

WHAT SHOULD HCG/PALEO USERS CONSIDER AS ADJUNCTS?

READERS SUMMARY:

ARE THE SUPPLEMENTS FOR THE LEPTIN RESET DIFFERENT FOR HCG USERS?

WHAT ARE THOSE SUPPLEMENTS?

WHAT DO THOSE SUPPLEMENTS DO?

WHAT SHOULD HCG USERS CONSIDER OVER A STANDARD PALEO/PRIMAL TEMPLATE?

I decided to add this post for the many readers I have that use HCG. To say that I have been inundated with emails about this topic would be an understatement. I think from my public comments at MDA and PaleoHacks about HCG, people have wanted to know a bit more about why HCG patients react differently than a regular paleo patient would. I think is best explained by the following example. Patients given coumadin by their doctors have to be treated differently for osteoporosis in my clinic. Most of you know I no longer use the bisphosphonate drugs as a first line treatment for this condition. So if a patient is on coumadin, I cannot offer them high dose Vitamin K2 therapy because coumadin depletes vitamin K as a side effect of its mode of action. This why so many people on long term coumdin treatment suffer from dystrophic calcification of their arteries in their aortic tree and coronary vessels while simultaneously having extreme osteopenia. So these patients need to be managed differently. HCG patients have to be handled differently than an obese patient as well for but different mechanism.

I have been very flattered by the many patients and readers of my blog that have posted their results in the monster MDA thread marrying a paleo/primal lifestyle with my Leptin Rx.

One of my patients informed me there was also a big thread over at another web forum of people who use HCG with a paleo template. One of those people happens to be an author who is a friend of mine of FB. After reading the thread in total and seeing the many questions they had I decided last night to put something together for them as well. The HCG diet is very controversial in the medical profession and in the paleo world. This blog is not about to discuss whether or not the diet is "total WOO WOO" or not. As a practicing physician, my job is to take care of patients with what they bring to me as they walk through my clinic door. Many of my own patients in Nashville have confided to me that they too decided to give HCG a whirl before they came to see me. In fact , one of my family members, who is a healthcare practitioner, now works with a group of physicians who use the HCG diet in their practice. I get many questions from that group of physicians as well. I get asked tons of questions by the lay public and my referral docs about the diet and what I think about it. Recently, I even spoke to a group of ICU nurses in a local hospital about the diet's pro's and con's. My job as a physician is to listen to my patients and then treat them in the best fashion possible. When a person comes to me overweight or with a smoking history I do not ostracize them and refuse to treat them because they maybe impacting their health in a detrimental way. I look at HCG in the same light. People who opt for HCG have usually struggled with obesity and body composition issues for a long time. They want help and are ready to change. These characteristics make them favorite patients because they are ready for real change to occur.

Many of them have found when they come off HCG weight loss gains are tough to keep unless they do some very specific things. The things I have recommended to this group of patients is quite a bit different then I would recommend to a person who has no history of HCG use. Once one comes off the last round of treatment, it is critical that you adopt a paleo/primal template quickly and use the Leptin reset Rx that

I outlined in the my blog post. Timing of meals is more critical for an HCG user than the food fuel source macronutrients ratios. Most people on HCG can use the “protein method” of controlling the incretin hormones from the gut like PYY, agouti, and gherlin, but I find that the addition of MCT to work best for them. This is why coconut oil is often added to the BAB outlined in the Leptin Rx blog, when cravings or hunger return. It completely obliterates them via the afferents from the vagus nerve that connect parts of the brainstem with the hypothalamus. So today's post is for my readers who have chosen a different path to conquer a disease that has taken something dear from them.....their health.

If I can answer any questions about these supplements please let me know. I blog to help people who want help. I don't judge people who decide to take their health care decisions and make them their own. I am here to help guide you through the land mines of bad health to get back to optimal.

1. **Pinolenic Acid:** Recent research has shown its potential use in weight loss by curbing the appetite. Pinolenic acid causes the triggering of two hunger suppressants—cholecystokinin and glucagon-like peptide-1 (GLP-1). Pinolenic acid may have LDL-lowering properties by enhancing hepatic LDL uptake. Cholecystokinin is recognized to suppress appetite in humans. When a partially digested meal rich in fats or proteins leaves the stomach to enter the duodenum (the first portion of the small intestine), the duodenal mucosa cells secrete CCK. In turn, CCK stimulates the pancreas to secrete numerous enzymes to help digest food. CCK also acts on the gallbladder to stimulate the release of bile into the small intestine, which helps to emulsify and break down fats. Most important to appetite control, CCK acts to slow gastric emptying and to promote a feeling of fullness, thus suppressing further food intake. Glucagon-like peptide-1 is another hormone that is intimately connected with fullness and satiety. Produced in the small intestine in response to fat and carbohydrates,

GLP-1 works in part by activating the “ileal brake” mechanism. This slows down the absorption of food in the gut, promoting feelings of fullness and satiety, and therefore limits the desire for further food intake. GLP-1 also helps to control the health of pancreatic beta cells, which serve the crucial function of manufacturing insulin in the body. Abnormal beta-cell function plays a key role in the development of insulin resistance due to intracellular Magnesium deficiency , and scientists believe that therapies that boost GLP-1 levels could help to favorably alter the course of diabetes.

CCK and GLP-1 are key hormones for appetite control and satiety, and scientific studies show that these two hormones exert effects in combination that are more powerful than either alone (synergistic effects). Studies of normal-weight and obese subjects have shown that GLP-1 and CCK reduce feelings of hunger and decrease voluntary food intake at meals.

2. **Pycnogenol:** inhibits key triggers of inflammation. In 2000, it was first discerned that Pycnogenol works on a genetic level by suppressing activation of a genetic master switch, called nuclear factor-kappa B, which regulates expression of more than 300 genes that promote an abnormal inflammatory response. In a 2006 study on seven healthy human volunteers, 200 milligrams a day exerted anti-inflammatory effects, apparently by inhibiting pro-inflammatory gene expression. It is a potent blocker of series two prostaglandins (excessive omega 6) that can cause leptin resistance to develop at the SOCS3 receptor site of leptin in the brain.

Pycnogenol boasts more than 220 published studies over the past 35 years. In 2008 alone there were three published studies in the peer-reviewed literature for osteoarthritis. In one, 100 milligrams per day of the ingredient decreased the use of anti-inflammatory drugs by 58 percent (which led to a 63 percent decrease in gastrointestinal irritation, versus no change in the placebo group), lowered levels of HS-CRP, cut

patient pain and increased patient walking distance. This is a drug I use myself because of my knee injury.

On the cardio front, it specifically enhances circulation, reduces cholesterol, controls blood pressure and protects against heart infarction and stroke. In one study amongst people with borderline hypertension, eight weeks of taking Pycnogenol led to diastolic blood pressure dropping from 139.9 to 132.7.

3. Green Tea extract: Green tea extract boosts the “resting” metabolism by inhibiting an enzyme called catechol-O-methyl transferase (COMT) that breaks down norepinephrine, an adrenaline-like hormone that sustains energy production. This action helps to burn more calories for fat loss. HCG is a low calorie diet that uses hypothalamic modification to try to increase weight loss. In a large clinical trial, a patented green tea phytosome extract produced exceptional weight loss in obese individuals. Supplemented subjects lost almost 31 lbs over 3 months, while controls lost just 11 pounds! Both groups followed a low calorie diet. This study is particularly interesting for HCG patients. Green Tea is also loaded with EGCG a potent antioxidant that is also a potent aromatase inhibitor. This keeps the sex steroid hormones at a higher level supporting HDL levels in the liver to improve endotoxin clearance and decrease plasma oxidative potential (sdLDL). Green Tea also slows down the effect of the enzyme lipase in the gut. This helps slow the absorption of fats. I drink on average close to 1-1.5 liters of green/black tea daily with coconut oil melted in it.

4. Kelp: is potent inhibitor of amylase and another digestive enzyme called alpha-glucosidase. It also lowers BG and it helps thyroid function by increasing dietary Iodine levels.

5. CLA: is found in grass fed meats and raw dairy products. A study that showed a dose of 3.4 g CLA per day for 12 weeks seems to be sufficient to reduce body fat mass (BFM)

significantly in overweight and obese humans

6. **Curcumin:** The active compounds in turmeric known as curcuminoids are potent phytonutrients that contain powerful antioxidant properties, showing activity as much as 300 times greater than that of vitamin E. The main curcuminoid, Curcumin helps to counteract the damaging effects of free radicals in the body, exerting extraordinary liver protection to aid in weight loss lowering IL6 and TNF alpha. I really like curcumin when it is mixed with raw black pepper in cooking because it increases its effectiveness by ten fold when taken in tandem. This powerfully lowers your HS CRP and serum ferritin levels. I use this in supplement form myself and use the spice turmeric on just about every meal I eat.

7. **Resveratrol:** increases mitochondrial biogenesis leading to increased exercise endurance and protection from diet induced obesity. Resveratrol increases SIRT 1 and has wide effects all over the our genome. It activates many epigenetic switches that control fat and protein metabolism favorable for weight loss. Resveratrol effects were shown to be mediated through the SIRT1 gene and mTor pathways and PGC-1a pathways. Many people who are LR complain of losing muscle mass while on the HCG diet. This is because they are profoundly LR and they are not stimulating the AMPk pathway because of how the diet is constructed. Resveratrol helps modulate this when calorie reduction is occurring. Anyone who is a neurosurgical patient of mine or a FB friend already knows how I feel about Resveratrol. I take large amounts this supplement myself because of the myriad of good things it does to our biology. In a recent study from the American Journal of Clinical Nutrition , resveratrol was shown to: inhibit preadipocyte proliferation inhibits preadipocytes' maturation into mature adipocytes stimulates glucose uptake inhibits de novo lipogenesis cause a down regulation of the inflammatory cytokines IL-6, TNF-alpha, NF-kB, and IL-8 (IL-8 is proatherogenic- enhances CAD) Resveratrol increases production

of rhBMP2 to increase bone mass which is important for leptin resistant patients with obesity, high cortisol levels or those with anorexia.

8. **Pregnenolone:** replacement to support poor steroid genesis that is common in HCG users. Pregnenolone falls dramatically in two states. Aging and in leptin resistance. The fall in LR is due to excessive sympathetic outflow from the the brain due to stress. This stress often translates to increase amounts of adrenal fatigue seen in these patients. If you remember my Hormone 101 blog I said there that LR leads to adrenal resistance given enough time. Pregnenolone converts into DHEA and progesterone. DHEA does not convert into progesterone, rather it converts into estrogen and testosterone. It can also convert to cortisol as well so this dose needs to be done with salivary levels and the care of your doctor. Without context you can make some errors in dosing.

9. **Vitamin E:** Is useful in preventing lipid peroxidation. Fats are very sensitive to oxidation and this is the antidote to this. Its major effects for weight loss are in being a powerful reducer of HS CRP which reduces many of the inflammatory cytokines associated with leptin resistance development. For those who have been on multiple rounds of HCG I also think adding high dose alpha lipoid acid is prudent to this regimen as well. I usually will have multi rounders use 600 mgs three times a day.

10. **Chromium picolinate:** works by increasing peripheral tissue to insulin. This allows for more AMPk pathway signaling that increases your body composition as you lose weight. Some claim it curbs appetite but I do not find this to be a major benefit. It also is very helpful in shredding weight when it is used with coconut oil and Vitamin K2. This is a method that body builders also use. If you are new to HCG then you can get away with 200 mcgs a day but if you are a frequent user of HCG I would use that dose three times a day. Chromium is synergistic when used with L-arabinose. It is a non absorbable

sugar the blocks sucrase digestion and works quite well when paired with chromium to lower blood sugars and HbA1c.

*****All HCG users should seriously consider high dose PQQ use while using HCG (not homeopathic HCG)

CITES:

Peng Q, et al. Pycnogenol inhibits tumor necrosis factor-alpha-induced nuclear factor kappa B activation and adhesion molecule expression in human vascular endothelial cells. *Cell Mol Life Sci* 2000 May;57(5):834-41.

Belcaro G, et al. Treatment of osteoarthritis with Pycnogenol. The SVOS (San Valentino Osteo-arthritis Study). Evaluation of signs, symptoms, physical performance and vascular aspects. *Phytother Res*. 2008 Apr;22(4):518-23

Stoffers DA. The development of beta-cell mass: recent progress and potential role of GLP-1. *Horm Metab Res*. 2004 Nov-Dec;36(11-12):811-21.

Paquot N, Tappy L. Adipocytokines: link between obesity, type 2 diabetes and atherosclerosis. *Rev Med Liege*. 2005 May;60(5-6):369-73.

Christophe J. Is there appetite after GLP-1 and PACAP? *Ann NY Acad Sci*. 1998 Dec 11;865:323-35.

Flint A, Raben A, Astrup A, Holst JJ. Glucagon-like peptide 1 promotes satiety and suppresses energy intake in humans. *J Clin Invest*. 1998 Feb 1;101(3):515-20.

Gutzwiller JP, Degen L, Matzinger D, Prestin S, Beglinger C. Interaction between GLP-1 and CCK-33 in inhibiting food intake and appetite in men. *Am J Physiol Regul Integr Comp Physiol*. 2004 Sep;287(3):R562-7.

Marx J. Cellular warriors at the battle of the bulge. *Science*. 2003 Feb 7;299(5608):846-9.

Brennan IM, Feltrin KL, Horowitz M, et al. Evaluation of interactions between CCK and GLP-1 in their effects on appetite, energy intake, and antropyloroduodenal motility in healthy men. *Am J Physiol Regul Integr Comp Physiol*. 2005 Jun;288(6):R1477-85.

Diepvens K, Westerterp K R, Westerterp-Plantenga MS. Obesity and thermogenesis related to the consumption of caffeine, ephedrine, capsaicin, and green tea. *Am J Physiol Regul Integr Comp Physiol*. 2007 Jan;292(1):R77-85.

Lipids. 2001 Aug;36(8):773-81.

Lee JW, Lee KW, Lee SW, Kim IH, Rhee C. (April 2004). "Selective increase in pinolenic acid (all-cis-5,9,12-18:3) in Korean pine nut oil by crystallization and its effect on LDL-receptor activity". *Lipids* 39 (4): 383-7.