



Understanding Cancer

Using the Nutritional Toolbox to prevent, inhibit and support conventional therapies

Peter Brodhead CN, ETMS.

What is Cancer ?

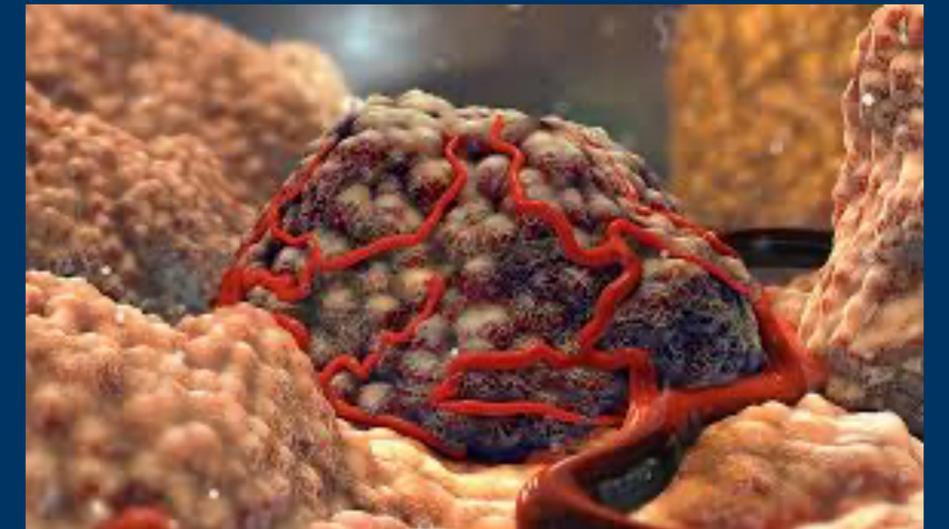


It is a disease in which some of the body's cells grow uncontrollably and spread to other parts of the body

When the orderly process of the body breaks down, cell division and apoptosis (cell death) gets out of control - damaged cells grow and multiply. These cells may form tumors

Cancerous tumors spread into, or invade, nearby tissues and can travel to distant places in the body to form new tumors (metastasis) They also can be called malignant tumors.

Cancer grows in the absence of signals telling them to grow - they ignore signals that tell them to stop dividing or to die (apoptosis). They tell blood vessels to grow toward the tumor. The blood vessels feed the tumor.



Cancer cells hide from the immune system so the immune system can't eliminate them

Damage to DNA can initiate the formation of cancer cells. The body can normally eliminate damaged DNA But as we age our ability to do so diminishes this is why cancer is more common in older people.

Proto - oncogenes are involved in normal cell growth and division when these get altered they may become cancer - causing genes or (oncogenes) allowing cells to grow and survive when they should not.

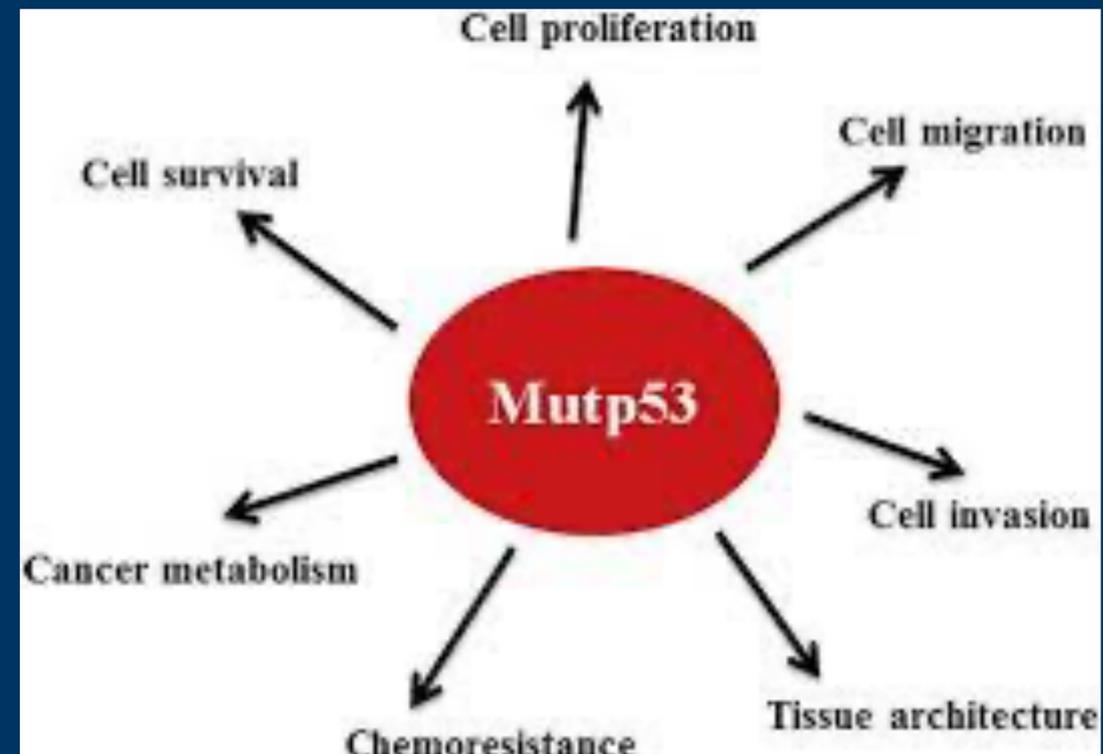
Tumor suppressor genes are involved in controlling cell growth and division -

The p.53 gene is the most common genetic mutation that occurs in human cancers. It is often called the **Guardian of the genome**. 70% of Colon, 50% of Breast and Ovarian, 50% of Lung cancers and most Prostate Cancers have a p.53 mutation.

Healthy p.53 is called "**Wild Type p.53**" - the goal is to have plenty of wild type p.53 in your genome.

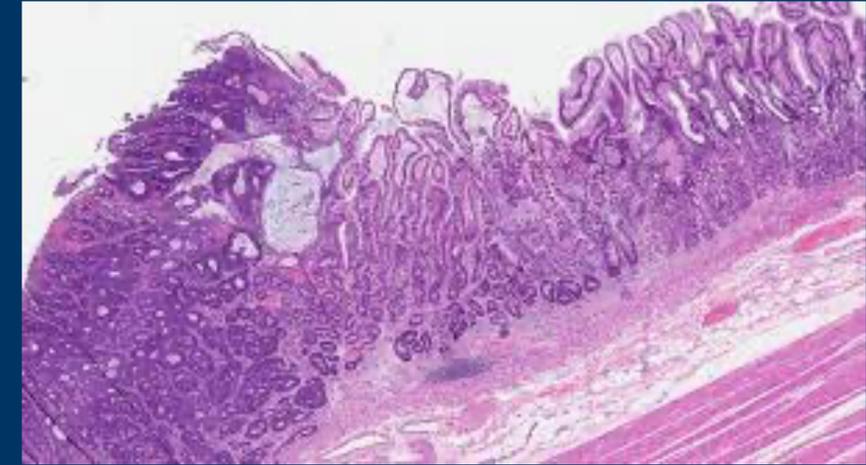
p.21 and p.27 are important gene-proteins involved in maintaining and regulating cell behavior. Loss of expressions of these genes activates many cancers to grow. Up regulating these genes are important in inhibiting the development and growth of cancer.

DNA repair genes are involved in fixing damaged DNA



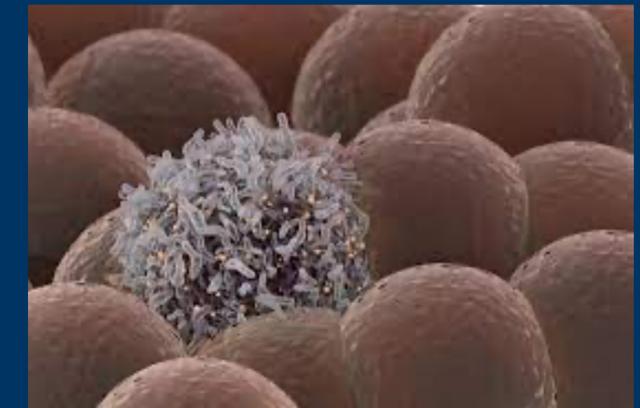
Types of Cancer

Carcinoma - The most common type of cancer - formed by epithelial cells



Adenocarcinoma - forms in the epithelial cells that produce fluids and mucous - glandular tissues - such as Breast, Prostate, Colon

Basal Cell - skin cells - the outer layer of skin



Squamous cell - the epithelial cells just below the surface - such as the lining of organs - Bladder, lungs, stomach, intestines, kidneys.

Sarcoma - cancer that forms in the bone and soft tissue
Muscles, Fat, Lymph, Blood Vessels and fibrous tissue - ligaments and tendons
Osteocarcinoma is the most common one - bone cancer



More Types of Cancer

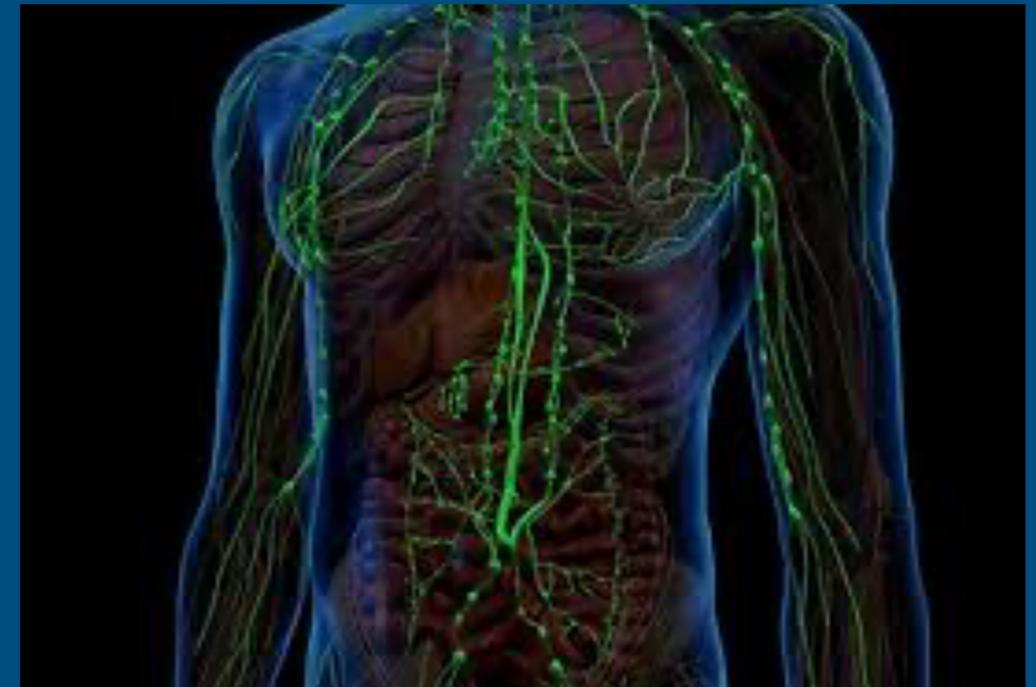
Leukemia - begins in the blood forming tissue - bone marrow. It crowds out normal blood cells
There are 2 basic forms Acute (rapid) and Chronic (slow growing)

Lymphoma - begins in the lymphocytes T-cells or B-cells
White blood cells Hodgkin and Non-Hodgkin are the main ones

Multiple Myeloma - begins in the plasma cells, another type of immune cell. The cells build up in the bone marrow and form tumors in the bones

Brain (Glioblastoma) and Spinal Cord - astrocytic star shaped brain cells - that keep nerve cells happy

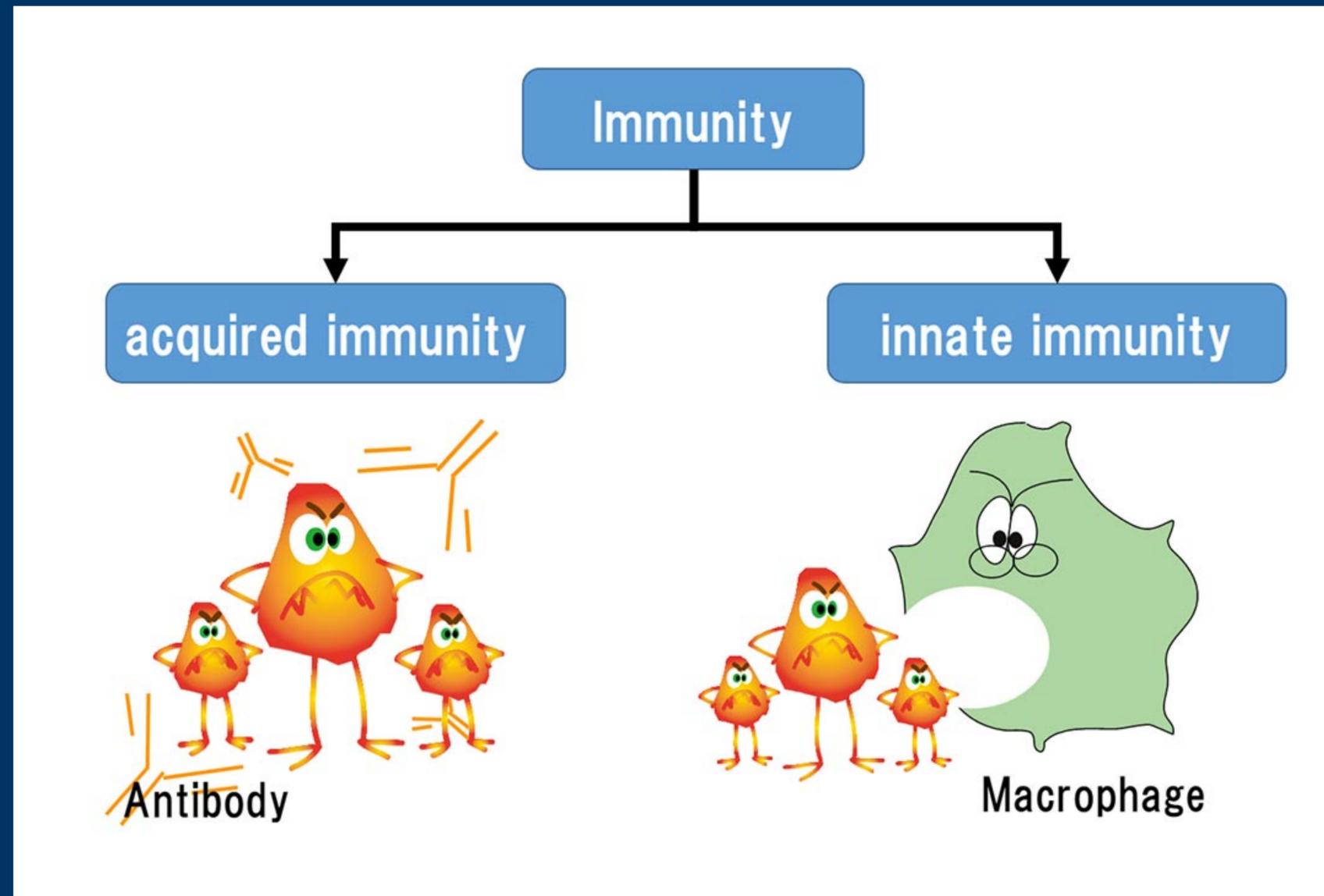
Other types of tumors - Germ Cell Tumors, Neuroendocrine, and Carcinoid



Innate Immunity and Adaptive (Acquired) Immunity

Innate - What we are born with

Adaptive - Learned immunity - chicken pox, measles, mumps - vaccines



Diet and Botanicals that influence the p.53 gene “Guardian of the Genome”

Foods that cause a mutation of the p.53 gene

The SAD diet - “Standard American Diet” - Fast food diet - high sugar - high fructose corn syrup sweetened foods.

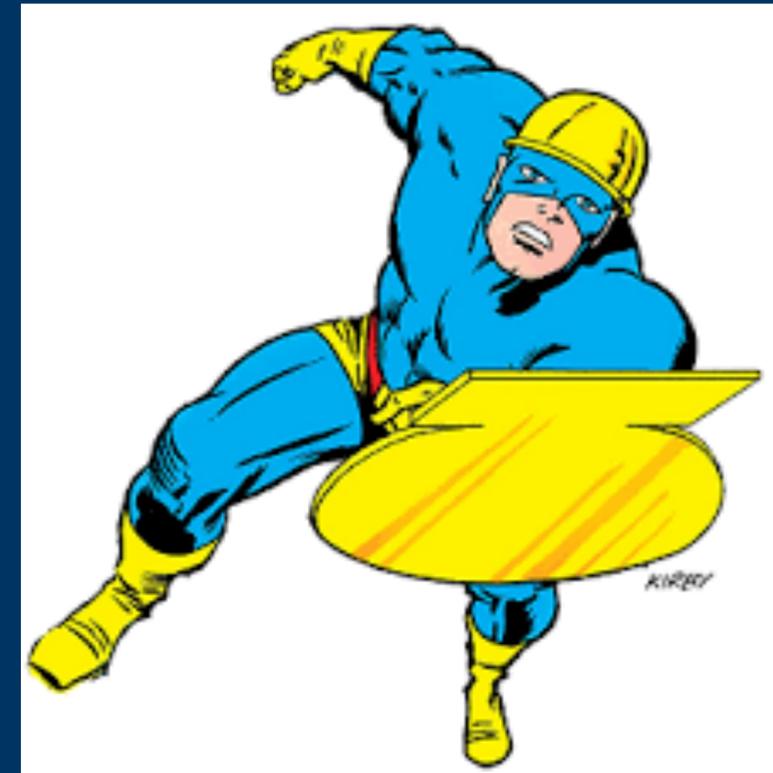
Non organic feed lot fed beef and pork and chicken

Soybean oil, corn oil excess omega 6 inflammatory fats - trans fats

Glyphosate sprayed foods - ie. Roundup - GMO.

Dirty dozen fruits and vegetables (non-organic)

White flour - refined packaged foods Processed Foods



Foods and Botanicals that support the restoration of the p.53 gene - a return to “wild type”

High polyphenol foods, deeply pigmented fruits, berries and vegetables, turmeric (Curcumin), Ginger, Resveratrol, Quercetin, Green Tea EGCG, Ashwaghandha, I3C - Indole 3 Carbinols - Sulforaphane - All Broccoli / Cabbage family vegetables, Apegenin family - Parsley, Celery family, Black Seed.

Ellagic Acid - Pomegranates, Raspberries, Vitamin D3, Melatonin, Folate, NAC - N-acetyl Cysteine
Coriolus Versicolor - Turkey Tail Mushroom, Vitamin E (succinate - dry vitamin E), DeltaTocotrienols

Other Genetic Factors that can be normalized with Diet and Supplements

Upregulating p.21 and p.27

Curcumin, Silymarin (Milk Thistle extracts), Grape Seed Extract - OPC's, Sulphoraphane, IP-6

PTEN - restoration - when this gene mutates cancers become more aggressive

Magnolia (Honokiol), Curcumin, Quercetin, Resveratrol, Isoflavones -
Soy, Fish Oils



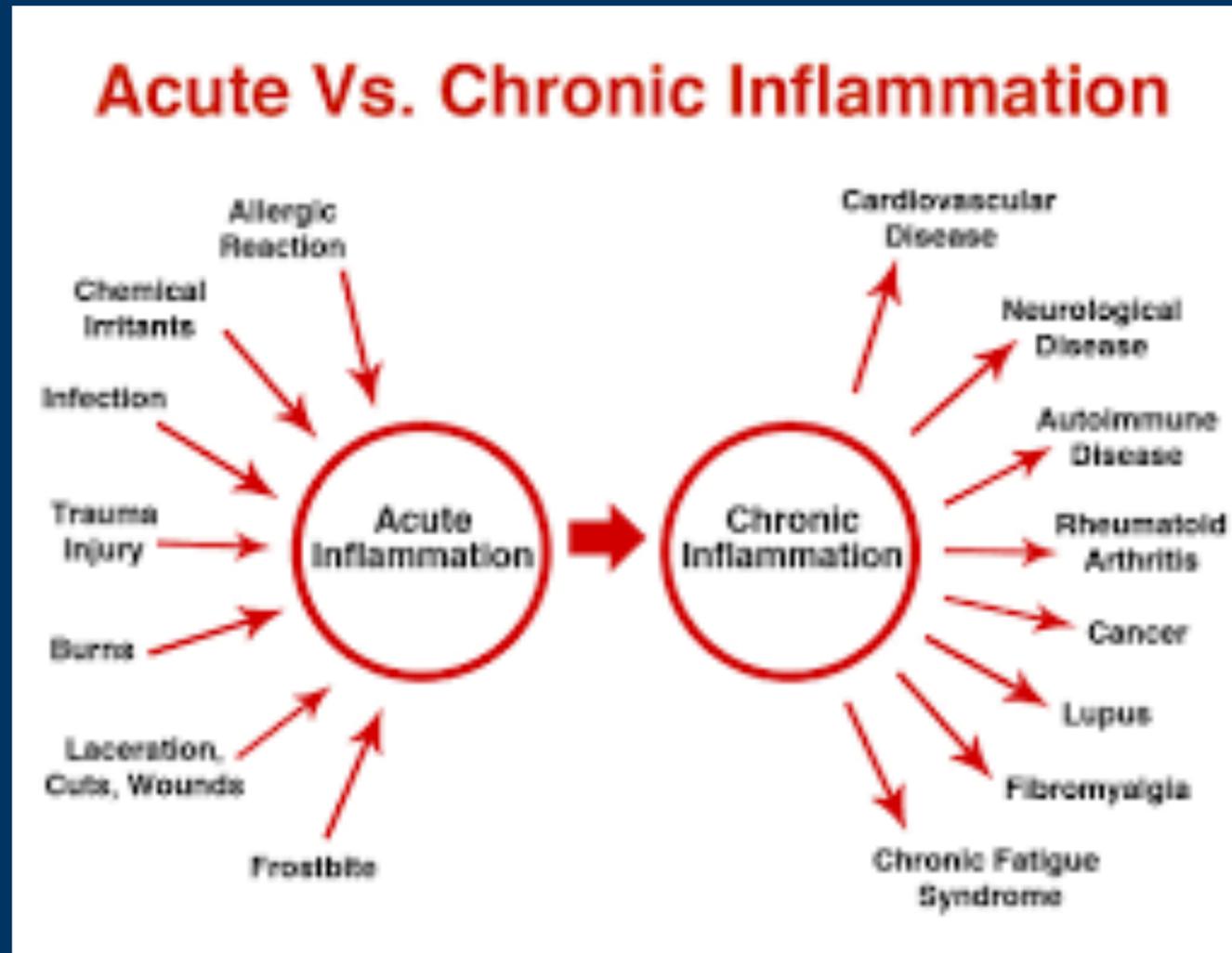
E Cadherin - inhibits the invasion and metastasis of tumors

Tangerines - tangeretin - a flavone found in tangerines, Curcumin, Omega 3 fatty acids,
GLA - Gamma Linolenic Acid - a fat found in primrose oil, hemp seed oil, borage oil.

NM-23 - Metastasis suppressor gene

Curcumin, Lycopene, Vitamin A, Melatonin, IP-6, Modified Citrus Pectin, Quercetin, Rutin, Kaempferol

NF - Kappa Beta - the master switch to inflammation



Nuclear Factor-kappa Beta (NF-kB) is a major inducer of inflammation. The inflammatory pathways COX-2 and LOX 5 & 12 are well known. NF-kB increases the survival of cancer cells and protects them from chemotherapy.

A wide variety of active phytochemicals inhibit NF-kB - flavonoids, terpenoids, lignins, sulfides, polyphenolics, carotenoids, coumarins, saponins, plant sterols, and curcuminoids.

Botanical compounds that inhibit NF-kB

Curcumin, Stilbenes - Resveratrol and Pterostilbene, Grape Seed proanthocyanidins, Green Tea - Epigallocatechin-3-gallate (EGCG), Parthenolide found in the herb Feverfew, Ginseng, Reishi Mushroom, Licorice Root, Ursolic Acid - Holy Basil and Rosemary, CAPE - found in bee Propolis, Betulinic acid found in Chaga Mushroom, DIM, I3C Both found in cruciferous vegetables, Magnolol - found in Magnolia Bark - Honokiol,

Other foods and spices that inhibit NF-kB

Almonds, anise, basil, black pepper, caraway, cardamom, cashews, chili pepper, cinnamon, clove, coriander, cumin, fennel, fenugreek, figs, flaxseed, garlic, ginger, gooseberry, holy basil, lemongrass, licorice, mango, mint, mustard seed, nutmeg, onion, oregano, parsley, pecans, pomegranate, prunes, rosemary, saffron, sesame seeds, tamarind, walnuts.

VEGF - Vascular Endothelial Growth Factor

Angiogenesis - Copper and Cancer

Angiogenesis is the development of a new network of blood vessels which can fuel tumor growth and invasion

Without angiogenesis - tumors remain small and dormant

Cancer patients have elevated levels of copper compared to healthy controls

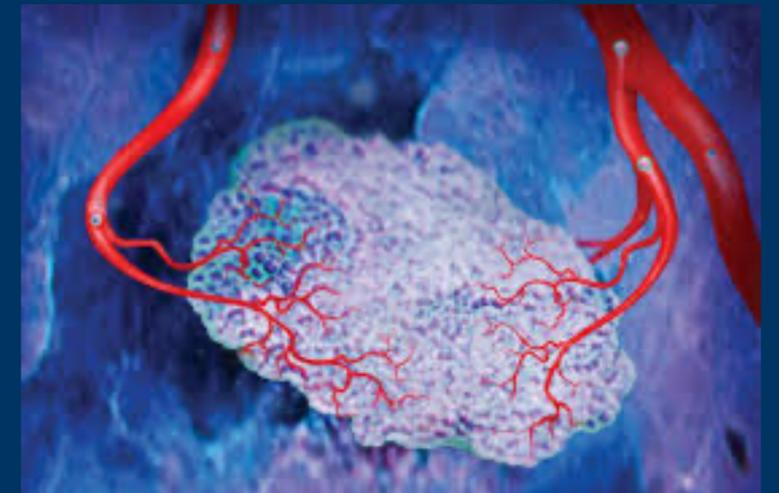
Serum copper correlates with tumor burden

Copper levels rise during active disease and fall to normal in remission

Zinc and Molybdenum are the 2 main minerals that lower copper in the body

Salvia Mithorriza - Chinese Red Sage - has very potent anti-VEGF effects.

VEGF Inhibitors - curcumin, green tea, boswellia, fish oils, grape seed extract, IP-6, ginseng, resveratrol, luteolin, milk thistle, ashwaghandha, selenium, soy genestein, hazelnuts (taxenes), cinnamon, black seed, reishi, chaga, quercetin, andrographis, chinese scullcap (baicalein), feverfew, salvia miltiorrhiza, bitter melon, gotu kola, magnolia (honokiol), albizia, St. John's Wort, astragalus, delta tocotrienols, olive leaf, olives, olive oil, pomegranate - Ellagic acid, fish oils.



Can we eat to starve cancer ?

Dr William Li MD

Foods that inhibit angiogenesis

Green Tea****
Strawberries
Blackberries
Raspberries
Blueberries
Oranges***
Grapefruit***
Lemons***
Apples
Pineapple
Cherries
Red Grapes
Red Wine
Brassica Family***
Bok Choy
Kale

Soy Beans
Ginseng
Maitake Mushroom
Licorice
Turmeric****
Nutmeg
Artichokes
Lavender***
Pumpkin
Sea Cucumber
Tuna
Parsley
Garlic
Tomato
Olive Oil
Grape Seed Oil
Dark Chocolate

Broccoli Stems have 2x more sulphorophane than tops
Broccoli Seed Sprouts have many more times
Mushroom Stems have more beta glucans than the tops

Bloodwork to consider

Omega Quant - this tests the amount of omega 3's and 6's in the blood very important info in knowing how much fish oil you need to supplement and how much Omega 6 fats to cut back - important for inflammation and Fibrinogen.

Fasting Insulin - elevated levels may indicate insulin resistance elevated Insulin can drive tumor growth. Uric acid testing

Hemoglobin A1c - average blood sugar levels for the past 120 days

hsCRP - inflammation marker, LDH - elevated levels can indicate tumor growth

Fibrinogen - a marker for "thickness of the blood" fibrin

Homocysteine - inflammation marker, liver detoxification - methylation marker

Vitamin D - 25OH D - the ideal number should be between 50 - 80 - Vitamin D is a regulating hormone

Ceruloplasmin - total copper, total zinc - excess copper can stimulate VEGF - blood vessel development to a tumor



Exercise and Cancer

Exercise is a polypill - for the body and the brain
150 to 180 minutes a week of moderate to vigorous aerobic exercise.

Exercise stalls cancer growth through activating the immune system
Exercise moves the lymphatic system where your immune system hangs out.

Exercise activates the cytotoxic T-cells to mobilize and improves their ability to attack cancer cells

Types of Exercise

1. Aerobic - 60 to 80% of your maximum heart rate
2. Strength Training
3. Skill based exercise - Neuro Motor Training



Mediterranean diet



Nutrient Dense - Colorful Foods

The more variety of colors the better

Each color has different carotenes, flavonoids and polyphenols

They all have anti-inflammatory effect

Lowering inflammation is the key to brain and body health.

Longevity and disease prevention

Inflammation is the driver of brain decline as well as glucose “blood sugar” control.

Small Fish, loads of colorful vegetables, berries, whole fruits (no fruit juice except pomegranate).

Kiwi fruit is a superstar ! Gluten free whole grains in smaller quantities. Avoid hybridized wheat.

Ancient varieties are better - Kamut, Spelt, Einkorn. If you eat pasta try gluten free or Italian grown wheat,

Lots of fermented foods. Avoid Oats that are not organic - Glyphosate ie. Roundup is sprayed on Wheat and Corn before it is harvested - Glyphosate is an anti-biotic and will damage your gut biome. Avoid GMO soy and corn - heavily sprayed with Roundup.

Eat Organic whenever possible - the EWG - Environmental Working Group has a list of the “Dirty Dozen” and the “Clean 15” - worst and best vegetable and fruits to eat that are non-organic www.EWG.org



Polyphenol Rich Foods

Are specific food for your biome
 Anti-inflammatory
 Anti-oxidant
 Cell Protective

Cloves are the #1 richest polyphenol food, Coffee, Tea - Green and Oolong, Cacao - Chocolate, Peppermint and Spearmint, Flax Seed Meal, Rosemary, Sage, Oregano, Olive Oil, Black Elderberry, Blueberry, Black Currant, Capers, Black Olive, Hazel Nut, Pecans, Plums, Basil, Curry Powder, Roasted Soynuts, Strawberry, Raspberry, Ginger, Prune, Shallots, Apple Cider Vinegar, Pomegranate Juice, Cinnamon, Black Bean, Walnut, Organic Oats, Pear, Carrot, Broccoli, Asparagus, Purple Sweet Potato, Blue Potato and many more.....

Table 1 Polyphenol and antioxidant content in the 100 richest foods (mg per 100 g or mg per 100 ml)

From: Identification of the 100 richest dietary sources of polyphenols: an application of the Phenol-Explorer database

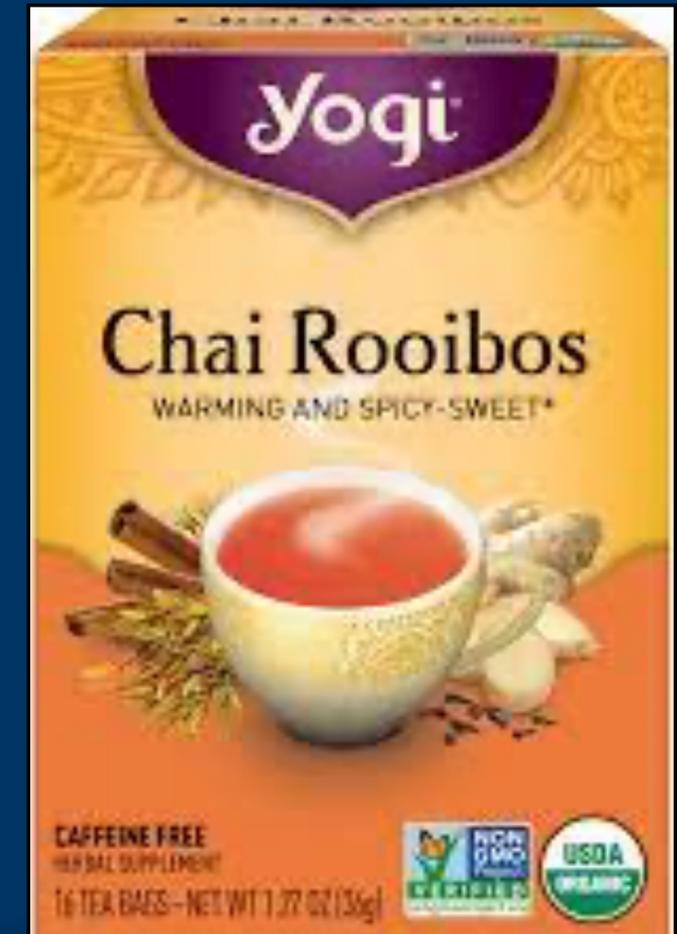
| Food | Food group | Polyphenols ^a | | Polyphenols AE ^a | | Antioxidants ^b | |
|------------------------|----------------|--------------------------|------|-----------------------------|------|---------------------------|------|
| | | Content | Rank | Content | Rank | Content | Rank |
| Cloves | Seasonings | 15188 | 1 | 15188 | 1 | 16047 | 1 |
| Peppermint, dried | Seasonings | 11960 | 2 | 7920 | 2 | 980 | 26 |
| Star anise | Seasonings | 5460 | 3 | 5460 | 3 | 1810 | 16 |
| Cocoa powder | Cocoa products | 3448 | 4 | 3294 | 4 | 1104 | 24 |
| Mexican oregano, dried | Seasonings | 2319 | 5 | 2137 | 5 | — | — |
| Celery seed | Seasonings | 2094 | 6 | 1007 | 10 | — | — |
| Black chokeberry | Fruits | 1756 | 7 | 1432 | 7 | 1752 | 17 |
| Dark chocolate | Cocoa products | 1664 | 8 | 1618 | 6 | 1860 | 13 |



Chai Tea is a great example of a polyphenol rich beverage
 Dark Chocolate 72% with Coffee !!!



Non - Caffeinated Chai Tea's



Lycopene and GAP junction

Lycopene is the red color found in tomatoes, red bell peppers, paprika, watermelon

Lycopene re-establishes cell to cell communication between cells

This communication system breaks down in cancer cells

Research has found a correlation between high lycopene consumption

And lower cancer rates of Breast, Prostate and Pancreatic cancer



Aromatase Inhibition and estrogen driven cancers

The aromatase enzyme converts DHEA and testosterone into estrogen
Belly fat is an indicator of estrogen dominance and in men its a sign of low testosterone and higher estrogen.

ER+ Breast cancer patients in particular need to include foods that inhibit this enzyme pathway

Grow your own Broccoli Sprouts
they are one of richest sources of Sulphorophane



Foods that inhibit the aromatase enzyme

Flax seed meal (Lignans), Genistein found in fermented soy - miso and tempeh,
All mushrooms - crimini, portabella, white button, shiitake -Always cook your mushrooms.
Chrysin a flavonoid found in carrots,, parsley, passion flower tea - great for sleep and anxiety and red clover

Probiotics and the Biome - Gut Health



The Gut Brain Connection

You have 100 trillion bacteria in the gut

Your bacteria are in the drivers seat and activating and regulating a massive amount of functions in the body
Including immunity

Massive Research is constantly discovering more about the biome

The newest generation of cancer treatment is using Immunotherapy - getting the immune system to destroy Cancer. Immunotherapy is far less effective unless a person has a healthy biome. Akermancia mucinifolia - pomegranates
cranberry, concord grapes

Ruminococcus - Eating pears has the fiber that feeds this.

Fermented foods, fibers, and polyphenols feed your gut bacteria

Read my Handout - Let's Get Cultured to learn all about diet and gut health

Let's get cultured - Understanding our biome

The value of cultured and fermented foods and fibers in our diet.

by Peter Brodhead CN
updated November 26, 2021

Best Fermented and cultured foods to include in our diet:

Vegetables: Learn how to ferment your own vegetables

Go to You Tube : Look up - The Art of Fermentation and Fermenting Vegetables with Sandor Katz [Sandor Katz](#) is author of the book Wild Fermentation and the Art of Fermentation

Make your own cultured vegetables

Sauerkraut - traditionally made with cabbage as the main ingredient - if purchased from a store only buy refrigerated sauerkraut it contains the live bacteria (probiotics) - off the shelf has no live bacteria

Kim Chi - Korean Sauerkraut - usually made with cabbage or nappa it also comes in varieties made from Daikon radish and small cucumbers - usually spicier and if purchased from a Korean market it has fish sauce in it

Fermented soy products:

Miso paste - again only purchase from the refrigerator - when using miso as a soup stock - add it only after the water temperature is well below boiling - so you don't kill the culture

Tempeh - is a fully cultured soy product originally from Indonesia - the proteins in Tempeh are far more digestible than from Tofu - there are many great ways to cook with Tempeh.

Tamari - is the traditional soy sauce and is made from the liquid that forms when miso is being made - it is the most preferable form of soy sauce to use as a condiment

Natto - is cultured from soy and popular in Japan - it has a very intense smell and flavor and strange texture - okra like stringy - the "lindberger cheese of soy"

Kombucha - made from adding a Scobie to Black Tea or Green Tea with sugar - the Scobie is a mixture of beneficial yeasts and bacteria that converts the tea and sugar into a very healthy probiotic beverage. Contains *Saccromyces Boulardi* a beneficial yeast

Dairy based:

Yogurt - always look at the label for active cultures

Kefir - "yogurt on steroids" as I call it - has a larger variety of probiotic bacteria and beneficial yeasts usually 12 or more strains and is a great support for the digestive system

Traditional aged cheeses with probiotics - cheeses that are made using the facto-fermentation process and raw milk that have lactic acid producing bacteria. **Gouda** the longer it ages, the more probiotics are produced - it has been found to help aid the digestive system and Finnish studies have shown that it boosts immune system

Probiotic bacteria feed on fiber and polyphenols

The greater the variety of fibers and polyphenols in the diet
The greater the diversity of beneficial bacteria in the gut.

Flax seed meal is a phenomenal fiber for the gut - it is loaded with polyphenols and Lignans - Lignans bind to the estrogen binding receptors and block them
Many cancers use estrogen as a driver besides Breast,
Uterine and Ovarian Cancer
Prostate cancer, Lung cancer and Brain Cancers are also driven by Estrogen.

Many probiotics are being discovered that you can only get through the diet
FP - Faecallbacterium prausnitzil is one of the major players in immunity
It makes up 5 - 15% of the total gut microbiome.
It is anti-inflammatory and can moderate the immune cells
By acting on T cells and cytokines (IL-8, IL-10, IL-12) and producing
Anti-inflammatory molecules.

Include Fermented Foods in your diet every day

Sauerkraut - learn to make your own -
or buy only refrigerated varieties



Fermented Soy products

Miso Paste
Tempeh
Tamari
Natto

Dairy Based also look for Goat and Sheep
Kefir (Yogurt on steroids !)

Yogurt
Traditional aged cheeses with probiotics
Parmesan - Reggiano
Gouda - the longer it is aged the more probiotics are produced
Aged Cheddar - raw milk cave aged is best - raw English Cheddars
Stilton
Emmental Swiss



Kim Chi - Sunja's for example

Kombucha



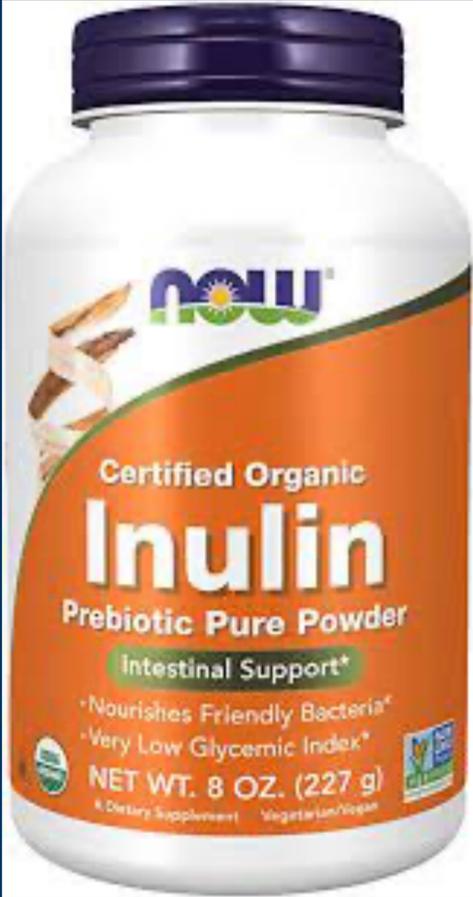
Authentic German Sourdough bread



Organic Apple Cider Vinegar



Inulin, FOS, Resistant Starches



Stimulates the production of Butyrate in the colon

Kiwi Fruit one of the best foods for the biome

Eating 3 a day can
Reverse DNA damage





Glyphosate - “Roundup” is a Gut Bomb

Glyphosate originally was made as an anti-biotic to kill bacteria in industrial pipes



It is heavily sprayed on GMO soy, corn and alfalfa (used to feed beef and dairy cows)

It is also used as a drying agent - sprayed on crops before harvest

To make it easier for the farmer

Wheat, Oats and many Bean crops are sprayed with it before harvest

Eat only organic to protect your gut bacteria



Environmental Toxins



Heavy Metals



Brain Fog



Plastics - BPA, Pthalates

Dietary Sensitivities

Morphine like effects from casein and gluten

Mold



Zinc, Selenium, NAC, Vitamin C, Turmeric and Green Tea help

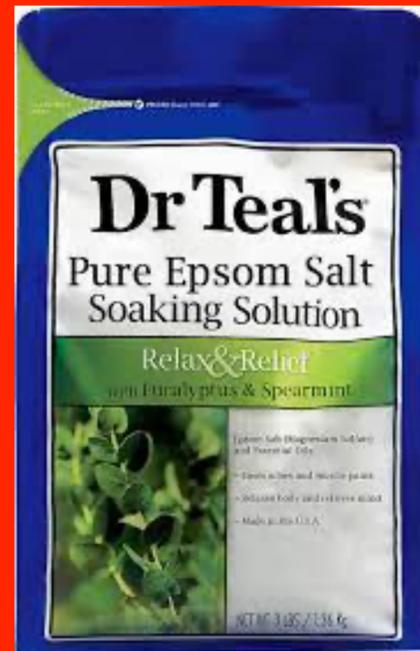
Hyperthermia- Sauna



Can induce tumor-cell death.
and tumor regression.

Stimulates Heat Shock Protein
BDNF
Brain and Mood
Anti-Depressent
Hypertension and Heart Benefits
Detoxification of Heavy Metals
Plastics from the environment
BPA, Pthalates

Epsom Salt Baths combined with diaphoretic herbal tea drinking



+

Recipe for an Epsom salts bath - put 2 cups of Epsom salts in a bathtub of hot water (*as hot as you are comfortable with*) add 1 cup of baking soda

And soak for 20 to 40 min. 102 degrees is a therapeutic temp.

To make a good diaphoretic tea:

Add 1 heaping tablespoon of Yarrow or Elder Flowers

Add also 1 tablespoon of Peppermint Leaves

Pour 2 cups of boiling water over the loose herbs and cover for 5 min.

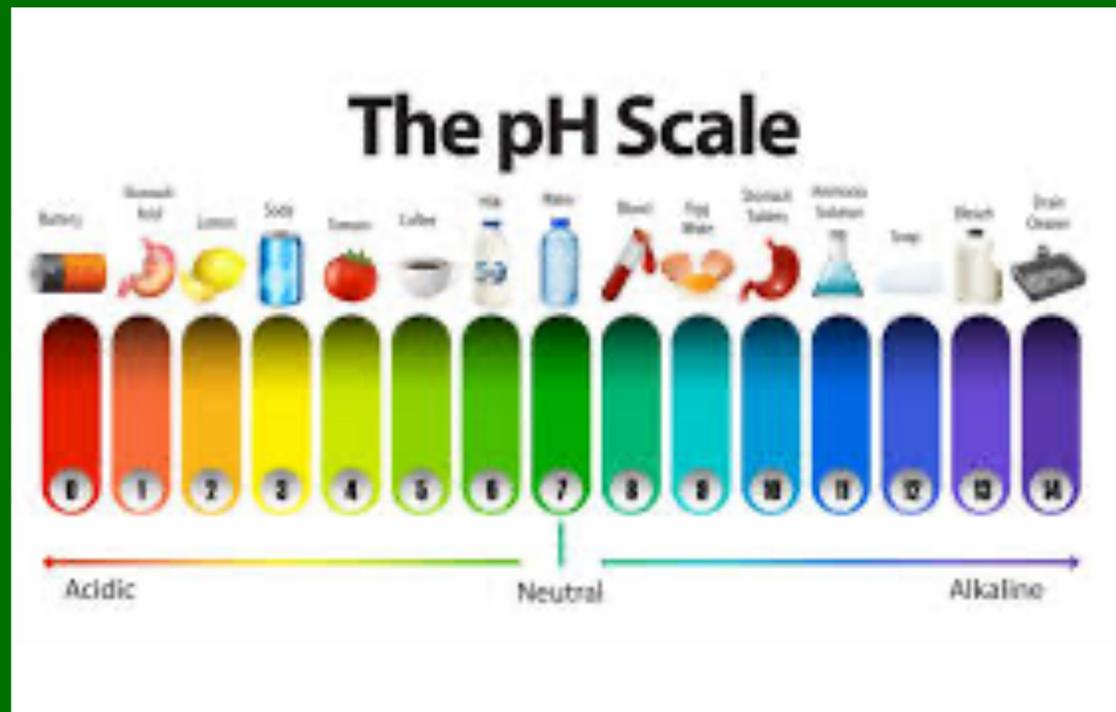
Drink the hot diaphoretic tea while soaking in the tub



Alkalinity

Check your morning urine pH - this is the best time of day to measure your pH
Obtain pH test paper this paper measures the acid - alkaline state of any liquid
Try to maintain a pH between 7 and 7.5

The more you can create alkalinity the better everything else works better
- the micro-environment around a tumor is acidic



Minerals are what makes the body more alkaline
The more mineral rich the diet - the more alkaline you become

When a cancer tumor is growing it produces lactic acid which lowers pH
This creates high levels of extracellular acidity in the tumor microenvironment
Tumor acidity is a driving force in the invasion and metastases of cancer
Manipulation of the extracellular and / or intracellular pH of tumors
has considerable potential in cancer therapy

Bicarbonate has the highest buffering capacity of any substance

Auphagy, Fasting and Intermittent Fasting

Auphagy - self eating - house cleaning - old mis-folded DNA, Mitochondria and Senolytic Cells
(cells that take up room in the body but are asleep)
get eaten creating a healthier - more efficient - better functioning body.

Fasting - 48 to 72 hour fasts done several times a year as a re-set
Listen to Dave Asbery podcast - Victor Longo Phd.
The book - Fast This Way by Dave Asbery

Intermittent Fasting - Time restricted eating
You basically don't eat for 16 hours and eat in an 8 hour period
The simplest way is to eat dinner early - so you have at least 2 hours before bed
and then skip breakfast and start eating after 12pm.

Deep Sleep - activates the Glymphatic System -
a housekeeping system in the brain that cleans up metabolic debris



Mushrooms and the Immune System

Exert a wide influence on the immune system

Reishi

Trametes Versicolor - Turkey Tail

Chaga

Maitake

Shitake

AHCC

They influence the immune system by modulating hematopoietic stem cells
Lymphocytes, macrophages, T-cells, dendritic cells cytokine production, NK (Natural Killer Cells)

Beta Glucans are a major marker used to assess quality and therapeutic activity

Terpenes - Triterpenoids - Reishi and Chaga are highest in these - hepatoprotective, anti-oxidant, Anti-inflammatory and work in conjunction with beta-glucans to activate immunity. Triterpenes are notable for their cytotoxic activity against various cancer cell lines

Their anti-inflammatory influence down regulates INOS, COX-2, TNF (Tumor Necrosis Factor), and suppresses NF-Kappa Beta (The master switch to inflammation)



Astragalus

The immune enhancing/modulating effects of astragalus root include: increase white blood counts when suppressed because of drug therapies, increase interferon production, natural killer cell count and activity; antiviral, chemo and radiation protective. It could be applied in clinical practice for immune- modulation and anti-cancer treatment protocols.

- More specifically shown to enhance interleukin-2 production, increase interferon levels; Increase activity of natural killer (NK) cells and cytotoxic T-cells and an overall enhancement of phagocytic activity. Makes T-cells and NK cells more aggressive.
- Immune-modulating: Improves Th1 cytokine, while reduces Th2, also increases IFN γ and IL-2 • Enhances effectiveness while reducing the toxicity reduction of chemotherapy in patients with cancer • Possesses antitumor activity. It has a synergistic effect with IL-2 while reducing toxicity and increase survival time of cancer-bearing animals
- Liver protective against a number of toxic substances including carbon tetrachloride • Cardio-protective
- Lipid lowering
- Kidney protective
- Inhibits platelet aggregation
- Protective effect against E. coli endotoxin intoxication in mice
- Free-radical scavenging activity
- Increases sperm motility
- Increases growth hormone
- Telomere lengthening



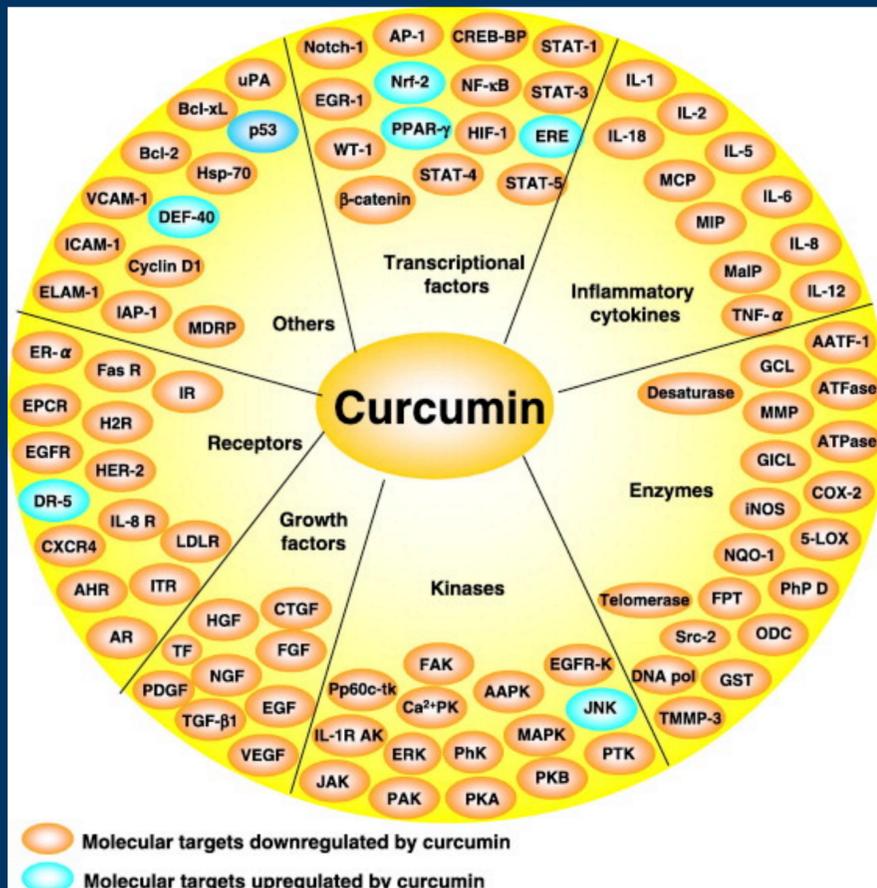
**Cooking with Astragalus - put the roots into any water that you cook with - say cooking rice, or beans, or as a soup stock
Your food then become infused with the medicine - Food as Medicine**

Turmeric - the anti-cancer superstar



Anti-oxidant, Anti-inflammatory, Anti-Carcinogenic, Anti-angiogenic and anti-metastatic
 Liver protective - increases glutathione, anti-thrombotic, Anti-tumor - activates T-cells,
 Neuro-protective, Heavy Metal detox, Chemotherapy enhancement and protection,
 Radiation protection.

It down regulates 100+ cancer growth factors



Black Seed - the up and coming superstar

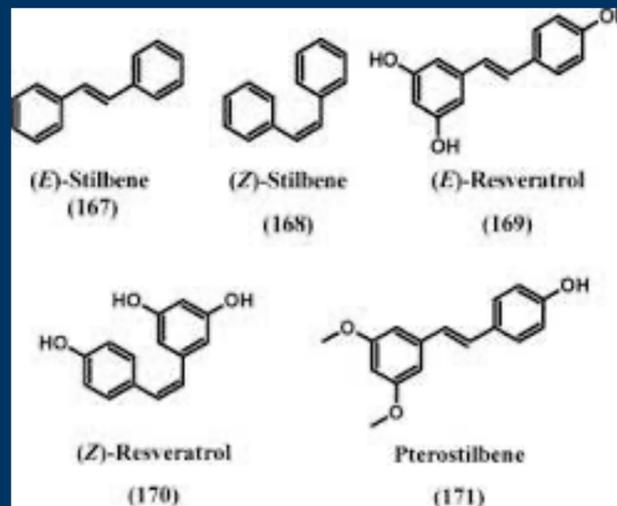
Induces apoptosis, inhibits NF-Kappa Beta,
 It inhibits metastasis through activation of
 JNK and p.38, it has interferon-like activity,
 Inhibits cancer and endothelial cell progression
 Inhibits VEGF, suppresses pancreatic cancer
 The data is just starting to pour in.



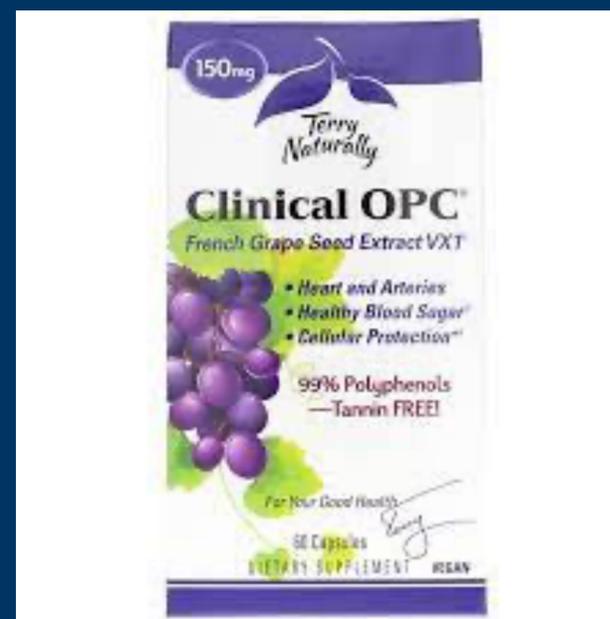
Stilbenes - Resveratrol and Pterostilbene

Plant protecting compounds that protect plants from fungal attack

Anti-aging, anti-inflammatory, cardiovascular Protection, anti-cancer



Grape Seed Extract



Connective tissue enhancing - helps prevent metastasis super anti-oxidant anti-inflammatory

Green Tea - EGCG - Catechins

Stimulates apoptosis,
liver detoxification enhances turmeric 1+1=3



Quercetin

Anti-Allergy, Mast Cell Stabilizer, Anti-inflammatory
Anti-estrogenic, Uric acid lowering
Numerous anti cancer pathways

ACS LABORATORY

VAPORIZES AT 250°C / 482°F

QUERCETIN

FLAVONOID QUICK FACTS

Where is Quercetin found?

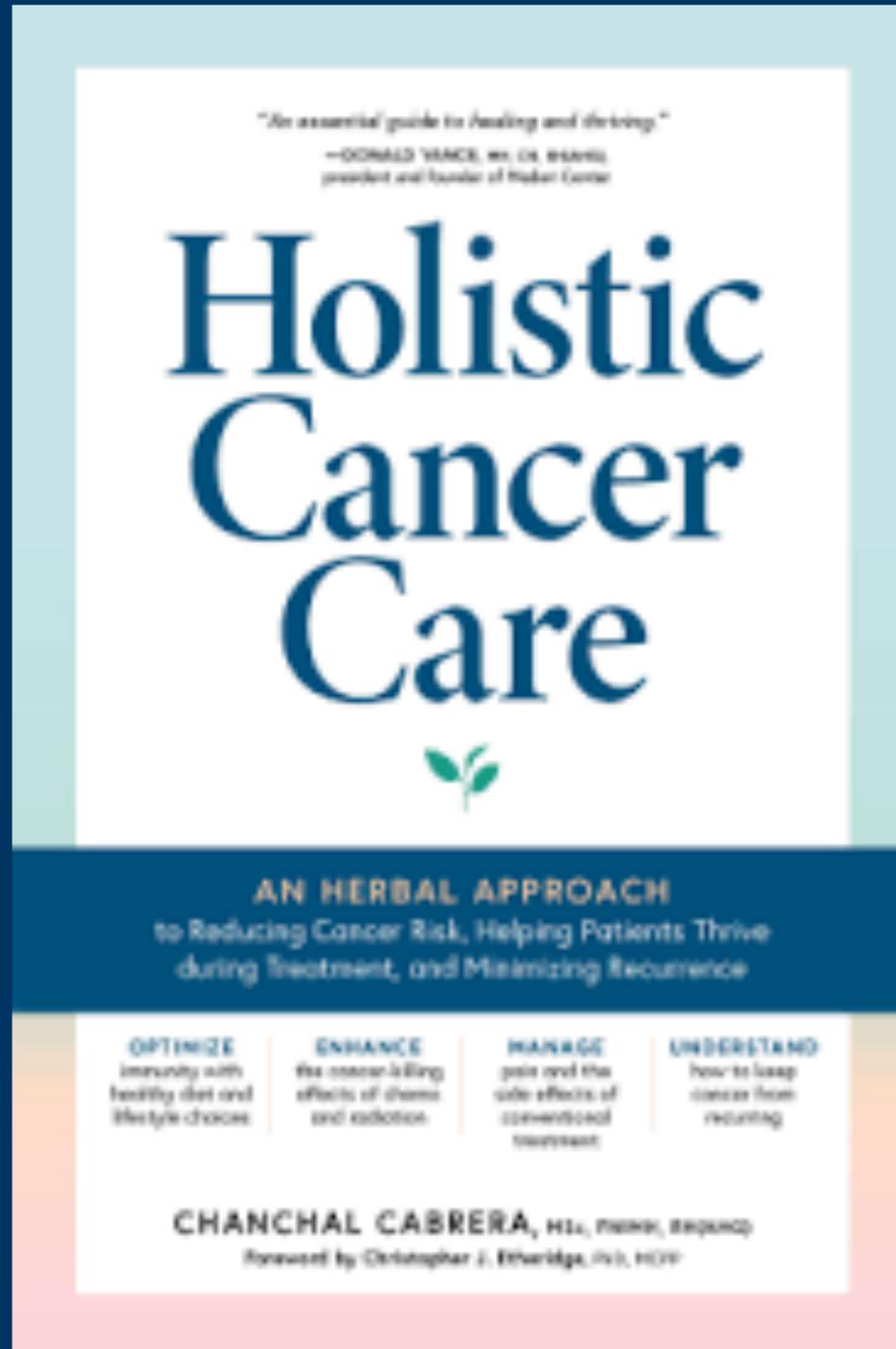
- CANNABIS
- APPLES
- ONIONS
- CHOCOLATE
- BLUEBERRIES
- RED WINE

42X MORE
Quercetin per gram in lovage leaves than apples

Benefits of Quercetin.

- Immune Builder
- Antioxidant
- Anti-Inflammatory
- Anti-Viral

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This is a great new book on cancer
By Chanchal Cabrera

That I highly recommend

A Cliff Notes Guide to Nutrition and Cancer

What You Need to Know to Heal

Mark C. Bricca, ND, LAc & Bodhicitta Healing Arts



The ETMS Approach to a Healthy Diet

“There’s a great deal of truth in the old adage, “You are what you eat.” In fact, modern research is proving that we can take it one step further: we influence our genes. Maintaining health through diet is one of the central principles of the Elicited Triphasic Medical System (ETMS). The ETMS dietary approach is unique, in that it weaves together the core principles of traditional dietary wisdom and current scientific research to offer a comprehensive health supportive diet that can be easily modified for individual needs.

The ETMS Dietary wisdom applies various diagnostic lens that review the lens, the microenvironment, and the disease (in cancer, for example, the cell type, characteristics such as gene mutations and growth factors, and the location). All of this must be considered when creating a personalized diet.

Every calorie we ingest either fuels the inward energy that creates, sustains, and heals every cell in our bodies, or is used to generate the outward energy that helps us act in the world. A nutrient dense, phytonutrient rich diet provides the building blocks to create healthy cells, produce balanced energy, and helps reduce the toxic waste by-products that cause inflammation and cellular damage.

I. ETMS Dietary Guidelines: Getting Started

Our bodies are designed to thrive on a varied diet of whole, unprocessed foods: fresh vegetables, fruits, and herbs; proteins from sea and land animals; naturally grown and processed grains and beans; and fermented foods. Despite regional and cultural differences, traditional diets throughout the world are all based on some combination of these basic foods. These foods are tied to our human evolution—they are the nourishment that has kept us healthy for eons.

With an abundance of food to choose from, we have the luxury of crafting the perfect health-supportive diet. The ETMS approach creates a comprehensive diet for each individual

that takes into account geographic location; season; energetic type (deficiency/excess, yin/yang, organ system weakness); traditional diet (ethnic background/taste preferences); the presence of chronic and/or acute conditions; nutrigenetics (diet-gene interaction); lifestyle (work/exercise); and environmental influences (toxic exposure).

Ideally, you’ll have the opportunity to work with an ETMS trained practitioner who can help guide you in the process of creating your optimal diet. There’s a lot you can do on your own, though.

The philosophy of the ETMS diet is based on the Four Golden Rules of Eating:

- Quality:** Eat a whole-foods diet rich in fresh, organic or wild, and preferably local foods whenever possible.
- Balance:** Eat a balanced diet filled with a variety of fresh fruits, vegetables, whole grains, nuts, and seeds and a moderate amount of high-quality proteins and fats.
- Quantity:** Don’t overeat to the point that your total daily caloric intake greatly surpasses your caloric requirements.
- Relationship:** Have a healthy relationship with the food you eat; enjoy it and be thankful. Eating healthy food, grown from the earth and prepared with love, sustains both body and spirit.

Handouts

Let’s get cultured - Understanding our biome

The value of cultured and fermented foods and fibers in our diet.

by Peter Brodhead CN
updated November 26, 2021

Best Fermented and cultured foods to include in our diet:

Vegetables: Learn how to ferment your own vegetables

Go to You Tube : Look up - The Art of Fermentation and Fermenting Vegetables with Sandor Katz [Sandor Katz](#) is author of the book Wild Fermentation and the Art of Fermentation

Make your own cultured vegetables

Sauerkraut - traditionally made with cabbage as the main ingredient - if purchased from a store only buy refrigerated sauerkraut it contains the live bacteria (probiotics) - off the shelf has no live bacteria

Kim Chi - Korean Sauerkraut - usually made with cabbage or nappa it also comes in varieties made from Daikon radish and small cucumbers - usually spicier and if purchased from a Korean market it has fish sauce in it

Fermented soy products:

Miso paste - again only purchase from the refrigerator - when using miso as a soup stock - add it only after the water temperature is well below boiling - so you don’t kill the culture

Tempeh - is a fully cultured soy product originally from Indonesia - the proteins in Tempeh are far more digestible than from Tofu - there are many great ways to cook with Tempeh.

Tamari - is the traditional soy sauce and is made from the liquid that forms when miso is being made - it is the most preferable form of soy sauce to use as a condiment

Natto - is cultured from soy and popular in Japan - it has a very intense smell and flavor and strange texture - okra like stringy - the “lindberger cheese of soy”

Kombucha - made from adding a Scobie to Black Tea or Green Tea with sugar - the Scobie is a mixture of beneficial yeasts and bacteria that converts the tea and sugar into a very healthy probiotic beverage. Contains Saccromyces Boulardi a beneficial yeast

Dairy based:

Yogurt - always look at the label for active cultures

Kefir - “yogurt on steroids” as I call it - has a larger variety of probiotic bacteria and beneficial yeasts usually 12 or more strains and is a great support for the digestive system

Traditional aged cheeses with probiotics - cheeses that are made using the facto-fermentation process and raw milk that have lactic acid producing bacteria. **Gouda** the longer it ages, the more probiotics are produced - it has been found to help aid the digestive system and Finnish studies have shown that it boosts immune system

Donald Yance
Immune Checkpoint Inhibitors

Goal: **Getting durable remissions with them**

10/21/21 Transcribed by Peter Brodhead CN, DHom, ETMS practitioner

Source of information for this handout - Donald Yance 2017 presentation Immune Checkpoint Inhibitors pt.1 & 2 along with his slide presentation on this topic

Vagal Nerve - a key factor that runs the parasympathetic nervous system - When the parasympathetic nervous system is activated the immune system works better. Learn how to activate it to help manage stress - see *my handout on activating the Vagal nerve response.*

Following the **Circadian Rhythm** of the day can support immunity - get morning light in the eyes get outside take off your sun glasses and get light in your eyes early in the day. Get noon day light - eat outside for lunch. Try to watch the sunset. This sets up the Circadian Rhythm for your body supporting immunity and helping you get a better and deeper sleep which really helps immunity. Exercise during the day and eliminate blue light at night turn off your electric devices 2 hours before bed or change the light settings to orange light on your phone or computer. Red light is fine for your bedroom clock if it isn’t red cover it. Keep your bedroom as dark as possible and get to bed before 11pm to reset your body, brain and immune system.

Moving the Lymph is very important when the body is breaking down a cancer. Herb Pharm’s Herbal Detox is the original Hoxey Formula and is a great support for moving the lymph. Get the lymph moving to help the body eliminate toxins. Gentle exercise such as brisk walking and or biking. Use a rebounder which is a small trampoline to help the lymph move.

Understanding the Immune System: There are 2 components of the immune system

1. **Innate Immunity** - non specific immunity - this is the immune system we are born with - the first line of defense that is activated to go after bacteria, viruses and pathogens.
2. **Adaptive Immunity** or learned immunity this consists of bone marrow derived B-cells. B cells recognize specific antigens such as: Chicken pox. Vaccines by pass the Innate Immune system and activate the adaptive immune system.

Cancer - starts from a less inflammatory and as it grows and spreads progresses to a pro-inflammatory state. Checkpoint inhibitors work best in this pro-inflammatory state. Low grade cancers do not respond well to checkpoint inhibitors. High grade cancers do respond. Cancer grows during the day under stress hormones. BiPhasic way tumors grow by a different pathway at night. KRAS mutations in the cancer are good indicators for a response with checkpoint inhibitors.

Lymphocytes:

T-Cells (originally derived from the Thymus Gland but are also made all over the body) CD8+ T cells are what Checkpoint inhibitor drugs activate. Your Cytotoxic T-Cells have to be armed and ready to allow the Checkpoint inhibitors to work properly. CD4+ cells suppress and buffer - CD4 T helper cells

Dendritic Cells:

Are antigen-presenting cells - Tumor antigens are taken up by antigen-presenting cells. TH1 Helper cells are critical for successful immunity against cancer. DHEA levels support TH 1 TH2 works the opposite and helps the cancer grow. High Cortisol levels (ie. Stress) helps TH2

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Optimizing the effectiveness Chemotherapy

Current update 6/21/21

These rules will help the chemotherapy work at its best while supporting your body
Eating before and during chemotherapy – during a fast your healthy cells slow down their metabolism so when you get the chemotherapy they don’t take it up – conversely cancer cells have a high metabolic rate – they don’t have the ability to slow down their metabolism so they take up the chemotherapy drug and it has a greater ability to kill them. So be sure cut down on eating starting 2 days before your chemotherapy treatment and keep food to a minimum for the first 12 hours after a chemo treatment. There are 3 papers on it you can read or give to your oncologist.

1. Hydrate like crazy – drink plenty of water. One of the best things to drink during your chemo treatment is Coconut Water – it is full of electrolytes – very hydrating and pleasant. A great combination to use is 50% coconut water with 50% hibiscus tea – sweeten the tea with LoHan (a good tasting sweetener that has no effect on blood sugar levels.) Make at least 1 QT or more of Hibiscus Tea. Hibiscus lowers Bcl-2 a factor that allows a cancer cell to develop multi-drug resistance.

2. Take your Adaptagen formula with you An Adaptagen Formula contains numerous “super tonic” herbs in it such as Ginseng, Rhodiola, Eleuthero, Schizandra and other tonics – Natura Power Adapt (more focused on energy) or Natura Vital Adapt (more focused on tonics) or the combination formula (my favorite) use 3 eyedropperfulls when you are taking the chemotherapy. Take 2 eyedropperfulls in the morning then 1 eyedropperfulls every hour during your chemo treatment. You can put it in a little water or if the taste doesn’t bother you – or put it in the coconut water/hibiscus tea - 1 tablespoon in a qt of tea.

3. Start your fast 2 days before chemo. For the 48 hours before the chemo treatment and the day of chemotherapy keep food to a minimum going on a complete fast during this period is even better. This is the window that you want the chemo treatment to really hammer the cancer. This is the window of time that the chemo is really doing its job. It is important that you don’t have a lot of food in your system. If you are really hungry – eat very lightly easy to digest low calorie foods and low protein foods. This keeps mTOR and IGF-1 levels low which stimulate cancer growth. Do all you can to help the chemo work at its best !!

4 If you have nausea – believe it or not this can be a good thing. Drink ginger tea – lemon also helps. Smelling lemon can allay nausea. The homeopathic remedy Nux Vomica 30C can be taken under the tongue – 3 pellets as needed. Also you can take Green Papaya tablets with your ginger tea. This can be extremely helpful.