The Paleolithic Solution - Episode 2

1. Email question:

Robb,

I am a Crossfit trainer and recently attended your nutrition cert in Bozeman. I've had my nose in the books since then even though I'm still trying to digest what I learned at the cert. It was awesome. I've cut out the gluten and I'm taking 10 grams of fish oil a day. I was talking to one of my clients about the fish oil doseage and she expressed concern that high doses of fish oil would lead to excessive levels of vitamin E, A and K. She said these vitamins are neurotoxins at high levels. I told her that I had not heard that about fish oil, but that I would find out more. So I did some poking around the internet and on your site. The only mention I found of excessive levels of vitamin E was specifically in regards to cod liver oil. I know you get a lot of e-mail, and I'm not asking to be spoon fed the answers. If there is some reading I'm missing, could you point me in the right direction? I want to give this very motivated woman the right answers.

2. Discuss our recommendation of Kirkland Fish Oil

3. Discuss following study

Abnormal neurological responses in young adult offspring caused by excess omega-3 fatty acid (fish oil) consumption by the mother during pregnancy and lactation.

Neurotoxicol Teratol. 2009 Jan-Feb;31(1):26-33. Epub 2008 Sep 16

Consuming omega-3 fatty acids (omega-3 FA) during pregnancy and lactation benefits fetal and infant brain development and might reduce the severity of preterm births by prolonging pregnancy. **However, diets that are relatively rich in omega-3 FA can adversely affect fetal and infant development and the auditory brainstem response (ABR)**, a measure of brain development and sensory function. We previously examined the offspring of female rats fed excessive, adequate or deficient amounts of omega-3 FA during pregnancy and lactation. The 24-day-old offspring in the Excess group, compared to the Control group, had postnatal growth retardation and poor hearing acuity and prolonged neural transmission times as evidenced by the ABR. The Deficient group was intermediate. The current study followed these offspring to see if these poor outcomes persisted into young adulthood. Based on prior findings, we hypothesized that the Excess and Deficient offspring would "catch-up" to the Control offspring by young adulthood. Female Wistar rats received one of the three diet conditions from day 1 of pregnancy through lactation. The three diets were the Control omega-3 FA condition (omega-3/ omega-6 ratio approximately 0.14), the Excess omega-3 FA condition (omega-3/omega-6 ratio approximately 14.0) and Deficient omega-3 FA condition (omega-3/omega-6 ratio approximately 0% ratio). The Control diet contained 7% soybean oil; whereas the

Deficient and Excess omega-3 FA diets contained 7% safflower oil and 7% fish oil, respectively. One male and female offspring per litter were ABR-tested as young adults using tone pip stimuli of 2, 4, 8 and 16 kHz. The postnatal growth retardation and prolonged neural transmission times in the Excess and Deficient pups had dissipated by young adulthood. In contrast, the Excess group had elevated ABR thresholds (hearing loss) at all tone pip frequencies in comparison to the Control and Deficient groups. The Deficient group had worse ABR thresholds than the Control group in response to the 8 kHz tone pips only. The Excess group also had ABR amplitude-intensity profiles suggestive of hyperacusis. These results are consistent with the Barker hypothesis concerning the fetal and neonatal origins of adult diseases. **Thus, consuming diets that are excessively rich or deficient in omega-3 FA during pregnancy and lactation seems inadvisable because of risks for long-lasting adverse effects on brain development and sensory function.**

4. Discuss Sweet Potatoes vs Fruits

5. Nuts - How do they fit in a Paleo diet?

6. Robb gives us a short book overview and updates us on current status.