Welcome to the COPE Webinar Series for Health Professionals!

June 10 2015 webinar

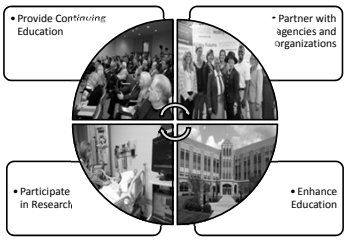
Fight Cancer with Your Fork!



Time: 12 noon – 1 PM EST
Moderator: Rebecca Shenkman, MPH, RDN, LDN
Interim Director
MacDonald Center for Obesity Prevention & Education

Handouts of the slides are posted at: www.villanova.edu/COPE

MacDonald Center for Obesity Prevention and Education (COPE) Goals



Fight Cancer with Your Fork!



Susan Silberstein PhD
Founder and Educational Director of BeatCancer.org

Objectives: The learner will be able to:
1. Identify the ways in which dietary charge can affect outcome in diagnosed patients.
2. Name foods that can help suppress tumor growth.
3. Explain the connection between cancer and biological terrain.

Credits: This webinar awards 1 contact hour for nurses ,1 CPEU for dietitians and 1 CEC for fitness professionals. Suggested CDR Learning Need Code: 4000,4040, 5150; Level 2

Notice: Villanova University College of Nursing is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center Commission on Accreditation.

Villanova University College of Nursing Continuing Education/COPE is a Continuing Professional Education (CPE) Accredited Provider with the Commission on Dietetic Registration and an ACSM Approved Provider .

DISCLOSURE

The planners do not have any conflicts of interest to disclose.

The speaker discloses she is founder and educational director of BeatCancer.org.

Accredited status does not imply endorsement by Villanova University, COPE or the American Nurses Credentialing Center of any commercial products or medical/nutrition advice displayed in conjunction with an activity.

Fight Cancer With Your Fork!



A Recipe for Preventing Cancer And Recurrence

Diet and Cancer Risk

- In November 2007, the **American Institute for Cancer Research** and the **World Cancer Research Fund** published *Food, Nutrition, Physical Activity and the Prevention of Cancer: a Global Perspective* -- the most comprehensive report on diet and cancer ever completed.
- Over 7,000 scientific studies that met rigorous research criteria were independently reviewed by an Expert Panel of 21 world-renowned scientists, who judged the accumulated evidence and developed recommendations for cancer prevention.
- Among their conclusions:
  - Diets that are protective against cancer are mainly made up from foods of plant origin.
  - The recommendations of this report also apply to cancer survivors.



Source: http://www.dietandcancerreport.org/cancer_resource_center/downloads/summary/english.pdf

Diet and Cancer Risk

- Epidemiological research indicates that high fruit and vegetable consumption is associated with lower cancer risk.
- Nearly 5000 studies show that fresh fruits and vegetables prevent at least 15 different types of cancer.
- Dr. Richard Beliveau, world famous biochemist from the University of Montreal has stated:

"Change your diet, change your cancer risk!"
"Plant-based food is the best thing you can put on your plate to protect you from cancer."

Sources: Kohlmeier L, Simonsen N, Mottus K et al. Dietary modifiers of carcinogenesis. *Environ Health Perspect* 1995 November; 103 (suppl 8):177-184
Beliveau R and Gingras D. *Foods to Fight Cancer.* Toronto: McClelland & Stewart, 2006

EPIC Study

European Prospective Investigation into Cancer

Increasing fruits and veggies by 150g/day (= 1 small apple) could prevent:

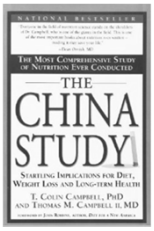


- >36,000 new cancer cases annually in the US
- >300,000 new cancer cases worldwide

Boffetta P et al. Fruit and vegetable intake and overall cancer risk in the European Prospective Investigation into Cancer and Nutrition (EPIC). *J. Natl Cancer Inst*. 2010;102:1-9

The China Project

The China Oxford Cornell Diet and Health Project, the world's most comprehensive study of diet, health and disease ever completed, found very strong correlations between the changeover in China from the traditional Asian plant-based diet to a western diet of meat and dairy and fat and significant increases in cancer and obesity.



Campbell TC and Campbell T. *The China Study*. Dallas: Benbella, 2006

Obesity and Cancer

- In fact, obesity is a known cause of cancer.
- Obesity also negatively affects cancer survival.
- More than 117,000 cases of cancer each year are caused by excess body fat, according to the American Institute for Cancer Research.

Source: American Institute for Cancer Research
http://www.cnn.com/2009/HEALTH/11/05/obesity.cancer.link/index.html

Obesity and Cancer Risk

• Endometrium	• 49%
• Esophagus	• 35%
• Pancreas	• 28%
• Kidney	• 24%
• Gallbladder	• 21%
• Breast	• 17%
• Colorectal	• 09%

Source: American Institute for Cancer Research
http://www.cnn.com/2009/HEALTH/11/05/obesity.cancer.link/index.html

Cancer Deaths Avoidable by Dietary Change

• Prostate	• 75%
• Colon/Rectum	• 75%
• Breast/Pancreas	• 70%
• Endometrium/Gallbladder	• 50%
• Stomach	• 35%
• Larynx, Bladder, Cervix	• 20%
• Mouth, Esophagus, Lung	• 20%

Source: *Cancer Trends Progress Report* 2007 Update,
NCI, NIH, DHHS, Bethesda, MD Dec. 2007
:

Why is Nutrition So Important?

- Cancer patients don't usually die from their tumors.
- They mostly die from:

✓**Malnutrition**
✓**Toxemia**
✓**Infections**

Proper nutrition can help address all of these!

Quillin P, *Beating Cancer with Nutrition*. Tulsa: Nutrition Times, 2001

That is why, no matter what therapy a patient may choose,



we also need to be dealing with cancer in our kitchens.

EFFECTS OF DIETARY CHANGE ON DIAGNOSED CANCER

✓**Avoidance of Malnutrition**

✓**Minimization of Treatment Side Effects**

✓**Optimization of Cytotoxic Effects**

✓**Protection of Healthy Tissue**

✓**Healthy Cell Proliferation**

✓**Healing from Surgical Procedures**

EFFECTS OF DIETARY CHANGE ON DIAGNOSED CANCER

✓**Enhanced Immune System Function**

✓**Hormone Modulation**

✓**Influence on Tumor Growth Factors**

✓**Angiogenesis Inhibition**

✓**Apoptosis Stimulation**

✓**Increase in Tumor Necrosis Factor**

EFFECTS OF DIETARY CHANGE ON DIAGNOSED CANCER

✓ **Cell Differentiation**

✓ **Reduced Inflammation**

✓ **Improved Renal and Hepatic Function**

✓ **Phase I and II Liver Detoxification**

✓ **Inhibition of Metastasis**

✓ **Extended Remission Period**

EFFECTS OF DIETARY CHANGE ON DIAGNOSED CANCER

✓ **Prevention of Recurrence**

✓ **Increased Survival Time**

✓ **Enhanced Quality of Life**

✓ **Patient Empowerment**

- Patient Responses vs Oncologist Responses

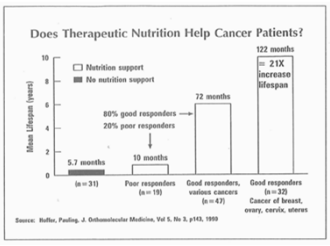
FREQUENT RESPONSES RE: ADJUVANT NUTRITIONAL SUPPORT

- *"Don't do anything nutritional – it might interfere with your treatment."*
- *"Taking nutritional supplements is a waste of money."*
- *"There is no evidence that diet plays a role once you've been diagnosed."*
- *"Just eat a balanced diet."*
- *"Eat everything and anything you want."*
- *"Eat a high fat, high calorie, high protein diet -- you need to keep your weight and strength up."*

EFFECTS OF DIETARY CHANGE ON CANCER SURVIVAL

- Research shows that such advice is misguided.
- The field of nutritional support for the diagnosed cancer patient is extremely complex. This presentation is limited to a discussion of dietary support only.
- There are literally thousands of studies published in hundreds of biomedical journals documenting not only the role of diet in cancer prevention, but specifically the scientific relationships between diet and cancer survival.
- Here are a few examples:

Hoffer Pauling Study



Source: Hoffer and Pauling. *J. Orthomolecular Medicine* 1990 Vol 5, no 3,143.

Nutritional Support and Cancer Survival

- Drs. Hoffer and Pauling tested a diet of unprocessed foods low in fat, dairy and sugar.
- All 129 patients in the study received conventional oncologic care.
- 31 in control group: survival < 6 months
- 98 in intervention group: survival > 6 years

  This group included:
  - 47 patients with adult leukemia, lung, liver & pancreatic cancers
  - 32 females with reproductive cancers: survival > 10 years

Source: Hoffer and Pauling. *J. Orthomolecular Medicine* 1990 Vol 5, no 3,143.

Dietary Factors in Lung Cancer Prognosis

- At the University of Hawaii, investigators examined the role of diet on lifespan of 212 female lung cancer patients over a period of six years.
- A significant reduction in the risk of death was shown with increasing consumption of vegetables.
- The median survival times for women from the highest to the lowest quartiles of vegetable intake were 33 and 18 months, respectively.
- Survival time essentially doubled with the highest intake of vegetables.

Goodman MT, Kolonel LN, Wilkens LR et al. Dietary factors in lung cancer prognosis. Cancer Research Center of Hawaii, University of Hawaii, Honolulu. *European Journal of Cancer,* 1992, 28(2-3):495-501

Diet and Prognosis for Pancreatic Cancer

- At Tulane University, researchers examined the effect of dietary changes on survival of pancreatic cancer.
- A small number of patients followed a macrobiotic diet (composed mainly of whole grains, vegetables, beans, legumes and small amounts of fruit).
- Of 1467 patients who made no changes, 90% were dead within the first year.
- 4-fold increase in median survival (13 months versus 3 months) in patients who followed the macro diet as compared with those eating an omnivorous diet.

Carter JP, Saxe GP, Newbold V et al. Hypothesis: Dietary management may improve survival from nutritionally linked cancers based on analysis of representative cases. *J Am Coll Nutr.* 1993;12:209–226.

Diet and Prostate Cancer Outcome

- Prostate cancer patients on the macro diet averaged 19 years survival vs matched controls whose median survival < 4 years.
- Harvard University researchers studied fat consumption from red meat in men with prostate cancer.
- Those who consumed 30 g fat from red meat per day were 2.5x more likely to have advanced prostate cancer or to die than of their cancer those who consumed 3 g fat from red meat per day.
- Those who consumed 5 fish meals/week had a 48% lower death rate.

Chavarro JE, Stampfer MJ, Hall MN et al. A 22-y prospective study of fish intake in relation to prostate cancer incidence and mortality. *Am J Clin Nutr* November 2008 vol. 88 no. 5: 1297-1303

Diet and Prostate Cancer Outcome

•525 Swedish men with prostate cancer were studied in terms of time until prostate cancer death.

•Increased risk for disease-specific mortality was seen for the highest quartile of fat consumption as compared with the lowest quartile.

•High intake of total fat and certain saturated fatty acids may worsen prostate cancer survival, particularly among men with localized disease.

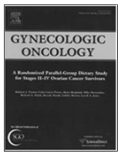
Epstein MM, Kasperzyk JL, Mucci LA et AL. Dietary Fatty Acid Intake and Prostate Cancer Survival in Örebro County, Sweden. *Am. J. Epidemiol. (2012) 176 (3): 240-252.*

Diet and Ovarian Cancer Survival

- Australian cancer researchers evaluated the effects of diet on survival among 609 women with invasive epithelial ovarian cancer between 1990 and 1993.
- Longest survivors ate the most vegetables. A survival advantage was noted for those with the highest intake of vegetables in general and cruciferous vegetables in particular, as compared with those who consumed the least.
- Shortest survivors ate the most dairy products. An inverse association between length of survival and consumption of lactose and dairy products was noted.

Nagle C, Purdie D, Webb P et al. Dietary influences on survival after ovarian cancer. *Int J Cancer* 2003 Aug 20;106(2):264-9.

Dietary Effects on Diagnosed Ovarian Cancer



- At MD Anderson Cancer Center, study of 51 women with ovarian cancer (stage II-IV)
- Two diet groups (10 F&V, 5 F&V + F&VC)
- After 6 months, both diet groups exceeded expectations for quality of life, antioxidants, phytonutrients and cell health.
- 5 years later, hospitalization rate, recurrence rate and death rate were much lower than predicted.
  --Statistically, about 60% (30 women) should have died.
  --The death rate was under 10% (4 women)

Paxton RJ, et al. A randomized parallel-group dietary study for stages II-IV ovarian cancer survivors. *Gynecologic Oncology* 2012; 124: 410-416

Diet & Breast Cancer Outcome

- Poor dietary habits are strongly associated with risk for breast cancer treatment failure.
- Dietary intervention is a worthwhile approach for improving treatment outcome.

Holm, Nordevang, Hjalmar et al. Treatment failure and dietary habits in women with breast cancer. *Journal of the National Cancer Institute,* 1993 (85):32-36

Western Diet & Colon Cancer Outcome

- Dana Farber Cancer Institute study
- 3x greater colon cancer recurrence and death among those patients eating a western diet high in sugar, meat, dairy and fat.

Meyerhardt JA, Niedzwiecki D, Hollis D et al. Association of Dietary Patterns With Cancer Recurrence and Survival in Patients With Stage III Colon Cancer. *JAMA.* 2007;298(7):754-764.





"If I were asked to design a diet today that promoted the development of cancer to the maximum, I couldn't improve on our present diet!"



Richard Beliveau, PhD

Macronutrients & Cancer: Fats

•Fats are relevant in three ways:

- ✓**AMOUNT**
- ✓**TYPE**
- ✓ **QUALITY**

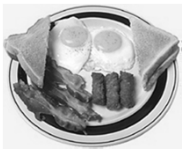
•Traditional plant-based diets contain only 15-20% of total calories from fat; Western diets often contain 50% total calories from fat.

•High levels of dietary fat are linked to increased levels of hormones, mutagens and carcinogens.

•Fat is a threshhold nutrient.

Source: Sparandeo J. *Scientific Relationships Between Diet and Cancer Survival*. Easton, PA: Comprehensive Nutritional News, 1991

Foods High in Fat



Fried Chicken
French Fries
Hamburgers
Steak
Pork
Butter
Cheese
Ice Cream
Chips
Donuts



Types of Fats

Saturated Fats

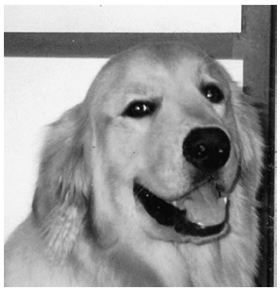
- Animal Source
- Promote Disease

Unsaturated Fats

- Plant Source
- Prevent Disease
  - Omega-3
    - Upregulate Immune Response
  - Omega-6
    - Downregulate Immune Response

•All are important for health, but the ratios are key. Americans consume a 25:1 ratio of Ω -6: Ω -3.

One-third of all deaths in humans and dogs could be prevented by reducing omega-6 fats in the diet.



Source: Institute of Food Technologists 2010 annual meeting

Unsaturated Fats

Omega 6

- Sunflower Oil
- Safflower Oil
- Soybean Oil
- Corn Oil
- Cottonseed Oil
- Sesame Oil
- Peanut Oil

Omega 3

- Wild Fish
- Sea Vegetables
- Wild Game
- Grass Fed Animals
- Free Range Hens/Eggs
- Walnuts
- Pumpkin Seeds
- Flax, Hemp, Chia Seeds

Quality of Fats

•Fats are labile and denature quickly when exposed to air, heat and light.

•When they do, they oxidize, rancidify, and produce lipid peroxides.

•Oxidized fats, free radicals, hydrogenated fats, trans fats, and margarine can contribute to cancer growth through genetic damage and immune system suppression.

Sources: Erasmus U. *Fats That Heal, Fats That Kill*. Burnaby, BC: Alive, 1993
Dianzani M. Lipid peroxidation and cancer. *Critical Reviews Oncology/Hematology* 15 (1993) 125-147
Weil A. *8 Weeks to Optimum Health*. New York: Ballantine, 2006

Macronutrients & Cancer: Proteins

There are also two main classes of proteins:

ANIMAL
- ✓**Meat**
- ✓**Fowl**
- ✓**Fish**
- ✓**Dairy**



PLANT
- ✓**Beans**
- ✓**Nuts**
- ✓**Seeds**
- ✓**Whole Grains**



Animal Protein & Cancer Growth

- A British study of more than 6000 vegetarians found them 40% less likely to die of cancer than meat-eaters.
- Animal products are frequently high in fat and low in fiber, both of which are risk factors for cancer.
- Charbroiled or cured meats are especially carcinogenic due to heterocyclic amines & nitrates.
- North American cattle are treated with bovine growth hormones which stimulate growth of hormone-responsive cancers like breast and prostate cancer.

Campbell TC and Campbell T. *The China Study*. Dallas: Benbella, 2006.

Animal Protein & Cancer Growth

- According to Drs. Robert Good, David Kitchevsky and T. Colin Campbell, a low animal protein diet (<10%) helps slow cancer growth.
- Test animals were given a carcinogen that caused rapidly growing liver cancer. When animal protein in the feed was replaced by plant protein, the cancer stopped growing.
- *"Carcinogenesis is turned on by animal protein and turned off by plant protein, even if cancer has already been initiated."*

Campbell TC and Campbell T. *The China Study*. Dallas: Benbella, 2006.

Cow Dairy and Cancer Growth

- Another dangerous animal protein source: cow dairy consumed as milk, cheese, butter, ice cream, yogurt
- European Institute of Oncology in Milan and the Universite de Montreal prostate cancer study:
  - 197 prostate cancer patients were compared with matched controls.
  - >a two-fold increased risk for cancer was associated with increased intake of dairy products.



Raimondi S, Mabrouk JB, Shatenstein B, et al. Diet and prostate cancer risk with specific focus on dairy products…: A case-control study. *Prostate* 2010:70(10):1054-1065

Cow Dairy and Cancer Growth

- In the Physicians Health Study, tracking 21,660 men for 28 years, researchers found an increased risk of prostate cancer for those who consumed ≥2.5 servings of dairy products per day as compared with those who consumed ≤0.5 servings a day.

Song Y, Chavarro JE, Cao Y, et al. Whole milk intake is associated with prostate cancer-specific mortality among U.S. male physicians. *J Nutr*. 2013;143:189-196.

- The Iowa Women's Health Study found that women who consumed >one glass of milk per day had a 73% greater chance of developing ovarian cancer than women who drank less than one glass per day.

Kushi LH, Mink PJ, Folsom AR, et al. Prospective study of diet and ovarian cancer. *Am J Epidemiol*. 1999;149:21–31.

Dairy and Ovarian Cancer

- Harvard Nurses Study of over 80,000 women found that women who consume >4 servings of dairy products a day have twice the risk of serous (the most common and deadly form of) ovarian cancer than women who have <2 servings.
- Women who drink 2 or more glasses of milk a day are at double the risk of those who do not consume it at all, or only in small amounts.
- Women who consumed 1 or more servings of skim or low-fat milk daily had a 32%-69% higher risk of ovarian cancer compared with women consuming 3 or fewer servings monthly.

Fairfield KM, Hunter DJ, Colditz GA, et al. A prospective study of dietary lactose and ovarian cancer. *International Journal of Cancer* 2004 (Vol. 110(2): 271-277)

Dairy and Cancer Growth

- Many non-organic dairy products contain exogenous growth factors, but even organic dairy products contain endogenous growth factors.
- Casein (87% of milk protein) provides intrinsic growth factors and consistently promoted all stages of the cancer process.
- Insulin-like Growth Factor-1 (IGF-1) is a growth hormone produced by all mammals. Levels of it are very high in dairy products.
- Among women younger than 50, having high IGF-1 levels (top 25%) raises breast cancer risk by seven times.
- At BeatCancer.org, diet histories of nearly 30,000 cancer patients showed correlations between heavy dairy consumption and poorly controlled adult leukemias, lymphomas, breast, prostate, and ovarian cancers.



Sources: Campbell TC. *The China Study*, Dallas: Benbella, 2006, p. 6; *Lancet* 351(1998), 1393-96.

Macronutrients & Cancer: Carbs

There are also two main classes of carbohydrates:

SIMPLE (refined)	**COMPLEX**
Promote Cancer	Fight Cancer
✓ **White Sugar**	✓ **Fruits**
✓ **White Flour**	✓ **Vegetables**
✓ **Corn Syrup**	✓ **Beans/Legumes**
✓ **Soft Drinks**	✓ **Whole Grains**



Macronutrients & Cancer: Carbs

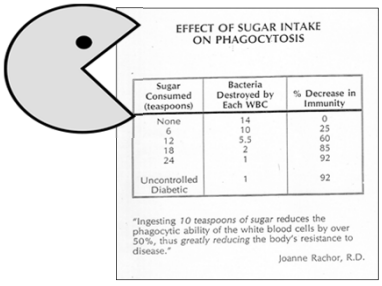
- Cancerous tumors are obligate sugar metabolizers.
- Cancer cells uptake sugar at a rate 10-12 times that of healthy cells.
- PET scans work because radioactive injected glucose is eagerly uptaken by cancer cells.



Source: Quillan P. *Beating Cancer with Nutrition*. Tulsa: Nutrition Times, 2001

Macronutrients & Cancer: Carbs

Sugar suppresses immune response.



EFFECT OF SUGAR INTAKE ON PHAGOCYTOSIS

Sugar Consumed (teaspoons)	Bacteria Destroyed by Each WBC	% Decrease in Immunity
None	14	0
6	10	25
12	5.5	60
18	2	85
24	1	92
Uncontrolled Diabetic	1	92

"Ingesting *10 teaspoons of sugar* reduces the phagocytic ability of the white blood cells by over 50%, thus *greatly reducing* the body's resistance to disease."

Joanne Rachor, R.D.

Rachor J. *Of These Ye May Freely Eat*. Family Health, 2005: 91.

Macronutrients & Cancer: Carbs



Sugar, Insulin, IGF and Cancer

- Sugar ingestion leads to insulin release.
- The more sugar eaten, the higher levels of insulin in the body.
- Obesity and lack of exercise increase insulin and IGF levels.
- High levels of insulin and IGF may be CAUSATIVE for cancers of the breast, colon, prostate, endometrium and pancreas.



Kaaks R, Energy balance and cancer: the role of insulin and insulin-like growth factor-I. *Proc Nutr Soc* 2001 Feb;60(1)91-106

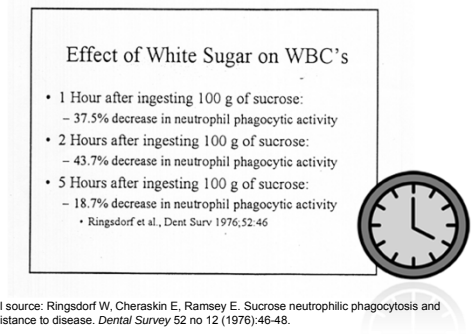
Macronutrients & Cancer: Carbs

"Trying to beat cancer while eating a diet that constantly raises blood glucose is like trying to put out a forest fire while somebody's throwing gasoline on the trees."



--Patrick Quillin, PhD
Beating Cancer with Nutrition

Macronutrients & Cancer: Carbs



Full source: Ringsdorf W, Cheraskin E, Ramsey E. Sucrose neutrophilic phagocytosis and resistance to disease. *Dental Survey* 52 no 12 (1976):46-48.

Artificial Sweeteners

- Cancer Research Centre, European Ramazzini Foundation of Oncology, Bologna, Italy:
- "Aspartame causes a statistically significant dose-related increase in lymphomas and leukemias at dose levels very near those to which humans can be exposed."
- Authors called for urgent re-examination of permissible exposure levels, especially for children. (Current ADI= 50 mg/kg bw)
- More human research is warranted.
- Sugar may be safer – just not too much – or too often!



Soffritti M, Belpoggi F, Esposti DD, Lambertini L. Aspartame induces lymphomas and leukaemias in rats. *European Journal of Oncology* 2005; 10(2):107–116.

There's Nothing to Eat!

✓FATS ARE BAD FOR YOU
✓MEAT IS BAD FOR YOU.
✓MILK IS BAD FOR YOU.
✓SWEETS ARE BAD FOR YOU.
✓PASTA IS BAD FOR YOU.
✓BREAD IS BAD FOR YOU.



Cancer or starvation?

CANCER-FIGHTING



Cancer-Fighting Foods: Fiber

- Sources of Fiber:
  - Whole Grains
  - Fresh Fruits
  - Vegetables
  - Psyllium or other fiber supplement
  - Seeds and Nuts
  - Beans and Legumes
  - Sea Vegetables
- Binds up and escorts out circulating hormones and carcinogens
- Protects against colon cancer, breast cancer, prostate cancer, lymphomas, possibly others
- *"Small stools, large hospitals."*

--Dr. Dennis Burkitt, Fellow, Edinburgh Royal College of Surgeons

Cancer-Fighting Foods: Apples



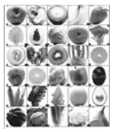
✓ Fiber
✓ Peel
-Triterpenoids
-Inhibit growth of human
Liver cancer
Colon cancer
Breast cancer

Liu RH, *Journal of Agricultural and Food Chemistry*, 2007

Cancer-Fighting Foods: Carotenes

- Carotenes are a large class of 600 phytonutrients.
- Not just beta-carotene, not just in carrots, not just in orange colored vegetables and fruits.





•Carotenes are red, yellow, purple and green. Sources of carotenes are all brightly colored fresh fruits and vegetables.

Benefits of Carotenes

1) Immune Support
- **T-Cells**
- **Natural Killer Cells**
- **Macrophage Cells**

2) Antioxidants
- **Neutralize Free Radicals**
- **Protect Cellular DNA**



Benefits of Carotenes: Lycopene



- Protects against cancers of the
  - ✓ Prostate
  - ✓ Breast
  - ✓ Mouth
  - ✓ Pharynx
  - ✓ Esophagus
  - ✓ Stomach
  - ✓ Colon

Source: *International Journal of Cancer*

Effect of Lycopene on Prostate Cancer

•Oncologists at the Karmanos Cancer Institute in Detroit tested 30 men with prostate cancer
•For 3 weeks, 15 mg lycopene daily or placebo
•Following surgery, the true lycopene group had:
- ✓ Smaller tumors
- ✓ More confined tumors
- ✓ Decreased malignancy
- ✓ Greater regression



Effects of lycopene supplementation in patients with localized prostate cancer. *Exp Biol Med* 2002 Nov,227(10):881-885

Cancer-Fighting Foods: Berries

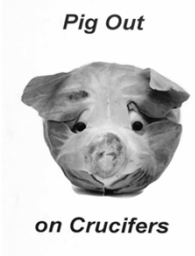
•Ellagic Acid – Anti-Angiogenesis
•Anthocyanidins – Pro-Apoptosis
•Berries inhibit cancers of the
- •Mouth
- •Esophagus
- •Colon
- •Brain
- •Kidney
- •Liver
- •Lung
- •Ovary
- •Triple Negative Breast Cancer





Journal of Agricultural and Food Chemistry, 2006
Seminars in Cancer Biology, 2007

Cancer-Fighting Foods: Crucifers



•Sources:
- •Cabbage, cauliflower, broccoli
- •Brussels sprouts, kale
- •Collard greens, bok choy

•Phytonutrients:
- •Indole 3-carbinol
- •Sulforaphane

•Support:
- •Liver enzymes
- •Detoxification pathways

•Neutralize Carcinogens:
- •Hormones
- •Chemicals

Cancer-Fighting Foods: Crucifers

PROTECT AGAINST

- ✓**Breast Cancer**
- ✓**Prostate Cancer**
- ✓**Bladder Cancer**
- ✓**Lung Cancer**



- 1338 prostate cancer patients completed food frequency questionnaires.
- Greater consumption of crucifers was associated with decreased risk of aggressive prostate cancer.

Source: Kirsh V et al. Eating more vegetables like broccoli and cauliflower is associated with a reduced risk of aggressive prostate cancer. *Journal of the National Cancer Institute*, July 25, 2007

Cancer-Fighting Foods: Green Tea

- Fights cancer via 13 different mechanisms:
  - Antioxidants - Catechins
  - Epigallocatechin Gallate (EGCG)
- Antiangiogenesis factors
- Apoptosis stimulators
- Anti-inflammatory action
- More than 300 research studies



Lee SH, Green tea fights cancer, *Immune Perspectives 2014(XL-2):3-7*

Cancer-Fighting Foods: Green Tea

- Potentially inhibits cancers of
  - Esophagus
  - Stomach
  - Pancreas
  - Colon
  - Bladder
  - Prostate
  - Lung
  - Breast
  - Liver
  - Uterus
  - Ovary



Lee SH, Green tea fights cancer, *Immune Perspectives* 2006(XI-1):5-12.

Cancer-Fighting Foods: Green Tea

- Therapeutic grade green tea depends on:
  - Amount of EGCGs
  - Growing method
  - Harvesting method
  - Brewing method
  - Amount ingested



According to National Cancer Institute pharmacodynamics data, daily consumption of 1200 ml (40 oz) of green tea containing 710 mcg/ml EGCG is equivalent to 1.5 times the lowest effective anti-cancer dose in a 153 lb. adult.

NCI Division of Cancer Prevention and Control, *J Cell Biochemistry* 1996;265:236-257

Cancer-Fighting Foods: Flaxseeds

- Phytonutrients:
  - Omega-3 Fats
  - Lignans
  - Fiber



- Mechanisms:
  - Immune support
  - Bind up estrogen
  - Improve bowel function
  - Influence prostaglandin chemistry

Source: American Society of Clinical Oncology Meeting, Chicago, April 2007

Cancer-Fighting Foods: Flaxseeds

University of Toronto Study
Flaxseed Effect in Patients with ER+ Breast Cancer

- 34% slower rates of cancer cell growth
- 31% higher rates of cancer cell death
- 71% less activity of breast cancer oncogene
- Similar results in Duke Univ. and MD Anderson Cancer Center studies on prostate cancer



Sources:Thompson L. Flaxseed and its lignan and oil components reduce mammary tumor growth at a late stage of carcinogenesis. *Carcinogenesis* 1996, 17(6), 1373-1376.
Denmark-Wahnefried W, et al. Flaxseed supplementation (not dietary fat restriction) reduces prostate cancer proliferation rates in men presurgery. *Cancer Epidemiol Biomarkers Prev*. 2008;17(12):3577-3587.

Cancer-Fighting Foods: Soybeans

- Isoflavones
  - Genistein and Daidzein
  - Angiogenesis inhibitors



- Phytoestrogens vs. xenoestrogens
- Controversy: Soy will cure you – soy will or kill you
- A meta-analysis of 18 major breast cancer studies (1978-2006) found no evidence that intake of isoflavones increased breast cancer and showed overall evidence of risk reduction.
- Synergetic effects with Tamoxifen

Silberstein S. To soy or not to soy: That is the question – Part II, *Immune Perspectives XII*, no 2, 2009:1-7

Cancer-Fighting Foods: Soybeans

- Conflict resolves when we define:
  - Type of soy
  - Amount of soy
  - Quality of soy
  - Circumstances of person
- Best forms:
  - Organic, non GMO
  - Fermented
  - Sprouted
  - Refrigerated soy milk



Cancer-Fighting Foods: Garlic



- Natural Killer Cell Activity
- Aged Garlic Extract
- Inhibition of Cancers of:
  - Breast
  - Prostate
  - Stomach
  - Colon
  - Brain
  - Lung

Beliveau R and Gingras D. *Foods to Fight Cancer.* Toronto: McClelland & Stewart, 2006

Cancer-Fighting Foods: Shiitake

- There are a dozen therapeutic mushrooms in the Asian tradition.
- Shitake is likely the only one that can be found in a food store.
- Rich in phytonutrient called Lentinen
- Immune Support
  - T-Cells (total & helper/suppressor ratios)
  - Natural Killer Cells
  - Interferon
  - Interleukin



Servan-Schreiber D. Anticancer, New York: Viking Penguin, 2009

Other Cancer-Fighting Foods

- Besides those foods we already discussed, there are over ***100 foods*** that have demonstrated ***anti-cancer activity*** against ***multiple cancers*** through ***hundreds of phytonutrients*** performing via ***dozens of mechanisms*** at ***various stages of cancer*** initiation, progression and promotion.
- These functions have been documented in human research as well as laboratory studies which have been published in biomedical journals worldwide.

Silberstein, S. *Alphabetical Beat Cancer Diet*, Richboro, PA: Center for Advancement in Cancer Education, 2014

A Classic Debate

- 19th century French chemists Louis Pasteur and Claude Bernard argued about the best way to control malaria.
- Pasteur favored killing all the mosquitos.
- Bernard favored draining the swamp.
- Pasteur got all the glory, but on his deathbed he admitted:

"Le terrain, c'est tout."

Applications in Oncology

- Modern oncologic treatments attempt to kill all the cancer cell "mosquitos."
- That is difficult because you can't see them, the body produces new ones all the time, and often the patient is sacrificed in the process.
- While our oncologists are doing the best they can with this approach, patients can and should attend to their own biological terrain through wise dietary choices.

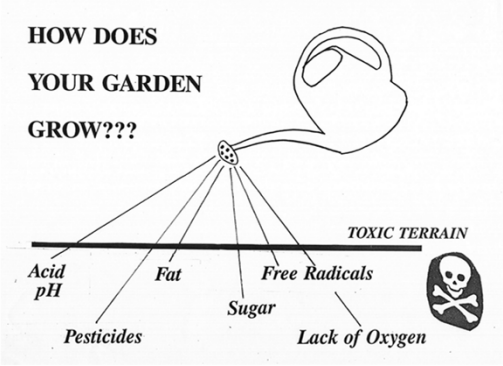
Cellular Environments

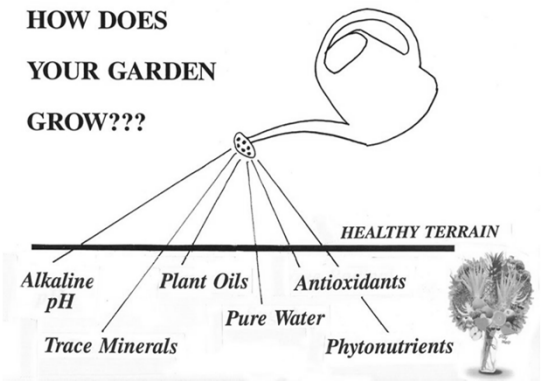
CANCER CELLS	**HEALTHY CELLS**
thrive in	thrive in
✓**Low Oxygen**	✓**High Oxygen**
✓**Acidity** (low pH)	✓**Alkalinity** (high pH)
✓**High Sugar**	✓**Low Sugar**

Source: Dr. Otto Warburg, *Nobel Prize Winner, 1931*

The Seed and the Soil

- Dr. Stephen Paget: **"The likelihood of cancer to grow depends on its environment."** (*Lancet* 1, 571–573 (1889)
- Sir William Lane, Royal Surgeon of London: **"Cancerous cells will only grow in a suitable soil."** (*The Prevention of Diseases*, 1929)
- Dr. T. Colin Campbell: **"Promotion is reversible, depending on whether the early cancer … is given the right conditions in which to grow."** (*The China Study*, 2006)





Quotes Worth Noting

"Whatsoever is the father of disease, poor diet is the mother."

--Ancient Chinese Proverb

Quotes Worth Noting

*"Natural forces within us
are the true healers….
Let your food be your medicine and
your medicine be your food."*



--Hippocrates, the "Father of Medicine"

Quotes Worth Noting

"Realization of the potential of foodborne substances to reduce the human burden of cancer will only be achieved with better measurement of dietary exposures and funding of multidisciplinary research…. "

Kohlmeier L, Simonsen N and Mottus K. Dietary modifiers of carcinogenesis, *Environ Health Perspec 1995* November; 103 (suppl 8):177-184

Quotes Worth Noting

*"Chemoprevention by
edible phytochemicals
is now considered to be an inexpensive,
readily applicable, acceptable
and accessible approach
to cancer control and management."*

Y-J Surh, Cancer chemoprevention with dietary phytochemicals
Nature Reviews Cancer 2002,3:10

Quotes Worth Noting

*"Every day, at every meal,
we can choose food
that will defend our bodies
against the invasion of cancer."*

-- David Servan-Schreiber, MD, PhD, *Anti-Cancer, 2009*

Additional Thoughts

- The lifetime risk of cancer is now 1 in 2. What you learned today could help you be the other one!
- The same diet that helps prevent cancer can help prevent recurrence or help reverse active cancer.
- Don't focus on what you have to give up, focus on what you need to include.
- Small changes can produce big results.
- Make dietary changes gradually.
- Healthy eating can be simple and delicious.



Additional Thoughts

- Even if we don't give up everything that is "bad," introducing healthy foods will help undo their damage.
- A byproduct of eating this way includes more energy, normalized weight, and protection against other diseases.
- Please share these messages with your patients and clients.
- For more information:BeatCancer.org
- Contact me: Info@BeatCancer.org



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- The email will be sent to the email address that you used to register for the webinar.
- Please complete the evaluation soon after you receive the email. The evaluation does expire after 3 weeks. Once expired, you cannot obtain a certificate.
- Once the evaluation is completed, the CE certificate will be emailed separately within 2 business days.

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Lynn Parker Klees, MA, RDN, LDN, CDE
Instructor, Department of Nutrition Sciences
The Pennsylvania State University

Improve Your Practice Through the Application of Current Recommendations in Diabetes and Nutrition

Date:	Wednesday, September 16 2015
Time:	12:00PM - 1:00PM EST
CE Credit :	1.0 contact hour, 1.0 CPEU

Questions and Answers!



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