

# Breast Wellness

*Tools to Prevent and  
Heal from Breast Cancer*



WITH

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& Heidi Spear, MA

# Breast Wellness DVD

Hi, my name is Elizabeth Boham. I have developed this ebook to go along with my DVD, Breast Wellness: Tools to Prevent and Heal from Breast Cancer. You can see the video on demand at [vimeo.com/ondemand/breastwellnessdvd](https://vimeo.com/ondemand/breastwellnessdvd) or order a copy of the DVD through my website [DrBoham.com](http://DrBoham.com) or Amazon. Through my website, I am offering you a 30% discount (use code -- **breast3owellness**).

On the video you can watch me teaching the functional medicine approach to breast wellness. You can also see all three important healing yoga and meditation sequences that yoga and meditation instructor Heidi Spear guides you through. I hope this information and practice gives you information that will empower you to know how to care for your body. Enjoy!

# Introduction

I'm going to take you on a journey to breast wellness.

Whether you have breast cancer, have had breast cancer or want to keep your body healthy to prevent the growth of cancer, this information is for you. During this journey we will review the science behind cancer development and review some simple things we can all do everyday for healing and prevention.

As a functional medicine physician and nutritionist I look to get to the root cause of someone's illness or dysfunction in their body and work with them to restore balance and health. We will review the concepts of functional medicine and discuss how this new thought process can help us rebalance our body so it can heal and gain energy that will help all of the cells in your body work optimally. I will highlight the healing power of food and give you some practical ideas to help you modify your diet to one of healing.

One of many unique components of Heidi's and my collaboration is the importance we place on illustrating that healthy energy-movement in the body enables the physical body to thrive. We do this by discussing beautiful, intelligent, and colorful ways that food fuels the body and gives it information needed for optimal health. The yoga and meditations sections in our DVD will introduce the concept of energy centers in the body, and energy channels, and through our practices you will find yourself directly engaging with the energy that flows through you. Through guided meditation, visualization, gratitude practice, breathwork, energy balancing, yoga, and deep relaxation, you will become mindful of how your thoughts and emotions (which are forms of energy) affect your physical body, and how you can work with them to promote deep, natural healing.

I know first hand how these modalities can help the healing process. It is for this reason that I knew that I needed to have these modalities as part of our journey to breast wellness. My gratitude journal changed me at my core. When I learned how to meditate and calm my negative thoughts in my brain, I felt happier. When I learned how to discover where the blockages were in my energy pathways and release them, my body truly healed. Heidi and I see these healing modalities work for our patients every day. We are so excited to be able to bring these to you and that you have chosen to take this journey with us to breast wellness. Welcome.

# A Functional Medicine Approach To Breast Wellness

Why have so many of us been touched by breast cancer? Why is breast cancer so common? Why are we seeing an increasing amount of young women getting breast cancer? What can we do to prevent this from happening? What can we do to decrease the incidence of breast cancer for our daughters and our daughter's daughters?

Getting to the bottom of these questions is of personal interest to me.

When I was 30 years old, I was diagnosed with an aggressive type of invasive breast cancer. At the time I thought I was healthy. Like so many others who have gone through this experience, I went through the 5 stages of grief.

1st Denial. I did not believe my surgeon when she was so sure that what she had just removed was cancerous. 2nd Anger -- I was so angry that my healthy body had deceived me and gone on to make cancer. I mean, I was an athlete and ate healthy. I had studied exercise and nutrition in undergraduate and graduate school and I practiced what I preached. Stage 3 Bargaining -- As I went through treatment I started bargaining with God or whoever was listening. Please let me just have children. After the chemotherapy and radiation ended and my periods came back, I was very lucky to have those prayers answered and have two miracle children. But then soon after my son was born, the 4th stage of grief, depression set in. I think all of the exhaustion of getting through the treatment and birth of 2 children set in and I was scared that I was going to die soon and leave these 2 beautiful children. Over time the depression slowly began to lift and the 5th stage acceptance began. I began to accept that I did have breast cancer. I started to investigate why this could have happened. How could someone who had spent so much time and energy taking care of herself and her body grow cancer? How does an otherwise healthy woman get cancer? What did I do wrong? What can I do to reduce my risk of recurrence?

Looking for answers to these questions sent me on a journey through my medical training and eventually to an education in Functional Medicine. Functional medicine is a different way of looking at health and disease. Instead of just naming the disease and then giving the same treatment to everyone with that disease, it looks at the individual systems in a person's body to look for that underlying root cause. Functional medicine individualizes treatment, focusing on the patient instead of the disease. We appreciate

the importance of prevention and the interconnections within the body. Most importantly, FM asks the question why?

Functional medicine helped me understand that some of the systems in my body were not working as well as I had thought. I started to look at health and disease in a different way. Understanding that we are not healthy one day and then have a disease the next. The changes in someone's body that ultimately lead to cancer take many years to develop and are very different for each individual person. We often look for one cause for cancer but what we have learned is there are multiple hits or causes for any one person's cancer. There is not just one reason that I got breast cancer, there are many things that occurred over many years in combination with my individual genetic predisposition that resulted in me getting breast cancer.

Every woman with breast cancer is not the same, and the causes for an individual person's cancer are not the same. There are many different kinds of breast cancer. We are not just talking about cancer...but cancers. We are not just talking about breast cancer...but breast cancers. Even if we just take all of those women with estrogen receptor positive breast cancer, we know that they are not the same or have the same causes. They each have different causes, a different body environment and different genetics. For any one person these causes are different and so it is important to treat each individual person differently and look to rebalance their body so that they do not get a recurrence. This concept has helped me with my own health and the health of my patients. We must start looking deeper at the various hits that can result in the growth of a cancer for us to do better at helping prevent cancer from occurring and if it does to help treat people and prevent a recurrence.

The American Institute of Cancer Research and the World Cancer Research Foundation put out a statement estimating that 38% of breast cancers could be prevented with some simple lifestyle steps including regular exercise, increasing fruits and vegetables and maintaining a healthy weight. This does not even include stopping smoking, which would increase the percentage of breast cancers that could be prevented. In addition, there are many other changes that I will go on to discuss that will help to create an optimum environment in the body to prevent cancer.

It is important to understand that precancerous cells are being produced all of the time in everyone's body. I am not giving this information, so we can feel scared. I am saying this so we can feel empowered. Because, most of the time our immune system removes these cells when it discovers them. Why do some precancerous cells become invasive cancer is an important question that we need to continue to investigate through research and one that I will explore. What we have learned, is the terrain or environment of the body influence whether or not cells become invasive cancer. We know that a healthy terrain or environment will prevent the growth of cancer and on the other hand an unhealthy terrain can feed cancer and cause it to grow. What is the optimal environment in our body that will prevent cancer? How can we change that environment? It is important that we focus more than just on the individual cells in the body, but also on

the terrain that these cells live in. Creating a healthy terrain in our body is as simple as removing what is causing the imbalances in our body and replacing what is needed for balance to be restored in our body. We will come back to this concept again and again.

Along my healing journey I discovered many healing modalities that I am sure contributed to my well being. These practices helped my body calm down and get to a space where optimal healing could occur. Some of my favorite complementary practices included breath work, meditation, journaling, energy work, chakra healing and movement therapy. Because of this, I recognized that these healing modalities needed to be a part of our journey to breast wellness. You will learn about these healing modalities and have time to experience them again and again with relaxation specialist Heidi Spear.

I wanted to put this information together to help explain the functional medicine approach to breast wellness and healing from breast cancer and give you all tools that you can use everyday for optimal health.

Lets work together to create an optimum environment to prevent the growth of cancer!

# Chapter 1

## The Estrogen Connection

It is common knowledge nowadays that there is a connection between estrogen and breast cancer. Science tells us that as our estrogen exposure increases so does our risk of breast cancer. There have been numerous studies performed to show the definitive link between overexposure to estrogen and an increased risk for breast cancer(1). Taking birth control pills, for instance, or receiving hormone replacement therapy after menopause, or even the amount of periods you experience in your lifetime, are all ways to be exposed to high levels of estrogen, levels which carry a higher risk of breast cancer. It is important to understand where these high levels of estrogen can come from and how our bodies respond to them.

Endocrine disruptors are a key factor in the increase of estrogen in our bodies, which, in turn, cause the risk of breast cancer to swell. So what are endocrine disruptors? Endocrine disruptors are substances that disturb the activity or binding of our hormones. They can come from a variety of sources, and were first discovered quite accidentally. In 1991, there was a group of researchers at Tufts University that were studying breast cancer. Try all they might, every test they ran would be slightly “off”(2). Being problem solving scientists, they quickly deduced that there was something in their equipment that was altering their experiments. The plastic of the test tube, it turns out, was leeching chemicals into their tissue cultures, increasing the growth of the samples in them. The chemicals were causing the breast cancer samples to grow at an aggressively accelerated rate, which was skewing their data. This groundbreaking observation in 1991 helped us begin to understand how chemicals in our environment could be affecting the hormone balance in our bodies. Endocrine disruptors can be found everywhere: in plastics containing BPA (such as water bottles, sippy cups, and some receipt paper), PVC (Polyvinyl Chlorine - found in some piping and cling wrap), even in our soaps and toothpaste (Triclosan is an antibacterial agent found in some soaps and toothpastes)! Herbicides and pesticides, of course, are a given. Synthetic chemicals are a major source of endocrine disruptors and when one steps back and looks at the data regarding synthetic chemicals in society, it is AMAZING. The amount of synthetic chemicals we as a society are exposed to has increased two hundred times since the 1930's. We have gone from being exposed to one million tons of synthetic chemicals in the 1930's to two hundred million tons of synthetic chemicals currently.

Thankfully, there are steps we can take to mitigate these endocrine disruptors. One of the first changes can be made in the grocery store. By buying organic produce you reduce your exposure to pesticides and herbicides. Buying organic meat and dairy has the added bonus of decreasing your exposure to growth hormones commonly pumped into regular meat and dairy. Dairy also carries an insulin-like growth factor that has been linked to the growth of cancer in certain situations. It is a good idea, in fact, to cut down your overall consumption of animal products as well. Women who eat red meat three times or less per week have half the risk to develop breast cancer as women who eat red meat every day(3).

Food aside, there are other things that can be done to avoid these synthetic chemicals that act as estrogen. Try to use glass whenever possible. Glass does not contain BPA and is a chemically neutral object to drink from. Heating or microwaving plastic will lead to leaching of chemicals into your food and drink so avoid doing so as much as possible. Refilling plastic water bottles also exposes you to the same risk, so make the switch to a non- plastic reusable water bottle. Avoiding antibacterial soaps and toothpaste containing Triclosan will also help. Finally,

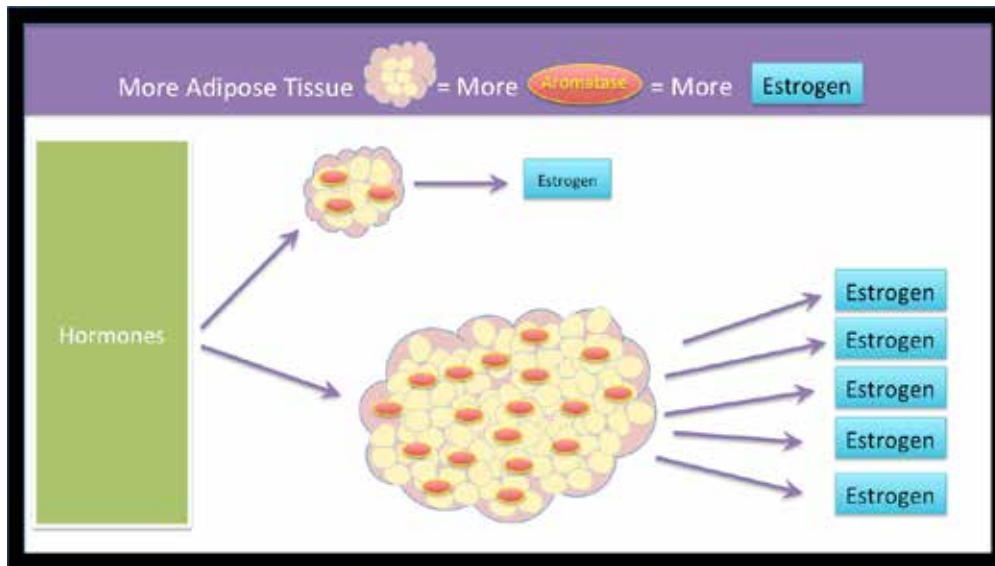


ly, refraining from using pesticides and herbicides in your home garden will help as well. It is important to understand that making our lawns perfect is not ideal. A finely manicured lawn is not ideal for our bodies. Making these simple changes will decrease your exposure to estrogen and with that, your risk for breast cancer.

It is important to understand that when it comes to our bodies, our weight is not the only thing that we should be concerned about. Body fat percentage is the most important factor(4). As our body fat increases, so does our risk for breast cancer. This is because the fat in our body produces an enzyme called aromatase that can turn other hormones in our body into estrogen. As our body fat percentage goes up, so does the amount of estrogen in our body. This is true for both men and women.

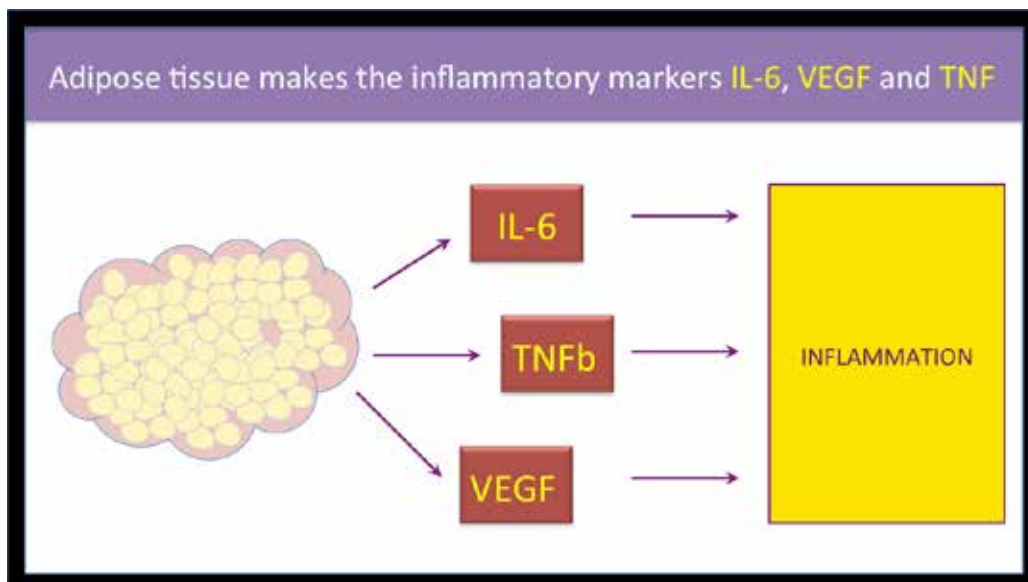


## How Adipose (fat) Produces Estrogen



Body fat is an active endocrine organ. It may seem dormant, a stubborn reminder of cheeseburgers past, but in addition to producing enzymes such as aromatase, it also produces inflammatory markers such as Interleukin-6 (IL-6) and Tumor Necrosis Factor (TNF). These inflammatory markers have traditionally been linked with heart disease, but they have also been shown to have an effect on cancers. Think of it as an active ingredient in the making of cancer. It is key for us to reduce our body fat so we can reduce our risk.

## How Fat leads To Inflammation



The key to mitigating our risk for breast cancer is to improve our estrogen metabolism. Metabolizing is the body's natural way to deal with estrogen by breaking it down. Incorporating certain foods into one's daily diet can significantly aid one's body in the break-

down of estrogen (5). One of the best food groups for metabolizing estrogen is cruciferous vegetables. Cruciferous vegetables are the ones you may have hated as a kid. You might know them better by their common names: broccoli, cauliflower, brussels sprouts, kale, etc etc. While young you might have harbored a distaste for them, present you can realize their worth. These vegetables are high in fiber and also contain three components that aid with the destruction and removal of estrogen: Indole 3 carbinol, DIM, and sulforaphane. As important as cruciferous vegetables are to health, they are only one piece of the solution. Still, having a serving a day will help you achieve optimal metabolism.

Daily exercise is another HUGE factor. Obviously, maintaining a healthy weight is the ultimate goal and exercise will help you get there. Resistance training brings with it the added perk of developing lean muscle mass. Building lean muscle mass will bring your body fat percentage down, which in turn will lower your levels of aromatase.

Decreasing inflammation is another way to lower the aromatase in your body (4). Aromatase is produced in high quantities when there is inflammation in the body. To combat this, try to introduce some new things into your diet. Omega-3 fats are excellent anti-inflammatories and can be found in fatty fish like salmon. They can also be found in flax. Avoiding trans fats is always good advice, as is decreasing your consumption of saturated fats. If nothing else, turmeric is a wonderful anti-inflammatory herb that is easily introduced into most dishes and will have an immediate positive impact on your body.



There are many things we can do to support our body's natural metabolism of estrogen. Lowering inflammation, decreasing body fat and getting some cruciferous vegetables in your body every day are a great start.

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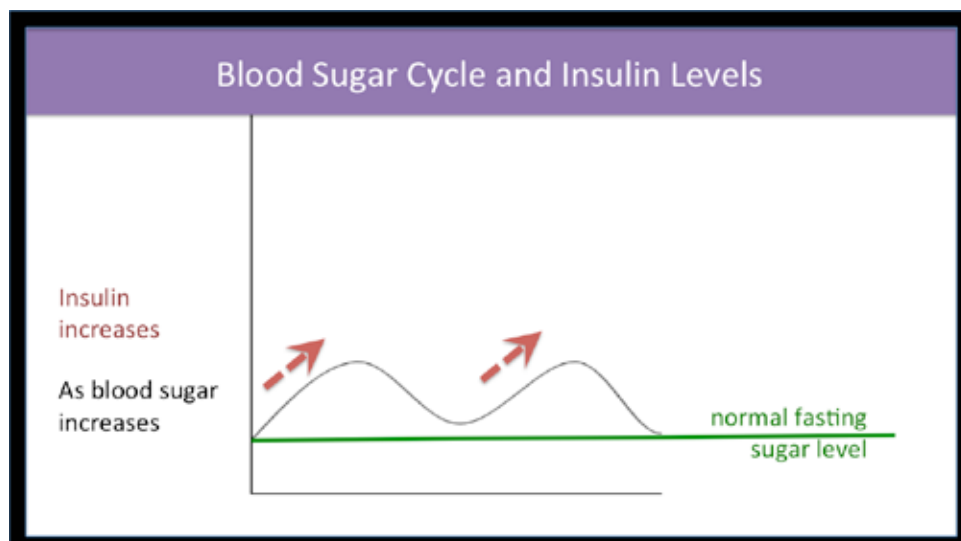
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# Chapter 2

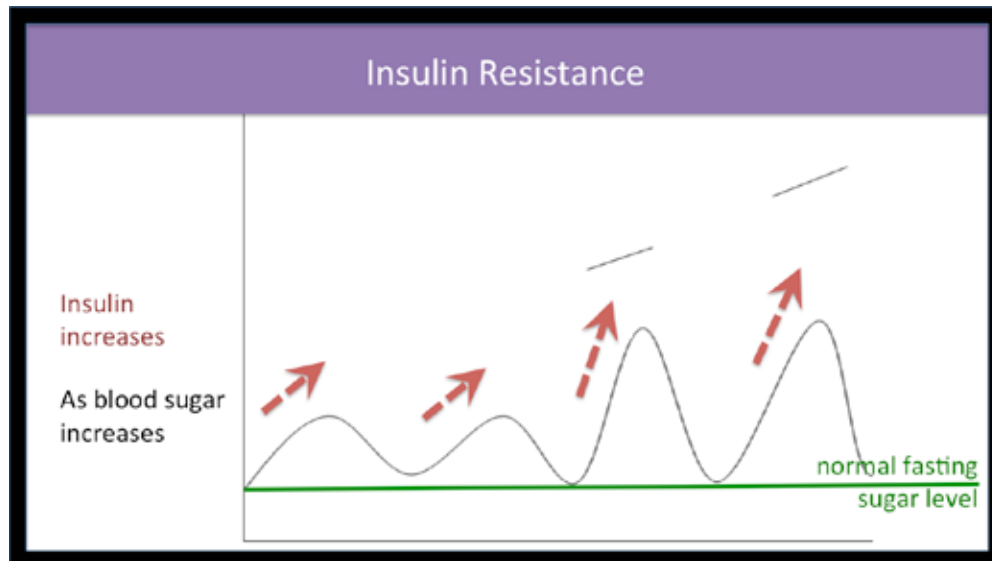
## The Concern Over Belly Fat

Belly fat is a troubling epidemic in our society. Not only is it a signal of weight issues, it is indicative of other important risk factors for one's health as well. One of the biggest issues with belly fat is that it is indicative of insulin resistance. Insulin resistance is a primary risk factor for many cancers. (1) It comes as no surprise, then, that women with higher insulin levels have a higher risk of getting breast cancer. In order to understand how insulin resistance impacts your risk of developing breast cancer we must first understand what insulin is, how it works, and what can be done to keep your insulin working well and prevent insulin resistance.

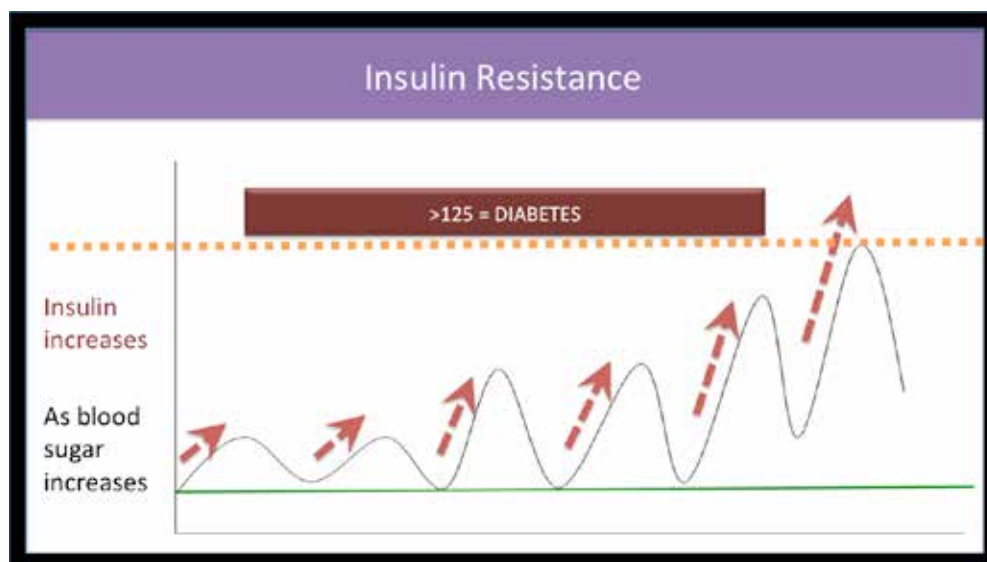
First let's go over how insulin works in our body. Nearly everything we consume affects our blood sugar levels. For a typical, non-diabetic human, the levels stay fairly consistent, usually in the 70-90 range. This is considered the "normal" range and is where our bodies function the best. Insulin is a hormone that is used as a regulator for the blood sugar in our bodies. After we eat a meal, our blood sugar increases, and the body responds by producing insulin. The insulin brings the sugar from the blood into the cells where it can then be processed and used to produce energy. After this has taken place, the blood sugar levels in the body subside.



What we eat has great influence on how this process goes. If you eat a large meal or a meal with a lot of refined simple sugars that are absorbed quickly into your bloodstream, your blood sugar also rises very quickly. As a result, the body needs to produce more insulin to lower its blood sugar.



If one continually eats meals heavy in refined sugars, the body starts to become more resistant to insulin, and needs to produce more insulin to regulate blood sugar levels. When this occurs, you have developed insulin resistance. Over time, insulin resistance could lead to continually higher levels of blood sugar. When a person's fasting blood sugar (blood sugar before eating) is  $>100$ , their risk for diabetes becomes significantly higher.



Not only that, but even before someone gets diabetes, high levels of insulin increase one's risk for a multitude of diseases, including cancer. Identifying insulin resistance is important so the problem can be rectified before permanent damage occurs.

Insulin levels have a direct relation with cancer in our bodies. When insulin levels are high in the body there is increased metastasis, increased recurrence and a decreased survival rate from breast cancer. (2) The high levels of insulin cause sugar in the blood to feed cancer cells and results in aggressive growth. Insulin resistance has become an epidemic in our society. Over half of all people over the age of 50 have insulin resistance. Our children have become conditioned to eat so much processed food that we are starting to see this condition in our children as well. The connection with insulin and cancer has been so well established that oncologists are now using medication that improves insulin sensitivity as treatment for cancer (in some cases).

### **How do you know if you have insulin resistance?**

#### **Look for these common indicators:**

- Weight gain around the belly
- Fatigue
- Feeling tired after a meal
- Harder time losing weight
- Cravings for foods
- Hot Flashes
- Energy Swings
- Low blood sugar
- Heart Disease
- Memory Loss

#### **These tests can also be done at your doctor's office to determine if you have insulin resistance:**

- Belly Fat:
- Waist circumference (> 35 inches for women) or Waist / Hip ratio (> 0.8 for women)
- Elevated blood sugar (fasting > 100)
- Elevated Insulin levels (fasting >12)
- Elevated blood pressure (>140/90 )
- High triglycerides (>150)
- Low HDL (good cholesterol) (<50 for women)
- Elevated CRP (> 1.0)

Remember, you do not want to wait until you have actual diabetes to start to pay attention to your numbers. If you pick up insulin resistance early, it is easier to reverse.

#### **Causes of Belly Fat and Insulin Resistance:**

- Weight gain - often times we will develop belly fat when we gain weight, especially if we are genetically predisposed
- Poor Diet - a diet high in refined carbohydrates and simple sugars provides a perfect recipe for the development of belly fat

- Lack of exercise - exercise is key in maintaining insulin sensitivity and preventing belly fat
- Stress - a well known factor in weight gain around the belly
- Inadequate Sleep - proper sleep is crucial in mitigating weight gain around the belly
- Dysbiosis - an imbalance of the good and bad bacteria in our bodies has been linked to insulin resistance and belly fat.
- Toxins - Alcohol, environmental toxins, and processed foods are among the leading causes for belly fat(3).

### **How to Improve Your Insulin Sensitivity:**

- Increase fiber in your diet - 35 grams daily – vegetables, beans, nuts, and seeds are all great sources of fiber
- Protein at every meal - lean chicken, fish, beans, eggs, and nuts are great sources
- Eat regularly - skipping meals can lead to overeating which will result in insulin resistance
- Increase omega 3 fats – healthy fats found in fish and flaxseed
- Eliminate Trans fats - these hydrogenated fats are linked to insulin resistance and weight gain.
- Nutrient dense foods – Avoid junk food
- 40 minutes of exercise daily
- Get 7-9 hours of sleep per night - Insulin resistance and weight increases with lack of proper sleep
- Manage stress
- Eliminate sources of inflammation in the body - As discussed in chapter one, eliminating sources of inflammation will help with your overall health
- Avoid BPA – BPA has been linked to insulin resistance and an increased risk of diabetes and weight gain(3).

As you can see, there are many things we can do every day to keep our insulin working well. Higher levels of insulin become a great cause of concern for one's health, and by taking charge of our insulin sensitivity and belly fat, we are lowering our risk of breast cancer.

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# Chapter 3

## The Immune System and Inflammation

### The Root of many diseases

The immune system is very important for cancer prevention. Too much inflammation in the body has been associated with the growth of cancer. In this section we will review how you can strengthen your immune system and discuss what you can do to decrease inflammation in your body and create a terrain in your body that is not conducive to the growth of cancer.

Our immune system is remarkable with its tenacity. It is usually able to detect precancerous cells and destroys them. While it is excellent at sniffing out precancerous cells, our immune system is not infallible. From time to time precancerous cells will slip by the immune system and that is when problems arise. These precancerous cells are able to grow unabated and can become an invasive cancer.

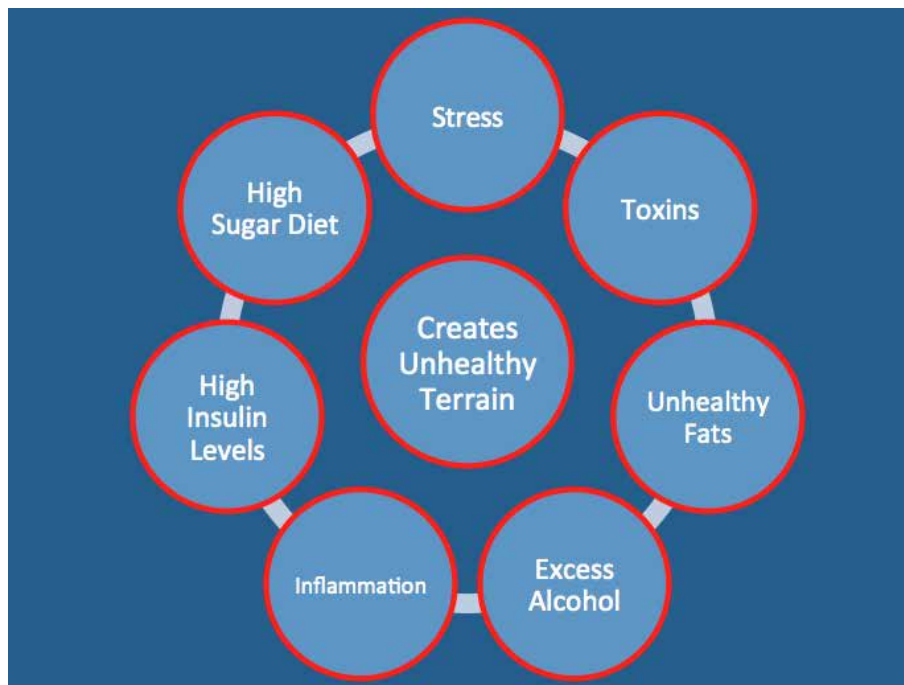
Precancerous cells go through many steps before they become an invasive cancer and this can take years to develop. First the precancerous cell is initiated into becoming an abnormal cell. Then the cell gets transformed. After transforming, the abnormal cell goes through a process called angiogenesis, where it invades the body and brings blood vessels back to it in order to help it grow. Angiogenesis allows the abnormal cells to proliferate throughout the body, or metastasize. Because there are so many steps involved in the precancerous cells becoming invasive cancer, there are also many places for one to intervene.

So what can be done to help fight against precancerous and abnormal cells? Chemotherapy, of course, is an option, and definitely can decrease or get rid of abnormal cells. Still, there are times where chemotherapy will have no impact on some abnormal cells. So, it is of utmost importance that we strengthen our own immune system to help get rid of cancer cells that were not impacted by chemotherapy and prevent further precancerous cells from developing.

When there has been examinations of breast tissue in healthy women who die by accident, we see that 30-50% of healthy women aged 40-50 have premalignant microscopic

breast cancer cells (DCIS or LCIS) on autopsy. Almost 1/2 of all women between the age of 40-50 have signs of DCIS or LCIS on autopsy. That is very interesting. The rate of breast cancer is not that high! So what does that mean? It means that some tumors regress. That is very important to understand. Our bodies have the ability to rid themselves of precancerous cells. By what method do we help our immune system fight off these precancerous tumors and prevent them from becoming invasive cancer? The scope of our focus needs to move beyond these individual abnormal cells. We need to focus on the fertilizer or terrain that is surrounding these cells. If we have the right terrain surrounding our cells, cancer is less likely to grow. On the other hand, if we have unhealthy terrain or fertilizer surrounding the cells in our body, cancer cells will be fed and are more likely to grow and become a problem. We can create the healthy terrain or fertilizer in our body in which cancer is unlikely to grow. How? It is most beneficial to us to look into what we are feeding these cells.

## Healthy vs. Unhealthy Terrain

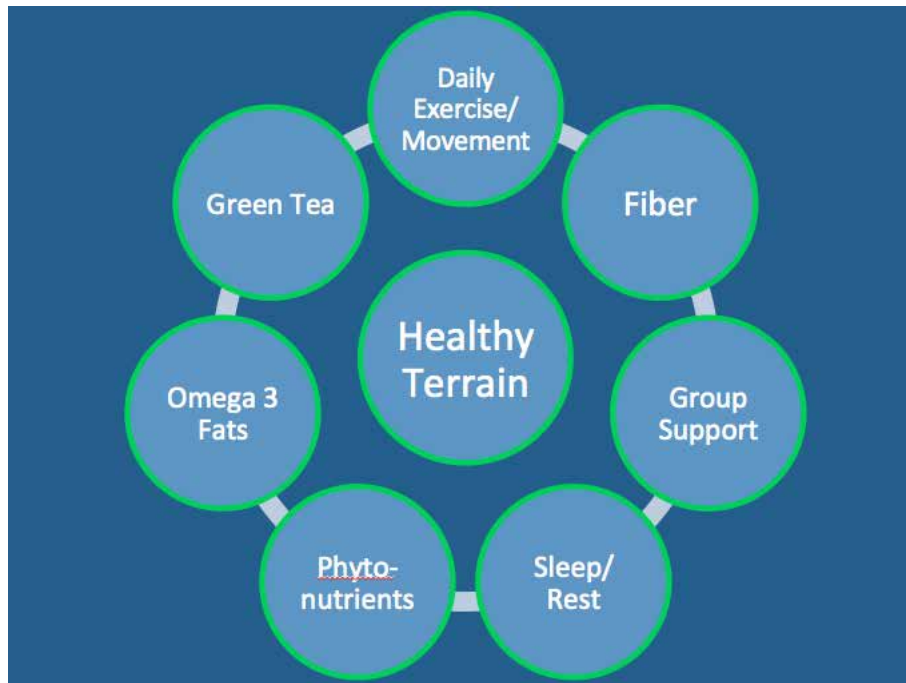


### Unhealthy Fertilizer and Soil:

- High levels of insulin in the body
- High levels of sugar in the body
- Unhealthy fats – high levels of trans fat
- High omega-6 / omega-3 fat ratio - this can occur when someone is not getting enough healthy omega 3 fats in their diet
- Insulin Like Growth Factor (IGF) as we had discussed earlier that can be found in milk and meat
- High levels of inflammation – when levels of inflammation is high in the terrain of the body, this can feed cancer



These are all things that we should be avoiding as much as possible. Everything in the previous list promotes the growth of abnormal cells. In order to build a healthy terrain for our bodies, focus on the following:



### **Healthy Fertilizer and Soil**

- High intake of Phytonutrients – these are found in plant foods like vegetables – we will discuss this further in the phytonutrient section
- Low levels of inflammation
- High omega 3 levels
- Green tea
- Beta glucans -Beta glucans increase macrophages and strengthen immune system (naturally found in many mushrooms)

As much as it seems repetitive to once again bring up this point, it is important: inflammation in the body is like fertilizer for cancer to grow. Inflammation is the source of many problems for our body. How do you know if you have inflammation? What can you do to stop it? It can be confusing for individuals to understand what exactly to look for when worrying about inflammation.

### **Signs of Inflammation:**

- increased C-Reactive Protein (CRP) - this is a blood test you can ask your doctor to run
- increase SED rate or high ESR on a blood test
- water retention
- bloating
- joint pain

- asthma
- eczema
- abdominal weight gain.

Chronic inflammation is a common factor in the development of cancer. Inflammation causes multiple issues, all of which can influence our susceptibility to cancer growth: causing DNA damage, inhibiting our body's ability to repair itself, or even creating a "soil" that is enriched with inflammatory growth factors causing cancer to grow. If the terrain in the body is inflamed, cancer is more likely to grow. Inflammation can come from multiple sources. Body fat, chronic infection, insulin resistance, all of these elements influence the inflammation found in the body.

Are there tests to determine the amount of inflammation in one's body? Absolutely. One good blood test that your family physician can do for you is a test looking for the C Reactive Protein (CRP). Some studies have even shown it to be a better marker for survival than the stage of a patient's cancer. The CRP test is useful because it provides us with a road map of sorts. When it is elevated in one of my patients, I look for underlying signs of infection or inflammation and focus on that. If a patient has too much weight around their belly, I help them lower their belly fat. If diet seems to be the culprit, I work with them to eliminate the foods that may be causing the inflammation. The CRP test helps us test and therefore treat the terrain in the body.

### **Easy Ways to Decrease the Inflammation in Your Body:**

- Avoid refined and processed foods
- Decrease % Body Fat
- Increase Omega 3 fats in your diet and eliminate trans fats
- Low glycemic impact diet: A diet that will not cause a quick rise in blood sugar after you eat.
- Eliminate added sugars, sugary drinks, juices and refined carbohydrates. Also combine your complex carbohydrates, like brown rice, with a protein and a fat to slow its digestion and absorption
- Introduce turmeric, resveratrol, ginger and green tea into your diet. These herbs and teas have natural anti-inflammatory properties and are great to add to your diet.
  - Turmeric also decreases NFkB (n f kappa b) and this helps the body kill cancer cells when it sees them.
- Decrease stress
- Increase sleep (7-9 hours per night is optimal)
- Trial of an elimination diet: remove dairy, wheat / gluten, sugar, foods with added sugar, caffeine, refined carbohydrates or foods made with flour for two weeks. If the inflammation in your body decreases, then you can determine your diet was a source of inflammation in your body.



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# Chapter 4

## Detoxification

### The Process of Detoxification

Detoxification is the process in our body that helps us get rid of toxins that we are exposed to every day. There has been an explosion of toxic chemicals released in our environment over the last 80 years, which, in turn, means we are exposed to them. What's even worse is that most of the chemicals that we've pumped into the environment haven't been properly tested regarding their effect on the human body. What could we possibly do to combat this? Don't fret, there's hope on the horizon! In this chapter we will review the steps we can take to avoid as many toxins as possible and help our bodies detoxify from what we have been exposed to.

### **Toxins Encountered in Everyday Life:**

- Environmental
- Endocrine Disruptors (discussed in Chapter 1)
- Pesticides / Herbicides
- Cigarette smoke
- Meats cooked at high temperature quickly - When meat is cooked quickly at high heat, it makes heterocyclic aromatic amines – these have carcinogenic properties.
- Alcohol
- Toxins Produced In Own Body

Alcohol will be a point of contention for many but it is important to understand its risk regarding breast cancer. Alcohol and its connection to breast cancer has been very well studied, and the results are... striking, to say the least. As one's alcohol intake increases so does one's risk of breast cancer. Unbelievably, there is a linear relationship between the two. For every 1 drink increase in consumption per day, a woman's risk of getting breast cancer is increased by 12%. (1) Twelve. Percent.

And if a woman drinks more than 2 drinks per day, her risk has increased threefold. Even low levels of intake (3-5 glasses a week) have been associated with an increased risk. Clearly, the relation between alcohol and breast cancer risk is of no trivial order.

What causes this association between alcohol intake and breast cancer risk? While concrete answers have not yet been found, there are some very probable reasons as to why.

**1. Liver and detox impact:** Alcohol makes it harder for the liver to detoxify other toxins in the environment.

**2. Increases free estrogen:**

- by decreasing Sex Hormone Binding Globulin – which is a protein that binds up estrogen in the blood stream.
- Alcohol lowers it, causing free estrogen to increase.
- Alcohol also increases aromatase, which increases estrogen production.

**3. Decrease B vitamins:**

- B vitamins are vitally important for a multitude of bodily functions.
- Alcohol uses them up. There are a lot of risks involved with alcohol intake so a good rule of thumb is to consume it in moderation.
- Keep your alcohol intake to 5 or less drinks per week. A drink is either 12 oz of beer, 5 oz of wine or 1 oz of hard alcohol.

**There are many foods you can eat to strengthen your ability to detoxify or get rid of toxins that we are all exposed to. Focus on:**

- Fluids
- Fiber
- Protein
- Choose organic

Eat cruciferous vegetables daily– broccoli, kale, collards and brussels sprouts have wonderful detoxification properties. Try to add in a serving every day. Garlic, cilantro, parsley, dandelion greens, chlorophyll are also very helpful foods to add to your diet that can support the detoxification process in your body. There are many more things that you can do to help strengthen your body's resolve against toxins.

**Those things include:**

- Have 1 to 2 bowel movements a day
- Drink 6 to 8 glasses of water a day
- Sweat regularly
- Exercise to help you sweat regularly
- Use steam baths or saunas—infrared saunas may be even more helpful
- Regular exercise, yoga, and lymphatic massage can improve lymph flow

All of these steps listed above will help your body detoxify and lower your breast cancer risk.

Reference

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# Chapter 5

## Gut microbiota

Now that we have discussed detoxification, we should talk about an area where a significant amount of the detoxification takes place. What area, you ask? Why, the digestive system, of course! The entire purpose of the digestive system is to help us filter out the waste from the nutrients. Of paramount importance in having good detoxification is having regular bowel movements. Consuming the recommended daily serving of fiber will help with that. And, of course, we have the unsung heroes of the digestive system, the gut microbiota. "Gut Microbiota" is the name given today to the microbes living in our intestine. We have tens of trillions of microorganisms living in our digestive systems, including at least 1000 different species of known bacteria with more than 3 million genes (150 times that of human!) living in our bodies. Microbiota can, if counted in total in the human body, weigh up to 2 kg. This is an extremely important 2 kg that we do not want to lose. An imbalance in our gut microbiota can cause a plethora of problems, including decreased detoxification and poor estrogen metabolism.

I focus on gut microbiota and health of the digestive system all of the time with my patients. I know my microbiota has had a significant impact on my overall health. I was on many antibiotics throughout my childhood for chronic urinary tract infections. This changed the way my digestive system worked. This impacted how I was able to detoxify from toxins and eliminate estrogens from my body.

There have been many studies done looking at the association between antibiotics and breast cancer. These studies have shown that a woman's risk for getting breast cancer increases with her increasing use of antibiotics over her lifetime. This study in particular looked at antibiotic use in women over a 17 year period of time. If a woman needed greater than 25 prescriptions for antibiotics over those 17 years, her risk of getting breast cancer was twice as high as women who did not need any antibiotics (1).

Antibiotics have developed a widespread use in our modern society. We are placed on antibiotics for urinary tract infections, ear infections, acne, and sinus infections, just to name a few. And there are many more out there. Women who used less than 25 prescriptions in that 17 year timeframe were also at an increased risk for breast cancer. These women carried a risk that was one and one half times greater for breast cancer than women who did not need any antibiotics. Why is this? An increased need for antibiotics, may indicate that the women has a weakened immune system or it may be from

the damage the antibiotics do to our microbiota. Our gut microbiota have an incredible influence on our health, and we are learning more about them every day.

One process that they microbiota are helpful for is glucuronidation. Normally glucuronic acid binds to the used estrogen in our body and helps our body excrete the estrogen in our stool. If we have a large number of unhealthy bacteria in our digestive system, we have a higher amount of beta glucuronidase. This can cleave estrogen allowing it to be reabsorbed and ultimately lead to an increase total body estrogen. Elevated levels of beta glucuronidase and therefore insufficient detoxification of estrogen can occur in a high meat / low fiber diet or when there is an overgrowth of unhealthy bacteria. When there are sufficient amounts of healthy gut bacteria, fed by a diet high in soluble fiber, there is an increase of the compound butyrate which has been proven to lower the rate of inflammation and cancer.

By now you can see that it is important to keep the healthy microbiota populating your gut. Thankfully there are many things you can do to support your healthy gut bacteria. First and foremost, limit antibiotic use. If you and your doctor are not sure that you need an antibiotic, avoid taking the prescription. For example, most upper respiratory infections are viral and do not need antibiotics to go away. Another way to support the microbes in your gut is to introduce a high level of fiber into your diet. Fiber is what the microbes thrive on. Decreasing your consumption of red meat also has a positive impact. The American Institute for Cancer Research recommends consuming less than 18 ounces of red meat per week. (2) A diet high in nutrients or a whole foods diet will feed the good bacteria as well. Healing the gut will improve our immune function and our body's ability to detoxify.

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# Chapter 6

## Exercise, sleep, & stress

Exercise is essential for breast wellness. Being active every day is probably the most important thing each of us can do to decrease our risk of getting breast cancer. Multiple studies show that exercise decreases a woman's risk of getting breast cancer and increasing survival for women with breast cancer. (1) Exercise stimulates the body to wellness in a multitude of ways; it increases your lean muscle mass which in turn improves insulin sensitivity and metabolism, it prevents weight gain, it helps relieve stress, it helps improve sleep and it helps mood and outlook which is always important but even more so when you are facing a difficult diagnosis.

Make a goal for yourself to get some movement every day. Your level of health will determine what you choose to do for activity. For some, it may be simply going for a walk. For others, it may be a dance class or maybe interval training with sprints on the treadmill. Whatever works for you, it is important that you heed the words of Nike and "Just Do It." Daily exercise has proven to be the best bet for good overall health. Resistance and weight training are also great to incorporate into your exercise if you are able. Just two days a week of resistance training will pay off handsomely over time. At the very least, some type of cardiovascular exercise should be performed at least three times a week. Studies have shown that you want to reach for 3-4 hours per week. If you are new to exercise, remember the most important thing to focus on is consistency.

Exercise also helps physically tire out our body and this helps us get a good night sleep. Women who are not getting enough sleep have been shown to have an increased risk for breast cancer. In fact, one study showed that women who slept less than 6 hours each night had a 62% increased risk of getting breast cancer compared to women who slept at least 7 hours every night! (2)

With cell phones, laptops, and TV, our sleep is getting more and more disturbed. Sleep deprivation results in an elevation in the stress hormones cortisol and insulin. As we have said before, high levels of cortisol and insulin are very concerning. We also know that sleep deprivation results in a lower functioning of our immune system. Melatonin, the hormone that is naturally high at night as we sleep, has anti-cancerous properties and is an antioxidant. By the way, for people who need it, melatonin can be a great sleep aid. You should aim to get about 7-9 hours of sleep a night. Anything in that range is considered a good night's sleep.



## **Tips for getting a good night's sleep!**

- Maintain a regular sleep schedule
- Establish a regular, relaxing bedtime routine
- Create a sleep-conducive environment
- Sleep on a comfortable mattress and pillows
- Finish eating at least 2-3 hours before bedtime
- Exercise regularly - at least three hours before bedtime
- Avoid caffeine, nicotine, and alcohol close to bedtime
- Belly-breathing and visualization:
  - work to practice daily
  - before bedtime can be a great time
- Turn off the TV, phone and computer 1 hour before bed.

Stress has a huge impact on our health. We know that stress increases our insulin resistance and weight around our belly. We know by now that stress increases inflammatory cytokines and that inflammation can, in turn, encourage cancer to grow. Stress can also result in lower natural killer cell activity. We know that natural killer (NK) cells are very helpful cells in our immune system that help our bodies fight off cancer. Studies show that the stronger a woman's natural kill cell activity is, the higher their rate of survival from breast cancer. (3) We also know that social support can increase NK cell activity. Remember to avoid isolation and loneliness, ask for help, go to group support. Support groups are so valuable on many levels.

"I have stress. I am concerned it will impact my health". We have heard this many times from our friends and family, and most likely uttered this phrase ourselves at some point. What is interesting to note, however, is that studies have shown, it is not necessarily the stress itself that impacts our health, but the sense of control over the stress that is of utmost importance. In the following study, lab rats were given enough cancer cells for 50% of them to develop cancer and die. Then they exposed these rats to a stress. They shocked the rats to cause them stress. There were 3 groups of rats. In one group the rats were shocked and had no control over the shock. The second group of rats were left alone. They were not shocked. The third group of rats were shocked but had a lever that they could press that would stop the shock. They had stress, but they had a means to control this stress. For the rats who were shocked and had no control, only 27% rejected the tumor. For the group that was left alone and not shocked, a higher amount, 54% rejected the tumor. Most importantly, the group that was shocked but could stop the shock, in other words, they had control, had the highest amount of rats, 65%, rejecting cancer (4). This study implies that the sense of control over a stressful event is very important for our health. We need to give ourselves a way to handle the stress that comes up in our lives. We need a way that we can push on the lever and control the stress in our lives. What is wonderful, is that there are so many things we can do on a daily basis to help us control stress, calm down our bodies, stop, and help put our body and mind get to a place for optimal healing. There are many modalities that have been developed for centuries to do just that. To help us calm down our body, rest and feel a sense of control over our stress. Prayer, meditation, breath work, exercise, and movement, getting together with friends, sleep, yoga, qigong, acupuncture, Reiki are some examples of said modalities. It is important that we incorporate these into our lives on a daily basis.

When I was diagnosed with breast cancer at the age of 30, I knew I needed to include many healing techniques during my treatment. I worked with a Reiki practitioner weekly, took supplements, studied the chakras, started to meditate and kept a daily journal. Gratitude saved my life. On a daily basis, after I wrote in my journal, I wrote down 3 things I was grateful for. I was doing this because for some reason I knew I had to and I had learned about it on Oprah. At the beginning, it was so hard. I was not feeling grateful at the time. But over time, this exercise changed me so profoundly. Gratitude helped the fear go away. Gratitude helped me learn what was important in life. Gratitude helped me feel happy again. Gratitude helped me turn this very difficult time into a time of growth. So every day write down 3 things that you are grateful for. If it is hard at first, stick to it. It will get more natural over time. And you will see how much it will change you.

Many times it is hard to slow down. But slowing down and learning how to listen to the body is very important. We need to take the time to quiet the mind and slow down enough to listen to what the body needs. Be gentle with your body and loving to the body.

This program of daily movement, relaxation, cooking good food, and writing in a journal can help your body heal. Your healing is not all up to your doctor.

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# Chapter 7

## The Optimal Diet for Breast Wellness

What is the optimal diet for breast wellness? We have spoken about many components of the diet that contribute to breast health so far. In this chapter I will review phytonutrients and why they are so healthful and review the top 10 foods for Breast Wellness.



Phytonutrients are compounds in plants that are neither vitamins or minerals. But they are very important to the health of the plant as well as our health when we consume them. Plants make phytonutrients to help the plant defend against bugs in the environment. They have also been found to be very healthful for us. One major aspect that helps us is that they can improve our defense against DNA-damaging molecules. For instance, if you are exposed to a carcinogen or a chemical that can damage your DNA, phytonutrients can help reduce the damage these chemicals can have on your body. Another interesting aspect is when the plant is under more stress in its environment,

it makes more phytonutrients. This means that organic produce, produce that has to fight to grow, has more of these cancer-fighting phytonutrients in them. One can see now the importance of eating organically grown produce. (1)

Phytonutrients are found in vegetables, fruits, teas, herbs and spices. Your goal should be to get 8-10, 1/2 cup servings of fruits and vegetables in your diet every day. If you have some signs of insulin resistance, keep the fruit to no more than 3 out of the 8-10 total servings per day. It is important to have a variety of color in your fruits and vegetables as well. Work to get all of the colors of the rainbow into your diet everyday. A diet filled with Red, Orange, Yellow, Green, Blue / Purple, White, and Tan plant foods will contain a wide variety of phytonutrients.

### **Here are some common healthful phytonutrients:**

- Chlorophyll – found in green vegetables
- Glucosinolates – found in cruciferous vegetables
- Xanthophyll – a yellow carotenoid pigment
- Isoflavones – some have phytoestrogen impact
- Polyphenols – such as; quercetin, lignan, flavonoids
- Flavonoids – including, catechins, and ECGC = epigallocatechin (found in green tea)
- Carotenoids – found in yellow / orange

Cruciferous vegetables are a great way to consume phytonutrients. Cauliflower, cabbage, broccoli, bok choy and brussels sprouts are all great sources of phytonutrients. They are high in Glucosinolates, which carry with them these defining characteristics.

- Glucosinolates are the phytonutrient that gives these vegetables their bitter taste.
- They have Pro-apoptotic activity --- Apoptosis is programmed cell death. This is necessary for the body to get rid of old or damaged cells. If there is insufficient cell death, than cells can grow uncontrollably. This occurs in cancer.
- Estrogen metabolism – These phytonutrients are also important for proper estrogen metabolism and are wonderful aids for the detoxification process in your body. Try to eat a serving of cruciferous vegetables daily.
- Another set of healthful phytonutrients is the Isoflavones. These include:
  - Phytoestrogens
  - Genistein
  - Daidzein (dad Long a, Zen long e)
  - Soy



One question I always get from people is "Is soy an ok food to eat?" In its natural, non- GMO form (i.e, edamame, tofu and soybeans) soy can be a great food for people wanting to prevent breast cancer and even for many women who have had breast cancer. Eating soy whether as a young adult or in the premenopausal years can result in a lower level of estrogen in our body. Natural soy also contains a wealth of phytonutrients which is great for the fight against cancer.

Unfortunately, for postmenopausal women who have had an estrogen receptor positive breast cancer, there is some concern that soy could increase a woman's estrogen level in her body. Still, many studies have shown that these women do not need to avoid soy. The Shanghai Breast Cancer Survival Study (2) is one of the largest studies to date to explore the question of soy and risk of breast cancer. They found that among women with breast cancer, soy food consumption was significantly associated with decreased risk of death and recurrence. The inverse association was evident among women with either Estrogen Receptor (ER)-positive or ER-negative breast cancer and was present in both users and non-users of tamoxifen.

While these results may seem confusing, the take-home message is this: the results of this study suggest that moderate soy food intake is safe and potentially beneficial for women with breast cancer.

That being said, if you are a postmenopausal woman with breast cancer, it is important that you discuss this with your own personal doctor. If you do reach for soy, pick whole non-GMO sources of soy: edamame, tofu, and soybeans are all excellent sources. Avoid genetically modified soy and soy that has been processed. Soy is often added to food products in an effort to increase its protein content. On the label, you will see the ingredient hydrolyzed soy protein or soy protein isolates. These concentrated soy sources have not been adequately studied. Without enough information regarding these sources, you are better off avoiding them completely.

Flavonoids are an important group of phytonutrients.

**Some examples of Flavonoids are:**

- Anthocyanidins = Found in Red, Blue and Purple Berries
- ECGC – Epigallocatechin – Found in green tea
- Flavonols = Found in onions and kale

Flavonoids prevent the growth of cancer by stifling angiogenesis. Angiogenesis is the process when new blood vessels are formed from existing blood vessels or arteries. This is a necessary process for cancer cells to go through if they want to survive and grow. Too much angiogenesis in the body is not a good thing. Green tea and raspberries, strawberries and blueberries all contain flavonoids that have anti-angiogenic properties. Pomegranate has ellagic acid, a phytonutrient that prevents proliferation and angiogenesis. (3) These foods can prevent the growth of new blood vessels when they should not occur.

**Top 10 Foods For Breast Wellness**

- Broccoli / Kale– try to eat some daily
- Asian mushrooms – boosts the immune system and increases NK cells
- Fatty Fish – sardines and salmon – the omega 3 fats decrease inflammation in the body
- Ground flax seed – rich in both omega 3 fats and fiber
- Green tea – antiangiogenic properties - make sure to choose organic!
- Pomegranate – prevents proliferation and angiogenesis
- Beans and legumes – a wonderful source of protein that is also high in fiber and wonderful substitute for meat
- Garlic and Onions – high in phytonutrients
- Blueberries and other berries
- Seaweed – nori – iodine rich food that is wonderful for breast wellness

There are many supplements that you may have heard about that can support breast wellness.

**Here are some examples:**

- Vitamin D - 2000IU of vitamin D a day is a good, safe dose for most people. Still, it is important to have your Vitamin D level checked by your doctor in case any adjustments need to be made.
- Probiotic – When choosing a probiotic find one that has a variety of good bacteria. Many people need at least 25 – 50 billion active life cultures per day. Work up slowly. If you are sensitive to dairy, choose one that is not grown on dairy.
- Diindolylmethane (DIM) and Sulforaphane – The active component of cruciferous vegetables in supplement form. Useful if it is difficult to eat cruciferous vegetables daily.
- Calcium d glucurate – This helps the body detoxify the estrogen out of your body. A typical dose is 1000mg twice daily.
- Fish oil – Add up the EPA + DHA in your fish oil and make sure you are getting at least 1000mg per day.
- B vitamins – methylated - I choose methylated b vitamins for 2 reasons. First, some people can not process the non-methylated B vitamins as well and secondly, the non-methylated synthetic folic acid may build up in some people's body. This has been questioned as a possible risk for cancer. So I avoid multivitamins and b complex vitamins with synthetic folic acid. I choose multivitamins and b complexes that have methyl-folate or just folate instead of folic acid.

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# Chapter 8

## Meditation / Yoga

Chronic stress, worry, fear, and anxiety are forms of energy that impede the body's ability to perform its natural functions that by design support a healthy, vibrant, youthful, and happy you. To guide you into a restful space where your body can work on proper digestion, sustaining a regular heartbeat, regulating hormones, sinking into deep sleep, and much more, yoga and meditation instructor, Heidi Spear has designed a practice that you can return to day after day, night after night. These practices have been proven to help relax your body and put you in a position for optimal health and healing.

Heidi will guide you through three meditation and yoga practices. To view the segments, you can instantly download them from vimeo on demand or purchase the DVD through my website, DrBoham.com or Amazon. Through DrBoham.com, I am offering you at 30% discount (use discount code breast3owellness).

You can choose to do simply one or two segments at a time, or follow the entire meditation/yoga/deep relaxation flow, depending on your energy level. For those of you new to the idea of energy movement in the body, this promises to be an illuminating and profound aspect of your life's journey – getting you in touch with the special life-force energy that we experience with each in-breath and out-breath, when we aren't too busy to notice. It is often said that dis-ease manifests in the energy body before the physical, so when we attune ourselves to the messages at the subtle energetic levels we can uncover and address - with compassion - root causes.

It is my hope that the information in this ebook and my DVD will guide you in self care and healing and that you enjoy and benefit from this journey to breast wellness.  
To You Health,

Elizabeth W. Boham MD, MS, RDN