

Week One on The PATH

On The PATH to Real Food

Week One introduces The PATH, the importance of process, and the folly of chasing magic molecules. We will get back to basics, and reintroduce ourselves to Real Food.

WHAT TO DO THIS WEEK

- Define food ("Is it a duck?")
- Decide which ingredients, and which products, are actually food

WHAT TO KNOW THIS WEEK

Learn:

- Ingredients to avoid
- Foods to avoid
- Drinks to avoid

RESOURCES

- Honest food
- Foods to enjoy, and those to eliminate completely
- Stealth foods
- Ingredients watch
- Satiety Self Test
- Journal
- Further reading

HOMEWORK

- Throw out all faux foods
- Come back with the list of foods you're not sure of
- Find a buddy

JOURNALING

- What is real food?

Honest Food

Is it even food at all? Never before has humanity had to ask such a basic question.

Nevertheless we are deluged with a wash of food inventions that are counterproductive to our weight and health. We serve our children and ourselves the chemicals that send them and us circling the drain of metabolic disorders that will be imprinted for life. By giving in to clever media messages we treat Fruit Roll Ups as fruit, sodas as a viable substitute for milk, and cheese goldfish as a dairy product.

If you were observing from another planet, and you saw a group of animals eating chemical concoctions rather than the food they were ecologically “designed” for, you would wonder why. It is no surprise that these products lead to ill health. But when you realize that this group seeks those foods out—often in response to the problems caused by the chemicals in the first place!—you would be baffled at the ludicrous nature of these self-imposed problems.

The animals, of course, are us. Seen from the outside, our attempts to deal with our weight and health by eating hydrogenated chemicals and sugar-filled “weight loss slurries” can seem bizarre, especially when the answer is so basic and straightforward. In fact, it may be exactly because the answer is right in front of us that we cannot see it.

Eat real food.

How do you know if that product is NOT a food?

- Being sold in the food section does not make it a food.
- Being 600 times sweeter than sugar does not make it a food.
- And unfortunately, even looking like food does not make it a food.

So we must define food and hold to that definition. Foods can come in two categories:

1. **Obvious foods**, such as apple, egg, carrot, fish, beans.

These:

- Were all alive at some point
- Will normally go bad in a couple of days (with some exceptions like honey)
- May be found in a biology textbook
- Are not inventions

2. **Derived foods**, such as bread, cheese, ice cream, pasta, chocolate.

These:

- Are composed of parts that all satisfy the above criteria
- Can be made in the home

Examples of Foods to Enjoy

Meats (in this order)

- Fish
- Seafood
- Chicken
- Turkey
- Lean pork
- Ham
- Veal
- Beef
- Prepared meats like sausage

Cheese

- Cheddar
- Cottage cheese
- Cream cheese
- Feta
- Gouda
- Mozzarella
- Parmesan
- Provolone
- Ricotta
- Brie

Nuts (unsalted)

- Peanuts
- Brazil nuts
- Cashews
- Walnuts
- Pistachios
- Almonds

Vegetables

- All vegetables

Fruits

- All Fruits

Fats

- Extra virgin olive oil
- Corn oil (for some baking)
- Peanut oil (for some frying)
- Walnut oil (for salads)

Spices

- All spices without added sugar or MSG (HFCS, etc)
- All extracts (almond, vanilla, etc)

Desserts

- Fruit
- Any dessert with real ingredients
- Dark chocolate

Drinks

- Water
- Tea (herbal or regular)
- 100% Juice*
- Coffee
- Milk
- Alcohol
- Wine (1–2, 4-oz glasses/day)
- Beer (1–2, 12 oz bottles/day)

Starches

- Any bread made that day
- Oats
- Pasta
- Rice
- Baked goods

Beans

- All beans

Dairy

- Eggs
- Ice cream
- Milk
- Yogurt
- Cheese

Seeds (unsalted)

- All seeds

Sweeteners

- Sugar
- Brown sugar
- Molasses
- Honey

Enjoy

Example of Foods to Eliminate

Product characteristics

- Plastic-wrapped
- Unnatural shelf life > 1 month
- Inventions
- Colors not found in nature
- Versions of natural products

Artificial Sweeteners

- Aspartame
- Acesulfame-K
- Sucrolose
- Saccharin
- Sorbitol

Drinks

- All sodas (diet or not)
- Sugared "juice drinks"
- Flavored waters
- Sport drinks
- Diet slurries

Real Food

Substitutes

- Wonder-type breads
- Margarine
- Egg Beaters
- Processed cheese food
- Reduced fat items
- Reduced carb items
- Pre-packaged baked goods
- Lite anything

Stealth Foods

Foods with added sugars you may not be aware of: Ketchup, relish, plastic-wrapped breads, hot dogs, all pre-prepared foods, all low-fat foods.

You must look on the package for the additive sugars such as high fructose corn syrup.

Eliminate

*If you are a diabetic please consult our dietician.

Ingredient Watch

Ex. of Acids

Phosphoric acid
Sorbic acids

Ex. of Colors

- Blue 2
- Green 3
- Orange B
- Red 3
- Red 40
- Yellow 5
- Yellow 5 lake
- Yellow 6
- Yellow 6 lake
- Caramel Coloring (produced with ammonia)

Ex. of Gums

- Cellulose gum
- Guar gum
- Locust bean gum
- Xanthan gum

Oils

- Partially hydrogenated oil
- Fully hydrogenated oil

Ex. of Preservatives

- BHA
- BHT
- Calcium di-sodium EDTA
- TBHQ

Ex. of Sugars

- Acesulfame-K
- Corn syrup solids
- High fructose corn syrup
- Maltodextrin
- Non-nutritive sweeteners

Ex. of Metal

Compounds

- Aluminum phosphate
- Calcium dioxide
- Calcium iodate
- Calcium silicate
- Copper sulfate
- Disodium phosphate
- Ferric orthophosphate
- Magnesium oxide
- Sulfur dioxide
- Titanium di-oxide
- Zinc oxide

Other

- Alum
- Annatto
- Artificial flavor
- Artificial flavoring
- Artificial margarine flavoring
- Autolyzed yeast extract
- Calcium phosphate
- Calcium propionate
- Carrageen
- Datin
- Di-sodium guanylate
- Di-sodium inosinate
- Ethoxylated mono- and di-glycerides
- Glutamen
- Hydrolyzed soy and corn protein
- Mono- and di-glycerides
- Monocalcium phosphate
- Monosodium glutamate
- Palmitate
- Polysorbate 60
- Potassium bromate
- Potassium sorbate
- Propyl gallate
- Sodium benzoate
- Sodium caseinate
- Sodium hexametaphosphate
- Sodium Nitrate
- Sodium Nitrite
- Sodium stearoyl lactylate
- Sodium steryl lactylate
- Sodium sulfite
- Sorbitan monosterate

The ingredient watch list is to serve as a helpful guide. The goal should be to rid your diet of as many of these additives and preservatives as possible. Research suggests some are more harmful to health than others.. Here is some helpful information on some of the major ones that may be the least offensive in terms of where current research stands. But, as always it is important to remember that research is ever developing and new discoveries for our health are continually being made. So it would be in our best interest to eat a clean diet free of as many additives and preservatives as much as possible.

Annatto: Annatto is a vegetable dye obtained from a tropical tree. There is not a lot toxicity data currently available on annatto. It is approved for use in the United States and by the European Union. For now, the accepted view is that it is safe to consume in moderation but further research is being conducted.

Caramel Coloring: Caramel coloring is a bit sticky and tricky and here's why... When it's formulated with the use of ammonia, it contains the chemical, 4-methylimidazole — 4-MEI which according to the International Agency for Research on Cancer, it may be a potential carcinogen (cancer-causing agent). Although caramel color can also be produced without yielding 4-MEI. The difficulty for the consumer is that they just do not know what method of production was used simply by reading the ingredient caramel color. Currently many companies are having pressure put on them to make caramel color free of 4-MEI. It would be best to limit our consumption of caramel color and hopefully in the future the safer alternative will be the only one that's produced. All this being said, some companies are starting to voluntarily post the ingredient written in this fashion: caramel color (ammonia free) and it seems as if this is the ingredient listed, the food may be an on occasion ok choice.

Carrageenan: Carrageenan is still sort of a mystery of an ingredient. It is an ingestible substance obtained from a red seaweed also known as Irish Moss. Research demonstrates that it is carcinogenic in

animals so as a result it is currently being researched for its safety for human consumption. There is concern that it does lead to inflammation in humans. That being said currently both in America and in the European Union it is restricted for use in baby formulas but it is still used as a food additive. Until we know more, it may be in our best interest to limit consumption of carrageenan as much as possible.

Citric Acid: Citric acid is present in practically all plants and is a food additive that is known to be safe when extracted in its natural form.

Glutamate Derived Ingredients: There is quite an extensive list of additives such as hydrolyzed corn protein, hydrolyzed vegetable proteins, autolyzed yeast, hydrolyzed yeast, yeast extracts, soy extracts and protein isolate that contain naturally occurring glutamate. Glutamate refers to glutamic acid, which is amino acid that is naturally occurring and is found in many foods and in our bodies. The concern is that glutamate is a component of MSG and that these additives may cause the same effect. It's important to understand that MSG is an artificially created additive and the previously listed additives contain naturally based glutamate and do not contain anywhere close to the amount of glutamate concentrations found in MSG. So it seems safe to have these additives in moderation unless of course you are personally sensitive or allergic to glutamate.

Gums: To include Arabic, Furcelleran, Ghatti, Guar, Karaya, Locust Bean, Tara, Tragacanth and Xanthan work as thickening and stabilizing agents. There is not extensive research on them but according to various scientific organizations do appear to be safe when consumed in low doses and in moderation. So it appears to occasionally have a food with this additive is safe. Although in large quantities it may cause nausea, flatulence or abdominal cramps. The amount we are having as it being a food additive does appear to be a safe amount. It would just be in your best interest to not go overboard with their consumption.

The Satiety Self Test

Facts from the front lines of nutrition science research:

We are eating more sugar.

US Food Supply Data agree with the USDA Continuing Survey of Food Intakes of Individuals (CSFII). Americans eat more calories than ever, and the largest source comes from added sugars in processed and low-fat food products, and especially soft drinks.

For adolescents, from 1965 to 1996, soft drink consumption increased by 187% for boys and 123% for girls.

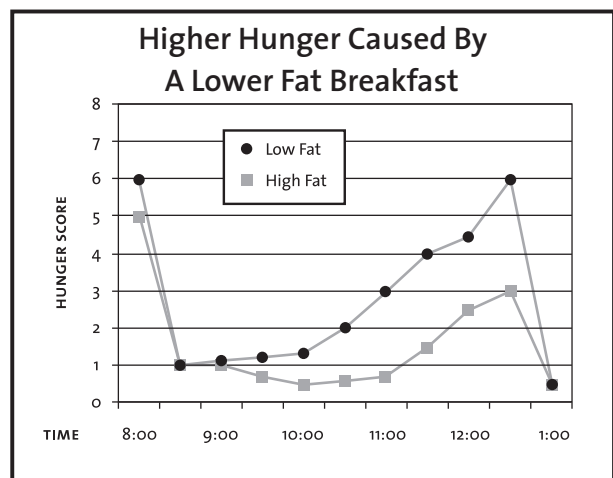
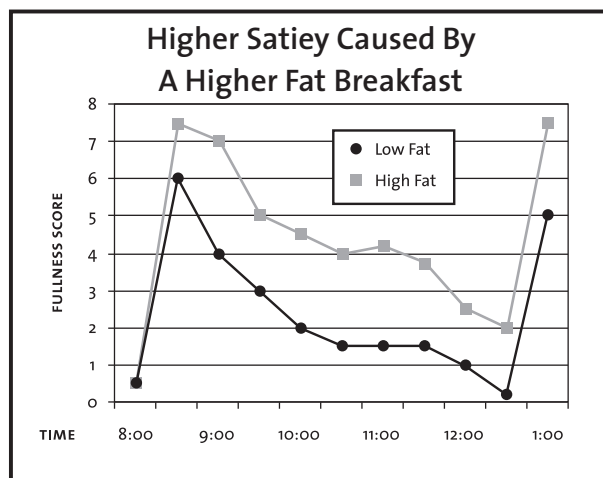
These simple sugars such as fructose, found in low fat and processed foods, make us hungry.

Just look at the data below!

Drs. Sepple and Read at the University of Sheffield in England have shown that eating a low fat breakfast makes subjects hungrier before lunch. Moreover, these same subjects ate more food at the lunch meal!

Food with natural levels of fat stimulates satiety hormones to decrease hunger between meals and even at the following meal.

The study below demonstrates the real-life effect of this principle. They compared subjects' feelings of hunger and satiety after eating a high-fat versus a low-fat breakfast. After the high-fat breakfast, subjects were more satiated and less hungry than the low fat group.



From Sepple CP and Read NW (1990):
"Effect of prefeeding lipid on food intake and satiety in man" Gut Vol 31(2):158-61

Try This Experiment Yourself!

Low Fat Test Days:

Day 1: 6 oz. non-fat yogurt, 1 piece dry toast, orange juice.

Day 2: 1 cereal bowl processed low-fat cereal such as Frosted Flakes, skim milk, fruit.

Day 3: 1–2 egg equivalent of egg substitute (such as Egg Beaters), 2 pieces 97% lean turkey bacon, 1 piece dry toast, skim milk.

High Fat Test Days:

Day 1: 6 oz. whole milk yogurt (preferably the one with cream on top), 1 piece toast with butter, orange juice.

Day 2: 1 cereal bowl of oats made with 1 Tbsp. butter, brown sugar, and a drizzle of cream, small glass of whole milk, fruit.

Day 3: 1–2 eggs, 2 pieces thick sliced bacon, 1 piece toast with butter, small glass of whole milk.

Beverages:

If you drink milk or have it in your coffee:

Low fat days = skim milk. High fat days = whole milk.

During low fat test days, feel free to drink regular sodas. On high fat test days do not drink any soda or other drink with high fructose corn syrup or other additive sweetener.

Foods:

You may want to follow this dietary comparison throughout the day. If so, on higher fat days, avoid all high fructose corn syrup and other sweeteners. No low fat, processed food products—only natural foods. Feel free to finish the meal with a small portion of full fat cheese, unsalted nuts, or rich dark chocolate (with a high cocoa content).

Keep Your Own Data Log!

- Eat breakfast at the same time each morning.
- Assess your hunger on a scale from 1 (being low) to 10 (being high) once per hour.
- Eat lunch at the same time each day.
- Assess the amount you eat at lunch and how fast you eat it.

Homework

- Perform the “Sweet Tooth Test” discussed in class.
- Become aware of the level of sugar in foods you consume. Test for sweetness at each bite, to begin to lay down the concrete habit of conscious eating.
- Bring to class the next week all items you have thrown away from the cupboard and fridge. If the fridge items are going bad, bring their labels.
- Bring to class the solutions you have applied to replace faux foods.
- Get a buddy.

Journal

Beginning of the week

Your goal this week is to quit faux foods “cold turkey.” Throw them out. Begin your life again by eating honest, real food. How does this make you feel (liberated, bummed)?

- Thoughts on honest food?
- Hardest faux food to give up?
- Some products are hard to classify. List the products you are not sure about.

It’s vital to eliminate food with added sugars. So this week you will test your sweet tooth, and taste for the sugar levels in your foods.

- Write how changing your sugar dependence will affect your food choices.
- Thoughts on finally gaining control over sugar seduction?
- List the sugar filled products that sabotage your diet.
- When are your raving cravings the worst?

You will become a conscious, thoughtful eater. Part of this includes enjoying and appreciating the wonderful aspects of eating. But another will be your growing distinctions for foods that are way over salted, and way over sweetened.

- Write your thoughts on this new awareness of foods—not only the good, but the bad as well.

End of the week

- Changes you’ve noticed (energy level, food flavor, enjoyment)
- List your faux foods and what you replaced them with
- List the sugared foods you eliminated

Further Reading

J Pharmacol Sci. 2003 Jan;91(1):83-6.

Formaldehyde-induced shrinkage of rat thymocytes.

NAKAO H, UMEBAYASHI C, NAKATA M, NISHIZAKI Y, NODA K, OKANO Y, OYAMA Y

Laboratory of Cell Signaling, Faculty of Integrated Arts and Sciences, The University of Tokushima, Tokushima, Japan.

To test the possibility that micromolar formaldehyde, a metabolite of methanol derived from aspartame, exerts cytotoxicity, its effect on rat thymocytes was examined under the in vitro condition using a flow cytometer. Incubation of thymocytes with formaldehyde at 100 micro M or more for 24 h significantly increased the populations of shrunken cells and cells with hypodiploid DNA. The peak blood concentration of methanol in human subjects administered abuse doses of aspartame has been reported to exceed 2 mg/dL (625 micro M). It would increase the population of thymocytes undergoing apoptosis if formaldehyde at 100 micro M or more appears in the blood after administration of aspartame.

Science to English Translation Over 87 degrees F, Aspartame breaks down into methanol (a poison) and formaldehyde. Even in very small doses, these by-products of aspartame breakdown caused living cells (and the DNA of those cells) to wither. According to these scientists, the same would be true for oral administration of aspartame.

Ann Nutr Metab. 2003;47(6):302-5.

Higher content of 18:1 trans fatty acids in subcutaneous fat of persons with coronarographically documented atherosclerosis of the coronary arteries.

DLOUHY P, TVRZICKA E, STANKOVA B, VECKA M, ZAK A, STRAKA Z, FANTA J, PACHL J, KUBISOVA D, RAMBOUSKOVA J, BILKOVA D, ANDEL M

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AIM: To identify the total content of trans fatty acid (TFA) isomers and C18:1 trans isomers in subcutaneous fat samples from persons with atherosclerosis of the coronary arteries, as an indicator of dietary exposure. **METHODS:** The authors determined total content of TFA isomers and C18:1 trans isomers in the subcutaneous fat of 34 patients with ischemic heart disease who had undergone aortocoronary bypass surgery and in 46 patients with no sign of coronary disease. **RESULTS:** On average, the total TFAs in cardiac patients were 2.88 +/- 1.19% of all fatty acids, in noncardiac patients 2.56 +/- 0.89%. However, the difference is not statistically significant. The average concentration of C18:1 trans in cardiac patients (2.31 +/- 1.09%) was statistically significantly higher ($p = 0.05$) than in the noncardiac group (1.95 +/- 0.77%).

CONCLUSIONS: The results obtained indicate a lower TFA load in comparison with previous studies in other countries. A higher concentration of 18:1 TFAs in the subcutaneous fat of patients with coronary disease might be an impulse to correct the dietary habits of this very high-risk population. (Copyright 2003 S. Karger AG, Basel)

Science to English Translation Trans-fatty acids are found in hydrogenated oils, which are put in foods to give them a longer shelf life. These fatty acids are more likely to be found in the fat of people who have heart disease.

Arterioscler Thromb Vasc Biol. 2001 Jul;21(7):1233-7.

Replacement of dietary saturated fatty acids by trans fatty acids lowers serum HDL cholesterol and impairs endothelial function in healthy men and women.

DE ROOS NM, BOTS ML, KATAN MB

Division of Human Nutrition and Epidemiology, Wageningen University, Wageningen, the Netherlands.

We tested whether trans fatty acids and saturated fatty acids had different effects on flow-mediated vasodilation (FMD), a risk marker of coronary heart disease (CHD). Consumption of trans fatty acids is related to increased risk of CHD, probably through effects on lipoproteins. Trans fatty acids differ from most saturated fatty acids because they decrease serum high-density lipoprotein (HDL) cholesterol, and this may increase the risk of CHD. We fed 29 volunteers 2 controlled diets in a 2x4-week randomized crossover design. The "Trans-diet" contained 9.2 energy percent of trans fatty acids; these were replaced by saturated fatty acids in the "Sat-diet." Mean serum HDL cholesterol after the Trans-diet was 0.39 mmol/L (14.8 mg/dL), or 21% lower than after the Sat-diet (95% CI 0.28 to 0.50 mmol/L). Serum low density lipoprotein and triglyceride concentrations were stable. FMD+SD was 4.4+/-2.3% after the Trans-diet and 6.2+/-3.0% after the Sat-diet (difference -1.8%, 95% CI -3.2 to -0.4). Replacement of dietary saturated fatty acids by trans fatty acids impaired FMD of the brachial artery, which suggests increased risk of CHD. Further studies are needed to test whether the decrease in serum HDL cholesterol caused the impairment of FMD.

Science to English Translation Saturated fat foods have been the target of health advocates for years. Recently, however, it was learned that margarines and other food products with trans fatty acids were associated with heart disease. This group of scientists did a simple experiment.

What if you were to compare the two diets—those with saturated fat versus trans fat? The authors reported that "HDL cholesterol after the Trans-diet was...21% lower than after the Sat-diet." And the ability of the blood to flow in the vessels was worse as well. Thus, "Replacement of dietary saturated fatty acids by trans fatty acids impaired [the blood flow in] the brachial artery, which suggests increased risk of (heart disease)." In that sense, the cure is worse than the disease.