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Understanding Trans Fats

Trans fats seemed like such a good thing once, enhancing the flavour, texture, and shelf life of many processed foods -- from cookies to frozen pizza. Unfortunately, they come with a health risk. Trans fatty foods tantalize your taste buds, then travel through your digestive system to your arteries, where they turn to sludge.

Small amounts of trans fats occur naturally in beef, lamb, and full-fat dairy products, but most come from processing liquid vegetable oil to become solid fat.

As of Jan. 1, 2006, food manufacturers have been required by the FDA to list trans fats on food labels. Health-conscious shopping became a lot easier, but there's more to it than buying products that boast "0 Trans Fats!"

Trans Fats: Recommended Limits

Like saturated fats, trans fats raise LDL "bad" cholesterol and increase the risk of heart disease. But unlike saturated fats, trans fats lower HDL "good" cholesterol and may do more damage, says the American Heart Association (AHA). The AHA advises limiting saturated fat consumption to less than 7% of daily calories and trans fat consumption to less than 1%. Given that a gram of fat has 9 calories, the following are the recommended trans fat limits based on calorie intake:

Total calories limit	**1% of total calories**	**=**	**Trans fat**
2,000	20		About 2 grams
1,500	15		About 1.5 grams
1,200	12		Slightly more than 1g

Trans Fats: Food Categories to Watch Out For

The FDA label ruling and consumer awareness of the dangers of trans fats have led many food manufacturers to reformulate products to reduce or eliminate trans fats. Today you can buy cookies and soft-spread margarine with zero trans fats. But trans fats still exist in some products. Carefully read nutrition labels on foods in these categories. Chose brands that don't use trans fats and are low in saturated fat in these products:

- cookies, crackers, cakes, muffins, pie crusts, pizza dough, and breads such as hamburger buns
- some stick margarine and vegetable shortening
- pre-mixed cake mixes, pancake mixes, and chocolate drink mixes
- fried foods, including donuts, French fries, chicken nuggets, and hard taco shells
- snack foods, including chips, candy, and packaged or microwave popcorn
- frozen dinners (continue page 2)

Job Opportunities

In the past we advertised job opportunities separately from the newsletter but from November 2009 this will be done in one complete newsletter for your convenience. If you are the owner of a gym or fitness studio and require the services of fitness personnel then let us know by email, admin@collegeofkinesis.com and we will place an ad in the December issue free of any charge.

HAVE YOUR SAY!!

Email your comments on any of the articles in this newsletter or any previous newsletters to info@collegeofkinesis.com who knows we might just

publish it

Trans Fats (Continues from page 1)

The Meaning of Zero Trans Fat

Reach for the product whose label shouts "0 Trans Fats!" and what do you get? Maybe some trans fats. That's because the FDA allows that label on anything with 0.5 grams of trans fat per serving.

As a result, keep in mind this advice:

1. Even if you're a conscientious shopper, it's easy to ingest a significant amount of trans fats without knowing it. A bowl of "trans-fat-free" cereal (that actually contains half a gram) plus a slice of birthday cake at the office and some microwave popcorn in the evening add up quickly.
2. Get in the habit of reading nutrition labels, the ones headed **"Nutrition Facts."** Look at all the fats listed there. Keep in mind that saturated fat is also unhealthy. If the label lists Trans Fat as 0 g, look at the **Ingredients List** for the words **"partially hydrogenated."** Any oil that is partially hydrogenated is a trans fat. So a single serving of cookies could have as much as a half gram of trans fat and be labeled "0 Trans Fats." Be aware, too, that often a "single serving" is often less than an average person would eat.

Bottom line: When choosing foods with "0 grams trans fats," evaluate the total fat content including the amount of saturated fat. Choose foods that have the least amount of saturated fat and that use healthy fats such as canola oil in the product.

Here are some examples from the Nutrition Facts on food labels:

Food	Trans fats in a single serving
Cake mix	0.5 g
Frozen chicken and noodles	0.5 g
Blueberry muffin mix	1.5 g
Refrigerated crescent rolls	1.5 g
Stick margarine (1T)	1.5 g
Frozen beef pot pie	2 g
Microwave popcorn	6 g

The following are some examples of foods that list 0 g trans fats but contain partially hydrogenated oils, such as soybean or cottonseed oil:

- Corn muffin mix
- Pizza
- Stoned wheat thin crackers
- Cookies, including some cartoon-licensed brands

Trans Fat-Free Products: Does Better Nutrition Come at a Higher Price?

Budget-conscious shoppers might be tempted to buy the cheapest brand of pastry, pot pie, or microwave popcorn. But don't make that decision at the expense of nutrition. Reformulating foods to reduce or eliminate trans fats costs manufacturers money. Some "0 trans fats" foods may cost more, although not all do. Again, be sure to read the nutrition label carefully so you know if you're buying a healthier version of the snack, cookie, cracker, or cake.

There's also concern that some food processors will remove trans fats only to substitute low-cost saturated fats -- another contributor to heart disease. But a 2006 marketplace survey published in the *Journal of the American Dietetic Association* showed that had not occurred except in one category: microwave popcorn.

Snack Food: Better Alternatives

While the FDA's labeling rule has made consumers aware of a hidden danger and has motivated food manufacturers to reduce or eliminate trans fats, health experts say even the reformulated snack food products rarely deliver good nutrition. Most are loaded with empty calories and should be avoided anyway.

The AHA advocates a diet containing a variety of fruits, vegetables, and grains, especially whole-grain products; fat-free and low-fat dairy products; legumes, poultry, and lean meats; and fish, preferably oily, at least twice a week.

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The Truth About Heart Rate and Exercise

Do you really need to track your heart rate when you work out? Experts weigh in.

By David Freeman, WebMD Feature

Reviewed by Louise Chang, MD

If you're even a semi-serious exerciser, you've probably read or heard that it's a good idea to know your resting and maximum heart rates and to track your heart rate during workouts.

Well, yes and no.

Knowing how fast the heart is beating before, during, and after exercise can be helpful for some people, including heart patients and competitive athletes. But experts tell WebMD that much of the conventional wisdom about heart rate and exercise is wrong.

Take this quiz to separate fact from fiction about heart rate and exercise.

1. TRUE OR FALSE: It's vital to monitor your heart rate during exercise.

FALSE. It all depends on who you are and why you're exercising.

If you have heart disease and your doctor has forbidden you to exercise strenuously, monitoring your heart rate during workouts is a good way to avoid pushing your heart into the danger zone. Heart rate monitoring can also make sense for serious runners, cyclists, and other athletes who are eager to optimize their aerobic fitness.

But otherwise, there's no pressing need to know your heart rate.

"The majority of people simply don't need to monitor their heart rate," Gerald Fletcher, MD, professor of medicine at the Mayo Clinic in Jacksonville, Fla., tells WebMD.

Edward F. Coyle, PhD, agrees. He's a professor of kinesiology and health education at the University of Texas at Austin and director of the university's Human Performance Laboratory.

Coyle's work has included studying the muscular efficiency and physiological factors -- including heart rate -- in Lance Armstrong during his acclaimed cycling career. But Coyle says that for most people, it's not essential to track heart rate during exercise.

"If you're exercising for health, the most important thing to do is get off the couch," Coyle says. He says that for most people, the key is to "enjoy their exercise, so they keep doing it."

2. TRUE OR FALSE: Resting heart rate is a good indicator of aerobic fitness.

TRUE. Regular aerobic exercise makes your heart stronger and more efficient, meaning that your heart pumps more blood each time it contracts, needing fewer beats per minute to do its job. "For most people, a normal resting heart rate is between 60 and 90 beats a minute," Coyle says. "Athletic training can lower that rate by 10 to 20 beats per minute."

But if you have a lower resting heart rate than someone else, don't assume that you're in better shape than them, or vice versa. Two people can be equally fit and have significantly different resting heart rates.

"Both a couch potato and a highly trained marathoner could have a heart rate of 50 to 60," says Benjamin D. Levine, MD, professor of medicine and cardiology at the University of Texas South Western Medical School and director of the Institute for Exercise and Environmental Medicine, both in Dallas.

3. TRUE OR FALSE: Maximum heart rate declines with age.

TRUE. As we all know, exertion makes the heart beat faster, and the greater the exertion, the faster the heart rate. But there's an upper limit on how fast your heart can beat, and that limit is affected by age.

"Maximum heart rate is unrelated to exercise training," Hirofumi Tanaka, PhD, tells WebMD. He's an associate professor of kinesiology and health education at the University of Texas and director of the university's Cardiovascular Aging Research Laboratory.

"Whether you're a couch potato or a highly trained athlete, that rate declines about seven beats per minute for each decade," Tanaka says. Regular exercise can lower your resting heart rate, but it does nothing to slow the age-related decline in maximum heart rate.

4. TRUE OR FALSE: Moderate exercise promotes weight loss more effectively than vigorous exercise.

FALSE. Weight loss is a matter of simple arithmetic: To shed pounds, you must burn more calories than you consume. And when it comes to burning calories, the greater the exertion, the greater the rate at which calories are burned. Working out at about 60% to 75% of your maximum heart rate (the so-called "fat-burning zone") burns fewer calories than working out at 75% to 85% of your maximum heart rate (the so-called "aerobic" or "cardio" zone).

But caloric burn depends on a workout's duration as well as its intensity -- and it's easier to work out longer when exercising at a lower intensity.

5. TRUE OR FALSE: There's a simple and reliable formula for calculating your maximum heart rate.

TRUE. There is such a formula -- but there are two big caveats.

For starters, it's not the familiar 220 minus your age in years. That formula, first promulgated in the 1960s, works reasonably well for people under age 40. But it overstates the maximum heart rate for older people.

A more accurate formula is the one published in 2001 by Tanaka in the *Journal of the American College of Cardiology*: Multiply your age by 0.7 and subtract that figure from 208.

For example, a 40-year-old has a maximum

The truth about Heart Rate and Exercise continues from page 3

heart rate of 180 (208 - 0.7 x 40).
Formulas aside, maximum heart rates vary, even among people of the same age. "The formula is only relevant for groups of people," Levine says. "For individuals, the prediction is off by plus or minus 10 to 20 beats per minute."
It's possible, of course, to determine your maximum heart rate by running or riding a bike to the point of exhaustion. But because it can be risky, exercising that intensely is not recommended for men over 45 or women over 55, as well as for heart disease patients or people with heart disease risk factors, unless they have been exercising regularly or have been cleared to exercise by their doctors.

6. TRUE OR FALSE: Using a heart rate monitor can help boost your fitness level.

TRUE. Electronic heart monitors, typically consisting of a wristwatch-like display and an electrode-studded chest strap, are used by serious runners, cyclists, etc. while training and even during races. By providing accurate, real-time heart rate information, the monitors help athletes pace themselves.
But even if you're not preparing for a marathon or a century ride, using a heart rate monitor can help motivate you to exercise. How? By turning your regimen into a solitaire of sorts: Can your regimen lower your resting heart rate? Can you exercise at the same pace but get your heart to pump more slowly? Can you shorten the time it takes your heart rate to return to normal after a workout?
It's not easy to answer these questions when you take your pulse manually, but quite easy with a heart rate monitor. "No one really needs a heart rate monitor," Fletcher says. "But some people love to play with these things, and that motivates them to exercise."

How Many Calories Do You Really Need?

How many calories do you need to maintain a healthy weight?

To maintain weight, see the calorie chart below. This chart represents calorie guidelines to maintain weight based on median height and weight -- a BMI of 21.5 for females and 22.5 for males – as well as activity level.
To lose weight -- about 1 pound a week -- reduce calories in the chart by 500 a day and become more physically active.
To gain weight, add 500 calories per day for each pound you want to gain per week.
For successful weight loss that you can maintain over time, experts recommend choosing foods that are lower in calories but rich in vitamins, minerals, fiber, and other nutrients.

Gender	Age	Sedentary*	Moderately Active*	Active*
Females	19-30	2000	2000-2200	2400
	31-50	1800	2000	2200
	51+	1600	1800	2000-2200
Males	19-30	2400	2600-2800	3000
	31-50	2200	2400-2600	2800-3000
	51+	2000	2200-2400	2400-2800

*Sedentary means a lifestyle that includes light physical activity associated with typical activities of daily living..
*Moderately active consists of walking 1.5 to 3 miles daily at a pace of 3 to 4 miles per hour (or the equivalent).
An *active person walks more than 3 miles daily at the same pace, or equivalent exercise.

High Fructose Intake May Raise Blood Pressure

Study Shows Link, but Not Everyone Is Convinced
By Kathleen Doheny WebMD Health News
Reviewed by Louise Chang, MD
Oct. 30, 2009 -- Eating too much of the sweetener fructose, found in sugary soft drinks, bakery goods, and candy, could be driving up your blood pressure, even if your blood pressure is typically healthy, according to a new study.
"High fructose intake is linked to high blood pressure," says researcher Diana Jalal, MD, assistant professor of medicine at the University of Colorado Denver Health Sciences Center in Aurora, Colo., citing the results of her study, presented this week at the annual meeting of the American Society of Nephrology in San Diego.
About 2.5 sugary soft drinks a day is enough to elevate the pressure, Jalal's team found.
While previous researchers have linked the consumption of sugary soft drinks and high blood pressure in teens, she says, this is believed to be one of the first studies to look at fructose consumption from the total diet and associate it with higher blood pressure.

Survey on Diet

Jalal and her colleagues evaluated data from 4,528 adults, ages 18 and above, who took part in the National Health and Nutrition Examination Survey (NHANES) in 2003 and 2006. None had a history of high blood pressure.
They had answered questions about diet, and fructose intake was calculated based on the answers. Foods such as fruit juices, regular soft drinks, bakery goods and candy were included. Jalal did not include fruits, which also include "natural" fructose, because their antioxidants, potassium, and other substances counteract the fructose effects, she says.
The researchers found that the median fructose intake (half had more, half had less) was 74 grams a day, or about 2.5 sugary soft drinks.
When she took into account such factors as age, physical activity, calorie intake, and salt intake, Jalal still found an association between high fructose and blood pressure. Overall, intakes of 74 grams or more daily was associated with a 36% higher risk of having blood pressure of 140/90 or higher, she found. Ideally, blood pressure should be below 120/80.

Why Fructose May Raise Blood Pressure

Exactly why fructose may raise pressure wasn't looked at in the Jalal study, but she tells WebMD several mechanisms could explain the association. "We know that fructose has the potential to reduce nitric oxide production within the blood vessels," she says. "Nitric oxide relaxes the vessel and is supposed to lower blood pressure. Fructose reduces the production of nitric oxide and makes it difficult for the vessels to relax and dilate."
Fructose also raises uric acid in the blood, she says, and that could raise blood pressure. "Fructose can tell the kidneys to 'hold onto' more salt, and that can contribute to high blood pressure," she says.

Beverage Industry Response

The beverage industry isn't convinced. "It's important to remember that this is an abstract presented at a scientific meeting," says Maureen Storey, senior vice president of science policy for the American Beverage Association in a prepared statement in response to the study.
"It is not a published, peer-reviewed paper where the study, the data and the results and conclusions have undergone the rigors of peer review." Because of that, Storey says, it is "impossible to provide thoughtful comments on the results."
She adds: "There is nothing unique about soft drinks and/or high-fructose corn syrup when it comes to risk for high blood pressure." She notes the many other risk factors for high blood pressure, including family history, lack of exercise, being overweight, and having a poor diet. *(Continue on page 6)*

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Second Opinion

Connie Diekman, RD, director of university nutrition at Washington University in St. Louis and a past president of the American Dietetic Association, reviewed the study for WebMD, and says: "The issue of fructose is one that is drawing much attention, but outcomes from research are conflicted." She awaits more study to see if the fructose-high blood pressure link is a true cause and effect, or more weakly associated.

Her advice: Sugary foods should only be chosen after you've had your fruits, vegetables, and other healthy foods.

Jalal says it's difficult to tell consumers an exact level of fructose intake that's healthy. And she cautions that she's not talking about the fructose found in fruits and some vegetables. "Fruits do have fructose, but not as much as a piece of pecan pie or a soft drink. Fruits have much less."

Diet Moodiness: Low-Fat vs. Low-Carb

Study Shows Initial Weight Loss Boosts Mood on Both Diets but Didn't Last on Low-Carb Diet

By Miranda Hitti WebMD Health News

Reviewed by Louise Chang, MD

Nov. 9, 2009 -- If you're looking to lose extra pounds and weighing the options of a low-fat diet vs. a low-carbohydrate diet, you might want to consider the moody findings of a new diet study.

The study, published in the *Archives of Internal Medicine*, shows a short-term improvement in the moods of people who went on low-fat and low-carb diets, but those mood gains didn't last in the long run for people on low-carb diets.

The study included 106 overweight and obese adults (average age: 50) in Adelaide, Australia. They were randomly split into two groups. One group was assigned to go on a low-fat diet for a year. The other group was assigned to go on a low-carbohydrate diet for a year.

Here's a quick look at those two diets:

Low-fat diet: 46% of calories from carbohydrates, 24% of calories from protein, and 30% of calories from fat (less than 8% from saturated fat).

Low-carb diet: 4% of calories from carbohydrates, 35% of calories from protein, and 61% of calories from fat.

People in both groups got the same daily calorie budget. They also met regularly with a dietitian and completed mood surveys several times during the yearlong study.

By the end of that year, people in both groups had lost the same amount of weight -- about 30 pounds.

At first, mood improved for people in both groups. That was no surprise; the researchers had expected to see that bounce in mood as people started to shed extra pounds, but better moods didn't last for people on the low-carb diet

By year's end, their mood was right back where it had been before dieting and losing weight.

However, the mood improvements lasted for people on the low-fat diet. It's not clear why the mood benefits faded for people in the low-carb group, but the researchers suggest that the low-carbohydrate diet may have been too hard and too different from how people used to eat.

The low-carb diet may have been "so far removed" from normal eating patterns that it became a lot of work and a social burden, note the researchers, who included Grant Brinkworth, PhD, of the Commonwealth Scientific and Industrial Research Organization in Adelaide, Australia.

"Although, in the short term, participants may have been able to meet the challenges presented by this dietary pattern, over the longer term, it may have increased participant isolation, leading to the negative impact on mood state that may provide a possible explanation for the effects that were observed," Brinkworth and colleagues write.