

Health, Wellness and Cancer Prevention



Orlando E. Silva, M.D.

Dedication

To The Fallen and The Standing Patients

Along the way.

Here's to the Wives,

And the Mothers,

The Sisters and the Daughters

Who made a difference

And guided the way.

Thank You.

We are still trying.



**How can
the organ that nurtures us
with life,**

**become the executioner
of so many ???**

Breast Cancer Risk Factors

- Gender
- Age
- Hormonal Factors
 - Early menses
 - Late menopause
 - No pregnancy
 - Late pregnancy
 - No lactation
 - Other Estrogens
- Mammographic Breast Density
- Family history
- Inherited Susceptibility Genes
- Diet/ETOH consumption
- Radiation
- Benign Breast Disease
- Ethnicity

Endocrine Disrupting Environmental Toxins

- **Organichlorines**
- **Biphenyl A (coated receipts)**
- **PBBs (flame retardants Polybrominated Biphenyls)**

- **95% of all U.S adults have BPA in their urine.**
- **Higher levels of BPA related to Met Syndrome**
- **Independent risk factor besides lifestyle**

Reversible Biomarkers and Relative Risk

Serum Hormone Levels		2-4X (upper quartile vs lower)
Serum IGF-1,IGF-1/IGFBP-3 (pre-menopausal)		2X (upper quartile vs lower)
Mammographic breast density		5X (>75% vs <5%)
Breast IEN (Dx Bx)	Hyperplasia	2X
	ADH	4-5X
	In situ cancer	10-20X

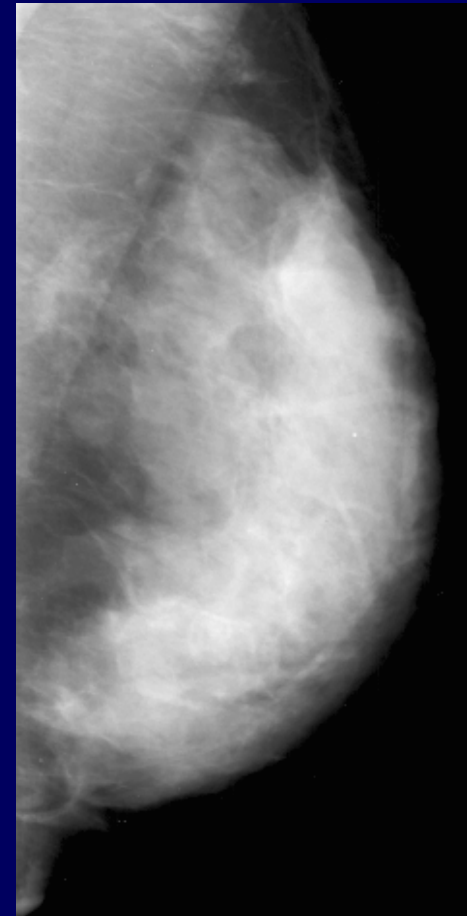
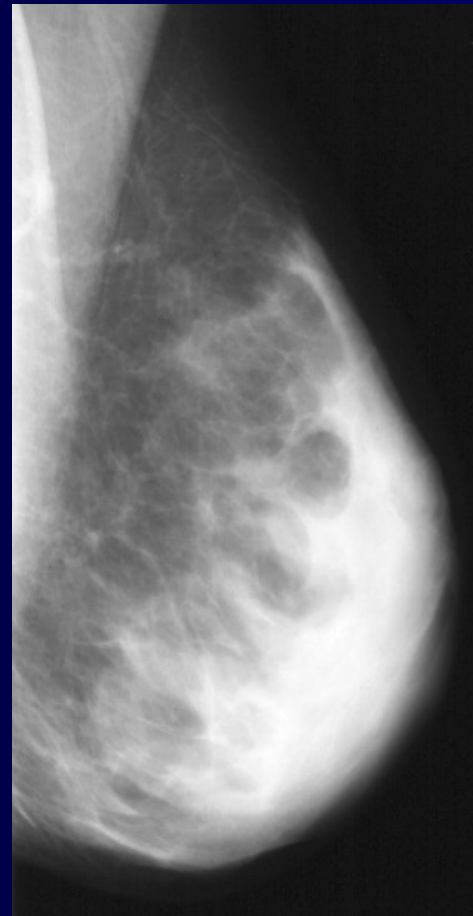
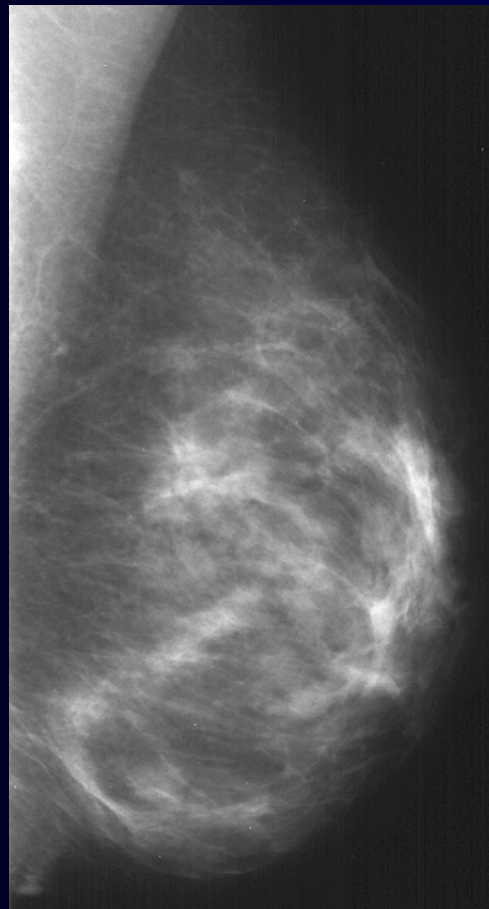
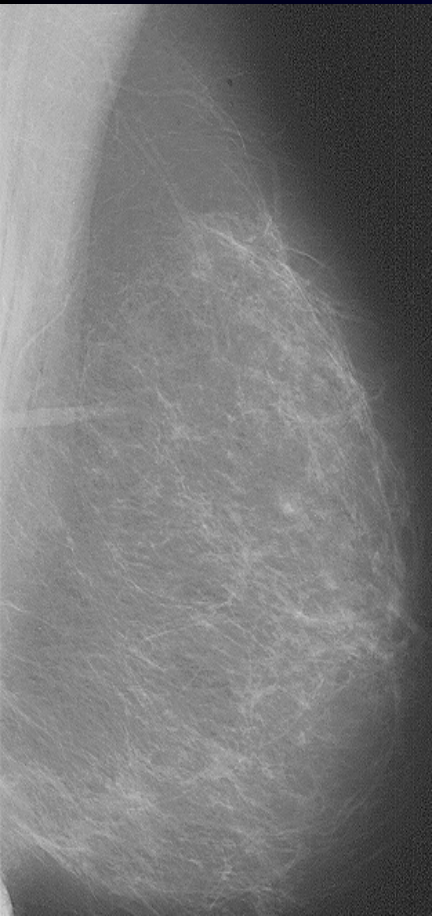
Cummings *et al.* JAMA 281:2189, 2002.

Hankinson *et al.* Lancet 9:1393, 1998.

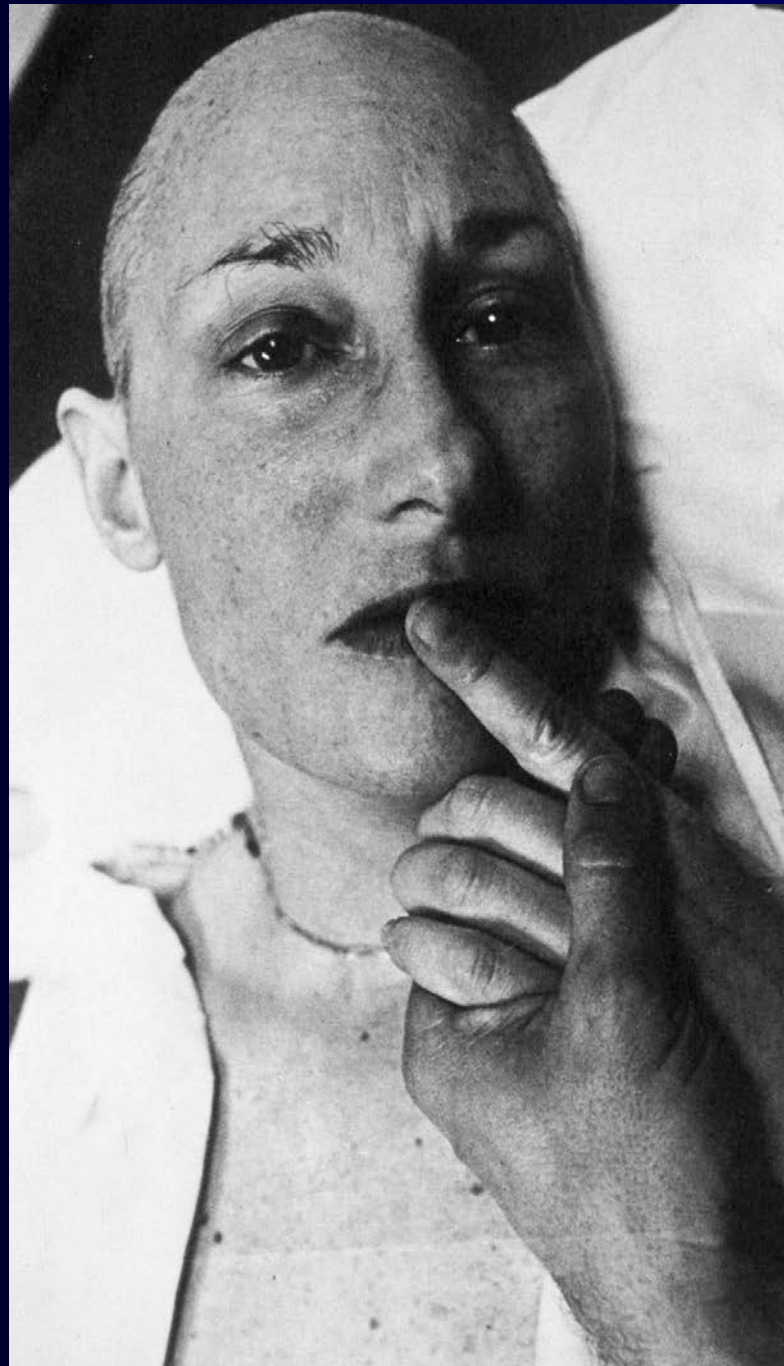
Boyd *et al.* J Natl Cancer Inst 87:670, 1995.

Page & Dupont. Cancer 66:1326, 1990. Hartman NEJM 2005.

Mammographic Density







“And Now What???”

It is all in the Genes right?

It's all genetic?

Nigerian Paradox!

Alzheimer's - Incurable but
PREVENTABLE!

- **The Nigerian Paradox**
- Nigeria should be the country with the highest rate of Alzheimer's due to genetics but, it is actually the lowest in the world.
- **Nutrition can trump genetics!**

Breast Cancer Risk Factors

- **Inflammation!!!**

Fighting Cancer through Nutrition/Activity

Decreases Inflammation and Increases Immunity

Metabolic Syndrome

Increased BP
Increased Lipids
Central Obesity
Insulin Resistance
Skin Tags
Darkening of Axillary folds

Diabetes
Mellitus II

Cancer

Inflammation

↓ (IL - 6)

1 disease

↓

different expressions

Alzheimer's
(Apo E-e4)

Depression

ANTI-Inflammation!!!

- **Inflammation**
 - **Leading culprit in developing:**
 - **Metabolic Syndrome/Insulin Resistance**
 - **Diabetes/Obesity**
 - **CAD**
 - **Alzheimer's**
 - **Depression**
 - **Cancer**

Metabolic Syndrome

- Centripetal Obesity - belly fat
- Insulin Resistance - High circulating Insulin levels
- High Blood Pressure
- High Lipids
- Acanthosis Nigricans - darkening of the folds around neck and axillas
- Skin Tags around neck and axillas
- High levels of pro-inflammatory cytokines

Hypertension

- \uparrow BP can cause LV hypertrophy and can lead to CHF even if EF is normal.
- Women with chronic heart failure, even if asymptomatic have a \downarrow mortality by 65%.
- Standard of care is to start dual therapy early even if asymptomatic if EF < 50 (ACE/ARB and BB as 1st line therapy) for anthracycline and TKI associated cardiomyopathy.
- B-Blockers - \uparrow OS in TNBC, in retrospective studies, by \downarrow norepi, \downarrow angiogenesis and cell migration and may boost immunity.

Cardiac consultation

- Diltiazem – Interferes with lots of chemo drugs.
- Ondansetron can cause QTc prolongation – Keep K⁺, and Mag on the high side.

Functional Derangements in Metabolic Syndrome (JAMA Vol. 292 (23): 2823-4, 2004)

34% of the country

Atherogenic:

- Insulin resistance +/- glucose intolerance
- Dyslipidemia
- ↑ inflammatory markers (CRP)

Prothrombotic:

- ↑ homocysteine
- ↑ fibrinogen / ↑ PAI-1
- ↓ Mag

Obesity at diagnosis is linked to prognosis in breast cancer

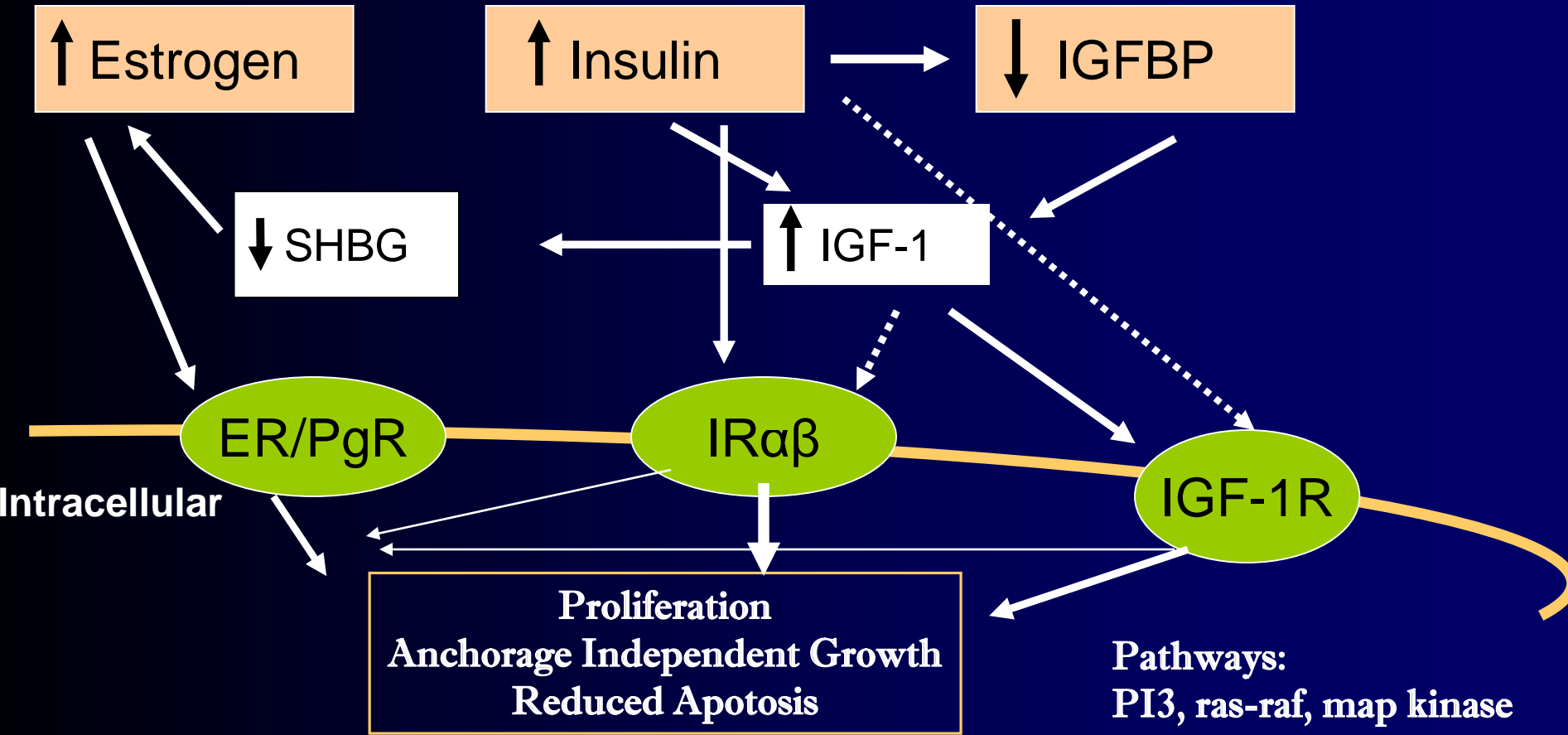
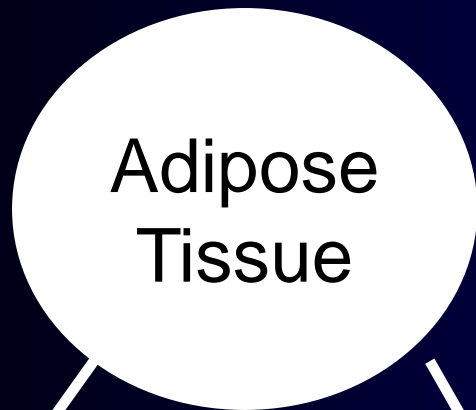
Meta-analysis of 82 studies looking at obesity and survival in breast cancer

	Breast Cancer-Specific HR [95% CI]	Overall HR [95% CI]
All patients	1.35 [1.24-1.47]	1.41 [1.29-1.53]
Premenopausal		1.75 [1.26-2.41]
Postmenopausal		1.34 [1.18-1.53]

RR, relative risk.

Chan DS, et al. *Annal Oncol.* 2014;25(10):1901-1914.



Interaction of Estrogen and Insulin Pathways in Setting of Obesity



Obesity in the United States

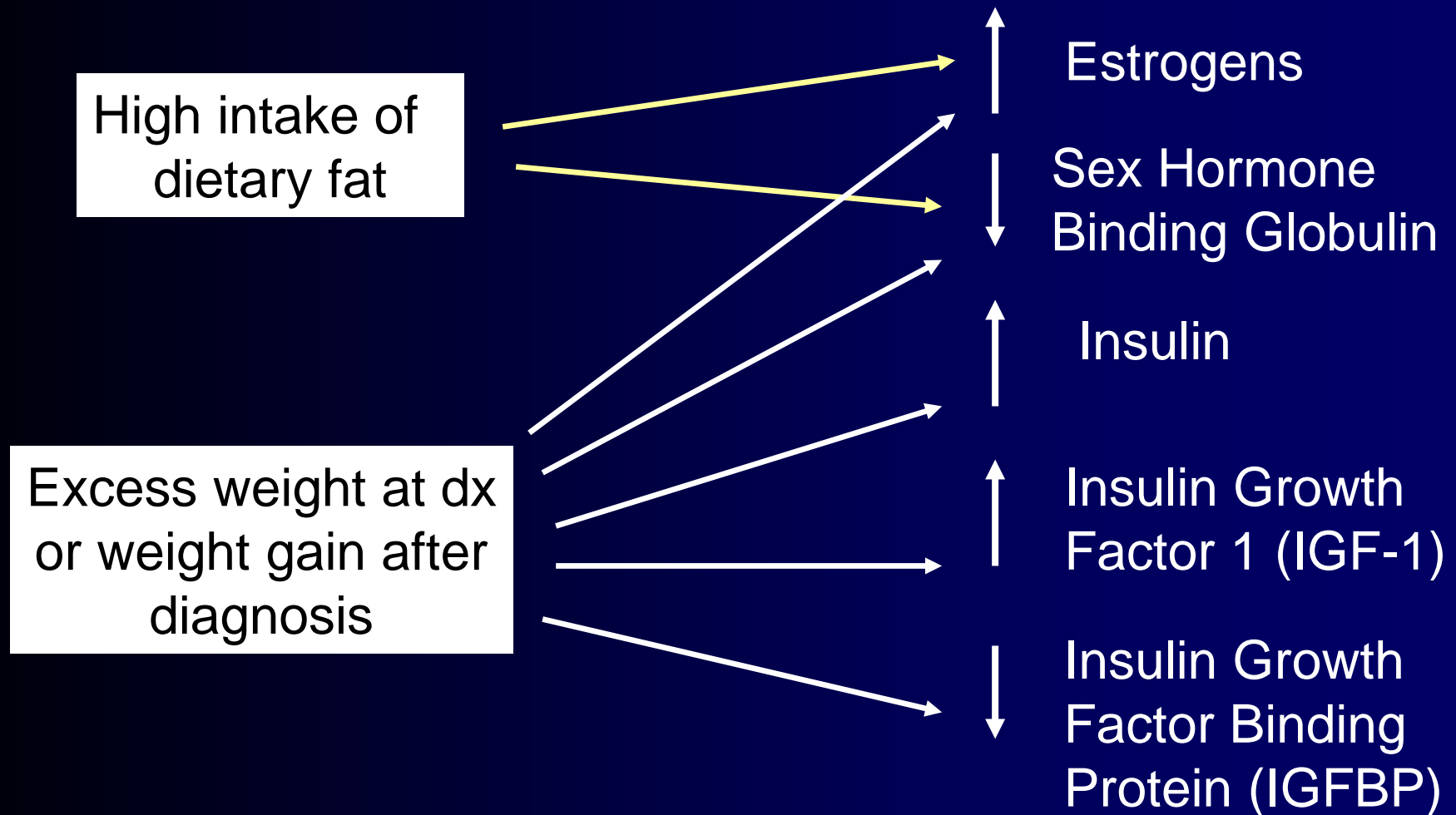
- In 1999-2002, 34% of adults were overweight and 30% were obese

% Overweight Over Time

Years	'76-78	'88-94	'98-02
 20-74	42.0%	51.2%	61.7%
 55-64	53.7%	66.3%	72.2%



Potential Mechanisms Underlying Relationship Between Fat Intake or Weight and Breast Cancer Outcome



JAMA

The Journal of the American Medical Association

February 8, 2006

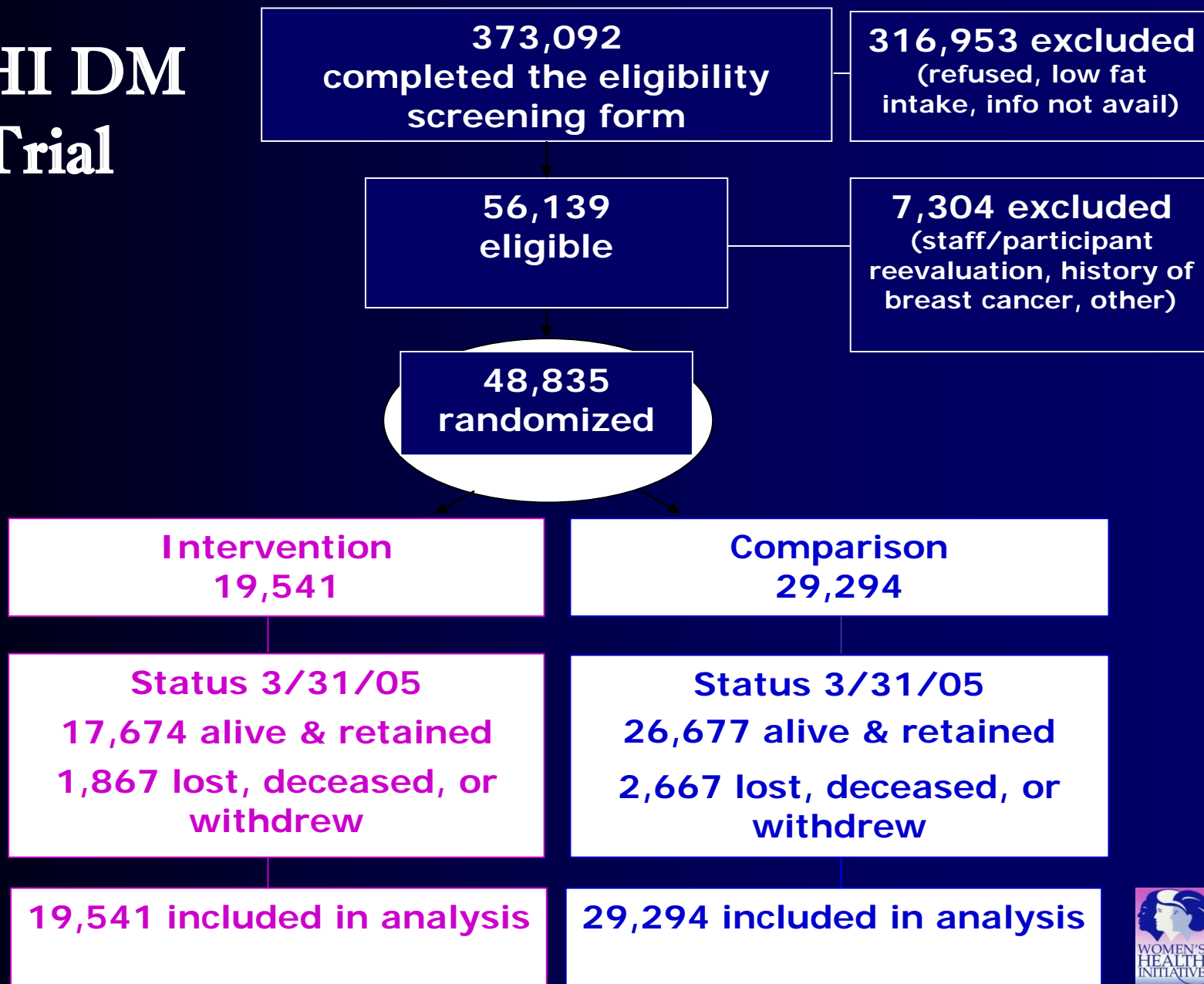
ORIGINAL CONTRIBUTIONS

Low-Fat Dietary Pattern and Risk of Invasive Breast Cancer:
The Women's Health Initiative Randomized Controlled
Dietary Modification Trial 629

R. L. PRENTICE, B. CAAN, R. T. CHLEBOWSKI, AND COLLEAGUES

JAMA 2006;295:629-642

WHI DM Trial



Interpretation

- **Intensive intervention resulted in significant and sustained dietary fat reduction and vegetable and fruit increase.**
- **Observed 9% lower breast cancer rate (15% among “adherent women”) but the difference was not large enough to be statistically significant.**

Impact of Weight on Prognosis in Women Diagnosed with Breast Cancer

- **Multiple studies have examined impact of weight and/or BMI on breast cancer prognosis**
- **In review by Chlebowski et al:**
 - **26 studies (n=29,460) demonstrated a statistically significant association between increased weight and poor outcome (recurrence or death)**
 - **8 studies (n=3,727) revealed no significant relationship**

Meta-analysis Evaluating Measures of Adiposity at Dx and Prognosis

	Recurrence at 5 yrs HR [95% CI]	Death at 10 yrs HR [95% CI]
↑ Body Weight	1.78[1.50-2.11]	1.36[1.19-1.55]
↑ BMI	1.91[1.52-2.40]	1.60[1.38-1.76]

Nurses' Health Study Analysis of Weight Gain and Breast Cancer Survival

- **5204 Nurses' Health Study participants diagnosed with breast cancer**
- **Change in BMI calculated from pre-breast cancer dx to first reported BMI \geq 12 months later**
- **Adjusted for smoking, menopausal status, and relevant breast cancer variables**




Weight Gain After Diagnosis in Never-Smoking Women

	MAINTAIN	GAIN 0.5 to < 2.0 kg/m ²	GAIN ≥2.0 kgm ²	
Recurrences*	1.00	1.40 [1.02-1.92]	1.53 [1.04-2.24]	<i>p=.01</i>
Breast CA Deaths*	1.00	1.35 [0.93-1.95]	1.64 [1.07-2.51]	<i>p=.03</i>
All Cause Mortality*	1.00	1.35 [1.00-1.82]	1.59 [1.12-2.27]	<i>p=.04</i>

*multivariate RR
95% CI

Obesity

Adipokines – 7 Hormones (Resistin)

- Insulin Resistance -  levels of Insulin
- Fat  Estrogen
-  Inflammation



Diet

- **Veggies**

- **Spinach/carrots (carotenoids / flavonoids)**
 - **rich in magnesium & alpha lipoic acid**
 - **antioxidant**
- **Asparagus, beets, broccoli, brussels sprouts, garlic, onions, leeks, kale, cabbage, scallions**

- **Dark Chocolate**

- **at least 99%;**
 - **Cuna indians from San Blas islands (off the Coast of Panama)**
 - **lowers BP and rich in oleic acid**

- **Fruits**

- **Berries**
- **antioxidants/anti-angiogenesis**

Dietary Sources of Naturally-Occurring Antiangiogenic Substances

Green tea

Strawberries

Blackberries

Raspberries

Blueberries

Oranges

Grapefruit

Lemons

Apples

Pineapple

Cherries

Red grapes

Red wine

Bok choy

Kale

Soy beans

Ginseng

Maitake mushroom

Licorice

Turmeric

Nutmeg

Artichokes

Lavender

Pumpkin

Sea Cucumber

Tuna

Parsley

Garlic

Tomato

Olive oil

Grape seed oil

Dark chocolate

Others

Diet



- **Fibers & Grains**
 - **Walnuts - 14 halves a day, also rich in magnesium**
 - **50 grams / day**
- **Milk – Horizon/Organic Valley Milk (0% Fat)**
 - **UNSWEET!**
 - **ALMOND MILK!!!**
- **Turmeric – inhibits nFKB**

Homemade Almond Milk

1. Soak 1 cup almonds up to 2 days
2. Drain & rinse almonds
3. Blend almonds with 2 cups water
4. Line a glass measuring cup with cheesecloth or nut bag
5. Pour blended almonds in
6. Squeeze & press to extract about 2 cups of milk
7. Refrigerate & use within 2 days



Diet


- **Fish – Salmon, mahi mahi, cod, halibut**
- rich in Omega-3 fatty acids
- **Extra virgin olive oil (Oleic acid)**
-  **Fat intake**
 - eat mono & polyunsaturated fats
 - extra virgin olive oil (Oleic acid)
-  **Sugar intake (no sweeteners)-Agave/Stevia**
- **Limit red meat (avoid processed meat)-Grass fed beef**
- **Limit salt intake**

Oster Steamer

Throw out your microwaves!!!



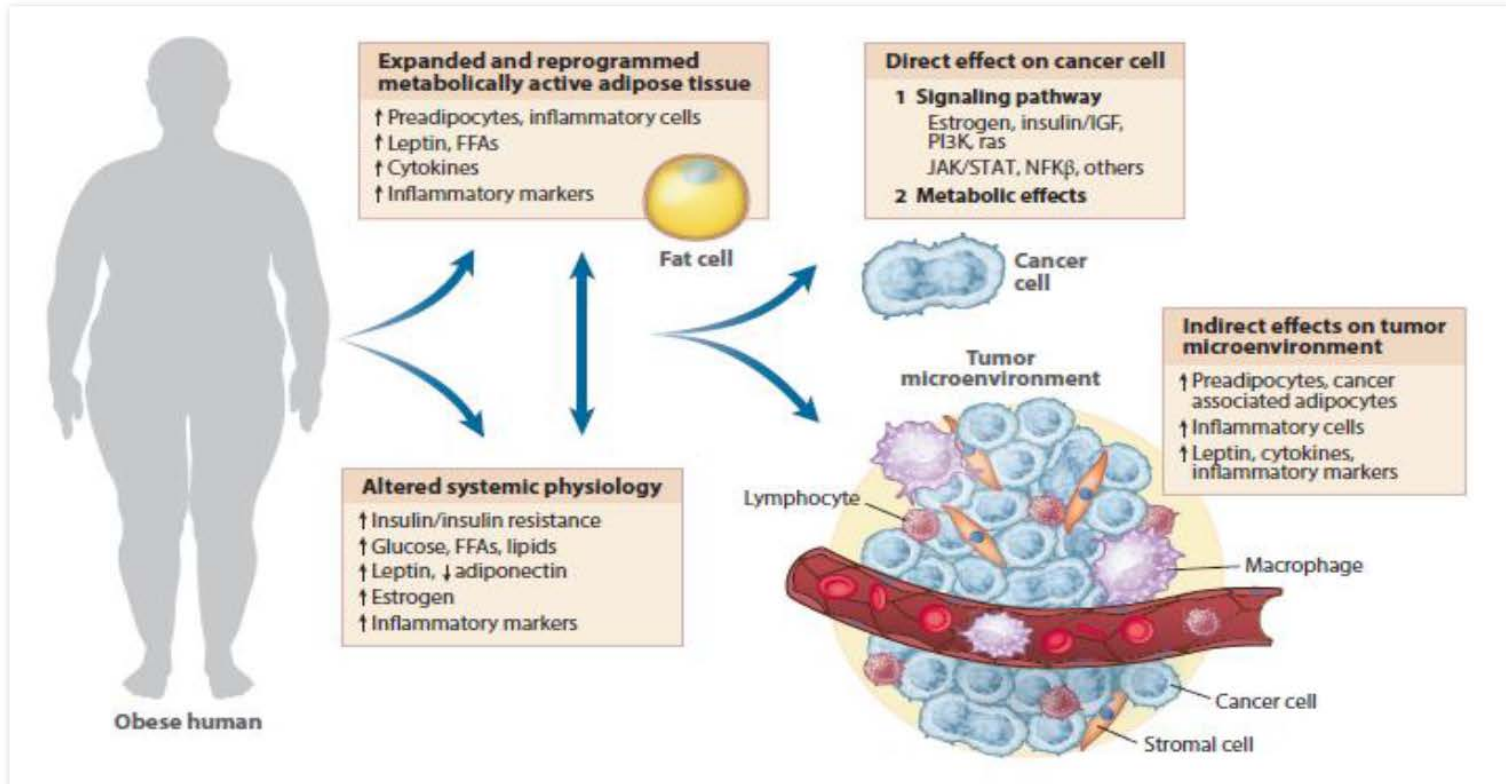
Insulin Levels

- Centripetal obesity leads to insulin resistance and higher levels of insulin
- BC expresses receptors for insulin
- Premenopausal women 2x  with high circulating levels

↑ Sensitivity to insulin (↓ insulin resistance)

- **Physical activity-Salsa/Rueda-Casino/Tennis**
- **Ping- pong/ Water aerobics**
- **Calorie restriction**
- **Cinnamon ½ teaspoon / day**
- **Ginseng berries**
- **Grapefruit**
- **Dark Chocolate(100%)**
- **Leafy Green tea- Folic Acid replacement**
- **Coffee (no sugar, no milk)**
- **Fiber- 50 grams /day**
- **Metformin!!!**

Biologic pathways linking obesity and breast cancer not clear, but likely involve metabolic and inflammatory mediators



Insulin and Breast Cancer Prognosis

- Cohort study of 512 women without known diabetes, T1-3 N0-1 disease

HR [95% ci]

Highest vs Lowest Insulin Quartile

Recurrence

2.0 [1.2-3.3]

Death

3.1 [1.7-5.7]

- In multivariate model adjusting for BMI, tumor, and treatment factors, prognostic significance of insulin levels was maintained

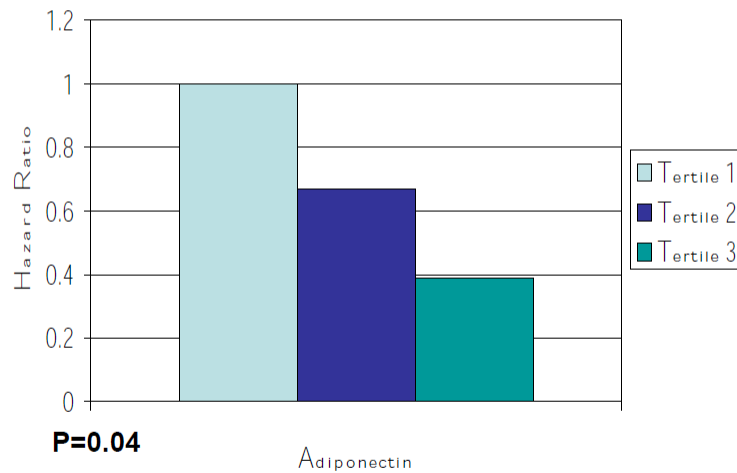
Prognostic Effects of Insulin in Breast Cancer

		<u>n</u>	<u>Factor Measured</u>	<u>Recurrence</u>	<u>Death</u>
Goodwin	2002	512	Fasting Insulin	HR=2.0	HR=3.1
Pasanisi	2006	110	Fasting Insulin IRS	HR=2.42 HR=3.0	
Pritchard	2011	667	Non-fasting C-peptide	p < 0.05*	
Irwin (HEAL)	2010	689	Fasting C-peptide		HR=3 (significant)
Duggan (HEAL)	2010	527	HOMA		HR=4.3 (BC death) HR=1.6 (overall mortality)
Emaus	2010	1364	IRS Components: BMI, cholesterol, BP, exercise		HR 1.3-3.0 (significant)

Goodwin et al, JCO 2002; Pasinisi et al, Int J Cancer 2006; Pritchard et al, JCO 2011;
Irwin et al, AACR 2007; Duggan C, et al. JCO 2011; Emaus et al. BCRT 2010.

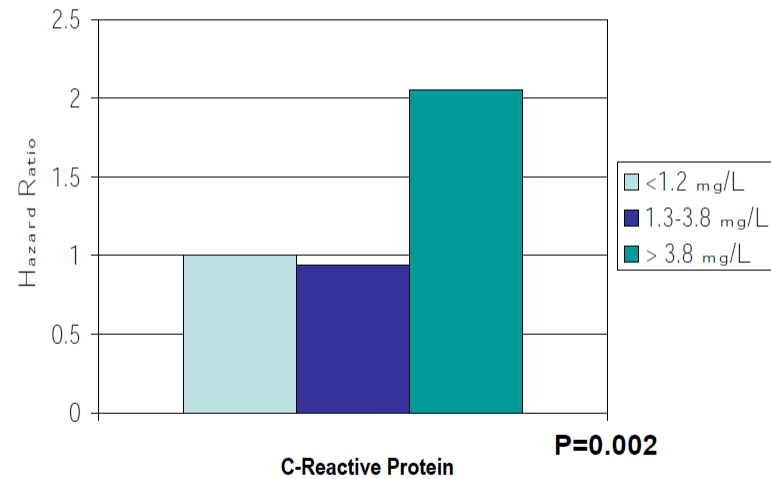
Studies also show links between other metabolic and inflammatory mediators and cancer recurrence

Adiponectin and breast cancer mortality



Duggan C, et al. JCO 2011

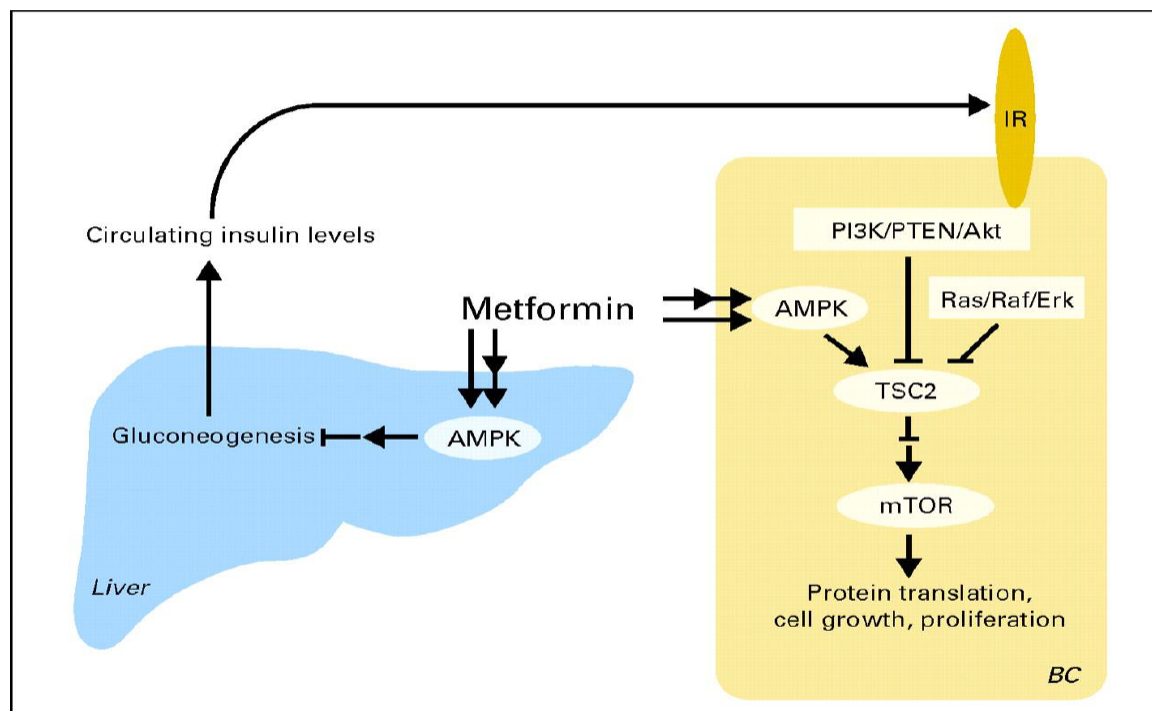
C-reactive protein and breast cancer mortality



Pierce, et al. JCO, 2009

**Can we improve prognosis in
(obese? inactive?) breast cancer
patients by targeting metabolic
and/or inflammatory pathways?**

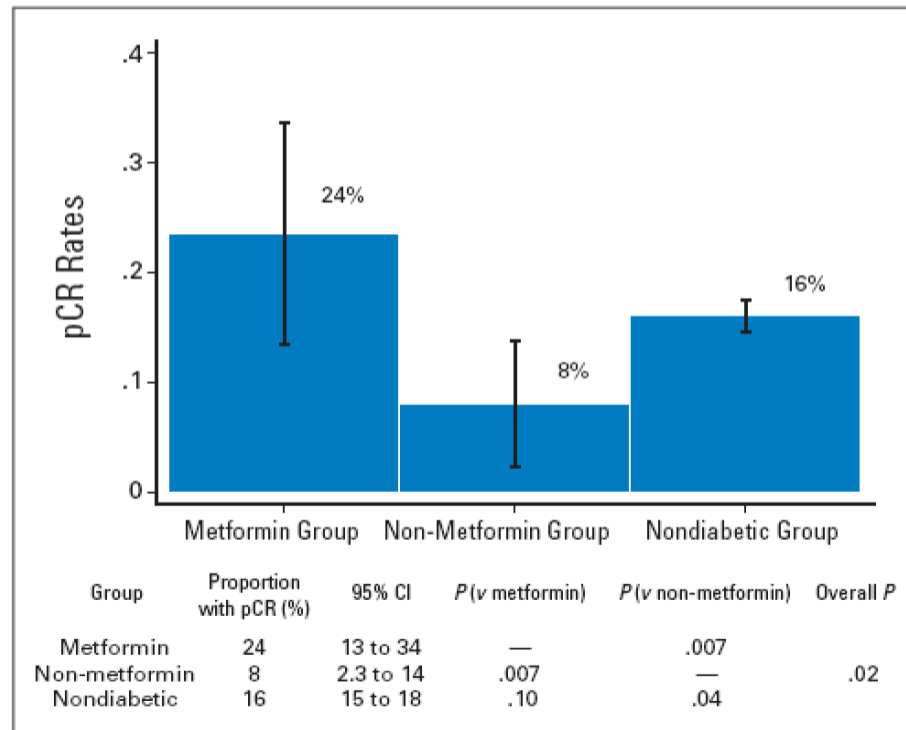
Targeting metabolic pathways: Metformin



Metformin use associated with better response to neo-adjuvant chemotherapy

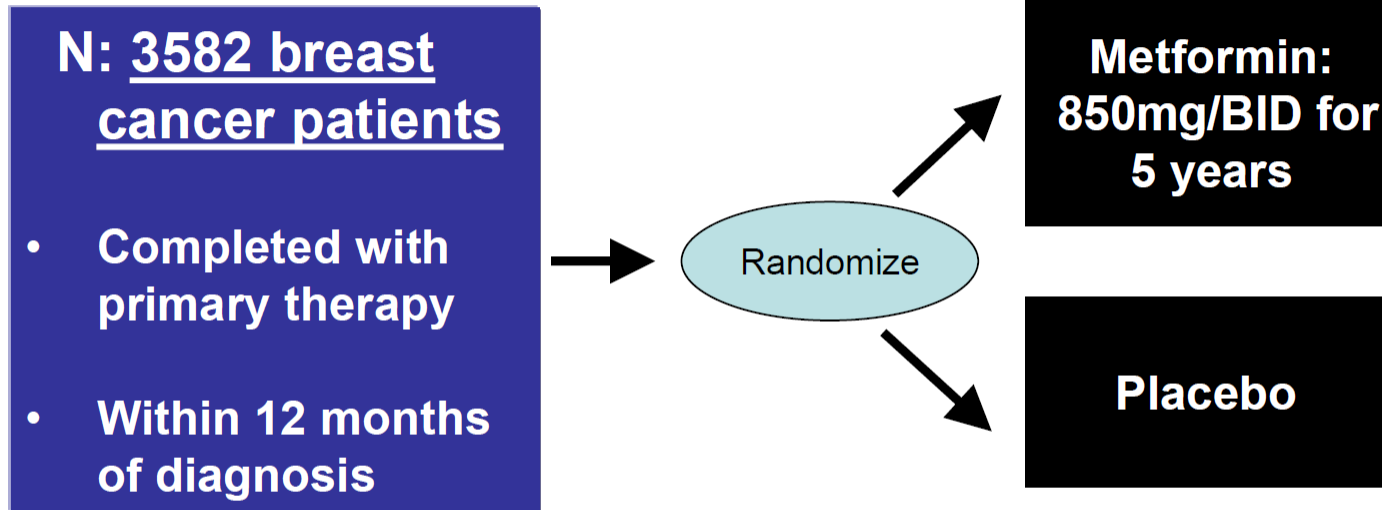
- 2529 patients receiving neoadjuvant chemotherapy for early-stage breast cancer at MD Anderson:
 - 2374 women without diabetes
 - 68 diabetics taking metformin
 - 87 diabetics not taking metformin

Pathological complete response rates by diabetes status and metformin usage



NCIC MA-32

PI: Pamela Goodwin



Primary Outcome: Invasive Disease Free Survival

Secondary: *fasting insulin, weight, QOL, breast cancer free interval, OS, distant DFS, hospitalization for CV disease, diabetes, AE's*

NCT01101438

Targeting inflammation

- Evaluation of anti-inflammatory drugs in breast cancer prevention and treatment in early stages
- Observational studies suggest that regular use of aspirin and NSAIDs linked to lower breast cancer risk and better outcomes

Risk of breast cancer death by use of pain relieving drugs in NHS

	None	1 Day/Wk	2-5 Days/Wk	6-7 Days/Wk	P for trend
ASA	1.0	1.07 (0.70-1.63)	0.29 (0.16-0.52)	0.36 (0.24-0.54)	<0.0001
NSAIDs	1.0	1.03 (0.43-2.43)	1.17 (0.61-2.24)	0.52 (0.30-0.88)	0.04
Acetaminophen	1.0	2.40 (1.22-4.71)	1.28 (0.72-2.27)	1.44 (0.81-2.57)	0.17

Aspirin for Breast Cancer (ABC) -A011502

Eligibility

- Node positive
- (any ER status) or
- High risk node neg
- (ER neg and > 2cm)
- HER2 negative
- Within 1 year of dx
- Age < 70

R
A
N
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Aspirin 300 mg daily x 5 yrs

Stratification factors:

- ER pos vs neg
- BMI (< vs \geq 30)

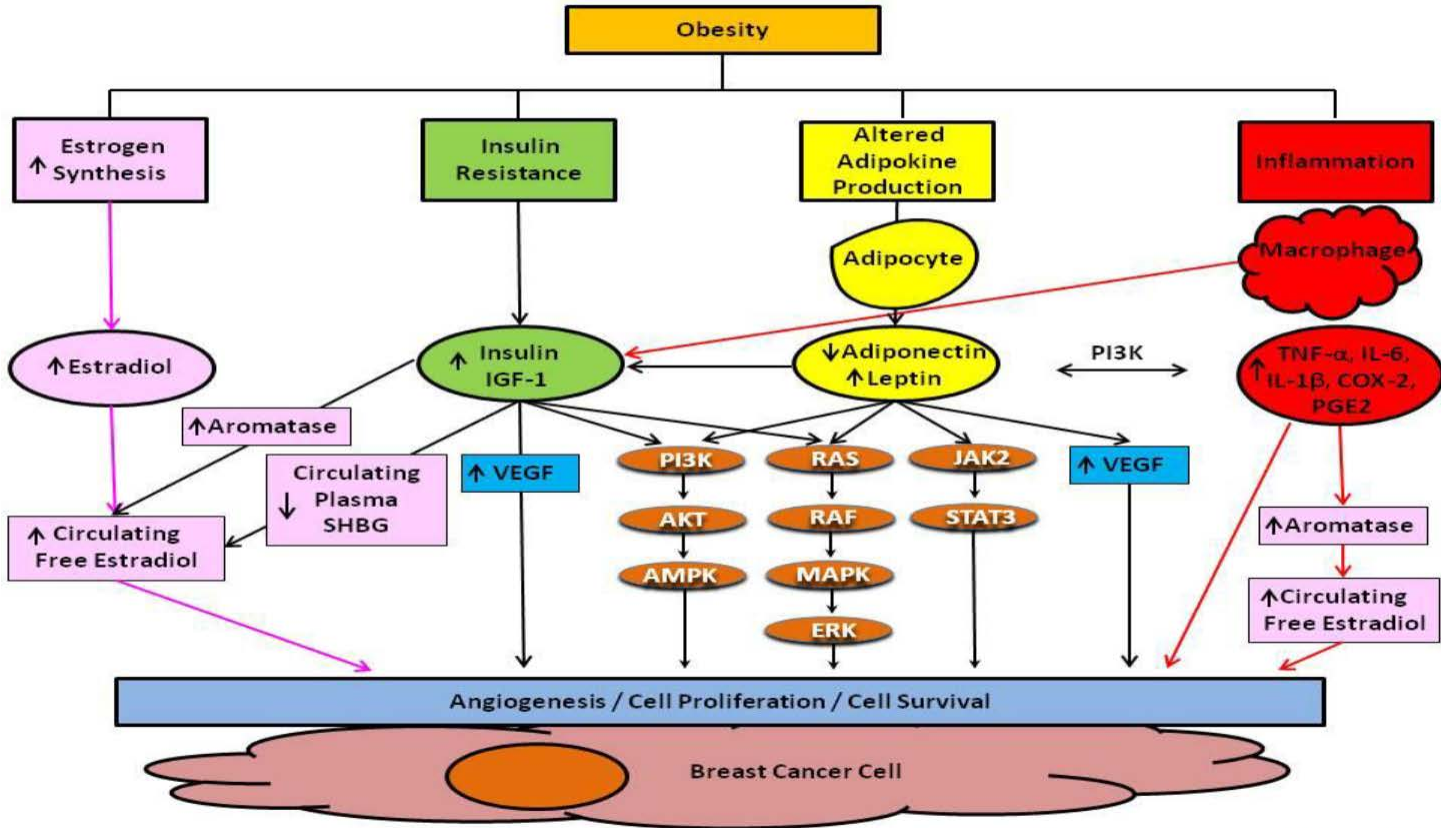
Placebo daily x 5 yrs

Primary endpoint: invasive disease free survival

Accrual goal: 2963 women over 2 years

80% power for HR of 0.75 (assume 5 year iDFS survival 77%)

Inflammation and metabolism are interconnected: Can we target both simultaneously?

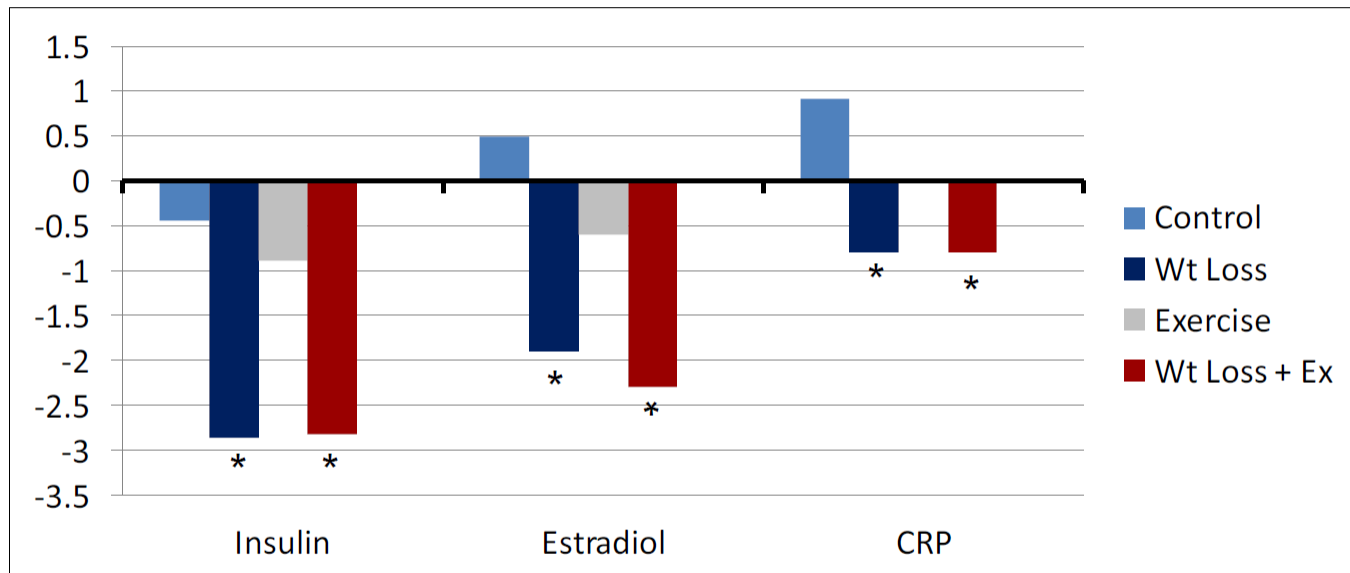


Lifestyle interventions affect metabolic and inflammatory pathways

Nutrition and Exercise Study for Women (NEW Trial)

- Designed to evaluate the impact of dietary weight loss and exercise upon biomarkers linked to breast cancer risk
- Enrolled 439 sedentary, overweight or obese, postmenopausal women
- Participants randomized to 1 of 4 groups:
 - Dietary weight loss
 - Exercise
 - Dietary weight loss + exercise
 - Control
- Endpoints:
 - Primary: change in sex steroids
 - Secondary: change in insulin, metabolic and inflammatory hormones

Weight loss led to significant reductions in metabolic and inflammatory biomarkers



* P<0.001

Weight Change:

Diet: -10.8%
Diet + Exercise -11.9%

Exercise -3.3%
Control -0.6%

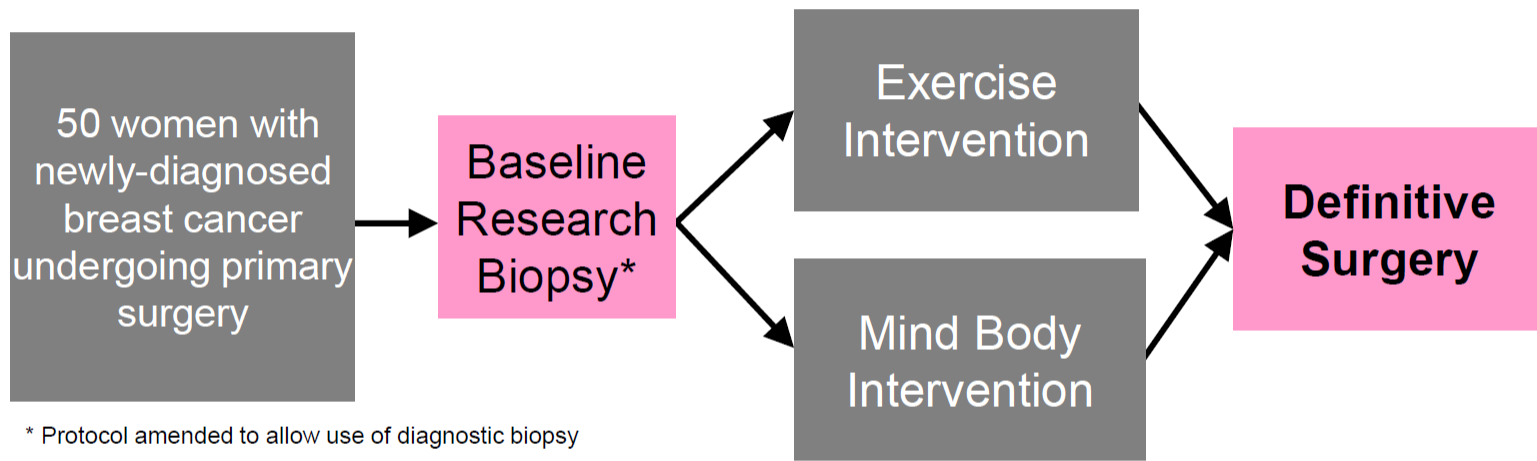
Physical Activity

- **25,624 Norwegian Women followed over 13.7 years**
 - **37% ↓ risk breast cancer among women who exercised regularly**
 - **Greatest benefit seen in women less than 45 y/o who exercise regularly over 3- 5 yrs**

Physical Activity

- 2,296 Women from Nurse's Health Study with Stages I, II, III BC
 - Death from BC was ↓ at every level of physical activity vs. sedentary
 - 5 hrs/ wk ↓ the risk of BC by 50%

Limited data also suggest that energy balance interventions could impact tissue biomarkers

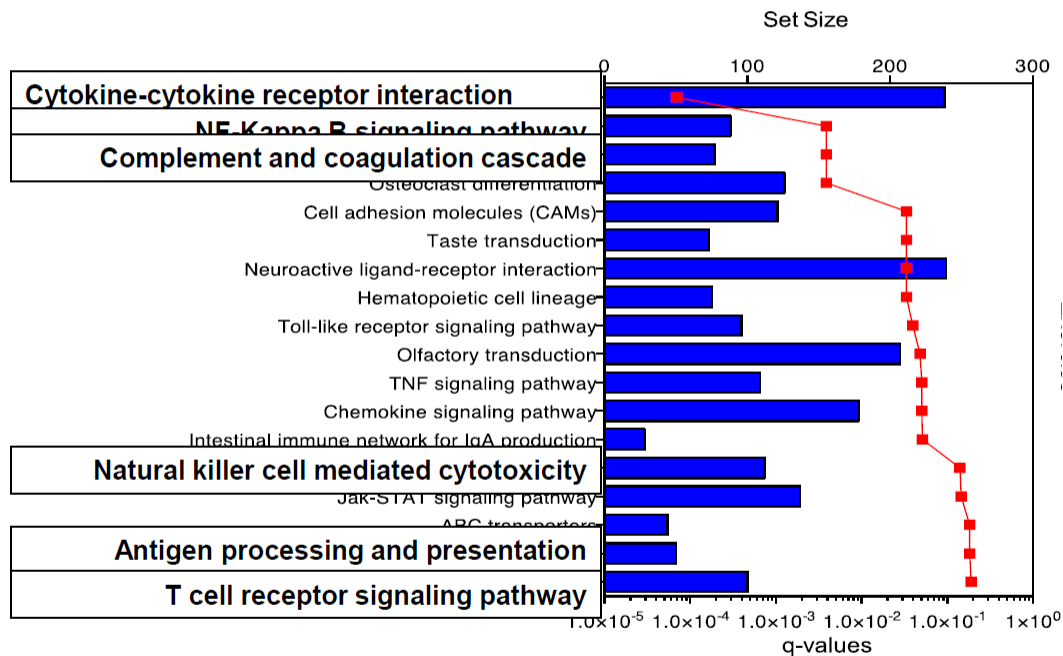


PreHAB

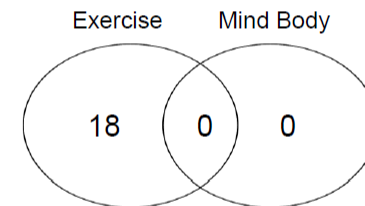
Pre-Operative Health and Body Study

NCT01516190

Exercise upregulated immune markers in breast tumors



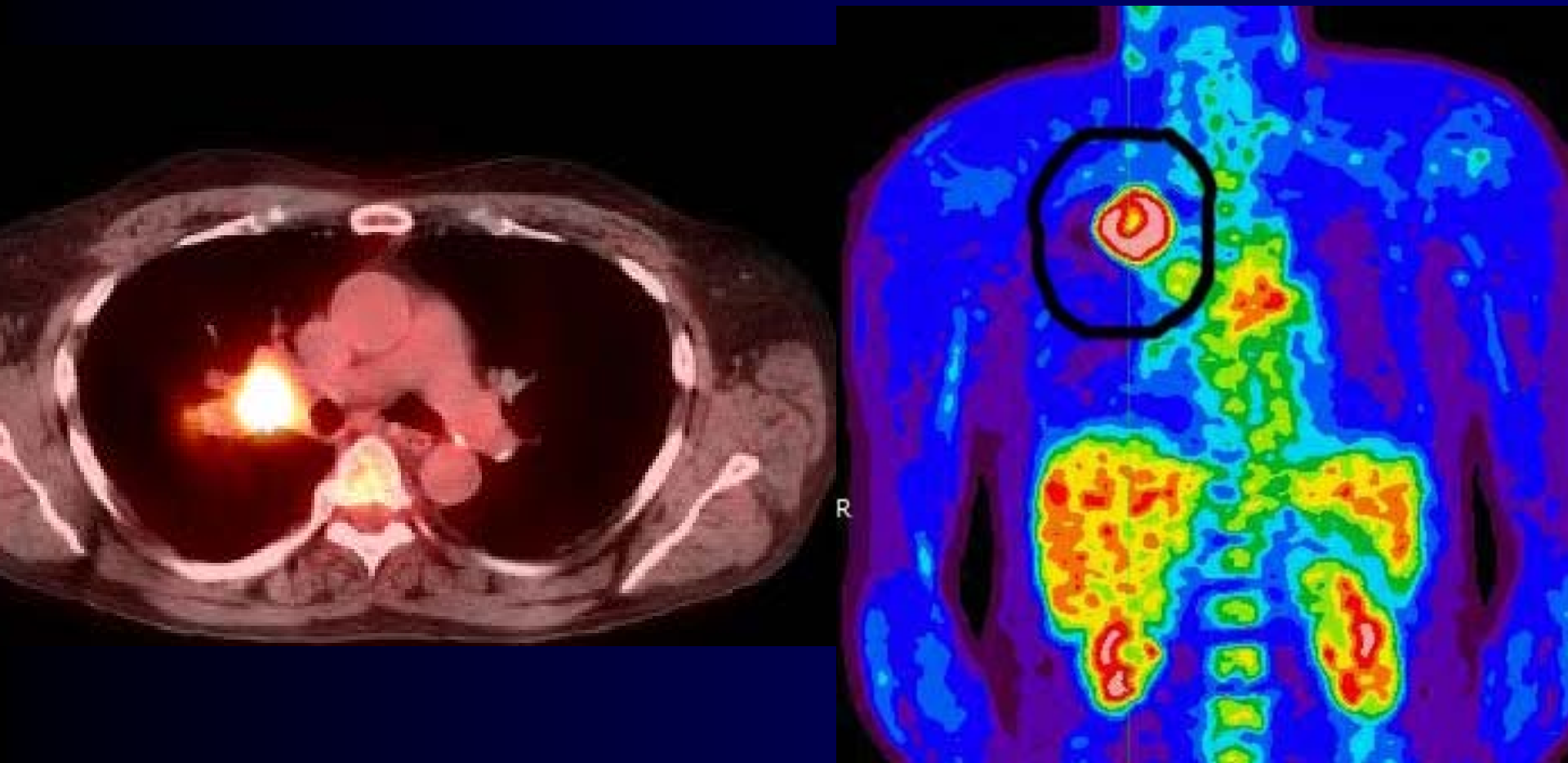
Significantly* Up Regulated Pathways



*adjusted p value < 0.1 (q-value)

NCT01516190

What is a PET Scan?








Inflammation & Prognosis

- Adenocarcinoma of Pancreas after surgery
 - *CRP < 10= median survival 21.5 months; > 10= 8.4 months (p=0.015)¹*
- Prostate cancer survival 10 yrs after intital dx & trx
 - *CRP predicted overall survival & prostate cancer specific survival (HR 1.80 [1.01-3.52] p < 0.05)²*
- Gastro-esophageal cancer survival after surgery
 - *CRP < 10= median survival 79 months; > 10= 19 months (HR:3.53 [1.88-36.64]; p<0.001);³*
- Breast cancer survival in HEAL study
 - *CRP increased overall survival HR 2.27 [1.27-4.08; p=.002] & trend towards decreased disease free survival (p=.07)⁴*

1. Jamieson NB et al. *Br J Cancer* 2005, 92:21-23.
2. McArdle PA et al. *Urol Int* 2010, Apr 15 Epub.
3. Crumley AB et al. *Br J Cancer* 2006, 94:1568-1571.
4. Pierce BL et al. *J Clin Oncol* 2009, 27:3437-3444.

Decrease Inflammation

- Flossing
-  Fiber
-  Alcohol
-  Physical activity
-  Vitamin – D3
-  Abdominal Fat

Scientific Corner

Fiber - 75 -100 grams/Day

↓ Heart Disease

↓ Stroke

↓ Obesity

↓ DM

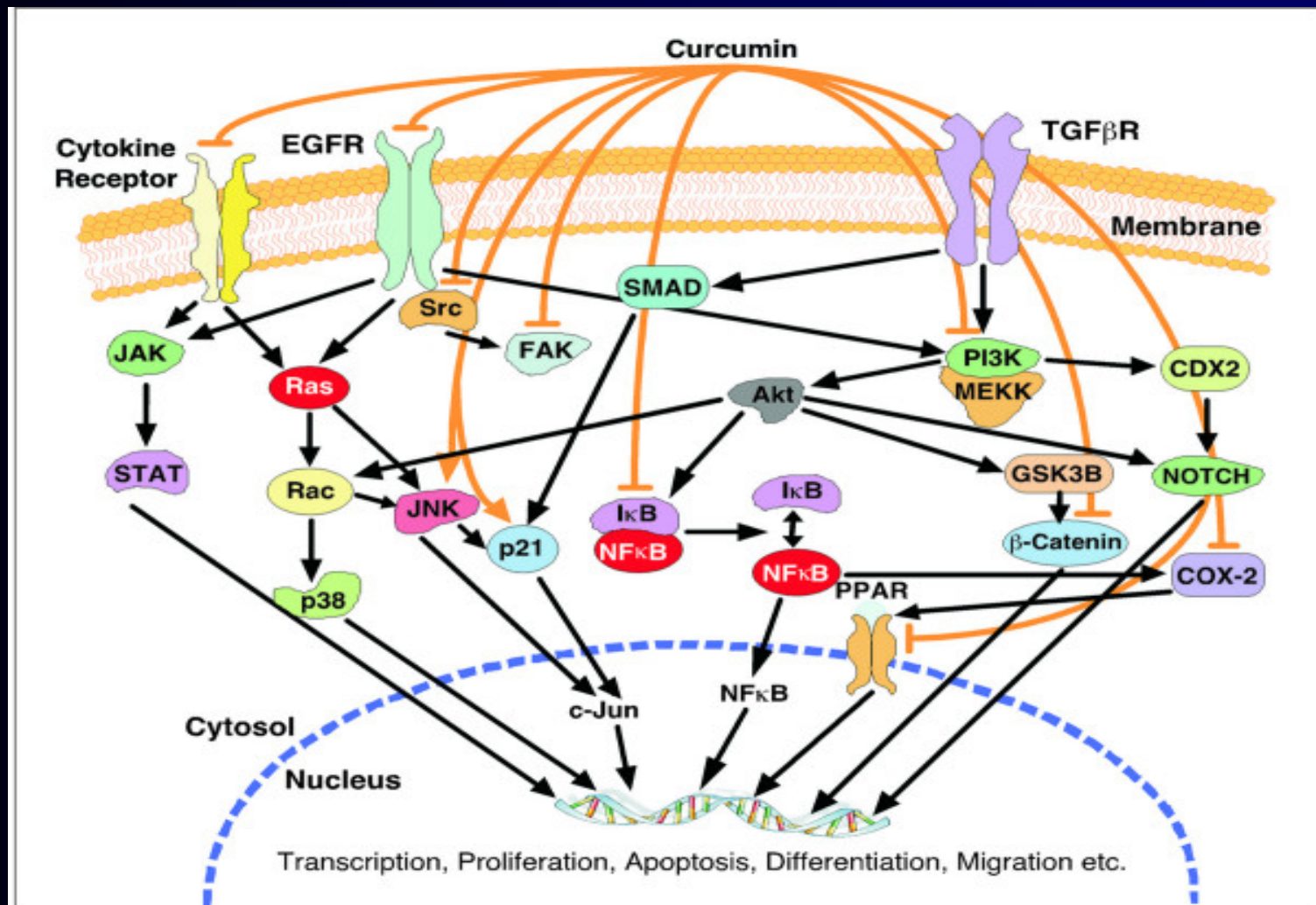
For Every 20 grams of Fiber consumed

↓ Risk of B.C. by 15%

TURMERIC

- **Turmeric – inhibits NFkB**
- **Most Powerful Anti-inflammatory agent known**
- **Crosses The Blood Brain Barrier**
- **Curcumin is the active ingredient**
- **1 tablespoon/person/day**
- **Must take with black pepper/Ginger**
- **1/2 teaspoon per day mixed with the turmeric**

Molecular Targets of Curcumin



Boost Immune System

- **Prayer/Meditation/Laughter/Dream**
- **Family & Friends**
- **Sleep 6-7 hrs/day**
 - Melatonin
- **Deep nasal breathing 10x AM & 10x PM**
 - 5 secs in & 7 secs out
- **Flossing 1-2X's/ Day**
- **Baby aspirin/ Vit D/ probiotic**
- **Exercise and Stretching**

CDK 4/6 Inh.- \uparrow *Immunity*

- **A) \uparrow CD8 Tcell proliferation in Tumor**
(\uparrow Antigen presenting cell, IFN mechanism)
- **B) \downarrow Immune suppression cells (\downarrow Treg)**

Conclusions

- Obesity at diagnosis is a poor prognostic factor in early breast cancer
- Emerging evidence suggests that interrelated metabolic and inflammatory pathways may underlie connection between obesity and breast cancer
- Observational and early clinical data suggest that metformin may have potential as a therapeutic agent in breast cancer; MA-32 will evaluate its role in the adjuvant setting
- Early trials are evaluating the role of anti-inflammatory agents in breast cancer
- Energy balance interventions can also impact metabolic and inflammatory pathways

Books and Websites

- “Anti-Cancer, A New way of Life”
by David Servan-Schreiber MD, Ph.D
- “A Prescription for Wellness”
by Carolyn I. Sartor, MD.
- “How Not to Die” by Michael Greger, MD
- nutritionfacts.org by Michael Greger, MD
- “The Blue Zones” by Dan Beuttner

Thank You

Patients

Professor J.A. van Dongen

Dr. Jennifer A. Ligibel

Dr. Hyman Muss

Dr. Stephen Richman

Amanda Martin

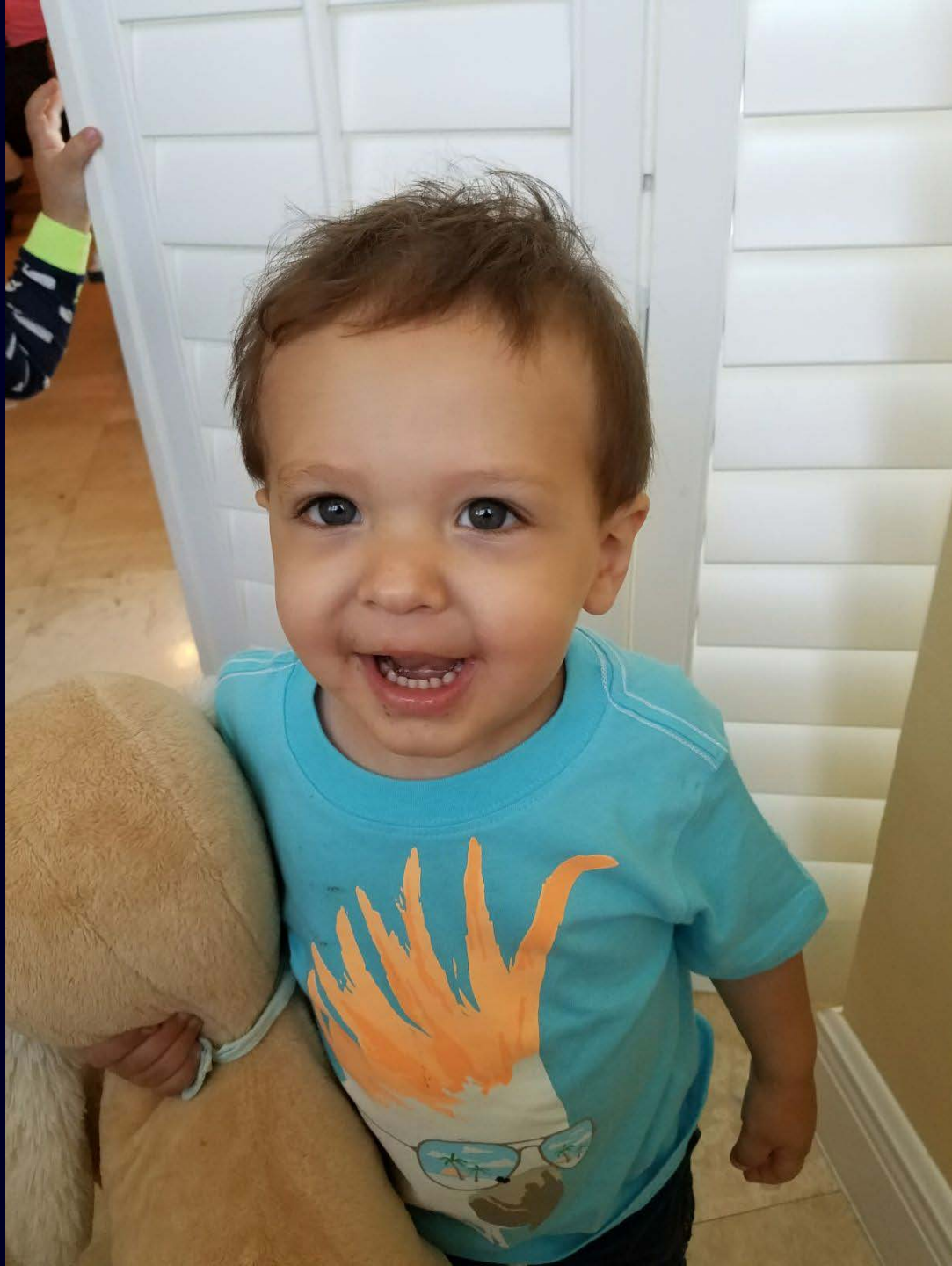
Firenze





Culprits of Derangements

- **High Glycemic index (refined sugars)**
- **Fructose/High fructose corn syrup**
- **Advanced glycosylation end products**
 - **caramelized sugars**
 - **meats cooked high temps (microwaves)**
- **Transfats and long-chain saturated fats**
- **ETOH**






Vitamin D

- U.S. 2nd lowest in the world
- 25 OH levels(hydroxy) – measures steady state
- Normal levels 30-100, shoot for 75(Carlson)
- Replace with Vitamin D, D3 once a day with food
- Toxic to breast and prostate cancer cells
- Breast and prostate cancer express Vitamin D receptors
- Salmon is the richest fish in Vitamin D and lowest in mercury
- 20 mins in the sun gives 15,000 units of Vitamin D
- Calcium Citrate D is very low in Vitamin D
 - Take Calcium and Magnesium
with NO other meds (They are Resins)

Antioxidants

- **Are substances that help neutralize free radicals**
 - **Free radicals damage cells, DNA and cause cell death**
 - **Free radicals contribute to aging, cancer and heart disease**
 - **Bind Free radicals so they are excreted in the urine**

Beverages

- **Coffee (Black)** 2-4 cups per day
 -  Bad Cholesterol (LDL)
 -  Protection of the Liver
 - Helps clear Hepatitis C Virus
 - Rich in Antioxidants
- **Lemon** - Mix with warm water
 - 2 glasses/day – (1) Before Lunch/ (1) Before Dinner
- **Green Tea** 2 cups per day (may be decaf) -must be supplemented with folic acid 1mg/day in women of childbearing age
 - Avoid from Japan (radiation risk)
- **Ginger Root Tea** 1-2 cups per day
 - Helps  prostate size
 - Ginger Root Tea 1-2 cups per day - plain, nothing added

Leafy Green Tea (Camellia Sinesis Plant)

- Highest concentration of polyphenol- potent antioxidant
 - 1/3 caffeine of black tea and more polyphenol
- EGCG 1/6 catechins
- 2-3 cups per day (no milk with tea)
 - ↓ Stroke/ Heart Disease/BC/Prostate Cancer/Colon Cancer/Cholesterol (↑ HDL)
- Folic acid supplementation is needed !!!
- Do not take while getting chemotherapy/pregnant/breast feeding/MAOI (hypertensive crisis) /Coumadin/ or if have bleeding disease




STORY OF A DRUNKEN GIRLHOOD

KOREN ZAILCKAS

smashed



Alcohol

- Smashed
- 2 drinks per day  risk 1.4-1.7x's
- Dietary folate may help counteract the risk
- Recommend:
 - 2oz Red wine/day (Resveratrol)
 - Folic Acid 800 mcg/day, which also  Homocysteine levels.
 -  HDL

General Health tips

● Flossing

- Gums, areas in body of highest inflammation in the body
- Floss 2x's per day
- followed by waterpik
- Dental cleaning every 6 months
- Healthy gums ↓ heart attacks and strokes

● No Smoking/No Chewing Tobacco

- 20 million Americans have died since 1964 because of smoking
- ↑ Lung cancer
- ↑ head and neck cancer
- ↑ bladder cancer
- ↑ heart disease

General Health Tips (Cont.)

Sleep Hygiene

- Recommended 7 hours/night
- If sleep aid is needed - Melatonin
 - will **only** work if lights are out
 - boosts immunity
 - does not hurt memory
- If not resting - see pulmonologist to test for sleep apnea.

Filter Drinking Water

- Filter it twice, with an external filtering device,
such as PUR or Zero Water, etc.
- Heavy metals, such as Arsenic

Your Allies - Spices

Turmeric/Curcumin

inhibits Nfkb

1 TBS/person/day

Black pepper
Ginger

↑ absorption of Turmeric

Saffron

Best to prevent Alzheimer's

Garlic

Olive Oil

1 teaspoon (5cc) = 100 cal

Basil

Oregano

Rich in anti-oxidants

Parsley

Cardamom

Boosts activity of NK cells

Cumin

Rich in Salicylic acid

Exercise

↓ Inflammation (Decreases CRP levels)

↑ Immunity

↑ IGA Levels- cuts colds in half

↓ Circulating Insulin Levels

↓ Glucose Levels

↓ Lipids

↓ Risk of breast cancer



↓ Risk of prostate cancer

↓ Heart Attacks and strokes

Walking briskly 60 mins a day [6 days a week]

- At a pace that you cannot use or speak on your cell phone
- ↓ Hot flashes of menopause
- Strengthens bones

Your Weapons

- Whole Food, Plant Based, Gluten Free, Dairy Free, Salt Free Diet:
- Fruits 5 servings per day - sweetest in the AM
- Veggies 5 servings per day
- Gluten Free - UDi's Bread (in Freezer section)
- Pasta - Spinach/Quinoa/Brown Rice
- Fiber 50-75 grams per day
 -  colon cancer,  Breast Cancer
 - Rice/Black Brown
 - Quinoa
 - Metamucil sugar free (2 tablespoons + 2 glasses of water)
or Psyllium Husk Powder (2 tablespoons + 2 glasses of water)
- Greens - Rich in antioxidants
 - Broccoli lightly steamed (Better Crunchy!)
 - Asparagus
 - Avocados

Your weapons

Red onions (Quercetin)

↓ LdL Cholesterol
↑ Immunity

Kale

Red Grapes (Quercetin)

Cabbage

Blueberries

Spinach

Oranges

Leeks

Strawberries

Fight Barrett's Esophagus,
the precursor to Esophageal Cancer

Watercress

Pears

Arugula

Almond Milk

Asparagus

Berries

Rich in antioxidants
↑ Immunity by ↑ NK cells
↑ Anti-inflammation

Collard Greens

Broccoli - ↑ Immunity

Your Weapons

Mushrooms (cooked are best)

- White mushrooms fight Breast cancer
- Anti-inflammation/ ↓ Allergies
- ↑ Immunity
- ↑ IGA by 50%

Beans (Every day)

- Red/Black/Fava
- Lentils
- Black Eyed Peas
- Split Peas
- Chick peas - Hummus

Organic Ground Flaxseed

- 1 tablespoon per day
- Add to smoothie or gluten free cereal
- Bob's Red Mill Organic
100% whole ground Golden Flaxseed Meal

Tomato Sauce/Pasta

- Lycopene – anti-inflammatory
- Especially for prostate cancer
- 1 tablespoon in AM and PM

Legumes

- (beans, split peas chick peas, and lentils)

Snacks

- 10:00 AM 10 almonds & 1 pear
- 4:00 PM 10 almonds & 1 red apple
- Broccoli Chips - with Garlic
- Kale Chips - with Garlic
- Mary's Gone crackers
 - Gluten free super seed crackers
- Glutino - Gluten free crackers
- NO SUGAR
- Healthy sugar substitutes:
 - Agave (1 drop) or Stevia

Breakfast

- Smoothies

- Blender Brands - Nutribullet/Ninja Blender/Vitamix...
- Add protein “LEAN” vanilla veggie protein
- Almond Milk – plain, unsweetened (Almond Breeze 30 calories or Slik)
- Fruits/Veggies
- Organic ground flaxseed – 1 teaspoon
- No juicing (fiber must be included) (Skin of fruit/vegetable must remain inside the smoothie)

BEST BREAKFAST EVER

- Oatmeal (Steel cut), WATER/ALMOND MILK, CINNAMON (antioxidant), BERRIES, CHOCOLATE (100%), QI'A
- ORGANIC GROUND FLAXSEED (1 Teaspoon)
- Gluten Free Toast
- Hummus

Lowers Blood Pressure

Legumes (beans, split peas, chick peas, and lentils)

Watermelon

Hibiscus Tea (5 teabags in 2-3 cups/day)

Nitrate rich diet (↑ Nitric Oxide level)

-causes arterial walls to relax

[arugula (#1), cilantro, basil, beets (remolacha)]

0 Salt! NOT in the cooking pan and NOT on the plate!

Did you know?

Yanomamo Indians deep in the Amazon have a whole plant, 0 salt diet and never develop high blood pressure even in the very

100% Dark Chocolate

(Lindt 99% or Scharfenberger 100%)

pure cocoa causes arterial walls to relax

Did you know?

Kuna Indians, off the coast of Panama have a diet that is rich in pure cocoa and they do not develop high blood pressure.

Garlic

Organic ground flaxseed (2 teaspoons/day)

Scientific Corner

Fiber - 75 -100 grams/Day

↓ Heart Disease

↓ Stroke

↓ Obesity

↓ DM

For Every 20 grams of Fiber consumed

↓ Risk of B.C. by 15%

Your Enemies

Animal Protein —

Fish and shrimps (wild caught) once/week
(salmon, Sea Bass, Halibut, etc.)

Beef (Grassfed is best! once a month, and make it count
Ex: Argentinian Parrillada or juicy burger w/ egg on top)

Dairy/Yogurt
Cheese (↑ salt)

Chicken (On Chicken Day, every other year
Ex. Peruvian Aji de Gallina)
(↑ Salt, ↑ Cancer Risk,
Salmonella and campylobacter)

Eggs/Eggwhites

Turkey (On Thanksgiving)
Pork (On Christmas/"Nochebuena")
Lamb (On Easter/Passover)
Processed Meat (the worst)

Scientific Corner

Animal Protein stimulates IGF1 (growth factor for cancer)

Plant based diets

IGF1 Binding Protein - which binds to IGF 1

Consumption of Beef

↑ Risk of dying from cancer and heart disease

Red Meat - ↑ heme Iron - ↑ free radicals
(pro-oxidant)











Conclusion

- Insulin resistance and chronic low-grade inflammation are associated with obesity and inactivity and both have been associated with increased breast cancer risk, as well as recurrence and death among women diagnosed with breast cancer.
- Chronic Inflammation can contribute to insulin resistance in the metabolic syndrome through increased levels of pro-inflammatory cytokines such as TNF- α , which can impair glucose uptake and metabolism by altering insulin signal transduction and IL-6 which can increase glucose production by the liver.
- These inflammatory cytokines, growth factors and activated stromal proteins can promote breast cancer pathogenesis.

Cont...

- Weight loss and exercise interventions have been shown to impact insulin and other serum biomarkers linked to breast cancer risk and prognosis in healthy women and in breast cancer survivors.
- Animal models also suggest that lifestyle interventions can reduce malignant transformation of breast cells and impede tumor growth, potentially through immune mechanisms.
- Women with newly diagnosed breast cancer with exercise interventions may upregulate immune and inflammatory pathways within human breast tumors.