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# The Bond Briefing

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**Human Activity:** Kids think better on their Feet. **Human Nature:** Telling Time of Day by Color. **Human Biochemistry:** Salt- Yet more Mischiefs. **Recipe:** Fluffy Savoy Lemon Cake. **News Flashes:** High Fiber Diet Controls Weight; Antioxidants Boost Cancer (II); Sunlight Starvation: a Factor in Pancreatic Cancer; Potassium Aids Bone Health. **Misleading Headlines:** 'Why Healthy Eating may be the new Eating Disorder. Worthy Idiots: Bad Salt-Potassium Ratio Fix. Unintended Consequences: Many Probiotics taken for Celiac Disease contain Gluten.

## Human Activity

### Kids think Better on their Feet



Elementary pupils with standing desks are 12% more attentive than their seated counterparts [1]. That equates to an extra seven minutes per hour of engaged instruction time.

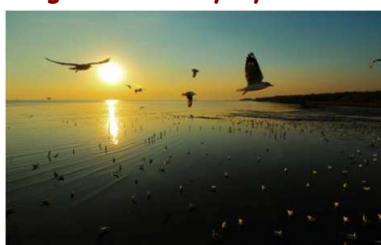
But this is just the icing on the cake. The main purpose of the study was to see if they burnt more calories. They did: 15% extra for healthy kids and a massive 25% for obese children.

"The key message", say the authors, "is that schools that put standing desks in classrooms can address two problems at the same time: academic performance and childhood obesity."

**My View?** In a state of nature, small children would never be sitting around for long. This study chimes with the burgeoning evidence pointing to the harm done by sitting for long periods. See: 'More on Excess Sitting', [April 2015](#) [2].

## Human Nature

### Telling Time of Day by Color



Our body-clock synchronizes not only with the arrival of bright light but also with its color. So finds a study from University of Manchester, UK [3]. In particular, during twilight, the hues move from yellow towards blue.

Say the researchers, "In theory colored lighting could be used to manipulate our body-clock to ease shift working or jet-lag."

**My View?** Why limit such measures to special cases? Just about everyone leading a modern lifestyle has their sleep disrupted by artificial lighting.

Of course none of this is new. I wrote about Judith Heerwagen's work [4] in 'Lightness of Being', [Jan 2006](#) [5]:

Our ancestors needed to be attentive to signals about time and weather. So much so, that sensitivity to these signals is in our genes. Without these signals we are missing something and feel deprived. These signals include changes in daylight (color, shadows, brightness, sun angle);

**Cont:** page 4

## Human Biochemistry

### Salt: Yet more Mischiefs

A review paper finds that even in the absence of an increase in blood pressure, eating too much salt undermines organs, including the blood vessels, heart, kidneys, and brain [6].

- 1) Reduces function of the endothelium (inner lining of blood vessels), affecting:
  - a) Coagulation
  - b) Platelet adhesion
  - c) Immune function.
- 2) Increases arterial stiffness.
- 3) Impairs dilation and microvascular function.
- 4) Abnormally thickens the muscle tissues of the heart's main pumping chamber. The tissue stiffens and so makes for harder pumping.
- 5) Undermines kidney function.
- 6) Interferes with the sympathetic nervous system, which activates the fight-or-flight response.
- 7) Sensitizes sympathetic neurons in the brain, causing a greater response to a variety of stimuli, including skeletal muscle contraction.

How to reduce intake? The authors say, apart from severely reducing the usual suspects (processed foods of all kinds), strongly limiting eating out: restaurants are notorious for over-salting their food.

**My View?** Salt, even if it doesn't affect blood pressure, is silently doing its mischief in the background. See: 'Bad Salt-Potassium Ratio Fix', page 3, 'Potassium Aids Bone Health', Page 3.

## Recipes

### Fluffy Savoy Lemon Cake

Yield: up to 16 servings



[Click to enlarge](#)

Many thanks to supporter and cookbook [7] writer Jeanne Bouvet for inspiring us with this recipe which Nicole has fine-tuned. At the moment, in our weight-watching phase, we particularly like this cake since it has a light texture and has only one third the energy density of our regular paleo conforming cakes.

4 eggs, omega-3

1¾ cups almond flour (about 7 ounces)

1 tablespoon vanilla extract

2 tablespoons olive oil

¼ cup freshly squeezed lemon juice (from ½ organic lemon)

6-7 tablespoons erythritol, to taste (can be replaced by 4-5 tablespoons xylitol)

zest of 1 large lemon

olive oil spray

1. Break the eggs and carefully separate the yolks from the whites into 2 separate mixing bowls.
2. In the first bowl, mix the egg yolks with the almond flour, vanilla extract, olive oil and lemon juice. Sweeten with erythritol (or xylitol) to taste and beat with an electric hand-mixer to a creamy texture.
3. Mix in the lemon zest.
4. In the second bowl, beat the egg whites and a pinch of salt with an electric hand-mixer, until stiff (you can also choose to do it in your food processor).
5. Add the egg whites progressively to the yolk-almond mixture, stirring carefully to obtain a smooth, but still fluffy mixture.
6. Spray an 8x8-inch square loaf mold, or any other similar loaf mold,

with the olive oil and fill with the mixture.

7. Bake in a hot, fan-assisted oven at 320°F (160°C) for about 25-30 minutes. Check the center for doneness.

8. Allow the cake to cool down. De-mold or serve in the loaf mold.

## News Flashes

### High Fiber Diet Controls Weight

High levels of a dietary fiber called 'oligofructose' dramatically suppressed weight-gain in rats fed a high fat diet [8].

The researchers think that the fiber acts through changes in the gut hormones known as "GIP" and "PYY", and the promotion of 'good' bacteria in the gut called 'bifidobacteria'.

**My View?** Oligofructose is present widely in plant food. Unripe bananas, onions, garlic and chicory are particularly rich sources.

But the take-home message is this: dietary fiber of all kinds (and oligofructose is only one of many) is something that the body expects to receive and, if it doesn't, all manner of things go wrong. One consequence is undermined weight control.

Yet one more reason to eat up large volumes of plant food!

### Antioxidants Boost Cancer II

We reported in 'Antioxidants Boost Lung Cancer', [May 2014](#) [9] how the immune system fires free radicals at cancer cells to knock them out.

Antioxidant supplements quench the free radicals and so undermine the immune system's efforts to kill cancer cells.

Now researchers have found a second way in which antioxidants miss the mark [10].

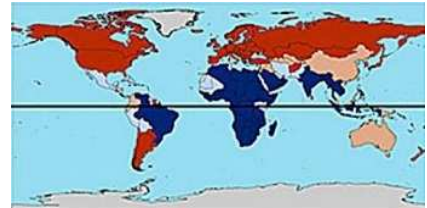
Antioxidants fail to show a beneficial effect because they do not act at the critical site in cancer cells where tumor-promoting free radicals are produced.

Paradoxically, cancer cells use antioxidants as a natural defense to keep their higher levels of oxidants in check, so that their growth can continue.

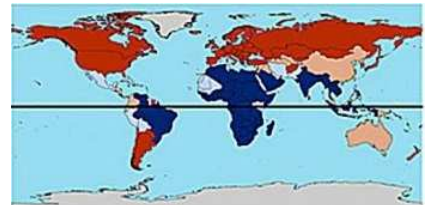
**My View?** Once again, we see the futility of trying to second-guess the operations of our biochemistry.

### Sunlight Starvation: a Factor in Pancreatic Cancer

#### Spot the difference:



Pancreatic incidence in the world  
Blue lowest rates, red highest



UVB Incidence in the world.  
Blue highest levels, red lowest.

**There is none!** The maps of POOR SUNSHINE EXPOSURE are identical to the maps of HIGH PANCREATIC CANCER. So find researchers at UC San Diego School of Medicine [11].

They consider that this link between pancreatic cancer and lack of sunshine is due to low vitamin D levels caused by inadequate sunshine exposure. The sunshine exposure was low due to a combination of:

- a) Heavy cloud cover and
- b) Distance from the equator.

**My View?** This study is just one more in a host of similar studies finding correlations between low sunshine and various cancers as well as other degenerative diseases.

See 'Low sunshine, High Prostate', [May 2007](#) [12]; 'Low Sunshine, More Alzheimer's', [May 2009](#) [13].

For why vitamin D pills don't work, see, '*Vitamin D Supplementation*', [March 2010](#) [14].

For Sunshine Dosage, see '*Sunshine is Human Food*', page 5, [Oct 2003](#) [15].

Famously Steve Jobs died of pancreatic cancer at the young age of 56.

Would he have avoided it had he founded Apple in sunny San Diego (annual sunshine hours 3,000) instead of cloudy Seattle – 1,250 miles further from the equator and with only 2,000 sunshine hours?

Mind you, it is not enough to live in a sunny place – one has to actually get out into the sunshine! I live in a sunny Mediterranean island and regularly visit southern California.

In either place, I am bemused to see, in spite of the wonderful sunshine, a large percentage of the population with pasty-faces and looking like they've recently emerged from a medieval dungeon.

#### **Potassium Aids Bone Health**

Many studies have shown that a high salt, low potassium diet undermines bone health [16].

Now a study, not quite reinventing the wheel, finds that a high potassium intake improves bone building, reduces calcium loss, and lowers acid excretion [17].

"This means that excess acid is neutralized and bone mineral is preserved... Excess acid in the body produced as a result of the Western diet, high in animal and cereal protein, causes bones to weaken and fracture", say the researchers. "Eating more fruits and vegetables could be a way of strengthening our bones..."

**My View?** Just so – plant food for bone health! And it is good to see that the authors don't bring out the hoary old myth about consuming dairy for bone health.

See also '*Bad Salt-Potassium Ratio Fix*', this page.

'*Salt: Yet more Mischiefs*', p 1.

#### **Misleading Headlines**

##### **Why healthy eating may be the new eating disorder:**

##### **Raw food and paleo dieters 'at risk of a dangerous obsession with nutrition'**

So screams a headline in the Daily Mail, a UK mid-market tabloid [18].

Here the Daily Mail manages to confound two notions: eating to a plan – and getting neurotic about it.

Many of us have come across people who get obsessive about 'Their Plan' and feel panicked by any departure from it.

American doctor Steven Bratman, who suffered from the condition himself, coined the term '*orthorexia nervosa*' in 1997 to describe it.

As Bratman explained, "At times *orthorexia* seems to have elements of obsessive compulsive disorder (OCD)."

Of course The Daily Mail is being intellectually dishonest for singling out a couple of the plans (including Paleo) and implying that they are the CAUSE of this neurosis rather than the outward expression of an OCD personality.

##### **Yogurt does not Improve Health**

For years the benefits of eating yogurt on a regular basis has been touted, though its effectiveness has never been proven.

Now a 3½ year prospective study (quite a reliable one) on some 4,500 adults finds that yogurt intake did not have any benefits for either physical or mental health [19].

There is a European Food Safety Authority regulation (no.1924/2006) which regulates health claims on food. Yogurt failed the test.

**My View?** Yogurt has become common just in my lifetime. Why? Because dairy producers, from the 1960s onwards, needed to invent new markets for dairy products.

They did so by claiming, without any foundation whatsoever, that yogurt had health benefits.

See: '*The Yogurt Deception*', [March 2006](#) [20].

#### **Worthy Idiots**

##### **Bad Salt-Potassium Ratio Fix**

The World Health Organization (WHO) recommends the target that we limit salt consumption to 2,000 mg of sodium per day.

At the same time WHO also recommends the target that we consume a MINIMUM of 3,510 mg of potassium per day.

So far so good. This is in line with forager diets and also with the well-known importance of maintaining a high potassium-sodium ratio.

See: '*Salt-Potassium Ratio*', [Chapter 4](#), *Deadly Harvest*, page 108 [21].

So how are we doing at hitting the WHO targets? Dr. Adam Drewnowski, of the School of Public Health at the University of Washington, wanted to find out.

He found that only 0.3% of Americans, 0.5% of French, 0.15% of Mexicans and 0.1% of British meet the WHO targets [22].

Dr Drewnowski's solution which earns him the 'Worthy Idiot' accolade this month? Change the WHO targets!

Dr Drewnowski said: "The bottom line is that dietary guidelines need to set targets that are reasonable..."

If we are not meeting the ideal, change the ideal!

In Dr Drewnowski's view it is unreasonable to expect people to eat much more potassium-rich food like salads, fruits and colored vegetables – and to eat much less processed foods like pizzas, breads, processed meats and cheese.

**My View?** What an irony! Dr Drewnowski knows exactly what we have to do – but he won't recommend it!

See: '*Potassium Aids Bone Health*', this page.

'*Salt: Yet more Mischiefs*', p 1.

### Unintended Consequences

#### Many Probiotics Taken for Celiac Disease Contain Gluten

Many celiac sufferers take probiotic supplements in an effort to improve colon health. (Probiotics are cultures of gut-friendly bacteria).

But, paradoxically, such supplement takers often suffer worse symptoms than those who don't.

Now Dr Peter Green of the Celiac disease Center, Columbia University, NY, has found out why [23]. Many of the supplements, including some claiming to be 'gluten-free', contain gluten!

This follows on the heels of other investigations which find that over-the-counter supplements often do not contain the ingredients they claim, and are

often adulterated with cheap fillers, substitutes and unlisted ingredients such as soy.

#### My View?

**1) Supplements:** In USA, over-the-counter nutritional remedies are lightly regulated. On the other hand, the European Union, against vociferous opposition, recently subjected such supplements to the full rigor accorded to prescribed medications.

Either way, my view is that supplementing is a cop-out. It gives a false sense of security to someone trying to avoid conforming to the lifestyle nature intended.

**2) Probiotics:** As I have written on several occasions, I am skeptical about probiotics.

a) The bacteria have to run the gauntlet of the stomach's stomach acids which are

designed specifically to kill bacteria.

b) The gut flora is an incredibly complex relationship of over 5,000 species of bacteria, and it is futile to second guess the effects of firing in just one or two species.

See: '*Yogurt does not Improve Health*', page 3.

See also: '*Kefir Ineffective as Probiotic*', [Sept 2009](#) [24].

Continued from Page 1

#### Telling Time of Day by Color

...and in temperature and touch associated with direct sun, wind, and humidity. For instance, the smell of the air, the color of the clouds and wind speed as predictors of an imminent storm.

See also: '*Daylight in Office Boosts Health*', [Sept 2014](#) [25].



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**1** Monica Wendel et al. The effect of stand-biased desks on academic engagement. *International Journal of Health Promotion and Education*, 2015; 1 DOI: 10.1080/14635240.2015.1029641

**2** <http://bit.ly/1Q2tSG0>

**3** Timothy M. Brown et al. Colour as a Signal for Entraining the Mammalian Circadian Clock. *PLOS Biology*, 2015; 13 (4): e1002127 DOI: 10.1371/journal.pbio.1002127

**4** Heerwagen, J, *Psychological Value of Space in: Whole Building Design Guide*; National Institute of Building Sciences (NIBS); Washington; 2005

**5** <http://bit.ly/1FXcRoY>

**6** William B. Farquhar et al. Dietary Sodium and Health. *Journal of the American College of Cardiology*, 2015; 65 (10): 1042 DOI: 10.1016/j.jacc.2014.12.039

**7** Les recettes 100% santé, Jeanne Bouvet, ISBN: 0971285292 <http://bit.ly/1GErDVJ>

**8** Keith A. Sharkey et al. Interactive effects of oligofructose and obesity predisposition on gut hormones and

microbiota in diet-induced obese rats. *Obesity*, 2015; 23 (4): 769 DOI: 10.1002/oby.21017.

**9** <http://bit.ly/1MG1fL5>

**10** David A. Tuveson et al. The Promise and Perils of Antioxidants for Cancer Patients. *New England Journal of Medicine*, 2014; 371 (2): 177 DOI: 10.1056/NEJMcibr1405701

**11** Cedric F. Garland, et al. Cloud cover-adjusted ultraviolet B irradiance and pancreatic cancer incidence in 172 countries. *The Journal of Steroid Biochemistry and Molecular Biology*, 2015; DOI: 10.1016/j.jsbmb.2015.04.004

**12** <http://bit.ly/1cUEkzs>

**13** <http://bit.ly/1cUEKpJ>

**14** <http://bit.ly/1yGIEdZ>

**15** <http://bit.ly/1o5kyDu>

**16** Sellmeyer, D.E. et al. "Potassium Citrate Prevents Increased Urine Calcium Excretion and Bone Resorption Induced by a High Sodium Chloride Diet." *J Clin Endocrinol Metab* 87:5 (2002): 2008–2012.

—Cirillo, M. et al. "Salt Intake, Urinary Sodium and Hypercalciuria." *Miner*

*Electrolyte Metab* 23:3–6 (1997): 265–268.

**17** Helen Lambert et al. The effect of supplementation with alkaline potassium salts on bone metabolism. *Osteoporosis International*, Jan 2015 DOI: 10.1007/s00198-014-3006-9

**18** <http://dailym.ai/1QzkQmL>

**19** Esther Lopez-Garcia et al. Habitual Yogurt Consumption and Health-Related Quality of Life. *Journal of the Academy of Nutrition and Dietetics*, 2015; 115 (1): 31 DOI: 10.1016/j.jand.2014.05.013

**20** <http://bit.ly/1s2x6wQ>

**21** <http://bit.ly/1omEi2m>

**22** A. Drewnowski et al. The feasibility of meeting the WHO guidelines for sodium and potassium. *BMJ Open*, 2015; 5 (3): e006625 DOI: 10.1136/bmjopen-2014-006625

**23** Digestive Disease Week, Washington D.C. May 15-19, 2015, [www.ddw.org](http://www.ddw.org)

**24** <http://bit.ly/1s5LsN4>

**25** <http://bit.ly/1IIm7V3>