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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 Health: Nicole's Omega-3/Omega-6 Healthy Status. **News Flashes:** Choline Deficiency Crisis? **Climate Watch:** Trim Obesity to Save the Planet. **News Flash:** Gut Bacteria to Reverse Food Allergy. **Food Ideas:** Spicy (Zaatar) Wafers. **News Flashes:** Low Choline – Cognitive Decline; CV Health needs Intense Light, **Our Physical Heritage:** From Fructivore to Omnivore. **News Shorts:** World Population Doomed to Rise. **Health Policy:** Over-aggressive Medical Intervention.

Bond-Paleo Health

Nicole's Omega-3/Omega-6 Healthy status



Enlarge: <http://bit.ly/2m2rWI9>

Last month we saw Nicole's conventional blood-work (it was exemplary). Now we look at the results of the special tests for Omega-3/Omega-6 status here: <http://bit.ly/2kbmQJh>.

Why is this so important? The answer is **INFLAMMATION**. Omega-6 oils are **HIGHLY INFLAMMATORY** and, just in my lifetime, omega-6 oils like sunflower, corn, soy, safflower and peanut have come to **DOMINATE** our food supply. They are in most processed foods.

As a result, they have become a **MAJOR FACTOR** in degenerative diseases from cancer, arthritis and heart disease to Alzheimer's, osteoporosis and diabetes.

In contrast omega-3 oils are **ANTI-INFLAMMATORY** and they **quench** the inflammatory tendencies of omega-6 oils. See: **Fats & Oils, Deadly Harvest, Chap 4**, p. 104 [1].

So how do Nicole's results shape up? Reassuringly, she has **extra-ordinarily good levels** of **ANTI-INFLAMMATORY** omega-3. The 'fish-oil' fractions (EPA & DHA) are up to **THREE TIMES BETTER** than the official upper reference levels.

> p 2

News Flashes

Choline Deficiency Crisis?

Back in [April 2000](#) [2] (in **Chocolate revisited**), I wrote:

"Choline is laying claim to be an essential nutrient, a vitamin even."

Its importance has been building up during the intervening years – see **Choline Fights Alzheimer's**, [April 2019](#) [3], **Egg Choline Builds Baby Brains**, [Sept 2018](#) [4]. **Pregnant Mom's Choline Boosts Child's Genetic Resistance**, [Dec 2012](#) [5].

Now an article in the prestigious British Medical Journal raises the alarm: the UK population, on average, is seriously deficient in choline [6].

Author Dr Emma Derbyshire points out that, like omega-3 oils, choline is an "essential nutrient" that **MUST** be obtained in the diet.



As long ago as 1998 the USA's Institute of Medicine recommended minimum intakes of 425 mg/day for women and 550 mg/day for men. Pregnant and breastfeeding women, need more. Only 11% of American adults achieve the minimum intake.

Inexplicably the UK has set no such standards and food and food composition tables ignore choline.

Choline is critical to brain health, fetus development, liver function, healthy fat metabolism, reduced homocysteine levels, and protection of cells from free radical damage.

> p 3

Climate Watch

Trim Obesity to Save the Planet!

"Obesity represents a titanic cost for the world's health systems but also a substantial ecological cost to the environment." [7]

So begins this scientific study on the 'ecological costs of overeating'. The study goes on to claim that: "Excess bodyweight corresponds to roughly 140 billion tonnes of food waste globally." – Wow! In other words:

If people only ate enough to maintain a normal bodyweight, then we could **REDUCE** the production of food by 140 billion tonnes per year! > 4

News Flash

Gut Bacteria to Nix Food Allergy

A team of researchers at Brigham & Women's Hospital, Massachusetts, find that certain strains of gut bacteria can suppress the immune system's inflammatory response [8].

In studies on mice with egg allergy they gave them fecal transplants of strains of the '*Clostridiales*' and '*Bacteroidetes*' families (see: **Our living Gut – part XX - Fecal Transplants**, [March 2018](#) [9]).

These bacteria (in mice) educated and stimulated regulatory killer T-cells known as 'Tregs' to promote a tolerant response. See: **Inflammation and Auto-immune Diseases**, [April 2009](#) [10]. They found that these effects also worked in human infants.

My View? The race is on to uncover the reasons why food allergies are rising so fast. There is certainly a constellation of lifestyle factors involved. See: **Infant Allergy Triggers**, [Sept 2018](#) [11].

Food Ideas

These totally conforming crackers make an ideal platform for all kinds of canapé.

Spicy (Zaatar) Wafers

Yield: about 35 (1½ inch square) crackers



<http://bit.ly/2nFQEPO>

- 40 g chia seeds
 - 50 g pumpkin seeds
 - 1 egg, omega-3
 - 100 g almond flour (about 3 ounces)
 - ¼ teaspoon salt, spiced (as truffle salt etc.)
 - ground pepper
 - ½ teaspoon bicarbonate of soda
 - 1 teaspoon cider vinegar
 - 1 tablespoon olive oil
 - 2 tablespoons water
 - 1½ tsp zaatar* or similar spice mix
1. Mill the chia seeds and pumpkin seeds in a coffee grinder until a very fine consistency. Set aside.
 2. Beat the egg with an electrical hand-mixer in a medium mixing bowl. Add the chia seed and pumpkin seed flour. Combine with all the other ingredients and mix well.
 3. Use your hands to knead the dough to obtain a smooth consistency and form into a ball.
 4. Place the dough between 2 sheets of non-stick baking paper.
 5. Roll out the dough between these two pieces of baking paper until it is wafer thin.
 6. Remove the top baking paper and cut into 1½ -inch square wafers (you

* Lebanese Zaatar spice blend is a fantastic, tangy, flavorful spice mix of oregano, ground sumac, thyme, sesame seeds and salt.

may use a pizza-cutter). Re-use the off-cuts in the same way.

Transfer the bottom piece of baking paper onto a baking sheet.

7. Bake in a hot oven at 320°F (160°C) for about 12-15 minutes (depending on thickness of the crackers), preferably turning them once, until golden brown.

8. Can be stored in the fridge in a sealed container.

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Nicole's Omega-3 status

Nicole is visibly in great shape, and her levels of omega-6 are at the **LOWER** end of official reference levels.



This results in a ratio of omega-6 to omega-3 as **LOW** as **2.9** to **1**. This is **EXCELLENT** for health, since an acceptable ratio is considered to be one that is less than **4** to **1**. Indeed foragers have a ratio closer to **1** to **1** See: **The State of the San's Health, Deadly Harvest, Chapter 1**, p 18 [12].

So we can be sure that, for Nicole, **inflammation**, one of the major factors in **AGEING** and **DISEASE**, is under control.

How does Nicole achieve this result? She does like we say: she avoids all sources of omega-6 oils as much as possible, and regularly eats some oily fish (e.g. sardine, salmon, herring, mackerel, trout).

Is it possible to do better? Certainly and one of our most ardent supporters, Diane Lewis, achieved an ideal omega-6 to omega-3 ratio of **1** to **1** back in 2018. See **Omega-3 to Omega-6 Blood ratio, April 2018** [13].

However, although Diane's status is perfection, Nicole's results are certainly 'good enough' – her results are in the "safety zone." Even so, as she says, she would like to improve. Since she has already eliminated obvious sources of omega-6, that leaves increasing intake of omega-3. This could be in the form of ALA (alpha-linolenic acid), from vegetable sources (such as flax-seed, rapeseed [Canola]) but that is problematic.

Human bodies struggle to convert ALA to DHA & EPA and they get worse as we get older. So that leaves upping the intake of oily fish. From now on she needs to consume **every day** at least **one FULL serving** of **oily fish**

All this is in contrast to the lamentable omega-6 to omega-3 ratio in the general population of some **20** to **1** [14]. No wonder most people are riddled with inflammation!

News Flashes

Low Choline - Cognitive Decline

A population study of Finnish men indicates that those men with the highest intake of choline had 28% lower risk of dementia and cognitive decline compared to the lowest intake [15]. The key sources of choline were eggs and meat.

My View? Although this study is a 'population' (epidemiological) study with all its attendant uncertainties, it does chime with other studies pointing in the same direction. See **Choline Fights Alzheimer's, April 2019** [16]. See also **Choline Deficiency Crisis?** p.1.

CV Health needs Intense Light

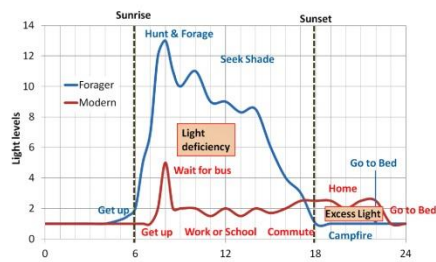
Researchers at the University of Colorado have found that, in the absence of **INTENSE LIGHT**, a specific gene ("PER2") that maintains blood vessels, is not activated [17]. This results in greater vulnerability to heart attacks.

They also discovered that the light increased 'cardiac adenosine', a chemical that plays a role in blood flow regulation.

In the experiments, human volunteers were exposed to 30 minutes of 10,000 lux at 8:30 a.m. on five consecutive days.

10,000 lux corresponds to being in the shade of a lightly veiled sky. (Office lighting is about 400 lux and full bright sun can be 100,000 lux). Finally, to confirm the connection, experiments on blind mice found that they suffered from inactive PERT2 gene and that, consequently, they had higher risk of CV disease.

My View? Humans evolved in the tropics where intense sunlight was the everyday experience.



Forager vs. Western light exposure

<http://bit.ly/2sVPvT2>

If that was the case for eons, we can be sure our bodies expect it to be there – and if it is not, then things go wrong. See: **Forager vs Modern Light Exposure**, [May 2018](#) [18].

Indeed, the PER2 gene **AMPLIFIES** the body-clock cycles, making them more effective. That is why the experiments were conducted at 8:30 a.m.

It is no coincidence that this mirrors the forager light exposure. It also chimes with many other studies underlining how the absence of morning **LIGHT** is harmful. See **Morning Sun keeps off Pounds** [May 2014](#), **Sunlight lowers Blood Pressure** [19].

This daylight is out-of-doors – there is no normal indoor light that is good enough. **Moral?** Get your 30 minutes of **OUTDOOR** daylight every morning!

Continued from Page 1

Choline Deficiency Crisis?

Food Sources

The primary sources in Western diets are beef, eggs, fish, chicken, and dairy products.



One-a-day egg consumers had **TWICE** the choline intake as non-consumers and were **8 TIMES** more likely to reach recommended levels.

Plant-based Diet Risks

Although nuts, beans, and cruciferous vegetables (such as broccoli) do contain some choline, the levels are much lower. Dr Derbyshire warns that the move to plant-based diets will aggravate the deficiencies.

My View? Presumably in our ancestral past, choline was plentiful in the forager diet to the point where our bodies came to rely on it always being there. Certainly, hunter-gatherers with their good intake of

animal matter, including eggs, would not have been deficient.

As for today's vegans, they should be thinking about supplementing with choline. Ovo-vegetarians (who eat eggs) should be all right on, say, one egg a day.

Similarly “pescatarians” (who eat seafood but not meat) should be all right too. All fish, both white and oily, are good sources of choline. Fish roe is exceptionally rich, see: **Fish Roe best for Omega-3**, [last month](#) [20]. See also **Low Choline – Cognitive Decline**, page 2.

Our Physical Heritage

Continuing insights from physical anthropologist Dr Daniel Lieberman of Harvard University [21]:

From Fructivore to Omnivore

Most people today only spend ½ an hour a day chewing food. “This is odd for an ape” says Lieberman.

A chimpanzee spends nearly half its waking hours chewing “like a raw foodist”. They (chimps) eat forest fruits like wild figs, wild grapes, and palm fruits, none of which is as sweet and easy to chew as our modern fruits.

Instead they are slightly bitter, less sweet than a carrot, extremely fibrous and have tough outer coverings. (See: **Fruits, Deadly Harvest**, [Ch 5](#), p 126 [22]).

In order to get enough calories, a chimp can eat 2 lb (900g) of this ‘fruit’ in an hour.

For us humans, the big transformation came some 4 million years ago when climate change forced our ancestors (the ‘*Australopithecines*’) out of the trees and onto the newly forming savannas to seek food.

This meant a huge change in diet – and it required physical adaptation of feet, legs and hips to long distance walking (see [last month](#)).

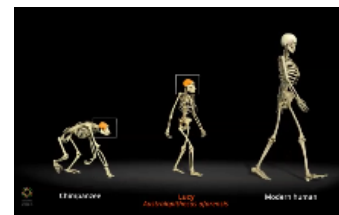
They relied more heavily on tubers, seeds, plant stems (think asparagus) and other foods that are hard and tough. Our jaws became stronger and our teeth adapted to heavy chewing. (See: **Your Jaws are what you chew**, [Aug 2011](#) [23]).

Even today foragers eat some tubers in a special manner known as “wadging” - chewing them for a long

time to extract any nutrients and then spitting out the remaining stringy pulp. (See **Indigestible Fiber Intake**, [Aug 2011](#) [24].)

My View? Lieberman covers a fairly well trodden path in outlining our extremely ancient transition from tree-dwelling to savanna-dwelling apes. He lays out well how this forced a rapid evolution in our bodies towards the ones we have now.

The most famous of all skeletons of creatures from that far off time is that of ‘Lucy’ who lived some 3.2 million years ago. She and those of her line already had bodies that were well adapted to walking upright.



Here is an interesting animation (by California Academy of Sciences) comparing her gait to both us (similar) and a chimpanzee (very different):

<https://youtu.be/xT8Np0g1dI>

News Shorts

World Population Doomed to Rise

Researchers at Queensland University, Australia, find that having large families is a genetic – and therefore heritable – trait [25].

“Fertility [having many children] tends to increase as children from larger families represent a larger share of the population.”

Say the researchers, “Our results suggest that ... it may be misguided to hope that world population will stabilize in the long term at a sustainable level simply by itself.”

My View? If true, this phenomenon has a number of consequences.

First, many people worry that the world's population is already beyond sustainable levels. See: **Sustainability of Food Supplies**, [April 2004](#) [26]. **Fish Stock Sustainability**, [Aug 2009](#) [27]. – so this is not good news for the planet.

Secondly, as discussed in **Human Species Brain Shrinkage**, [June 2019](#) [28], since lower IQ individuals tend

to have more children, this will result in a lowering of average intelligence in the general population.

Thirdly, it will be an example of accelerated Darwinian evolution in action. Just as so many well-meaning westerners are deciding to have no children "to save the planet", so they will, perversely, leave the field open to be populated with the genes of those people who have no such concerns.

This is similar to the phenomenon whereby the genes of women who prefer career over children will also die out. See **Career Women will die out**, [Oct 2007](#) [29]. Ho hum!

Health Policy

Over-aggressive Medical Intervention

Dr. Sunita Sah, a GP in UK, noticed that the U.K. guidelines for tests such as mammograms and colon cancer screenings are drastically less demanding than those in the U.S. -- even though they are based on the same medical evidence [30].

American practitioners tend to "exacerbate over-diagnosis, over-treatment, and spiraling health-care costs."

This is in part due to 'speciality bias' whereby "If you go to a surgeon, they recommend that you have surgery; if you go to a radiation oncologist, they recommend that you have radiation." They all want more aggressive and/or more frequent screening procedures. In part this is due to 'fee-for-service' bias whereby the medical practitioners have a financial interest in the procedures.

My View? All health services around the world are struggling with exponentially increasing demand and only linear increases in the money to pay for it.

But 'defensive medicine' is definitely built into some systems which result in excessive treatment. See: **The Quagmire: How American Medicine is Destroying Itself**, [Aug 2011](#) [31] and, **Docs avoid Aggressive End of Life Treatment for Themselves**, [July 2014](#) [32].

Our motto is to say: "A curse on all your houses!. We prefer to diligently maintain our bodies even better than our cars -- and avoid the clutches of the Medico-industrial complex!"

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Trim Obesity to Save the Planet!

... Most of this is high caloric foods like meat and dairy products. The

ecological impact of reducing production of these foodstuffs would be highly beneficial and would, in addition, reduce the production of greenhouse gases like methane, hydrogen and carbon dioxide.

My View? This is an interesting angle on the phenomenon of obesity. It is not only a massive cost to health systems, but obese people are causing immense ecological harm with their massive demand for over-production of food.

Maybe the watchword should be:

"Eat sparingly to save the planet!"

Held over for next Month

- **The Stonewyld Chronicles** – a vision of a medieval village life lived in harmony with nature

Spreading the Word

PRIVATE TALKS

ADVANCE NOTICE: Public Lecture

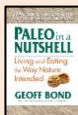
Date: Feb 1, 2020

Time: 14:15 – 15:15

Title: The Paleolithic lifestyle for optimum health and fitness.

At: ARTZ Symposium, Montabaur Castle, nr Frankfurt, Germany.

Web: <http://bit.ly/Artz-symposium>



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