



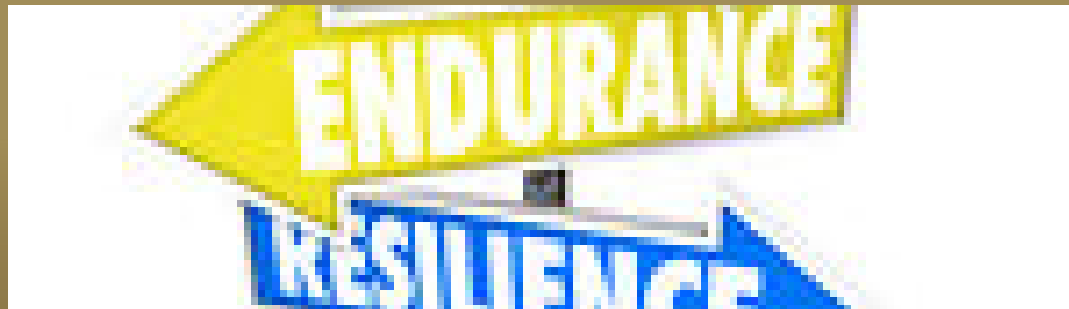
# Resilience in the Diagnosis & Treatment of Breast Cancer

Dr. Ronald L. Stram

**Stram Center**   
for Integrative Medicine

# Resilience

- Resilience
- The ability to become strong, healthy, or successful after something challenges your core stability.
- To return to its original shape after it has been pulled, stretched, pressed, bent, etc





# Resilience

- Resilience is the ability to roll with the punches to adjust to difficult events as they happen.
- When stress, adversity or trauma strikes, you still experience anger, grief and pain, but you're able to keep functioning — both physically and psychologically.
- Resilience isn't about toughing it out, being stoic or going it alone. In fact, being able to reach out to others for support is a key component of being resilient.





# Stram Center

## for Integrative Medicine

### Lifestyle

Food  
Movement  
Vegan/Vegetarianism  
Paelo

### Spirit

Friendship  
Love  
Family/Heritage  
Prayer  
Religion  
Volunteerism

### Resilience

Micropathology  
Microbiology

TREATMENT

Biological  
Terrain





# ***Background***



## ***Background***

- The World Cancer Research Fund estimates that  $\frac{1}{4}$  -  $\frac{1}{3}$  of the cancers that occur in the US are due to:
- **Poor Nutrition**
- **Physical Inactivity**
- **Excess Weight**

Eheman C, Henley SJ, Ballard-Barbash R, Jacobs EJ, Schymura MJ, Noone AM, Pan L, Anderson, RN, Fulton JE, Kohler BA, Jemal A, Ward E, Plescia M, Ries LAG, Edwards BK. Annual Report to the Nation on the Status of Cancer, 1975–2008, Featuring Cancers Associated with Excess Weight and Lack of Sufficient Physical Activity. *CANCER*; Published Early Online: March 28, 2012.





## ***Background***

- This research supports the belief that embracing a healthy lifestyle is essential for anyone trying to prevent cancer or anyone whose life is unfortunately touched with cancer.
- Diet
- Exercise
- Sleep
- Stress Management



## ***Background***

- 2010: Cancer is the 2<sup>nd</sup> leading cause of death in the US Cancer: 576,691

### Mortality:

- Cancer death rates have ↓ since the early 1990s among men, women, and children.
- Death rates ↓ on average 1.6 % per year between 2004 and 2008

Eheman C, Henley SJ, Ballard-Barbash R, Jacobs EJ, Schymura MJ, Noone AM, Pan L, Anderson, RN, Fulton JE, Kohler BA, Jemal A, Ward E, Plescia M, Ries LAG, Edwards BK. Annual Report to the Nation on the Status of Cancer, 1975–2008, Featuring Cancers Associated with Excess Weight and Lack of Sufficient Physical Activity. *CANCER*; Published Early Online: March 28, 2012.





## ***Background***

- Breast Cancer: The most common malignancy among American Women, 1/9 or 235,000 develop per year ~ 40,000 die every year.
- Incidence of breast cancer has increased by 27% over the past 20 years
- However much of this increase is in early pre cancerous “insitu” lesions such as DCIS



## ***Background***

- Mammography: early detection
- Barnett Kramer MD (Director of office of prevention NIH)
- The goal of early detection is one less Breast cancer found later, truth is mortality rates for the most aggressive forms of cancer has not changed.
- Mammography, has resulted in a new population of women with early stage cancer, but without a decline in the numbers of women with advanced cancer



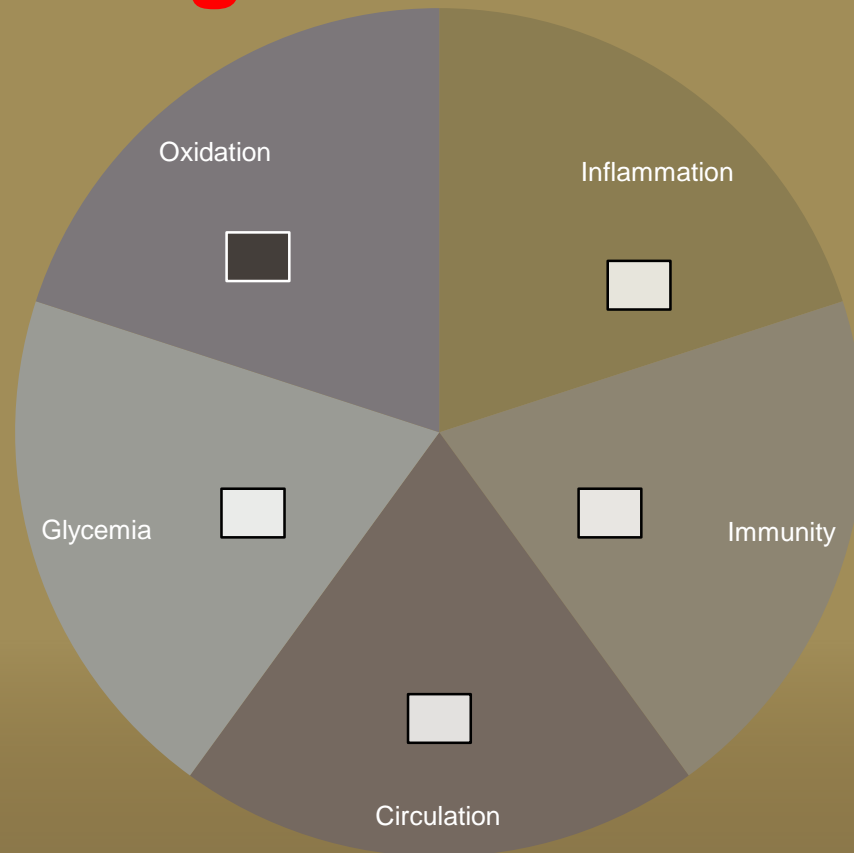


# Biological Terrain

- Biological Terrain involves:
- The in-depth study of the micro-cellular environment in the human body, the nutrient-filled environment that bathes and nourishes those cells.
- Testing for nutritional / vitamin optimization
- Genetic predispositions, inflammatory markers, immune status and possible environmental toxic exposure and how they influence acute and chronic disease states.
- Biological Terrain closely monitors cellular environment to gather important information about an individual's cellular health.
- Appreciating the vital role a healthy biological terrain environment plays in establishing and supporting an individual's overall state of health, vitality and well-being.



# The Healing Powers of the Terrain







# The Healing Powers of the Biological Terrain

- Oxidation: Oxidation creates free radicals in the body that damage DNA like unguided missiles. Keeping antioxidant levels in the body at optimal levels helps to minimize and control oxidation.
- Inflammation: Inflammation damages cells and organs, fuels pain, stimulates disease progression and weakens the immune system.
- Immunity: A surveillance system for assessing harmful bacteria, viruses and mutated cells while assisting in recovery from illness, surgery, or cancer treatment that may harm the body.
- Circulation: Thicker blood increases risk of blood clots and encourages development of blood vessels to tumors and distant tumor sites (metastasis). A healthy circulation allows nutrients to circulate, nourishes the body avoiding disease progression.
- Glycaemia: Higher blood sugar fuels aberrant cell growth, dampens the immune system and encourages disease progression.



# Oxidation

- Check cosmetic creams which often contain retinol
- Do not consume dairy or animal products which are high in retinol
- Check liver enzymes to assess proper liver functioning
- If low: include the following foods in your diet:
- Sweet potato, baked – 38,433 IU beta-carotene per cup
- Carrots, raw – 34,317 IU beta-carotene per cup
- Kale, raw - 10,302 IU beta-carotene per cup
- Red bell pepper, raw – 4,666 IU beta-carotene per cup
- Romaine lettuce – 4,094 IU beta-carotene per cup
- Spinach, raw – 2,813 IU beta-carotene per cup
- Eggs – 293 IU retinol per large egg
- Salmon, wild – 34 IU retinol per 3 ounces



# Anti-Oxidants

- VITAMIN C (Optimal: >1.2)
- Vitamin C is a highly effective antioxidant that protects proteins, lipids, carbohydrates, and DNA from damage by free radicals that can be generated through exposure to toxins and pollutants. Vitamin C may also be able to regenerate other antioxidants such as vitamin E.
- If low: Consume plenty of good sources of vitamin C:
- Acerola cherry juice – 1936 mg per ½ cup
- Red bell peppers – 190 mg per cup
- Guava – 189 mg per ½ cup
- Kale, raw – 86 mg per cup
- Orange – 83 mg per medium-sized fruit
- Kiwi – 71 mg per medium-sized fruit
- Broccoli, raw – 66 mg per cup
- Papaya – 43 mg per ½ cup





# Intravenous Vitamin C

- **High dose (Ascorbate) Vitamin C** used in conjunction with chemotherapy or radiation, eliminates cancer cells in the early stages of cancer. For those in the later stages of cancer, the intravenous vitamin C protocol may improve the quality of life.
- **Does oral vitamin C (ascorbate) provide the same results?**  
**No.** Oral vitamin C is an antioxidant with controlled absorption. Intravenous vitamin C is a pro-oxidant drug that helps produce peroxide, which targets neoplastic cells while leaving normal cells unharmed. With IV dosing plasma and tissue levels are many times above that of oral dosing.



# Intravenous Vitamin C

- **Safe Vitamin C Infusion and G6PD deficiency:** Patients must have a G6PD test before any infusions are given. Glucose-6-phosphate dehydrogenase (G6PD) deficiency is an inherited condition in which a person's body doesn't have enough of the G6PD enzyme. G6PD helps red blood cells function normally. Patients with this deficiency should not receive vitamin C infusions because it can cause hemolytic anemia.
- **The protocol should NOT be administered in conjunction with methotrexate chemotherapy because of urine pH requirements.**





## IV Vitamin C: In Practice


- IV suite





# Antioxidants and Chemotherapy

- Of reviewed studies that reported effects of antioxidants on toxicities, there were 49 separate reports of decreased toxicities (40 significant), 39 reports of no differences and 3 reports of increased toxicity.
- Some antioxidants may have potential to decrease toxicities but this varies by the antioxidant and chemotherapy chosen. Glutathione has the highest number of studies and of positive results.
- Met Breast Cancer – 90 advanced, whole system integrative treatment, chemotherapy combined with aggressive antioxidant therapy
- **Median survival: 38 mo's vs 18 mo's**



# Anti-oxidant / Immune support

- **COENZYME Q10 (Optimal: >1.3)**
- Incorporated into the mitochondria of your cells, CoQ10 facilitates the transformation of fats and sugars into energy. CoQ10 benefits high-energy demand organs, such as the brain, heart, kidneys, and muscles. The body uses it for cellular growth and to protect cells from damage. CoQ10 also helps the immune system better able to resist certain infections and types of cancer. With chemotherapy, CoQ10 has been shown to help protect the heart from damaging side effects.
- If low: Several foods contain small amounts of natural CoQ10, but likely a supplemental form of CoQ10 will also be necessary.
- Herring, marinated – 2.3 mg per 3 ounces
- Canola oil – 1 mg per tablespoon
- Rainbow trout – 0.9 mg per 3 ounces
- Sesame seeds – 0.7 mg per ounce
- Pistachios – 0.6 mg per ounce
- Broccoli – 0.5 mg per ½ cup (cooked)





# CoQ10

- Co enzyme Q10 is produced in the body to aid in oxygen delivery to cells and organs.
- CoQ10 is a fat soluble antioxidant.
- CoQ10 levels decrease with age and are low in infectious diseases.



# Glutathione: Our Body's Healing Agent

- Tri-peptide: glutamate, cysteine and glycine
- Primarily synthesized in the liver
- It is involved in DNA synthesis and repair
- Metabolism of toxins
- Immune system function
- Prevention of oxidative cell damage

# Glutathione Use: In Practice

- Used as a treatment and as a diagnostic tool to establish active infection versus need for detoxification
- Under our current protocol, we initiate IV antibiotic treatment followed by glutathione and further detoxify with infrared sauna treatment.







# Anti-inflammatory, Immune and Nerve Support

- VITAMIN B6 (Pyridoxine) (Optimal: 16-33)
- A coenzyme involved in the metabolism of protein, carbohydrates and fat. Required for normal red blood cell formation. An essential part of the formation of virtually all new cells in the body. B6 is required to minimize risk of unwanted inflammation in the body.
- If elevated: limit B6 intake to less than 100mg daily
- If low: several foods contain small amounts of natural B6, a supplemental form of B6 will also help
- Salmon – 0.8 mg per 3 ounces
- Banana – 0.4 mg per small banana
- Brown rice – 0.3 mg per cup cooked
- Bell peppers, raw – 0.3 mg per cup
- Carrots, raw 0.2 mg per cup

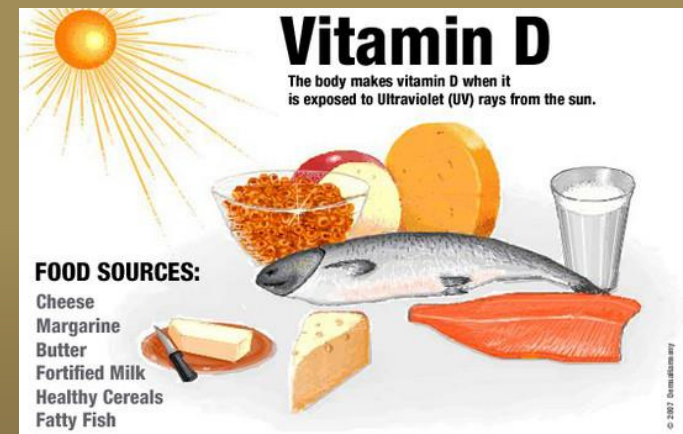


# Biological Terrain

- **Nutritional Status:** Protein, vitamin optimization: B Vitamins, Vitamin D
- **Inflammatory Markers:** Sed rate, HsCRP, TNF alpha, C4a
- **Auto-immune markers:** ANA, RF, IGA status
- **Genetics:** HLA DR4, HLA-B27, MTHFR, Celiac
- **Immune markers:** CD-57, WBC, Natural Killer cell profile

# Immune-support

- VITAMIN D (Optimal: 60-80)
- Vitamin D is actually a hormone that targets over 2,000 genes in the body. Deficiency has been found to be a major factor in the pathology of at least 17 varieties of cancer as well as heart disease, stroke, hypertension, *autoimmune diseases*, diabetes, depression, chronic pain and osteoporosis.
- If low: Several foods contain small amounts of natural vitamin D, but likely a supplemental form of vitamin D will also be necessary.
- Sunlight – only 5-10 min/day with most of skin exposed during summer months will provide up to 10,000 IU per day (then apply sunscreen or go inside!)
- Salmon, canned with bones – 649 IU per 3oz
- Herring – 570 IU per 3 ounces
- Monterrey mushrooms – 200 IU per ½ cup
- Soy, almond, or rice milk (fortified) – 100iu/cup
- Orange juice (fortified) – 50 IU per ½ cup
- Oysters – 45 IU per oyster







# Biological Terrain: Genetic Variation **MTHFR**

- The *MTHFR* gene provides instructions for making an enzyme called methylenetetrahydrofolate reductase.
- Methylation is a core process that occurs in all cells to help your body make biochemical conversions.
- The methylation process is responsible for:
- *Cellular Repair*: synthesis of nucleic acids, production & repair of DNA & mRNA
- *Detoxification and Neurotransmitter Production*: interconversion of amino acids
- *Healthy Immune System Function*: formation & maturation of red blood cells, white blood cells & platelet production

# Immune Support / Cell integrity

- **FOLATE - FOLIC ACID (Optimal: >12.0)**

- An important coenzyme in DNA synthesis, gene expression and regulation. Also required for normal red blood cell development. Do not want to be deficient as it is involved DNA synthesis and could promote an environment for unwanted replication, development, and progression of the disease.
- If low: Consume foods rich in folate such as:
- Lentils – 179 mcg per ½ cup cooked
- Black eyed peas – 178 mcg per ½ cup cooked
- Endive – 71 mcg per cup
- Romaine – 64 mcg per cup
- Spinach, raw – 58 mcg per cup
- Orange – 47 mcg per medium orange
- Papaya – 27 mcg per ½ cup
- Avocado- 27 mcg per ¼ avocado
- Tomato, raw – 22 mcg per cup



# Immune Support / Anti-inflammatory

- **ZINC (Optimal: 110-150)**
- Functions as an intracellular signal molecule for immune cells, and helps control inflammation markers. A lack of sufficient zinc in the body has been linked to increased production of pro-inflammatory cytokines and oxidative stress. Normal zinc concentrations have been correlated with a decreased risk of pneumonia, and decreased chance of infection.
- If elevated:
- Zinc is readily found in animal protein, so reduce animal protein consumption and increase consumption of plant based foods
- Limit intake to less than 25mg zinc daily
- If low: Several foods contain small amounts of natural zinc, but likely a supplemental form of zinc will also be necessary.
- Oysters – 13 mg per oyster
- Pumpkin seeds, hulled – 2.1 mg per ounce
- Green peas - 1.8 mg per cup
- Pine nuts – 1.8 mg per ounce
- Wheat germ – 1.3 mg per tablespoon
- Pecans – 1.3 mg per ounce
- Almonds – 1 mg per ounce







# Inflammation: The Heat

- *Inflammation Panel*
- C-REACTIVE PROTEIN – HIGHLY SENSITIVE (Optimal: <1.0)
- CRP is a sensitive marker of systemic inflammation. Researchers call it the “unifying theory” behind the major killers of our times. High levels of inflammation have been linked to increased risk of cardiovascular disease, diabetes, Alzheimer’s, Parkinson’s, and cancer.
- Treatment:
  - Omega 3’s, fish oil, bromelain, MSM, curcumin



# Circulation: Angiogenesis = blood vessel growth

- **MMP-9 (Optimal: <984)** Matrix metalloproteinase-9 is a marker that is related to normal tissue and development, such as embryonic development, ovulation, wound healing, etc. Inflammation markers often regulate its expression. MMP-9 is an enzyme that cancer cells use to degrade surrounding connective tissue and spread in the body. Elevated levels have been found to promote tumor growth, progression and angiogenesis.
- *If elevated:*
- Increase foods and supplements which help to inhibit angiogenesis, like green tea and foods rich in omega-3 (cold water fish, flax, walnuts, hemp seed)
- Consume foods rich in vitamin C – vitamin C acts as a natural inhibitor of degradation of connective tissue (MMP-9 is an enzyme that cancer cells use to degrade surrounding connective tissue and spread in the body)
-



# Circulation: Angiogenesis = blood vessel growth

- *Hypercoagulation Panel*
- FIBRINOGEN ANTIGEN (Optimal: <350)
- Fibrinogen can cause increased platelet aggregation, hyper-coagulation, and excessive blood thickening. This increases risk for heart attack and stroke. Fibrinogen is the precursor for fibrin, which cancer cells may use to coat themselves to hide from the immune system. Fibrin also relays a signal to cancer cells to initiate angiogenesis and sets the stage for tumor growth and metastasis.
- If elevated:
- Achieve and maintain a healthy weight
- Perform daily moderate-intensity aerobic exercise as recommended by your physical therapist
- Consume high omega-3 foods (cold water fish, walnuts, flax, omega-3 fortified eggs)
- Include garlic, onion, olive oil, green tea, and ginger in your diet
- Also include ferment soy (natto, tempeh, miso)
- Don't drink alcohol
- Quit smoking
- Get your homocysteine levels checked. Excessive homocysteine blocks the natural breakdown of fibrinogen by inhibiting the production of tissue plasminogen activator (tPA). Optimal homocysteine is <5.5.





# Melatonin

- Helpful in solid tumors.
- With cisplatin in NSC lung cancer used 10mg daily at 7pm. Improved one year survival.
- With tamoxifen in metastasized breast cancer 20mg daily at noon.
- With interleukin-2 in several types of solid tumors used 40mg melatonin.
- May modulate estrogen receptor expression



# GUT PROTOCOL

- One of the most important components to patients' success is a healthy gut
  - Reduces side effects from antibiotic treatment
  - Increases patient compliance
  - Promotes healthy lifestyle
  - Improves absorption
- Probiotics are key!  
(both oral and rectal)

## Probiotic Enema Protocol

### Supplies Needed:

1 enema bottle - **pharmacy OTC**  
Distilled water – **pharmacy OTC**  
Vaseline or KY lubricating jelly – **pharmacy OTC**  
VSL 3 ½ pack (450billion) powdered packs – **Stram center** (or probiotic 225 full pack)  
Orthobiotic capsule – **Stram center** (or Probiomax 30 1 cap)  
Enterogenic capsule – refrigerated – **Stram center** (or Probiomax 100 1 cap – not refrigerated).

### Enema Instructions:

The best time for taking an Enema is in the evening, just before bed.

Fill the fleet bottle so that there's about 30-50ml (1-2 ounces) of distilled water in it. Into the 30-50ml (1-2ounces) of fluid combine:

Half a pack of VSL 3 or full pack of probiotic 225

One (1) Orthobiotic/Probiomax 30 capsule opened

One (1) Enterogenic intensive/Probiomax 100 capsule opened

Once mixed well, apply lubricant to the tip of the enema catheter for lubrication. (If not pre-lubricated).

Follow the posture recommended in the enema instruction booklet, and slowly insert the lubricated Enema catheter approx. ½ - ¾ of its length into the rectum and squeeze the bottle until all the liquid has been instilled. Try to retain for at least 20 mins.

### Frequency:

Do once per day for 5 days (unless otherwise instructed by your practitioner).



# Lifestyle: Nutrition

- Effects of a very low-fat, vegan diet in subjects with rheumatoid arthritis.  
Conclusion: Patients with moderate-to-severe RA, who switch to a very low-fat, vegan diet can experience significant reductions in RA symptoms
- A vegan diet free of gluten improves the signs and symptoms of rheumatoid arthritis: the effects on arthritis correlate with a reduction in antibodies to food antigens.

McDougall J1, Bruce B, Spiller G, Westerdahl J, McDougall M.  
J Altern Complement Med. 2002 Feb;8(1):71-5.

Rheumatology (Oxford). 2001 Oct;40(10):1175-9.

Hafström I1, Ringertz B, Spångberg A, von Zweigbergk L, Brannemark S, Nylander I, Rönnelid J, Laasonen L, Klareskog L.





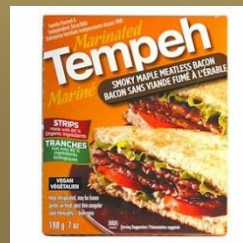
# **Stram Center's Recommendations for Cancer Prevention, Treatment, & Survival**

- 1. Limit and avoid animal protein, poultry, and dairy products & replace with plant-based equivalents*
- 2. Boost your immune system*
- 3. Promote a stable blood sugar*
- 4. Balance your hormonal risk*
- 5. Maximize the nutrient density of your diet*
- 6. Embrace all aspects of a healthy lifestyle*
- 7. Pick your battles*

# Avoid Animal protein, poultry, & dairy.

## Replace with plant-based equivalents

### Protein rich foods



### Calcium rich foods





# Boost your immune system

1. ↑ intake of foods rich in Beta-Glucans
  - Compounds that can help ↑ your immune system:
  - Onions, garlic, mushrooms, oats, nutritional yeast
2. Limit saturated fat
  - May (-) Natural Killer Cells & T Cells (WBC's)
3. ↑ Variety of plant based foods in diet
4. ↑ Exercise
5. Get adequate sleep & ↓ stress





# Promote a stable blood sugar

## *Eat small, frequent meals throughout the day*

- Consume 3 smaller meals/day & a snack in-between each meal
- Help control your blood sugar, appetite, & help one maintain/achieve a healthy weight





**Promote a stable blood sugar**

**Consume a variety of whole grains & whole grain products. Limit refined grains**







# Glycemic Control

- *Glycemia Panel*
- INSULIN (Optimal: 2.6 -24.9 –fasting)
- C-PEPTIDE (Optimal: 1.1 – 4.4 –fasting)
- HbA1c(Optimal is < 5.2) is a form of hemoglobin measures the average blood sugar over periods of time (about 3 months).
- Insulin and C-peptide levels may be used to monitor insulin produced by the body and check for insulin resistance. Elevated blood sugar reflects the level of resistance.
- These labs measure blood sugar and insulin in the blood that are due to what your body is making (endogenous) and how much is produced outside the body (exogenous sources). Insulin tests will reflect the total, while C-peptide will reflect only the endogenous insulin and elevated HGA1c reflects how much blood sugar over time.





## Rationale: Meat/Poultry & Cancer Risk

- ↑ sat fat → ↓ immune system
- ↑ Omega 6 → ↑ inflammation
- ↓ plant foods- ↑ free radicals
- ↑ saturated fat (animal pro, poultry, & dairy), & ↑ refined sugar/ starch → ↑ growth factors
- ↑ fat, ↓ fiber → ↑ hormones (estrogen/testosterone) →  
↑ risk of breast/prostate CA

<http://pcrm.org/health/cancer-resources/diet-cancer/facts/meat-consumption-and-cancer-risk>

Santos MS, Lichtenstein AH, Leka LS, Goldin B, Schaefer EJ, Meydani SN. Immunological effects of low-fat diets with and without weight loss. J Am Coll Nutr. 2003;22:174-182.

Life Over Cancer By: Keith I Block, MD

The Cancer Survivors Guide By: Dr. Neil Barnard & Jennifer K. Reilly, RD

Dorgan JF, Hunsberger SA, McMahon RP, et al. Diet and sex hormones in girls: findings from a randomized controlled clinical trial. J Natl Cancer Inst. 2003;95:132-141



# **Rationale: Meat/Poultry & Cancer Risk**

## Lacks protective compounds:

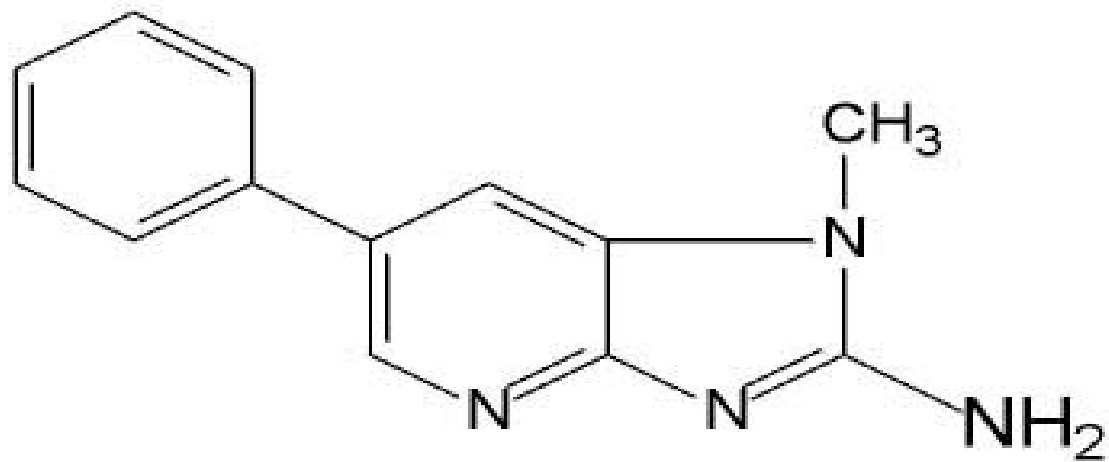
- No fiber, No antioxidants/phytochemicals

## Rich in potentially harmful substances

- Saturated Fat, Cholesterol, High in total fat
- Arachidonic Acid (omega 6's)
- Growth hormones (added & natural)
- Potentially carcinogenic compounds
  - heterocyclic aromatic amines (HCA) such as PhIP
  - polycyclic aromatic hydrocarbons (PAH)
  - formed during the processing or cooking of meat

# Heterocyclic Aromatic Amines

## PhIP Structure



2-amino-1-methyl-6-phenylimidazo[4,5-*b*]pyridine



# Cancer-Causing Compound Found in Grilled Chicken at Chain Restaurants

Chain	Item	PhIP?
	<ul style="list-style-type: none"> <li>• Caesar Salad with Grilled Chicken</li> </ul>	PRESENT
	<ul style="list-style-type: none"> <li>• Grilled Italian Chicken Caesar Salad</li> <li>• Honey-Grilled Chicken Entrée</li> </ul>	PRESENT
	<ul style="list-style-type: none"> <li>• Tendergrill Chicken Sandwich</li> </ul>	PRESENT
	<ul style="list-style-type: none"> <li>• Chargrilled Chicken Sandwich</li> </ul>	PRESENT
	<ul style="list-style-type: none"> <li>• Grilled Caribbean Chicken Salad</li> <li>• Guiltless Chicken Platter Entrée</li> </ul>	PRESENT
	<ul style="list-style-type: none"> <li>• Chicken on the Barbie</li> </ul>	PRESENT
	<ul style="list-style-type: none"> <li>• Cobb Salad with Grilled Chicken</li> <li>• Grilled Chicken Flavor Shots Entrée</li> </ul>	PRESENT

**Source:** Columbia Analytical Services tested 10 samples of each item, using a validated and published analytical method. Every sample from each restaurant tested positive for PhIP. PhIP is one of a group of carcinogenic compounds called heterocyclic amines (HCAs) that are found in grilled meats. In 2005, the federal government officially added HCAs to its list of carcinogens.




# Dairy and Ovarian Cancer

Lactose > Galactose and Glucose

**A meta-analysis of epidemiological studies**

- 10 grams of lactose increased cancer risk by 13%
  - 10 gm lactose = 1 glass of milk
- Skim, low-fat, and whole milk, yogurt, cheese, and total lactose were analyzed
- Galactose may have a toxic effect on a woman's ovaries



The background of the slide is a collage of autumn-themed images. The top left shows a close-up of various types of corn (one green, one multi-colored) and pumpkins. The top right shows a blue sky with white clouds. The bottom half of the slide is filled with a field of golden wheat stalks.

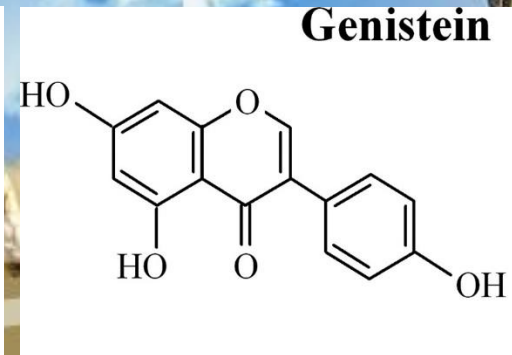
*Should soy be a part of a  
cancer-fighting  
plant-based diet?*





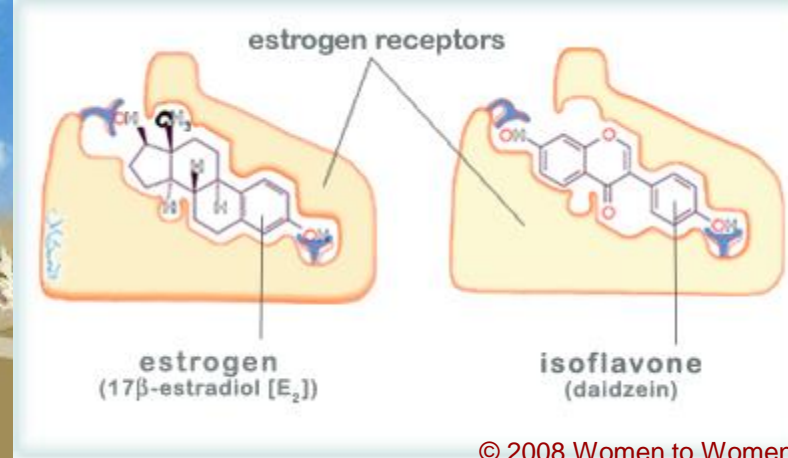
# American Cancer Society: Stance on Soy

- “For breast cancer survivors, current evidence suggests no adverse effects on recurrence or survival from consuming soy and soy foods, and there is the potential for these foods to exert a positive synergistic effect with tamoxifen, a common anti-estrogen drug for estrogen sensitive breast cancer.”



## Benefits of soy

- Only bean that is a complete protein on its own
- Soy contains:
  - Phytic acid that can bind dangerous heavy metals
  - Alpha-linolenic acid (omega-3) that helps control inflammation
  - Isoflavones like genistein and daidzein that help protect heart & bones
- Soy also contains phytoestrogens (AKA plant estrogens)
  - Very similar in structure to human estrogen
  - Soy has high level of phytoestrogens, but only 2% of power of human estrogen
  - Phytoestrogens will bind to your cells' estrogen receptors, but can also the bind up estrogen to keep it from working
- Over 300 other plant foods contain phytoestrogens: flax, sesame, wheat, oats, barley, beans, yams, apples, carrots, pomegranates



© 2008 Women to Women

## Will soy trigger breast cancer?

- Estrogen receptors (ERs) are like locks that need estrogen to act as key to open them
- Estradiol (human estrogen) will fit into ERs and cause breast CA cells to proliferate
- Phytoestrogens fit into these same ERs but cannot unlock them
- Phytoestrogens compete with estradiol and block it from working
- Alternately, when estradiol levels decline, phytoestrogens can stand in for estradiol to moderate negative effects of low estrogen





## Higher intake of soy may protect against breast cancer

- Meta-analysis of 7 case-control and 1 cohort studies conducted among Asians and Asian-Americans
- Asian women who consumed diets richest in soy (>20 mg/day) had **29%** less chance of developing breast CA vs. those who ate diets low in soy (<5 mg/day)
- Soy intake of Asian-American women did not impact their breast CA risk
  - Very low soy intake – only ranged 0.2 – 0.8 mg/day
- “...soy food intake in the amount consumed in Asian populations may have protective effects against breast cancer.”

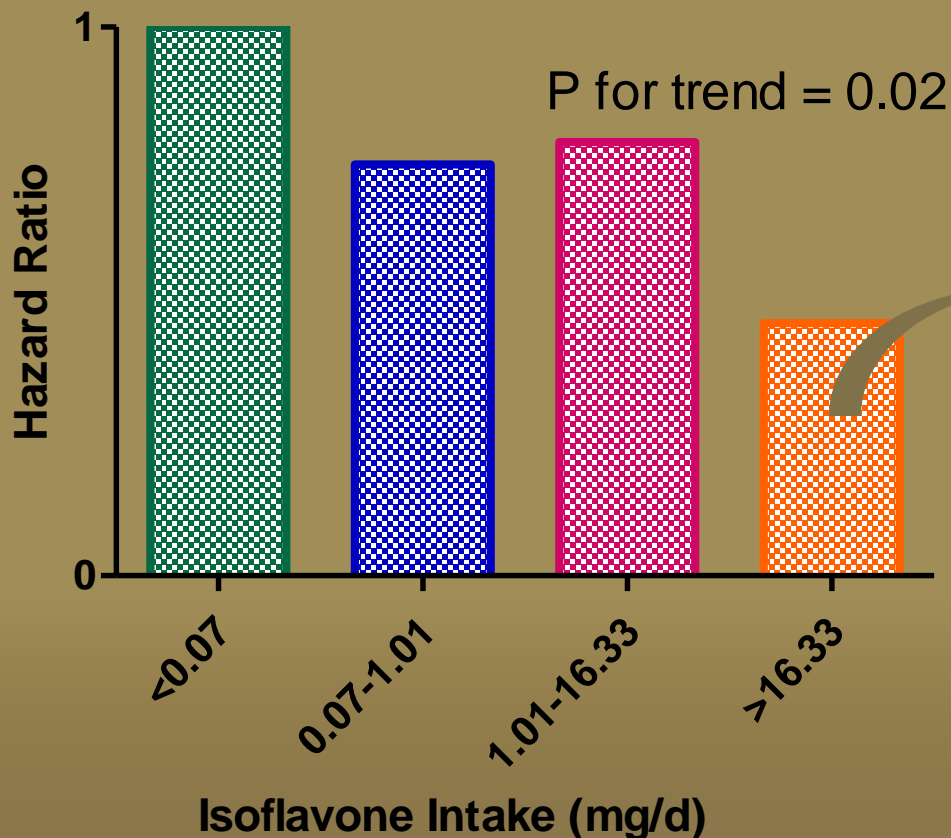


## Can I eat soy if I already have breast cancer?

- Phytoestrogens help to:
  - prevent cell-to-cell communication between breast cancer cells
  - stop the growth of blood vessels to tumors to cut off cancer cells' nutrition (angiogenesis)
  - interfere with processes involved in DNA replication

# Soy increases survival

## Soy and Cancer Recurrence or Mortality



3,088 early stage BC survivors

High soy intake (>16.33mg/day) was associated with **54%** reduced risk of recurrence/mortality

16.33mg isoflavones =

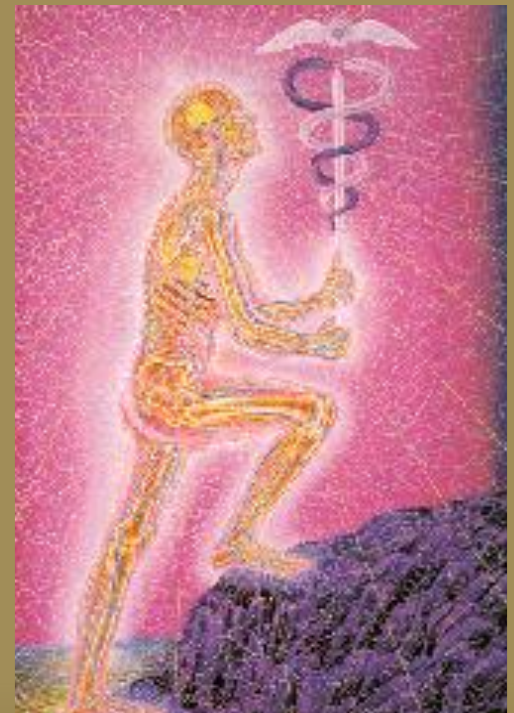
- ½ cup soymilk
- ¼ cup tofu



# Integrative Medicine

- ॐ Healing oriented
- ॐ Holistic
- ॐ Relationship-oriented
- ॐ Prevention-oriented
- ॐ Integration of complementary  
and alternative medicine
- ॐ COLLABORATION

- ॐ Carnegie Mellon study: “Teamwork is the ability to work together toward a common vision. The ability to direct individual accomplishments toward organizational objectives. It is the fuel that allows common people to attain uncommon results.”



# Stram Center for Integrative Medicine

## Lifestyle

Food  
Movement  
Vegan/Vegetarianism  
Paeo

## Spirit

Friendship  
Love  
Family/Heritage  
Prayer  
Religion  
Volunteerism

## Resilience

Micropathology  
Microbiology

TREATMENT

Biological  
Terrain



# Stram Center

for Integrative Medicine



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