January, 2010
Volume 2, Issue 1

Austin Quan Yin Newsletter
The Better Health News

Special Interest Articles:

- Sugar and migraines
- Bowel bacteria and obesity
- Insulin resistance and cholesterol
- Can dieting make you fat
- Obesity and poor pain tolerance
- Preventing diabetes
- Corn syrup and the obesity epidemic

Eat Breakfast to Lose Weight

A study appearing in the *European Journal of Clinical Nutrition* (2009; 63, 405-412) found an association between skipping breakfast and becoming overweight or obese. Information was gathered about breakfast, physical inactivity and alcohol consumption in 25,176 teen-aged subjects. The researchers found that skipping breakfast had a stronger association with being overweight obese—stronger than alcohol consumption or physical inactivity.

Other research appearing in *Family Practice News* (May 15, 2003:10) looked at 1,943 adults between the ages of 25 and 37 and found that those who ate breakfast seven days per week were less likely to be obese, or to have insulin resistance. The risk for insulin resistance was between 37% and 55% lower for regular breakfast eaters than for those who ate breakfast seldom or never.

Sugar and Insulin Cause Problems

Americans currently spend $25 billion each year on cholesterol lowering medication. One cause of high cholesterol is eating sugar and refined carbohydrates. Eating sweets and starch causes the body to produce insulin. If the consumption of refined food is excessive and habitual, the body becomes less responsive to the insulin—a condition known as “insulin resistance”. The body produces more and more insulin, but responds to it less.

Excess insulin production causes a variety of problems. For one thing, insulin causes the body to store calories. If you want to lose weight, you have to get insulin production under control. This means avoiding sweets and starch.

Insulin resistance can also lead to high cholesterol. It is interesting to note that cholesterol lowering drugs work by suppressing an enzyme in the liver. That enzyme is actually stimulated by insulin production.

Another thing that few people realize is that eating refined sugar actually contributes to inflammation. If you are recovering from an injury or are in pain, avoid sugar and refined carbohydrate. Sugar can, and will contribute to your suffering.

Insulin resistance can eventually lead to type 2 diabetes. In type 2 diabetes the body makes plenty of insulin, it just does not respond to it, so the blood sugar increases. Refined food and excess insulin production can really undermine your health.

Sugar and Migraines

A diet free of sucrose (the sugar found in most "goodies"), and eating six small meals per day improved the GTT results in most of the six patients.

Doctors who work with natural health care have always known that there is the connection between sugar and headaches. Eating a lot of sugar and skipping meals are two habits that must be discontinued if a patient is to have relief from headaches. Research that appeared in the journal *Headache* (May 1978;18:91-94) a study appeared that looked at 74 subjects who suffered from migraine headaches and their blood sugar levels. The subjects were give glucose tolerance tests (GTT) and it was found that six of the patients had results that suggested diabetes and 56 had results that suggested reactive hypoglycemia. A diet free of sucrose (the sugar found in most "goodies"), and eating six small meals per day improved the GTT results in most of the six patients with the diabetic patterns and half of those subjects became headache free. Of the 56 subjects with the hypoglycemic GTT result, of the 43 subjects who returned for a follow up, just about every one had improvement of their GTT curve and reduction in pain.

Bowel Bacteria and Obesity

The intestine is a kind of ecosystem. The number of bacterial cells outnumber all the cells in your body (the bacteria cells are much smaller than human cells). Bacteria perform necessary functions, like suppressing pathogens, detoxifying harmful chemicals, and producing vitamins. In natural health care there has been a concept called "dysbiosis". Dysbiosis refers to a situation where the wrong kinds of microorganisms thrive in the intestine. The wrong microorganisms produce toxins, can irritate the lining of the intestine, and suppress the beneficial bacteria. While this concept of dysbiosis has been controversial, research is beginning to support it.

Research published in the December, 2006 issue of the journal *Nature*, indicates that the type of bacteria found in the intestine may be related to whether a person is overweight or not. This was observed in both humans and mice. Obese humans and mice had a higher percentage of a family of bacteria called *Firmicutes* and less of a type of bacteria called *Bacteroidetes*. The researchers were unclear whether the obesity is caused by the presence of the bacteria, or if the bacteria are present because of the obesity.

In order to find out if the presence of the bacteria caused obesity, the researchers transplanted *Fimicutes* into the intestines of lean mice. When the bacteria were transplanted, the mice actually began to take in more calories from the food they ate. The same amount of food actually provided more calories for the mice with the *Firmicutes* bacteria in the intestine than for those without the *Firmicutes* bacteria.

In people, dieting affected the makeup of the bowel bacteria. *Bacteroidetes* made up about three percent of the gut bacteria in the participants of the study who were obese. But after dieting and losing weight, the subjects had much higher levels of *Bacteroidetes*—close to 15%.

Insulin Resistance and Cholesterol

Excess insulin production causes a variety of problems. For one thing, insulin causes the body to store calories. If you want to lose weight, you have to get insulin production under control. This means avoiding sweets and starch. Eating too much refined carbohydrate can cause insulin resistance.

Insulin resistance can also lead to high cholesterol. Usually there is a pattern. The triglycerides and LDL (bad) cholesterol are high and the HDL (good) cholesterol is low. This is a situation known as the metabolic syndrome, or syndrome X. It is often accompanied by high blood pressure. It is interesting to note that cholesterol lowering drugs work by suppressing an enzyme in the liver. That enzyme is actually stimulated by insulin production.

Consumption of sugar and insulin resistance goes beyond the obvious problems of obesity, diabetes and high cholesterol. Sugar is also linked to fatigue, high blood pressure, fatty liver, atherosclerosis, yeast overgrowth, magnesium loss, acidic pH, calcium/phosphorus imbalance, polycystic ovary disease, endocrine problems, a systemic inflammatory state, impaired fibrinolysis and pro coagulation, and an environment that favors neoplastic (cancer) growth.

The average American consumes nearly 200 pounds of refined sugar each year, and we get half of our calories from refined carbohydrates. This creates vitamin deficiency and insulin insensitivity. Other factors that contribute to the metabolic syndrome include stress, poor sleep habits, lack of exercise, and exposure to toxins.

Our blood sugar is controlled by insulin and glucagon. The excessive consumption of sugar and refined carbohydrates causes the body to become less sensitive to insulin—a condition that will lead to the metabolic syndrome or syndrome X. It can eventually lead to type-2 diabetes.

According to the *Journal of the American Medical Association*, Syndrome X is present if these three things are present:

- Waist measurement greater than 40 inches in men or 35 inches in women
- Trilycerides greater than 150 mg/dl
- HDL less than 40 mg/dl in men or less than 50 mg/dl in women
- Blood pressure that is 135/85 or greater
- Fasting blood glucose of 110 mg/dl or greater

25% of all Americans have Syndrome X. It is a problem created by eating too much refined food. It can result in diabetes, high blood pressure and heart disease. Clearly getting insulin levels under control is a must.

Insulin resistance can also lead to high cholesterol. Usually there is a pattern. The triglycerides and LDL (bad) cholesterol are high and the HDL (good) cholesterol is low. This is a situation known as the metabolic syndrome.

Can Dieting Make You Fat?

It was around 1914 when Dr. Lulu Hunt Peters came up with the concept of the calorie and its relationship to weight loss and weight gain. A calorie (actually, in dieting a calorie is actually a kilocalorie) is the amount of energy that it takes to increase the temperature of one liter of water by one degree centigrade. It made sense; all foods contained a certain amount of energy. Simply cut down on the amount of food energy you consume and your body will have to rely on other sources (namely your fat) for energy.

Ever since then, if you wanted to lose weight, you simply ate fewer calories. There have been variations over the last 95 years. You have been told to eat fewer fat grams or to limit the amount of carbs. But basically the advice has always been the same: If you want to lose weight, eat less.

That would work well enough if your body was a furnace and that excess weight was a pile of coal in front of it. Order less coal, and eventually the pile gets smaller. Unlike a furnace, your body adapts to less fuel; it becomes more efficient. In the 95 years that the calorie concept has been around, using it to lose weight has been woefully inadequate.

Hormones play a big role in weight loss and weight gain. They play a role in appetite. Fat cells produce a hormone called leptin, which helps control satiety. When you lose fat, leptin levels decrease and produce a greater desire to eat. Stress increases cortisol levels, which creates cravings for high-calorie foods and also causes the body to hold onto fat (especially around the belly and buttocks). Denying yourself adequate food produces stress, and ultimately results in weight gain. Another important hormone is insulin. We think of insulin as the hormone that keeps blood sugar under control. Insulin stores calories. It is impossible to lose weight unless insulin is under control.

We have survival mechanisms in place to keep us from starving and to provide us with fuel at times of stress. It turns out that how much we eat is not as important as when we eat and what we eat. Eating in a way that helps the endocrine system help us to lose weight is a much better strategy than merely limiting calorie consumption.

Eating a good breakfast and making sure that you eat more early in the day and less later in the day helps to keep cortisol, insulin and your appetite under control. Avoiding common food allergens, like gluten and dairy, is often an effective strategy.

Science has provided us with information about weight loss that goes way beyond the century-old concept of the calorie. The endocrine system and brain chemistry hold the key to losing weight and getting healthy. To successfully lose weight, you have to get around your own survival mechanisms. Let’s face it, your body thinks that weight loss is starvation and will work very hard at preventing it.

Obesity and Poor Pain Tolerance

The obese patients did not tolerate the painful stimulus as well as the non-obese patients.

A study published in the journal, *Pain* (2003; 104(3):549-57) followed over 1100 patients who had been treated for obesity (either surgically or non-surgically). The researchers found that hip, ankle, knee, neck and back pain was more common in obese patients than in the general population. Two years after bariatric surgery, the amount of pain suffered by the subjects was decreased.

The fact that overweight people suffer from more joint pain than those who are not overweight, is fairly obvious. But, according to other research performed at Ohio State University and Duke University, and presented in a paper to the annual meeting of the American Psychosomatic Society in March of 2006. All of the study's 62 participants had osteoarthritis of the knee joint. About a third of the participants were deemed to be obese. Those deemed to be obese had a BMI between 30 and 35. Your BMI is your "Body Mass Index" and it is calculated by dividing your weight (in kilograms) by your height (in meters) squared; BMI = kg/m^2. A BMI greater than 30 is considered obese and one greater than 35 is considered morbidly obese.

The subjects were subjected to a painful electrical stimulus in a nerve that goes into the calf muscle (the sural nerve). The obese patients did not tolerate the painful stimulus as well as the non-obese patients.

Many Cases of Diabetes are Preventable

A healthier lifestyle could ensure that 90% of the cases of type 2(adult onset) diabetes could be prevented. A study published in *The New England Journal of Medicine* (September 13, 2001;345) found that over 90% of the diabetes cases found in 85,000 female nurses could be attributed to eating habits and lifestyle.

Type 2 diabetes exists when the body does not properly use the hormone insulin and differs from type 1 diabetes where the body does not produce insulin. Type II diabetes is closely linked to obesity. In the study, the more overweight a nurse was, the more likely she was diabetic. Even having a weight at the high end of the normal range nearly tripled the risk. On the other hand, physical activity showed a strong protective effect against diabetes. Exercising seven or more hours each week reduced the chance of becoming diabetic by half.

Corn Syrup and the Obesity Epidemic

"Health and good estate of body are above all gold."

Apocrypha: Ecclesiasticus XXX, 15

The number of overweight and obese people in the United States is on the rise. According to data published in *Epidemiologic Reviews* (2007; 29: 6-28), the incidence of obesity increased from 13% of the population in the 1960s to 32% in 2004. Between 2003 and 2004 66% of American adults were overweight, and 16% of the children and adolescents were overweight.

According to an article published in *Nutrition Week* (July 28, 1995;25(28):7), obesity adds $68.8 billion dollars to our health care bill. It is responsible for 19% of the cardiovascular disease in the US. There are an additional $23 billion in indirect costs like lost productivity and work missed while in the hospital.

An article appearing in the *American Journal of Clinical Nutrition* (2004;79:537-543) notes that the consumption of high-fructose corn syrup increased by more than 1000% between 1970 and 1990, according to the US Department of Agriculture. Currently it represents 40% of sweeteners used in this country (not counting artificial sweeteners). This increase in the use of high-fructose corn syrup parallels the increase in obesity over the same time period. Almost all of the soda pop in the United States is sweetened with high-fructose corn syrup (excluding drinks labeled "diet"). There is a strong correlation between the consumption of soft drinks sweetened with sugar or corn syrup and obesity. Research appearing in *The Lancet* (February 17, 2001;357:505-508) studied 548 children and found that each serving of soda pop the body mass index and frequency of obesity increased. There is a 1.6 fold increase in the odds ratio for becoming obese for each additional 12 oz of sugared soda pop consumed. The article goes on to say that there has been a 500% increase in soda consumption over the last 50 years.