Nutrition

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General Eating Guidelines

- 45-65 % calories from complex carbohydrates
- 20-35 % from healthy fat
- 10-35 % from protein
- Limit intake of refined sugar, refined carbohydrates, processed foods, alcohol and caffeine
- Reduce exposure to pesticides and herbicides
- Eliminate the intake of artificial food additives, colors and preservatives.
- Eat a rainbow everyday
- Eat from an “ideal” plate
Fats

- All fats have building blocks called fatty acids.
- Different fatty acids have different effects on health.
- Fatty acids such as the omega 3’s are called the healing fats because they promote health and help prevent degenerative disease.
Essential Fatty Acids

- They are polyunsaturated fatty acids that the human body cannot produce.
- Therefore it is essential to include these fats in the diet.
- Every cell is our body needs these fatty acids.
- Without these fats cells fail to grow or function normally, increasing the chance for cell abnormalities and degenerative disease.
Essential Fatty Acids

- Wild Salmon
- Halibut
- Mackerel
- Herring
- Sardines
- Trout
- Oils of cold water fish (cod liver oil)
- Grass fed meat
- Flax
- Walnuts
- Pumpkin Seeds
Increasing Omega 3 Fatty Acids

- Eat cold water fish at least 2 x a week, or
- 1 tsp. – 1 T. of fish oil a day
- 2 T. of ground flax seed a day
- Include organic, raw walnuts and pumpkin seeds in the diet
Flax Oil vs. Fish Oil

- Flax oil is a precursor (ALA) to EPA & DHA (biologically active fat)
- Conversion of ALA to EPA & DHA is estimated to be 1-10%
Conversion of Flax

- Conversion of flax oil inhibited by: alcohol, sugar, trans fatty acids, over consumption of commercial vegetable oils high in omega-6 fatty acids, poor protein intake, diabetes, or youth

- Nutrients necessary for conversion: protein, zinc, biotin, vitamin E, B₆, B₁₂, magnesium
Cod Liver Oil

- Omega-3 fatty acids
- Biologically active precursor to anti-inflammatory prostaglandins (E3 series)
- More vitamin A & vitamin D per weight than any other common food
- Fish (typically salmon) oil has one-fifth the potency of cod liver oil
Trans Fats

“Biggest food processing disaster in US history”
Avoid Trans-fatty Acids

- These fats are found in margarines and vegetable shortenings, commercial baked goods such as crackers and cookies, and in many other processed foods.
- You can identify them on labels with the words “partially hydrogenated oil.” Be aware that many restaurants use these fats for frying.
- Trans-fatty acids inhibit the production of anti-inflammatory messengers.
Eat Less Seed Oil

- Oil from corn, safflower, sunflower, soy and cottonseed contains omega-6 fatty acids, which our bodies convert to pro-inflammatory messengers.
Resources

- Walker, Elizabeth, Ph.D. August 2005, PCC Sound Consumer
- www.oceansalive.org (for information on fish safety)
Proteins

- Fish
- Meat
- Eggs
Refined foods

- Fiber
- Vitamins
- Minerals
- Antioxidants
- Phytochemicals
- Are all lost
Refined Sugar

- Cane stalks crushed and pressed
- Juice extracted
- Heat and lime used to clarify juice
- Centrifuged to spin off liquid
- Crystallized and made colorless with carbon
- Filtered again
- Crystallized again
- This creates a very stable, purified chemical (98.8% sucrose) which will keep indefinitely
When we eat it

- Quickly dissolves into bloodstream
- Shocks pancreas taxing glucose insulin response in some
- Creates acidic environment; mineral leaching to balance
High Fructose Corn Syrup

- In the 1970s when sugar prices soared to $.50/lb. (due to expiration of the U.S. Sugar Act) food producers began converting to HFCS which could be purchased at $.05/lb.
- HFCS is sweeter, cheaper and lasts longer than sucrose.
- Accounts for 83 pounds of the 149 pounds of sugar consumed per person per year.
- In 2000 the average American consumed 53 gallons of soft drinks.
In November 2003, a review in the American Journal of Clinical Nutrition examined evidence from multiple studies on high fructose corn syrup. The researchers concluded that large quantities of fructose from a variety of sources, including table sugar and high-fructose corn syrup:

- Induce insulin resistance
- Impair glucose tolerance
- Produce high levels of insulin
- Boost a dangerous type of fat in the blood
- Cause high blood pressure in animals
Alternatives

- **Dry granulated products**
  - Date sugar
  - Unrefined cane sugar
    - Sucanat
    - Rapadura
    - Florida Crystals
  - Palm Sugar
  - Stevia
Alternatives

- Thick-Liquid or Syrups
  - Agave nectar
  - Malt syrups (Barley Malt, Rice Syrup)
  - Concentrated Fruit Sweetener
  - Honey
  - Maple Syrup
  - Pureed bananas or dates
  - Sorghum
Splenda

- Synthetic compound discovered by scientists in Britain seeking a pesticide formulation.
- It is made by replacing hydroxyl groups in the sugar molecule with chlorine.
- No long term studies done. Short term (by manufacturers) showed shrunken thymus and enlarged kidney and liver in rodents.

According to market research firm IRI, as reported in the Wall Street Journal, Splenda sold $212 million in 2006 in the US while Equal sold $48.7 million.
Recent Splenda Study

- **Journal of Toxicology and Environmental Health, Part A**
- [http://www.informaworld.com/smpp/title~content=t713667303](http://www.informaworld.com/smpp/title~content=t713667303)
- **Rats fed Splenda showed decrease in beneficial intestinal bacteria.** Disruption in the number and state of balance of intestinal microflora may potentially interfere with many essential gut functions, including nutrient metabolism, normal immune system functioning, gastrointestinal mobility, inhibition of pathogens (Cummings & Macfarlane, 1997; Holzapfel et al., 1998; Hart et al., 2002), vitamin synthesis (B group and K) (Albert et al., 1980; Hill, 1997; Shearer, 1995), and metabolism of drugs (Bauer, 1998; Peppercorn & Goldman, 1972; Williams et al., 1971).
- **They also showed increased body weight.** This is in agreement with the recent findings that composition of intestinal bacteria plays a major role in body weight regulation (Bäckhed et al., 2004; Ley et al., 2006; Turnbaugh et al., 2006).
Processed Foods

- Eat from the counters around the edge of the grocery store!
What is this food?

- Sugar, hydrogenated vegetable oil, high fructose corn syrup, water, sodium caseinate, natural and artificial flavor, polysorbate 60, sorbitan monostearate, xanthan and guar gums, sodium polyphosphate, beta carotene
Whole Foods

What is a whole food?
Ask yourself these questions

- Can I imagine it growing?
- How many ingredients does it have?
- What has been done since it was harvested?
- Is this product part of a food or the whole thing?
Why consume a Whole-Foods Based Diet?

- Better for the earth (sustainability)/animals
- Whole cells, so many nutrients
- Generally nutrient dense
- Synergistic effect of nutrients in whole foods
  - E.g. apple vs. apple sauce vs. apple juice
  - Scientific evidence vs. individual nutrients e.g. DASH diet and blood pressure, whole grains and type 2 diabetes
Eat Whole Foods

- Protein - meat, fish, poultry, legumes, fermented soy and eggs
- Healthy fats - avocados, nuts and seeds, olives, cold water fish
- Fresh vegetables
- Fresh fruit
Balanced nutrition

- Eat a rainbow every day
- The ideal plate
Diet & Depression

- Influences brain’s behavior
- Brain chemicals (neurotransmitters) regulate our behavior & are closely linked to mood, are controlled by what we eat
- Dopamine, norepinephrine & seratonin
- Protein
- Essential fatty acids
- Vitamin B3 & B6, iron, folate, copper, calcium & magnesium
- Complex carbohydrates
Nutritional Causes of Depression

- Frequent consumption of caffeine or sugar
- Deficiencies of biotin, folic acid, pyridoxine (B6), riboflavin (B2), thiamine (B1), vitamin B12, vitamin C, calcium, copper, iron, magnesium, or potassium
- Excesses of magnesium or vanadium
- Food sensitivities
Foods Good to Eat

- Foods high in B1 (thiamine)
- Essential for energy production, nerve cell function & carbohydrate metabolism
- Deficiency can cause fatigue & depression
- Rich sources include soybeans, brown rice, sunflower seeds, whole wheat & brewer’s yeast
Foods Good to Eat

- Eat foods high in B6 (pyridoxine)
- B6 deficiency is associated with depression
- B6 is important for maintaining hormone balance & immune function & is involved in the use & formation or neurotransmitters
- Good sources- Brewer’s yeast, whole grains, legumes, bananas, seeds, nuts, potatoes, Brussels sprouts, cauliflower
- Supplement with P-5-P (pyridoxal 5’ phosphate) an activated form of B6, if you have poor liver function
Foods Good to Eat

- Foods high in folate
- Folate deficiency is linked to depression
- Folate & B12 ↓ SAMe levels (associated with decreased serotonin)
- Sources- brewer’s yeast, green leafy vegetables, dairy & whole grains
Foods Good to Eat

- Vitamin C depletion leads to depression. It is important for the production of neurotransmitters & hormones.
- ↑ immune function by ↑ white blood cell activity, ↑ interferons, ↑ antibody response & levels, ↑ secretion of thymic hormones, and is also important in collagen formation. High urinary excretion of vitamin C occurs when you are emotionally & physically stressed.
- Found in red chili peppers, guavas, kale, parsley, collard greens, turnips, broccoli, Brussels sprouts, mustard greens, kiwi, strawberry & citrus fruits
Foods Good to Eat

- Add tryptophan, Tyrosine & Phenylalanine containing foods
- Tryptophan is a precursor to serotonin & melatonin. A deficiency of serotonin contributes to depression.
- Tyrosine is a precursor to norepinephrine and may stimulate thyroid hormone synthesis. Low levels have been seen with depression.
- Complex carbohydrate rich meals ↑ brain uptake of tryptophan. This has a calming effect, whereas excess protein tends to decrease brain tryptophan uptake. Carbohydrates promote sleep.
- Found in animal source foods- eggs, dairy, meats
More Foods that Help Moods

- Raw fruits & vegetables, bitter greens, dandelion greens, endive; these help cleanse the liver, improve digestion & aid in elimination of waste & toxins
- Salmon & white fish provide protein with EFA’s. People with depression have lower levels of PGE₁ & ↓ activity of delta 6 desaturase enzyme (used to make PGE₁ from EFA’s) reducing their ability to make PGE₁, a natural modulator of pain & inflammation