



# Epigenetics

## the new biology

### Cancer and Epigenetics

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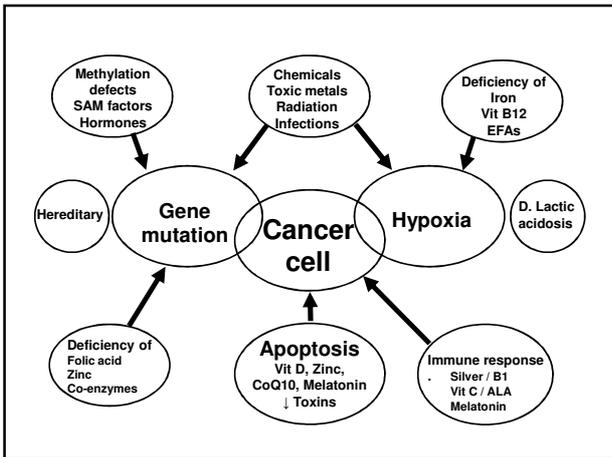
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1. Body constitution type predisposing to malignancy
  2. Single Nucleotide Polymorphisms (SNIP's) and which ones relate specifically to cancer.
  3. Defects in the methylation pathways leading to insufficient synthesis of S. Adenosylmethionine (SAM)
  4. Toxins that are known carcinogens.
  5. Inhibition of the conversion of Pyruvic acid to Acetyl CoA  
The effect of the accumulation of intracellular D. Lactic acid.  
Hypoxia within cancer cells
  6. The role of Melatonin in malignancy prevention and why cancer patients have sleep disorders.
  7. Why progesterone stimulates natural killer cells within the immune system.  
The role of Vitamin D in the immune system and its activation of progesterone through the skin.  
An explanation of tumour growth markers and how to functionally test for these.  
Diets that maybe useful for cancer patients.  
Detrimental factors for cancer patients to avoid within their environment.  
The neurochemical effects of subconscious and conscious negative emotions within cancer patients.
- Chris will complete his presentation with a check list for practitioners to examine and assess cancer patients and an advice sheet for all cancer patients.

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**Cancer or malignant neoplasm, is a broad group of various diseases, all involving unregulated cell growth. In cancer, cells divide and grow uncontrollably, forming malignant tumours, and invade nearby parts of the body. The cancer may also spread to more distant parts of the body through the lymphatic system or bloodstream.**

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**There are over 200 different known cancers that afflict humans.**

**Many things are known to increase the risk of cancer, including tobacco use, certain infections, radiation, lack of physical activity, obesity, and environmental pollutants.**

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**These can directly damage genes or combine with existing genetic faults within cells to cause the disease.**

**Approximately 5-10% of cancers are entirely hereditary.**

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***Environmental***, as used by cancer researchers, means any cause that is not inherited genetically, not merely pollution.

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**Chemicals**

**Cancer pathogenesis is traceable back to DNA mutations that impact cell growth and metastasis. Substances that cause DNA mutations are known as mutagens, and mutagens that cause cancers are known as carcinogens.**

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**Diet and exercise**  
**Diet, physical inactivity, and obesity are related to approximately 30–35% of cancer deaths.**

**Excess body weight is associated with the development of many types of cancer and is a factor in 14–20% of all cancer deaths.**

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**Physical inactivity is believed to contribute to cancer risk not only through its effect on body weight but also through negative effects on immune system and endocrine system.**

**Diets that are low in vegetables, fruits and whole grains, and high in processed or red meats are linked with a number of cancers.**

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**Infection**

**Worldwide approximately 18% of cancer deaths are related to infectious diseases. This proportion varies in different regions of the world from a high of 25% in Africa to less than 10% in the developed world. Viruses are the usual infectious agents that cause cancer but bacteria and parasites may also have an effect.**

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**A virus that can cause cancer is called an *oncovirus*. These include human papillomavirus (cervical carcinoma), Epstein-Barr virus (B-cell lymphoproliferative disease and nasopharyngeal carcinoma), Kaposi's sarcoma herpes virus (Kaposi's Sarcoma and primary effusion lymphomas), hepatitis B and hepatitis C viruses (hepatocellular carcinoma),**

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and Human T-cell leukemia virus-1 (T-cell leukemias).

Bacterial infection may also increase the risk of cancer, as seen in *Helicobacter pylori*-induced gastric carcinoma.

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Parasitic infections strongly associated with cancer include *Schistosoma haematobium* (squamous cell carcinoma of the bladder) and the liver flukes, *Opisthorchis viverrini* and *Clonorchis sinensis* (cholangiocarcinoma). Fasciolopsis buski (liver fluke)?

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**Radiation**  
Up to 10% of invasive cancers are related to radiation exposure, including both ionizing radiation and non-ionizing radiation. Additionally, the vast majority of non-invasive cancers are non-melanoma skin cancers caused by non-ionizing ultraviolet radiation. Sources of ionizing radiation include medical imaging, and radon gas.

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**Unlike chemical or physical triggers for cancer, ionizing radiation hits molecules within cells randomly. If it happens to strike a chromosome, it can break the chromosome, result in an abnormal number of chromosomes, inactivate one or more genes in the part of the chromosome that it hit, delete parts of the DNA sequence,**

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**cause chromosome translocations, or cause other types of chromosome abnormalities. Major damage normally results in the cell dying, but smaller damage may leave a stable, partly functional cell that may be capable of proliferating and developing into cancer, especially if tumour suppressor genes were damaged by the radiation.**

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**UVA, UVB, and UVC can all damage collagen fibres and, therefore, accelerate aging of the skin. Both UVA and UVB destroy vitamin A in skin, which may cause further damage. UVB light can cause direct DNA damage. UVB radiation excites DNA molecules in skin cells, causing aberrant covalent bonds to form between adjacent Pyrimidine bases, producing a dimer.**

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When DNA polymerase comes along to replicate this strand of DNA, it reads a "CC" dimer as "AA" and not the original "CC". This causes the DNA replication mechanism to add a "TT" on the growing strand. This mutation can result in cancerous growths, and is known as a "classical C-T mutation" (CH3H4Folate).

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**Heredity**  
The vast majority of cancers are non-hereditary. Hereditary cancers are primarily caused by an inherited genetic defect. Less than 0.3% of the population are carriers of a genetic mutation which has a large effect on cancer risk and these cause less than 5–10% of all cancer.

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Some of these syndromes include: certain inherited mutations in the genes *BRCA1* and *BRCA2* with a more than 75% risk of breast cancer and ovarian cancer, and hereditary non polyposis colorectal cancer (HNPCC or Lynch syndrome) which is present in about 3% of people with colorectal cancer, among others.

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**Physical agents**

Some substances cause cancer primarily through their physical, rather than chemical, effects on cells.

A prominent example of this is prolonged exposure to asbestos, naturally occurring mineral fibres which are a major cause of mesothelioma, a type of cancer of the serous membrane.

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Other substances in this category, including both naturally occurring and synthetic asbestos-like fibres such as glass wool, and rock wool, are believed to have similar effects. Non-fibrous particulate materials that cause cancer include powdered metallic cobalt and nickel, arsenic and crystalline silica (quartz, cristobalite, and tridymite).

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**Hormones**

Some hormones play a role in the development of cancer by promoting cell proliferation. Hormones are important agents in sex-related cancers such as cancer of the breast, endometrium, prostate, ovary, and testis, and also of thyroid cancer and bone cancer.

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**An individual's hormone levels are mostly determined genetically, so this may at least partly explain the presence of some cancers that run in families that do not seem to have any cancer-causing genes.**

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**e.g. the daughters of women who have breast cancer have significantly higher levels of estrogen and progesterone than the daughters of women without breast cancer. These higher hormone levels may explain why these women have a higher risk of breast cancer, even in the absence of a breast-cancer gene.**

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**Pathophysiology**  
**Cancers are caused by a series of mutations. Each mutation alters the behaviour of the cell somewhat. Cancer is fundamentally a disease of failure of regulation of tissue growth. *In order for a normal cell to transform into a cancer cell, the genes which regulate cell growth and differentiation must be altered.***

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**The affected genes are divided into two broad categories.**

**Oncogenes are genes which promote cell growth and reproduction.**

**Tumour suppressor genes are genes which inhibit cell division and survival.**

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**Malignant transformation can occur through the formation of novel oncogenes, the inappropriate over-expression of normal oncogenes, or by the under-expression or disabling of tumour suppressor genes. Typically, changes in *many* genes are required to transform a normal cell into a cancer cell.**

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**Genetic changes can occur at different levels and by different mechanisms. The gain or loss of an entire chromosome can occur through errors in mitosis. More common are mutations, which are changes in the nucleotide sequence of genomic DNA.**

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**Small-scale mutations include point mutations, deletions, and insertions, which may occur in the promoter region of a gene and affect its expression, or may occur in the gene's coding sequence and alter the function or stability of its protein product.**

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**Disruption of a single gene may also result from integration of genomic material from a DNA virus or retrovirus, and resulting in the expression of *viral* oncogenes in the affected cell and its descendants.**

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**Replication of the enormous amount of data contained within the DNA of living cells will probabilistically result in some errors (mutations).**

**Complex error correction and prevention is built into the process, and safeguards the cell against cancer.**

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**If significant error occurs, the damaged cell can "self-destruct" through programmed cell death, termed apoptosis. If the error control processes fail, then the mutations will survive and be passed along to daughter cells.**

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**Some environments make errors more likely to arise and propagate. Such environments can include the presence of disruptive substances called carcinogens, repeated physical injury, heat, ionising radiation, or most importantly hypoxia.**

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**Genetic Body Types predisposing to Cancer**

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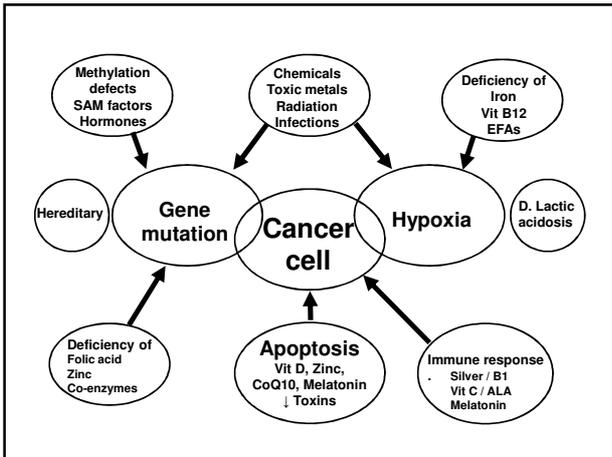
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**BLUE Gonads Ectomorph**

The key feature is short and sexual development. Classically far eastern body shape. Men tend to be short and stouter with softer musculature than the green person but with ample body hair often on the back. Small hands with tapered fingers which are shorter than the palm. Hair is usually thick and course.

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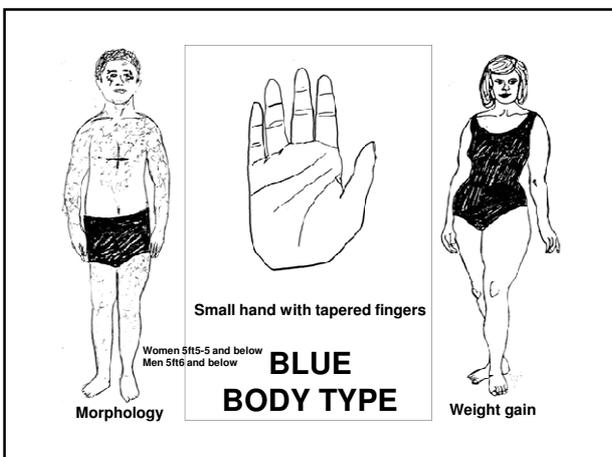
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**Diet**

**Low animal protein.  
Plenty of fruit and vegetables.  
No cow's milk or lactose products.  
Beware of old or aging cheese,  
avocados, bananas, chocolate and  
other tyramine foods.  
Avoid Aspartame and MSG.  
Limit alcohol**

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**Supplements**

**Vitamins – to be taken in water 3x a  
day with meals**

**Vitamin B1 (Thiamine)  
Folic acid  
Vitamin B12 (Hydroxycobalamin)  
Choline**

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**Minerals – to be taken in water 3x a  
day with meals**

**Boron  
Iron  
Magnesium  
Selenium  
Sulphur  
Zinc**

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**Oils all organic and cold pressed.  
To be taken with the evening meal.**

**Flax seed  
Pumpkin  
Walnut**

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**Herbs and Spices as beverage. All  
organic. To be taken in hot water 3x  
a day between meals.**

<b>HERBS</b>	<b>SPICES</b>
<b>Basil</b>	<b>Chilli</b>
<b>Coriander</b>	<b>Cinnamon</b>
<b>Dill</b>	<b>Paprika</b>

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**Probiotics  
To be taken last thing at night. Put  
powder into a glass and then add  
room temperature mineral water.  
Stir well and drink.**

**L. Casei**

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## Single Nucleotide Polymorphisms (SNIP's)

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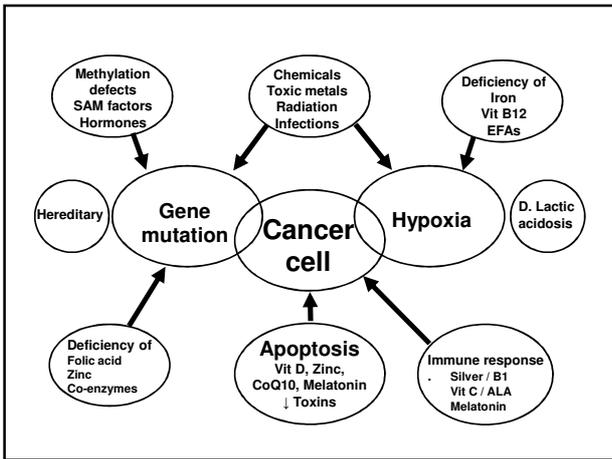
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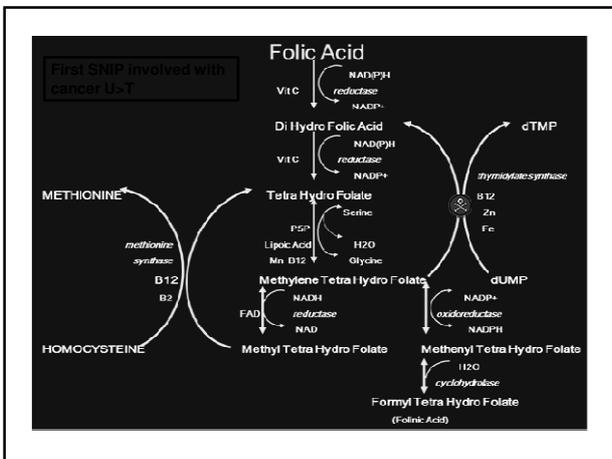
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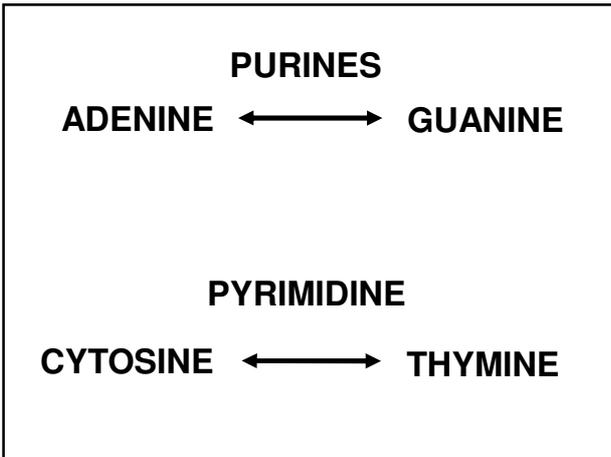
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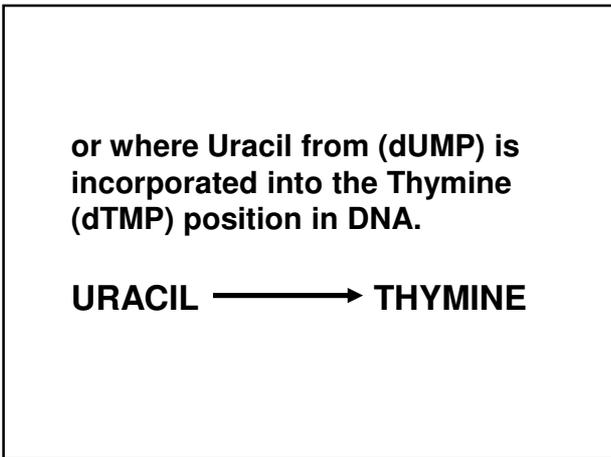
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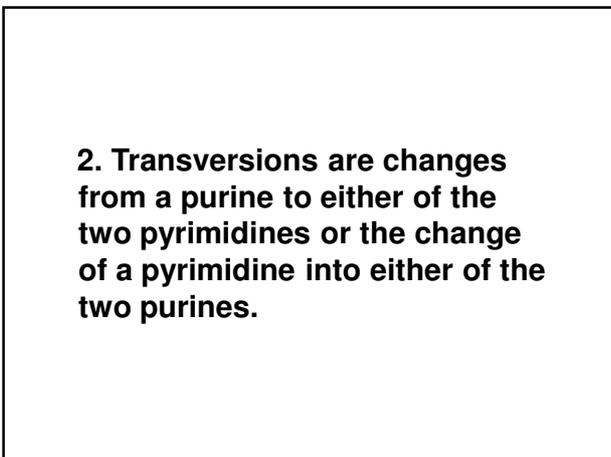
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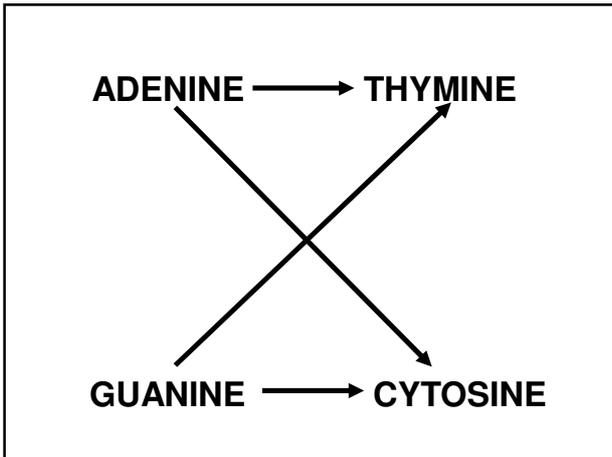
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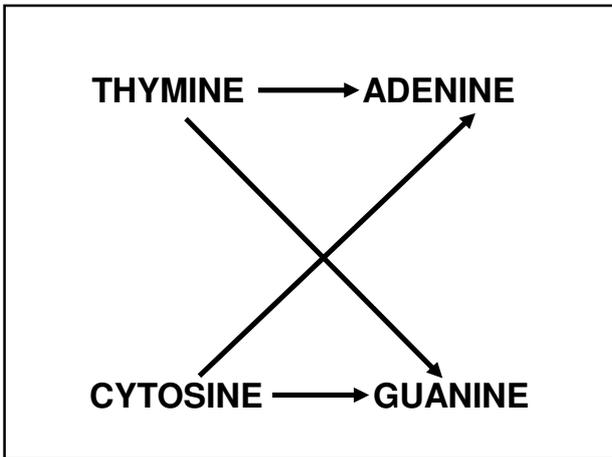
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Single base changes will be replicated within the mRNA transcription.

There maybe

1. No detectable effect.
2. A mis-sense effect
3. A nonsense codon effect.

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**SNIP Challenge**

- 1. Challenge each vial of nucleotide bases from strength to weakening over lower abdomen.**
- 2. Note which one weakens.**

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**Nucleotide bases**

- 1. Adenine**
- 2. Cytosine**
- 3. Guanine**
- 4. Thymine**
- 5. Uracil**

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- 3. Challenge weakening nucleotide base against each of the other nucleotide bases to identify which negates.  
e.g. G>T**

**This will indicate the specific single nucleotide polymorphism (SNIP).**

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**There is always an associated co-enzyme with each SNIP.**

**This indicates that a greater than normal amount of the coenzyme is required to bring an enzyme up to a more correct rate of reaction.**

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**Each SNIP defect maybe apparent to Nutritional deficiency of the necessary substrates and Cofactors to activate the vitamin to become a coenzyme.**

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**Each SNIP defect is caused by**

- 1. Inherited polymorphism (Miasm)**
- 2. Acquired – Due to Zinc deficiency leading to reduced DNA / RNA polymerase function for the repair caused by ROS as a result of exposure to pathogens especially viruses, toxic metals, mycotoxins, chemicals and / or ionising radiation.**

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**Epigenetics are mechanisms that lie outside the DNA sequence of the genes. One of the initial discoveries was the effects of DNA methylation upon gene expression and then modifications of nucleosomal histones. This DNA methylation, usually associated with 5-methylcytosine (m5C), leads to transcriptional silencing in vertebrates.**

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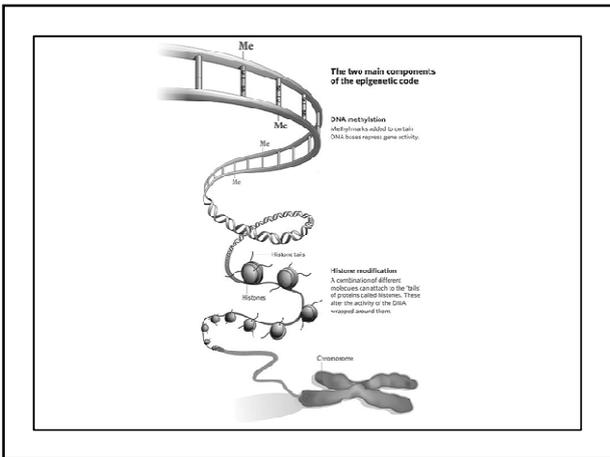
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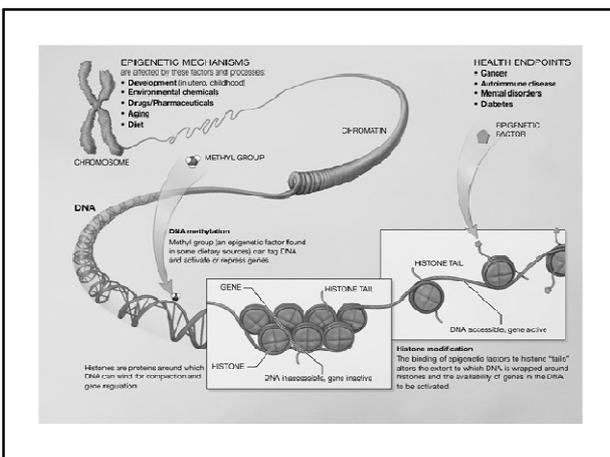
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**Each histone has a loose end or “tail” to which certain chemicals can attach which alter how tightly coiled the DNA is around the histone.**

**So long as the DNA remains tightly coiled the, gene does not activate, but to activate it the DNA must be partially unwound.**

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**The gene needs outside instruction from acetyl and methyl groups. Sometimes acetyl groups (COCH<sub>3</sub>) are added to the tail near a gene causing the histone to loosen their grip on the DNA allowing the expression of that gene.**

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**Removing the acetyl group causes the histones to tighten their grip on the DNA thereby stopping the expression of the gene. Put simply, adding a methyl group switches the genes off and removing a methyl group switches it back on.**

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**Methylation defects**

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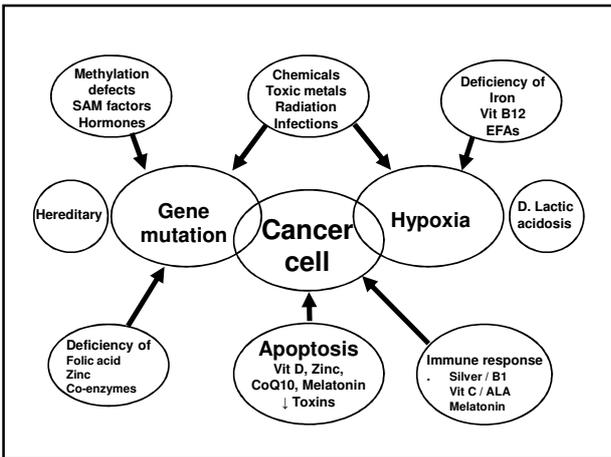
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**Some Methylation functions**  
Phosphatidylethanolamine to phosphatidylcholine  
Noradrenalin to adrenalin  
Metabolism Dopamine, Noradrenalin, Serotonin  
Metabolism of Estrogens and Testosterone?  
DNA methyltransferase  
Methyl Caps DNA /RNA  
Polyamine biosynthesis  
Synthesis of Creatine, Carnitine  
Histone methyltransferases  
Synthesis of myelin

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**SAM factors**

Hydroxycobalamin, Methylcobalamin,  
Folic acid, Folinic acid, Methylene H4 folate,  
Methyl H4 Folate  
Pyridoxine, Pyridoxal-5-phosphate  
Magnesium  
Zinc  
Choline

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**Cancer and Toxins**

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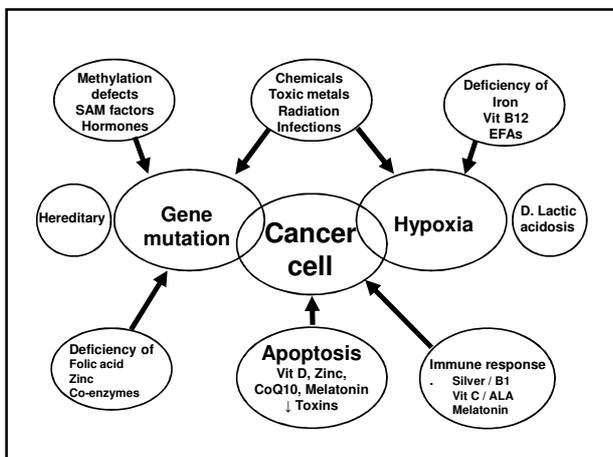
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**A carcinogen is any substance, radionuclide, or radiation that is an agent directly involved in causing cancer. This may be due to the ability to damage the genome or to the disruption of cellular metabolic processes.**

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**Several radioactive substances are considered carcinogens, but their carcinogenic activity is attributed to the radiation, for example gamma rays and alpha particles, which they emit. Common examples of non-radioactive carcinogens are inhaled asbestos, certain dioxins, and tobacco smoke.**

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**Although the public generally associates carcinogenicity with synthetic chemicals, it is equally likely to arise in both natural and synthetic substances. Cancer is any disease in which normal cells are damaged and do not undergo apoptosis as fast they divide via mitosis.**

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**Carcinogens may increase the risk of cancer by altering cellular metabolism or damaging DNA directly in cells, which interferes with biological processes, and induces the uncontrolled, malignant division, ultimately leading to the formation of tumours.**

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**Usually, severe DNA damage leads to apoptosis, but if the programmed cell death pathway is damaged, then the cell cannot prevent itself from becoming a cancer cell.**

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**There are many natural carcinogens. Aflatoxin B<sub>1</sub>, which is produced by the fungus *Aspergillus flavus* growing on stored grains, nuts and peanut butter, is an example of a potent, naturally occurring microbial carcinogen. Certain viruses such as Hepatitis B and human papilloma virus have been found to cause cancer in humans.**

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**Dioxins and dioxin-like compounds, benzene, and asbestos have all been classified as carcinogenic. As far back as the 1930s, industrial smoke and tobacco smoke were identified as sources of dozens of carcinogens, including benzo[a]pyrene, tobacco-specific nitrosamines such as nitrosonornicotine.**

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**Co-carcinogens are chemicals that do not necessarily cause cancer on their own, but promote the activity of other carcinogens in causing cancer. A pro-carcinogen is a precursor to a carcinogen. One example is nitrites when taken in by the diet. They are not carcinogenic themselves, but turn into nitrosamines in the body, which are carcinogenic.**

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**After the carcinogen enters the body, the body makes an attempt to eliminate it through a process called biotransformation. The purpose of these reactions is to make the carcinogen more water-soluble so that it can be removed from the body. But these reactions can also convert a less toxic carcinogen into a more toxic carcinogen.**

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**Carcinogenicity of radiation depends of the type of radiation, type of exposure, and penetration. Higher-energy radiation, including ultraviolet radiation (present in sunlight), x-rays, and gamma radiation, generally *is* carcinogenic, if received in sufficient doses.**

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Carcinogen	Associated cancer sites or types	Occupational uses or sources
Arsenic and its compounds	<ul style="list-style-type: none"> <li>•Lung</li> <li>•Skin</li> <li>•Hemangiosarcoma</li> </ul>	<ul style="list-style-type: none"> <li>•Smelting byproduct</li> <li>•Component of:                             <ul style="list-style-type: none"> <li>•Alloys</li> <li>•Electrical and semiconductor devices</li> </ul> </li> <li>•Medications (e.g. melarsoprol)</li> <li>•Herbicides</li> <li>•Fungicides</li> <li>•Animal dips</li> <li>•Drinking water from contaminated aquifers.</li> </ul>

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Asbestos	<ul style="list-style-type: none"> <li>•Lungs</li> <li>•Asbestosis</li> <li>•Gastrointestinal tract</li> <li>•Pleural Mesothelioma</li> <li>•Peritonea Mesothelioma</li> </ul>	<ul style="list-style-type: none"> <li>Not in widespread use, but found in:                             <ul style="list-style-type: none"> <li>•Constructions</li> <li>•Roofing papers</li> <li>•Floor tiles</li> <li>•Fire-resistant textiles</li> <li>•Friction linings (only outside Europe)</li> <li>•Replacement friction linings for automobiles still may contain asbestos</li> </ul> </li> </ul>
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Benzene	<ul style="list-style-type: none"> <li>•Leukemia</li> <li>•Hodgkin lymphoma</li> </ul>	<ul style="list-style-type: none"> <li>•Light fuel oil</li> <li>•Former use as solvent and fumigant</li> <li>•Printing</li> <li>•Lithography</li> <li>•Paint</li> <li>•Rubber</li> <li>•Dry cleaning</li> <li>•Adhesives</li> <li>•Coatings</li> <li>•Detergents</li> </ul>
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Beryllium and its compounds	<ul style="list-style-type: none"> <li>•Lung</li> </ul>	<ul style="list-style-type: none"> <li>•Missile fuel</li> <li>•Lightweight alloys</li> <li>•Aerospace applications</li> <li>•Nuclear reactors</li> </ul>
Cadmium and its compounds	<ul style="list-style-type: none"> <li>•Prostate</li> </ul>	<ul style="list-style-type: none"> <li>•Yellow pigments</li> <li>•Phosphors</li> <li>•Solders</li> <li>•Batteries</li> <li>•Metal paintings and coatings</li> </ul>
Hexavalent chromium (VI) compounds	<ul style="list-style-type: none"> <li>•Lung</li> </ul>	<ul style="list-style-type: none"> <li>•Paints</li> <li>•Pigments</li> <li>•Preservatives</li> </ul>

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Diesel exhaust	<ul style="list-style-type: none"> <li>•Lung</li> <li>•Bladder</li> </ul>	<ul style="list-style-type: none"> <li>•Exhaust gas from Diesel engines</li> </ul>
Ethylene oxide	<ul style="list-style-type: none"> <li>•Leukemia</li> </ul>	<ul style="list-style-type: none"> <li>•Ripening agent for fruits and nuts</li> <li>•Rocket propellant</li> <li>•Fumigant for foodstuffs and textiles</li> <li>•Sterilant for hospital equipment</li> </ul>

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Nickel	•Nose •Lung	•Nickel plating •Ferrous alloys •Ceramics •Batteries •Stainless-steel welding by product
Radon and its decay products	•Lung	•Uranium decay •Quarries and mines •Cellars and poorly ventilated places

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Vinyl chloride	•Hemangiosarcoma •Liver	•Refrigerant •Production of polyvinyl chloride •Adhesive for plastics •Former use in pressurized containers
Shift work that involves circadian disruption	•Breast	
Involuntary smoking (Passive smoking)	•Lung	

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Radium-226, Radium-224, Plutonium-238, Plutonium-239 and other alpha particle emitters with high atomic weight	•Bone (they are bone seekers) •Liver	•Nuclear fuel processing •Radium dial manufacturing
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**More than 75,000 synthetic chemicals now exist.**

**Most will require detoxification, with the liver being the main organ involved.**

**Occasionally a *xenobiotic* maybe excreted unchanged.**

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**It is convenient to consider the metabolism of xenobiotics in two phases.**

**1. Phase 1 hydroxylation catalyzed by the mono-oxygenases cytochrome P450's.**

**2. Phase 2 Methylation or Conjugation.**

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**The overall purpose of the two phases is to increase their water solubility (polarity) and thus facilitate their excretion from the body.**

**Very hydrophobic xenobiotics would persist in adipose tissue indefinitely if they were not converted to more polar forms.**

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In certain cases, phase 1 metabolic reactions convert xenobiotics from inactive to biologically active compounds.

In some instances the original xenobiotics are pro-carcinogens which then become converted to carcinogens by the phase 1 hydroxylation.

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Phase II drug-metabolizing enzymes such as glutathione S-transferase, aryl sulfatase and UDP-glucuronyl transferase inactivate chemical carcinogens into less toxic or inactive metabolites.

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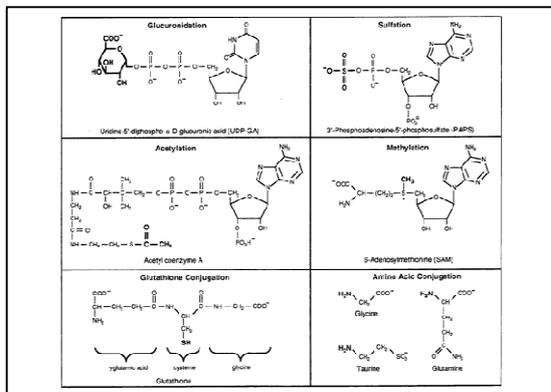
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The balance of detoxification and activation reactions depends on the chemical structure of the agents, and is subjected to many variables that are a function of this structure, or genetic background, sex, endocrine status, age, diet, and the presence of other chemicals.

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It is important to realize that the enzymes involved in carcinogen metabolism are also involved in the metabolism of a variety of substrates, and thus the introduction of specific xenobiotics may change the operating level and the existence of other chemicals.

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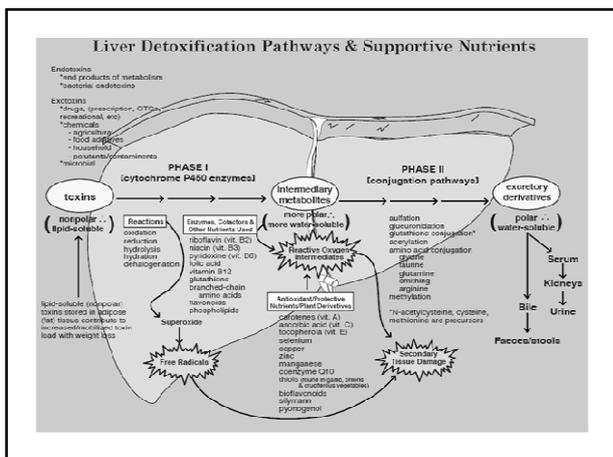
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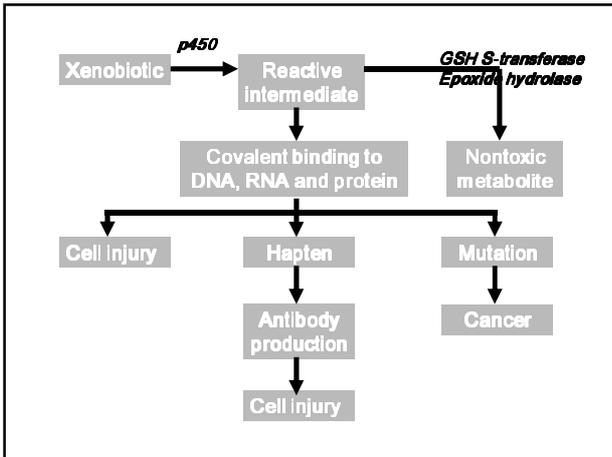
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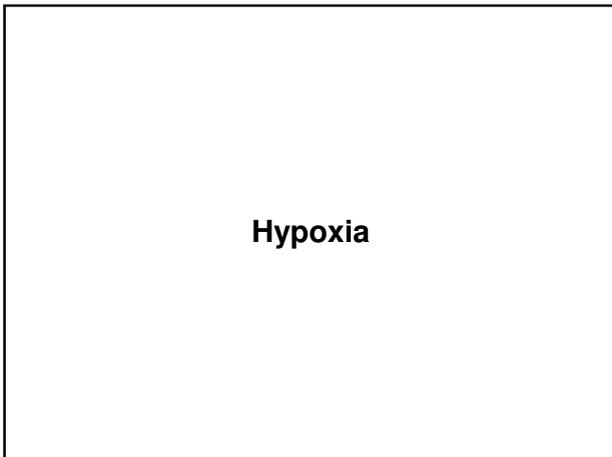
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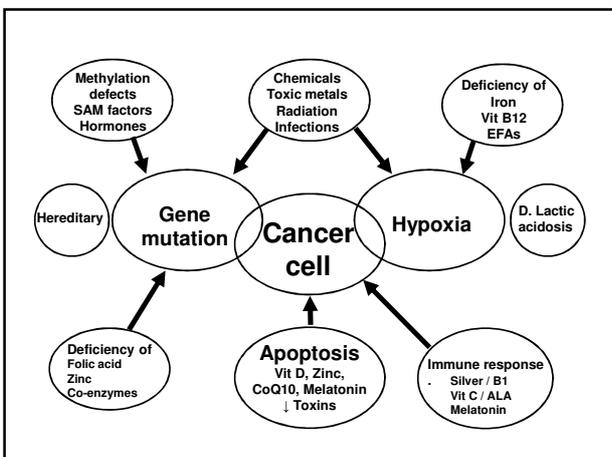
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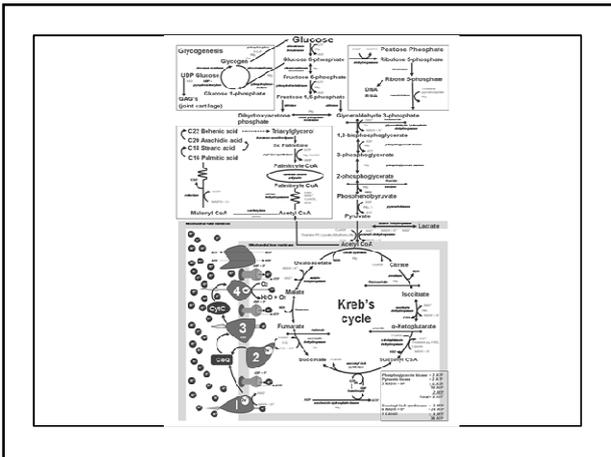
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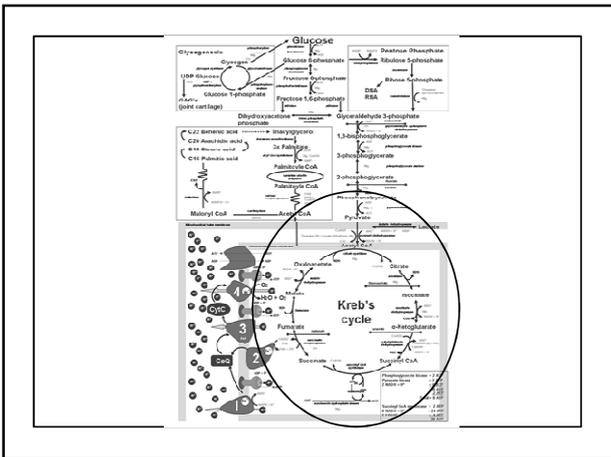
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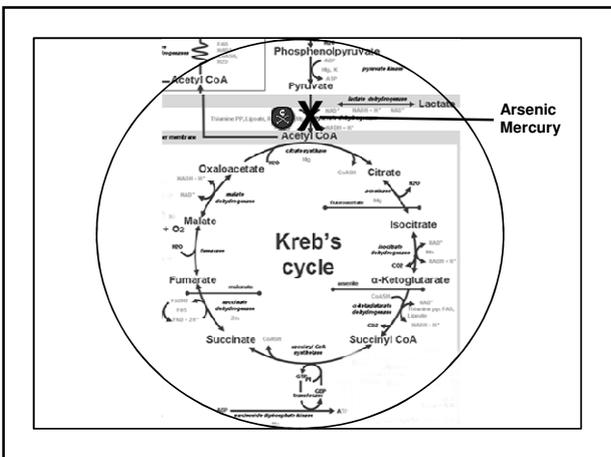
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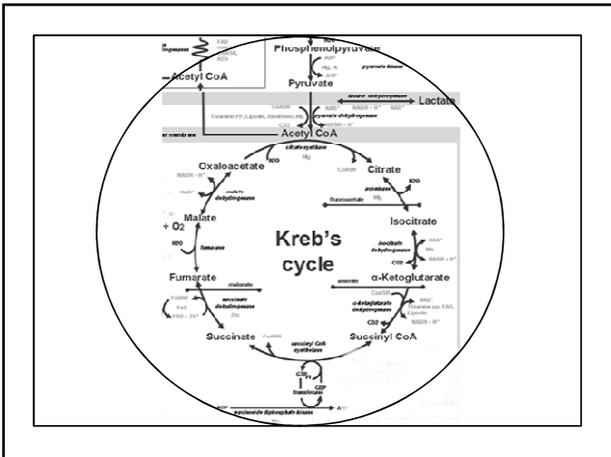
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**The link between oxygen and cancer is clear. In fact an underlying cause of cancer is low cellular oxygenation levels. In newly formed cells, low levels of oxygen damage respiration enzymes so that those cells cannot produce energy using oxygen. These cells can then turn cancerous.**

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**Discovering the Real Cause of Cancer  
Doctor Otto Warburg discovered the real cause of cancer in 1923 and he received the Nobel Prize for doing so in 1931.**

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**He investigated the metabolism of tumours and the respiration of cells, particularly cancer cells. "Cancerous tissues are acidic, whereas healthy tissues are alkaline. Water splits into H<sup>+</sup> and OH<sup>-</sup> ions, if there is an excess of H<sup>+</sup>, it is acidic; if there is an excess of OH<sup>-</sup> ions, then it is alkaline."**

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**In his work *The Metabolism of Tumours* he demonstrated that all forms of cancer are characterized by two basic conditions: Acidosis and Hypoxia (lack of oxygen). Lack of oxygen and acidosis are two sides of the same coin: where you have one, you have the other.**

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**"All normal cells have an absolute requirement for oxygen, but cancer cells can live without oxygen - a rule without exception." - Dr. Otto Warburg**

**"Deprive a cell 35% of its oxygen for 48 hours and it may become cancerous."**

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**Dr Warburg has made it clear that the prime cause of cancer is oxygen deficiency (brought about by Toxemia).**

**Dr Warburg discovered that cancer cells are anaerobic and cannot survive in the presence of high levels of oxygen.**

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**"Cancer, above all other diseases, has countless secondary causes. But, even for cancer, there is only one prime cause. Summarized in a few words, the prime cause of cancer is the replacement of the respiration of oxygen in normal body cells by a fermentation of glucose.**

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**All normal body cells meet their energy needs by respiration of oxygen, whereas cancer cells meet their energy needs in great part by fermentation. All normal body cells are thus obligate aerobes, whereas all cancer cells are partial anaerobes."**

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**Hypoxia comes from a build up of carcinogens and other toxins within and around cells, which blocks and then damages the cellular oxygen respiration mechanism. Clumping up of red blood cells slows down the bloodstream, and restricts flow into capillaries.**

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**What Warburg and other scientists found was that respiratory enzymes in cells, which make energy aerobically using oxygen, die when cellular oxygen levels drop. When they die, that cell can no longer produce all its energy using oxygen.**

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**However the problem comes when cells cannot produce energy using oxygen because of this damage to the respiratory enzymes. Then they must produce energy primarily by glycolysis most of the time. This is what can cause a cell to turn cancerous.**

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**J. B. Kizer, a biochemist and physicist at Gungnir Research in Portsmouth, Ohio explains, "The results that I found were rather remarkable. I found that... "High O<sub>2</sub> tensions were lethal to cancer tissue, 95% being very toxic, whereas in general, normal tissues were not harmed by high oxygen tensions.**

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**It does seem to demonstrate the possibility that if the O<sub>2</sub> tensions in cancer tissues can be elevated, then the cancer tissue may be able to be killed selectively, as it seems that the cancer cells are incapable of handling the O<sub>2</sub> in a high O<sub>2</sub> environment."**

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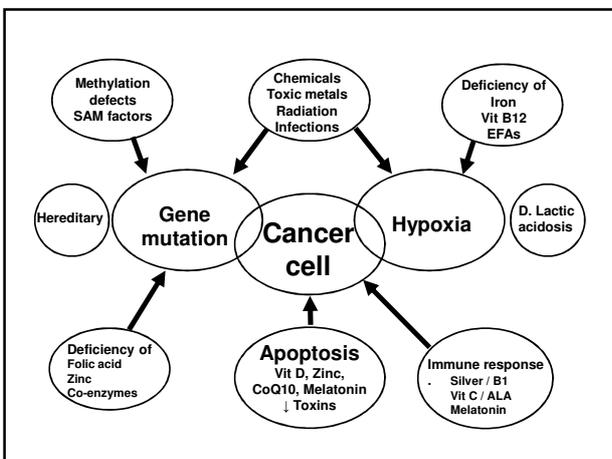
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There are several reasons cells become poorly oxygenated. An overload of toxins clogging up the cells, poor quality cell walls (EFAs) that don't allow nutrients into the cells, the lack of nutrients (Iron / B12) needed for respiration, poor circulation and perhaps even low levels of oxygen in the air we breathe (mechanics).

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**HYPOXIA**  
**Iron**

**Hydroxycobalamin**  
**Adenosylcobalamin**  
**Methylcobalamine**

**α-Linolenic acid**  
**Flaxseed**  
**Pumpkin seed**  
**Walnut**

**BLUE**  
**WONDER**  
**OIL**

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The Missing Link: EFA "Oxygen Magnets"




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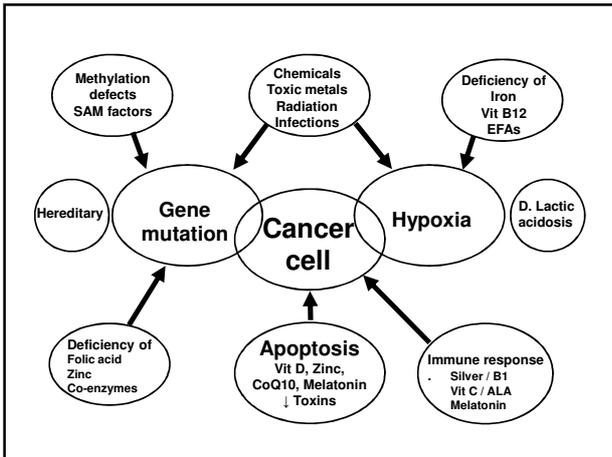
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**Cancer cells produce *excess D. Lactic acid* as they ferment energy. D. Lactic acid is toxic, and tends to prevent the transport of oxygen into neighbouring normal cells.**

**Over time as these cells replicate, the cancer may spread if not destroyed by the immune system.**

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**The ensuing acideamia tends to persist, since D-Lactic is not metabolized by *L-lactic dehydrogenase*, the enzyme that catalyzes the conversion of the physiologically occurring L-Lactic into pyruvate. Thus, D-Lactic is slowly metabolized in humans.**

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**Virtually *everyone* with cancer has low pH levels. This is because cancer is created, and thrives, in a body that has low pH levels, a body that is acidic. Low pH causes the body to store more toxins in cells, and reduces oxygen levels, both of which are fundamental to the development of cancer.**

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**When cancer cells grow, they produce even more acid. Making it very difficult to raise pH levels, especially when cancer is present.**

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**Circadian disruption**

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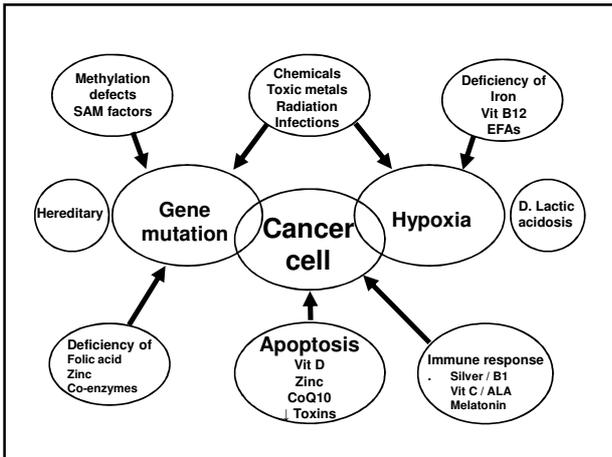
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### Circadian disruption

"Shiftwork that involves circadian disruption" was listed, in 2007, as a probable carcinogen by the World Health Organization's International Agency for Research on Cancer. (IARC Press release No. 180). Multiple studies have documented a link between night shift work and the increased incidence of breast cancer. Circadian disruption by exposure to light at night suppresses the production of the hormone melatonin which leads to reduction in cellular immune defence and surveillance necessary for protection from development of cancers. Melatonin also seems to have a direct protective effect against cancer, possibly in part because of its strong antioxidant properties.

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Recent research carried in *Cancer Watch* suggested that circadian rhythms might even control the effectiveness of chemotherapy drugs and the time of day they should be taken.

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**Research shows that the immune system needs 9 ½ hours of sleep in *total* darkness to recharge completely -- the authors of the book *Lights Out* explain. When was the last time you had this much sleep?**

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**Melatonin functions to destroy cancer in multiple ways. First, because it is toxic to cancer cells, it induces apoptosis, or cancer cell auto-destruction, as well as directly kills cancer cells. It also slows tumour growth through a variety of mechanisms, such as by inhibiting epidermal growth factor receptors on cancer cells**

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**Epidermal growth factors play an important role in cancer cell growth and proliferation, so blocking their receptors on cancer cells prevents them from carrying out these roles.**

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**Melatonin also stimulates the immune system and increases the cancer-killing activity of macrophages, monocytes, natural killer cells, T-helper cells and eosinophils, all of which are involved in cancer cell destruction.**

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**Additionally, melatonin inhibits angiogenesis (new tumour blood vessel creation) from existing blood vessels. Tumours get their nutrition through blood vessels, and as they grow, they require an increasingly greater supply of blood vessels to feed themselves.**

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**Melatonin has properties which enable it to block the effects of estrogen upon cancer cells; this is important because estrogen derivatives stimulate the growth of hormonally-influenced cancers, such as breast, endometrial, ovarian and uterine cancers.**

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**Finally, as an antioxidant, melatonin reduces inflammation, a condition that enables cancer's survival, and it scavenges free radicals so that they don't damage normal cells and make them vulnerable to further genetic mutations.**

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**The Pineal Gland secretes**

<b>Serotonin</b>	<b>Melatonin</b>
<b>Epithalamin</b>	<b>TRH</b>
<b>Vasopressin (ADH)</b>	<b>Prolactin</b>
<b>Somatostatin</b>	<b>Noradrenalin</b>
<b>Dopamine</b>	<b>GnRH</b>
<b>DMT</b>	<b>Pinoline</b>

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**Melatonin is the pineal hormone of most biological significance.**

**It is synthesized from serotonin.**

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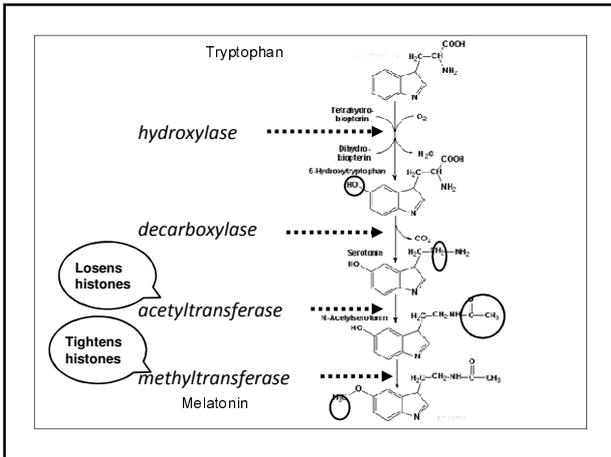
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**Synthesising N. Acetylserotonin from Serotonin**  
**Vit B5, Vit B1, Magnesium, α-Lipoic acid, Vit B2, Vit B3**

**Synthesising Melatonin from N. Acetylserotonin**  
**SAM – (Vit B12's, Folic acid, Vit B6, Zinc, Magnesium)**

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**It is most abundant and active in total darkness peaking at 2am and declining to half levels by 5am.**

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**Melatonin is found naturally in Wheat grass, Barley grass Bananas, Morello cherries, Porridge oats,.**

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**Melatonin is also secreted by bone marrow, the retina, the gastrointestinal tract, the liver, lungs, skin and certain lymphocytes.**

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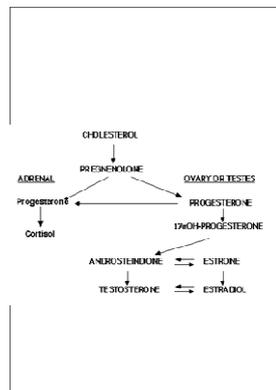
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**Melatonin has a modulating effect on all the steroid hormones.**




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**It stimulates monoamine oxidase thus reducing high levels of dopamine, noradrenalin, serotonin and histamine.**

**This is why a good night's sleep solves most problems.**

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**Melatonin has an immunomodulatory effect on the thymus gland by differentiating undifferentiated white cells into mature T, B and NK cells.**

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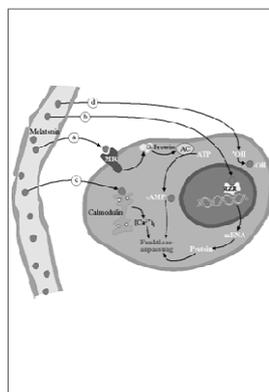
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**It is a powerful antioxidant against the hydroxyl radical.**



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## The Hormonal Connection

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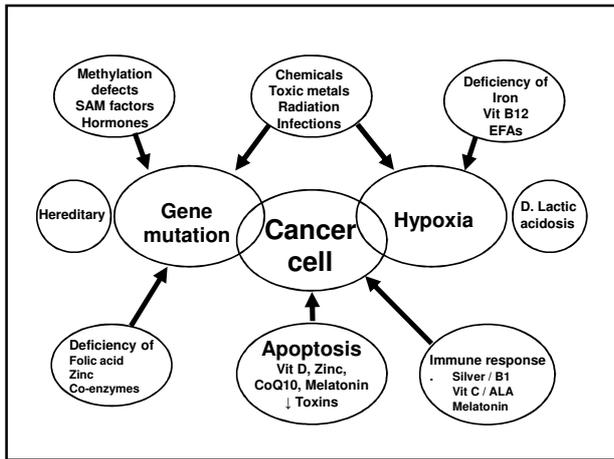
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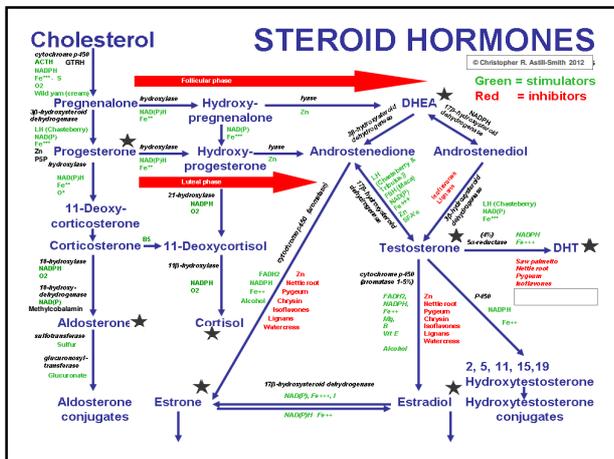
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**The synthesis of  
PROGESTERONE**

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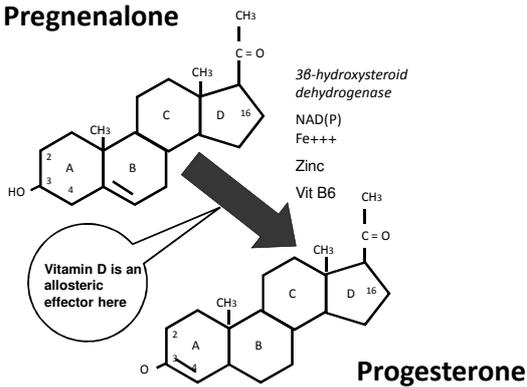
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**Pregnenalone**




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**Progesterone**

- 1. Enhances the acinar portions of the breasts.**
- 2. Decrease peripheral blood flow thereby decreasing heat loss during the luteal phase and in pregnancy.**
- 3. Requires estrogens to stimulate their receptor sites.**
- 4. Progesterone but not estrogen depolarizes natural killer cells.**

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## The Metabolism of 17β-ESTRADIOL

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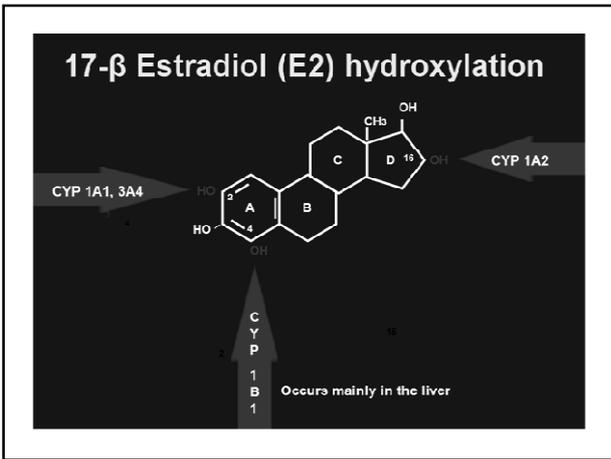
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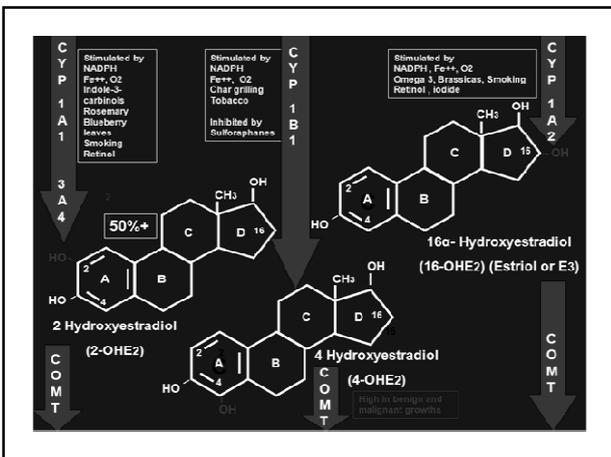
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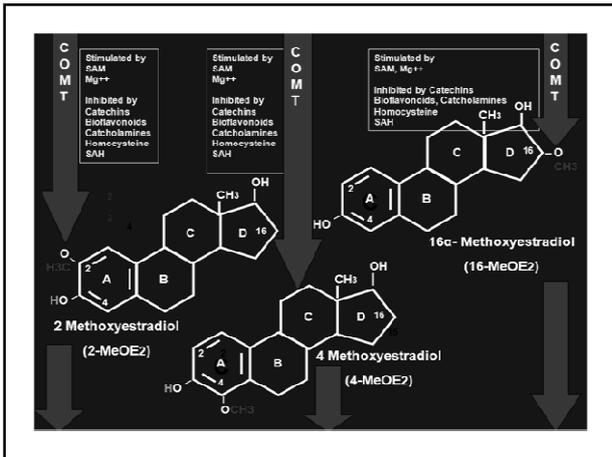
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Glutathione conjugation from various *glutathione-S-transferase* enzymes using glutathione as the cofactor. NAC, Zn<sup>++</sup>, P5P, Selenium. Spinach, Onion, Garlic, Rosemary, Watercress.

Sulfation from various *sulfotransferase* enzymes using PAPS or Sulfur as the cofactor. MSM. Broccoli, Asparagus, Garlic, Onions, Dill, Parsnip, Horseradish, Cabbage, Stinging nettle.

Glucuronidation from various *glucuronosyl transferase* enzymes using UDP-glucuronic acid as the cofactor. Cashew, Soy, Licorice, Flax, Alfalfa.

Acetylation using AcetylCoA as the acetyl donor. Pantethine. Endive, Pea, Cucumber, Watercress, Tomato.

**Methoxyestradiol conjugates excreted in the urine and bile**

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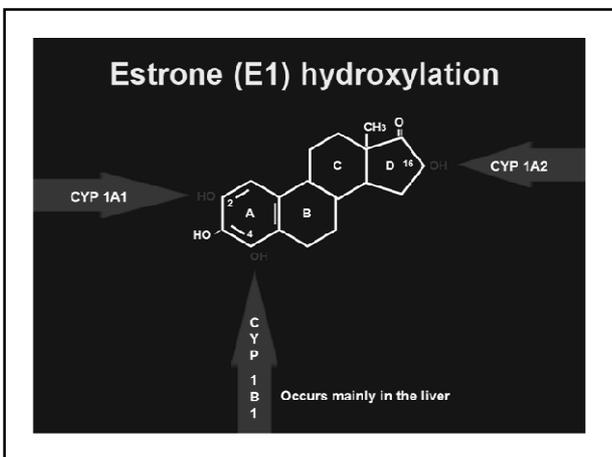
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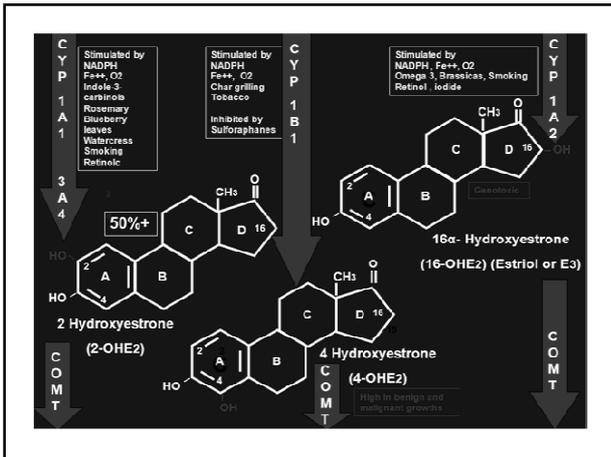
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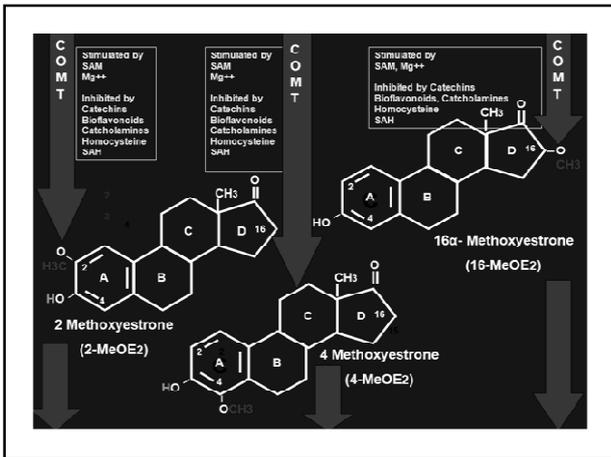
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Glutathione conjugation from various *glutathione-S-transferase* enzymes using glutathione as the cofactor. NAC, Zn<sup>++</sup>, P5P, Selenium. Spinach, Onion, Garlic, Rosemary, Watercress.

Sulfation from various *sulfotransferase* enzymes using PAPS or Sulfur as the cofactor. MSM. Broccoli, Asparagus, Garlic, Onions, Dill, Parsnip, Horseradish, Cabbage, Stinging nettle.

Glucuronidation from various *glucuronosyl transferase* enzymes using UDP-glucuronic acid as the cofactor. Cashew, Soy, Licorice, Flax, Alfalfa.

Acetylation using AcetylCoA as the acetyl donor. Pantethine. Endive, Pea, Cucumber, Watercress, Tomato.

**Methoxyestrone conjugates excreted in the urine and bile**

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**Glucosinolates are secondary metabolites that are mainly found in members of the Brassicaceae (Cruciferae) family. Glucosinolates consist of a common glycone group and a variable aglycone side-chain.**

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**Upon tissue disruption, glucosinolates rearrange to isothiocyanates, thiocyanates, or nitriles. Natural isothiocyanates are effective chemoprotective agents that block chemical carcinogenesis and prevent several types of cancer in rodent models.**

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**Isothiocyanates target mammalian Phase 1 and Phase 2 drug-metabolizing enzymes and their coding genes, resulting in decreased carcinogen-DNA interactions and in increased carcinogen detoxification.**

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**e.g. methionine-derived isothiocyanate, sulforaphane, inhibits Phase 1 enzyme-mediated activation of procarcinogens, induces Phase 2 detoxification enzymes in hepatoma cells, and blocks mammary tumour formation in rats.**

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**Sulforaphane is the most powerful natural inducer of chemoprotective enzymes thus far reported. Richest in watercress**

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**Fungi**

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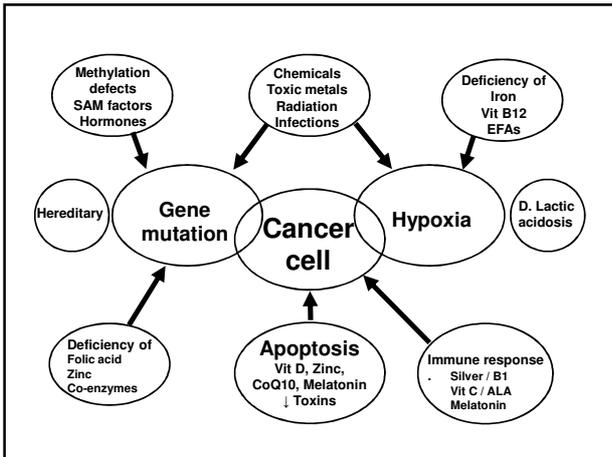
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**Grains such as corn, wheat, barley, sorghum, and other foods such as peanuts, are commonly contaminated with cancer-causing fungal poisons called mycotoxins. One of them, called aflatoxin, just happens to be the most carcinogenic substance on earth. we consume, on average, from 0.15mg to 0.5mg of aflatoxin per day.**

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**Antifungals**  
**Ionic citrated silver + Vit B1**  
**Castor oil extracts**  
**Coconut oil extracts**  
**Apple cider vinegar**  
**Grapefruit seed extract**

***Always check for Essential fatty acids and Zinc***

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### Cell Apoptosis

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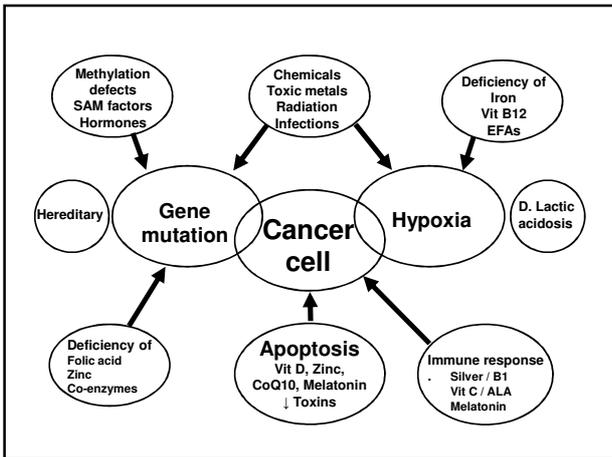
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### Vitamin D

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**Getting enough Vitamin D is vital for fighting cancer. In fact, a lack of it may contribute to cancer. There is more cancer (and MS) in the higher latitudes of the North because weaker sunlight produces less vitamin D. Vitamin D has been used to treat breast, prostate and other cancers.**

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**Vitamin D's link to certain cancers have been tested and confirmed in more than 200 epidemiological studies, and understanding of its physiological basis stems from more than 2,500 laboratory studies, according to epidemiologist Cedric Garland, professor of family and preventive medicine at the UC San Diego School of Medicine.**

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**Dr. Garland is regarded as the top epidemiologist on vitamin D and its relation to health. He led one of the latest studies on vitamin D for cancer prevention and his results, which were published in the Annals of Epidemiology, were nothing short of astonishing. Garland wrote:**

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**“It is projected that raising the minimum year-around serum 25(OH)D [vitamin D] level to 40-60 ng/ml would prevent approximately 58,000 new cases of breast cancer and 49,000 new cases of colorectal cancer each year, and three quarters of deaths from these diseases, in the US and Canada.”**

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**He proposed a new model of cancer development -- dubbed DINOMIT -- that is centred on a loss of cancer cells' ability to stick together. According to Dr. Garland:**

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**"The first event in cancer is loss of communication among cells due to, among other things, low vitamin D and calcium levels. In this new model, we propose that this loss may play a key role in cancer by disrupting the communication between cells that is essential to healthy cell turnover, allowing more aggressive cancer cells to take over."**

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**Some 600,000 cases of breast and colorectal cancers could be prevented each year if vitamin D levels among populations worldwide were increased, according to previous research by Dr. Garland and colleagues.**

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**Optimizing your vitamin D levels could help you to prevent at least 16 different types of cancer including pancreatic, lung, ovarian, prostate, and skin cancers.**

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**A large-scale, randomized, placebo-controlled study on vitamin D and cancer showed that vitamin D can cut overall cancer risk by as much as 60 percent. This was such ground breaking news that the Canadian Cancer Society has actually begun endorsing the vitamin as a cancer-prevention therapy.**

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**Light-skinned women who had high amounts of long-term sun exposure had half the risk of developing advanced breast cancer (cancer that spreads beyond your breast) as women with lower amounts of regular sun exposure, according to a study in the American Journal of Epidemiology.**

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**A study by Dr. William Grant, Ph.D., internationally recognized research scientist and vitamin D expert, found that about 30 percent of cancer deaths -- which amounts to 2 million worldwide and 200,000 in the United States -- could be prevented each year with higher levels of vitamin D.**

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**Some health practitioners recommend 4000 to as much as 10,000 IU a day on an on going basis. And some recommend 50,000 units a day for short periods of time like when your are fighting cancer.**

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**Vitamin D is a fat-soluble secosteroid responsible for intestinal absorption of calcium and phosphate. Vitamin D is unique because it can be ingested as cholecalciferol (vitamin D<sub>3</sub>) or ergocalciferol (vitamin D<sub>2</sub>) and because the body can also synthesize it (from cholesterol) when sun exposure is adequate.**

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**Vitamin D increases intestinal absorption of Ca.**

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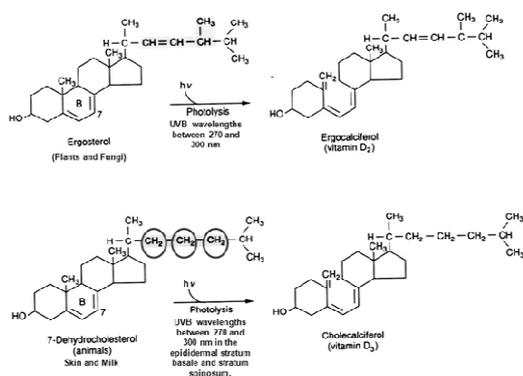
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Synthesis of pre-vitamin D<sub>3</sub> in the skin involves UVB radiation which effectively penetrates only the epidermal layers of skin. 7-Dehydrocholesterol absorbs UV light most effectively at wavelengths between 290-320nm and thus the production of vitamin D<sub>3</sub> will only occur at those wavelengths. The two most important factors that govern the generation of pre-vitamin D<sub>3</sub> are the quantity (intensity) and quality (appropriate wavelength) of the UVB irradiation reaching the 7-dehydrocholesterol deep in the stratum basale and stratum spinosum.<sup>1</sup>

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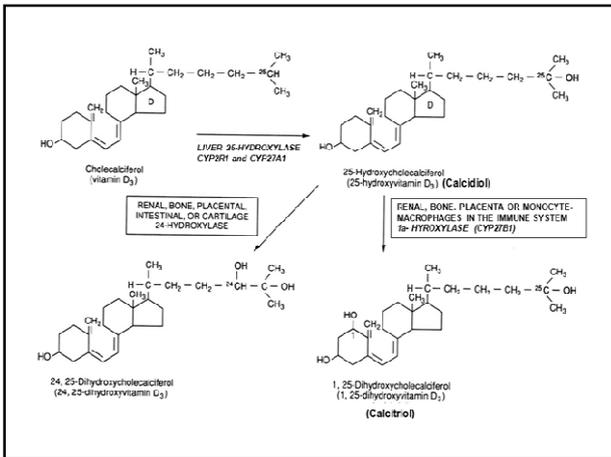
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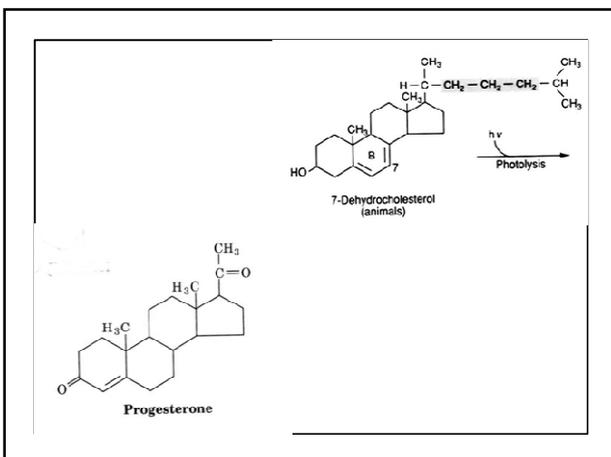
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**Vitamin D function**

**Calcitriol is transported by Vitamin D binding protein (VDBP). It binds to the Vitamin D receptor (VDR) in nuclear membrane of target tissues including brain, heart, gonads, prostate and breast.**

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**The binding of calcitriol to the VDR allows the VDR to act as a transcription factor that modulates the gene expression of transport proteins (such as TRPV6 and calbindin), which are involved in calcium absorption in the intestine.**

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**VDR activation in the intestine, bone, kidney, and parathyroid gland cells leads to the maintenance of calcium and phosphorus levels in the blood (with the assistance of parathyroid hormone and calcitonin) and to the maintenance of bone content.**

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**One of the most important roles of vitamin D is to maintain skeletal calcium balance by promoting calcium absorption in the intestines, promoting bone resorption by increasing osteoclast number, maintaining calcium and phosphate levels for bone formation, and allowing proper functioning of parathyroid**

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**hormone to maintain serum calcium levels. Vitamin D deficiency can result in lower bone mineral density and an increased risk of reduced bone density (osteoporosis) or bone fracture because a lack of vitamin D alters mineral metabolism in the body.**

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**Thus, although it may initially appear paradoxical, vitamin D is critical for proper bone formation despite its role as a potent stimulator of bone resorption.**

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**Vitamin D increases expression of the tyrosine hydroxylase gene in adrenal medullary cells to synthesise L.DOPA. Dopamine and Noradrenalin.**

**Probably also tryptophan hydroxylase to synthesise serotonin and melatonin levels.**

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**It also is involved in the biosynthesis of neurotrophic factors, synthesis of nitric oxide synthase, and increased glutathione levels.**

**Calcidiol is also converted to calcitriol outside of the kidneys for other purposes, such as the proliferation, differentiation and apoptosis of cells.**

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**Vitamin D also affects the immune system, and VDRs are expressed in several white blood cells, including monocytes and activated T and B cells.**

**When synthesized by monocyte-macrophages, calcitriol acts locally as a cytokine, defending the body against microbial invaders.**

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**Health benefits**  
**Cancer**  
**Cardiovascular disease**  
**Hypertension**  
**Diabetes**  
**Mortality**  
**Bone health**  
**Multiple sclerosis**  
**Immune system**  
**Muscle function**  
**Inflammatory response**

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**Vitamin D food sources**  
**Plant – UV exposed mushrooms**  
**UV exposed yeast**  
**Alfalfa**  
**Animal – Fish liver oil**  
**Fatty fish**  
**Whole egg**  
**Beef liver**  
**Sun - 10,000 to 20,000 IU of**  
**vitamin D are produced in 30**  
**minutes of whole-body exposure.**

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**Vitamin D EU RDA**  
**The recommended daily amount**  
**for vitamin D in the European**  
**Union is 5 µg (200 IU).**  
**The European Menopause and Andropause**  
**Society (EMAS) recommended 15 µg (600**  
**IU) until age 70, and 20 µg (800 IU) in older**  
**than 71 years, in postmenopausal women.**  
**This dose should be increased up to 4,000**  
**IU/day in some patients with very low**  
**vitamin D status or in case of co-morbid**  
**conditions.**

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**Epigenetics Vitamin D3 in Organic Hemp oil**

**1 drop delivers 2.5mcg (100 IU)  
= 50% EURDA**

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**Zinc**

**Poly (ADP-ribose) polymerase (PARP) is a family of proteins involved in a number of cellular processes involving mainly DNA repair and programmed cell death.**

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**PARP is composed of four domains of interest: a DNA-binding domain, a caspase-cleaved domain(see below), an auto-modification domain, and a catalytic domain. The DNA-binding domain is composed of two zinc finger motifs.**

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**It is interesting to note that NAD<sup>+</sup> is required as substrate for generating ADP-ribose monomers. PARP is synthesized using nicotinamide as the leaving group. PARP also has the ability to induce programmed cell death, via the production of PAR, which stimulates mitochondria to release Apoptosis Inducing Factor (AIF)**

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**Apoptosis Inducing Factor (AIF) is a FAD protein that triggers chromatin condensation and DNA degradation in a cell in order to induce programmed cell death. The mitochondrial AIF protein was found to be a caspase-independent death effector that can allow independent nuclei to undergo apoptotic changes.**

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**The process triggering apoptosis starts when the mitochondria releases AIF, which exits through the mitochondrial membrane, enters the cytosol, and finally ends up in the cell nucleus where it signals the cell to condense its chromosomes and fragment its DNA molecules in order to prepare for cell death.**

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**Isozymes**

**Human genes encoding apoptosis inducing factor isozymes are:**

**AIFM1**

**AIFM2**

**AIFM3**

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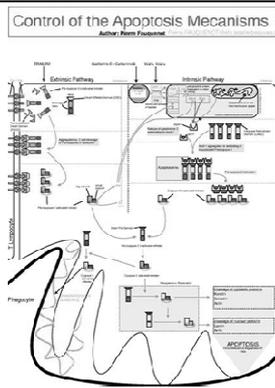
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**Researchers reported that in laboratory and animal studies where CoQ10 was delivered to cancer cells and tissues, it induced apoptosis, which is the normal programmed cell death that goes awry in the disease process.**

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**Melatonin can kill directly many different types of tumour cells. It is a naturally produced cytotoxin, which can induce tumour cell death (apoptosis). In instances where the tumour has already established itself in the body, melatonin has been shown to inhibit the tumour's growth rate.**

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**Tumour Markers**

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**Tumour markers are substances found in the blood, urine, stool, other bodily fluids, or tissues of some patients with cancer.**  
**Tumour markers may be used to help diagnose cancer, predict a patient's response to certain cancer therapies, check a patient's response to treatment, or determine whether cancer has returned.**  
**More than 20 tumour markers are currently in use.**

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**Tumour markers are substances that are produced by cancer or by other cells of the body in response to cancer or certain benign (noncancerous) conditions. Most tumour markers are made by normal cells as well as by cancer cells; however, they are produced at much higher levels in cancerous conditions.**

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TGF- $\alpha$  Transforming Growth factor alpha  
TGF- $\beta$  Transforming Growth Factor beta  
IGF Insulin like Growth factor  
FGF Fibrocytic Growth factor  
PSA Prostate Specific Antigen  
cAMP cyclic Adenosine triphosphate  
cGMP cyclic Guanosine triphosphate  
NGF Neural Growth Factor  
CEA Carcinoembryonic antigen  
EGF Epidermal Growth Factor  
OPT Orthophospho Tyrosine  
PDGF Platelet Derived Growth Factor

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**Therapeutic options**

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**Overcoming cancer is a process of reversing the conditions that allowed the cancer to develop, and going after and killing cancerous cells and stimulating apoptosis.**

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- Step 1 – Healing the Root Emotional Cause of Cancer**
- Step 2 – Eliminating all Inner and Outer Stress**
- Step 3 – Reducing Stress Hormone Cortisol Levels**
- Step 4 – Increasing Melatonin Levels**
- Step 5 – Boosting / Supporting the Immune System**
- Step 6 – Cleansing the Body of the Cancer Fungus Microbe**
- Step 7 – Detoxifying the Body**
- Step 8 – Cancer Nutrition and Re-Alkalizing the Body's pH**
- Step 9 – Overcoming the Subconscious Death Wish**
- Step 10 – Connecting to God / Accepting Divine Healing**
- Step 11 – Choosing an Alternative Cancer Treatment**

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**Step 1 – Healing the Root Emotional Cause of Cancer**  
**Every person diagnosed with cancer has a tendency to suppress emotional pain throughout their life, yet it is a single trigger event that has occurred approximately 2 years prior to the diagnosis of cancer that has caused cancer to develop.**

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This trigger event is akin to the straw that breaks the camels back and causes the body's natural homestasis or endocrine hormonal system to become out of balance at the cell-level. Every different type of cancer has a very specific psycho-emotional conflict that has caused cancer in that region of the body to develop.

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**ADRENAL CORTEX:** Wrong Direction. Gone Astray  
**BLADDER:** Ugly Conflict. Dirty Tricks  
**BONE:** Lack of Self Worth. Inferiority Feeling  
**BRAIN TUMOR:** Stubboness. Refusing to Change Old Patterns.  
Mental Frustration  
**BREAST MILK GLAND:** Involving Care or Disharmony  
**BREAST MILD DUCT:** Separation Conflict  
**BREAST LEFT:** Conflict concerning Child, Home or Mother  
**BREAST RIGHT:** Conflict with Partner or Others  
**BRONCHIOLES:** Territorial Conflict  
**CERVIX:** Severe Frustration  
**COLON:** Ugly Indigestible Conflict  
**ESOPHAGUS:** Cannot Have It or Swallow It  
**GALL BLADDER:** Rivalry Conflict  
**HEART:** Perpetual Conflict  
**INTESTINES:** Indigestible Chunk of Anger  
**KIDNEYS:** Not wanting to Live. Water of Fluid Conflict

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**LARYNX:** Conflict of Fear and Fright  
**LIVER:** Fear of Starvation  
**LUNGS:** Fear of Dying or Suffocation, including Fear for Someone Else  
**LYMPH GLANDS:** Loss of Self-Worth associated with the Location  
**MELANOMA:** Feeling Dirty, Soiled, Defiled  
**MIDDLE EAR:** Not being able to get some Vital Information  
**MOUTH:** Cannot Chew It or Hold It  
**PANCREAS:** Anxiety-Anger Conflict with Family Members. Inheritance  
**PROSTATE:** Ugly Conflict with Sexual Connections or Connotations  
**RECTUM:** Fear of Being Useless  
**SKIN:** Loss of Integrity  
**SPLEEN:** Shock of being Physically or Emotionally Wounded  
**STOMACH:** Indigestible Anger. Swallowed Too Much  
**TESTES / OVARIES:** Loss Conflict  
**THYROID:** Feeling Powerless  
**TUMOR (IN LOCATION):** Nursing Old Hurts and Shocks. Building Remorse  
**UTERUS:** Sexual Conflict

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**Cancer can only exist in the presence of unhealed emotional pain. This suppressed emotional pain presents as "severe internal stress" and fuels the daily growth of new cancer in the body. Healing emotional pain is the most CRITICAL step in recovering from cancer and is the first step in the 11 Step Cancer Survivor Program.**

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**The following three tools are most useful –**

- 1. Psychological reversal to "I am loved"**
- 2. Emotional Freedom Technique**
- 3. Aromatherapy using VEP spray containing Sage, Bergamot, Ylang Ylang, Geranium and Petit grain**

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**Step 2 – Eliminating all Inner and Outer Stress**

**Step 2 of the 11 Step Cancer Survivor Program is to remove all things in your life that cause you stress, which feeds cancer at the cell level by causing a depletion of adrenaline.**

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**ALL stress should be avoided, without exception. According to Lothar Hirneise, world-renowned cancer researcher, 100% of all late stage 'miracle' cancer survivors of the hundreds he interviewed had all made considerable **SYSTEMS CHANGE**.**

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**This means they had all either left a highly stressful job or finished work altogether, ended relationships that are highly stressful, toxic or depressing, relocated house from a place of stress to a peaceful environment etc, all for the purpose of removing **ALL** stress from their lives.**

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**The state of mind that creates inner healing is **ACCEPTANCE**. You must "change your mind" and reach a point of acceptance that your illness has come into your life temporarily to help you balance and heal your emotions, and restore inner equilibrium.  
Use Emotional Freedom Technique or other energy psychology methods**

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**Step 3 – Reducing Stress Hormone Cortisol Levels**

**Finding additional ways to remove / reduce stress inside your PHYSICAL body will help to calm the autonomic nervous system and lower stress hormone cortisol levels that have been proven to suppress immune system function.**

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**Those with cancer have abnormally high levels of the stress hormone cortisol. Regular aromatherapy massage, yoga, tai chi, meditation, relaxation techniques and laughter, will all help to lower stress hormone cortisol levels. A daily regime of one or two of these relaxation techniques should be a minimum requirement for those recovering from cancer.**

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**Step 4 – Increasing Melatonin Levels**  
**Those with cancer have abnormally low levels of melatonin, a hormone produced by the pituitary gland of the brain during deep uninterrupted sleep. As a result of chronic internal stress, those who develop cancer have difficulty sleeping well, and thus are unable to produce enough melatonin.**

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**This is important because melatonin is the hormone responsible for inhibiting cancer cell growth and for regulating the immune system. Daily meditation has been shown in studies to significantly increase melatonin levels.**

**Consider taking Asphalia – natural melatonin from wheat and barley grass.**

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**Step 5 – Boosting / Supporting the Immune System**

**High stress cortisol levels, parasites, pathogenic microbes (viruses, bacteria, fungus), chemotherapy and radiation all significantly weaken the immune system, whose job it is to keep the body healthy and to destroy cancer cells and other harmful pathogens in the body.**

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**High Dose Vitamin C Therapy can be used for this purpose and should whenever possible, be used PRIOR to chemotherapy and radiation. Best with alpha lipoic acid.**

**Fever Therapy**

**Lemon Juice Therapy**

**Apple cider vinegar**

**Vitamin D**

**Vitamin A**

**Vitamin B3**

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**Step 6 – Cleansing the Body of the Cancer Fungus Microbe**  
Prolonged stress suppresses the immune system. When the immune system is suppressed, somatids (tiny healthy organisms necessary for life that live in our body and our blood) - pleomorphise (change) from harmless (spore like forms) to harmful viral-bacterial-yeast-like-fungus forms.

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Cancer cannot exist without these viral-bacterial-yeast-like fungus that: a) breaks the cell's oxygen Krebs cycle, causing normal cells to mutate into cancer cells, and b) ferments the glucose in cancer cells, providing a natural growth factor for cancer cells and tumours to grow within the body.

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**Garlic**  
**Apple cider vinegar**  
**Lemon juice**  
**Castor oil**  
**Coconut oil**

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**Step 7 – Detoxifying the Body**  
**Toxins include “mycotoxins” or acidic waste products caused by:**  
**1) microbe and parasite secretions,**  
**2) a poor diet,**  
**3) chemicals, alcohol, tobacco,**  
**4) antibiotics,**  
**5) chemotherapy agents**

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**6) fermentation of stress hormones,**  
**7) poor exercise regime causing build up of lactic acid,**  
**8) dead microbes and parasites, and**  
**9) dead cancer cells.**

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**These toxins build up primarily in the liver – the master immune system organ. When the liver is overloaded with these toxins, the immune system is weakened, you feel sicker, and cancer and virus-bacteria-fungus thrives.**

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We recommend to include one protocol for detoxing the liver and colon on a regular basis. See: Liver-Colon Cleanse. Ozonated Water should be strongly considered by those without lung cancer or lung conditions for it is a superb body detoxifier.

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Colon cleansing will usually include psyllium, internal cleansing herbs and other natural colon cleansing products. When detoxifying the colon, it is also important to incorporate probiotics in your diet to replenish your intestinal flora.

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**New Epigenetics Colon Cleanse**  
Organic psyllium husk  
Organic rice bran  
Nettle root  
Bentonite clay

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**Step 8 – Cancer Nutrition and Re-Alkalizing the Body's pH**  
Cleansing the body from the inside out also means making sure whatever you put in your body from now on is free from toxins. It is **PARAMOUNT** - to change your diet to one rich in anti-cancer foods.

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These are foods whose compounds have been proven in studies to fight and kill cancer cells in the body. It is also essential to have a strategy to re-alkalise the body's cells to a pH of 7.0 or greater. Cancer cells can only survive in a low-pH environment, and this is why nearly all those with cancer have a low pH of between 4.0 - 6.5pH.

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As cancer cells find it difficult to survive in a high pH alkaline environment and cannot survive in a pH environment of 8.0 or greater, it is therefore essential to include a 3-step protocol to restore correct cell pH.

Alkaline tissue holds 20 times more oxygen than does acidic tissue and this oxygen rich environment prevents further cancer cell growth.

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**It is essential for the cancer survivor to eat 80% of alkaline foods (minimum) and 20% only neutral foods. Lemons, Watermelon, Figs are extremely alkaline and raw fruit and vegetables especially are very alkaline forming.**

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**Alkalizing Foods and Drinks**

**Vegetables:** Alfalfa, Barley Grass, Beetroot, Beet Greens, Broccoli, Cabbage Carrot, Cauliflower, Celery, Chard Greens, Chlorella, Collard Greens, Cucumber, Dandelions, Dulce, Edible Flowers, Eggplant, Fermented Veggies, Garlic, Green Beans, Green Peas, Kale, Kohlrabi, Lettuce, Mushrooms, Mustard Greens, Nightshade Veggies, Onions, Parsnips, Peas, Peppers, Pumpkin, Radish, Rutabaga, Sea Veggies, Spinach, Spirulina, Sprouts, Sweet Potatoes, Tomatoes, Watercress, Wheatgrass, Wild Greens.

**Fruits:** Apple, Apricot, Avocado, Banana, Berries, Blackberries, Cantaloupe, Cherries, Coconut, Currants, Dates, Figs, Grapes, Grapefruit, Honeydew Melon, Lemon, Lime, Muskmelons, Nectarine, Orange, Peach, Pear, Pineapple, Raspberries, Raisin, Rhubarb, Strawberries, Tangerine, Tomato, Tropical Fruits, Watermelon.

**Other:** Almonds, Chestnuts, Millet, Tempeh, Tofu, Whey, Cinnamon, Curry, Ginger, Mustard, Chili Pepper, Sea Salt, Miso, Tamari, All Herbs, Apple Cider Vinegar, Bee Pollen, Lecithin, Molasses, Probiotics, Soured Dairy Products, Green Juices, Veggie Juices, Fresh Fruit Juice, Mineral Water, Cesium: pH14, Potassium: pH14, Sodium: pH14, Calcium: pH12.

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**Neutral Foods and Drinks**

Butter, Cheese, Honey, Eggs, Potatoes, Oils, Beans, Soy Milk, Corn, Lentils, Olives, Winter Squash, Blueberries, Cranberries, Plums, Prunes, Amaranth, Barley, Wheat Bran, Oat Bran, Cornstarch, Hemp Seed Flour, Kamut, Rolled Oats, Oatmeal, Quinoa, All Rice, Rice Cakes, Rye, Spelt, Wheat, Wheatgerm, Noodles, Macaroni, Spaghetti, Wheat Flour, Black Beans, Chick Peas, Kidney Beans, Red Beans, Lentils, Pinto Beans, Soy Beans, White Beans, Almond, Soy & Rice Milk.

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**Highly Acidic Foods and Drinks**

**Dairy/Fats/Meats/Fish:** Ice Cream, Ice Milk, Cashews, Peanuts, Peanut Butter, Pecans, Tahini, Walnuts, Bacon, Beef, Carp, Clams, Cod, Corned Beef, Fish, Haddock, Lamb, Lobster, Mussels, Organ Meats, Oysters, Pike, Pork, Rabbit, Salmon, Sardines, Sausage, Scallops, Shrimp, Shellfish, Tuna, Turkey, Veal, Venison.

**Other:** Sugar, Artificial Sweeteners, Brown Sugar, White Flour, Breads, Canned or Glazed Fruits, Pastries, Refined Cereals, Chocolate, Custard, Jams, Pasta White, Pickles, Seafood, Table Salt, Yogurt, Corn Syrup, Alcohol, Cocoa, Coffee, Vinegar, Mustard, Pepper, Soft Drinks, Aspirin, Chemicals, Tobacco, Coco-Cola, Beer, Coffee.

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**Epigenetics Immune Formula**

**Citrated Ionic Silver +  
Citrated Vitamin B1 (Thiamine)**

**Usually 15 squirts once a day  
before breakfast**

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**Vitamin C + a-Lipoic acid (450mg + 50mg)**

**a-Lipoic acid is a co-enzyme and an antioxidant. alpha Lipoic acid is unique in that it functions in water and fat, and it appears to be able to recycle Vitamin C and Glutathione after they have been used up. It increases the formation of glutathione.**

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**Vitamin A**

**Get plenty of natural vitamin A. There is evidence that vitamin A also plays a role in helping prevent breast cancer.**

**The best sources are organic turkey and chicken liver, organic egg yolks, raw butter, raw whole milk, and organic beef liver.**

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**Step 9 – Overcoming the Subconscious Death Wish**

**All late stage cancer survivors have a strong inner belief they can beat their cancer and overcome it. This is because all cancer begins with a subconscious wanting to die, and if this can be reversed, then the patient will survive.**

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**A strong will to live sends direct messages to the immune system to re-activate and destroy cancer cells in the body. Those who feel cancer has beat them, or who feel tired of life and have lost their joy for life, in other words have lost their will to live, send subconscious messages to their immune system to shut down and stop working.**

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**It is important to understand that cancer is only a warning that you have momentarily lost your will to live and that you can at any time regain it.**

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**Guided imagery is used to empower you to re-activate your immune system, and to help you visualize a new life filled with joy and with purpose. It is also important to learn to reconnect to your Higher Spiritual Self, the part of you connected with God. Only when you do this can you rediscover your spiritual self and feel truly alive.**

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**Step 10 – Connecting to God / Accepting Divine Healing  
Those who have faith in God to heal them have a much higher rate of survival according to many cancer studies. Prayer is a calling to God that you want to live, and this helps overcome the subconscious death wish mentioned above.**

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**The Lord’s Prayer said out loud daily - preferably in Aramaic or Latin - are the most effective late stage cancer treatment.**

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<b>The Lords Prayer in Latin</b>	<b>The Lords Prayer in Aramaic</b>
Pater noster qui es in Caelis;	Abwoon d'bashmaya
Sanctificetur nomen tuum	Netqaddash shmak
Adveniat regnum tuum	Teete malkutah
Fiat voluntas tua	Nehvvey tzevyannach aykanna
Sicut in Caelo, et in Terra.	d'bashmaya aph b'arha
Panem nostrum quotidianum	Havlän lahma d'sunqananan
da nobis hodie	yaomana
Et dimmite nobis debita	Washbwoqlan haubvayn aykana
nostra	daph hnan shbvoqan
Sicut et nos dimittimus	l'hayyabayn
debitoribus nostris.	Wela tahlan le'ynesuyuna. Ela
Et ne nos inducas in	patzan min bisha
tentationem,	Metul dilakhe malkuta wahayla
Sed libera nos a malo.	wateshbuhta l'ahlam almin
	Amen

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**Step 11 – Choosing an Alternative Cancer Treatment**  
**The final step of the 11 Step Cancer Survivor Program is to choose at least one alternative cancer treatment that feels right for you. In most cases you should only need to choose one treatment in addition to the above steps of the 11 Step Cancer Survivor Program.**

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We highly recommend that your alternative cancer treatment include at least one dietary cancer treatment such as the Johanna Budwig Diet, the Gerson Therapy Diet, the Bill Henderson Diet Protocol (which is based on the Budwig Diet) or the Brandt Grape Cure (if you are up to it). Also the new Ketogenic diet.

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**Diets**

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**Rainbow diet**  
Resveratrol from grape skins, polyphenols in olive oil, allicin in garlic, ellagic acid in berries, quercetin in onions and apples, vitamin K and indole-3-carbinol released by beneficial bacteria from greens and broccoli, anthocyanidins from deep purple foods like beetroot and figs and so many, many more, that when combined by eating different ones across a few days can make a significant contribution to defeating the process that is called cancer.

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**Johanna Budwig Diet**  
Dr. Budwig found that by combining flaxseed oil with the sulphurated amino acids found in cottage cheese – the flaxseed oil would become water-soluble, and immediately available for use by the body’s cells. Cottage cheese contains sulphur for detoxification and L. Lactic acid

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**The Gerson Therapy – Cancer Diet**

The Gerson Therapy is a safe, natural treatment developed by Dr. Max Gerson in the 1920’s that uses organic foods, juicing, coffee enemas, detoxification and natural supplements to activate the body’s ability to heal itself. According to the Gerson Institute, “Over the past 60 years, thousands of people have used the Gerson Therapy to recover from so-called “incurable” diseases such as cancer, diabetes, heart disease and arthritis.”

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**The Brandt Grape Cure**

The original Brandt Grape Cure diet, developed by Johanna Brandt in the 1920’s, involves 12 hours of fasting every day, followed by 12 hours where you consume absolutely nothing except grapes (and/or grape juice). Purple (Concord) grapes (with their skin and seeds), contain several nutrients that are known to kill cancer cells.

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**The New Ketogenic Diet**

**Many cancer patients have reportedly overcome the disease by adopting a ketogenic diet, which calls for eliminating carbohydrates, replacing them with healthy fats and protein**

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**Animal studies have shown that mice fed a carb-free diet survived highly aggressive metastatic cancer even better than those treated with chemotherapy.**

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**Your normal cells have the metabolic flexibility to adapt from using glucose to using ketone bodies. Cancer cells lack this metabolic flexibility, so when you eliminate carbs, which turn into sugar, you effectively starve the cancer.**

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**Provocative question**

**Is cancer a nuclear genetic disease or a mitochondrial metabolic disease?**

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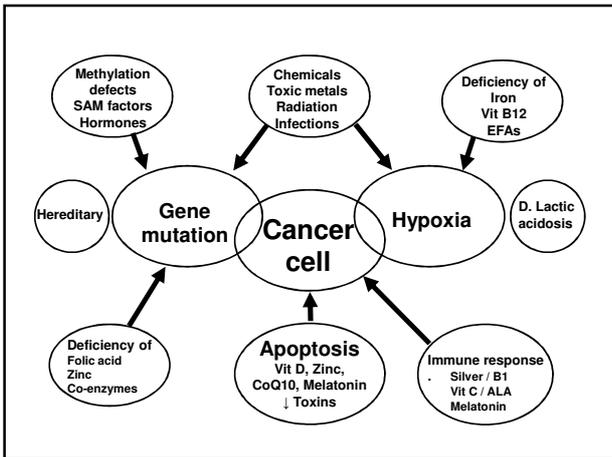
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**Always choose a diet you enjoy, as it is important that everything you do in your life bring you joy, not misery.**

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