

# Lectures in Holistic Medicine

10th in a series of 10 : Cancer part 1

Jakob Jaggy hMD

[www.foothillholistic.com](http://www.foothillholistic.com)

# Organizations I support

AHMA [www.holisticmedicine.org](http://www.holisticmedicine.org)

FoCuS [www.foothillsustainability.org](http://www.foothillsustainability.org)

OuterAisle [www.tablemountaingarden.com](http://www.tablemountaingarden.com)

# CANCER

Goals of this 3 part lecture :

- part 1 : to recognize environmental and lifestyle factors that lead to cancer
- part 2 : to look at supportive measures when going through conventional treatment
- part 3 : a look at other treatments than chemo, radiation and surgery (with some case studies)

# Some sad facts

1600 plus people die of cancer every day in the USA.

The second cause of death in children is Cancer.

Today 11.7 million people live with cancer or 1 in 26

1.1 million new cases every year.

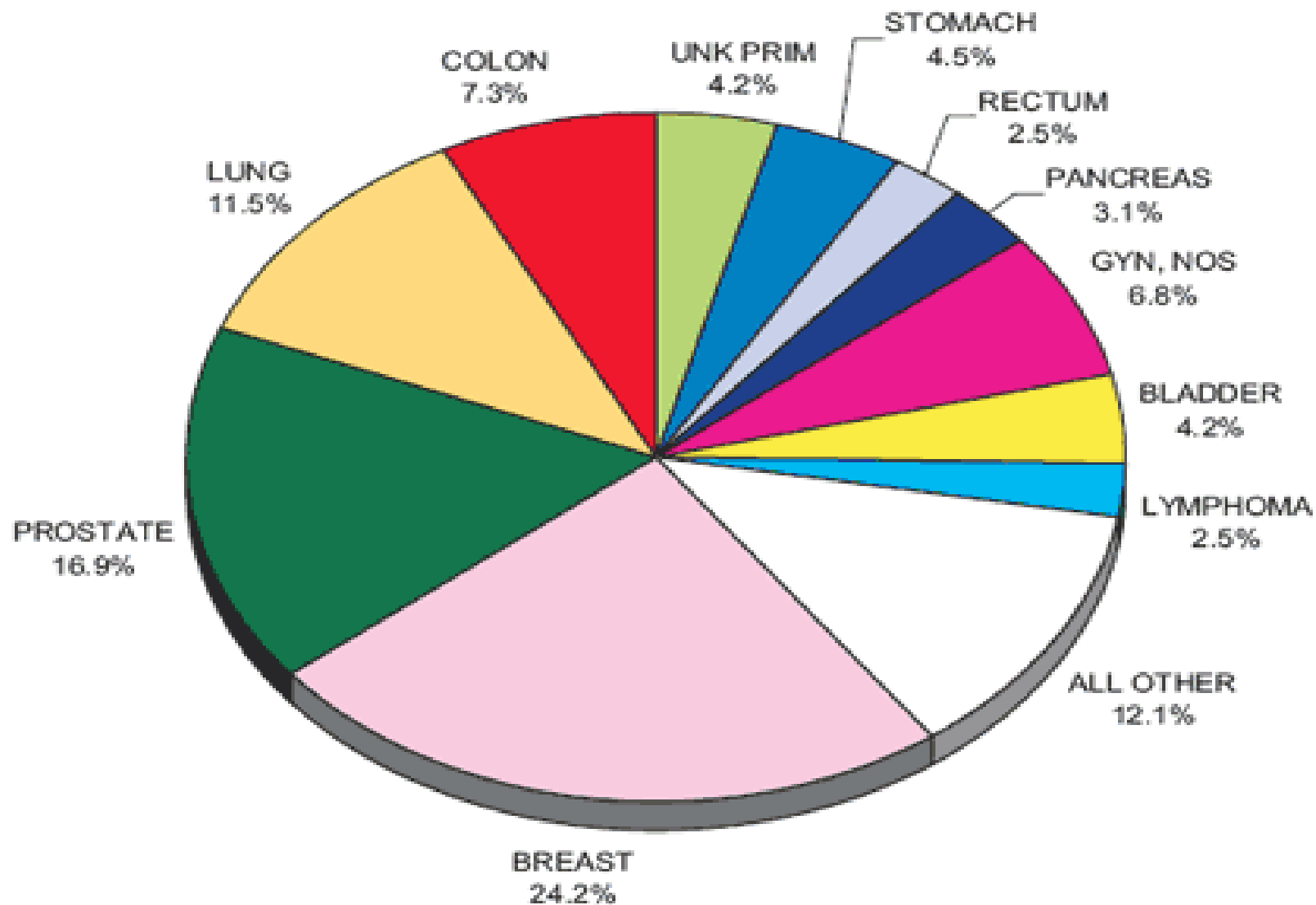
Analyses predict that the number of Americans who are diagnosed with cancer will grow to 18.2 million by 2020, about one in 19 Americans.

There may not be enough doctors to care for so many sick people; if current trends continue, the country could face a shortage of up to 4,000 cancer specialists.

[Journal of Oncology Practice, Vol. 3, No. 2, March 2007: 79-86](#)

# Frequency of Cancer

## 2005 Distribution of Primary Diagnosis



# A definition of Cancer

Cancer is the result of toxic exposure that the body cannot handle because of deficiencies that are too significant.

# Nature of toxic exposure

The toxic exposure can be chronic low level (contaminated ground water etc.) or a single high dose event (radioactive fallout for example).

Toxic exposure can be :

- emotional in nature (stress : financial, social, professional)
- biochemical/ physical in nature (environmental, chemicals, infections, trauma, radiation, accident)

# The dose can make the poison, but not always.

Most “safety” research in toxicology has been done with high dose short term exposure, not low dose and long term exposure.

Additionally most dose calculations are done for a healthy 150 pound human, not a child or a weakened elderly person.



# What kind of deficiencies are we talking about ?

- Spiritual (lack of a vision for ones life, missing passion)
- Emotional (missing social network, lacking support at home or at work, no time for fun, chronic unhappiness)
- Physical/biochemical (not enough vitamins, minerals and other crucial nutrients to support the body's detoxification systems and immune defenses)

# What about genes and cancer?

The way that genes play a factor in cancer growth is through activation/mutation by toxins. Cancer genes do not just turn on and proliferate without an exterior trigger and a weakened body/immune system.

# Environmental toxins

No chemical is 100% safe.

Almost all pesticides are either mutagenic or carcinogenic.

Foods cooked the wrong way create *Heterocyclic amines*, which are known carcinogens.

Heavy metals also can cause cancer.

Example: *Arsenic*

Many chemicals are so called “estrogen mimickers” (causing estrogen related cancers : breast, uterus and prostate cancer)

Examples of “estrogen mimickers” :

*-Bisphenol A, DDT, PCB's, Organochlorines*

For additional information go to [www.ourstolenfuture.org](http://www.ourstolenfuture.org)

# Bisphenol A and breast cancer

Murray *et al.* report that prenatal exposure to bisphenol A causes breast cancer in adult rats. Prior work had shown that bisphenol A (BPA) altered the growth of mammary tissues in ways that increase the risk of breast cancer and increase the sensitivity of breast tissue to cancer causing agents.

Murray, TJ, MV. Maffini, AA Ucci, C Sonnenschein and AM. Soto. 2006. **Induction of mammary gland ductal hyperplasias and carcinoma in situ following fetal bisphenol A exposure.** *Reproductive Toxicology* 23: 383-390.

# Bisphenol A and prostate cancer

This laboratory study with rats provides the first evidence of a direct link between development of prostate cancer and early life exposure to two estrogenic chemicals, the natural human estrogen, estradiol, and bisphenol A (BPA), a synthetic molecule widely used in plastics and epoxy resins.

Ho, S-M, W-Y Tang, J Belmonte de Frausto, and GS Prins. 2006. **Developmental Exposure to Estradiol and Bisphenol A Increases Susceptibility to Prostate Carcinogenesis and Epigenetically Regulates Phosphodiesterase Type 4 Variant 4.** *Cancer Research* **66: 5624-5632.**

# Where does Bisphenol A occur?

While Bisphenol A was first synthesized in 1891, the first evidence of its estrogenicity came from experiments in the 1930's feeding BPA to ovariectomised rats ([Dodds and Lawson 1936, 1938](#)).

Another compound invented during that era, diethylstilbestrol, turned out to be more powerful as an estrogen, so bisphenol A was shelved... until polymer chemists discovered that it could be polymerized to form polycarbonate plastic. Unfortunately, the ester bond that links BPA monomers to one another to form a polymer is not stable and hence the polymer decays with time, releasing BPA into materials with which it comes into contact.

It is used as a plastic coating for children's teeth to prevent cavities, as a coating in metal cans to prevent the metal from contact with food contents, as the plastic in food containers, refrigerator shelving, baby bottles, water bottles, returnable containers for juice, milk and water, micro-wave ovenware, nail polish and eating utensils.

# DDT

Women exposed to relatively high levels of DDT prior to mid-adolescence are 5 times more likely to develop breast cancer later in life than women with lower exposures. But exposure after adolescence does not increase risk.

Cohn, BA, MS Wolff, PM Cirillo and RI Sholtz. 2007. **DDT and breast cancer in young women: New data on the significance of age at exposure.**

[Environmental Health Perspectives doi:10.1289/ehp.10260](https://doi.org/10.1289/ehp.10260)

P.S. Toxicological experiments with animals, however, have consistently suggested that early exposure-- from fetal life through puberty, especially when tissues are developing rapidly-- can be important contributors to cancer risk. Typical studies attempting to link contaminants to breast cancer risk have not been able to test this biologically-plausible hypothesis. The levels of DDT that are measurable in a 50-yr old woman are not a good index of what she experienced earlier in life.

# PCB's

Epidemiological studies have reported conflicting results on the risks of breast cancer associated with exposure to PCBs. This study sheds light on one possible cause of that inconsistency, revealing that the risk is elevated in women carrying a particular form of a gene involved in metabolizing toxic compounds.

Zhang *et al.* conclude that women with a variant of the CYP1A1 gene called m2 are at greater risk to breast cancer when exposed to PCBs. They estimate that risk is **elevated over four-fold** in post-menopausal women exposed to comparatively high levels of PCBs.

Zhang, Y, JP Wise, TR Holford, H Xie, P Boyle, SH Zahm, J Rusiecki, K Zou, B Zhang, Y Zhu, P Owens and T Zheng. 2004. **Serum polychlorinated biphenyls, cytochrome P-450 1A1 Polymorphisms and risk of breast cancer in Connecticut women.** [American Journal of Epidemiology 160: 1177-1183.](#)



# Organochlorines

Hardell *et al.* report a **strong association between testicular cancer risk for a man and the levels of organochlorines in his mother's serum**. They found only a limited link between OCs in the man's own blood and the likelihood of developing testicular cancer.

Although testicular cancer is a disease primarily of young adulthood (see figure, below), growing evidence points to developmental failure in the fetal testis as its principal origin. A number of factors have been suggested as possible causes of this developmental failure, including endocrine disrupting chemicals.

Hardell, L, B van Bavel, G Lindström, M Carlberg, AC Dreifaldt, H Wijkström H Starkhammar, M Eriksson, A Hallquist and T Kolmert. 2003. **Increased Concentrations of Polychlorinated Biphenyls, Hexachlorobenzene and Chlordanes in Mothers to Men with Testicular Cancer.**  
[Environmental Health Perspectives 111 doi:10.1289/ehp.5816.](https://doi.org/10.1289/ehp.5816)

# Arsenic

Kaltreider *et al.* demonstrate that, at **extremely low levels of exposure**—levels far too low to call cell damage or 'traditional' toxicity—**arsenic alters hormonal function** in the glucocorticoid system. The metal interferes with glucocorticoid signaling necessary to turning on genes involved in tumor suppression and other activities. By preventing these genes from turning on, arsenic may increase the risks of cancer. This new result may require radical strengthening of arsenic exposure standards, because it takes place at levels far beneath current safety thresholds.

Kaltreider, RC, AM. Davis, JP Lariviere, and JW Hamilton 2001. **Arsenic Alters the Function of the Glucocorticoid Receptor as a Transcription Factor.** *Environmental Health Perspectives* 109:245-251.

# Soy phytoestrogens

Newbold *et al.* report that when neonatal mice are exposed to genistein—a phytoestrogen present in soy—later in life **they develop uterine cancer of the same form caused by diethylstilbestrol (DES)**. The levels of genistein used in these experiments are comparable to those **found in infant formula based on soy**.

Newbold, RR, EP Banks, B Bullock, and WN Jefferson 2001. **Uterine adenocarcinoma in mice treated neonatally with genistein.** [Cancer Research 61: 4325-4328.](#)

# Heterocyclic amines

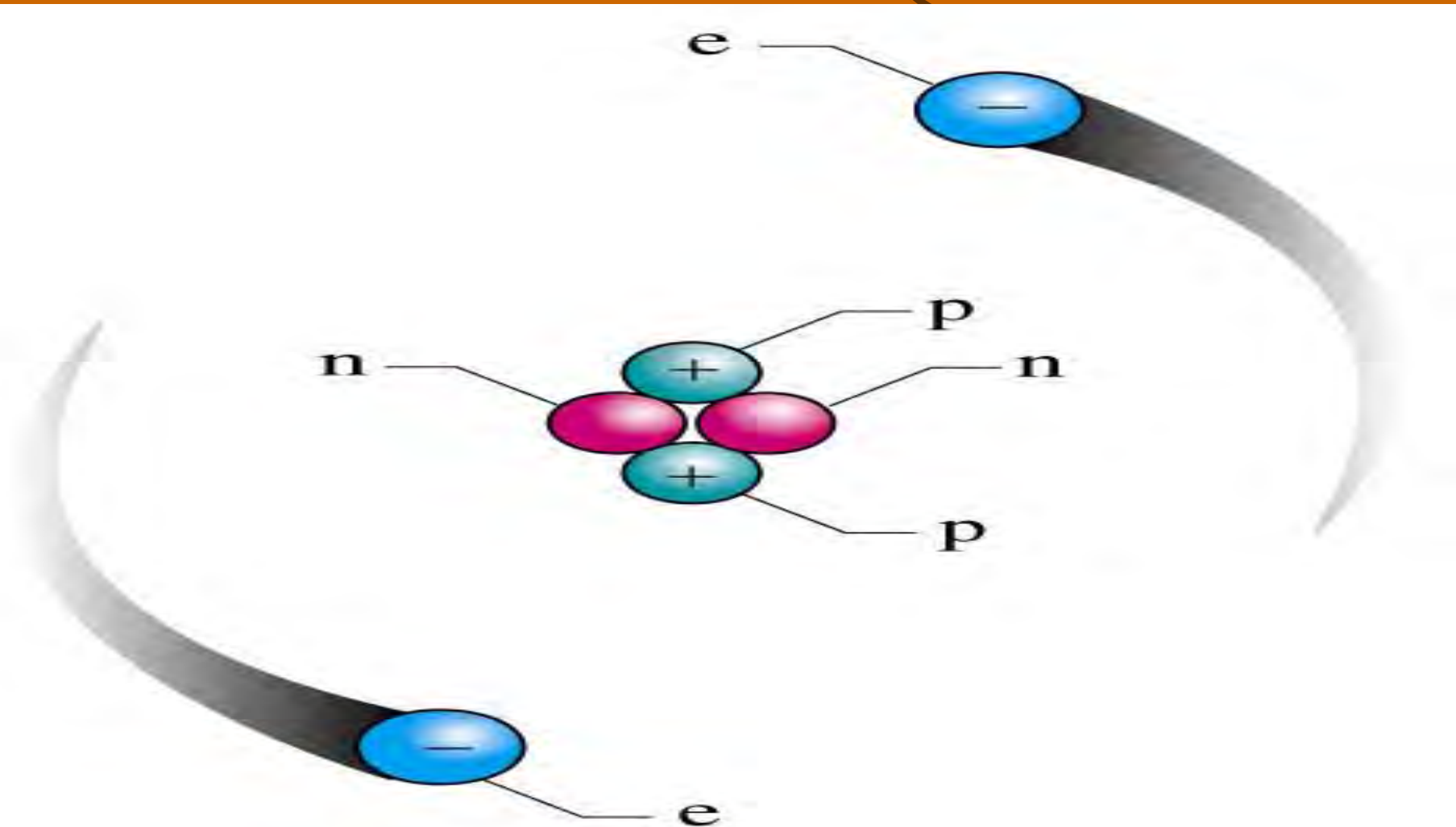
Heterocyclic amines are produced when meat is cooked at high temperatures (frying, grilling, deep-frying). They were first discovered 20 years ago by Drs. Minako Nagao and Takashi Sugimura at the National Cancer Center Research Institute in Tokyo. They found that the cooking of meat and fish, particularly at high temperatures and for prolonged periods, can lead to the generation of potent mutagenic compounds. More than a dozen heterocyclic amines have now been identified in cooked foods, including the compound 2-amino-1-methyl-6-phenylimidazo [4,5-*b*] pyridine (PhIP), discovered by Dr. James Felton and colleagues at the Lawrence Livermore Laboratory in California. PhIP, the most abundant heterocyclic amine mutagen in fried ground beef, has been demonstrated to produce colon tumors when fed to male rats for one year.

# Stress

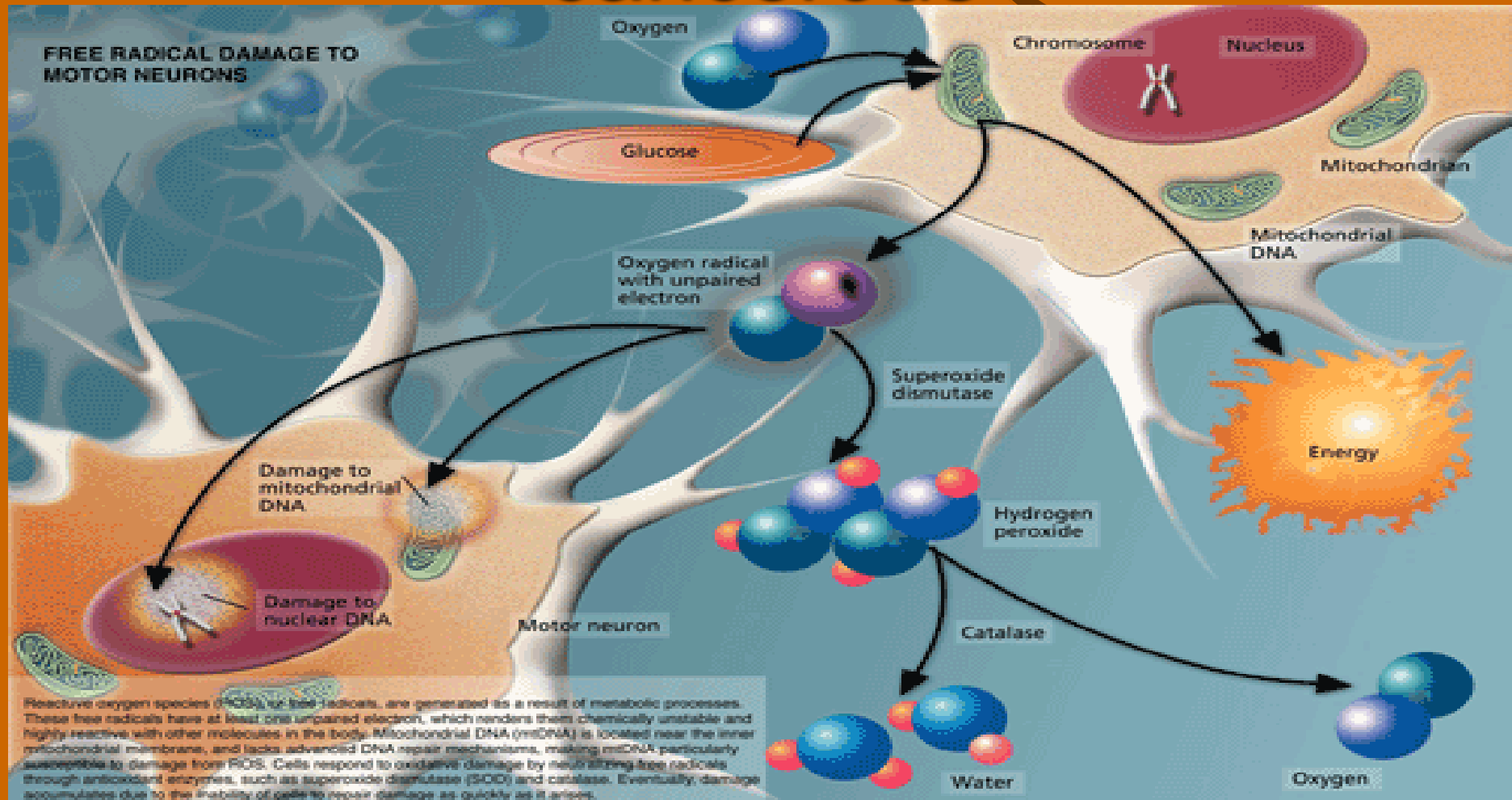
The stress hormone epinephrine changes prostate and breast cancer cells in ways that may make them resistant to cell death. This means that emotional stress could both contribute to the development of cancer and reduce the effectiveness of cancer treatments.

Journal of Biological Chemistry March 12, 2007

# Stress also produces free radicals



# Free radicals damage DNA, causing cells to become cancerous



# Alcohol

Cancer researchers in the United Kingdom have concluded that drinking as little as one glass of alcohol a day increases your risk of developing bowel cancer by about 10 percent. And, the more you drink, the more your risk of cancer increases.

[International Journal of Cancer July 19, 2007](#)



# Chlorinated water

This new study found that swimming and showering in chlorinated water may be even worse than drinking it. While study participants who drank chlorinated water had a **35 percent greater risk of bladder cancer** than those who didn't, those who swam in chlorinated pools had a **57 percent greater risk**. Meanwhile, those who took **longer showers or baths** in areas with higher trihalomethanes (THM, a chlorine by-product) levels also had an increased cancer risk.

[American Journal of Epidemiology January 2007, Volume 165, Number 2, Pp. 148-156](#)

# Make up

Women who use make-up on a daily basis can absorb almost 5 pounds of chemicals into their bodies each year.

Some of the compounds present in make-up have been linked to side effects ranging from skin irritation to cancer.

One class of cosmetic chemicals which could be dangerous are parabens. Traces of parabens have been found in breast tumor samples.

Another chemical, sodium lauryl sulfate, can cause skin irritation.

Many women use more than 20 different beauty products a day. The effects of these multiple combinations of chemicals are largely unknown.

[Telegraph.co.uk](http://Telegraph.co.uk) June 22, 2007

# Sugar

A study in Europe, which looked at 64,500 people over the course of 13 years, linked high blood sugar with cancers of the pancreas, skin, womb, and urinary tract. High blood sugar was also linked to breast cancer for women under 49.

[Diabetes Care, Vol. 30, No. 3, March 2007: 561-567](#)

P.S. 1 Average intake per year per person in the US : 165 pounds!

P.S. 2 WHO recommended to decrease sugar intake to less than 10%. Do you know what happened next ?

# The effects of sugar

Sugar can suppress the immune system.

Sugar can upset the body's mineral balance.

Sugar can contribute to hyperactivity, anxiety, depression, concentration difficulties, and crankiness in children.

Sugar can produce a significant rise in triglycerides.

Sugar can cause drowsiness and decreased activity in children.

Sugar can reduce helpful high density cholesterol (HDLs).

Sugar can promote an elevation of harmful cholesterol (LDLs).

Sugar can cause hypoglycemia.

Sugar can cause kidney damage.

Sugar can increase the risk of coronary heart disease.

Sugar can increase fasting levels of blood glucose.

Sugar can promote tooth decay.

Sugar can produce an acidic stomach.

Sugar can raise adrenaline levels in children.

Sugar can lead to periodontal disease.

Sugar can speed the aging process, causing wrinkles and grey hair.

Sugar can increase total cholesterol.

Sugar can contribute to weight gain and obesity.

High intake of sugar increases the risk of Crohn's disease and ulcerative colitis.

# More negative effects of sugar

Sugar can contribute to diabetes.

Sugar can contribute to osteoporosis.

Sugar can cause a decrease in insulin sensitivity.

Sugar can cause cardiovascular disease.

Sugar can increase systolic blood pressure.

Sugar causes food allergies.

Sugar can cause free radical formation in the bloodstream.

Sugar can overstress the pancreas, causing damage.

Sugar can compromise the lining of the capillaries.

Sugar can cause liver cells to divide, increasing the size of the liver.

Sugar can increase the amount of fat in the liver.

Sugar can increase kidney size and produce pathological changes in the kidney.

Sugar can cause hormonal imbalance.

Sugar can cause headaches, including migraines.

Sugar can increase blood platelet adhesiveness which increases risk of blood clots and strokes.

Sugar increases bacterial fermentation in the colon.

Source: [www.nancyappleton.com](http://www.nancyappleton.com)

# Aspartame not any better

A recently published Italian study found aspartame does indeed cause cancer. This is the second study by the same lab, which confirms their previous findings, yet FDA spokesmen have stated they see no reason to alter its previous conclusions that "...aspartame is safe as a general purpose sweetener in food."

The Italian research team fed high doses of aspartame to rats, allowing them to live until they died naturally.

The results showed increased risk of several types of cancer, including leukemia, lymphoma and breast cancer.

# Lobbyists

There are more lobbyists than legislators in Washington DC. According to a report from the Center for Public Integrity, from 2005 through June 2006 drug companies spent \$155 million lobbying the federal government.

In addition to lobbying, drug companies spent more than \$19 million in political contributions to candidates during last year's congressional election.

Also, they pay user fees to the FDA, for evaluating new drugs, that make up more than half of that agency's budget.

The total spent by makers of drugs, medical devices and assorted health products during the period examined was nearly \$182 million.

[The Center for Public Integrity April 1, 2007](#)

# Are drugs safe ?

Dr. Howard Scher and Dr. Maha Hussain—both prominent prostate cancer experts and practicing medical doctors—oppose the new prostate cancer drug Provenge, and have voiced their warnings to the FDA's approval committee. They believe there is insufficient evidence of the drug's safety and effectiveness.

The FDA's advisory panel has so far endorsed the effectiveness of the drug by a 13-4 vote, and a 17-0 vote for its general safety, even though there are signs it could increase the risk of stroke.

Patients with incurable diseases are often passionate about finding a cure and may advocate for the approval of experimental drugs even when the data is lacking. But death threats to the experts who are actually **championing for the safety** of these drugs prior to release, brings such ignorant fanaticism to a whole new level.

[New York Times June 4, 2007](#)

P.S. In the last decade 50% of drugs had to be relabeled or withdrawn.



# Statin Drugs do NOT Prevent Cancer

Two new studies have shown that statins, a class of popular cholesterol-lowering drugs, do not protect against cancer, despite the preliminary indications of some earlier studies.

One study examined overall cancer risk, and the other focused solely on colon cancer. In both studies, patients taking statins proved just as likely to develop cancer as anyone else.

Journal of the American Medical Association January 4, 2006;  
295(1): 74-80

USA Today January 4, 2006

# To the contrary !

New research indicates that besides lowering levels of harmful cholesterol, the drugs may also promote the growth of new blood vessels, which have the potential to promote cancer.

Simvastatin increased the growth of new blood vessels through the same pathway as vascular endothelial growth factor (VEGF), a substance produced by cancer to make new blood vessels as well, a process called angiogenesis.

Therefore statins might increase the growth of blood vessels in (undetected?) cancers. However, even though statins are some of the most widely used prescription drugs, these and other potential harmful effects have not been reported.

**Nature Medicine September, 2000;6:965-966, 1004-1010.**

# More on statin drugs

People who take statin drugs to lower their cholesterol as much as possible may have a higher risk of cancer, according to a meta-analysis of over 41,000 patient records from 23 statin drug trials.

The analysis raises concerns about how low cholesterol levels should actually go. Researchers found one extra case of cancer per 1,000 patients with the lowest levels of LDL (low-density lipoprotein) cholesterol, the so-called “bad” cholesterol, compared to patients with higher LDL levels.

[Journal of the American College of Cardiology July 31, 2007; 50:409-418](#)

# Patients have become a market

Astra Zeneca is the maker of arimidex, casodex, tamoxifen (470 mio), pharmaceuticals used in the treatment of cancer and acetochlor (CAS number 34256-82-1), a corn herbicide (300 mio) officially registered as a carcinogen and endocrine toxicant.

People affiliated with the companies that produce pesticides are on the board of cancer research institutes. (Dr Epstein 1999)

# How “research” is being done

The investigators of these studies had to legally invoke the Freedom of Information Act to obtain and analyze unpublished trials on SSRIs (selective serotonin reuptake inhibitors - the most commonly prescribed class of antidepressants, which include Prozac, Zoloft and Paxil). They discovered the existence of a "file drawer effect" - trials with positive results are published while others are filed away - an issue that may confuse the true results of a great deal of medication research.

The January 2008 New England Journal of Medicine investigators found that 37 of 38 studies of antidepressants with positive results were published, whereas only 14 of 36 studies with negative or questionable results were. Even among those 14, many did not emphasize that suicidal thoughts and hopelessness persisted, highlighting, for example, improvements in sleep and energy, instead. The reversal of such "vegetative" symptoms (lethargy, insomnia and poor appetite) of depression in the presence of a continuing depressed mood is thought to play a role in the risk of completing suicide, and the FDA now requires all antidepressants to carry the most serious "black box" drug warning regarding possibly increased suicide risk.

March 23, 2008 SFChronicle

# Placebo where you would not expect it

The February 2008 Public Library of Science investigators, studying a different group of SSRIs, statistically analyzed the combined results of published and unpublished trials. Their findings added to several other studies showing that in all but the most seriously depressed patients, those who get better with antidepressants may also improve with placebos (sugar pills). This "placebo effect" is not unique to mental health treatment: From responses to placebo pills for the common cold to placebo operations for knee osteoarthritis, such improvements demonstrate the remarkable ability we have to heal our own minds and bodies without using pills.

*March 23, 2008 SFChronicle*

Thank you for your attention!

Questions?