Health Bits and Pieces (HFN 29:4)

Written by Dan Kenner, Ph.D., L.Ac.

Blood Sugar and Spice.

Cinnamon may be useful in regulating glucose metabolism in diabetic patients. Cinnamon inhibits an enzyme that helps metabolize carbohydrates into simple sugars, which would prevent a blood sugar drop after eating.

Shihabudeen HM, Hansi P, Kavitha Thirumurugan K, "Cinnamon extract inhibits α-glucosidase activity and dampens postprandial glucose excursion in diabetic rats," *Nutrition & Metabolism*, 2011, 8:46 doi:10.1186/1743-7075-8-46.

And everything nice.

More research shows that other spices like turmeric, clove, and garlic, as well as cinnamon, can prevent a spike in blood sugar and an increase in plasma triglycerides, i.e., fat in the blood. Usually triglyceride and insulin levels rise significantly after a rich meal. Consuming a mixture of spices decreased the spike in insulin and triglycerides after a high-fat meal.

Skulas-Ray A, Kris-Etherton P, Teeter D, Chen C-Y, Vanden Heuvel J, West S, "A High Antioxidant Spice Blend Attenuates Postprandial Insulin and Triglyceride Responses and Increases Some Plasma Measures of Antioxidant Activity in Healthy, Overweight

Men," *Journal of Nutrition*, August 1, 2011, Vol. 141, No. 8 at 1451-1457.

That's what little girls are made of.

A new research report shows that resveratrol, a noted beneficial polyphenol found in red wine and some medicinal plants, stops breast cancer cells from growing by blocking the growth effects of estrogen and inhibiting the proliferation of hormone-resistant breast-cancer cells.

Francesca De Amicis F, Giordano F, Vivacqua A, et al, "Resveratrol, through NF-Y/p53/Sin3/HDAC1 complex phosphorylation, inhibits estrogen receptor α gene expression via p38MAPK/CK2 signaling in human breast cancer cells," *The FASEB Journal*, October 2011, Vol. 25, No. 10 at 3695-3707.

What boys are made of . . .

An extract of ginger, a spice with known anti-inflammatory and antioxidant properties, inhibits growth of various types of prostate cancer cells as well as induces apoptosis (cell death).

Karna P, Chagani S, Gundala SR, Rida PC, Asif G, Sharma V, Gupta MV, Aneja R, “Benefits of whole ginger extract in prostate cancer,” *British Journal of Nutrition*, 2011 Aug 18:1-12.

Turmeric Inflammation plays a central role in diabetic neuropathy by damaging the glomerulus, the tiny venous structures responsible for kidney filtration. The extract curcumin, from turmeric, appears to limit kidney damage in diabetics by reducing inflammation and its harmful effects.

Soetikno V, Sari F, Veeraveedu P, et al, “Curcumin ameliorates macrophage infiltration by inhibiting NF-κB activation and proinflammatory cytokines in streptozotocin induced-diabetic nephropathy,” *Nutrition & Metabolism*, 2011, 8:35 doi:10.1186/1743-7075-8-35.

Fish oil, etc. Supplementation with Omega-3 fatty acids improves insulin resistance, which has been associated with the development of diabetes. These fatty acids are found in oily fish such as anchovies and sardines.

Giuseppe Derosa G, Cicero A, Fogari E, et al, “Effects of n-3 PUFA on insulin resistance after an oral fat load,” *European Journal of Lipid Science and Technology*, Volume 113, Issue 8, pages 950–960, August 2011.

Carnitine The amino acid carnitine enhances glucose regulation and prevents spikes in blood sugar levels. The response in overweight men suggests that they may not be as sensitive to insulin as the test subjects with normal weight.

Galloway S, Craig T, Cleland S, “Effects of oral l-carnitine supplementation on insulin sensitivity indices in response to glucose feeding in lean and overweight/obese males,” *Amino Acids,* Volume 41, Number 2, 507-515, DOI: 10.1007/s00726-010-0770-5.

Vitamin D The lower a person's level of serum Vitamin D is, the higher the prevalence of developing metabolic syndrome, also known as pre-diabetes. Vitamin D, which is fat-soluble, can be stored in fatty tissue and thus made unavailable in the blood where it is physiologically active.

D is independently associated with high-density lipoprotein cholesterol and the metabolic syndrome in men and women,” *Journal of Clinical Lipidology*, 21 July 2009 (10.1016/j.jacl.2009.07.003).

Flavonoids Grape seed extract (GSE), a flavonoid-rich product, significantly improved markers of inflammation and glycemia, insulin resistance, and oxidative stress in obese Type-2 diabetic subjects who were at high risk of cardiovascular events over a four-week period. The researchers concluded that grape seed extract may have a therapeutic role in decreasing cardiovascular risk.

Kar P, Laight D, Rooprai HK, Shaw KM, Cummings M, "Effects of grape seed extract in Type 2 diabetic subjects at high cardiovascular risk: a double blind randomized placebo controlled trial examining metabolic markers, vascular tone, inflammation, oxidative stress & insulin sensitivity," *Diabetic Medicine*, 2009, May;26(5):526-31.

They couldn't afford a transplant

Researchers from UCLA and the Veterans Administration may have discovered a chemical that stimulates hair growth by blocking a stress-related hormone associated with hair loss. The researchers were investigating the effects of stress on the stomach and intestines with mice that were genetically altered to overproduce a stress hormone called corticotropin-releasing factor, or CRF. The mice lost hair as they aged and eventually became bald on their backs.

They used a peptide developed at the Salk Institute called astressin-B that blocks the activity of CRF on the bald mice. After several injections they placed the bald mice with the other ones, but three months later, the investigators returned to these mice but could not distinguish them from the others who had had no hair loss. They had re-grown the hair on their backs. Subsequent studies confirmed that the astressin-B peptide was responsible for the remarkable hair growth in the bald mice.

Wang L, Million M, Rivier J, Rivier C, Craft N, et al , "CRF Receptor Antagonist Astressin-B Reverses and Prevents Alopecia in CRF Over-Expressing Mice," PLoS ONE, 6(2): e16377. doi:10.1371/journal.pone.0016377 (2011).

Vitamin D for Viruses Past and Present

Supplementation with Vitamin D has been shown to reduce the risk of reactivation of latent Epstein's Barr virus during the Winter months. This importance of this role of Vitamin D in immune health cannot be overstated.

Zwart SR, Mehta SK, Ploutz-Snyder R, et al., "Response to Vitamin D Supplementation during Antarctic Winter Is Related to BMI, and Supplementation Can Mitigate Epstein-Barr Virus Reactivation," *Journal of Nutrition*, April 1, 2011 vol. 141 no. 4 692-697.