Volume 9, Issue 1

Fall, 2006

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NUTRITIONWORKS NEWS

Our Adulterated Food Supply

Focusing on the bigger issues in weight management and the obesity epidemic

Pick up any newspaper or magazine and you will likely see another story telling us how fat we are. In the same breath the usual evil culprits are exposed and we are admonished to eat less, exercise more and avoid fast food. It's not working.

The health care community, the media, and everyone who presumes to tell others how to eat recite the mantra. If only repetition made it true. It is time to address far more fundamental and complex issues regarding our food supply. As I have said too often, if obesity were merely a math problem, we would not be in this predicament.

Beyond Calories

Certainly, calories count. But even researchers are beginning to rethink the conventional interpretation of the energy balance equation. Now there is discussion of "energy partitioning", research jargon for what happens when your body doesn't burn energy for fuel but decides to preferentially store it as fat.

For anyone who has ever felt that the food you eat is immediately attached to your belly, it may not be just your imagination. Some of us are hard wired for survival. We store fat more efficiently than others, especially in our current indulgent environment.

Looking deeper into the food supply

In this year's newsletter I will explore the nutrients, foods, dietary patterns and food habits that influence energy metabolism and partitioning. I will also look at what leaders in health care and the business community are doing to make a difference.

I suppose the one benefit of all the fast food bashing is that fast food restaurants are actually on the leading edge when it comes to providing consumers with choice. Choice about what consumers order, choice about portion size, and more nutrition information to make those choices.

Now it is time for the rest of the players in the food environment to step up. From farmers and ranchers to food manufacturers, from suppliers to the retail grocers and restaurants, all players need to raise the bar. As consumers, our job is to support the players that do. That's how change happens.

The Buzzword is Balance

What Does "A Balanced Diet" Mean?

Eat a balanced diet. In nutrition circles the words have become cliché. In advertisements, we are told cereal is part of a "balanced" breakfast. But is our concept of a healthy meal truly balanced?

In that TV ad, the "balanced" breakfast of cereal, low fat milk, toast and juice is hardly balanced. While only 350 calories, 74% of those calories come from mostly refined carbohydrates, with 14% from protein and a mere 12% from fat.

Similarly a salad with no fat dressing and a grilled skinless chicken breast is just a bit better at 57% protein, 27% carbohydrate, and just 16% from fat. Neither the high carbohydrate nor the high protein meal is likely to provide the energy balance most of us need. (see *Balance* on pg 3)

Inside this issue:

Who's Switched? A List of Restaurants Now Using 'O' Trans Fat Shortening

- *Loews Santa Monica Beach Hotel*
- *Four Seasons Hotel, Beverly Hills*
- *Magic Castle, Hollywood*
- *Kay & Dave's Cantina (all 3 locations)*
- *Hotel Angelino, Bel Air*
- *Overland Café, Culver City* ***(Con't./SWITCHED pg 2)***

The Trouble with Trans Fats

Crackers, cookies, and snack foods now sport labels claiming "0 trans fats". Trans fats finally hit the public's radar this year when FDA regulations required them to be listed on food labels in January, 2006. The message is clear: trans fats are trouble.

Trans fats are created when vegetable oils are partially hydrogenated and form a solid mass. Margarine and shortening are common household sources. Creamy liquid shortenings made with partially hydrogenated oils are ubiquitous in the restaurant and institutional food industry. And because these fats are shelf stable, and provide unique cooking, texture and taste qualities in food, you will find them everywhere in processed foods.

Not all trans fat bad

Ironically, natural forms of trans fat found in meat and dairy products are found to be beneficial. These are not the trans fats to be concerned about. Naturally occurring trans fats are not required to be listed on food labels.

But don't be surprised if products with "0 Trans Fat" labels include partially hydrogenated fat in the ingredient list. The FDA regulations allow foods with less than 0.5 grams of trans fat to be labeled as "0". The trouble with this allowance is that the dietary guidelines recommend that we avoid trans fat as much as possible. The American Heart Association recommends an upper limit of 2.5 grams per day. It doesn't take long to eat enough servings of "zero" trans fat food to exceed 2.5 grams a day.

So what's a little trans fat?

Research has confirmed a public health nightmare of our own making. The health care community has been recommending foods with partially hydrogenated fats as a way to reduce intake of saturated fats for over 30 years. The nightmare is that natural forms of saturated fat are probably less harmful to us than partially hydrogenated fats.

Since 1902, partial hydrogenation of fats was seen as a boon to the food industry. Crisco was marketing shortening and recipes for their new product by 1911. Margarine was used extensively during years of war related rationing, and continued its popularity as the preferred butter substitute in order to reduce cardiovascular disease risk by the 1970's. It was in 1958 that partially hydrogenated fats were added to the "Generally Regarded As Safe" (GRAS) list by FDA without any additional testing.

It is stunning to consider what we now know. Trans fats are at least twice as damaging to our heart health as saturated fats. While butter increases LDL and total cholesterol, trans fats are known to do that *and* decrease HDL—the good cholesterol.

These changes in blood fats are a sign that something is amuck regarding energy metabolism. And that is just what research reported by a Wake Forest University scientist revealed at an American Diabetes Conference last June.

Dr. Kylie Kavanagh, DVM, and colleagues studied monkeys for 6 years (equivalent to 20 human years). Both the test and control monkeys ate the same number of calories and the same percentage of calories from carbohydrate, protein and fat. The experimental monkeys ate 8% of their calories from partially hydrogenated fats; the control monkeys only consumed olive oil.

Test monkeys gain more fat, and all in the belly

After six years the control monkeys had gained 1.2% of their initial body weight. (For a 130# woman this is equivalent to a 1.5 pound gain over 20 years) The experimental monkeys gained 7.8% in the same time, most of it deposited in their abdomen. (equivalent to 10 pounds of belly fat in the 130# example)

With trans fats found everywhere in our food supply it isn't any surprise that our population is more apple shaped than ever. Even relatively thin children and adults often sport a belly.

Thankfully, there are simple ways to reduce partially hydrogenated fats in our diet. First and foremost, eat close to the earth. Harmful trans fats are not found in natural foods. Second, look at food labels to check trans fat content. Even if it is "0", check the ingredient list to know when you are possibly consuming 0.5 grams trans fat per serving. And then, do the math.

SWITCHED: Decreasing Trans Fat In The Food Supply

Ninety-eight percent of liquid shortening used in restaurants contains trans fat. But is doesn't have to be that way. '0" trans fat liquid shortening is available, costing even a bit less than conventional partially hydrogenated liquid shortening.

Tradition continues to influence what is used in commercial kitchens, including the finest dining establishments. While in the South, peanut oil is the fat of choice, we use partially hydrogenated canola oil and soy bean oil in the West.

Representatives from Archer Daniel Midland and Cargill confirm that "almost all" liquid shortening used in the Southwest contains 5-7 grams trans fat per tablespoon. So much for egg white omelets. You're better off eating the entire egg poached!

Restaurants Using 'O' Trans Fat Liquid Shortening *(con't)*

- *Dukes Coffee Shop, West Hollywood*
- *Uzbekistan Restaurant, Hollywood*
- *Hollywood Billiards, Los Angeles*
- *Jon's Coffee Shop, Huntington Beach*
- *Baja Shrimp Company, Los Angeles*
- *Little Pedro's, Los Angeles*
- *Ole Tapas Bar, Studio City*
- *Minibar, Universal City*
- *Royal Claytons, Los Angeles*
- *Window's Restaurant, Los Angeles*

Data courtesy of Nemco Food Products, Vernon, CA

But change is coming. Forward thinking chefs are changing their cooking oils. Reports of restaurants switching to trans fat free shortening are sprinkled in the news. I was asked to speak to salesmen at *Nemco Food Products*, a local food distributor to hotels and restaurants. I presented the data, they got it, and restaurants are switching.

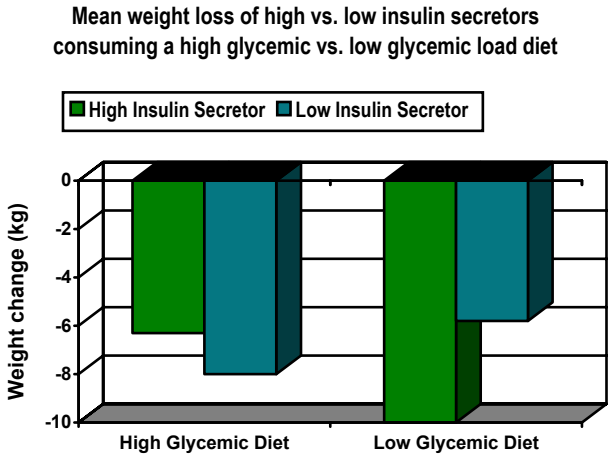
Next time you are dining, ask what liquid shortening is used on the grill, in the fryer or the bakery. There are options. A friendly nudge by a patron could be the tipping point to switch.

Balance (con't)

When a meal is mostly carbohydrate, it is metabolized quickly. People who secrete higher amounts of insulin commonly feel "hungry" in as little as 30-60 minutes after a high carbohydrate meal, probably as a response to an excessive insulin secretion. People who are low insulin secretors seem to mimic the Energizer bunny, and go on and on and on.

Protein and fat are both effective at enhancing a sense of satiety (feeling content and satisfied after a meal). Protein is especially potent in creating that sense of "enough!" Protein triggers a release of glucagon which works as an insulin antagonist. No wonder protein gives high insulin secretors a sense of contentment. And it follows that low insulin secretors can feel perfectly fine without much protein at all.

Ironically fat is basically neutral when it comes to insulin response. The benefit of enough fat in a meal is that it increases the duration of feeling satisfied.



All subjects lost weight, but the results are more dramatic when the diet compliments how a person metabolizes energy [Adapted from Diabetes Care 28(12) 2005]

Research by Anastacio Pittas (*Diabetes Care*, Dec 2005) continues to reinforce these truths. In last year's newsletter I mentioned David Ludwig's research that demonstrated how whole foods (fruits, vegetables, grains and beans) markedly reduced calorie intake in obese adolescents—contributing to a decrease in body mass index (BMI) that extended well beyond the 6 month trial. The kids were more satisfied and ate less when they consumed carbohydrates from whole foods—even when they ate ad libitum.

Dr. Pittas' work illustrates that people who secrete more insulin at baseline--even with normal glucose tolerance—lose fat weight far more dramatically when they eat less refined carbohydrate. As expected, the low insulin secretors (the insulin sensitive folks) lost more weight on the refined carbohydrate diet, but with less distinction between the two diets. (see chart above)

More than ever, the key is to find the balance that works for you.

The Secret of Survival

The Sweet We Eat Has Changed—*and maybe not in a good way*

Most wilderness survival manuals tell you to eat what animals eat. They eat what is sweet. Like our fellow mammals, we like sweet, too. The problem is that most of us are not hunting and gathering. We're sitting—a lot. And we still consume plenty of sweet.

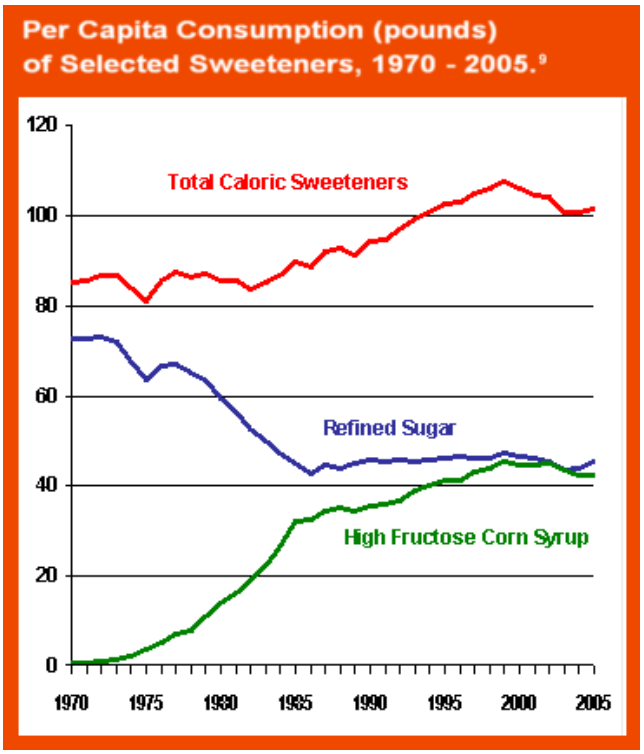
As of 2005, total intake of 'sugar" has been reported as low as 100# and up to 142# per capita per year. That is an average intake of 4.5 to over 6 ounces per person a day.

One particular concern regards the source. The graph on the right illustrates how rapidly high fructose corn syrup (HFCS) has swept into the marketplace over the last 35 years. It is far cheaper to produce, but maybe sweet shouldn't be so cheap.

Manufacturers insist that HFCS is metabolized similarly to sucrose (white table sugar). Some scientists believe otherwise.

A study published in the Journal of Endocrinology and Metabolism in 2004 (89(6):2963-2972) suggests that fructose does not stimulate insulin the same as sucrose. The end result is less circulating insulin and leptin, resulting in poor suppression of ghrelin, a hormone that stimulates appetite in humans.

This hormonal miscue is associated with a prolonged elevation of triglyceride which impairs glucose tolerance all by itself. But this hormonal response is also thought to increase calorie intake. When ghrelin is not suppressed, the body doesn't get a signal that says, "enough!". No wonder it is so easy to consume soda in 64 ounce buckets.



http://www.hfcsfacts.com/ USDA Data

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Bonnie Y. Modugno, MS, RD
530 Wilshire Boulevard
Suite 310
Santa Monica, CA 90401

Celebrating food in its rightful place

Phone: 310-395-4822
Fax: 310-917-2274
Email: bonnie@muchmorethanfood.com

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Alternative Contributors to Obesity:

The obesity epidemic conjures up the idea that everyone is getting heavier. Yes, weight has increased over the last 100 years, especially escalating over the last three decades. The average BMI (Body Mass Index) has increased moderately, but the more striking issue is that the heaviest individuals are far more obese. Is it possible that more than energy balance—calories in vs. calories out—contributes to this skewing of obesity distribution? Some researchers think so.

In the International Journal of Obesity (27 June 2006) a review article addresses ten additional factors that show just as much likelihood of contributing to this uneven epidemic.

1. **Sleep debt**. In population studies researchers note a trend: less sleep, higher BMI. Lack of sleep stimulates overeating in animals and humans. The physiology includes hormonal shifts that decrease glucose tolerance, leading to increased hunger and appetite—especially for sugar. Average sleep has decreased from greater than 9 hours to just over 7 hours in adults. And how many people sleep even less?
2. **Endocrine disruptors. (ED)** These are fat soluble industrially produced substances that affect endocrine function. ED change the way our body regulates energy metabolism. They can stimulate fat cell production, decrease glucose tolerance, and impair thyroid function. In humans ED burden is positively associated with BMI.
3. **Reduction in ambient temperature**. Exposure to very cold climates induces thermogenesis. Very hot climates tend to decrease food intake. Living in thermal neutral climates induces weight gain. We're comfortable, but heavier.
4. **Decreased smoking**. Nicotine both suppresses appetite and increases thermogenesis. Caffeine enhances this effect, but at the cost of increased insulin resistance. The CDC estimates smoking cessation may account for 16-25% increased incidence of overweight in women and men respectively.
5. **Pharmaceuticals.** Weight gain is induced by a long list of drugs including psychotropic medications (anti-psychotics, antidepressants, mood stabilizers), anticonvulsants, anti-diabetics, antihypertensives, steroid hormones and contraceptives, antihistamines and protease inhibitors. Dietary adjustments can minimize the impact, but few patients are counseled or referred to a dietitian for support.
6. **Change in population**. Evidence shows that older European populations, African American women, and Hispanics have markedly higher incidence of obesity compared to young European Americans. The US population is older with greater ethnic diversity today compared to 30 years ago.
7. **Increasing Age of Pregnant Women**. A British study showed that the odds of obesity in children increased 14.4% for every 5 year increment in maternal age.
8. **Gestational Diabetes.** Children born to mothers who experience gestational diabetes (GDM) are at increased risk for obesity as well as diabetes later in life.
9. **High BMI linked to better reproduction.** Heavier people reproduce at a higher rate than those with a lower BMI.
10. **Assortative mating.** Humans consciously or unconsciously choose mates based on body size. Genetic factors contribute to the weight and body girth of their offspring, resulting in a more polarized population.

Efforts to address the obesity epidemic need to shift focus and incorporate more than notions about energy balance . BMI is a poor litmus test of health. When it comes to health we already know fitness trumps weight every time.