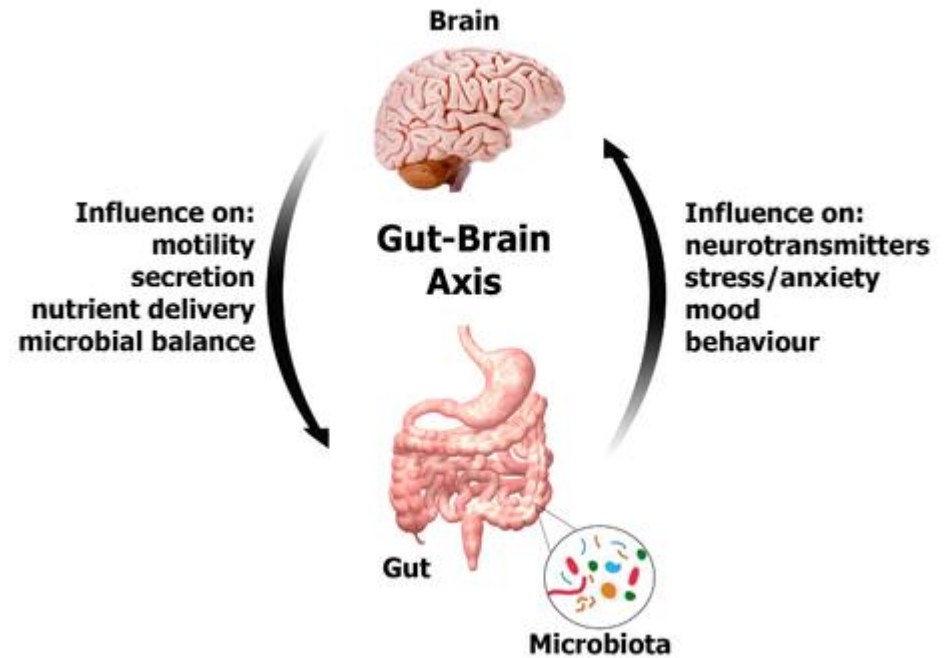
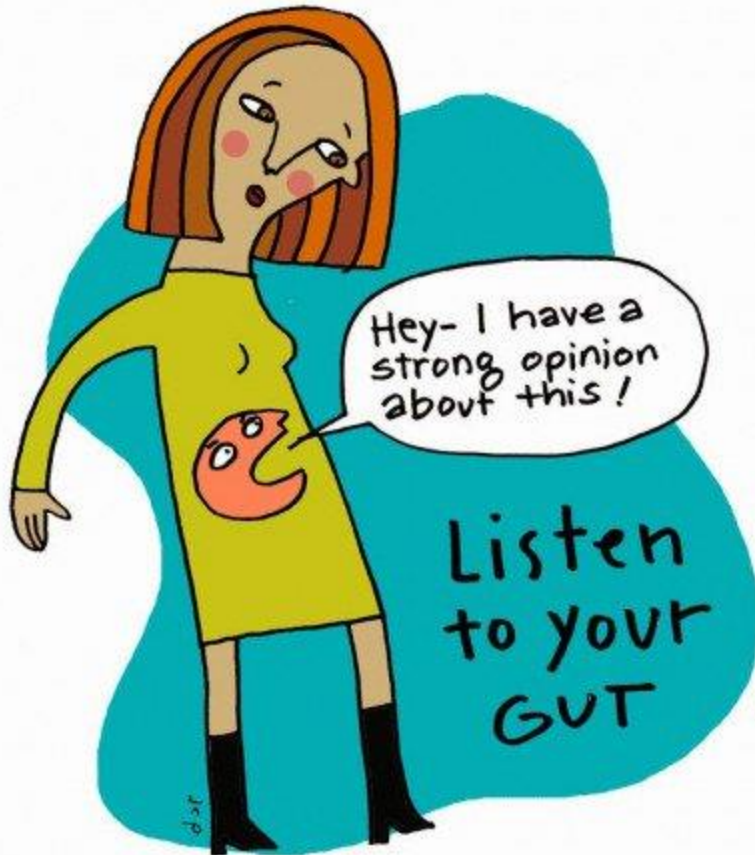
as less
tible to
others)

Summary/Conclusion



- Higher diversity of gut microbiota in athletes
- Clear separation of microbial communities between athletes and controls – there were different microbes present in the rugby players to the controls
- Increased fibre and protein intake as well as increased lean mass correlated with levels of specific short-chain fatty acids

Gut feeling???



So what's it got to do with spuds?



Potatoes= high fibre
high starch

And now for the science!



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Carbohydrate Polymers

journal homepage: www.elsevier.com/locate/carbpol

Digestibility and prebiotic properties of potato rhamnogalacturonan I polysaccharide and its galactose-rich oligosaccharides/oligomers

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T. Macfarlane, Editor



Fiber from a regular diet is directly associated with fecal short-chain fatty acid concentrations in the elderly

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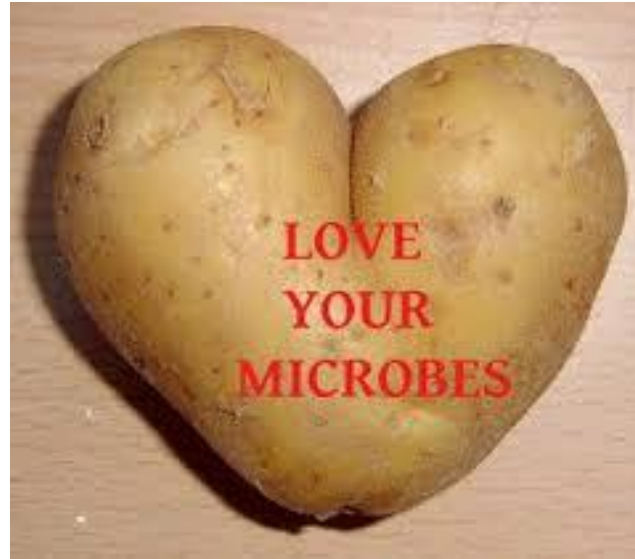
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Take home message!



and love (eat) potatoes....



Acknowledgements



All athletes

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