



The science & art of living the way nature intended

The Bond Briefing

www.thebondeffect.com | Subscribe: \$18 for 12 monthly issues



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

Letter: Ageing Muscles – hard to Build, Easy to Lose. **Scientific Credibility:** Population Studies: Finding the Specks of Gold in the Mass of Dross. **Insight:** Gut-bugs are a Hormone Factory. **Ancestral Diet:** Cricket Meal Helps Gut Health. **Hints:** Salmon Species – Fish-oil Content; Beware Restaurant Muzak; Infant Allergy Triggers. **From the Labs:** Mushrooms control Glucose; Calorie Restriction Nixes Degenerative Diseases; Egg Choline Builds Baby Brains. **Viewpoint:** Paleo-conforming Physical Activity. **Food Security:** Weed-killer in Granola, Crackers. **Spreading the Word:** YouTube Videos

Letter

Ageing Muscles: Hard To Build, Easy To Lose

From: Diane Lewis, CA, USA



Diane working out: <http://bit.ly/2yM9jLr>

"I am female, in my mid 60s and have a trainer who has started me on a muscle building program.

"I am now convinced that strength training should be a daily routine. I change it each day, working different areas of the body.

"With daily strength training, muscles get pumped up, blood flow improves and our metabolism boosted. Without it, our muscles start shrinking.

"This is huge: it can help us to be stronger, more empowered, possibly extend our life span and health span."

My View? I am proud of Diane who has been a follower, supporter and benefactor for many years.

And what she says is very true. Foragers spent some time every day in what amounts to heavy muscular work. The women would be digging 3 feet down into unyielding soil to prise out and haul up 15 lb tubers. The men would be laboring to dig out > p3

Scientific Credibility

Population Studies: Finding the Specks of Gold in the Mass of Dross

Is the following statement true?

"Anyone who has ever eaten a carrot eventually dies"

Yes, obviously! Yet if this is published in a scientific journal the media immediately interpret it – at best (but falsely) – that there is a **CORRELATION** between eating carrots and dying. At worst, they conclude (falsely) that carrots are the **CAUSE** of death.

That is the weakness of population (epidemiological) studies in general and meta-studies (studies of studies) in particular.

Prof. John Ioannidis, MD, of Stanford University, CA has been, for many years, a voice in the wilderness decrying the flabbiness of most population studies and, especially the "Worthy Idiot" conclusions that are often drawn.

His 2005 paper: "*Why Most Published Research Findings Are False*" has been the most downloaded technical paper from the prestigious journal PLoS Medicine. [1]. In my article **Synthesizing Torrents of Info**, [April 2015](#) [2] I alluded to Ioannidis and his campaign for intellectual honesty >p3.

Insight

Gut Bugs are a Hormone Factory

"The gut microbiome [bacteria, viruses, fungi] contains more than 100 times as many genes as there are human genes. These microbial genes generate hormones, neurotransmitters, and inflammation, which affect our biochemistry" [3].

"Thus, the microbiome is like an additional endocrine organ."

Ancestral Diet

Cricket Meal Helps Gut Health



In the past I have argued that humans have reduced ability to digest chitin, the main component of the shells of crabs, prawns, lobsters, grasshoppers, and crickets, and also of the scales of fish. See: [Insect Nourishment, May 2014](#) [4].

However, it now appears that, even if chitin escapes conventional digestion, it still serves a purpose in the gut microbiome...

Researchers find that the chitin acts like a dietary fiber. It reduces bad bacteria and encourages the growth of beneficial gut bacteria such as *Bifidobacterium animalis* [5].

The net result is that the gut is healthier. It has improved immune function and reduced inflammation. In particular, inflammatory cytokines like "TNF-α" are **REDUCED**, thus **REDUCING** risk of cancer [6], cardiovascular disease [7] and major depression [8].

My View? There are plenty of other sources of dietary fibers so we don't need to go out of our way to seek out powdered insects. See: [Defining Dietary Fiber, Aug 2016](#) [9].

On the other hand insect farming is a fast growing industry. Apart from being fed to farmed salmon (see **Salmon Species: Fish-oil Content**, page 2) such products are seen as a substitute for mammal meats in the face of >p3

Hints & Tips

Salmon Species: Fish Oil Content



The fish oil content of salmon can vary wildly from one product to another. So it is important to check before you buy.

One rule of thumb is to look at the **calorie** content. It can vary from only 100 kcal to over 220 kcal per 100 grams. In this case, the more calories the better – and most of that difference is in the quantity of fish oil.

So an alternative measure is to look at the **FAT** content. It can vary from 3 grams to 18 grams per 100 grams.

The variety of salmon can play a role. On average farmed (Atlantic) salmon is the richest in omega-3. The farmers have got very good at breeding and feeding salmon to be rich in fish-oils, and to have good color and good texture [10].

And the salmon farmers have cleaned up their act too: see **Sustainable Ocean Food for All**, [Sept 2017](#) [11].

WILD salmon have an unpredictably variable oil content depending on the vagaries of their lives in the wild. On average wild King salmon has almost as much oil as farmed salmon whereas the wild Pink, Sockeye and Coho species have on average only **HALF** as much. Some species, like Chum, can be so lean as to have almost no fish-oil at all.

So, from the fish-oil content point of view, farmed salmon is a better bet than wild.

Should we buy fresh, canned or frozen salmon? Actually they are all equally good. The frozen and canned varieties have the advantage of fat and calorie labelling.

Beware Restaurant Muzak.

The volume of a restaurant's ambient music changes our choice of healthy vs. non-healthy foods. Softer music (at 55 decibels) has a calming effect, making us more mindful of what we order resulting in healthier choices, such as a salad. Louder environments (at 70 decibels) increase stimulation and stress, inspiring diners to crave a

greasy cheeseburger and fries instead [12].

My View? A curse on all restaurant background music! All right, it is a pet hate of mine and I often find myself battling with serving staff for control of the volume knob.

But if you struggle to choose wisely in a restaurant, it certainly seems a good idea to avoid noisy ones.

Infant Allergy Triggers

Infant food allergy is linked to a mix of environmental and genetic factors that must coexist to trigger the allergy [13].

The factors include: a genetically porous skin, cleansing wipes that leave soap on the skin, skin exposure to allergens in dust, and exposure to food from infant carers.

Food allergy is triggered when these factors occur together.

My View? Allergies have been rocketing just in my lifetime. They appear to be unknown in foragers. So there must be something about our modern lifestyles that is to blame.

Should we go back to the days when we took a bath just once a week? Or washed ourselves with 'Sunlight Soap'? (A post-WWII non-detergent pure soap bar)

Certainly it seems sensible to avoid skin contact with the multitude of chemicals that have appeared in our cleaning products in the past decades.

See **Skin Microbiome Battles Cancer**, [April 2018](#) [14], **Myth of a Germ-free World**, [Apr 2011](#) [15] **More Triclosan**

Mischief, [Sept 2012](#) [16].

Whilst it is good to clean ourselves of 'bad' bacteria, we have to be careful

not to destroy the beneficial microbiome. See **Allergies: Hygiene Good, 'Old Friends' Germs, Good**, [Nov 2012](#) [17]

From the Labs

Mushrooms Control Glucose

Button mushrooms encourage 'good' gut bacteria, '*Prevotella*', to thrive such that they produce more "*propionic acid*" a short-chain-fatty acid (SFA) from its pre-cursor "*succinic acid*" [18].

Mice were fed mushroom rations corresponding to a human dose of 3 oz (90 gram) per day.

Succinic and *propionic acid* change how genes get switched on and off in such a way that signals between the

brain and the gut control blood glucose levels more healthily. In particular they stop the liver **CREATING** new glucose when it is not needed.

My View? The tests were done on white button mushrooms, but brown button mushrooms will be just as good. It is probable that any species of mushroom has similar properties.

At any rate, the role of funguses in human nutrition is too much ignored. They formed a significant part of our ancestral diet and it is not surprising if they have a useful health role to play. See: **White Button Mushrooms Aid Immune Function**, [Sept 2010](#) [19]

Calorie Restriction Nixes Degenerative Diseases

A 2-year calorie restriction trial in healthy, non-obese humans found that it enhances resting energy efficiency, resulting in decreased oxidative damage to tissues and organs [20].

Oxidative stress is linked to Alzheimer's and Parkinson's diseases, cancer, diabetes, and other degenerative diseases.

Says lead author Prof. Leanne Redman of at Pennington Biomedical Research, Baton Rouge, Louisiana: "Restricting calories slows your basal metabolism, decreases risk for chronic disease, and prolongs life"

Those in the calorie restriction group cut calorie intake by 15% and lost an average of almost 20 lb (9 kg), although they did not follow a particular diet and weight loss was not the study's goal.

No adverse effects, such as anemia, excessive bone loss, or menstrual disorders were noted. On the other hand the trial led to improvements in mood and health-related quality of life.

My View? It is interesting that in this trial even normal weight people lost some 20lb! I think this is a criticism of what we think is a 'normal' weight.

We live in an age of food abundance and it is hard to follow the forager template where they spend most of their time feeling hungry. Yet this study confirms that this is the ideal way to be.

See: **Hungry for Health, Long Life**, [Nov 2005](#) [21]. **Hardship and Long Life**, [Nov 2008](#) [22]. **Dieting Monkeys Don't Live Longer**, [Oct 2012](#) [23.]

Egg Choline Builds Baby Brains

Infants who were introduced to eggs beginning at 6 months showed significantly higher blood levels of choline (a B-type vitamin) and DHA, an omega-3 fat also found in fish-oils [24].

Both these components play vital roles in infant brain development and function. Say the researchers: "Eggs deliver their nutrients in a holistic package, or "food matrix," which improves absorption and metabolism."

My View? Amongst foragers, eggs (raw) were standard weaning food. So that should be good for our babies too. Just make sure they are high quality, from pasture-raised hens if possible. I also like the researchers' comment about taking your nutrients as a 'holistic package'. As I frequently remark, food consists of a myriad of ingredients all working together like a symphony orchestra – we can't cherry-pick ingredients. Dr Mozaffarian makes a similar point in **Doc rethinks Food-Disease Link**, [Aug 2010](#) [25]. See also: **Pregnant Mom's Choline Boosts Child's Genetic Resistance** [Dec 2012](#) [26]. **Chocolate Revisited**, [April 2000](#) [27];

Continued from Page 1

Cricket Meal Helps Gut Health

... the extremists in the global-warming cult calling for the world to adopt veganism.

See also: **Mini-livestock here we come**, [June 2008](#) [28]

Viewpoint

Paleo-conforming Physical Activity

In **Run to Stay Young**, [last month](#) [29] I undertook to give my overview of Paleo-conforming physical activity.

To a large extent, this has been completed with Diane Lewis' letter and my response, page 1. However, to summarise:

Foragers were always 'up and doing'. They didn't actually run much, but they did carry loads and they did do heavy labouring, both on a daily basis. This applied to both sexes and to all ages, notably old people.

The men climbed trees and did, on occasion, jog for miles to run down a quarry.

Whilst we can make special efforts to work out, lift weights, jog, and even carry loads, in my view most of us still run the danger of too much **SITTING**.



<http://bit.ly/2P68TKb>

If you have a sedentary occupation do try a stand-up desk – or even a treadmill desk ([June 2015](#) [30]), and have an app which reminds you to **MOVE** at least every hour. See: **More on Excess Sitting**, [April 2015](#) [31]. **Limit Sitting Time**, [April 2008](#) [32], **Too much sitting is bad for you**, [June 2014](#) [33]

Food Security

Weed-killer in Granola, Crackers

Carey Gillam, is a public interest researcher [34] for US Right to Know, a non-profit food industry research group. She has authored a book, *Whitewash: The Story of a Weed Killer, Cancer, and the Corruption of Science* [35].

She reports that suppressed internal documents of the FDA reveal that a wide range of food products are contaminated with 'glyphosate', the weed-killer known as Roundup [36]. Roundup, made by Monsanto, is mainly used on crops that have been genetically modified to resist it.

Monsanto is fighting hard to prevent these findings being made public. However, the FDA is due to publish at the end of the year but, if previous reports are anything to go by, Monsanto will have succeeded in watering down the conclusions.

Monsanto claims that Roundup is not harmful if the levels are within legal limits. However, many scientists dispute that. They say that we are exposed to so many contaminants that the cumulative exposure is harmful and no one takes that into account.

My View? We can take some comfort from the thought that most crops subject to Roundup are GMO (which we avoid) and are ones that are non-Paleo anyway: corn (maize), soya, wheat, milk and oatmeal (porridge).

However, it has also been found in honey and eggs. For more on Roundup see: **Glyphosphate (Roundup) Mischiefs**, [Dec 2017](#) [37]

Continued from Page 1

Population Studies: Finding the Specks of Gold in the Mass of Dross

in scientific reporting. In his latest publication in the American Doctors Journal, JAMA, he observes [38]:

"Non-experts [journalists, general public] presented with studies giving only relative risks may falsely conclude that eating 12 hazel-nuts daily (1oz) would prolong life by 12 years (ie, 1 year per hazelnut) [Study 39], that drinking 3 cups of coffee daily would extend life by 12 extra years [Study 40], and eating a single mandarin orange daily (80g) would add 5 years of life [Study 39].

"Conversely, consuming 1 egg daily would reduce life expectancy by 6 years, and eating 2 slices of bacon (30 g) daily would shorten life by a decade, an effect worse than smoking [Study 39].

Could these results possibly be true?

Ioannidis answers his own question: "Almost all nutritional variables will be associated with almost all outcomes."

My View? I see so much humbug in scientific clothing that there is not the time in the universe to debunk it.

However, I do spend a considerable time each month critically reviewing the some thousand articles that cross my desk to select those which, in my view, bring in genuine insights. Even then, in 'My View' I often bring an important critical twist.

Continued from Page 1

Letter: Ageing Muscles - Hard To Build, Easy To Lose

...creatures like warhog, springhares and antbears from their underground burrows.

Moreover the men were remarkable for their strength in pulling on a hunting bow. Frank Marlowe measured [41] Hadza men with bow-pulls up to 94lb (43kg) which is **DOUBLE** the norm for the average western sporting archer. Every male, from the age of some 5 years old, practised with their bows daily.

So yes, heavy muscular work is certainly a vital feature of the Paleo lifestyle.

The literature is full of the benefits of muscle building, especially in seniors [42,43]. Do you need to work out with weights? In my view, the closer you



<http://bit.ly/2CniwS6>

can align heavy muscular work with the forager template the better. So do hump shopping baskets and carry your golf bag – or whatever you can integrate into your daily lifestyle.

But even so I find it necessary to supplement with doing daily press-

ups, chin-ups, body squats and 2-minute “planks” (image below).



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

The question of muscle building is handmaiden to my oft mentioned activity of how we should also get into the habit of load bearing. See: **The Importance of Load Carrying**, [Aug 2014](#) [44] and, for older people, most of whose muscles are turning to fat: **Most of the World's People are “Overfat”** [Feb 2017](#) [45].

Spreading the Word

EVENTS: <http://bit.ly/bond-event>

Talks to private organizations.

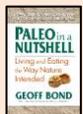
YOUTUBE VIDEOS: I am experimenting with reading a selected article each month from the [#BondBriefing](#). You can see the first two here:

[July 2018](#): [46] **Social Bonding & Soccer Violence** <https://youtu.be/XTall6uCVR8>

[Aug 2018](#) [47]: **Sunlight, not Vitamin D, Protects Brain Health:**

<https://youtu.be/emMfF3Vklvs>

Also I read an article from Ten Years Ago: [Aug 2008](#) [48]: **Docs: Sunshine is not the Cause of Melanoma,** <https://youtu.be/ZuDifoGwCdk>



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



Paleo Harvest Cookbook: Over 170 delicious, Bond Precept conforming recipes www.paleo-harvest.com

SUBSCRIBE TO THIS BRIEFING!

\$18 Electronic (with active hotlinks). \$59 Hard copy.



Tel: +357 99 45 24 68 **Skype:** gvlbond
email: admin@NaturalEater.com

1 Ioannidis JPA (2005) Why Most Published Research Findings Are False. PLoS Med 2(8): e124. DOI: 10.1371/journal.pmed.0020124

2 <http://bit.ly/1Q2tSGO>

3 Komaroff AL. The Microbiome and Risk for Atherosclerosis. JAMA. 2018;319(23): 2381–2382. doi:10.1001/jama.2018.5240

4 <http://bit.ly/1mLmUr1>

5 Valerie J. Stull. Impact of Edible Cricket Consumption on Gut Microbiota in Healthy Adults. Scientific Reports, 2018; 8 (1). DOI: 10.1038/s41598-018-29032-2

6 Tabung, F. K. et al. The association between dietary inflammatory index and risk of colorectal cancer. Cancer Causes Control CCC 26, 399–408 (2015).

7 Garcia-Arellano, A. et al. Dietary Inflammatory Index and Incidence of Cardiovascular Disease in the PREDIMED Study. Nutrients 7, 4124–4138 (2015).

8 Bergmans, R. S. & Malecki, K. M. The association of dietary inflammatory potential with depression and mental well-being among U.S. adults. Prev. Med. 99, 313–319 (2017).

9 <http://bit.ly/2cD2HCJ>

10 Acharya, Deependra; Fillet quality and yield of farmed Atlantic salmon; University of Norwegian Life Sciences; <http://hdl.handle.net/11250/186065>

11 <http://bit.ly/2gzpAtX>

12 Dipayan Biswas,. Effects of ambient music and background noise on food sales. J Acad Market Sci, 2018; DOI: 10.1007/s11747-018-0583-8

13 Matthew T. Walker,. Mechanism for initiation of food allergy: Dependence on skin barrier mutations and environmental allergen co-

stimulation. J Allergy & Clinical Immunology, 2018; DOI: 10.1016/j.jaci.2018.02.003

14 <http://bit.ly/2PFfbNz>

15 <http://bit.ly/1iPXFP9>

16 <http://bit.ly/1LK0yVl>

17 <http://bit.ly/2KQNXla>

18 Yuan Tian. Prebiotic effects of white button mushroom feeding on succinate and intestinal gluconeogenesis. Journal of Functional Foods, 2018; 45: 223 DOI: 10.1016/j.jff.2018.04.008

19 <http://bit.ly/2OoUEjY>

20 Leanne M. Redman,. Metabolic Slowing and Reduced Oxidative Damage with Sustained Caloric Restriction Support the Rate of Living and Oxidative Damage Theories of Aging. Cell Metabolism, 2018; DOI: 10.1016/j.cmet.2018.02.019

21 <http://bit.ly/1NESZ09>

22 <http://bit.ly/2lAx93y>

23 <http://bit.ly/RFvic7>

24a Lora Iannotti et al. Eggs in Early Complementary Feeding and Child Growth: Pediatrics, 2017; 140 (1): e20163459 DOI: 10.1542/peds.2016-3459

17b. Lora Iannotti et al. Eggs early in complementary feeding increase choline pathway biomarkers and DHA: Am J Clin Nutr, 2017; 106 (6): 1482 DOI: 10.3945/ajcn.117.160515

25 <http://bit.ly/1sL91lP>

26 <http://bit.ly/1T7N9ZL>

27 <http://bit.ly/1wmpaap>

28 <http://bit.ly/2Et2mov>

29 <http://bit.ly/2OwnnyC>

30 <http://bit.ly/1qvLzIZ>

31 <http://bit.ly/1Q2tSG0>

32 <http://bit.ly/2q0WgBL>

33 <http://bit.ly/1J6F8MD>

34 <http://careygitlam.com>

35 Island Press; October 10, 2017; ISBN-13: 978-1610918329

36 <http://bit.ly/2q0wggb>

37 <http://bit.ly/2Az5ix5>

38 Ioannidis JPA. The Challenge of Reforming Nutritional Epidemiologic research. JAMA. 2018;320(10):969–970. doi:10.1001/jama.2018.11025

39 Schwingshackl L, Food groups and risk of all-cause mortality: a systematic. review and meta-analysis of prospective studies. Am J Clin Nutr. 2017;105(6):1462-1473.

40 Poole R, Kennedy OJ, Roderick P, et al. Coffee consumption and health: umbrella review of meta-analyses of multiple health outcomes. BMJ. 2017; 359:j5024.

41 The Hadza Hunter-Gathers of Tanzania; Frank W Marlowe, University of California Press, 2010, ISBN: 978-0-520-25342-1).

42 Emilie A Wilkes. Blunting of insulin inhibition of proteolysis in legs of older subjects may contribute to age-related sarcopenia. Am J Clin Nutrition, 2009; DOI: 10.3945/ajcn.2009.27543

43 Denison HJ,. Prevention and optimal management of sarcopenia. Clin Interv Aging, May 2015 DOI: 10.2147/CIA.S55842

44 <http://bit.ly/1yWVaYb>

45 <http://bit.ly/2q8JOfX>

46 <http://bit.ly/2LfoNeX>

47 <http://bit.ly/2zrqQku>

48 <http://bit.ly/2QTF111>