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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

**Briefing:** Potatoes & Resistant Starch Revisited. **News Flashes:** Ahiflower – New Omega-3 Source. **Q&A:** Bio-identical Hormones. **Evolutionary Sleep:** Sleep Posture Clears Brain Waste. **Recipe:** Zucchini Clafoutis. **Q&A:** Sleep & Melatonin. **News Flashes:** Gut Bugs & Uveitis; High GI Diet – Depression Factor; Gut Bugs Potentiate Fish-oils; Salt a Factor in MS; Statins Double-edged Sword. **Evolutionary Sleep Patterns:** Nature Improves Sleep; Bright Screens Blight Teen Sleep; Siestas Good for Blood Pressure; Naturalizing Primordial Sleep. **Misleading Headlines (Cont):** Starchy Carbs advanced the Human Race [Really]. **Human Behavior:** Break-ups – Mars/Venus Contrast. **Advance Notice:** Lectures: Palm Springs, Oxford.

## Briefing

### Potatoes & Resistant Starch Revisited

Every so often the 'bad boy' status of potato is called into question. But has anything changed since I last wrote: 'Know your potatoes', [Nov 2003](#) [1] and 'The Deadly Potato', [Nov 2000](#) [2]?

Glycemic index guru, professor Jenny Brand-Miller (see also page 3) wrote a 1999 paper comparing varieties of potato, cooking method and so forth [3]. She found that whatever you did with them, they are extremely glycemic.

More recently, in 2005, Professor Jeya Henry of Brookes University, Oxford, UK, and his team reassessed potato GI [4]. They found that floury varieties were more glycemic than waxy ones - but they were all still very glycemic.

Are there any mitigating factors? There are perhaps two:

a) Potatoes are not a 'dense' food – they are some 80% water. To do the GI test, which requires the intake of 50 grams of pure starch, Brand-Miller's subjects had to eat whole potato portion sizes of 414 grams (almost 1 lb).

In contrast, the USDA serving size is one medium potato (6 oz, 170 grams). So in practice, a potato serving is only ONE THIRD of the GI test amount. That might not be enough to trigger a glycemic reaction. **Cont p. 4**

## News Flashes

### Ahiflower: New Omega-3 Source



Watch out for a new kid on the block – oil from the ahiflower. It is a relative of borage, a well-known source of omega-3 oil.

In the classical way, ahiflower does contain a massive 42% of the omega-3 oil, *alpha-linolenic acid* (ALA). However, even better, it contains a high percentage (20%) of the omega-3 oil called '*stearidonic acid*' (SDA). Stearidonic acid has the advantage that it is much more bio-available than ALA.

This is because it leapfrogs the chemical transformation that ALA undergoes by the enzyme '*delta-6 desaturase*' – see *Natural Eating*, [Chapter 4](#) page 72 [5].

Because the body's supply of *delta-6 desaturase* is limited, it creates a bottleneck and the body can only use some 6% of the ALA consumed.

## Question

### Bio-identical Hormones

**Q.** I know you decry the use of supplements, but what about bio-identical hormones? [Chemicals extracted from plants that mimic the body's hormones]

*Certain scientific studies suggest that they bring the energy and well-being of youth in a sustained way throughout old age.*

**Answer: see page 4**

## Sleep

### Sleep Posture Clears Brain Waste



In '*Sleep Detoxifies Brain*', [Nov 2013](#) [6] I related how the brain's 'glymphatic system' [similar to the lymphatic system] flushes out its waste products while we sleep.

We can now add to this finding. It works best when we sleep in a sideways posture (shown) as compared to sleeping on the back or stomach [7].

Say the researchers: "The lateral sleep position is already the most popular in human and most animals. It is clearly adapted to most efficiently clear our brain of the metabolic waste products that built up while we are awake. Sleep has a distinct biological function: to 'clean up' the mess that accumulates while we are awake."

The researchers opine that: "The buildup of brain waste chemicals (like amyloid and tau proteins) may contribute to the development of disordered sleep, Alzheimer's, Parkinson's and other neurological conditions."

**My View?** For millions of years our forager ancestors slept in this posture. Before lying down they would scoop out a little hollow in the ground to snugly fit their hip.

See: '*Evolutionary Sleep Patterns*', Page 3.

## Recipes

### Zucchini Clafoutis

Yield: 8 servings



Click image for enlargement  
<http://bit.ly/1MB2Uon>

*This recipe makes a succulent dish resembling a Spanish omelet*

- 4 zucchini (about 1½ lb.), grated
- 2 cloves garlic, crushed
- 1 tablespoon chopped fresh parsley
- 4 eggs, omega-3
- 4 tablespoons almond flour
- 2 tablespoons coconut flour
- 6 tablespoons coconut milk
- ½ teaspoon baking powder
- 2½ teasp. mild curry, or to taste
- pinch of nutmeg
- optional: 1 handful grated Mozzarella cheese
- olive oil spray

1. Sauté the zucchini in a hot non-stick frying pan until soft. Mix in the garlic and parsley and heat through for another couple of minutes. Set aside.

2. Meanwhile mix all the remaining ingredients in a medium-size mixing bowl with an electric hand-mixer. Add the zucchini to the mixture.

3. Spray a round baking mould (about 9-inch diameter) with the olive oil and fill with the zucchini mixture.

4. Bake in a hot oven at 320°F (160°C) for about 40 minutes, or until golden brown. Check for doneness.

## Questions

### Sleep & Melatonin

**Q.** *Poor sleep habits have become an epidemic in this country and the world causing a crisis of serious health and social problems. What do you think of melatonin? Our own bodies produce this hormone but in a declining manner, and in my view it should be supplemented through adulthood and our senior years.*

**A.** I agree that there is a huge problem with poor sleep habits. See 'Evolutionary Sleeping Patterns', page 3 and page 1.

It is clear that they are a problem of LIFESTYLE. So it should always be the priority, in my view, to fix the source of the problem if possible before resorting to medication.

**My View?** Personally I wouldn't use melatonin: hormones are powerful agents, controlling all kinds of biochemical functions, most of which we can only guess at. Why mess with the unknown when there are things we can do to rectify our discord with nature?

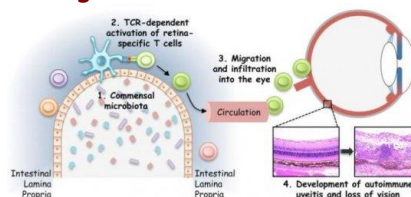
But for those looking for a 'fix' rather than a change of lifestyle, it does seem to work. Dr Alan G Wade of CPS Research, Glasgow, UK, and his team found that amongst patients aged 55-80 years, "long-term melatonin supplementation results in significant and clinically meaningful improvements in sleep quality, morning alertness, sleep onset latency and quality of life in primary insomnia patients." [8].

Surprisingly, melatonin is naturally present in many plant foods. Jeffrey Johns and team at Khon Kaen University, Thailand found that subjects' blood levels of melatonin were increased THREE-FOLD after consumption of pineapple, orange or banana [9].

See also: 'Social Jet lag, Fatigue & Obesity', [Sept 2012](#) [10]

## News Flashes

### Gut Bugs and Uveitis



Click image to enlarge [11]

One major cause of human blindness is autoimmune uveitis, a disease of the retina. It is triggered by the activation of immune system T cells, but exactly how and where the T cells become activated in the first place has been a long-standing mystery. Now a study suggests that gut bugs are responsible [12]. The researchers will now try to identify

the particular species of bacteria that are causing the mischief.

### High GI diet: Depression Factor

In a population study of 70,000 women, investigators found that those who consumed high GI diets were 23% more likely to suffer depression than those on the lowest GI diet [13].

**My View?** This type of study can only show a correlation, but even so, it is a straw in the wind. The effect is probably due to high insulin levels disrupting mood hormones.

### Gut Bugs Potentiate Fish-oils

An interesting study has found that gut bugs provide a second benefit to fish-oil intake [14].

When compared to lard, fish oil encouraged the growth of 'good' bugs 'Akkermansia muciniphila' which control weight and improve glucose control.

In contrast, lard encouraged the growth of the bacterium 'Bilophila' which produces cytokines (signaling molecules) that inflame fatty tissue and impair insulin sensitivity.

### Salt a Factor in MS

Research in mice shows that diets high in sodium are a risk factor in the development of multiple sclerosis (MS) by influencing immune cells that cause the disease [15].

MS has tripled in women in the last century, which suggests environmental influences that afflict females in particular.

This study on mice shows that exposure to a high-salt diet exacerbated disease:

- a) in both sexes with a genetic profile defined as 'C57BL6/J';
- b) in females only with genetic profile 'SJL/JCrHsd'.

It also increased blood-brain barrier permeability and brain pathology.

**My View?** No need to get too entangled in the biochemical detail here. The overall message is that salt is a factor in yet another modern disease.

It was never a significant part of our ancient intake and we should drive down our own intake to similar levels.

See '[Bad Salt-Potassium Ratio Fix](#)' [May 2015](#) [16]; '[High Salt - Calcium Depletion](#)' [Sept 2012](#) [17].

### Statins Double-edged Sword

Researchers at Tulane University, New Orleans, USA have uncovered yet another reason why statins have bad side effects – they sabotage certain stem cells called 'MSCs' [18] which are produced in bone marrow.

Statins impair MSC's potential for bone-repair and cartilage renewal; they increase cell ageing and programmed cell death; they sabotage DNA repair.

The researchers say that statin therapy, because of its effects on stem cells, is not appropriate as a prophylactic.

**My View?** This is a riposte to the worthy idiots I wrote about in '[Big Mac with Statin Sides](#)' [Sept 2010](#) [19]. They wanted a statin tablet to be served with every junk food meal!

That aside, there is absolutely no need for statins. The condition they are designed to treat is entirely one of dysfunctional lifestyle. As it is, statin addicts are open to an ever-lengthening list of ailments – from memory loss and muscle problems to joint degeneration, accelerated cell ageing, DNA mutated cancers and diabetes.

See also: '[Statin: Two-faced Harlot](#)', [March 2015](#) [20]; '[Statins affect Memory](#)', [Oct 2013](#) [21].

### Evolutionary Sleep Patterns

#### Nature Improves Sleep

Men and the over 65s who have access to natural surroundings, whether it's the green space of a nearby park or a sandy beach and an ocean view, report sleeping better [22]. Says the researcher: "If people spent more time in nature, it would improve the quality of their sleep--and their quality of life".

**My View?** Well yes! Alienation from our roots in Nature is surely a factor in a host of conditions.

#### Bright Screens Blight Teen Sleep

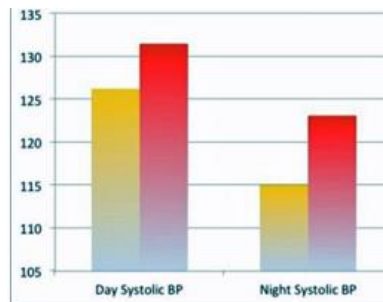
The sleep biology of boys and girls aged 9 to 15 was especially sensitive to light at night compared to older teens.

An hour of nighttime light exposure to bright screens suppressed their production of the body-clock hormone melatonin much more than for teens aged 11 to 16 [23].

The phenomenon is linked to pubertal hormone changes.

See also: '[Lightness of Being](#)', [Jan 2006](#) [24].

#### Siestas Good for Blood Pressure



*Siestas-Yellow, No-naps-Red*  
A study on 60-year-olds finds that those who had a midday nap had lower 24 hour blood pressure (BP), an enhanced fall of BP at night, and less damage to the arteries and the heart. Pulse wave velocity levels were 11% lower and left atrium diameter was 5% smaller. The longer the midday sleep, the lower the systolic BP levels and fewer drugs needed to lower BP [25].

**My View?** Foragers regularly napped in the heat of the afternoon. It seems that if we don't do it, things go wrong.

See '[Evolutionary Sleep Patterns](#)', [Aug 2014](#) [26].

#### Naturalizing Primordial Sleep

Social anthropologist Mathew Wolf-Meyer has written an interesting review of the myths surrounding sleep dysfunction in the modern state [27].

He notes that notions of 'primordialism' (back to nature) are in conflict with technology and modernity.

Prior to industrialization, British people slept in two short periods rather than one long, 'consolidated' period of sleep. This claim is corroborated for societies around the globe, leading to the general conclusion that "consolidated sleep is socially constructed and culturally conditioned".

He takes to task early morning school start times (which run against the grain of nature); light at night, especially blue light from electronic

devices; shift working and jet lagging; absence of daylight exposure to calibrate the body-clock; the working day straitjacketed to a rigid timetable which takes no account of human biological rhythms.

So what happens? Blame is laid at the door of 'disorderly individuals' rather than the modern technological dystopia. We pathologise sleep disorders and try to fix them with chemical medications.

See: '[Docs: Sleep Evaluation Vital](#)', [Dec 2006](#) [28]; '[Sleep Patterns and Campfires](#)', [March 2005](#) [29].

### Misleading Headlines (Cont)

**"Starchy carbs, not a Paleo diet, advanced the human race" [really?]**

Continued from [last month](#) [30].



GI Jenny

In '[Forager Tubers](#)', [July 2012](#) [31] and '[Indigestible Fiber Intake](#)', [August 2011](#) [32], I talk about how our ancestral tubers had a woody consistency; that they required much

chewing, that fibers like balls of knitting had to be spat out, and that the starch was extracted from the bolus with difficulty.

So where does this leave us? The take-home message is this: modest amounts of starch embedded in a tough matrix (like in nuts) are a normal part of the ancestral diet.

However unlike the suggestion of the newspaper article, this does not allow us to 'mainline' pure starch, in bulk, from potatoes, pasta, breads and pastries.

To be fair, GI Jennie in her article does not suggest that either. That is an invention of the journalist. Reader beware!

See also: '[All about Tigernuts](#)', [August 2010](#) [33]; '[Potatoes & Resistant Starch Revisited](#)', p 1.

### Human Behavior

#### Break-ups: Mars/Venus Contrast

According to studies on men and women in 96 countries, breakups initially hit women the hardest emotionally and physically, but they recover more fully and come out emotionally stronger. Men, in contrast, never fully recover – they just have to move on [34].

The authors suggest an evolutionary mechanism: "Women are evolved to invest far more in a relationship than a man. A brief romantic encounter could lead to nine months of pregnancy followed by many years of lactation for an ancestral woman, while the man may have gone minutes after the encounter.

It is this 'risk' of higher biological investment that, over evolutionary time, has made women choosier about selecting a high-quality mate. Hence, the loss of a relationship with a high-quality mate 'hurts' more for a woman."

"Conversely, as a man has evolved to compete for a woman, he will feel the loss for a long time as it sinks in that he must 'start competing' all over again to replace what he has lost."

Is this a 'Just-so story'? Who knows! But it is intriguing how researchers feel the need to find explanations for their findings in our ancestral past.

### Advance Notice

For details and updates:

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

**LECTURE:** (Open to the public)  
**January 20, 2016, Palm Springs Library, CA, USA**

**LECTURE:** (Open to the public)  
**March 16, 2016, Oxford, UK**

For Speedwell Trust, Green-Templeton College, Oxford University.

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#### Potatoes & Resistant Starch

At the very least we can say that potatoes have a low 'GLYCEMIC LOAD' – of about 7. See, *Glycemic Load, a New Measure of Blood Sugar Stress*, [April 2003](#) [35].

b) Resistant starch. Some of the starch in potatoes is 'resistant'. That is to say it resists breakdown by the regular digestive juices and so it arrives in the colon unchanged. There the microflora gets to work on it.

In this regard, resistant starch has similar properties to dietary fiber: it is

non-glycemic and it feeds good bacteria. See: '*Resistant Starch*', [Jan 2014](#) [36].

I also talk about how resistant starch is important for colon health in: '*Colon Cancer Part II*', [April 2003](#) [37].

**Continued:** [Next month](#)

### Continued from Page 1

#### Bio-identical Hormones

**A.** I presume you are referring to those female sex hormones usually used in Hormone Replacement Therapy (HRT).

I have no reason to change my view expressed in *Natural Eating*, [Chapter 6](#), p. 117 [38].

That is to say, HRT whether bio-identical or not, is a matter between the woman and her doctor. But I do agree that it usually seems to keep a menopausal woman rejuvenated. Wife Nicole indeed opted for regular HRT and she is a good advertisement for its efficacy.



**Deadly Harvest:** Geoff's latest work encapsulates current thinking on lifestyle anthropology. [www.deadlyharvest.com](http://www.deadlyharvest.com)



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