“The Role of Nutrition and Lifestyle in Cancer Prevention”

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“Healthy At Home” and
“Life Is Your Best Medicine”

“God grant me the serenity to accept the things I cannot change;
Courage to change the things I can;
And wisdom to know the difference.”

- Reinhold Niebuhr
Statistics

• In US, one in four people will die from cancer. One in 2 men and one in 3 women will be diagnosed with cancer in their lifetime.
• In 2010, 1.6 million people were diagnosed with cancer. In 2030, this number is estimated to increase to 2.3 million.
• Cancer rates are increasing globally, people being diagnosed at younger and younger ages.
• But many people who are diagnosed also survive the disease. >12 million people have survived cancer treatment and are looking to prevent cancer recurrence.

Carcinogenesis broken into three stages:
1. Initiation  2. Promotion  3. Progression

http://clinicalcenter.nih.gov/dtm/our_research.html
Integrative Approach

*Chemoprevention — risk reduction.
Adjunctive — the stage when people are actually receiving chemotherapy, radiation or other conventional treatment methods.
Antineoplastic — drugs or natural substances with direct anti-cancer activities.

“Cancer Prevention in 21st Century”

Recommendations for Cancer Prevention
WCRF/AICR

- **Body Fatness** – be as lean as possible within normal range of body weight
- **Physical Activity** – be physically active as part of everyday life
- **Foods and Drinks that Promote Weight Gain** – limit consumption of energy-dense foods. Avoid sugary drinks
- **Plant Foods** – eat mostly foods of plant origin
- **Animal Foods** - limit intake of red meat, avoid processed meat
- **Alcoholic Drinks** – limit alcoholic drinks (2 serving/d men, 1 serving/d women)
- **Preservation, Processing, Preparation** – limit consumption of salt
- **Breastfeeding** – mothers to breastfeed, children to be breastfed

Cancer Survivors – follow recommendations listed for cancer prevention

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Can Cancer be Prevented?  
Maybe 30-50%  

Tobacco  

- Tobacco use is a well-established risk factor for cancers of the lung, head and neck, nasopharynx, esophagus, stomach, pancreas, liver, kidney, bladder, leukemia, and cervix.  
- Tobacco smoking estimated to account for 21% of cancer deaths worldwide.  

Alcohol

• High alcohol consumption is a well-established risk factor for cancers of the head and neck, esophagus, liver, colorectum; and breast in women.
• There is clear evidence of beneficial effects of moderate wine consumption in cardiovascular disease, diabetes, osteoporosis, maybe neurological diseases, and longevity.


Alcohol and Cancer

• LACE (Life after Cancer Epidemiology) study found women drinking > 5 grams of alcohol per day had a 35% increased risk of recurrence and 51% increased risk of death due to breast cancer, especially if postmenopausal and obese.
• Women drinking 5-15 g/d had increased survival from colorectal cancer compared to non-drinkers.
• One standard drink is 10 grams alcohol.
• May be differences between types of alcohol consumption with regards to cancer.

Two Unifying Themes

When we look at what appears to be driving much of our chronic disease, including some cancer, we see:

*Chronic Inflammation*

*and*

*Insulin Resistance*
Inflammation and Cancer

• Activation of NF-κβ is vital for our body’s ability to defend itself against infection and is a central mediator of inflammation.

• But many things activate NF-κβ and when it is persistently “turned on” it induces genes that are responsible for increasing cell survival, proliferation, migration and invasion. It also turns down growth regulators (e.g., p53) that suppress tumor growth.

Factors That Drive Inflammation and Insulin Resistance

- Sedentary lifestyle, lack of exercise
- Pattern of central obesity
- Western-dietary pattern, high fructose
- Prolonged psychosocial stress
- Environmental exposures (smoke, toxins)
- Alterations in oral and gut flora and intestinal permeability
WCRF/AICR Recommendations to Reduce Cancer Risk

- Be as lean as possible without becoming underweight.
- Be physically active for at least 30 minutes/d.

According to AICR, estimated number of US cancers that are currently linked to excess body fat include:

Estimated Cancers

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Cancer Site</th>
<th>Cases Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>49</td>
<td>Endometrial cancers</td>
<td>21,300</td>
</tr>
<tr>
<td>35</td>
<td>Esophageal cancers</td>
<td>5,824</td>
</tr>
<tr>
<td>28</td>
<td>Pancreatic cancers</td>
<td>12,079</td>
</tr>
<tr>
<td>24</td>
<td>Kidney cancers</td>
<td>13,978</td>
</tr>
<tr>
<td>21</td>
<td>Gallbladder cancers</td>
<td>2,050</td>
</tr>
<tr>
<td>17</td>
<td>Breast cancers</td>
<td>35,540</td>
</tr>
<tr>
<td>9</td>
<td>Colorectal cancers</td>
<td>12,831</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>103,602</td>
</tr>
</tbody>
</table>

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Obesity and Cancer: What is The Connection?

- Fat cells, particularly those in the belly, produce and react to hormones and proteins that drive inflammation and insulin resistance, which promote cell growth. The more often cells divide, the more opportunity there is for cancer to develop.

- Waist measurements indicating increased risk:
  - 31.5 inches or more for women
  - 37 inches or more for men

- High risk
  - 35 inches or more for women
  - 40 inches or more for men
Obesity and Insulin Growth Factors

• Obesity is associated with multiple factors that may cause an increased risk for cancer and cancer-related mortality including insulin resistance, high blood sugar and insulin-growth factors (IGF).

• Elevated insulin increases tumor growth and aggressiveness.

• IGF-1 and IGF-2 have been identified as tumor promoters in multiple studies.

Ways to Reduce Insulin Resistance

- Maintain healthy weight
- Regular physical activity
  - Cells use available insulin AND muscle cells can take up glucose without insulin
- Low glycemic load diet
  - Reduce insulin spikes
- Adequate magnesium in diet
  - Increases insulin sensitivity
BENEFITS OF PHYSICAL ACTIVITY

- Resets stress response, takes more physical and emotional strain to increase cortisol levels.
- Lowers risk of diabetes by enhancing skeletal uptake of blood sugar.
- American Cancer Society, *exercise may reduce risk of cancer by reducing insulin and insulin-like growth factors levels, associated with increased cell/tumor growth.*
- Review of 73 studies found 25% average risk reduction for breast cancer amongst physically active women.

*Lynch, et al. Recent Results Cancer Res 2011; 186:13-42*

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Insulin and Breast Cancer

- Dr. Celia Byrne (Harvard University) compared C-peptide levels, a marker for insulin, from 463 women who developed breast cancer in Nurses Health Study to women who didn’t develop breast cancer.
- Those with highest C-peptide had a 70% greater chance of developing breast cancer.
- C-peptide levels are higher in overweight and obese women who aren’t physically active.
Keep Track of Your Movement

- Work up to 10,000 steps per day.
- I love my Fitbit – keeps track of my movement and aerobic activity.
- Omron HJ-112 is under $25 and is also great.
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Glycemic Index & Glycemic Load Rating Chart

Glycemic Index (GI)

<table>
<thead>
<tr>
<th>Low (&lt;=55)</th>
<th>56-69</th>
<th>High (&gt;=70)</th>
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<tbody>
<tr>
<td></td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

Glycemic Load (GL)

<table>
<thead>
<tr>
<th>Low (&lt;=10)</th>
<th>11-19</th>
<th>High (&gt;=20)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

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Figure 3-6. Sources of Added Sugars in the Diets of the U.S. Population Ages 2 Years and Older, NHANES 2005-2006

a. Data are drawn from analyses of usual dietary intake conducted by the National Cancer Institute. Foods and beverages consumed were divided into 97 categories and ranked according to added sugars contribution to the diet. "All other food categories" represents food categories that each contributes less than 2% of the total added sugar intake.

### Food Glycemic Load Chart

#### Total GL ~ 80 per day.

<table>
<thead>
<tr>
<th>Food</th>
<th>Serving Size</th>
<th>Glycemic Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grapefruit</td>
<td>½ large</td>
<td>3</td>
</tr>
<tr>
<td>Apple</td>
<td>1 medium</td>
<td>6</td>
</tr>
<tr>
<td>Banana</td>
<td>1 large</td>
<td>14</td>
</tr>
<tr>
<td>Raisins</td>
<td>1 small box</td>
<td>20</td>
</tr>
<tr>
<td>Watermelon</td>
<td>1 cup</td>
<td>8</td>
</tr>
<tr>
<td>Carrots</td>
<td>1 large</td>
<td>5</td>
</tr>
<tr>
<td>Orange</td>
<td>1 medium</td>
<td>6</td>
</tr>
<tr>
<td>Sweet potato</td>
<td>1 cup</td>
<td>17</td>
</tr>
<tr>
<td>Baked potato</td>
<td>1 medium</td>
<td>28</td>
</tr>
<tr>
<td>French fries</td>
<td>1 medium serving</td>
<td>26</td>
</tr>
<tr>
<td>Snickers</td>
<td>1 bar</td>
<td>35</td>
</tr>
<tr>
<td>Reese’s cup</td>
<td>1 miniature</td>
<td>2</td>
</tr>
</tbody>
</table>

Total GL ~ 80 per day.

### Food Glycemic Load Chart

#### Total GL ~ 80 per day.

<table>
<thead>
<tr>
<th>Food</th>
<th>Serving Size</th>
<th>Glycemic Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>½ cup</td>
<td>2</td>
</tr>
<tr>
<td>Broccoli</td>
<td>1 cup</td>
<td>4</td>
</tr>
<tr>
<td>Green beans</td>
<td>1 cup</td>
<td>3</td>
</tr>
<tr>
<td>Tomato</td>
<td>1 medium</td>
<td>2</td>
</tr>
<tr>
<td>Subway sandwich Turkey breast</td>
<td>6 inch</td>
<td>17</td>
</tr>
<tr>
<td>Butter pecan ice cream</td>
<td>5.5 ounces (small)</td>
<td>22</td>
</tr>
<tr>
<td>Vanilla ice cream cone</td>
<td>4.5 ounces (small)</td>
<td>19</td>
</tr>
<tr>
<td>Potato chips, fat free</td>
<td>1 bag (8 ounces)</td>
<td>49</td>
</tr>
<tr>
<td>Tortilla chips, white corn</td>
<td>3.5 ounces</td>
<td>38</td>
</tr>
<tr>
<td>Eggo oat waffles</td>
<td>1 serving</td>
<td>13</td>
</tr>
</tbody>
</table>

Total GL ~ 80 per day.

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### Food Serving Size Glycemic Load

<table>
<thead>
<tr>
<th>Food</th>
<th>Serving Size</th>
<th>Glycemic Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spaghetti</td>
<td>1 cup</td>
<td>38</td>
</tr>
<tr>
<td>Brown rice</td>
<td>1 cup</td>
<td>23</td>
</tr>
<tr>
<td>White rice</td>
<td>1 cup</td>
<td>33</td>
</tr>
<tr>
<td>White bread</td>
<td>1 slice</td>
<td>10</td>
</tr>
<tr>
<td>Whole grain bread</td>
<td>1 slice</td>
<td>5</td>
</tr>
<tr>
<td>Bagel, cinnamon raisin</td>
<td>1 3.5 inch</td>
<td>24</td>
</tr>
<tr>
<td>Pumpernickel bread</td>
<td>1 slice</td>
<td>6</td>
</tr>
<tr>
<td>Macaroni and cheese</td>
<td>1 cup prepared</td>
<td>31</td>
</tr>
<tr>
<td>Chocolate doughnut</td>
<td>1 doughnut (80 g)</td>
<td>25</td>
</tr>
<tr>
<td>Glazed doughnut</td>
<td>1 doughnut (80 g)</td>
<td>12</td>
</tr>
</tbody>
</table>

Total GL ~ 80 per day.

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www.glycemicindex.com

"The Fire Within"

**CUT BACK ON **REFINED** GRAINS & SWEETS!!**

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Sugar and Cancer

• **Sugar does NOT cause cancer.**

• However, excessive consumption of sugar in combination with low physical activity induces metabolic changes that drive inflammation and insulin resistance, which drive heart disease, diabetes, non-alcoholic fatty liver disease and tumor growth.

• WHO recommends no more than 25 grams per day of added sugars (6 tsp).

*Resources*

• The New Glucose Revolution by Jennie Brand-Miller, PhD

• The Glycemic Load Diet by Rob Thompson MD

• The Glycemic Load Diet Cookbook by R. Thompson

• The Easy GL Diet Handbook by Fedon Lindberg MD

• The 150 Healthiest 15-Minutes Recipes on Earth by Jonny Bowden, PhD

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"Cancer Prevention in 21st Century"

Mediterranean Diet Pyramid

- Be Physically Active
- Fish and Seafood
- Cheese and Yogurt
- Poultry and Eggs
- Wine
- Sweets and Meats
- Water

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Diet and Cancer

• Study > 2000 women confirmed that “Western” diet increased breast cancer risk, while Med Diet rich in fruits, vegetables, legumes, oily fish and vegetable oils lowered risk of all breast cancer subtypes, particularly triple-negative tumors.

• Another review found strong evidence of a beneficial role of the Mediterranean diet on oral and pharyngeal cancer.

• High adherence to MD associated with a significant reduction in the risk of overall cancer mortality (10%), colorectal cancer (14%), prostate cancer (4%) and aerodigestive cancer (56%)


Inflammation and Aging

• Med Diet has shown anti-inflammatory effects when compared with typical North American and Northern European dietary patterns in most observational and interventional studies.

• Review of large Nurses Health Study by researchers at Harvard School of Public Health found greater adherence to the Mediterranean diet was associated with longer telomeres.

Compared with patients consuming the control diet, patients consuming the intervention diet had significantly reduced serum concentrations of hs-CRP, IL-6, IL-7, and IL-18, as well as decreased insulin resistance.

A Mediterranean-style diet might be effective in reducing the prevalence of the metabolic syndrome and its associated cardiovascular risk.

Esposito et al., JAMA 2004; 292:1440-1446

Cancer Prevention in 21st Century
Fish and Cancer

- There seems to be a U-shaped trend with fatty fish consumption and total mortality and with total fish consumption and cancer mortality (p = 0.046).
- Studies are complicated by intake of different fish (ocean, oily, freshwater); presence of environmental toxins, etc.
- 2 servings per week of low mercury, omega 3 fatty fish is current recommendation.


Seafood Calculator
www.ewg.org/research/ewg-s-consumer-guide-seafood/seafodd-calculator
WCRF/AICR Recommendations to Reduce Cancer Risk (2007)

- Limit consumption of red meats (beef, pork, lamb) and avoid processed meats. Aim for no more than 18 ounces per week (10 ounces higher risk)

**Red meat** refers to beef, pork and lamb – *foods like hamburgers, steak, pork chops and roast lamb*.

- Studies show we can eat up to 18 ounces a week of red meat without raising cancer risk.

**Processed meat** is red meat that is preserved by smoking, curing, salting or adding other chemical preservatives. *Sausage, bacon, ham and lunch meats (such as bologna, salami and corned beef) are processed meats.*

- The evidence is convincing that processed meats raise your risk of colorectal cancer. *For every ounce and half of processed meat eaten per day, risk rises by 21%.*
Dietary Fat and Cancer Systematic Review

• No associations were found for prostate cancer, esophageal cancer, gastric cancer, renal cell cancer, bladder cancer, lung cancer, postmenopausal breast cancer, or skin cancer by the total intake or types of dietary fat.
• There may be an association between total dietary fat and premenopausal breast cancer.
• Ovarian cancer there was limited-suggestive evidence for a positive association with intake of saturated fats.


Interesting Review on Fat and Breast Cancer

• Striking differences in breast cancer incidence between Asian and western women, with Mongolia’s rates even lower than China.
• The almost exclusive dietary reliance of Mongolians on meat and dairy argues against beneficial effects of a low-fat diet on circulating hormones explaining international breast cancer differences.

• Prostate cancer is unique in that most cases will remain indolent, while only some will become virulent. Therefore, some men will choose active surveillance rather than more aggressive treatment.

• University of Alabama researchers concluded that flax seed is safe, inexpensive, easy to obtain, and its metabolic products reduce cell proliferation in the prostate.


• Flax is high in lignans, which are being studied for use in cancer prevention.

• Lignans block powerful growth factor receptors like epidermal growth factor (EGF), Her2, Insulin like growth factor-1 (IGF-1), and vascular endothelial growth factor (VEGF), the hormone responsible for stimulating blood vessels into tumors.

<table>
<thead>
<tr>
<th>Source</th>
<th>Lignans/100 g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flax seed</td>
<td>300,000 mcg (0.3 g)</td>
</tr>
<tr>
<td>Sesame seed</td>
<td>29,000 mcg (29 mg)</td>
</tr>
<tr>
<td>Grains</td>
<td>7-764 mcg</td>
</tr>
</tbody>
</table>

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Flaxseed

- In one study, 161 men with prostate cancer were randomized to a diet high in flax (30g/day), a low-fat diet, both high-flax and low-fat or control group between their prostate biopsies and prostatectomies, an average of 30 days.
- The study demonstrated lower rates of proliferation in prostate cancer tissue among those eating flax.

Flax Seed Take Away

- Purchase whole seeds and grind before using.
- Heat does not damage beneficial components.
- 1 Tbsp whole flax seed ~ 14 grams

Calcium and Prostate Cancer?

- Harvard review Health Professionals Study: 47,885 men in cohort reported diet data in 1986 and every 4 y thereafter. From 1986-2010, 5861 cases of prostate cancer were identified, including 789 lethal cancers (fatal or metastatic).
- Calcium intake > 2000 mg/d was associated with increased risk of advanced-stage/high-grade disease 12-16 y after exposure.

Soy and Breast Cancer

- Soy in childhood may be protective against breast cancer. Dietary soy is safe and possibly beneficial in breast cancer.
- LACE trial saw a 60% reduction in risk of breast cancer recurrence in women taking tamoxifen who were in the highest quintile of soy intake.
- Supplemental soy isoflavones significantly reduce hot flash frequency and severity, particularly those that provide a minimum of 18 mg/d of genistein.


Turmeric
(Curcuma longa)
Curcumin

- Curcumin is the yellow pigment in turmeric and has powerful health benefits. Human and animal data suggest it may be beneficial for:
  - Brain health
  - Inflammation
  - Heart disease
  - Cancer
  - Depression
  - Skin Conditions

Effective anti-inflammatory; strong inhibitor NF-kB very favorable clinical trials in knee osteoarthritis.

25 clinical trials using curcumin in a variety of cancers, curcumin is the most promising polyphenol as possible future adjuvant in colorectal cancer management.

Early Investigation

- Colonic polyps are a precursor to colorectal cancer.

- A small pilot study of 5 patients with familial adenomatous polyps found that after six months of taking 480 mg of curcumin and 20 mg quercetin taken three times a day, polyp numbers were reduced by 60%.

Beneficial Effects in the Gut

- Distribution studies show curcumin preferentially accumulates in intestine, colon and liver.
- Early research is promising in cases of ulcerative colitis, NAFLD, FAP. Strong hepatoprotectant.
- For systemic absorption consider using phytosome bound curcumin. Peak plasma approximately 5-fold higher than traditional curcumin products.

Absorption

- Most research has used range of 1200-6000 mg of curcumin.
- Doses up to 12 grams per day for three months not associated with toxicity HOWEVER, GI upset is common complaint.
- Curcumin is poorly absorbed from the GI tract.
- Preparations that increase absorption include: nanoformulations, phytosome, and those with piperine (alkaloid from black pepper).


Label: Curcumin with Piperine

Suggested Use
As a dietary supplement, take 1-3 capsules daily, in divided doses, between meals.

Supplement Facts

<table>
<thead>
<tr>
<th>Supplement Facts</th>
<th>Amount Per Serving</th>
<th>% Daily Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serving Size: 1 Capsule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Servings Per Container: 60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin C (ascorbyl palmitate)</td>
<td>17 mg</td>
<td>7%</td>
</tr>
<tr>
<td>Turmeric (curcuma longa) Extract (root) (standardized to contain 96% curcuminoids)</td>
<td>630 mg</td>
<td>*</td>
</tr>
<tr>
<td>Bioperine (piper nigrum) Extract (fruit) (standardized to contain 95% piperine)</td>
<td>5.3 mg 5 mg</td>
<td>*</td>
</tr>
</tbody>
</table>
Curcumin Bound to Phytosome

**Serving Size:** Two Capsules

**Servings Per Container:** 60

<table>
<thead>
<tr>
<th>Two Capsules Contain:</th>
<th>Amount Per Serving</th>
<th>% DV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curcumin Phytosome† (Curcuma longa extract (root) / Phosphatidyicholine complex)</td>
<td>500 mg</td>
<td>*</td>
</tr>
</tbody>
</table>

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Green Tea
*(Camellia sinensis)*

- **White, green, oolong and black teas** contain polyphenols and flavonoids, particularly catechins.
- White and green are richer sources of catechins than black.
- The dominant catechin in green tea is epigallocatechin gallate (EGCG), which exerts potent antioxidant activity and activate detoxification enzymes.
Green Tea in Cancer

- Green tea polyphenols have been shown to inhibit every step of carcinogenesis. It stimulates DNA repair and inhibits two proteins that promote tumor cell growth and migration — namely, vascular endothelial growth factor (VEGF) and hepatocyte growth factor (HGF).
- It also inhibits NF-κβ and induces P53.


Oral Cancer

- 6th most common cancer globally with an annual incidence of > 300,000 cases and an increase of 62% has been reported in the developing countries.
- Smokers 4-7 times higher prevalence than nonsmokers.
- If also drink or chew tobacco, risk increased 19 and 123 fold, respectively.
- HPV, particularly 16, may also be increasing risk.
- Preliminary data using both topically applied and oral dosing of EGCG have found clinical and biochemical improvement.

Green Tea and Prostate Cancer

- RDBPCT 60 men with high-grade prostate intraepithelial neoplasia (PIN) given 600 mg of EGCG or placebo for 1 year.
- In green tea group, only 3% converted into prostate cancer versus 30% in placebo group.
- UK study: 199 men (~74 years) localized prostate cancer, randomized to oral capsule containing pomegranate, green tea, broccoli, turmeric; or identical placebo for 6 months.
- Median rise in PSA in supplement group was 14.7% as opposed to 78.5% in the placebo group; difference 63.8% (P=0.0008).


Green Tea

- Drinking 3-5 cups green tea quite safe.
- If using concentrated EGCG extracts, take with food.
- Dose is typically 600-800 mg/d

Pomegranate

*Punica granatum*

- 2-year, open-label, phase II human study demonstrated that pomegranate consumption reduces PSA levels; 16 of 46 patients (35%) exhibiting a PSA decline during treatment, 4 of whom achieved a PSA decline of more than 50% (Pantuck, 2006).
- In a four-year follow-up, researchers found that for men who continued to drink pomegranate juice, the time to double PSA levels was roughly four times longer than it had been at the study outset.

Vitamin D and Cancer

• Large ESTHER study ~10,000 women and men (50-74 yrs) found vitamin D deficiency significantly increased cardiovascular mortality over a follow up median of 9.5 years.
• Vitamin D deficiency was also associated with significantly increased cancer mortality.


Vitamin D and Breast Cancer

• Some research suggests serum 25(OH)D level of 47 ng/ml is associated with a 50% lower risk of breast cancer.
• Review of 30 studies show that high vitamin D status is strongly associated with better breast cancer survival.

Vitamin D and Colorectal Cancer

- Review ~ 1,000,000 participants found 10 ng/mL increment in blood 25(OH)D level conferred a 26% reduction in risk.
- Reviewers from National Cancer Institute found Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial supports association between higher vitamin D status and substantially lower colorectal cancer risk even after adjusting for known colon cancer risk factors.
- Higher serum 25(OH)D is associated with lower mortality of patients with colorectal cancer. Colorectal cancer patients with deficient levels of serum 25(OH)D should have levels restored to range (30-50ng/ml).


Vitamin D and Prostate Cancer

- Blood levels of 25-OHD on the risk of total, low-, and high-grade prostate cancer were examined in the Selenium and Vitamin E Cancer Prevention Trial (SELECT) and Prostate Cancer Prevention Trial.
- The results from these large prevention trials support the hypothesis that circulating levels of 25-OHD decrease the risk of clinically relevant prostate cancers.

Hormone Therapy: Update

- Guidelines from North American Menopause Society, Endocrine Society, International Menopause Society, and the European Menopause and Andropause Society for the management of menopausal women with a personal or family history of thromboembolic disease all contain positive statements regarding both transdermal estradiol and micronized progesterone, especially for obese women.

Simon JA. Climacteric 2012 15S 1:3-10

Gardisil HPV Vaccine

- Advisory Committee on Immunization Practices recommends HPV vaccination for females 11–12 years—ideally before sexually activity. “Catch up” vaccination, aged 13–26, is also recommended. Appears to offer life-long protection.
- According to CDC, from June 2006-March 2014, ~67 million doses of HPV vaccines distributed and ~ 25,000 adverse events were reported; 92% were classified as non-serious.
- After careful review, none of these adverse events were any more common after HPV vaccination than among comparison groups.

www.cdc.gov/vaccinesafety/vaccines/HPV/index.html
Stress and Cancer

• While stress does not cause cancer, there is growing evidence that chronic stress can promote the growth of tumors that are already present.
• Studies clearly demonstrate that social isolation and depression promote tumor growth.
• Excess sympathetic tone caused by emotional stress, can decrease cancer survival.

Yoga

• Largest yoga study to date randomized 200 breast cancer survivors to 12 weeks of twice-weekly, 90-minute classes and home practice or to a wait list control.

• Practice of yoga was associated with less fatigue and higher levels of vitality and markers for inflammation were 10-15% lower.


“Cancer Prevention in 21st Century”
The Medicine of My Life

“The cave you fear to enter holds the treasures you seek.”

—Joseph Campbell

Letting Go.....

“Healing may not so much be about getting better, but about letting go, of all the expectations, all of the beliefs, and becoming who you are.”

—Rachel Naomi Remen, M.D.