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For health professionals

PREVENTING BREAST CANCER – PART 2

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Breast cancer is the second leading cause of death in women. To confront this devastating disease, women aged 40 and over have been advised to have a mammogram every year. However, the benefits and potential harms of mammograms have been a subject of scientific controversy for more than two decades.

Do mammograms prevent breast cancer? No. They're **promoted** as a way of finding early signs of cancer so treatment can be administered before the cancer spreads. But mammograms are **not** early detectors; they detect tumors that have been developing for years and are large enough to signify more advanced cancer.

Are mammograms accurate? Not really. Some tumors are detected. Some are not. According to the National Cancer Institute, "Overall, screening mammograms miss up to 20 percent of breast cancers that are present at the time of screening." Some studies found that mammography detects only about 25% of cancers. The vast majority (up to 83%) of areas deemed 'suspicious' turn out **not** to be cancerous. Obese women have a 20% increased risk of having a mammogram diagnosed as abnormal when no cancer is present. **Most** 'suspicious' findings are due to detection of ductal carcinoma in situ (DCIS), a lesion with tiny calcifications contained within a milk duct. This leads to unneeded testing and unneeded treatment. Very few (35% or **less**) cases of DCIS would progress to invasive cancer if left alone. Yet virtually all DCIS is treated as if it were invasive cancer, with surgery and radiation therapy. Such unnecessary treatment is harmful. Many so-called breast cancer 'cures' have been nothing more than cases of treated DCIS that probably never needed treating in the first place. Also, not all breast cancers are alike. Some are not deadly even if left undetected. Non-lethal cancers tend to be smaller and grow more slowly. Some cancers, given time, regress and would not continue to be detectable by mammogram after several years. The woman's body deals with it so it stays sequestered, regresses or disappears. Also, there is considerable **variability** in the interpretation of mammograms. In one study, radiologists agreed with each other only 54% of the time when cancer was present and 62% when there was no cancer; 25% of cancers were missed. When a woman has dense breasts, radiologists are twice as likely to disagree. Dr Otis Brawley of the American Cancer Society, said: "I'm admitting that American medicine has overpromised when it comes to screening. The advantages to screening have been exaggerated."

Who gets the best detection? Women aged 50 to 69 may get the most accurate detection. Women are told to start annual mammograms at age 40, prior to menopause when breast tissue is still dense enough to make mammogram results questionable if not totally unreliable. Many premenopausal women get false-positive diagnoses—the radiologist questions an area, the woman has more tests, usually including a biopsy, and ends up being told there's nothing wrong. About **97%** of women in their 40s having biopsies do not have cancer. After menopause, the density of a woman's breasts changes and mammography sensitivity increases. But women aged 69 and over have little need for mammograms, plus potential harms increase. Sufficient evidence is lacking to set a specific age for screening or to establish how often it should be done.

Do mammograms save lives? A 2002 Cochrane review of studies concluded that mammography does **not** reduce all-cause mortality and there was insufficient evidence to show breast-cancer deaths are prevented. Misuse of statistics in many studies had led to conclusions that mammograms were life-saving. Not only are benefits uncertain, but screening may cause more **harm** than good. A 2011 study found that with 10 years of annual mammograms, most women with screen-detected breast cancer do not have their lives saved by screening. H Gilbert Welch, MD, admits: "The presumption often is that anyone who has had cancer detected has survived because of the test, but that's not true. In fact, and I hate to have to say this, in screen-detected breast and prostate cancers, survivors are more likely to have been over-diagnosed than actually helped by the test...It's important to remember that of the 138,000 women found to have breast cancer each year as a result of mammography screening, 120,000 to 134,000 are not helped by the test." At best, there is a minute (2%) reduction in breast cancer mortality from screening. People have been given the mistaken impression that the earlier cancer is detected, the better the chance for cure. But getting cancer diagnosed earlier does **not** mean a woman will live longer than she would have if the cancer was diagnosed later. A major trial found

the breast cancer death rate among women given mammograms was no different from that of women not given mammograms. A 13-year study found that screening had no impact on breast cancer mortality. Instead, it had several negative features (inaccuracy, over-diagnosis, DCIS over-treatment, carcinogenic effect of radiation). A 2011 Cochrane review stated: "For every 2000 women who go for mammography screening throughout 10 years, one will have her life prolonged and 10 healthy women, who would not have received a breast cancer diagnosis had they avoided mammography screening, will be treated unnecessarily for a breast cancer that would never have become life-threatening." Studies conducted in many countries including the US show that mammography screening has not reduced the occurrence of large invasive cancers.

Are mammograms safe? A growing body of evidence indicates mammography causes more harm than good. Harms of over-diagnosis and over-treatment have been mentioned. Breast compression during the procedure can cause small tumors to burst open, allowing cancer (even cancer that was well-contained and may have remained so) to spread. There is danger from cumulative radiation. Each mammogram **increases** breast cancer risk by 1%. If a woman has a mammogram every year after turning 40, by the time she is 50, she will have increased her risk for breast cancer by 10%. The sensitivity of breast tissue to radiation has been known for decades. Some women are more sensitive to radiation than others. Routine mammography screening "by some estimates...accounts for up to 20% of all breast cancers annually in the United States," according to a report in the *Journal of National Cancer Institute*. Radiation exposure raises the risk DNA damage, of cells becoming abnormal and eventually cancerous. In a 2009 article in the *Journal of the American Medical Association*, researchers reported the possibility that mammography screening "may be increasing the burden of low-risk cancers without significantly reducing the burden of more aggressively growing cancers..."¹

Are there alternatives to mammograms? **Molecular breast imaging** involves an intravenous dose of a radioactive tracer that is absorbed more by abnormal cells than by healthy ones. It detects more tumors than mammography, but uses 8 to 10 times more radiation. **Computed tomography** (CT scan) is more accurate than mammography in detecting masses, not as good in detecting DCIS, and is another source of high radiation. **Magnetic resonance imagery** (MRI) uses magnetic fields to create images of breast tissue injected with a contrast dye that concentrates in cancer cells. MRI identifies tumors in dense breast tissue and breasts with implants better than mammography. It also detects large numbers of non-cancerous lesions and leads to unnecessary treatment. **Proton magnetic resonance spectroscopy** reveals more of the chemical makeup of a tumor and increases the detection rate of cancers and 'suspicious' areas, so there are many false-positives. **Positron emission tomography** (PET scan) creates computerized images of chemical changes in tissue. An injection of sugar (which cancer cells absorb faster) and radioactive materials helps locate tumors. It's more accurate in detecting larger, more aggressive tumors, but delivers large radiation doses. **Ultrasound** is better in distinguishing differences between benign and malignant lesions and between fluid-filled cysts and tumors. It penetrates denser breast tissues for clearer views, but increases false-positive findings. For **ductal lavage** (breast Pap), a thin catheter is inserted into milk ducts where most cancers originate, and cells are extracted. Only 1% to 2% of results are abnormal; with no suspicious findings on imaging tests, doctors don't know what to do. **Thermography** (infrared imaging) picks up heat emissions. As tumors begin to develop their own blood supply, they produce more heat than surrounding tissue. It points to areas of suspicion early. Thermograms are highly sensitive with no radiation exposure, are useful for dense breast tissues, and are pain-free.²

How helpful is a biopsy? A biopsy is usually performed when a suspected abnormality is found to determine if the tissue is benign or malignant. Either a surgical biopsy or a needle biopsy procedure can be used with equal accuracy. Potential complications (1% for needle biopsies; 2% to 10% for surgical biopsies) include significant bleeding, hematoma, and severe pain. According to a 2009 study, too many women have biopsies after a mammogram detects something suspicious. At least 80% of **all** 'abnormalities' are found to be benign. Unnecessary biopsy can lead to unnecessary mastectomy. This is because 2 conditions may be picked up—lobular carcinoma *in situ* and ductal carcinoma *in situ*. No one can predict if these conditions would progress into cancer, but the vast majority of women with these conditions would never develop cancer. Cutting into or sticking a needle into cancer tissue pulls out cancer cells which can potentially manifest in other tissues, spreading early-stage breast cancer that may have remained contained and rendered harmless. Biopsies destroy natural barriers the body produces to isolate and attempt repair. With tissue disruption, lymphatic and vascular channels can be breached, allowing cancer cells to enter blood vessels and lymph nodes.³

Do breast self-exams help find cancer? Regular breast self-exams (BSEs), performed after being trained to do so, do not improve the chances of finding early breast cancer. A large study of 300,000 women followed for over 12 years showed that the women trained in BSE technique didn't find any more cancers than those who were not trained. Both groups had virtually the same number of breast cancer deaths. It doesn't make any difference if a woman finds a tumor by doing a regular BSE rather than finding it incidentally. Studies find that women who perform BSEs are more likely to run to their doctor with false alarms, leading to unnecessary tests. Most women **normally** have non-cancerous lumps in their breasts at various times. Normal lumps often increase or decrease in size, prompting doctors to order tests. Most authorities in the US have stopped recommending regular, systematic BSEs, including the National Breast Cancer Coalition.⁴

FOODS AND NUTRIENTS. Significant risks of breast cancer are associated with diet. Poor diets are probably one of the reasons why there is 5 times as much breast cancer in the US than in most other parts of the world.

Do fats contribute to breast cancer risk? This has been hotly debated, especially since 1993 when the Nurses' Health Study found **no** association between a high-fat diet and breast cancer. Some studies had linked fats (particularly saturated fats) with breast cancer. Other studies found no such link. A combined analysis of 7 studies of 337,819 women in 4 countries found no link between breast cancer and fat intake. In 1999, the continuing Nurses' Health Study (89,000 women) found "no evidence that lower intake of total fat or specific major types of fat was associated with a decreased risk of breast cancer." A 2002 NYU Women's Health Study found **no** significant differences between the proportion of saturated, monounsaturated, omega-6 and omega-3 polyunsaturated fatty acids in women with breast cancer compared with controls. There is no solid evidence against **any** natural real food fat, whether animal or vegetable. But altered, refined, over-processed and fake fats can increase risk. Women who consume **trans** fats (partially hydrogenated vegetable oils), for example, are almost 4 times more likely to develop breast cancer than those who don't eat them. It's claimed that fats increase risk because they may increase blood levels of **estrogen**. But: "Available data have not consistently supported the idea that a change in dietary fat can alter the level of this [estradiol] hormone." A 2004 study showed that a low-fat diet "did not result in a statistically significant reduction in invasive breast cancer risk." Researchers state that "the relationship of fat intake to breast cancer is not fully established either in terms of demographics or mechanisms of action...Multiple other factors play significant interactive roles." Unaltered natural fats can be **protective**. Fish oils, flaxseed oil and other sources of omega-3 fats, evening primrose or black currant seed oil (rich in GLA), and palm kernel or coconut oil (high in lauric acid) have protective indications. Omega-6 fatty acids have been accused of causing risk, but since oils rich in these fatty acids are usually refined, heated at high temperatures, chemically deodorized, and otherwise changed from their original composition, it's no wonder they can cause problems. Unrefined oils and whole foods rich in omega-6 fats (like raw nuts and seeds) are beneficial. Conjugated linoleic acid (CLA) in meats and milk products (especially from organically-raised, pasture-fed animals) play a protective role. Women with breast cancer have lower levels of CLA in their blood and breast adipose tissues than women without cancer. Extra virgin olive oil has been associated with decreased risk, not due to the direct effect of oleic acid but due to other components.⁵

Does meat increase breast cancer risks? Some studies seemed to indicate that meat, poultry, fish and eggs increase risk. Other studies found **no** difference in breast cancer incidence with any of these animal foods. Red meat has been particularly targeted, yet studies like the Nurses' Health Study found risk slightly lower in women who ate more red meat. Findings show that **processed** meats (smoked meats, bacon, sausage, hot dogs, etc.) significantly raise risk. Also, as oncologist Marisa Weiss, MD, explains, commercial meats can contain compounds that are "unhealthy for breast tissues, such as the hormones given to most cattle to accelerate their growth." **Industrially**-raised cattle, poultry, and pigs are given antibiotics and fed crops grown with pesticides—residues end up in their meat. Charred meat may be a problem due to chemical changes that occur. Some studies found increases in risk with high intakes of butter; fat from an animal contains the highest concentrations of hormone, drug, and pesticide residues—commercial butter harbors significant amounts. Eat only organically-raised meats and milk products and small wild deep ocean fish (not farmed-raised).⁶

What about other foods? A systematic review of studies shows that dietary **patterns** are associated with breast cancer risk. Breast cancer expert, Dr Christine Horner, asserts that our typical diet has dramatically changed. Native, natural whole foods have been exchanged for highly-processed, refined, fabricated and altered non-

foods. Her research helped formulate many effective cancer-preventive strategies. Among these, “the most important thing is what you do or do not put in your mouth...because you can have huge influences by the foods you consume...” One risk factor for breast cancer is obesity which primarily arises from eating nonfoods that are low or devoid in nutrients and high in toxins and stressors. In the US and Western Europe, breast cancer rates are about 6 times that of Asian populations, but within a few generations after migration, rates in Asian women shift towards those of US women. The Western lifestyle, primarily **diet**, is responsible. Refined grains and sugars, processed meats, altered fats—pasta, pizza, white bread, pies, cakes, candy, processed meats, industrial meats, French fries, other commercially fried items, margarine, refined oils, commercial mayonnaise—all appear to increase risk. Women with high **insulin** levels are almost 2½ times more likely to be diagnosed with breast cancer within 7 years than similar women with the lowest blood insulin levels. High insulin often results from eating refined and processed nonfoods. High insulin is also associated with increased weight. ‘Junk’ foods, overweight, and breast cancer seem to be close associates. Increased levels of insulin can disrupt various hormone-balancing functions of the liver, impair energy-producing abilities of cellular mitochondria (contributing to a more acidic, less oxygenated cellular environment, ideal for cancer), and lead to increased activity of insulin-like growth factor, which may stimulate growth of cancerous cells. A ‘prudent’ diet (whole grains, fresh fruit and vegetables, fish, non-industrial poultry and meat, legumes, mushrooms, etc.) is protective. **Traditional** diets such as a Mediterranean type diet (vegetables, poultry, seafood, fruits, olive oil), a native Mexican diet (legumes, Mexican cheeses, soups, meat dishes, tomato-based sauces, vegetables, fruit), and other natural food diets have also been shown to reduce risk.

Whether or not **dairy** products increase or decrease risk has been debated. Most dairy foods are pasteurized which alters the protein and fats plus destroys all enzymes. Milk products contain conjugated linoleic acid (CLA), which may help prevent cancer. Milk from pasture-fed cows has more CLA than grain-fed cows. Industrial cows are often given bovine growth hormone (BGH) to increase milk production. According to cancer expert Dr Samuel Epstein, BGH residue in milk increases cancer risk of all types. Fresh **fruits** and **vegetables** keep showing up as breast cancer preventives—components attributed with anti-cancer properties include flavonoids, carotenoids, sulforaphane, indoles, polyphenols, vitamin C complex, vitamin E complex, folate, zinc, magnesium, fiber, and more. Intakes of dark green leafy vegetables, garlic, onions, carrots, cruciferous vegetables (broccoli, kale, Brussels sprouts, cabbage, etc.), sauerkraut, squash, tomatoes, banana, papaya, watermelon, cantaloupe, oranges, strawberries, plums, peaches, pomegranate, and other produce may all help reduce risk. Mushrooms can be protective as can legumes (lentils, peas, beans). One study found that women who are lifelong vegetarians may be less likely to develop breast cancer than women who eat meats. But the protection comes from eating lots of vegetables and legumes, **not** from avoiding meat. Fiber (in vegetables, fruits, whole grains, legumes) is linked to a significantly reduced risk of breast cancer in a number of studies. ⁷

Should supplements be taken? Quality, food-based supplements can improve nutritional status, the capacity to deal with toxins, insult, or injury and support function of glands, organs, tissues, systems. Studies have so far found the following nutrients to be associated with decreased breast cancer risk: **Carotenoids**, vitamins **A** and **E** complexes. Women with higher intake from foods, higher circulating levels, and higher breast adipose tissue concentrations of various carotenoids, retinoids (vitamin A) and tocopherols, tocotrienols and **selenium** (components of vitamin E complex) have the lowest breast cancer risk. Women with breast cancer have lower intakes and lower levels of these nutrients than women who don’t have cancer. However, isolated carotenoids, such as separated beta-carotene, do not improve risk. **Vitamin C** complex. Conflicting study results indicate that isolated or synthetic ascorbic acid does not have the protective effects that vitamin C complex found in whole foods does have. Women with the highest intake of vitamin C from food have reduced risks of breast cancer compared with the corresponding lowest intakes. **Vitamin B complex** and associated nutrients. Higher intakes of vitamin B₆, vitamin B₁₂, and particularly folate are associated with reduced risk. Some studies indicate that synthetic folic acid (especially in high amounts) may enhance progression of abnormal cell development. Women now get synthetic folic acid in all commercial bakery products, raising a question about the wisdom of such fortification. Naturally-occurring folate in fruits, vegetables, beans, and other foods does not disturb biochemistry. Foods contain a myriad of other nutrients that work with folate (including B₁₂, B₆, methionine) and do not contribute to imbalances. **Vitamin D**. Sunlight exposure and dietary intake of vitamin D have been linked with reduced risk. Low circulating levels appear to increase risk. Sun exposure earlier in life, particularly during breast development, may be relevant. However, there is ambiguity regarding vitamin D

'fortification' of milk and other foods. Isolated or synthetic vitamin D is different than complex forms in natural foods. Calcium, magnesium, zinc, and other **minerals** can be cancer preventive. **Co-Q10** may be protective and is associated with circulating vitamin E complex components. Fish oil as a source of **omega-3 fats** is inversely associated with breast cancer risk. The **enzyme** manganese superoxide dismutase, **iodine** (in seaweeds like kelp), and **cysteine**, a sulfur-containing amino acid, may play a preventive role. Green tea and the herb, black cohosh, may also have a modest effect. It was found that 81% of women with breast cancer were taking supplements, particularly vitamin E (as d-alpha tocopherol), vitamin C (as ascorbic acid), and multivitamin and mineral supplements (isolated and synthetic vitamins, isolated nonfood minerals). Most studies have **not** found an overall reduced risk of breast cancer among women taking such supplements of separated or imitation 'nutrients.' Obtaining whole complex nutrients from real foods is linked to lower risk.⁸

Are phytoestrogens protective? Phytoestrogens have a somewhat similar structure to human estrogen. They include isoflavones (mainly found in legumes such as soybeans, mung beans, lentils, etc.) and lignans (found in whole grains, various fruits and vegetables, nuts, legumes, seeds like flax and sesame). It's thought that phytoestrogens occupy estrogen receptors on cells and block some of the activity of estrogen or prevent estrogen from getting into cancer cells. Estrogen is believed to cause breast cancer though evidence for blame points far more to hormone replacement therapy, contraceptives, hormone-disruptive chemicals and a stressed liver. Most phytoestrogen studies focused on **soy** and Asians or Asian immigrants who consume a lot of soy—usually fermented (soy sauce, tempe, miso, etc.). But far fewer Westerners are able to metabolize some isoflavones than are Asians. Also, soy and other beans are rich sources of **fiber** which may lower serum estrogen levels. Asian cultures consume other beans and other whole foods. Studies on diets or foods cannot claim that one component, like a phytoestrogen, has a specific effect. And it's difficult to account for all factors that might distinguish non-Asians who regularly eat soy foods from those who don't. Studies of non-Asian women haven't always shown a relationship between isoflavones or lignans (more prevalent in Western diets) and breast cancer risk. A 2011 review of studies reported that soy isoflavones were associated with reduced risk in Asian, but not Western populations. Further, high doses of phytoestrogens in supplements are thought to behave like estrogen, causing breast-cell changes that could **lead** to cancer. How many soy products, then, should a woman eat since, according to this reasoning, eating too much soy could lead to breast cancer?⁹

Does alcohol increase risk? Though publicized that it does, it's still unproven. Many studies that concluded alcohol increases risk were epidemiological—they may offer implications but not cause-and-effect proof. Some studies haven't found a relationship between alcohol consumption and breast cancer. Other studies reported incremental increases in risk as the amount of alcohol consumed increased whereas a number of studies found no clear evidence as to the amount of alcohol that might be hazardous. There are reports that past drinking doesn't matter as much as recent alcohol use and reports that past drinking habits do influence risk. There are studies that link alcohol consumption to **negative** estrogen- and progesterone-receptor tumors. There are studies that make a link to **positive** estrogen-receptor tumors but not to negative estrogen or progesterone tumors. Alcohol has been found to raise the risk of some breast cancers and not others—for example, upping risk for cancer in milk-producing lobules (10 to 15% of breast cancers are lobular) but **not** affecting cancer in milk ducts (70% are ductal). An analysis of 6 studies found that women who consumed small amounts of alcohol had the smallest risk; women who consumed moderate amounts had an increased risk. But women who consumed large amounts did **not** show further increase in risk. One reason it's believed that alcohol increases breast cancer risk is that it may increase **estrogen** levels. Yet a study found that, after drinking alcohol, women on estrogen replacement therapy (ERT) experienced increased estradiol levels but women **not** on ERT didn't experience any variations in estradiol levels. Most studies grouped all types of alcohol together—wine, beer, liquor. But a recent study showed that red wine may lower estrogen so is believed to decrease risk. Polyphenols in red wine are also being considered as potential cancer preventives. In postmenopausal women alcohol may increase breast density (thought to up cancer risk) with increasing intake but red wine decreases breast density. Studies found that "the adverse effects of alcohol on breast cancer risk might be reduced with adequate folate intake from dietary sources alone." Increasing intake of food **folate** may offset detrimental effects of alcohol on breast cancer risk. Alcohol lowers bodily folate as well as other nutrients such as other B vitamins, but research focused on folate. Low folate intake "may predispose individuals to cancer due to disruption of DNA synthesis, repair and methylation." It's still uncertain if alcohol increases breast cancer risk. Red wine may turn out to be protective. And eat your vegetables.¹⁰

To support the body's ability in lowering breast cancer risk, the following may be considered:

Just Before Two Meals:

- 2 Cataplex C –chew (C complex)
- 1 Cruciferous Complete (cruciferous vegetables)
- 1 Organically-Bound Minerals (alkaline-ash minerals, iodine)
- 2 Cellular Vitality (B vitamins, phytochemicals, mushrooms, Co-Q10)

After Two Meals:

- 2 Chlorophyll Complex (carotenoids, E)
- 1 Black Currant Seed Oil (GLA)
- 1 Tuna Omega-3 Chewable (omega-3s, D)

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