Estrogen - an Introduction

I firmly believe that knowledge is power. When faced with a problem, the best approach is to first understand as much as you can about it. Dealing with estrogen driven breast cancer is no different. In the hopes of clearing up a lot of confusion around estrogen, in this document I will be explaining estrogen receptors and three types of estrogen.

It's been stated that one of every eight women in the United States will develop invasive breast cancer over her lifetime. We are now hearing reports that incidence may be as high as one in four. Eighty percent of those cancers are fueled in part by estrogens. Their tumors have estrogen receptors. So, just what are estrogen or hormone receptors?

"Cell receptors, including hormone receptors, are special proteins found within and on the surface of certain cells throughout the body, including breast cells. These receptor proteins are the "eyes" and "ears" of the cells, receiving messages from substances in the bloodstream and then telling the cells what to do. In other words, the receptors act like an on-off switch for a particular activity in the cell. If the right substance comes along that fits into the receptor — like a key fitting into a lock — the switch is turned on and a particular activity in the cell begins."
http://www.breastcancer.org/symptoms/diagnosis/hormone_status/understanding

One way the current medical industry attempts to deal with estrogen positive cancers is to prescribe hormone blockers or, more specifically, estrogen blockers. The theory is that if a breast cancer is estrogen driven, and if they can block estrogen from the receptor cells, then they are helping defeat the cancer. The primary flaw in that thinking is quite simple. If estrogen caused cancer, then every female past the age of puberty would end up with it.

Another flaw is that these drugs cannot block all estrogen, so there is still estrogen available to get to the receptor sites. Think of it like waiting in line in the women's restroom. Let's say the restroom has 5 stalls. What difference will it really make whether there are constantly 20 women waiting in line or just 7 constantly waiting in line? True, with the shorter line you don't have to wait as long to get into a stall but, either way, the stalls will still always be full.

Even with blocking most of the estrogen, you are still going to have estrogen available, waiting to fill those receptor sites!

When you realize that most, if not all, of the hormone blockers which doctors currently prescribe come with some major side-effects, ranging from aching joints to heart failure, with some causing new cancers and others causing death, it makes one wonder why they are used at all. Some doctors will even go so far as to recommend the removal of your ovaries to stop estrogen production. Such drastic measures are short-sighted at best and permanently damaging at worst. Frankly, they are harmful and ineffective.

There are several forms of estrogens. Some are produced within our bodies, some are in the foods we eat and others are from exterior substances such as plastics and our cosmetics.

Metabolic or endogenous estrogen, also referred to as oestrogen, is the estrogen produced in our bodies. The most common source everyone thinks of is our ovaries, but there are other sources in our bodies as well. Did you know that even men produce estrogen? Yes, they do … and they don't have ovaries! Did you know that fat cells can produce estrogen? Yes. How about your brain? Yep, thanks to your hypothalamus it does. Even your liver is involved in regulating estrogen levels.

That knowledge makes the idea of removing ovaries to control your estrogen levels seem pretty ridiculous now, doesn't it? What are the doctors going to do? Also recommend that you remove your brain and your liver? I don't think so!

Our bodies produce different types of endogenous (meaning it originates from within the body instead of from without, such as with drugs) estrogens.

According to Wikipedia,

"The four major naturally occurring estrogens in women are estrone (E1), estradiol (E2), estriol (E3), and estetrol (E4). Estradiol is the predominant estrogen during reproductive years both in terms of absolute serum levels as well as in terms of estrogenic activity. During menopause, estrone is the predominant circulating estrogen and during pregnancy estriol is the predominant circulating estrogen in terms of serum levels. Given by subcutaneous injection in mice, estradiol is about 10-fold more potent than estrone and about 100-fold more potent than estriol.[9] Thus, estradiol is the most important estrogen in non-pregnant females who are between the menarche and menopause stages of life. However, during pregnancy this role shifts to estriol, and in postmenopausal women estrone becomes the primary form of estrogen in the body. Another type of estrogen called estetrol (E4) is produced only during pregnancy.

Please realize that despite what many oncologists may want us to believe, estrogen is NOT our enemy. We do NOT want to eliminate it from our bodies. Actually, we couldn't if we tried. Like so many other things in our bodies, estrogen is important for several functions. Did you know estrogen is not just a sex or fertility hormone? "Estrogen is active in the brain as well, and is involved in regulating learning, memory, and mood. Recent studies have shown that when the brain is at risk, such as during a stroke or traumatic injury, estrogen helps to protect the brain from damage. Estrogen imbalances are thought to play a role in several brain disorders, including Alzheimer's disease, stroke, and autoimmune disorders." Estrogen is also essential for the health of our bones and our cardiovascular system!
http://www.healthline.com/health-news/strange-your-brain-makes-estrogen-too-121013

Phytoestrogens are a diverse group of compounds, found in plants, which have the ability to bind to estrogen receptor sites. When they bind to these estrogen receptor sites, they create an anti-estrogen effect. These "plant estrogens" are fairly abundant in a whole foods diet, and are found in many commonly eaten seeds, grains, and beans, especially in foods such as flax and soy. In addition, many medicinal herbs used to treat female reproductive disorders contain phytoestrogenic compounds.

To understand how phytoestrogens work in regards to breast tumors, it is important to grasp the following concept: different substances can bind to the same tumor receptor site, at different times, and elicit differing effects, depending upon the exact molecular fit. Phytoestrogens exert a weaker estrogenic effect on cells than metabolic estrogens and xenoestrogens. So, when phytoestrogens occupy the same site, they actually reduce the amount of estrogen the cancerous tumor receives. The more of these receptors sites the phytoestrogens occupy, the less room there is for the more potent metabolic and xenoestrogens.

Think of it this way: Imagine that your tumor is a small but very busy airport. All around the airport terminal (your tumor) there are gates for airplanes to dock, to unload passengers. These gates represent

the estrogen receptor sites on your tumor. You can only have one plane dock at any given gate and at any time. Now, if you are trying to reduce the number of people in the airport, which plane would you want to dock at the gate? A jumbo jet carrying hundreds of people or a small commuter plane which only has a dozen people on board? Both planes will take up the same gate, or receptor site, but obviously the small commuter plane will have far less impact on the airport terminal than the jumbo jet.

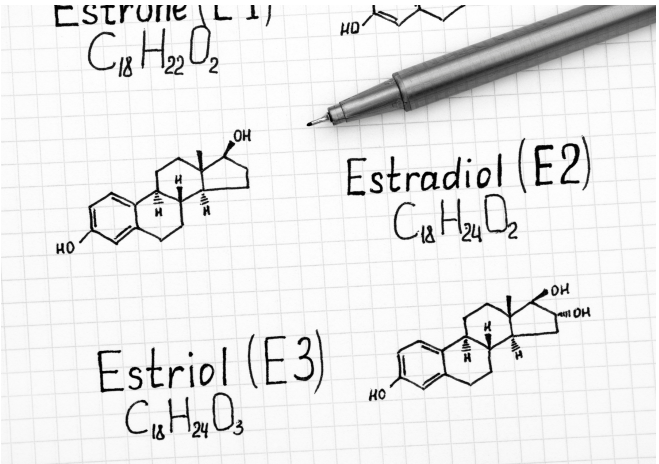
Phytoestrogens, being weak estrogens, are like the small commuter planes with few passengers and no cargo, yet they still occupy the same gate after landing. When phytoestrogens occupy the receptor site, normal estrogens cannot. Plant estrogens do not eliminate all of estrogen's effects, but they do minimize them, apparently reducing breast cancer risk and menstrual symptoms.
http://www.pcrm.org/health/cancer-resources/ask/ask-the-expert-soy

Xenoestrogens are ones we don't hear about as much, but they probably play a much larger role in the development of breast cancer than most people would think. For that reason, I feel it is important to go into this in some depth.

"Xenoestrogens are found in a variety of everyday items. Many of us don't think twice about the makeup we wear each day or the plastic container we use to pack our lunch. We know organic food is supposed to be better for us, but sometimes we just don't want to pay the extra money. Unfortunately, all of the above may be altering the way our body naturally functions because they all contain endocrine disruptors called xenoestrogens.

"Endocrine disruptors are a category of chemicals that alter the normal function of hormones. Normally, our endocrine system releases hormones that signal different tissues telling them what to do. When chemicals from the outside get into our bodies, they have the ability to mimic our natural hormones; blocking or binding hormone receptors. This is particularly detrimental to hormone sensitive organs like the uterus and the breast, the immune and neurological systems, as well as human development.

"Xenoestrogens are a sub-category of the endocrine disruptor group that specifically have estrogen-like effects. The body regulates the amount needed through intricate biochemical pathways. When xenoestrogens enter the body they increase the total amount of estrogen resulting in a phenomenon called, estrogen dominance. Xenoestrogens are not biodegradable so, they are stored in our fat cells. Build up of xenoestrogens have been indicated in many conditions including: breast, prostate and testicular cancer, obesity, infertility, endometriosis, early onset puberty, miscarriages and diabetes." https://womeninbalance.org/2012/10/26/xenoestrogens-what-are-they-how-to-avoid-them/



Knowing all this, we can see how important it is to reduce our exposure to environmental or xenoestrogens. They are potent and can increase the total amount of estrogen in our bodies. We also know that we cannot, and don't want to, get rid of all metabolic estrogen in our bodies and that plant or phytoestrogens can help regulate the amount of estrogen which gets to the receptor sites of a tumor.

Armed with knowledge, we can now better understand what needs to be done to assist our bodies:

We need to help balance our estrogen, we need to consume phytoestrogens and we need to reduce our exposure to xenoestrogens. All of this can be done without the use of any potentially harmful drugs, such as Tamoxifen, or any other drastic measures.

While nearly an hour long, I strongly recommend that you please watch this video. It is probably the best explanation I've seen of the progesterone and estrogen relationship, hormone receptors, our liver's role in processing estrogen and what we can do to balance our hormones.
https://www.youtube.com/watch?v=MGmpq43YxMA&feature=player_embedded