

Comprehensive Cancer Care: Integrating Complementary & Alternative Therapies
Breast Cancer: A Critical Need for an Integrated Approach
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June 12, 1998

It's an honor to be here before you. I'd like to make a few comments while we're trying to get the slides going. It's clear that the war on cancer and its warriors are weary. It's also clear that people are voting with their pocketbooks, and that is what this meeting is about. Having lost my father to cancer, I understand firsthand what this disease can mean, and I know many of you in this room are struggling with it every day.

I want to tell you about a group of women who are now on Mt. McKinley. Women with breast cancer climb a mountain every day. If you've ever tried to go for a climb or a hike, you do it one step at a time. If you deal with cancer, you do it one step at a time. I ask your support for these women as they seek to climb Mt. McKinley to show women what women with breast cancer can do and are doing to take charge of their lives. This is a very positive indication of what is changing about cancer today.

People sometimes ask me, what's the big deal about breast cancer? Why is everybody so worried about it now? I mean, it's not that different, is it? Well, actually it's a bit different, because now one in eight women will contract the disease by the time she lives to be 85. But what's really different is that women are no longer going off to cry in the dark alone, no longer feeling ashamed. People are coming out of the closet about the disease, and not only about the disease, but taking charge of what this disease means for their lives, and demanding a place at the table. You all know that 20 years ago a woman could go into the operating room not knowing whether she was going to wake up with or without a breast. It was the breast cancer movement that changed that.

The breast cancer movement includes a number of voices that are committed to prevention. I want to call your attention to Dr. Epstein's new book, because it includes in it a breast cancer prevention program, and there is a lot we know that can be used to reduce the risk of breast cancer. I want to show you what we know about breast cancer and the environment, but before doing that let me just make something very clear. Our environment cannot explain all of breast cancer. But the reason the environment is important is that, unlike many of the things we know that do cause breast cancer, you can do something about the environment. This is where the challenge is for public policy, and for the informed citizenry to make a difference.

Let me talk a little about the statistics that Dr. Epstein mentioned in another context. The statistics on cancer are complicated. They are very complicated. One of the troubling issues is that in most modern countries, the number one form of cancer that kills people is lung cancer. Most of that in men is due to smoking. The fact that white men, who are the majority in the United States, have stopped smoking, in large part is what is driving down the death rate from cancer in whites.

If you look at incidence or new cases, you see increases in almost every form of cancer that we look at. So it's a very complex puzzle you have to consider. In fact there is some good news in the cancer statistics, in that there is this drop in lung cancer among older white men. The rates are still very, very high, but they've started to drop. There's also a drop a little bit in ovarian cancer, possibly because of the newer forms of the birth control pill. We're not really sure.

But these pieces of good news I think are eclipsed by some really bad news. Non-Hodgkin's lymphoma has continued to increase for many years, and it has increased in older

people. We don't know why, but we have some very good ideas why. Dr. Epstein mentioned some of them. I'm going to come back to them in a minute.

Childhood cancer continues to increase. The thing about childhood cancer, as some of you in this room know firsthand, is that many of its forms are largely treatable, but then the survivors go on to face a lifetime of risk for many other forms of cancer.

Let's look at some of the other types of cancer that are increasing that Dr. Epstein mentioned. Brain cancer, multiple myeloma, childhood cancer, prostate cancer, melanoma. What is very interesting about all of those types of tumors is that they are also increased in farmers. Now what are farmers exposed to? They are exposed to pesticides, but they are not just exposed to pesticides. They are exposed to engine exhaust, and solvents, and animal viruses. We believe that the trends that we see in increasing cancers, that my colleagues and I have reported on in fifteen industrial countries, showing increases in cancers that are also increased in farmers, should be regarded as very important clues about what is going on.

Now I'm going to talk with you about some of the evidence we have on breast cancer. We know a lot about what we can do to prevent cancer. The Cancer Institute has published studies on the role of pesticides for non-Hodgkin's lymphoma, as well as on the role of hair dyes for non-Hodgkin's lymphoma. We need to do a better job of getting that information out so that people can be informed. People don't just vote with their pocketbooks for alternative medicine. They can vote with their pocketbooks for greener products and safer industries and better businesses so that individuals are no longer given the poor choices they have today in the marketplace. If we could change the procurement policies of the Department of Defense, and we can do this, then they would stop buying hazardous materials that their soldiers have to use to

keep their boots and guns clean. We can do this by taking the information we have and putting it to use in a more practical way.

The most important thing I want to tell you about breast cancer is that fewer than one in ten women who get this disease was born with a defect in her genes. This means that fewer than one in ten cases comes on that has a defect. We have to figure out what is going on here that gives this one person the defect. They get breast cancer, but the rest are born with perfectly healthy genes. What is happening here, that most women who get breast cancer have none of the known risk factors?

If you look at the questions that we raise, the risk factors for cancer that we've identified, the way we identify a risk factor is very simple. You compare the risk of breast cancer in those with elevated exposures, for example women working with vinyl chloride, to those without such exposures. This gives you a clue about what is a risk factor.

I'm going to briefly show you what we know about these risk factors. A risk factor for breast cancer is not necessarily a cause of the disease. Known risk factors for breast cancer are really a very complicated puzzle. History is important. If a woman goes through menopause late in life, she has a higher risk of breast cancer. If a woman lacks exercise she has a higher risk. But most of these risk factors are not direct causes of the disease. Radiation, particularly to the young breast, clearly increases the risk of breast cancer, as does a history of breast cancer in the mother or sister. Aside from these direct causes, most of the risk factors we've identified are related to timing, exposure or to dose. So we look at distinguishing between those risk factors that increase your vulnerability because they extend the time during which the breast undergoes growth and development.

For example, in the prenatal period, you have the breast cells being laid down, and, as they're being laid down, they can become subject to chemical hits. Next you have adolescence when, if you get radiation during adolescence, there's a much higher risk of breast cancer from that radiation. Finally, you have the post-menopausal period, when the ovarian hormones stop being produced. But if you are alcoholic, if you are on post-menopausal estrogen for a long period of time, if you are high fat in your diet, high animal fat in particular, then you will have higher levels of estrogen and greater vulnerability to breast cancer.

If we look at the vulnerability risk factors that have been identified, they really increase breast cell growth. If you have elevated prenatal hormones in the mother, the girls that face this will have a higher level of breast cancer when they're born. If you have no children, you'll have a 60% greater risk of breast cancer, because your body has been cycling hormones without interruption, so you have greater vulnerability to the breast growth. If you've never nursed you have a 40% greater risk of breast cancer, and if you go through menopause after age 55, you have a twofold excess risk. In addition, we know that early menses increases the risk, that's menstruation before age 12, never having nursed, late menopause, and being over 65. Now why is age such a big risk factor? We'll come back to that in a moment.

When we look at contributing risk factors as distinguished from vulnerability, these are the ones that alter the hormonal environment. In fact, there are good and bad natural hormones. Some of the contributing risk factors can change the ratio of good to bad hormones. That's where some of the complementary therapies are particularly valuable. Contributing risk factors include things that increase your body's own hormones or xenohormones, xeno for the Greek word foreign, hormones that alter your body's metabolism of hormones. Alcohol, particularly more than five grams a day. Postmenopausal, especially if you're on hormone replacement

therapy and you drink, can give your body a level of hormones that's higher than you had prior to menopause. Lack of exercise has been implicated, because exercise helps the body to excrete and lower the hormone levels. Lack of fiber and vitamin D, obesity after menopause.

In addition, we have identified a number of other factors that contribute. Stress is a big question. Whether stress is a cause or a consequence of cancer is something that many people have speculated on. My own sense is that we know learning how to cope with stress, learning how to climb those mountains, becomes a very important skill for those people who will survive. And I need not stress to this group the value of prayer and meditation. What many of us have known for years is now scientifically demonstrated.

Living near a chemical facility can increase your risk of breast cancer two to fourfold, according to a study in New York State. Lifetime exposure to harmful xenohormones such as some pesticides, some fuels and some plastics, increases your risk as well. Elevated levels of insulin growth factor have been recently found to increase your risk of breast cancer sevenfold. Where does insulin growth factor come from? Well, it comes naturally in the body. It can be elevated by certain things. It appears to be elevated by bovine growth hormone.

These are issues that really cannot be solved by individuals taking responsibility for themselves. In fact, the premenopausal women with the highest levels of insulin growth factor in their blood had seven times more breast cancer than women with a lower level. We don't know what the cause of this was, but it's pretty important that we find it out. It's the biggest risk factor ever identified in epidemiological studies so far. Total lifetime exposure to unbound hormones links most of these known risk factors.

The most important risk factors are sex and age. What is it about age? It could be two very different things. One is that as we get older our body loses some of its normal ability to

protect itself. The other, though, is that as we get older we store more of the natural hazardous waste chemicals in our body. Fat has been called a natural hazardous waste site. One of the reasons why age may be a factor is that as we get old enough, we have accumulated enough exposure that that is going to have an effect as well. The protective factors that we will talk about in this afternoon's panel are things like vegetables, soy, exercise, fish and olive oil and high fiber.

Let's look at what they have in common. They're all linked to lowering the levels of hormones circulating in the body. This may be one of the reasons why Japanese women, who have traditionally lower levels of breast cancer, but live in a polluted environment as do we, have dietary protective factors. So one has to look at the whole package and not just one thing at a time. Soy products reduce the circulating levels of these hormones. This afternoon we will hear about the beneficial effects of the other complementary therapies.

Our theory is that bad estrogens, such as those in plastics and pesticides, go into the estrogen receptor, turn it on, and cause aberrant cell growth, whereas good ones, such as those in soy and broccoli, go into the same receptor and can cause an increase in repair and prevent breast cancer. Harmful xenohormones can work by binding with the estrogen receptor and causing changes in hormones and increasing aberrant cell growth and thereby causing genetic damage or increasing hormones, either one of which will lead to breast cancer. This theory, by the way, has been developed and published by us and is on our web site.

Breast cancer cell growth and DDT. Just one little message from the laboratory. Dr. Epstein told you the animal studies are being discounted. This is a study in a petri dish of human breast cancer cells. If you take them and expose them to no DDT you get a small amount of

growth because they're cancer cells. If you expose them to more, higher levels of DDT, you get a higher rate of cell growth from DDT.

The next slide shows you what happens when you expose human breast cancer cells to red dye #3. This is a legal food additive. So much for what we are doing in our food supply. There is much we have to do collectively to get these things out of our supply.

Next. I'm going to just show you that this is the way healthy cells communicate. This is what happens when you give them a little DDT, and this is what happens when you give them a mixture of other pesticides, and this is what happens when you give them yet other pesticides.

The bottom line is, cells need to communicate to stay in control, and some pesticides disrupt that communication. Controllable agents associated with breast cancer in humans – I want to stress something. We have done a really good job of telling people what they need to do as individuals to take responsibility for their health. Great. Now it's time for society to step up to the plate and take responsibility for what we have to do collectively.

And just in case you think this is just a woman's thing, which I know you don't, but some people have that notion, let me just share with you some new information about some puzzling male reproductive health problems. These problems are probably related to very similar causes. We have increases in testicular cancer. Testicular cancer has increased remarkably. Hypospadias, which is a defect of the penis, cryptorchidism, which is a defect of the testes, infertility – all of these are increasing in males in every industrial country where we have looked. We've reported on this in an article in the *Journal of the American Medical Association* April 1st. There are other published studies on this in peer-reviewed literature.

I will very briefly show you what some of these data look like. This is testicular cancer in all the Nordic countries. You will see that although Finland is moving up the least, they are all increasing, and this is from 1960 to 1990, in some places a doubling of testicular cancer.

Next we will look at hypospadias. This is the United States. This is a defect of the penis, this is not a problem of increased diagnosis. These are baby boys that are being born with a defect in their penis. This is a decline, in Canada and the next line will show you United States, in the birth of baby boys. What does this mean? If these declines had not occurred in the proportion of baby boys born, then we would have 38,000 more baby boys born. In Canada there would have been 8,600 more under conservative estimates. There is something going on here that's pretty important for us to figure out.

Let's go very quickly through the rest of the slides. There are hot spots for breast cancer. Some of these are identified in Dr. Epstein's book. I really do recommend the book. It's an excellent piece of work, and I think it provides practical advice on a lot of the things I've touched upon here.

We'll go through these now, and let me just say that we are epidemiologically searching for clues. However, you can't afford to wait for us to be certain of what we find. We have enough reason now to require policy changes at many levels. We need to come up with better tests to screen chemicals, not people. We need to figure out ways to control what's in our environment better.

We need to come up with policies that address some of the causes of these problems. We have to stop subsidizing unhealthy agricultural practices. We have to promote integrated pest management and reduce the use of pesticides in our homes and gardens and schools. We have to

promote sound procurement policies in the private sector and the public sector, and of course workplace safety is very important. These are some of the things that have to be addressed.

I will just remind you that we waited far too long to take action on smoking and health. This is a cartoon from Doonesbury from an 1878 medical textbook that warned about the hazard of smoking and health. If we had only listened to Ernst Wynder, millions of deaths would have been prevented by now. We must never forget that the only thing that ever changes public policy is a group of concerned citizens. This group and this meeting is a very important start. Some people say, why are you trying to do this? It's an impossibly complex task, and I leave you with this thought from the *Talmud*. It is not for us to complete the task, but we must begin it.