



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

Our Evolutionary Heritage: Better office light, better sleep, better performance. **Q of Month:** Micro-plastic in Seafood. **News Shorts:** Centenarian Secrets; Strong Muscles, Strong Immune System. **Q&A:** Myth: Erythritol Inflammatory? **Did You Know?** Body Temperature has dropped. **Breaking News:** Titanium Nanoparticles Inflammate the Colon; Sugar & Fatty Heart; More Berries & Apples Beat Alzheimer's; Overdose on Vitamin D; Unhealthy Antioxidant Overdose; Over-dependence on four crops; Melanoma Over-diagnosed? Hookworm helps MS Patients; Balanced Protein Intake Reduces Ageing Muscle Loss.

Our Evolutionary Heritage

Better office light: better sleep, better performance



<https://bit.ly/2CKuiUR> © Getty

For millions of years our ancestors lived out of doors in the light of a tropical sun during all the daytime hours. See: **Forager vs Modern Light Exposure**, [May 2018](#) [1].

If this were the case for eons our bodies and mentalities came to rely on it being there, and if it is not, things go wrong.

We know that sunlight exposure is important for regulating the body clock and sleep patterns, and I have frequently written about it [2,3,4,5] Now a very interesting and well-designed study tested what happened to workers in identical offices which had either traditional lighting or special glazing that let in **8-TIMES** as much light [6].

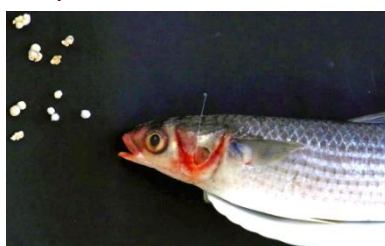
They found that, when working in the brightly day-lit environment, the participants slept 37 minutes more per night on average and scored 42% higher in a range of cognitive thinking tests.

Just one day was sufficient to register a major improvement which lasted several days.

The special glazing also gave much clearer views onto a green landscape. The researchers note >p4

Question of Month

Micro-plastic in Seafood



Q I am concerned by an Australian study [7] on micro-plastics in seafood. They found the highest levels in sardines! How does this impact us who eat fish and seafood for health?

A. It's not just seafood. Micro-plastics are becoming all pervasive. Sometimes manufacturers put them deliberately into their products. See: **Chemicals in Personal Care Products**, [Feb 2019](#) [8].

In the study you refer to, the researchers admit that their samples could have been contaminated by the plastic wrapping they were sold in. Should we be concerned? There is little actual research on what mischief micro-plastic might do to us.

Micro-plastics are smaller than a pinhead and result from the disintegration of larger plastic items such as bottles and supermarket bags.

IN THEORY micro-plastics could be a problem in two ways: a) they can physically clog up tissues, like the lining of the gut and, b) the chemicals they give off can be harmful. Many of them are 'endocrine disrupters' which mess with your hormones. See: **Is Obesity Optional?** [March 2016](#) [9], **Epigenetic Effects – Part III**, [Oct 2017](#) [10], **Pollutants Switch on Bad Genes Permanently**, [April 2012](#) [11]

All this can seem a little scary, >p2

News Shorts

Centenarian Secrets

Every so often studies roll round to discover the secrets to living to 100. Mostly they come to similar conclusions: have normal genetic makeup (accounts for some 25% of chances), preferably be a woman, then lead a physically hard life, don't eat too much, consume a Paleo diet, enjoy good social connectivity, and avoid lifestyle diseases of civilization like diabetes, heart disease and cancer. See: **How to Live to 100 and More**, [March 2008](#) [12]; **Sardinian Centenarians**, [Nov 2002](#) [13]; **Centenarian: Army Discipline Helps**, [April 2018](#) [14].

Now a data-mining exercise on Washington State denizens adds some more detail [15]. It finds that those Washingtonians who live in a 'highly walkable, mixed age, community have the best chance to celebrate their 100th birthday'. Translation? Yes, it means – just like in a forager band – have plentiful physical activity and multigenerational social connectedness.

Strong Muscles, Strong Immune System

In the fight against cancer or chronic infections, the immune system must be active over long periods of time. But, in the long run, the immune defence system becomes exhausted. However nature has an answer: the immune system's T-cells get renewed in bulky muscle [16].

My View? Surprisingly, muscles have many vital roles in maintaining the immune system. See: **Exercise helps Cancer Patients**, [June 2020](#) [17].

Moral? Do your press-ups every day!

Questions

Myth: Erythritol Inflammatory?

Q. The “wellness influencer”, Elana Amsterdam [18], claims that erythritol is made from corn (maize) and that is therefore inflammatory and should be avoided. Your view?

A. That’s about as daft as saying that you shouldn’t breathe the air in a cornfield because of the oxygen it gives off! (This is no joking matter – in summer, the Corn Belt pumps out so much oxygen it rivals the Amazon Rainforest [19])

This is not the first time this kind of sloppy thinking has come up. See: **Erythritol Source Nit-picking**, March [2018](#) [20]

No, erythritol is a naturally occurring dietary fiber in many plants and you can consume it with a clear conscience wherever it comes from.

As for the good Elana’s worry about corn inflammation, she is perhaps thinking about a) high fructose corn syrup and b) corn’s omega-6 oil content, both of which indeed are inflammatory and both of which should, indeed, be avoided.

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Micro-plastic in Seafood

but how much priority should we give to it?



Taking the broad view, people are getting sick because they are pigging out on sugars, starches, dairy, bad fats and processed meats. As far as we know, no one has died from eating a sardine.

So, in my view, while we should limit our exposure to plastics as best we can, we shouldn’t let fear of them affect our normal BondPaleo eating patterns.

Meanwhile we have to keep watch on micro-plastics breaking down into even smaller “nano-plastics”. For an idea where this might lead, see: **Titanium Nanoparticle Gut Attack**, [March 2017](#) [21] and **Titanium Nanoparticles Inflamm the Colon**, this page.

Did You Know

Body Temperature has Dropped

Since the early 19th century, the average human body temperature in the US has dropped [22].

Says Julie Parsonnet, MD: “Everybody grew up learning that our normal temperature is 98.6°F (37°C)”. But that figure was established by German physician Carl Wunderlich in 1851. However, modern studies call that number into question.

A recent study, for example, found the average temperature of 25,000 British patients to be 97.9°F (36.6°C)

Parsonnet hypothesizes two possible factors at work: 170 years ago people were more **INFLAMED** due to poor hygiene and illness and, secondly, their **METABOLISM** was raised due to their exposure to more freezing and heating than we are today in our comfortably heated and air-conditioned environments.

My View? Who knows? All I know is that when I enter an establishment requiring a Covid-19 forehead temperature check I am cleared when it checks out at 97.4°F (36.3°C).

Breaking News

Titanium Nanoparticles Inflamm the Colon

Titanium dioxide is a food additive which food processors use to make products look whiter and more opaque. It is common in chewing gum, toothpaste, desserts, and candy.

Smaller than 100 nanometers, food-borne nanoscale particles have properties that cause concern. The bigger particles won’t be absorbed easily, but the smaller ones could get into the tissues and accumulate somewhere.

In this study, the researchers found that titanium dioxide nanoparticles decreased the levels of short-chain fatty acids (like butyric acid and propionic acid), which are essential for colon health. This increased inflammatory immune cells and inflammatory cytokines in the colon [23].

Although the FDA and the EU (E171) has approved titanium dioxide as a food additive, France has broken ranks and banned it.

My View? In the great scheme of things, this is not of the first priority. However we must remain vigilant that all these little intrusions into our natural diet don’t add up to major problem. So, in my view, avoid E171 whenever you reasonably can.

See: **Titanium Nanoparticle Gut Attack**, [March 2017](#) [24] and **Micro-plastic in Seafood**, p 1.

Sugar and Fatty Heart

Sugar consumption is linked with larger fat deposits around the heart and in the abdomen, which are risky for health [25].

“This fat tissue located around the heart and in the abdomen (which we measured by CT scan) releases chemicals into the body which are harmful to health” says researcher, Dr Lyn Steffen of the Minnesota School of Public Health.

My View? Just one more nail in the coffin of our scandalous sugar (and starch) intake. Avoid!

More Berries & Apples Beat Alzheimer's

Older adults who only consumed small amounts of flavonoid-rich foods, such as berries, apples and tea, were two to four times more likely to develop Alzheimer's disease and related dementias over 20 years compared with people whose intake was higher, according to a study from Tufts University, Boston, USA [26].

Researchers categorized flavonoids into six types and created four intake levels. Examples of the levels studied:

Low intake: no berries (anthocyanins) per month, roughly one-and-a-half apples per month (flavonols), and no tea.

High intake: roughly 7½ cups of blueberries or strawberries (anthocyanins) per month, 8 apples and pears per month (flavonols), and 19 cups of tea per month (flavonoid polymers).

My View? The “High Intake” of the study is pretty modest by our lights.

But it reinforces our thesis that the starvation of micronutrients in our modern diets is a major factor in many of the Diseases of Civilisation, notably Alzheimer's.

See: **Alzheimer's Disease and Dementia, Chapter 9, Deadly Harvest**, p. 252 [27],

Rolling Back Alzheimer's, June 2012 [28].

Overdose on Vitamin D

One woman was hospitalised with vomiting, stabbing stomach pain, headaches, fatigue, low appetite, itching, and frequent night urination [29].

After a battery of tests, this woman was discovered to have self-medicated with massive over-doses of Vitamin D. She was appropriately detoxified and then released.

My View? Yes, Vitamin D is human food – but we need to get it from sunshine! That way the body takes just what it needs and converts it into the hormones that are in harmony with the needs of the body.

The truth is in the name “sunshine vitamin”. Vitamin D needs to be obtained from sunshine! See **Sunshine is Human Food, Dec 2016** [30]

But many people try to do a short-cut and take vitamin D as a supplement. Then they run the risk of overdose. On the contrary, get your vitamin D the way nature intended – from sunshine!

Unhealthy Antioxidant Overdose

Anti-oxidants are good, right? Yes, but only when there is a dearth of them. It is also possible to have too much of them [31].

In that situation they create “anti-oxidative stress” which is “pathological” – that is, it makes you sick. This is known as “reductive stress” which caused unhealthy heart enlargement and diastolic dysfunction (when the heart muscles become stiff). This was in mice who developed irreversible heart damage over time.

My View? We cannot second-guess the need of our bodies for nutrients – but we don't need to!

Just eat the way nature intended (the way we say) and the body sorts this out just fine.

Over-dependence on Four Crops



Soy bean prairie
<https://bit.ly/3gnBWCp>

Believe it or not, some 50% of the world's food production is accounted for by just four crops: soy bean, wheat, corn (maize) and rice [32]. Needless to say, we Paleo buffs don't eat any of them.

In contrast, the remaining 50% is accounted for by some 152 crops. The danger, says researcher Adam Martin, is that we have become over-dependent on just a few crops which could disastrously fail due to a virus, fungus, or whatever (think the Irish Potato Famine).

However, there is good news, diversity of production and consumption has increased over the past couple of decades.

My View? We certainly encourage the consumption of a wide variety of plant foods, just like a forager – who ate from a range of over 100 plants species.

Indeed that was the case until recent times. Only 400 years ago, Shakespeare had a wonderful roll-call of food-plants that we have largely forgotten and ignored in recent times. See: **Forgotten wild plants, Oct 2000** [33].

Melanoma Over-diagnosed?

“If you go looking for melanomas, even among low-risk people, you're going to find some. The question is whether detecting those cancers does more harm than good.” So wonders Dr Rita Rubin writing in the doctors' trade journal, *JAMA* [34].

She points out that the rate of melanoma diagnosis has increased fast, mainly due to massive increases in screening, whilst the

death rate has remained flat. It is a sure sign of ‘over-diagnosing’.

Rubin goes on to observe that most melanomas are “indolent”, meaning that the cancers never would have caused harm if they'd been left undetected and untreated. “Only thyroid cancers are more over-diagnosed than melanomas”, says Ruben. See: **Epidemic of Diagnoses May 2018** [35]

My View? This concern about over-diagnosing and treatment of melanomas is not new. We talked about it 15 years ago in: **Non-Epidemic of Melanoma, Sept 2005** [36].

Even so, since the operation to remove a melanoma (whether or not it be ‘indolent’) is relatively trivial, I would have it cut out anyway.

Hookworm helps MS patients

A recent study finds that infecting MS patients with a safe dose of the hookworm parasite *Necator americanus* induces immune responses and boosts the number of cells which help keep the immune system under control [37]. Hookworms in the gut switch off the mechanism by which the body's immune system becomes overactive -- the main cause of MS -- reducing both the severity of symptoms and the number of relapses experienced by the patients.

My View? It is an uncomfortable truth that our forager forebears were always infected with parasitic worms and that we have to suppose that in many ways our bodies must have developed a symbiotic relationship with them. See: **Gut Worm Helpers, Jan 2018** [38], **Worms are Good for You, Nov 1999** [39].

Even so, most of us get along very well without ‘hookworm helpers’ but if you do suffer from one of the various autoimmune diseases, then this kind of hookworm treatment is definitely Paleo-conforming!

Balanced Protein Intake Reduces Ageing Muscle Loss

Eating more protein at breakfast or lunchtime could help older people maintain muscle mass as they age -

- but most people eat proteins fairly unevenly throughout the day [40]. Older people don't build muscle in response to protein like younger people do. They therefore, need to eat more protein to get the same muscle building response. And oh yes, do muscle-building exercises to mobilise utilisation of the protein intake.

My View? This is a regular refrain which we report at regular intervals. See: **Protein in Focus**, [Jan 2016](#) [41]

What did foragers do? As far as we know, they ate protein-rich nuts at most times of the day but meat mostly at the end of the hunting day in the evening. So protein intake was not equally distributed throughout the day. Nevertheless, it seems that we can use this trick to improve

on the outcome provided in a state of Nature.

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Better office light: better sleep, better performance

that studies are legion which show that absence of contact with nature is very detrimental to both bodily and mental health [42,43,44]. For example, hospital patients with access to windows overlooking gardens had shorter stays, fewer negative outcomes and fewer pain medications than those looking at a brick wall [45]. Other studies find that people working in an underground or a windowless environment have increased stress, increased



drowsiness and reduced cognitive function [46].

My View? These office workers were receiving **8 HOURS** per day of broad daylight. Is this necessary to achieve these helpful results? It certainly mirrors the amount of light that our ancient ancestors received.

On the other hand, we have worked with other studies which suggest that a minimum of 30 minutes of morning sun is good enough. See **Morning Sun keeps off the Pounds**, [May 2014](#) [47].

One thing for sure is that it is best to start daylight exposure early in the morning and keep going for as long as possible.

Spreading the Word

All speaking events are cancelled until further notice

Paleo in a Nutshell: Geoff's latest work encapsulates, concisely and easily, current thinking on living the way nature intended. www.paleo-nutshell.com



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