Grapefruit, berberine the new curcumin, compounds which mimic fasting and thoughts generally about sustainability and self-renewal.

What if you could wear a suit which would make your body fluids completely recyclable?

Maybe only allowing a thimbleful of liquid to be lost each day?

Matt's self sealer.

A few years ago at collage I broke a tea cup. Quickly I pushed it make together and remarkably it resealed. The mug became know as Matt's self sealer. It used to make a weird high pitched noise when you made tea in there. Eventually it broke properly – fortunately the body can heal and stay healed. Much of my work relies on the body's unique ability to heal across all its systems. Given the right nutrients we have the remarkable capacity to live across several decades, going through the spring, summer, autumn and winter of life if you like.

In my office I've a mini dehumidifier. Once it's full I use the water to water the plants in there. Spider plants as they are really good at keeping the air clean. NASA experiments have proven this.

I was pretty pleased with this little eco-cleaning, self-sustaining system – as long as I empty the dehumidifier it all works out fine. The plants get watered, the water is free from the air, from the sweat produced in the shed workouts at the bottom of the garden.

If I powered the electronic device with solar then I'd really be onto something.

There's a theory the Earth is a self-sustaining system the Gaia hypothesis. Whether or not this is true we seem to be doing our very best to disrupt the delicate balance of self-renewal.

In a sense the body is like this, given the right nutrients we can heal, sustain and build energy going through the cycle of life until we are also recycled back into the earth.

It got me thinking about an old book I read many moons ago. Dune. They made an ok film about it too. Briefly it's a dessert planet with hardly any water. The inhabitants wear still suits.

The still suits are a cool concept, making the body a mini self sustaining ecosystem. Gaia on a mini level. I was thinking how we can all build more sustainability into our houses, our bodies. Eating less, eating less frequently means using less energy, taking less from the planet and giving back more from the energy we generate.

In Dune, they mine 'spice' – there's a great quote when one of the nasty leaders, Baron Harkonnen says "he who controls the spice, controls the universe"

I guess if we're talking about the metabolic universe, the currency we trade on – the 'spice' could be thought of as insulin. "He who controls insulin, controls the performance universe"

Of course, it's not just about insulin, there's tons of other systems at play, oxidative stress, inflammation and so on. However, insulin and the associated food intake, its relationship to the fed and fasting enzyme systems AMPK and Mtor really are key players.

I was first made aware of AMPK (I'll explain more what this key survival enzyme does in a minute) when reading about grapefruit and the grapefruit diet.

The grapefruit diet, for anyone who doesn't know was basically, grapefruit, eggs and coffee. Unsurprisingly you lose weight and fat quite quickly. The diet has after all the 2 key concept which are needed for successful fat loss, protein, fibre and a decent deficit. The addition of caffeine and grapefruit probably makes it more effective. You can read about the pathways activated through grapefruit compounds in the links listed below.

Grapefruit probably is the only fruit which is a good idea to take if you have metabolic syndrome, poor blood glucose control, pre-diabetes or full-blown diabetes. You just need to be aware that the compound which helps does prolong the effects of other medication (makes it stronger).

Grapefruits as energy boosters

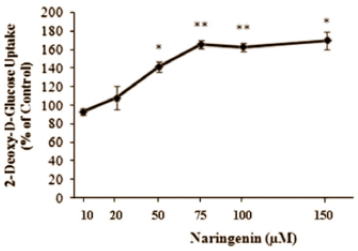
Canadian researchers wanted to explore the effects that naringenin (a food compound found in grapefruits) had on glucose uptake in cells.

The reason for this interest in naringenin was due to its similarity in structure to Resveratrol, which has previously shown to have beneficial effects on glucose uptake in muscle cells.

Study

Young and adult rats were exposed to naringenin in test tubes. The younger rats did not react, whilst the older rats did indicating GLUT4 transporter activity was enhanced.

Results indicate that as naringenin increases, glucose uptake into muscle cells increases.



Naringenin increases the AMPK mechanism, which becomes active once fuel supply is low in cells. Similarly, upon taking a certain amount of naringenin in, insulin activity is boosted.

Zygmunt, K *et al.* (2010) 'Naringenin, a citrus flavonoid, increases muscle cell glucose uptake via AMPK', *PubMed,* 398(2), pp. 178-83 [Online]. Available at http://www.ncbi.nlm.nih.gov/pubmed/20558145

The mechanism – we always got to come back to the mechanism if the activation of the enzyme AMPK which is released in response to lower energy environment. This in turn increases insulin sensitivity. So then when you eat carbs after fasting or grapefruit intake you should be able to get more glucose back into the muscle.

AMPK also happens to be activated by many other flavonoids, one of the most powerful ones and likely to surpass curcumin in terms of general health giving effectiveness is berberine. Just one of several highly effective ingredients in my Metabolic Optimiser.

If we can keep our AMPK systems activated by exercise and calorie manipulation, altering feasting and fasting patterns we can maximise health and longevity along with being less of a burden to the planet.

Grapefruit compound reduces obesity

https://www.ncbi.nlm.nih.gov/pubmed/20501876

Grapefruit general benefits

https://books.google.co.uk/books?id=iyv1CAAAQBAJ&pg=PT240&lpg=PT240&dq=grapefruit+ampk+Nootkatone+vs+naringin&source=bl&ots=puhq5pSo2H&sig=ACfU3U2sWXlCKv9t7oKOWBpzDh8NinPYjA&hl=en&sa=X&ved=2ahUKEwjjtt7UtePjAhU7QUEAHSf4DJUQ6AEwB3oECAkQAQ#v=onepage&q=grapefruit%20ampk%20Nootkatone%20vs%20naringin&f=false

Grapefruit in relation to obesity

https://academicjournals.org/journal/AJPP/article-full-text-pdf/81888CE51349

Protects against the effects of metabolic syndrome

https://www.ncbi.nlm.nih.gov/pubmed/22198281