



The science & art of living the way nature intended

The Bond Briefing

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RATIONAL EVIDENCE-BASED COMMENT FOR THE GENERAL PUBLIC & HEALTH PROFESSIONALS. WE SAY EXACTLY WHAT WE THINK

Bond Paleo Strategy: Surprise Sweetener Spook. **Living how Nature Intended:** Daylight in Office Boosts Health. **Evolutionary Behavior:** Male-Female Pairing Evolved to Lock in Male Protection for Kids. **Bond-paleo Resources:** Natural Eating – Revised edition. **Questions:** Sugary Fruits; Fruit Sugars Metabolisation. **News Clips:** Morning Sickness Healthy? Do Gut Bugs Manipulate our Behavior? Fasting Renews Immune System; Ultra Running – too much of a good thing; Liver helps Regulate Bone Mass. **Web News:** Interview with Sam Bearfoot.

Bond-Paleo Strategy

Surprise Sweetener Spook



Once in a while a study comes out which springs a sea-change on us. Such is an Israeli study [1] on the 'intense' sweeteners sucralose (Splenda), aspartame (Canderel, Equal) and saccharin (Sweet 'n' Low, Hermesetas, Sweetex...).

Many skeptics condemn these substances, known as Non-Nutritive Sweeteners (NNS), as 'unnatural' but without much evidence of harm. But now researchers have uncovered a totally unexpected way in which they can be a problem.

The scientific paper, published in the prestigious journal *Nature*, describes a very thorough and elegant study; it is densely crammed with data and highly nuanced observations. It has taken me several hours to study it in depth, and to make sure I understand all the wrinkles.

The bottom line is this: many people who consume sucralose, aspartame and especially saccharin, have an overgrowth of a particular profile of 'bad' bacteria in the gut.

And the research proved that the bad bacteria are the cause (no question here of an ambiguous 'correlation') – are the cause of a number of mischiefs - especially that they can induce a state of 'glucose intolerance'.

Cont: page 3

Living how Nature Intended

Daylight in Office Boosts Health



Employees with windows in the workplace received 173 percent more white light exposure during work hours, slept 46 minutes more per night, and had better quality sleep, than employees who had windowless offices [2].



Tony Hancock's windowless office in 'The Rebel'

According to the researchers, architects should be aware of the hidden costs of windowless offices. They should also note that, to do any good, the desk needs to be within 20 feet of the window.

Say the researchers: "Light is the vital agent for synchronization of bio-rhythms with the day-night cycles. Exposure to daylight, particularly in the morning, is essential to health and improves mood, alertness and metabolism."

My View? No surprise here – and yet, as the sage said: "Man alone amongst the living creatures tries to deny the laws of Nature".

See: 'Morning Sun keeps off Pounds', [May 2014](#) [3]; & 'Daylight controls fat', [Sept 2009](#) [4]

Evolutionary Behavior

Male-Female Pairing Evolved to lock in Male Protection for Kids



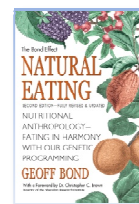
The greatest threat to a primate infants' life in a state of nature is from unrelated males.

Now a sophisticated New Zealand study takes our understanding one stage further. It finds that this threat is a key driver of male-female contractual pairing in humans [5].

For infants to survive, they need the protection of the mother's male partner. **Cont: Page 4**

Bond-Paleo Resources

Natural Eating – revised edition



My 2000 classic, revised and updated, is now available in print and on Kindle. Full information and "Try Before you Buy": www.naturaleating.co.uk.

"Yesterday I downloaded a book by Geoff Bond, "Natural Eating". I'm about 10% through this book and I'm riveted to it." – 'Costa'

[Google forum: <http://bit.ly/1COOrQlm>]

Questions

Sugary fruits

Q. *What is your view on fruit intake generally? Should it be limited because of sugar content or is it a green light?*

A. I write and talk about the problems of sugary fruits a lot. As a rule of thumb, work on the berries which are pretty safe, otherwise limit intake of more glycemic fruits – see *Fruit-GI-Fructose Table* [6].

These are some of my writings at random: '*Glycemia and Runner's Wall*': [May 2014](#) [7]

'*Pink Lady Apples, Fruits and Blood Sugar*': [April 2004](#) [8]

Fruit Sugars Metabolisation

Q. *Do sugars in the fruit have the same effect on the body as the same amount of sugars in their pure form?*

A. Sugars within the fruit get metabolized the same way, but rather more slowly. So the GI of a whole fruit compared to swigging the same cocktail of sucrose, glucose and fructose, is somewhat lower.

However the benefit is limited – see previous question.

By the same token, fruits lose their fibrous structure when juiced and the sugars hit the bloodstream hard. So fruit juices are associated with the sugar diseases and, in particular, obesity and diabetes.

That is why even the Government authorities have come to the view that we should limit consumption of fruit juices to ½ a cup a day [9].

See also: '*Fruit Juice Warning*': [Nov 1999](#) [10]

'*Guidelines: Cut back on Soda*': [March 2006](#) [11]

Deadly Harvest, [Ch 3](#), p 83 [12].

News Clips

Morning Sickness Healthy?

Morning sickness is one of the puzzles of human evolution. Does it serve a purpose? Or is it just a by-product of the huge hormonal changes going on in early pregnancy?

We have little information even about hunter-gatherer women and if they so suffer.

In '*Plant Food in Pregnancy*', [Dec 2003](#) [13] I reported how evolutionary biologist Margie Profet hypothesized that it helped women avoid plant toxins that could harm the embryo.

Now a recent study finds that, compared to women who had little or no morning sickness, women who suffer moderate to severe morning sickness were less likely to miscarry; were less likely to have babies with birth defects or low birth-weight; were less likely to have premature birth; and had children who scored higher on IQ tests at ages three to seven years [14].

These are still just correlations but nevertheless indicative that morning sickness is a 'normal' condition. The researchers warn that the taking of anti-morning sickness medications probably defeats the benefits and so are probably not a good thing.

Do Gut Bugs Manipulate our Behavior?



Famously, mice infected with the cat parasite, *Toxoplasma gondii*, lose their fear of cats [15].

The parasite needs mice to complete its life cycle and so it manipulates mice into risky behavior, increasing its chances of being eaten by a cat.

But this is just one example of how gut bugs manipulate their hosts into behaviors that promote the bug's success to the detriment of the host's.

It happens in us humans too. Microbes influence human behavior to favor eating of the nutrients they grow best on, rather than simply living off whatever nutrients we choose to send their way [16].

They manipulate us by changing our sense of taste, by producing toxins to make us feel bad, and by releasing chemical rewards to make us feel good.

They do this by altering signals carried by the '*vagus*' nerve which connects the gut to the brain.

My View? We are only scratching the surface of the vital importance of hosting a Paleo-conforming gut 'biota' (see '*Surprise Sweetener Spook*', p.1)

Some of the bugs have interest aligned with ours, and others do not.

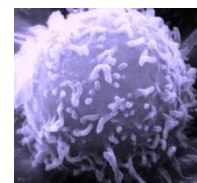
But the good news is that we can change the profile from one minute to the next simply by changing what we ingest.

But that means ignoring the cravings! It means sailing steadfastly on the Paleo course that you set for yourself.

Fasting Renews Immune System

Valter Longo and colleagues at University of California, Davis find that regular prolonged fasts of two to four days, tune up the immune system [17].

They force the body to break down a goodly ration of the immune system's white blood cells.



White blood cell

As the white blood cell count goes down, stem cells are shifted from a dormant state to one of self renewal. Over the course of six months, old and damaged white cells are cleared out and replaced by new ones.

This fasting also lowered levels of '*IGF-1*', a growth-factor hormone. Reducing IGF1 is helpful. It slows ageing and tumor progression.

Chemotherapy

The researchers found, too, that a 72 hour fast prior to chemotherapy, enabled the

white cells to better resist the toxic effects of the treatment.

My View? I hold that there is no evolutionary basis for drastic fasting on a regular basis – see: *'Fasting Diet'*, [Jan 2013](#) [18].

However, this is an interesting biological trick which one could try for oneself – especially if facing chemotherapy.

This trick also ties in with the observation that calorie restriction quenches cancer [19] and could prolong life [20].

Ultra Running – too much of a good thing



Back in [Jan 2011](#) [21] (*'A Good Month for...'*) I reported on Dr James O'Keefe's review: *'Achieving Hunter-Gatherer Fitness'* [22].

O'Keefe ALSO said that extreme endurance sports are not conforming to our Stone Age heritage and can pose health problems. This applies to Marathons upwards through Iron-man triathlons and beyond. In particular: "Even in highly trained individuals, high intensity, multi-hour endurance effort damages myocardial [heart] cells and connective tissue".

Now in his latest review, O'Keefe reports that extreme exercise:

- increases risk of atrial fibrillation and,
- increases artery plaque, both calcified and non-calcified.

My View? As I say in *'Not all Exercise is Good'*, [Dec 2005](#) [23], humans were not designed for extreme endurance activity.

See also: *'Salt & Endurance Athletes'*, [Aug 2014](#) [24].

Phosphorus-rich Diet Unhealthy

Colas contain phosphorus in the form of phosphoric acid and, just in living memory, cola intake has rocketed from near zero to over

48 gallons per American per year [25].

But phosphorus is all pervasive in processed foods too (often as phosphates). The upshot is that the Western diet is overloaded with phosphorus.

As reported in *Deadly Harvest*, [Chapter 9](#), *'Osteoporosis'* page 269 [25], this excess undermines bone health.

But the mischief does not stop there. Phosphorus over-consumption stimulates the production of a hormone (made in the bones) called 'FGF23'.

FGF23 unhelpfully slows how the kidneys excrete sodium and so increases blood pressure [26].

It also controls the way the kidneys handle calcium levels. Too much phosphorus and this leads to calcification of the blood vessels [27].

My View? Hey – we all know that colas and processed foods were never part of our Stone Age past and we should forsake them today.

See also: *'Colas Accelerate Ageing'*: [May 2010](#) [28]

Liver Helps Regulate Bone Mass

Good bone health relies on many factors all working in harmony. Researchers have found another factor in an unexpected area: the liver.

Under normal conditions, the liver makes the amino acid, *'taurine'*. And taurine, by an unknown process, boosts the activity of bone-building cells [29].

However if, for some reason, the liver doesn't make taurine as it should, bone health suffers.

One reason, discover the researchers, is a deficiency of vitamin B12 in the gut.

My view? Who would have guessed that there is a bone-building pathway from the gut, to the liver, to bone? It is a powerful lesson that bone health depends on a fantastic variety of factors all working in harmony.

Who is likely to be vitamin B12 deficient? First of all vegetarians

and especially vegans: in spite of vain hopes to the contrary, B12 is ONLY available from animal sources. That is why vegans in particular should supplement with B12 tablets. See *'Vegan Blindness'*, [April 2000](#) [30].

Otherwise, it will be people who have some kind of intestinal condition like Crohn's disease, bad gut bacteria, leaky gut; or people on medications like acid-suppressing drugs and diabetes medications (e.g. metformin); or those with pernicious anemia, an auto-immune condition.

Continued from Page 1

"Five-a-day is enough"



This means that many people who use these NNS have a significantly higher blood sugar spike when consuming a glycemic food compared to people who do not use these sweeteners.

The researchers decided to focus on saccharin, since it gave the strongest reaction. The first experiments were carried out on mice. But, having established uncontrovertibly the existence of this phenomenon, the researchers turned to humans. First they examined some 380 subjects about half of whom were habitual users of NNS. They found that the more NNS they consumed, the more the bad gut bacteria increased and the worse the glucose intolerance.

Next, when the bad bacteria from the humans were put into the guts of healthy mice, the mice developed glucose intolerance – just the same as the humans from which they came.

Finally they put seven healthy volunteers through the same tests as the mice. They found that four of the seven responded in the predicted way.

After five days of consuming an Acceptable Daily Intake (ADI) of saccharin, their blood glucose

levels in an Oral Glucose Tolerance Test (OGTT) peaked at around 160 mg/dl. This is in 'glucose intolerant' (but not diabetic) territory.

However, three of the seven subjects were 'non-responders' – they did not 'respond' after the seven days trial to the NNS dosage. Their gut bacteria stayed the same and their glucose tolerance remained normal at 120 mg/dl.

What are we to make of this? What is it about 'non-responders' that their gut bacteria remain unchanged? The researchers speculate that it is something to do with diet – but what? We simply do not know yet.

Next Month: Sweetener dosing; Technical stuff; Public policy; Xylitol; Take home message [31]

Continued from Page 1

Male-Female Pairing Evolved to lock in Male Protection for Kids

"Just about every tribal society on Earth practices an arrangement where a man and a woman become contractually bound to each other. The fundamental terms of the contract are straightforward: the woman provides sex for the husband; food for herself, her husband, and their children; and nurturing for the offspring.

The man provides commitment, protection, status, security, and hunted status-food for gift-giving and sharing; he accepts any offspring of the woman's previous marriages." (Deadly Harvest, Chapter 8, page 210.) [32].

My View? Sometimes, erroneously, this contractual relationship is presented as an argument for lifelong monogamy. Actually hunter-gatherer men practised polygamy where they could – and 'serial' monogamy where they had to. In practice – in the savannas – a man could only fulfill one marital contract at a time.

See also 'Origins of stepfather violence': [Nov 2008](#) [33]

Web News

Radio Interview: Paleo Living

Listen to me, with Kim Lloyd (founder of [Ugg Foods](#)) talking to the [Digestion Detective](#) (Sam Bearfoot) about Paleo Living:

Sam's Page: <http://bit.ly/1rFQIQT>.

Bond Page: <http://bit.ly/Bond-audio>



Deadly Harvest: Geoff's latest work encapsulates current thinking on lifestyle anthropology. www.deadlyharvest.com



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