Kristi Funk reports a family stockholder relationship with Pink Lotus Elements.

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2020 Cancer-Kicking Summer
2020 Cancer-Kicking Tuesdays

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100% free breast cancer screening and treatment for underserved women.
BREASTS: THE OWNER'S MANUAL

POP QUIZ!

You and all of your loved ones will most likely die from this disease.

What is it?

Mortality Rates

<table>
<thead>
<tr>
<th>Incidence</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Dz</td>
<td>6,600,000</td>
</tr>
<tr>
<td>Lung Ca</td>
<td>112,350</td>
</tr>
<tr>
<td>Breast Ca</td>
<td>252,710</td>
</tr>
<tr>
<td>Colon Ca</td>
<td>64,640</td>
</tr>
</tbody>
</table>
Breast Facts

- 3.5M breast cancer survivors in US
- Men: 2470 diagnosed, 460 die
- Death Rate ↓2.2% per yr since 1998
- 5 yr survival for NODE NEG = 99%
- 95% of breast cancer in > 40 yo
- Median Age = 62yo
- Incidence stable since 2005

Risk Factors You Cannot Change

- Female
- Age

Table 2. Age-specific Probability of Developing Invasive Breast Cancer for US Women

<table>
<thead>
<tr>
<th>Current age</th>
<th>10-year probability:</th>
<th>or 1 in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>0.1%</td>
<td>1,567</td>
</tr>
<tr>
<td>30</td>
<td>0.5%</td>
<td>220</td>
</tr>
<tr>
<td>40</td>
<td>1.5%</td>
<td>68</td>
</tr>
<tr>
<td>50</td>
<td>2.3%</td>
<td>43</td>
</tr>
<tr>
<td>60</td>
<td>3.4%</td>
<td>29</td>
</tr>
<tr>
<td>70</td>
<td>3.9%</td>
<td>25</td>
</tr>
</tbody>
</table>

Lifetime risk 12.4% 8

Note: Probability is among those free of cancer at beginning of age interval. Based on cases diagnosed 2012-2014. Percentages and “1 in” numbers may not be numerically equivalent due to rounding.
Risk Factors You Cannot Change

- Female
- Age
- Race

Incidence and Mortality by Race 2008-2012

Risk Factors You Cannot Change

- Female
- Age
- Race

- Age at menarche:
  - Under 10, 23% increase
  - After 16, 50% decrease
  - Prior to 44yo, 34% decrease

- Age at first pregnancy

Risk Factors You Cannot Change

Age at first full-term pregnancy after age 35 increases breast cancer risk 40%
Risk Factors You Cannot Change

Age at first full-term pregnancy before age 20 decreases breast cancer risk 50%

Risk Factors You Cannot Change

- Radiation to upper body or chest
- Prior breast cancer in self
- Prior biopsy with “marker” lesion
- Family Hx

What % of breast cancer can be attributed to an inherited genetic mutation such as BRCA?

- 5-10%
- 30-40%
- 60-70%
- 80-90%

What is a BRCA Gene Mutation?

What is a BRCA Gene Mutation?
RED FLAGS FOR HBOC SYNDROME

- Two or more relatives with breast cancer prior to age 50, or ovarian cancer at any age
- If Ashkenazi Jewish, only one of the above
- Self with breast cancer prior to menopause
- Self with triple negative breast cancer ≤ 60
- Self with two primary breast cancers
- Any male breast cancer
- Any known BRCA carrier
- Pancreatic cancer plus ovarian or breast
- Three or more: breast, ovarian, pancreas, prostate, colorectal, gastric, uterine, melanoma

What % of women with breast cancer have NO first degree relatives with breast cancer?

- 16%
- 45%
- 61%
- 87%
Lifestyle Risk Factors You CAN Change

FOOD: For Better or Worse
- Estrogen levels
- Growth factors
- New blood vessel formation (angiogenesis)
- Inflammation
- Immune system function
- Free radical formation!!

FOOD IS MEDICINE

Oxidative Stress
- Free Radicals
- Antioxidants
- Stress Situation
**Oxidative Stress: IGF-1**

**IGF-1 in the Body**

- **HGH**
  - Cellular Repair and Rejuvenation
- **IGF-1**
  - Muscle, Bone, and Tissue Growth
- **IGFBPs**

**Oxidative Stress: IGF-1**

6,381 adults over 50 followed 18 years:
- Ages 50-65, higher animal protein levels led to:
  - 430% increase in cancer death
  - 7300% increase in diabetes

M. E. Levine et al., Cell Metabolism 19, no. 3 (2014): 407-17.

**Laron Syndrome**


**Oxidative Stress and The IGF-1 Antidote**

- The Pritikin Plan:
  - Low-fat (10-15 percent of daily calories)
  - High-fiber (30-40 grams per 1,000 calories per day)
  - Whole food plant-based diet (WFPB)
  - Daily exercise classes


What about Keto? Paleo? Atkins? South Beach?

The Lifestyle Heart Trial

The International Agency for Research on Cancer (IARC), which is the governing body that determines what causes cancer, labeled which of the following flat-out “carcinogenic to humans” (on par with tobacco, plutonium and asbestos):

A. Bisphenol-A (BPA) in plastics
B. Aluminum in antiperspirants
C. Phytoestrogens in soy
D. Nitrites in processed meat
E. All of the above


Processed Meat

I LOVE BACON!
NIH-AARP Diet and Health Study

- 193,742 postmenopausal women
- Followed over 9.4 years
- 25% more breast cancer in red and processed meat consumers


How Would You Like Your Steak?

A. Raw  
B. Rare  
C. Medium Rare  
D. Well Done  
E. Burnt to a Crisp

S. E. Steck et al., Epidemiology 18, no. 3 (May 2007): 373-82.

Diet:  
Grilled/Burnt Meat Increases Breast Cancer

Hamburger 54%  
Bacon 64%  
Beefsteak 121%  
All three? 362%


But Chicken is Okay, right?

- IGF-1  
- PAHs/HCAs  
- PhIP


What Are You Eating?

“In the absence of effective federal regulation, the meat industry uses hundreds of animal feed additives, including antibiotics, tranquilizers, pesticides, animal drugs, artificial flavors, industrial wastes, and growth-promoting hormones, with little or no concern about the carcinogenic and other toxic effects.”

- International Journal of Health Services. 1990
**But Chicken is Okay, right?**

- *Illegal* antibiotics, like fluoroquinolones
- Arsenic
- Acetaminophen
- Prozac
- Antifungals
- Antihistamine
- A sex hormone
- Caffeine

---

**But Chicken is Oklahoma, right?**

- IGF-1
- PAHs/HCAs
- PhIP
- ???
- Poop and Bugs

---

**But Chicken is Okay, right?**

- 1 in 10 = Salmonella (serious cramps and diarrhea)
- 1 in 3 = Campylobacter (permanent paralysis, Guillain-Barré Syndrome)
- 8 in 10 turkey = E. Coli (more cramps and bloody diarrhea)

---

**Organic But Chicken is Better, right?**

Testing of 98 chicken breasts bought from 12 retail stores in the Netherlands showed that 100% of the inorganic meat contained E.coli, whereas the organic version had 84% contamination.

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But Chicken is Okay, right?
- IGF-1
- PAHs/HCAs
- PhIP
- Poop and Bugs
- Arsenic

But Chicken is Okay, right?
Arsenic:Cancer > 100

But Chicken is Okay, right?
- IGF-1
- PAHs/HCAs/PhIP
- Poop and Bugs
- Arsenic
- Saturated Fat
  - One breast with skin = 36% fat
  - One skinless breast = 19% fat

But Fish is Okay, right?
- IGF-1
- PAHs/HCAs/PhIP
- Dioxins/PCBs

But Fish is Okay, right?
“If people choose to get their recommended long-chain omega-3 intake from fish, the majority of consumers would exceed the safety limits for dioxins and dioxin-like substances (like PCBs).”

- Food and Chemical Toxicology, 2007
But Fish is Okay, right?

- IGF-1
- PAHs/HCAs/PhIP
- Mercury
- Dioxins/PCBs
- Microplastics/microbeads
- Saturated Fat

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
<th>Nutrition Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salmon, Atlantic, raw</td>
<td>Soy sauce salmon</td>
</tr>
<tr>
<td>Amount Per 0.5 fillet (158 g)</td>
<td>Amount Per 0.5 fillet (135 g)</td>
</tr>
<tr>
<td>Calories 412</td>
<td>Calories 201</td>
</tr>
<tr>
<td>% Daily Value*</td>
<td>% Daily Value*</td>
</tr>
<tr>
<td>Total Fat 27 g</td>
<td>Total Fat 15 g</td>
</tr>
<tr>
<td>41%</td>
<td>15%</td>
</tr>
<tr>
<td>Saturated fat 8 g</td>
<td>Saturated fat 1.4 g</td>
</tr>
<tr>
<td>30%</td>
<td>7%</td>
</tr>
<tr>
<td>Polyunsaturated fat 9 g</td>
<td>Polyunsaturated fat 2.3 g</td>
</tr>
<tr>
<td>Monounsaturated fat 7 g</td>
<td>Monounsaturated fat 2.2 g</td>
</tr>
</tbody>
</table>

Where Do I Get My 50g Protein?

- Seitan 1/3 cup = 21 grams protein
- Soy tempeh/tofu/edamame 1/2 cup = 20 grams
- Lentils 1 cup cooked = 18 grams
- Beans (kidney, pinto, black, white, green, garbanzo) 1 cup = 15 grams
- Nuts or nut butters (almond, walnut, cashew, pistachio, brazil); Seeds (sunflower, sesame, flax, pumpkin, chia, hemp) 1/4 cup = 7 to 10 grams
- Green peas 1 cup = 8 grams
- Quinoa 1/2 cup cooked = 7 to 9 grams
- Wild rice 1 cup cooked = 6.5 grams
- Steel-cut oats 1/4 cup dry = 5 grams protein

The Real Deal on Soy
The Real Deal on Soy: Lower Estrogen

L. J. Lu et al., Cancer Epidemiology and Prevention Biomarkers 5, no. 1 (1996): 69-70.

The Real Deal on Soy: Less Breast Cancer

1. Shanghai Women's Health Study with 73,223 Chinese women: ↓59% premenopausal breast cancer
2. American Asian women with childhood intake of 1.5 soy servings a week: ↓58% adult-onset breast cancer
3. Korean BRCA gene mutation carriers: ↓43%


The Real Deal on Soy: Less Breast Cancer Recurrence

1. 1,954 multiethnic survivors on tamoxifen, followed > 6 years: ↓60% in recurrence
2. 6200 multiethnic survivors followed 9.4 years: ↓51% in mortality ER negative cancers
   ↓32% in mortality ER positive cancers (no Tamoxifen)


Soy in Breast Cancer Patients

3. 5,000 breast cancer patients:
   ↓29% decrease in mortality
   ↓32% in recurrence
4. 9514 breast cancer survivors = ½ cup soy milk a day:
   ↓25% in recurrence

Whole Food Plant-Based Eating

**VEGETABLES**
- Limitless consumption of leafy greens (kale, spinach, collard)
- Very colors to capture more phytonutrients: green broccoli, red tomatoes, white mushrooms, orange butternut squash, purple potatoes.

**FRUITS**
- Eat whole fruits, including edible skins. No juice. Berries, apples, bananas, citrus.

**FLUIDS**
- Water—plain, fizzy, natural flavors (lemon, mint, cucumber), Tea, Coffee. Substitute almond and soy milk for animal milk. Do not exceed one alcoholic drink a day. No juice. No added sugars. Sorry, soda.

**WHOLE GRAINS**
- 100 percent whole grains say yes to the ingredients and must list the whole grain first: whole wheat bread, pasta, rice, oats, quinoa, barley, couscous. Wrap, rice, white bread.

**HEALTHY PROTEIN**

**HEALTHY FATS**
- Healthy fats come from whole foods: avocado, nuts, seeds, nut and seed butters, olives. When using oil, prioritize extra virgin olive oil and expeller pressed canola oil.

10 Breast Superfoods
- **Cruciferous vegetables/Leafy greens:**
  - Isothiocyanates, sulforaphanes, indole-3-carbinol
- **Dietary Fiber:**
  - Vitamin, flavonoids, lignans, polyphenols, sterols
- **Berries:**
  - Ellagic acid, anthocyanidins, and proanthocyanidins
- **Apples:**
  - Flavonoids, catechins, anthocyanins
- **Tomatoes:**
  - Carotenoids, lycopene
- **Mushrooms:**
  - Flavones, isoavones, polyphenols
- **Garlic, Onions, Leeks, Shallots, Chives, Scallions:**
  - Allium compounds (allin, allyl sulfides), flavonoids
- **Turmeric and Spices:**
  - Cumin, paprika
- **Seaweed:**
  - Saponins, sterols, triterpenes, flavonoids
- **Cacao:**
  - Flavonoids, procyanidins

Fiber
- 30g Fiber = ↓50%
- Less breast cancer

Black beans, lentils, split peas 1 cup = 15 grams
Avocado = 13 grams
Berries 1 cup = 8 grams

Fruit
- Apples =
- Less breast Cancer
  - ↓24%
Vegetarian/Vegan/Breast Cancer Alert: Vitamin D

Vitamin D:
- the Sunshine Vitamin
- 2000 IU/day
- 12 minutes of sun
- ↓50% breast cancer
- ↓50% breast cancer death

Vitamin D Sources:
- Fatty fish (salmon, tuna, mackerel)
- Fish liver oils
- Beef liver
- Egg yolks
- Fortified dairy products
- Fortified grain products

4000 IU winters; Serum level 40-80 ng/ml

What is the most common beverage enjoyed by people over 100 years old?
- Water
- Grapefruit juice
- **Tea**
- Gin & Tonic
Tea

- Inhibits free radicals
- Epigallocatechin gallate (EGCG) stops tumor production, invasion, and metastases


Tea

1160 cancers followed up to 9 years:
3 cups of green tea per day:
Stage I ↓ 57% recurrence
Stage II ↓ 31% recurrence

M. Inoue et al., Cancer Letters 167, no. 2 (June 2001): 175–82.

Always add a Squeeze of Lemon

What is the single most preventable contribution to the causation of breast cancer worldwide?
- Drinking alcohol
- Being overweight
- Eating meat
- Taking HRT
- Consuming dairy

Breast Cancer and Obesity

No question. No controversy. Obese women have more breast cancer, more breast cancer recurrence, and more breast cancer-related death than non-obese women.

pinklotus.com/bmi

BMI = Body Mass Index
[ Weight (lbs) / Height (in)$^2$ ] x 703

BMI 25-29.9 = Overweight
BMI $\geq 30$ = Obese
BMI $\geq 40$ = Morbidly Obese

Breast Cancer and Obesity

- 80% of breast cancers are fueled by estrogens
- High estrogen levels after menopause increase breast cancer risk
- Fat converts adrenal steroids to estrogen
- So... Do obese women have increased estrogen levels that increase their risk of breast cancer?

Postmenopausal Obesity:

<table>
<thead>
<tr>
<th>Pounds Gained Since Age 18</th>
<th>RR</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\pm$8</td>
<td>1.0</td>
</tr>
<tr>
<td>8-13.9</td>
<td>1.25</td>
</tr>
<tr>
<td>14-29</td>
<td>1.6</td>
</tr>
<tr>
<td>$\geq$29</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Weight and Breast Cancer Risk

- Prospective study with 33,660 women
- 1,987 breast cancers over 15 years
- Highest rates: steady increase in weight over time, the reference group for comparisons

M. Harvie et al., Cancer Epidemiology, Biomarkers and Prevention 14, no. 3 (March 2005): 656-61.

Weight and Breast Cancer Risk: Be a Loser!

Lower Rates: in anyone who just lost weight!

- 64% for premenopausal weight loss
- 52% for postmenopausal weight loss
- 34% for weight maintenance

M. Harvie et al., Cancer Epidemiology, Biomarkers and Prevention 14, no. 3 (March 2005): 656-61.

Breast Cancer and Weight Gain

Gaining more than 5% of your initial weight during or after treatment—irrespective of baseline BMI—increases the risk of recurrence and reduces survival fivefold.

That’s 400%

FACT

25% of breast cancer cases worldwide are due to the deadly combination of obesity and a sedentary lifestyle

Recreational Physical Activity and the Risk of Breast Cancer in Postmenopausal Women

- Prospective study with 17,171 women
- 1.25-2.5 hours/week brisk walking
- ↓18%


---

**FACT**

Women who exercise for 3–4 hours per week at moderate to vigorous levels have a 30-40% lower incidence of breast cancer than sedentary women.


---

**FACT**

Women who exercise for more than 4 hours per week at moderate to vigorous levels have a 57% lower incidence of breast cancer than sedentary women.


---

Of all the controllable risk factors for breast cancer, what is the most prevalent across diverse populations and cultures?

- Obesity
- HRT
- Alcohol
- Stress
Alcohol

- Increases estrogen levels
- Forms acetaldehyde
- Impairs immune function
- Inactivates folic acid, thus interfering with DNA repair

Alcohol and Heart Disease:

One drink /day decreases mortality from heart disease

What's a "Drink"?

12 oz of beer = 5 oz of wine = 1.5 oz hard liquor

**Alcohol and Breast Cancer**

RR 1.1

RR 1.3

RR 1.4

**Women’s Health Initiative**

16,000 postmenopausal women with a uterus

Prempro (estrogen + progesterone)

Placebo

2010 WHI Update

Estrogen + Progestin:
\[\uparrow\text{Breast cancers (385 vs 293 /year)}\]
7 per 1000 women

1 in 143

LetsBeatBreastCancer.org

DR. FUNK’S “BEAT IT, BREAST CANCER” CHECKLIST

- Whole food, plant-based eating that prioritizes vegetables, fruits, 100 percent whole grains, and legumes (beans, peas, lentils), whole food soy, ground flaxseed; eliminate all meat, poultry, fish, dairy, and eggs; minimize saturated fat, simple sugars, processed foods, and refined cereals.

- Keep your BMI < 25

DR. FUNK’S “BEAT IT, BREAST CANCER” CHECKLIST

- Exercise: 5 hours a week moderate effort, or 2.5 hours a week vigorous, sweaty workouts.

- Minimize or eliminate alcohol: 7 drinks or fewer a week, favor 4 to 8 ounces of red wine.

- No smoking.
DR. FUNK’S “BEAT IT, BREAST CANCER” CHECKLIST

- Stress management techniques: 20 minute daily minimum (prayer, meditation, tai chi, yoga, guided imagery, focused breathing).

- Social connectedness: 30 minute daily minimum (no computers or phones or screens when with others in person). Examples: date night, coffee with a friend, church group, tennis team, uplifting online community, bridge club.

DR. FUNK’S “BEAT IT, BREAST CANCER” CHECKLIST

- Monthly breast self-exam, annual clinical breast exam, annual mammogram, plus additional imaging (ultrasound, MRI) and clinical exams when indicated.


BREASTS: THE OWNER’S MANUAL