

Tom Petrie, Nutritionist

Schachter Center for
Complementary Medicine
2 Executive Boulevard; Suite 202
Suffern, New York 10901
Phone: 845-368-4700; FAX: 845-368-4727

<http://www.schachtercenter.com>

<http://tompetrie.net>

tpetrie@mbschachter.com

4/19/2010

Michael B Schachter MD, CNS

1

Good nutrition can enhance
the healing power of the
body in **MANY** ways!



Nutrition Basics to Help Prevent Cancer

- The best way to realize this is by practicing good nutrition on a regular basis.
- We need to learn how to *reflect* on how what we eat affects how we feel.

Aches and Pains

- We need to NOT accept little “aches and pains” as a “normal” part of getting older. This is simply not true.
- Ok, it's *a little* true!

Three Major Messages re: Food

1. Acid/Alkaline Balance; pH balance in our foods and lifestyles
2. Proper oxygenation; exercise, breathing, posture
3. Epi-Genetics: how *what* we eat, affects our cells on a *genetic* level turning on and off various genes

Alkaline Diets

- Max Gerson, Paavo Airola, Euell Gibbons, Herbert Shelton, etc. more recently...
- Harvey & Marilyn Diamond (Fit for Life) and Robert Young (*The pH Miracle*), many others.
- Alkalizing the blood is essentially about eating greater amounts of foods with ‘alkaline’ minerals in them: Calcium, Magnesium, Sodium and Potassium

Oxygen Matters!

- **Otto Warburg** discovered in 1943 that cancer cells “thrive” in an acidic, oxygen starved environment. Greater oxygenation of the body promotes more alkaline blood.
- In fact, if you increase the blood pH from just 7.36 to 7.42, your blood carries 38% more oxygen!
- Posture should be good, breathing also must be proper and diaphragmatic.

Some Advice is Just...Timeless!

- So here we are, some 62 years later, and SCIENCE has determined that Dr. Warburg and Dr. Gerson were right!
- Our bodies need more alkaline foods AND more oxygen.
- Yet, that’s not all...Science has discovered, the biggest breakthrough of all time...

EpiGenetics

- What we eat can up and down-regulate various genes
- Genes can control Inflammation, Cancer, Heart Disease, even longevity!
- By the food choices we make, we can turn on and turn off genes and make a very significant contribution to improved health and wellness.
- Let’s get this out of the way first (next few slides, thanks to Dr. Michael Schachter.)

The Human Genome

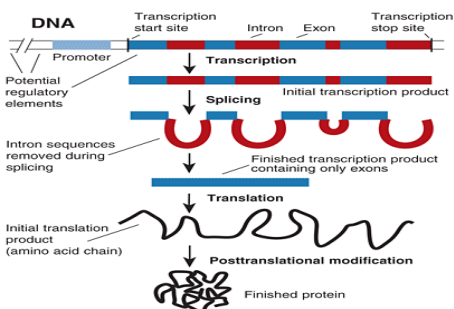
- Sequenced in 2002 (Human Genome Project)
- Contains 20,000 to 30,000 genes (much less than expected)
- The nuclei of all cells contain all of the genes
- So, why do different cells act differently?
- Only about 3,000 genes active at one time
- Some genes turned off permanently
- Others affected by the environment throughout our lives

4/19/2010

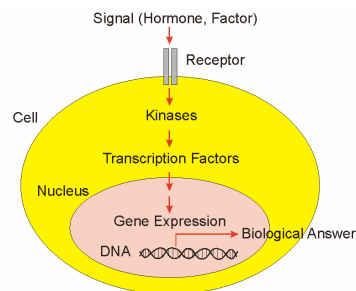
Michael B Schachter MD, CNS

10

Gene Structure and Expression in Higher Organisms



Signal Transduction



Environment and Genes

- The foods we eat, the drugs we take, the toxins we absorb through our skin: All talk directly to our genes
- This is all happening simultaneously
- Food consists of instruction manuals
- Environmental substances can interact with receptors on the cell membrane or with transcription factors within the cells.

Nuclear Factor Kappa Beta (NFkB): A Transcription Factor

- Nuclear Factor Kappa Beta (NFkB)-upregulates inflammation by combining with the regulatory elements of several genes when activated by stimuli such as stress, cytokines, free radicals, ultraviolet irradiation, oxidized LDL and bacterial or viral antigens
- Activates immune system and protective in acute situations
- Overstimulation leads to chronic inflammation

4/19/2010

Michael B Schachter MD, CNS

14

Food and Nutraceutical NFkB Modulators

Nutrients and Herbs	
Vitamins C & E	Boswellia
N-Acetylcysteine	Chinese Skullcap
Citrus flavonoids; Quercetin	Cat's Claw (Una de Gato)
Resveratrol	Ginkgo biloba
Milk thistle	Echinacea
Green & black tea	Pomegranate
Alpha Lipoic Acid	Feverfew

4/19/2010

Michael B Schachter MD, CNS

15

Phytonutrients Can Be Master Switches to Turn Genes On/Off

- Families of genes associated with:
 - Pro-inflammation
 - Pro-cancer
 - Pro-glucose dysregulation
 - Pro-oxidation
- Often these genes overlap
- Substances in our environment (chemicals, nutrients, phytonutrients) may turn genes on or off

4/19/2010

Michael B Schachter MD, CNS

16

Effects of Typical Diets on Inflammation and Disease

- The Standard American Diet (SAD), rich in refined carbohydrates, trans fatty acids, pesticides and various chemicals tends to upregulate pro-inflammatory, pro-cancer, pro-glucose dysregulation, pro-oxidation genes
- Organic, raw, vegan foods upregulate anti-inflammatory, anti-cancer, pro-glucose regulation and anti-oxidant genes and downregulate the opposite (Food is an instructional manual); phytonutrients destroyed by cooking, especially microwave
- Example: Gabriel Cousens MD work with diabetes

4/19/2010

Michael B Schachter MD, CNS

17

Anti-Cancer Diet

Start with minimizing your consumption of refined carbohydrates. These would be:

- Cakes, Cookies, Pies, Croissants, Muffins, Bagels, White Bread, White Pasta
- White Rice, Pearled barley and Degerminated Corn Grits
- Candy, soda, junk food

Let's talk about sugar

- It contains no nutrients
- It contains NO fiber itself
- It depresses enzyme levels
- It depresses chromium levels
- It depresses copper levels
- It depresses magnesium levels
- It depresses B-6, folic acid and B-12

White Sugar, Corn Syrup and High Fructose Corn Syrup

- For example, 2 tbs of sugar reduces WBC count by 50 % in 20 min; In one study of 10 healthy subjects, a 100 gm dose of sugar from glucose, sucrose, honey or orange juice was fed to healthy adult volunteers. Such a dose significantly decreased the capacity of neutro-phils to engulf bacteria! Indeed, there was at least a 50 % reduction in their activity 2 hrs after the sugar was ingested! Not surprisingly, the authors stated the neutrophils became "paralyzed."

[Bernstein, J., Albert, S., Nauss, K. and Suskind, R., "Depression of lymphocyte transformation following oral glucose ingestion," Am. J. Clin. Nutr., 1977, 30, p. 613]

So sugar depresses the immune system; now it can **increase** one's risk of cancer...

- A recently released study from the **University of Minnesota** finds that people who drink as few as two soft drinks a week face almost double the risk of pancreatic cancer. This is not just *any* cancer!
- "Their risk of getting pancreatic cancer over the time period of the study was almost two times higher than their counterparts who were consuming little or no sugar-sweetened beverages in the study," said Dr. Mark Pereira, Ph.D. and study director.

As reported in CBS news, Feb. 9, 2010; Soda Linked to Pancreatic Cancer: People Who Drink as Few as Two Soft Drinks a Week Face Nearly Twice the Risk of Developing Deadly Cancer, Study Finds

Sugar and Cancer, con'd

- The study, which examined data from 60,000 people in Singapore over 14 years, found that regular soft drink consumers were 87 percent more likely to develop pancreatic cancer, after accounting for factors like age, obesity, diabetes and cigarette smoking habits. The study only applies to consumption of regular soda, not diet soft drinks or fruit juices.
- Of course the pancreas produces insulin to balance the body's blood sugar levels. More sugar means more insulin.

Insulin excess...not desirable!

- "Insulin has been shown to promote the growth of most tissues including cancer cells, so that might be the mechanism if this is cause and effect," said Pereira.
- In addition, it's likely the constant stress of producing insulin in response to a regular repeated "sugar load" every few hours, week after week; month after month; year after year...that is also at work here.

Sugar and Diabetes

- Sugar can 'stress' the pancreas and contribute to or even cause Diabetes
- It can cause insulin resistance and an increasingly common syndrome called 'the X Syndrome'
- X Syndrome is associated with Obesity, now afflicting over ½ of all Americans!
- Sugar can induce Diabetes in laboratory rats.
- Sugar can depress Chromium levels—this too is linked to Diabetes in both animals and humans!
- This may then be linked to pancreatic cancer

Sugar and Obesity

- Obesity is a \$38 BILLION per year 'industry' w/a 95% failure rate!
- Sugar encourages the consumption of foods of inferior quality and value
- Sugar has nothing but *empty calories* making it more difficult to consume the kinds of foods that elevate one's metabolism, increase one's energy level and make wt. management easier.
- [Know any obese individuals who do NOT eat any/many foods containing white sugar or white flour?]

Excess Animal Protein Consumption, esp. Casein, "The China Study"

- by T.C. Campbell, Cornell Un.
- On the other hand when the rats were fed with 20 % casein the same enzyme activity increased by 76 % resulting in an increased risk of cancer. Hence the author concluded that exposure to carcinogens may be less likely to cause cancer in a person whose diet contains a sufficiently low protein.

The results suggest

- **A LOW PROTEIN DIET** can also prevent toxins from entering cells
- **LOWERS THE CELL MULTIPLICATION RATE** and
- **PROTECTS AGAINST THE FORMATION OF TOXIN-DNA ADDUCTS.**
- He also mentions that the adequate % of protein for body growth is 10 %.

Hepatitis, Liver Cancer

- **Dr. Campbell's team** also found that hepatitis B virus, which is known to be a carcinogen that causes liver cancer, does not cause as much damage in rats which were given a diet with 5 % protein when compared to rats fed with a diet containing 20 % protein.
- Take home message? A modest animal protein intake can significantly cut your risk of developing cancer!

Chinese citizens consumed

- Less than 10% of protein from their diet, among which 90 % of protein comes from plants.
- Americans consumed more than 15% protein, among which more than 80 % comes from an animal source.
- This difference in protein content may cause at least seven-fold difference in cancer risk.
- This difference in protein content may cause at least **seven-fold difference in cancer risk**. A diet with high animal protein increases risk of breast cancer. Similarly a diet rich in red meat and processed meat resulted in an elevated risk of colon cancer. Link between dairy products and prostate cancer has already been established.

Vegetables CAN fight Cancer!

- Vitamin C
 - Sulfurophanes
 - Lycopenes
 - Much more!
- Top: Broccoli (& sprouts), Asparagus and Dark Green Leafy Vegetables

EAT THESE EVERY DAY



Asparagus and Cancer

- *"As a biochemist, I have made an extensive study of all aspects of cancer, and all of the proposed cures. As a result, I am convinced that asparagus fits in better with the latest theories about cancer. Asparagus contains a good supply of protein called histones, which are believed to be active in controlling cell growth. For that reason, I believe asparagus can be said to contain a substance that I call cell growth normalizer. That accounts for its action on cancer and in acting as a general body tonic."*

Broccoli, cabbage, and cauliflower

- **Indole-3-carbinol** that can combat breast cancer by converting a cancer-promoting estrogen into a more protective variety.
- **Broccoli, especially sprouts:** phytochemical sulforaphane, a product of glucoraphanin - believed to aid in preventing some types of cancer, like colon and rectal cancer.
- **Sulforaphane** induces the production of certain enzymes that can deactivate free radicals and carcinogens. The enzymes have been shown to inhibit the growth of tumors in laboratory animals.

Leafy Green Vegetables

- **Green and Yellow Leafy vegetables** have been associated with lower levels of stomach cancer.
- **Kale** has **indoles**, nitrogen compounds which may help stop the conversion of certain lesions to cancerous cells in estrogen-sensitive tissues. In addition, **isothiocyanates**, phytochemicals that may suppress tumor growth and **block** cancer-causing substances from reaching their targets.



Tomatoes

- **Lycopene:** an antioxidant that attacks roaming oxygen molecules (free radicals) that may trigger cancer. It appears that the hotter the weather, the more lycopene produced. Scientists in Israel have shown that lycopene can kill mouth cancer cells.
- An increased intake of lycopene has already been linked to a reduced risk of breast, prostate, pancreas and colorectal cancer.

Don't forget Seaweeds and chili peppers!

- **Seaweed and other sea vegetables** contain beta-carotene, protein, vitamin B12, fiber, and chlorophyll, as well as chlorophyllones - important fatty acids that may help in the fight against breast cancer. Many sea vegetables also have high concentrations of the minerals potassium, calcium, magnesium, iron, and iodine.
- **Chili peppers and jalapenos** contain a chemical, capsaicin, which may neutralize certain cancer-causing substances (nitrosamines) and may help prevent cancers such as stomach cancer.

Grapes and Wine

- **Red Grapes** contain bioflavonoids, powerful antioxidants that work as **cancer preventives**. Grapes are also a rich source of **resveratrol**, which inhibits the enzymes that can stimulate cancer-cell growth and suppress immune response. They also contain **ellagic acid**, a compound that blocks enzymes that are necessary for cancer cells - this appears to help slow the growth of tumors.
- **Red wine (w/ or w/out alcohol):** **polyphenols** that may protect against various types of cancer.



Keep it simple!

- **Fruits and vegetables** have been associated with decreased risk of cancers of the colon and rectum.
- You can eat them in many different ways:
- **Organic, Raw, Cooked, Steamed, Frozen,**
- **From your juicer**
- **But DO eat them!**

We need to eat MORE of:

- **Fresh Fruits**
- **Yams, sweet potatoes, squashes, etc.**
- **Fresh Vegetables**
- **Dark Green Leafy Vegetables**
- **Legumes, split peas**
- **Nuts like almonds, filberts, walnuts, etc.**
- **Seeds (like sunflower and pumpkin seeds)**
- **Whole grains, like brown rice, whole wheat bread, millet, buckwheat, amaranth, barley, corn, oats, etc.**
- **Beans like black eye beans, garbanzos, etc.**
- **Cold water fish like salmon, trout**
- **Free range and low fat animal products**
- **Healthy dairy products**

Exercise

- **Increases oxygenation of tissues**
- **Speeds removal of toxins from the body**
- **Alkalizes the blood**
- **Helps fight depression**
- **Improves blood flow**
- **Enhances digestion and assimilation of nutrients**
- **Helps fight cancer**

Some Exercises You Could Do

- Running/ Jogging
- Walking
- Race Walking
- Bicycling
- Roller Bladeing
- Weight Lifting
- Swimming
- Rowing
- Soccer/ Football
- Tennis
- Racquetball
- Basketball
- Martial Arts
- Dance
- Calisthenics
- Golf, Frisbee Golf

Wait...there's more!

- Now I'd like to discuss some nutrients that are difficult to get in food and that perhaps should be taken as supplements.
- These nutrients are iodine and vitamin D
- I also think it would be wise for many of us to take vitamin C and E (and perhaps a few other nutrients), but my focus today is mostly on food, not supplements.

Iodine

- Iodine-discovered in 1811 by Bernard Courtois while making gun powder
- First medical use reported by Francois Coindet who showed that iodine could prevent goiter; Boussingault verified his work in 1824 (Birth of Western Medicine)
- Iodized salt was introduced in areas of the Midwest in the 1920's, and goiter incidence dropped precipitously following work by David Marine in Ohio (100 years after iodine shown to prevent goiter) 74 mcg of I per gm salt
- 1980-RDA (Recommended Daily Allowance) established and confirmed in 1989
- RDA not based on **whole body sufficiency**, but the minimum amount to prevent goiter and cretinism

Iodine-2

- Is essential for normal growth and development of children
- Deficiency can result in cretinism, mental deficiency, delayed physical and intellectual development and ADHD
- Elevates pH of body, making the body more alkaline (most pathological conditions make the body too acid)
- Found in every cell in the body and necessary for proper endocrine gland functioning (not just the thyroid)
- Iodine is the only trace mineral used to synthesize hormones. *J Clin Endocr and Met 1998; 83:3398-3400.*

4/19/2010

Michael B Schachter MD, CNS

43

Iodine-3

- Needed to produce thyroid hormones (TSH→T4→T3→Thyroid Receptors)
- Prevents enlargement of the thyroid (goiter), autoimmune thyroid conditions (Hashimoto's Disease), thyroid and other cancers, hypothyroidism
- Iodine deficiency results in reduced thyroid hormones and increased TSH; TSH causes *hypertrophy* of thyroid (goiter) corrected by RDA of Iodine; suboptimal iodine causes *hyperplasia* of thyroid (nodules and ultimately cancer in some)
- Is antibacterial, antiviral, antifungal and antiparasitic
- Is a mucolytic agent
- **In doses much higher than RDA, has anticancer properties, especially for the thyroid, breast, ovaries and prostate, but possibly other cancers too**

4/19/2010

Michael B Schachter MD, CNS

44

Worldwide Iodine Deficiencies

- Worldwide, the soil in large geographic areas is deficient in iodine. Twenty-nine percent of the world's population, living in approximately 130 countries, is estimated to live in areas of deficiency
- WHO Claims that iodine deficiency is the world's greatest single cause of preventable mental retardation
- Iodine is the most deficient trace mineral in the world. 1/3 of all peoples are deficient. *J Clin Endocr and Met 1998; 83:3398-3400*
- Iodine deficiency is the number one cause of under functioning intellect. *J Clin Endocr and Met 1998; 83:3401-08*

4/19/2010

Michael B Schachter MD, CNS

45

National Health & Nutrition Survey (NHANES)

- Iodine levels in the United States declined 50% during the past 30 years (1971-2000)* as measured by iodine in urine (Proportion of US population with moderate to severe iodine deficiency has gone from 2.6% in 1970 to 11.7% in 2000 and 16.8% in 2005). Where are we now?
- During this time, thyroid cancer and other thyroid illnesses, breast cancer, prostate cancer, uterine endometrial cancers and ovarian cancers all have increased dramatically; iodine deficiency can cause all of these problems

Hollowell, JE et al. Iodine nutrition in the US. Trends and public health implications: iodine excretion data from NHANES I and III (1971-74 and 1988-94). *J Clin Endocrinol Metab* 83:3401-3408. 1998.

Thyroid 15:692-9, 2005.

4/19/2010

Michael B Schachter MD, CNS

46

Some uses of Iodine

Many conditions for which Iodine is clinically indicated: Thyroid conditions; Hypothyroidism, Hyperthyroidism, Hashimoto's Thyroiditis (all thyroid conditions assoc with low iodine); Infectious Diseases: Bacterial (including Lyme and similar conditions), Viral (chronic and recurrent acute); Fungal (chronic yeast infections) and parasitic infections. Also...

Get the Immune System Working!

- **Immune functioning:** Optimal levels of Iodine improve ability to fight all kinds of infections and cancer in all organs (See: Abraham, G. The Concept of Orthoiodosupplementation and Its Clinical Implications; www.optimox.com ;
- **Remember: a properly functioning immune system is our first tool we need to use in the prevention of cancer.**
- Vitamin D...Its Important role here!

Vitamin D or THE IMPORTANCE of ADEQUATE SUNSHINE!

What vitamin D does:

- Allows for Calcium absorption in the GI tract; lowers OP
- Modulates the immune system
- Is linked to decreased Heart Disease
- Is linked to decreased incidence of MS
- **Is linked to decreased incidence of Cancer!**



A HUGE Cancer Fighter!

- **Cuts risk of many forms of cancer from 40-77 percent!**
- Colon Cancer
- Prostate Cancer
- Pancreatic Cancer
- Ovarian Cancer
- Breast Cancer
- 7 or 8 other cancers reduced; many references...
- Grant WB, An ecologic study of dietary and solar ultraviolet-B links to breast carcinoma mortality rates. *Cancer*. 2002a Jan 1;94(1):272-81

Sunshine and Melanoma

- Poor diets, excessive alcohol consumption and obesity likely explain half of melanoma. Samanic C, Gridley G, Chow WH, Lubin J, Hoover RN, Fraumeni JF Jr. Obesity and cancer risk among white and black United States veterans. *Cancer Causes Control*. 2004 Feb;15(1):35-43.
- Treated in the 1940's with... Sunshine Exposure!
- Two studies showed that sunshine exposure helped to *beat* potentially deadly skin cancer Malignant Melanoma. Patients with increased sun exposure were *less likely* to die than other melanoma patients. Millen AE, Tucker MA, Hartge P, Halpern A, Elder DE, Guerry D 4th, Holly EA, Sagebiel RW, Potischman N. Diet and melanoma in a case-control study. *Cancer Epidemiol Biomarkers Prev*. 2004 Jun;13(6):1042-51.

Safe Sunshine Exposure

- Watch overexposure: 10-30 minutes.
- UV radiation does NOT go through clothes or glass
- Check vitamin D levels;
- 25 hydroxycholecalciferol;
- 50-80 mcg/dl
- Use natural D3, Cholecalciferol (or 25-Hydroxy Vitamin D), not D-2

SUMMARY

- Eat lots of fruits & vegetables, preferably organically grown; juice if you can
- Asparagus and DGLVs are real important!
- Eat whole grains, nuts, seeds, legumes.
- Naturally raised animal products, cold water fish

SUMMARY

- Minimize consumption of sugar, corn syrup and high fructose corn syrup
- Remember, you "program" your genes with your food choices! Choose wisely!
- Exercise on a regular basis!
- Check Iodine status...critically important to good health

You might want to know...

- A set of two 1-hour DVDs of a lecture Dr. Schachter gave in San Francisco to doctors recently, is available at our website. Dr. S. discusses iodine in much more depth and includes a suggested protocol when Iodine is used.
- The Iodine challenge test is sometimes available from your doctor, but not always and not all laboratories do this test, unfortunately.
- Call our office with questions!

Useful Websites

- David Brownstein:
<https://www.drbrownstein.com>
- Iodine information and publications:
<http://www.optimox.com>