

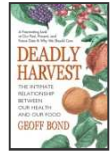


The Bond Effect The Bond Effect The Bond Effect

The Science and Art of Living the Way Nature Intended

The Bond Briefing

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Question of Month: When it's OK to Drink a Gallon. **Darwin on Orthodontics:** Your Jaws are What You Chew. **Darwin Label** 'Only the fittest survive': Nestlé Hot Cocoa Mix. **Early Warning:** Men Lean at 18 Live Longer. **Recipe:** Broccoli Soup. **Q&A:** Sweetener 'Just Like Sugar'; Evolution of Symbiotic Microbes. **Sunshine is Human Food:** Sun Starvation, Stiffer Arteries. **Health Politics Quote:** The Quagmire – How American Medicine is Destroying Itself. **Jungle Lore:** Indigestible Fiber Intake. **Food/Disease Links:** Low Glycemic Diet Nixes Cancer. **Evolutionary Psychology:** Jobless Husbands Seek Divorce. **Events:** Geoff Speaks at London Body Conference.

Question of Month

When it's OK to Drink a Gallon
Q. Re '8x8 myth' *last month*, I often drink twice that (a gallon) on 100 mile bicycle rides in a hot, dry climate. Shouldn't you warn readers: Don't forget to drink when thirsty! Don't put it off!

A. You have a valid point – drink to your thirst! But it shows how bamboozled we are about fluid intake that we have to make that obvious remark.

Picture an African country, largely Sahara Desert, in mid-August. The people are devout Muslims and it is Ramadan, the holy month when they don't eat or drink during daylight hours.

I was in charge of carrying out a week-long survey in the desert with a team of local technicians. They regarded fasting in these severe conditions as a test of their manhood. To keep their respect you can be sure I did the same.

Every day we rose at 5:00 am, had breakfast before sunup and set off. We tramped all over the desert in the blazing sun carrying out our work. After a few hours we were THIRSTY! And it got WORSE until, after 12 hours and with our heads spinning, we arrived back at camp just as the sun set.

The ritual – and the dignity – is in self-control. To first sup the Ramadan sheep's-head soup slowly. Then, over the next couple of hours, to eat and drink in a steady and controlled way. After 6 hours sleep it is up and doing the same thing again the next day.

Now I don't think this is a healthy thing to be doing... **Cont p 4.**

Darwin on Orthodontics

Your Jaws are What You Chew



I am indebted to Dr Kevin Boyd, an American pioneering 'paleo-dentist', for bringing his interesting work to my attention [1].

Ever since the early explorations of dentist Weston Price in the 1930's we have understood that 'primitive peoples' did not suffer the crooked teeth and jaws ("malocclusions") that are so prevalent in modern societies.

Just in 300 years faces have got smaller and narrower, palates are malformed, jaws are receding and jaw muscles are underdeveloped. What is happening?

Boyd, and English colleague Michael Mew, say that feeding practices in babyhood and childhood have much to answer for.

Forager babies suck on the breast on demand 24/7. The nipples are: "Mother Nature's palate-expander. The baby pushes the nipple around its front teeth, helping create a wide palate and enough room for the front teeth. Baby bottles don't promote this growth."

The forager diet is hard and rough – it requires heavy chewing. It develops the muscles and molds the child's jaw and cheekbones in the way nature intended. See: 'Indigestible Fiber Intake', page 2. **Cont: Page 4**

Darwin Label

'Only the fittest survive'

Nestlé Hot Cocoa Mix
 'Rich Chocolate flavor'



"Cocoa Mix", "Rich Chocolate" – so does this product live up to this hype? Let's check the ingredients: (click to see full size)



The ugly truth: this product is 60% SUGAR, 10% HYDROGENATED FAT, and 30% assorted artificial flavors, fillers, and colors. Buried in the last category is to be found some token cocoa powder.

So calling this a "Cocoa Mix" is being economical with the truth. "Rich Chocolate" is just a joke. Nestlé is playing name-games to gull the public into buying junk in a packet. Don't be taken in! See 'Sweetener: Just Like Sugar' p 2.

Early Warning

Men Lean at 18 Live Longer

In a study of 20,000 men born between 1896 and 1934, those with the lowest Body Mass Index at age 18 were 35% less likely to die of cancer [2].

See: 'Low G.I. Diet Nixes Cancer', p.3.

Recipe

Broccoli Soup

Yield: 6 servings as a main dish

A delicious and healthful soup.

- 4 pounds broccoli florets, fresh or frozen
 2 white onions (about 10 ounces), cut in quarters
 4 cups vegetable broth
 1/4 cup (about 2 ounces) ready-made sesame paste (or butter), also called Tahini
 1 cup light coconut milk
 1 tablespoon mild curry paste, or to taste
 2 teaspoons ground cinnamon, or to taste
 freshly ground black pepper, to taste
1. Steam the broccoli florets and onion quarters for about 15 minutes, or until tender.
 2. Place in a food-processor, add the vegetable broth and mix until smooth.
 3. Mix in the sesame paste, coconut milk and season with curry, cinnamon and pepper to taste.
 4. Heat in a saucepan before serving.

Questions

Sweetener: 'Just Like Sugar'

Q. *What do you make of 'Just Like Sugar' sweetener? It is not bitter like stevia. Ingredients are: chicory root dietary fiber, calcium vitamin C and natural flavors from the peel of an orange.*

A. On seeing the ingredient list my first question was: what is producing the sweet taste?

Their website got off on the wrong foot with me. Spelling mistakes, multilevel marketing, flimflam, and manipulative sales promotion complete with irritating voice-over.

There was no hard data anywhere – the whole website is a masterclass in obfuscation. I wondered what they are hiding.

Its 'Nutrition Facts' unhelpfully stated that this product has 0 Calories, 0g Sugar, 0g Fat,

0g Cholesterol, 0g Sodium, 0g Carbohydrates, 0g Protein.

Meanwhile the blurb boasts about the calcium 'to ensure that your teeth are strong'; vitamin C which 'may protect against stroke'; orange peel flavor which 'has the potential to lower cholesterol'; and 'chicory (inulin*) root dietary fiber - a probiotic'.

['Probiotic'? Dietary fiber is not a probiotic. Probiotics are BACTERIA alleged to aid colon health [June 2009](#).]

But still nothing to explain where the sweetness comes from! However, I persevered and found a lead on the company's UK website. (Americans are not to be trusted with the info!) It spoke of a process to convert the fiber into "maltodextrin".

Maltodextrin is sweet all right but it is a **BAD** high glycemic sugar. Is this then the death knell? Not yet!

The FDA allows manufacturers to play name games. This isn't maltodextrin at all, it is another chemical they call (misleadingly) 'maltodextrin (dietary fiber)'.

It is indeed sweet and indigestible – and that mention of 'dietary fiber' gives a warm glow in the mind of the consumer.

In other words, 'Just Like Sugar' falls within a similar category to Splenda. It's a glucose-like molecule chemically transformed to make it indigestible and so unable to affect blood sugar.

So we have come full circle. This product, despite the maker's best efforts to hide the fact, seems to be quite acceptable to use!

See also 'Indigestible Fiber Intake', p 3.

Evolution of Symbiotic Microbes

Q. *Microbes evolve at a much faster rate than do humans. They are important in digestion. Haven't they evolved differently in different peoples to reflect their diets? Haven't our microbes adapted to post-Paleolithic diets – for example to lactose and grains?*

A. Your point about different diets, different microbes, is not to do

* Inulin is a soluble fiber which arrives undigested in the colon, see 'All About Inulin', March 2011. Link: <http://bit.ly/bond-2011-03>.

with evolution – it is to do with the proportions of EXISTING species changing with diet.

That is to say, certain residues we send down favor some species over others. There are 5,000 species and still counting.

Unquestionably microbes are capable of evolving much faster than us humans. However, we don't thrive if our symbiotic bacteria get ahead of us – so they tend to stay in equilibrium with us.

To put it another way, by adopting a Paleo diet our guts will grow the same microbes as hunter-gatherers. Everything we know about gut health, tells us that this is the way to be. See [Chapter 5, Deadly Harvest](#), page 114 onwards ('The Underrated Colon', then 'Food Choices and Colon Health').

The challenge today is that what we eat now sends down residues that feed 'bad' species of bacteria and discourage 'good' ones. That has clear and measurable effects on a plethora of health factors. No need to invoke evolution!

Bad microbes just love starches, sulfur-containing foods, pulses, and much more. As for lactose, babies secrete the enzyme lactase to deal with that. Some people of north-west European origin continue to secrete lactase into adulthood, but even that tapers off. Then the bad bacteria just love the free lactose you send down!

As for microbes mutating, that happens all the time. That is why we have to rely on the good, unchanged ones, to fight off the mutants. Our guts are a microbial battle zone and we have to give the friendly ones all possible help and not undermine them.

See also: 'Bacteria Control Immune Cells', [May 2011](#); 'Mouth Flora in Evolutionary Perspective', [Oct 2008](#); 'Gut Bacteria in Twins', [June 2006](#).

Sunshine is Human Food

Our bodies expect to receive sunlight to work properly...

Sun Starvation, Stiffer Arteries

A lack of the solar vitamin (vitamin D), even in generally healthy people, is linked with stiffer arteries and an inability of blood vessels to relax, research from the

Emory/Georgia Tech Predictive Health Institute has found [3].

The results add to evidence that sunshine starvation weakens vascular health, and contributes to high blood pressure and the risk of cardiovascular disease.

It can be reversed: study participants who increased their vitamin D levels improved their vascular health and lowered their blood pressure.

Health Politics Quote

The Quagmire: How American Medicine is Destroying Itself

"We have medicine excessively driven by progress, which treats death and disease as the targets of unlimited medical warfare.

"That warfare, however, has come to look like the trench warfare of World War I: great human and economic cost for little progress.

"Neither infectious disease nor the chronic diseases of an aging society will soon be cured. Cancer, heart disease, stroke, and Alzheimer's disease are our fate for the foreseeable future.

Medicine and the public must adapt it to that reality, one that has mainly brought us lives that end poorly and expensively in old age." - *Dr Daniel Callahan & Dr Sherwin B. Nuland* [4]

Drs Callahan & Nuland think that physicians should tell patients how aggressive medicine can increase the likelihood of a poor death; they think that, in chronic disease, the emphasis should shift towards care rather than cure.

Of course our strategy is to sidestep the 'quagmire': Live like nature intended and stay in good shape to the end!

Jungle Lore

Indigestible Fiber Intake

A large part of a forager's diet comes from underground. The women, vigorously burrowing with their digging sticks, root out large tubers from as deep as 10 ft (3m).

When they have a good collection, they light a fire and roast some of the tubers to eat on the spot. The rest they take back to camp to feed the rest of the family.

Either way, the tubers take a lot of chewing. Typically, a tuber such as //ekwa (*Vigna frutescens*) contains up to 40% indigestible fiber [5].

The forager chews the mouthful for some time to extract the juices and then spits out the quid of fiber which is like a ball of string - see photo below.



There is nothing like it in the western diet. It raises some interesting thoughts:

a) Maybe the absence of all that chewing is a factor in defective growth of jaw-bone and muscle in modern societies (See: '*Your Jaws are What you Chew*', p. 1).

b) A percentage of these fibers is probably swallowed. Truswell and Hansen speculate that these fibers (plus those from other sources) explain the potbellies observed in the Kung San [6]. Frank Marlowe ([June 2011](#)) also observed potbellies in the Hadza but mainly among children [7].

Either way, we know that Pleistocene humans had huge intakes of indigestible matter of which, remarkably, the evidence is preserved in fossilized feces (see *Deadly Harvest*, [Chapter 1](#), p 22, where Michael Kliks identified an intake of 130 grams/day [8]).

The average American consumes only **ONE TENTH** of that and we can be sure that this dearth of indigestible fiber is a factor in many modern diseases, notably those of the digestive tract.

Food/Disease Links

Low Glycemic Diet Nixes Cancer

50% of mice on a typical Western (high carbohydrate) diet, developed cancer within a year and none of them made it to the normal lifespan of 2 years [9].

50% of mice on a low-carbohydrate, higher protein diet lived longer than the two years and only half as many developed cancer.

Like they've discovered something new, the researchers observe that tumor cells feed on blood sugar and that low carbohydrate intake sharply limits blood sugar spikes.

It also sharply limits those insulin spikes, spikes which stop cancer-killer cells from doing their job.

Finally, a low-carbohydrate, moderate protein diet militates against obesity - a sore provoker of chronic inflammation and cancer.

Opined one researcher: "this study definitely lends credence to the idea that a change in diet can be beneficial". [Wow! That's a statement of the obvious!]

In another major study, those who stayed skinny, avoided junk food, were physically active and didn't binge alcohol were 42% less likely to die of cancer [10]

Our View? You've heard all this before! See '*Cancer Avoidance and Recovery*', *Deadly Harvest*, [Chapter 9](#), page 230.

High Tofu Intake/Worse Memory

A study of elderly Indonesians finds that those who had had a high intake of tofu over a lifetime had a significantly worse memory function [11].

This chimes with another finding: that tofu consumption is linked to senile dementia in Hawaiian Japanese [12]. See *Deadly Harvest*, [Chapter 5](#), page 131.

The problem is soy, but the researchers are undecided just what: the bean antinutrients or the phytoestrogens (which I would class as antinutrients anyway).

Evolutionary Psychology

Jobless Husbands Seek Divorce

Dr Liana Sayer, professor of sociology at Ohio State University finds that a jobless husband is more likely to divorce, all things being equal, than one who has a job [13].

Meanwhile, a wife's employment status has no discernable effect on the divorce rate.

Sayer laments that men resist taking on feminized roles like housework, and would rather leave the household.

Our View? We won't make any comments about sociologists or

indeed female punditry. No, we'll just confine ourselves to this observation: male brains were wired in Pleistocene times to bring home the bacon in ways that only a man could do. The hard-wired reward is a sense of importance, self-esteem, respect and dignity vis-à-vis the family. [*The Modern Workplace for Men and Women*, *Deadly Harvest*, [Ch 8](#), p 204.]

Without the bacon the man feels a nonentity – a feeling which is easier to bear alone. A spouse, however kindly she be, is a silent reminder of his shortcomings.

The tragedy is that, in today's world, a man can't just go out into the bush and 'do what a man has got to do'. Someone else is in control of livelihoods – of 'jobs'.

See: '*The Stress of Jobs for the Boys*', [Nov 2009](#).

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Question of the Month

When it's OK to Drink a Gallon

... but it does stretch our ideas of where the limits lie.

In those times we had never heard of "8x8" – but we certainly knew when we were thirsty – and in a healthy person, it can be pushed a long way.

After all, the thirst reflex kicks in when we have lost only 2% of body fluid, whereas it takes 5% loss to become 'mild' dehydration and 15% to be life threatening.

Meanwhile, what we were doing in the Sahara was not that unusual.

After all, hundreds of millions of Muslims have just come through an August Ramadan again – many of them laboring in the blazing sun in fields or on building sites.

Did we – did they – drink a gallon (4 liters), albeit at night? Who knows? Thirst was the guide! But sure, in extremes of heat and exertion, 8x8 will not be enough.

There lies a caveat: some people, perhaps old, or sick or medicating, have a poor thirst reflex. They certainly need to calculate their fluid intake.

The rest of us? Yes, don't "forget" to drink when thirsty – but trust me – it's hard to "put it off"!

[Next Month](#): Study: Distance Runners Drink too Much.

See also: '*Water Intake for Child Athletes in Hot Weather*', [July 2009](#); '*Water Intoxication Kills*', [July 2005](#); '*Drink At Least 8 Glasses Of Water A Day*' - Really?', [Sept 2002](#).

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Darwin on Orthodontics

Your Jaws are What You Chew



Orthodontics Begin at Birth

Boyd is now working on chimpanzees, comparing the jaws

of wild creatures with those of zoo-raised and bottle fed.



Which Chimp Palate is the Wild One?

Already, just with a cursory glance at this photo, one can see how the right-hand palate (the wild one) is wider and straighter, the nasal cavity breathes easier, and the cheek bones are wider.

The left-hand palate, which is from a zoo-raised chimpanzee, is stunted on all those measures.

(See also: '*Mouth Flora in Evolutionary Perspective*', [Oct 2008](#)).

Events

LONDON, UK
The Body Conference,
Nov 5 & 6, 2011

Target Audience: Health Professionals (CME accredited)

At: The Royal Society of Medicine
1 Wimpole Street, London.

Info: www.bodyconference.co.uk

Geoff's Lecture: 9:30 - 10:00
Saturday November 5, 2011

Geoff's Lecture Title: *Lifestyle Changes for Health and Beauty: Darwinian Insights.*

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