

# Appendix C - Cancer Prevention Risk Factors

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# Radiation and Medical Imaging

## What is radiation?

Radiation is best described as energy moving through space, and it can take many forms, including visible light, x-rays, gamma-rays, microwaves, and radio waves. Radiologists use low dose radiation in the form of x-rays to create images of different parts of your body. High doses of radiation can also be used to treat certain types of cancer.

## Where does radiation come from?

Radiation is all around us. The two main sources of ionizing radiation are from natural background radiation and medical exposure (CT scans and x-rays). Natural background radiation comes from the Sun (cosmic radiation), the Earth (mostly Radon gas), and from naturally radioactive substances in our body. Natural background radiation exposure accounts for an average of 3.1 mSv/yr with variations depending on where you live. The average radiation exposure to individuals in the US is 6.2 mSv/yr which includes natural background and medical imaging.

## What are x-rays?

X-rays are a type of radiation used in medical imaging much like a camera uses visible light to create an image. X-rays pass through the body and create an image on film based on how many x-rays get absorbed and how many pass through. These films are commonly referred to as "x-rays," but x-rays are actually the type of radiation that is used to produce the image. Studies that use x-rays include plain films, fluoroscopy, and computed tomography (CT scans).

## Understanding Risk

It is important to realize that in a properly performed individual exam, the potential health benefits almost always outweigh the potential risks of radiation exposure. Great effort has been made throughout the medical community to ensure patient safety while providing quality diagnostic images. However, there is data to suggest that high doses of radiation increase your future risk of cancer. The data is compiled from high dose exposures including survivors of atomic bombs and radiation spills. There is no proof that the low doses of radiation used with common x-rays or CT scans cause cancer, but we know enough to use this technology carefully and only when needed.

## Typical Radiation Doses

Exam	Dose (mSv)
Dental x-rays	0.01
Airline Flight	0.02
Mammogram	0.04
Chest x-ray	0.10
Natural Background	3.1 / year
Average US Exposure	6.2 / year
Chest CT	7.0
Abdominal CT	8.0

## Quick Tips

- Benefits of study usually outweigh potential risks.
- Don't get any study you don't need.
- Keep a history of your studies to avoid unnecessary repeat exams.



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## **THE TRUTH BEHIND "SILVER"/AMALGAM FILLINGS ... GO TO YOU TUBE: SMOKING TEETH = POISON GAS**

<http://www.youtube.com/watch?v=9ylnQ-T7oiA>

Dentists have been taught in medical school that metal (amalgam, gold) in the mouth did not release any poison into the system and so they believe that, and that is partially true.

The cadavers and plastic skeletons they worked on to achieve their degrees in dentistry did not leach out toxins because they were not subjected to heat (hot coffee, cocoa, food, etc.) and no friction was applied by their cadavers and plastic models (as occurs when we chew food). But we humans do eat and drink hot foods, and we certainly chew our food.

It is necessary, even vital that we chew so that our saliva can mix with our food for proper digestion ! When heat and/or friction (chewing) is applied, the amalgam in the teeth gives off mercury gases and this can be seen now on the You Tube.

“Silver” fillings—also known as amalgam—are actually a combination of five different metals—mercury, silver, tin, copper and zinc. Half of the mixture comes from mercury, and mercury is one of the most toxic substances on earth. Researchers have found that mercury vapors are released during common everyday activities which include the brushing of teeth, the chewing of meals and snacks, and the consumption of hot or acidic food. World Health Organization studies estimate that 3 to 17 micrograms of mercury are released each day in your mouth if you have amalgam fillings [1] (and it is cumulative, that is, it accumulates in the body). Additional amounts can leach out of old, deteriorating silver fillings if they are not replaced.

It surprised me to learn that **mercury is more dangerous than lead and arsenic**. There is no disagreement that it is extremely toxic to the human body. While mercury was once widely used in medicines, its presence today is quite limited because of the earlier toxic effects this metal caused. Still mercury is used in dental fillings in the mouth, based upon the disproved notion from dental school where the students worked on cadavers and plastic skeleton models, that it is somehow safe in the mouth and does not affect the body. Recent studies are showing the contrary. For instance, researchers have found that **two-thirds of the excretable mercury found in humans comes from amalgam fillings** [2] . **Studies also show that mercury from silver fillings impairs kidney functioning and increases antibiotic resistant bacteria in the mouth, intestines and elsewhere** [3]

Anita Vazquez Tibau, now an activist against the use of “silver” fillings, says she was one of amalgam’s victims. An active and fit woman who majored in dance in college, Anita was rarely ill. But in her early 20s, she began to experience severe asthma attacks that would continue for two decades. Anita could barely breathe or walk, and just staying alive became a struggle. Then in 2000, Anita discovered that she was reacting to mercury in her system. She decided to have her 13 “silver” fillings removed. Within a year, Anita had her good health, normal breathing and high-energy back.

Much of the current documentation for mercury's potential harm to the body comes from studies of people who work with this metal on the job (dental personnel) or have a high-dose, short-term exposure. Research has shown that mercury can:

- Damage the central nervous system and affect behavior [4]
- Disturb the chemical balance in the body [5]
- Interfere with cellular activity [6]
- Alter the functioning of the endocrine system, including hormonal activity [7]
- Adversely affect our immunity [8]
- Increase the risk of depression [9]
- Increase the risk of heart attack [10] .

Mercury is also a suspected contributor to Alzheimer's Disease, Fibromyalgia [11] and Chronic Fatigue Syndrome [12] . For more information on mercury's ill health effects, go to <http://www.amalgam.org/>.

In dentistry specifically, certain problems in the mouth linked to silver fillings have been observed by biological dentists. These include:

- Increases in infections in the mouth
- More bleeding gums
- Inflammation of the tissues surrounding the teeth
- Bone loss in the jaws [13]

The YouTube, Smoking Teeth = Poison, lets you see the poison gases being released from old fillings. To see this, go to [www.iaomt.org](http://www.iaomt.org)

.Evidently there are materials, composites, which may be used that do NOT require making undercutting. These materials bond to the surface. Please watch this short video.

It's important to look for a biological dentist with specific experience in removing and replacing amalgam. To find an experienced dentist in your area, contact the American Academy of Biological Dentistry in Carmel Valley, CA (831/659-5385) or the Environmental Dentistry Association in San Diego, CA (800/388-8124).

## Healthy Living Can Temper Breast Cancer Risk That Runs In Family

### Healthy Living Can Temper Breast Cancer Risk That Runs In Family October 12, 2010 by Scott Hensley

Source: <http://www.npr.org/blogs/health/2010/10/12/130508261/healthy-living-can-t-hurt-when-it-comes-to-breast-cancer-risk?sc=17&f=1128>

Some simple steps for healthier living appear to reduce a woman's risk of developing breast cancer later in life, even if a close relative has already had the disease.



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Moderate exercise five days or more each week is one ingredient for reducing breast cancer risk.

Researchers found women had a lower risk of breast cancer when they exercised regularly (20 minutes of moderate or vigorous intensity at least five days a week), drank modestly (7 or fewer drinks a week) and kept a normal body weight.

This isn't the first study to support the notion that taking these steps can help stave off cancer. And the American Cancer Society [already recommends](#) women take these steps.

But the researchers also took a look at how the preventive measures worked when a woman's mother or sister got breast cancer at age 45 or older. About 15 percent of post-menopausal women in the U.S. are in that boat.

The researchers found the good behavior lowered risks for women even when a close relative had already been diagnosed with breast cancer later in life. The effect was about the same as for women without the family history.

Still, the cancer risk remained higher for those with a family history — about 5.94 breast cancers for every 1,000 years lived by those women compared with 3.51 breast cancers for the healthy-living women without the family history.

The findings come from the experience of 87,000 women, ages 50-79 at the beginning of a [study looking at breast cancer risks](#). They answered questions about their cancer risks and health behavior back in the 90s. The researchers checked on who got breast cancer and who didn't through 2003. The [results](#) were just published online by the journal *Breast Cancer Research*.

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# Intensity and timing of physical activity in relation to postmenopausal breast cancer risk: the prospective NIH-AARP diet and health study.

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## Abstract

**BACKGROUND:** Despite strong evidence of an inverse association of physical activity with postmenopausal breast cancer risk, whether a certain intensity or time of life of physical activity is most effective for lowering breast cancer risk is not known.

**METHODS:** In 118,899 postmenopausal women in the prospective NIH-AARP Diet and Health Study, we examined the relations of light and moderate-to-vigorous intensity physical activity during four periods of life ("historical": ages 15-18, 19-29, 35-39 years; "recent": past 10 years) to postmenopausal breast cancer risk. Physical activity was assessed by self-report at baseline, and 4287 incident breast cancers were identified over 6.6 years of follow-up.

**RESULTS:** In age-adjusted and multivariate Cox regression models, >7 hours/week of moderate-to-vigorous activity during the past 10 years was associated with 16% reduced risk of postmenopausal breast cancer (RR:0.84; 95%CI:0.76,0.93) compared with inactivity. The association remained statistically significant after adjustment for BMI (RR:0.87; 95%CI:0.78,0.96). Neither moderate-to-vigorous activity during other periods of life nor light intensity activity during any period of life was related to breast cancer risk, and associations did not vary by tumor characteristics.

**CONCLUSION:** A high level of recent, but not historical, physical activity of moderate-to-vigorous intensity is associated with reduced postmenopausal breast cancer risk. More precise recall of recent physical activity than activity in the distant past is one possible explanation for our findings.

PMID: 19796379 [PubMed - indexed for MEDLINE]PMCID: PMC2768744Free PMC Article

# **Breast Cancer Prevention Plan For Breast Cancer Survivors**

From: The Breast Cancer Prevention Diet  
(By Dr. Bob Arnot Pages 175-181)

Breast cancer survivors are routinely being put on diets to prevent recurrence. These diets are radically different in purpose from the general breast cancer prevention diet. Because stray cancer cells may still be present, the diet's job is actually to help fight and destroy cancer cells and to prevent regrowth over a very short time frame – as little as several months. Diet is clearly not a substitute for chemotherapy, radiation, or surgery, but it is being used at top centers to supplement them. As I've mentioned, flax is being given to cancer patients even before surgery to shrink tumor size. Since treatment programs are individualized, you will want to go over your nutritional treatment with your oncologist or an oncologist who deals with nutrition at a top cancer center.

## **BREAST BENEFITS OF DIET**

Beyond the basic benefits of cutting the estrogen effect, researchers hope for even more aggressive cancer-fighting properties from diet, including the following; decrease tumor size, wall off tumor growth, cut off the fuel for further growth, shut down further genetic damage.

The recommendations here are divided into two parts. First, those for which there are no reservations because they are universally accepted to be safe and effective. Second, because this crosses over from pure prevention into part of an intensive medical plan, those recommendations that you will want to discuss with your doctor to be certain they are part of a solid overall treatment plan.

### *Recommended without hesitation:*

#### **\*\*\*\*\*DON' DRINK**

Alcohol is such a clear and well-established risk that it makes sense to drink sparingly or not at all.

#### **\*\*\*\*\* AVOID OMEGA-6 FATS**

Cutting the booster effect to a bare minimum by avoiding polyunsaturated fats is crucial. Substituting omega-3 fats may have a strong synergistic effect.

#### **\*\*\*\*\* EXERCISE**

Exercise plays a big part in improving your sense of well-being after surviving cancer. It will also help you drop your estrogen production.

#### **\*\*\*\*\* TAKE FISH OIL**

Changes are early and dramatic with fish oil. This is an aggressive measure that quickly changes the biology of your breast. Many cancer centers now firmly recommend this. The only question is dose., since high doses have been linked to bleeding. Ten milligrams is a safe dose in terms of bleeding. Sloan-Kettering and UCLA both include fish oils as part of regular and experimental protocols.

#### \*\*\*\* CONTROL BODY FAT

This has the added benefit of making recurrences easier to detect early.

#### \*\*\*\* AVOID HRT

Avoiding HRT makes sense because you cut the estrogen load on your system. If you really want to take an estrogen for menopausal symptoms, then consider raloxifene or soy.

#### \*\*\*\* ADD FIBER

Trapping estrogen in the bowel and preventing recirculation makes the most sense if you are still exposed to near normal levels of estrogen. The fiber will also help with weight control.

#### \*\*\*\*\* BLOCK ESTROGEN RECEPTORS

Estrogen-blocking drugs are the most effective means of cutting the estrogen effect.

Tamoxifen is the most frequently prescribed estrogen blocker. Five-year survival figures are close to 90 percent when given with chemotherapy for breast cancer survivors.

Raloxifene poses an interesting alternative. It appears to protect against breast cancer, with a 77 percent decrease in cancer after just 18 months use in women who did not have cancer when they began the trial, and as much as 90 percent after 30 months. Doctors are awaiting clinical trials to determine what use it may have in breast cancer and whether it poses any risk to the ovaries.

Soy: This is the area of greatest nutritional contention in women who have survived breast cancer. The question remains whether soy is a suitable estrogen receptor blocker once a patient has stopped taking tamoxifen or completed treatment. Since there are no suitable clinical trials to answer the question, it remains unanswered.

Since soy can act as a weak estrogen, many oncologists are squeamish about prescribing it for women who have low estrogen states as a result of breast cancer therapy or menopause. Any estrogenic effect could be potentially harmful, and the weak estrogenic effect of soy is included. Many doctors think it's playing with fire. Genistein, the most active component, can act as both an estrogen and an anti-estrogen. It's difficult to predict how it will act and it can act in both ways at the same time in one person.

A look to Asian women, shows no sign of a problem has ever been detected in breast cancer survivors. Soy has other anticancer properties, such as its effects as an antioxidant and its ability to block new blood vessel growth.

Clearly, premenopausal woman with fully functioning ovaries and high levels of estrogen production might benefit. For postmenopausal patients, few doctors dare make any kind of prescriptive advice. For that reason you will want to review this with your oncologist.

If you go the soy route, remember that the risk, if any, is in eating too little soy. For that reason, you'll want to make the full commitment to 35-60 grams a day.

Receptor status: Breast cancer cells may also have estrogen receptors—breast cancer cells that have estrogen receptors are called estrogen receptor positive or ER positive. That means that estrogen can spur further growth of the tumor by attaching to the receptor so that estrogen blockers may be an effective adjunct to treatment.

Flaxseed: Since proof of flaxseed as an estrogen blocker is just now being published, you will need to review taking it with your doctor.

### \*\*\* DROP GLUCOSE LOAD

The cross talk between insulin and estrogen receptors is pure bad news, since together they create an even stronger estrogen effect. Using a lowered glucose load to lower insulin decreases their synergy between estrogen and insulin to lower the estrogen effect.

### \*\*\* EAT CRUCIFEROUS VEGETABLES

Since “bad” estrogens may actually induce cancer by attaching to a cell's DNA, cruciferous vegetables are an important part of the plan.

### \*\*\* LOWER CALORIES

Sloan-Kettering recommends a low-calorie diet. This may seem counterintuitive for cancer survivors trying to nourish themselves, but Dr. Moishe Shike strongly believes that excess calories may be potent cancer promoters in these women. He has no reservations about this diet in early-stage cancer. By low-calorie, Dr. Shike means about 1,500 calories—not an overly restrictive calorie intake. Rita Mitchell, the nutritionist who prepared the meal plans listed in this book, feels this may be too low for some women to feel good and remain active. Your nutritionist can help determine what the right number of calories is for your diet.

### \*\*\* DROP OXIDANT LOAD

Since this is the only available measure to stop the constant toxic barrage on your DNA, a nine-a-day fruit and vegetable diet, emphasizing those highest in antioxidants, is critical.

### \*\*\* AVOID CHEMICAL ESTROGENS

Surgeons at Sloan-Kettering strongly advise their patients to avoid eating risky fish and meats that may contain chemical estrogens. For a breast cancer survivor, avoiding these chemicals is vitally important until more is known about their risk.

*Recommended in consultation with your oncologist or as part of a trial:*

### \*\*\* TAKE INDOLE-3 CARBINOL SUPPLEMENTS

Since “bad” estrogens may play a role in both cancer initiation and growth, a full dose of I3C capsules should be considered. Since dosing is still being worked out, this is considered experimental. However, you will want to take a minimum of 300 milligrams a day, the lowest dose considered effective. In some trials 500 milligrams is now being used as a daily dose.

Gene status: For those women who carry BRCA1, BRCA2, and others yet to be discovered genetic mutations, most serious researchers do not believe that diet can prevent cancers from growing. Far more powerful genetically engineered tools are likely to be necessary, combined with a powerful estrogen receptor drug, either tamoxifen or raloxifene. Presently, for women at very high risk of breast cancer, there is much more hard clinical data on tamoxifen than there is on raloxifene.

#### *Recommendation*

My recommendation is to participate in an established clinical protocol so that you can receive all the advantages of careful observation and the encouragement to observe the diet strictly.

# Breast Cancer Risk Factors

## A. PERSONAL

1. Previous diagnosis of breast or ovarian cancer.
2. Previous histology (biopsy) diagnosis of breast dysplasia or metaplasia.
3. Previous X-Ray treatments to the thorax, especially before thirty years of age.
4. Menopausal estrogen (especially Premarin) replacement therapy for three years or more.
5. Abortion (to lesser extent, miscarriage) before first childbirth
6. Use of hormone contraceptives four or more years prior to first childbirth.
7. No childbirth by age thirty years of age.
8. Thirty pounds or greater gain in body weight after menopause.
9. Menarche before twelve years of age.
10. Menopause after fifty-five years of age.
11. Did not nurse any children for at least one month.

## B. FAMILIAL\*

1. Two first-degree relatives with breast cancer, one of whom was diagnosed at fifty years of age or younger.
2. Three or more first- or second-degree relatives diagnosed with breast cancer.
3. Breast and ovarian cancer diagnosed among first- or second-degree relative.
4. One first-degree relative diagnosed with cancer in both breasts.
5. Two or more first- or second-degree relatives diagnosed with breast **or** ovarian cancer, especially if diagnosed at fifty years of age or younger.
6. One first- or second-degree relative diagnosed with breast **and** ovarian cancer.
7. History of breast cancer diagnosed in a male relative.
8. Woman of Ashkenazi Jewish descent with any first- or second-degree relative diagnosed with breast or ovarian cancer.

\*US Preventive Services Task Force. Annals of Internal Medicine. O6 September 2004

**CAUSE OF HYPERPROLACTINEMIA  
(SERUM PROLACTIN > 25/ML)**

Information Provide By: William Hobbins, M.D.

DECREASED METABOLIC CLEARANCE

Chronic renal failure

Hypothyroidism

INCREASED PRODUCTION

Medication affecting neurotransmitter availability at receptor sites

Psychotropics (phenothiazines, butyrophenones, sulpride, thioxanthenes)

Anitemetics (metoclopramide)

H2-receptor blockers (ametidine)\*

Estorgens oral contraceptives\*

Opiates (morphine, methadone)

Hypothalamic diseases (easinophilic granuloma, histocytosis X tuberculosis, sarcoidosis, hypothalamic Gilomas, Craniopharyngiomas)

Pituitary diseases (nonprolactin-secreting pituitary adenomas with suprasellar extension prolactinomas)

Hypothyroidism

Addison's disease

Polycystic ovarian syndrome

Ectopic prolactin production

Prolactin: Physiology and Pathology, George Toils, M.D., McGill University



[Epidemiology, genetics, and risk evaluation of postmenopausal women at risk of breast cancer.](#)

Menopause. 2008 Jul-Aug;15(4 Suppl):782-9

Authors: Vogel VG

Breast cancer risk factors have been studied for the past three decades, and the single most important risk factor is age. Hormonally linked adult reproductive and anthropometric risk factors contribute to the etiology of postmenopausal breast cancer. The risk of breast cancer increases among women older than 50 years of age who have benign breast disease, especially those with atypical ductal or lobular hyperplasia. Lobular carcinoma in situ increases risk significantly, as do a family history of breast cancer in first-degree relatives and the presence of BRCA1 or BRCA2 mutations. Diet, exercise, and environmental factors play a very small role in overall risk. Mammographic breast density increases relative risk fivefold among women with the highest density, and breast cancer risk is two to three times greater in women with elevated serum levels of estradiol or testosterone. Multivariate risk models allow determination of composite relative risks and cumulative lifetime risk, although improved models for African American women are required. For postmenopausal women, newer risk models are being developed and validated that include age, breast density, race, ethnicity, family history of breast cancer, a previous breast biopsy, body mass index, age at onset of natural menopause, hormone therapy, and previous false-positive mammography. A simpler model that includes only age, breast cancer in first-degree relatives, and previous breast biopsy performs well for estrogen receptor-positive breast cancer in postmenopausal women. As many as 10 million women in the United States are at increased risk, and clinicians are obligated to identify these women and manage their risk appropriately.

PMID: 18596599 [PubMed - in process]

***Factors influencing the risk  
of breast cancer –  
established and emerging***

**The Health & Environment Alliance (HEAL)** is an international non-governmental organisation that aims to improve health through public policy that promotes a cleaner and safer environment. Our work draws on the findings of the environmental health science revolution, which is revealing the impact of environmental degradation on health in an ever widening range of diseases and conditions. We represent a diverse network of more than 50 citizens', patients', women's, health professionals' and environmental organisations across Europe and we have a strong track record in bringing environmental health science and policy to an increasing number of fora. Our vision is that of a healthy planet for healthy people.

<http://www.env-health.org/>



**CHEM Trust** is a UK charity whose aim is to protect humans and wildlife from harmful chemicals. CHEM Trust's particular concerns are related to hormone disruptors, the cocktail effect of chemicals and the role of chemical exposures in early life. Exposure to undesirable chemicals may arise from contamination of the food chain and from the use and disposal of many everyday products such as TVs, computers, cars, construction materials, toys, toiletries and cosmetics. CHEM Trust is working towards a goal where chemicals play no part in causing impaired reproduction, deformities, disease or deficits in neurological function. CHEM Trust is committed to engaging with medical, scientific and patient communities to raise the level of dialogue on the role of chemicals in chronic disease, and the wider implications this may have for disease prevention strategies.

<http://www.chemtrust.org.uk/>



**Chemicals Health Monitor** aims to improve public health by ensuring that key scientific evidence on the links between chemicals and ill-health are translated into policy as quickly as possible. The strategy involves fostering dialogue, sharing perspectives and promoting greater collaboration between policy makers and governments on the one hand and scientific researchers, medical and health professionals, patient groups, environmental organisations and the public on the other. We work to highlight the compelling scientific basis for added controls over certain chemicals; and encourage EU policies that are precautionary and participatory, especially with regard to the implementation of REACH, and the substitution of hazardous chemicals.



The project was launched by the Health and Environment Alliance (<http://www.env-health.org/>) in collaboration with other partner organisations across Europe in March 2007.

<http://www.chemicalshealthmonitor.org/>

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# ***Factors influencing the risk of breast cancer – established and emerging***

April 2008

# Introduction

Most of us will know of someone affected by breast cancer, be they a family member, friend or acquaintance. Faced with a diagnosis of breast cancer, many women ask, “why me”? Unfortunately, there is no easy answer to this question. There is still a lot we do not know about breast cancer. But the good news is that our understanding is increasing all the time, and this will provide new avenues for preventing the disease, which is of course the best outcome. Also, thanks to better treatment and earlier diagnosis, more women are surviving the disease than ever before.

The high incidence of the disease in developed European countries, and the sharp increase of new cases in the rapidly developing eastern European countries<sup>1</sup>, is a cause for concern. This rate of increase is happening so quickly that it cannot be attributed mainly to hereditary factors. At least part of the reason must lie in our environment and/or how we live today.

This briefing will outline:

1. The established risk factors for breast cancer, and
2. The current thinking regarding the involvement of certain chemical exposures in breast cancer, and in particular, the concerns about man-made chemicals which mimic the female hormone oestrogen.

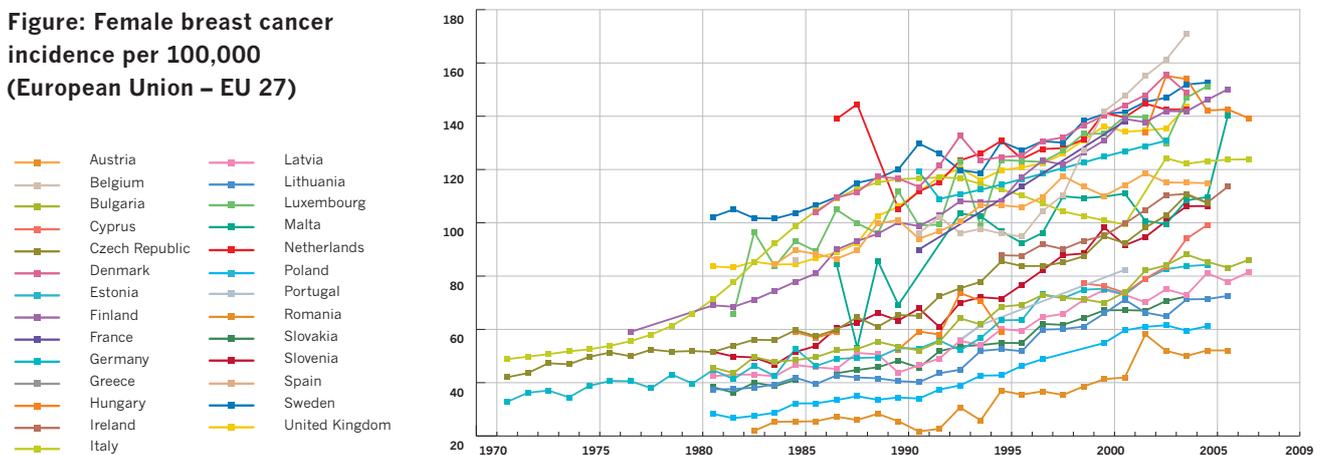
Doctors and scientists largely agree about factors that can influence a woman’s chances of getting breast cancer, such as age, weight, the number of children she has and

the possession of certain so-called ‘breast cancer genes’<sup>2</sup>. These are known as ‘established risk factors’.

However, all the established risk factors together can only explain about half of breast cancer cases and for the remainder, scientists and doctors are still unsure of the causes<sup>2,3</sup>. One of the suggested additional risk factors for breast cancer is the environment, i.e. the world around us. This may come as a surprise to some people, as it is often thought that breast cancer is largely an inherited disease. This is not the case. And the proportion of breast cancers related to specific inherited genes is in fact very low; only around 1 in every 10 to 20 cases is due to inherited “breast cancer genes”<sup>2,4</sup>. Indeed, there is evidence from studies on twins suggesting the environment, rather than genes, has more influence on the chance of developing breast cancer (see “Environmental Factors” on page 7). Therefore, to improve prevention of the disease there is a need to identify the factors in our environment that might be responsible and try to minimise our exposure.

One of the environmental factors that may be important in breast cancer is exposure to certain man-made chemicals. New evidence is emerging to support the theory that exposure to pollutants in our environment, food and water, and to chemicals in consumer products in our homes, offices and schools may be a risk factor for breast cancer<sup>5,6,7,8</sup>.

**Figure: Female breast cancer incidence per 100,000 (European Union – EU 27)**



Source: WHO/Europe; European HFA Database, June 2007

## 1. Established Risk Factors

4

The established risk factors for breast cancer may increase a woman's chances of developing the disease. However, having one or more risk factors does not necessarily mean that a woman will get breast cancer, and no single factor can explain any given case of breast cancer as it is a complex disease with often many different contributing causes. There are some risk factors that women have control over, such as alcohol consumption, weight gain after menopause, and exercise, while others such as age, age of onset of menstruation or menopause are not within a woman's control.

The Established Risk Factors outlined in this briefing are the following:

- Genetic predisposition and family history;
- Natural oestrogen;
- Oestrogen in pharmaceutical products – the Oral Contraceptive “The Pill” and HRT (Hormone Replacement Therapy);
- Weight gain and lack of exercise;
- Alcohol consumption;
- Other risk factors.

### Genetic predisposition and family history

The widely held view that breast cancer is largely a genetic disease is inaccurate. For 9 out of 10 women with breast cancer, specific inherited genes do not seem to be responsible for the development of the disease<sup>9</sup>, and 8 out of 9 women who develop breast cancer do not have an affected mother, sister, or daughter<sup>10</sup>.

There are a small percentage of women who have faulty versions of genes called BRCA1 and BRCA2, and having these genes does make them particularly susceptible to developing breast cancer<sup>11,12</sup>. These genes are very rare. Other rare variations in certain genes can also increase a woman's breast cancer risk<sup>13</sup>. Even if a woman has one or more of these kinds of genes, it still does not mean she will develop the disease. This is because, as with many genes, lifestyle and environmental factors influence whether these genes will make their presence felt (see “Environmental Factors” on page 7).

### Natural oestrogen

One of the most established risk factors for breast cancer is a woman's total lifetime exposure to oestrogen<sup>14</sup>. Although oestrogen is produced in a woman's body (in the ovaries) and is essential for the development of the breast, paradoxically oestrogen is also involved in the development of breast cancer via the stimulation and proliferation of breast cancer cells<sup>15,16</sup>. In fact, the longer oestrogen is circulating in a woman's body, the greater the risk of developing breast cancer. For example, it is well known that the greater number of menstrual cycles a woman goes through in her life, the greater her overall risk for breast cancer. Put more simply, if a woman starts her periods earlier than average and goes through the menopause later, her body is exposed to more natural oestrogen (released from the ovaries during every menstrual cycle) over her lifetime and she therefore has an increased risk of developing breast cancer. For women who start their periods earlier than average, the risk is increased by 5% per year<sup>17</sup>, and for late menopause the risk is increased by 3% per year<sup>18</sup>.

Similarly, having children reduces a woman's lifetime exposure to her own oestrogen and therefore her breast cancer risk<sup>19</sup>. Each pregnancy is thought to decrease breast cancer risk by 7%<sup>20</sup>. This is because for the duration of pregnancy the ovaries are not producing oestrogen. It is thought that this is one of the reasons why breast cancer incidence is increasing in western societies, as women are now having fewer children later in life, or no children at all.

Research indicates that breastfeeding also reduces breast cancer risk and that the longer a woman breastfeeds, the greater the reduction in risk, with a 4.3% decrease in cancer for every 12 months of breast feeding<sup>20,21</sup>. It is not fully understood why this should be, but scientists think that breastfeeding may change the cells in the breast and may make them less prone to developing cancer.

## Oestrogen in pharmaceutical products - The Pill and HRT

The contraceptive pill (which contains female hormones) has been shown to slightly increase a woman's breast cancer risk. This risk slowly disappears after coming off the pill, and is no longer an issue 10 years after cessation of use<sup>22</sup>.

Post-menopausal use of Hormone Replacement Therapy (HRT) drugs can increase a woman's risk of breast cancer<sup>18,23,24,25</sup>. It is therefore very important that women discuss all options carefully with their doctor before starting HRT, and weigh up the severity of their symptoms against possible side effects. In the USA, Germany and France, figures show that breast cancer incidence has actually decreased slightly in recent years, which is thought to be due to the drop in the number of women being prescribed HRT<sup>26,27,28</sup>.

The well documented evidence that a woman's lifetime exposure to both her own natural oestrogen and to oestrogen in pharmaceutical products (i.e. the Pill and HRT) influences her risk of breast cancer makes a very compelling case for suspecting that our constant exposure to man-made chemicals which mimic oestrogen may also play a role (see "Environmental Factors" on page 7).

## Weight gain and lack of exercise

Weight gain and being overweight are risk factors for breast cancer in women who have gone through the menopause<sup>29,30</sup>. The advice would be to adopt a diet that avoids weight gain.

Physical activity reduces a woman's breast cancer risk<sup>29,31</sup> so regular exercise is advisable. The UK Government currently recommends 30 minutes of moderate activity five days per week<sup>32</sup>.



## Alcohol consumption and smoking

Drinking alcohol has consistently been shown to increase breast cancer risk, in both pre- and post-menopausal women<sup>33,34</sup>. In the UK, it is recommended that women limit the amount of alcohol they drink to 14 units a week (one unit is a glass of wine, half a pint of beer or a measure of spirits)<sup>35</sup>. A recent collaborative survey, looking at over 50 separate studies, also suggests that drinking even small amounts of alcohol can increase the risk. It was shown that 8.8% of women who abstain from alcohol develop breast cancer by the time they are 80 years old, but of those drinking between 2 units and 4 units/day 10.1% and 11.6% respectively will develop breast cancer by the time they are 80<sup>36</sup>.

Smoking has long been thought to have no significant effect on breast cancer risk<sup>2,35</sup>. However, recent research has suggested exposure to tobacco smoke may increase risk. Exposure to second-hand smoke (passive smoking), has been found to slightly increase breast cancer risk<sup>37</sup> and research suggests that smoking whilst a teenager can also increase a woman's risk post-menopause<sup>38,39</sup>. However, more research is needed before the association between cigarette smoke and breast cancer is clearly defined. In the meantime, not smoking has other clear health benefits.

## Other risk factors

As well as those described above, other risk factors for breast cancer include radiotherapy treatment for Hodgkins lymphoma<sup>40,41</sup>, having dense breasts<sup>42</sup>, being taller than average<sup>43</sup> and having certain kinds of non-cancerous breast disease<sup>44</sup>.

In addition, exposure to ionizing radiation such as X-rays has been shown to increase cancer risk but this should not stop women having mammograms as the potential benefit of early detection of a breast tumour is believed to far outweigh any risk of exposure to a tiny amount of x-ray radiation during the scan<sup>35</sup>. Nevertheless, in future, alternative methods for early detection could be developed that would be preferable. Research also suggests women working predominantly at night are at increased risk of breast cancer<sup>45,46,47,48</sup>. This could be due to exposure to 'light at night', which suppresses the production of melatonin, a hormone which is thought to be able to prevent the growth of cancerous cells and which may also increase the release of oestrogen from the ovaries<sup>45</sup>. However, more work is needed to fully confirm a link between light at night and breast cancer.

## Phytoestrogen (plant oestrogen) – an unclear role in breast cancer

Phytoestrogen is found in plants and plant derived foods such as soy beans and flaxseeds and can act like oestrogen in the body, but the research on its potential involvement in breast cancer is conflicting<sup>50</sup>. While some studies have found no association between phytoestrogen and breast cancer, others suggest that phytoestrogen can have a protective effect against breast cancer. Clearly more research is needed on the subject of phytoestrogen before their involvement in breast cancer, if any exists, becomes clear.

With perhaps the exception of night shift work where further research is warranted to confirm the risk, all the 'established or known risk factors' outlined above are those that scientists and doctors agree can make a difference to a woman's risk of developing breast cancer. However, it is also agreed that they only account for around half of diagnosed breast cancers. So what could be causing the other 50% of cases? And why are more women, and younger women<sup>51</sup>, developing the disease?

### Established risk factors for breast cancer - all of which increase a woman's oestrogen exposure

- Starting periods early
- Late onset of the menopause
- Not having children or having them later in life
- Not breastfeeding or breast feeding for only a short time
- Use of oral contraceptives
- Use of hormone replacement therapy
- Obesity
- Regular intake of alcohol<sup>49</sup>



## 2. Environmental factors

Breast cancer is caused by a *combination* of hormonal, genetic, lifestyle and “environmental” factors. It is factors in our environment i.e. the world around us, that are thought to be responsible for at least some of the unexplained proportion (50%) of cases.

Studies on twins and migrant women have illustrated just how important our environment can be. Research on twins in Scandinavia has shown that only 27% of the breast cancers recorded could be explained by genetic factors and therefore 73% of the risk was due to environmental factors<sup>52</sup>. The study’s authors said that their findings “indicate that the environment has the principal role...”. More evidence suggesting our environment can influence our chances of getting cancer comes from research on Japanese women (who traditionally have a much lower incidence of breast cancer than western women) who migrate to the USA. Within one or two generations the incidence of breast cancer in the descendants of migrant Japanese women increases to become similar to that of US women<sup>53</sup>.

The environment can also strongly influence breast cancer risk even in women who have a high likelihood of getting the disease because of their ‘breast cancer’ genes. Women with one or more faulty BRCA genes who were born before 1940 have a 24% chance of developing breast cancer by the age of 50, but women with the genes born after 1940 have a 67% risk of being diagnosed by the same age<sup>12</sup>. This indicates that some other factor that is now more prevalent in our environment is involved and it is not just faulty genes that determine the risk of contracting breast cancer.

### Exposure to man-made chemicals

So what in our environment could be causing these changes? Scientists are still unsure about what environmental factors are involved in breast cancer, but one compelling theory, with an increasing amount of evidence, is exposure to certain man-made chemicals that can mimic hormones. Our reliance on synthetic chemicals has increased dramatically over the last 50 years, and they are an integral part of our everyday 21<sup>st</sup> century lives, providing many lifestyle benefits.

Unfortunately however, remarkably few of the man-made chemicals in use today have been adequately assessed for their safety and toxicity<sup>54</sup>, and it is now clear that a few of these chemicals have undesirable properties. Of particular concern are chemicals which are known to cause cancer in the mammary (breast) tissue in laboratory studies (“mammary carcinogens”)<sup>8</sup>, and chemicals that can mimic oestrogen. Oestrogen mimicking chemicals are part of a group of chemicals called hormone disruptors or “endocrine disrupting” chemicals (the endocrine glands secrete hormones in the body). Concern about these chemicals amongst scientists worldwide has escalated in recent years. The remainder of this briefing focuses on hormone disrupting chemicals and explores their potential involvement in breast cancer.

Not all chemicals are bad. In fact, all of us are exposed to natural and man-made chemicals in the air we breathe, the food we eat, the water we drink and the consumer products we use in our daily lives. But it is increasingly being recognised that we need to identify those chemicals which do have harmful properties and stop using them. Laboratory tests allow scientists to identify those chemicals which can mimic oestrogen, and those which are suspected to cause cancer.

### Synthetic oestrogen – e.g. The Pill and HRT

Artificial oestrogen such as the contraceptive pill and HRT, have been shown to increase a woman’s risk of breast cancer (see previous section).

Another form of artificial oestrogen, a drug called diethylstilbestrol (DES) was given to women in the 1950s and 60s to prevent miscarriage. Not only was it not effective at doing this, but research has also shown that it doubled the risk of breast cancer for the daughters of the women who took it<sup>55</sup>. This shows how a hormone, when present at the wrong time (in this case during the development of baby girls in the womb) can lead to problems later in life. What if hormone mimicking environmental chemicals to which pregnant women are exposed today have similar effects?



### Some chemicals found in our environment that have oestrogen-disrupting properties

- DDT – although banned in Europe for decades, the breakdown products of this pesticide are still found in the food chain, and therefore food is the main exposure route<sup>56</sup>.
- Several other pesticides e.g. some pyrethroid insecticides<sup>57,58</sup> and methoxychlor, which is now banned, also act on the oestrogen receptor<sup>59</sup>.
- Polychlorinated biphenyls (PCBs) – used in capacitors and transformers, and some building materials. Manufacture has long ceased in Europe but because PCBs are highly persistent, exposure still occurs, mostly via food<sup>60,61</sup>.
- Dioxins – these are by-products which are not produced intentionally but are released during burning coal, oil or chlorinated materials. They are released from incinerators, pulp and paper mills, and factories, such as metal processing works. They are highly toxic and found in the food chain<sup>8,62</sup>.
- Bisphenol A (BPA) - used in plastics and resins to make water and food storage containers, food and drink can linings, tableware, dental sealants and babies' bottles. Exposure occurs via leaching of BPA into the food and drink from the containers<sup>63</sup>.
- Parabens - preservatives and antioxidants used in toiletries and cosmetics e.g. underarm deodorants. Test tube experiments suggest several parabens can disrupt oestrogen, and butyl-paraben and butyl-paraben absorbs through the skin<sup>64,65</sup>.
- UV filters - e.g. benzophenone and 4-MBC. Several chemicals used in sun creams are able to disrupt oestrogen and cause effects in animals. Some oestrogenic UV filters can be absorbed through the skin<sup>66,67,68,69</sup>.
- Alkylphenols – including nonyl phenol (NP) and octyl phenol (OP) – from plastics, paints, inks and detergents, and used in textile processing. Nonyl phenol is now highly regulated, but both NP and OP are oestrogenic in organisms. May be found as contaminants in food. Exposure can arise via skin absorption, inhalation and food<sup>70,71</sup>.

Unfortunately, early studies on the link between chemicals and breast cancer did not look at multiple exposures at critical times. This may be the reason why such studies have been largely inconclusive.

The more scientists learn about the role of chemicals in human health the clearer it becomes that a different approach is needed, one which examines exposure to chemicals in a more relevant way. Research has recently highlighted two critical factors:

- i) The cocktail of oestrogen mimicking chemicals to which we are all exposed (the “cocktail effect”) and
- ii) The vulnerable stages of development when exposure occurs (“timing”).

These realizations have made the theory of oestrogen-mimicking chemicals and their involvement in breast cancer increasingly plausible. Studies have been published which investigate the timing and nature of exposure to oestrogen-mimicking chemicals and provide invaluable insight into the complicated origins of breast cancer.

### I) THE COCKTAIL EFFECT

Despite the theory of the role of oestrogen mimicking chemicals in breast cancer, it will be almost impossible to prove the involvement of specific chemicals, particularly because we are never exposed to single chemicals on their own. Our modern lifestyles expose us to a cocktail of different chemicals, many of which have hormone-like properties. Recent studies show that a number of different chemicals can add to the effects of natural oestrogen, even when those man-made oestrogen mimicking chemicals are present at very low levels that would not cause an effect on their own<sup>5,72</sup>. There is new evidence that for some women current exposure to a mixture of oestrogen mimicking chemicals

can influence the risk of breast cancer. A study among Spanish women shows, for the first time, that breast cancer risk is associated with the total amount of certain man-made oestrogen mimicking chemicals (excluding natural hormones) found in a woman’s body<sup>73</sup>. This is the first evidence that oestrogen mimicking chemicals in our environment can play a role in the development of breast cancer.

### II) TIMING OF EXPOSURES

As well as looking at the mixture of chemicals to which we are exposed, it is vital to look at the amounts during the most important times of development such as development in the womb and during puberty.

A recent study in the US has highlighted the profound impact that chemicals can have if exposure occurs during puberty. The study showed that women exposed during puberty to relatively high levels of DDT were five times more likely to develop breast cancer later in life than women with lower exposures<sup>74</sup>. The study also found that exposure after puberty does not increase the risk.

The tragic story of DES shows that exposure to oestrogen mimicking chemicals in the womb can have a devastating impact on the development of the breast later in life. Studies on pregnant rodents using an oestrogen mimicking chemical called bisphenol A (BPA - widely used in consumer products) have also shown that *in utero* exposure can alter the development of the breast tissue in the growing foetus, with possible consequences for breast cancer in later life<sup>75,76</sup>. Indeed, exposure to this oestrogen mimicking chemical makes animals more sensitive to mammary cancer later in life when subsequently exposed to a cancer causing agent<sup>77</sup>. There is not enough evidence to confirm a link in humans yet, but many scientists are increasingly worried because exposure to BPA is so widespread.

These studies show why it is vital to study exposure to potential breast cancer causing chemicals during the critical time period, which may be several decades before the disease occurs. Only then will scientists be able to work out which specific chemicals might be implicated in breast cancer.

### Preventing breast cancer: A way forward

Women wishing to reduce the chance of developing breast cancer can make choices about some aspects of their lifestyle, such as alcohol consumption. However, women have no control over many of the established risk factors, such as late age at menopause. Therefore, few proven options for reducing breast cancer exist but bearing in mind the mounting evidence, it can be argued that it would be wise to try to reduce exposure to hormone mimicking chemicals. The Royal Society in the UK<sup>78</sup>, with reference to endocrine disrupting chemicals (EDCs), has said...

*“Despite the uncertainty, it is prudent to minimise exposure of humans, especially pregnant women, to EDCs.”*

Similarly, the 2005 Prague Declaration on Endocrine Disruption<sup>79</sup>, signed by more than 200 scientific experts from across Europe and the US recommends precautionary action on endocrine disrupting chemicals...

*“For the foreseeable future, regulation of endocrine disrupters will have to cope with the tension between the biological plausibility of serious, perhaps irreversible damage and delays in generating data suitable for comprehensive risk assessment. In view of the magnitude of the potential risks, we strongly believe that scientific uncertainty should not delay precautionary action for risk reduction.”*

Women may choose to limit the unnecessary use of household chemicals, plastic food wrappings, DIY products, and cosmetics. They may also choose to avoid pesticides by eating organically produced fruit and vegetables. But is it really practical for women to have a list of all the known oestrogen mimicking chemicals, and look at each and every label in the supermarket trolley: on toiletries, fruit and vegetables or in all the products in the home including that new smell emanating from the recently replaced shower curtain or kitchen floor?

The answer is that regulatory intervention is needed. CHEM Trust and the Health and Environment Alliance (HEAL) believe it should be the responsibility of regulatory authorities to ensure harmful chemicals, particularly hormone disruptors, are identified and are phased out in favour of safer alternatives.

In the short term, given the number of chemicals potentially involved, and the other confounding factors, it will be impossible to fully elucidate the role chemical exposures are playing in breast cancer. However, in the face of so much human tragedy, well respected international scientists are beginning to raise questions as to how much proof is enough. Some feel that threshold has already been reached.

It is relatively easy for governments to put the ball into the court of the individual and to talk of exercise and weight control. However, the increasing scientific evidence is now demanding that governments also play a part and ensure better control of chemical exposures.



## Further Information

**CHEM Trust website – Section: “Diseases: Breast cancer”**

<http://www.chemtrust.org.uk/>

**Health and Environment Alliance (HEAL) - Chemicals Health Monitor project website – Section “Chemicals and Diseases: Breast cancer”**

<http://www.chemicalshealthmonitor.org/>

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### ***The risk factors for breast cancer***

#### ***Solving the riddle of the missing causes***

Only 50% of breast cancers can be linked to specific established or “known” causes. These include genetic predisposition; a woman’s total lifetime exposure to oestrogen; the pill and HRT; weight gain and lack of exercise; and, alcohol consumption.

What other factors might be playing a role? Given that exposure to natural and synthetic oestrogens (in the pill and HRT) are both recognised to contribute to the risk, this publication argues that other oestrogenic mimicking chemicals or hormone disrupting chemicals may be playing a role. Modern life is exposing us all to a cocktail of chemicals, some of which are known to disrupt our hormones, including oestrogen. Hormone disrupting chemicals include some pesticides, dioxins which contaminate our food, Bisphenol A that can leak from tin cans and plastic containers, and some UV filters used in sunblock.

Research indicates that better control of such chemicals could make a real difference.

In reading this report it is hoped you will be able to make up your own mind whether breast cancer is possibly more preventable than you had previously thought.



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# HRT Drugs Found to Cause Abnormal Mammograms, Increased Breast Cancer Risk

Tuesday, August 19, 2008 by: David Gutierrez, staff writer

(NaturalNews) Hormone replacement therapy (HRT) may increase women's risk of developing breast cancer and interfere with cancer diagnostic techniques after as little as one year, according to a new large-scale study conducted by researchers from the Los Angeles Biomedical Research Institute and published in the journal *Archives of Internal Medicine*.

Researchers used data from 16,600 postmenopausal women who had participated in the National Institutes of Health's Women's Health Initiative (WHI), comparing those who underwent combined HRT as a [treatment](#) for menopause symptoms with those who were given a [placebo](#). The study did not look at [women](#) who underwent estrogen-only [HRT](#).

In combined HRT, women are treated with a combination of the hormones [estrogen](#) and progesterone.

The combined HRT treatment in the original WHI study was halted early in 2002, when researchers found that women undergoing the treatment had a higher risk of invasive [breast cancer](#), heart disease and stroke. But analysis of those [results](#) suggested that it took at least five years for those problems to develop, and that they occurred mostly in older women.

The current study confirmed the WHI's conclusion that combined HRT led to one additional case of breast [cancer](#) per 1,000 treatments, but it also found evidence that problems could emerge more quickly than previously believed, and in younger women.

Most significantly, according to lead researcher Rowan Chlebowski, combined HRT increased women's [risk](#) of experiencing abnormal [mammograms](#).

After only one year of combined HRT, women had a 4 percent higher chance of an abnormal [mammogram](#) than women not receiving HRT. After five years, their risk was 11 percent higher than those in the control group.

In absolute terms, this meant that while only 23 percent of the women in the placebo group had abnormal mammograms, 35 percent of the women in the combined HRT group did. Nearly twice as many women in the combined HRT group as in the placebo group - 10 percent as opposed to 6 percent - had breast [biopsies](#) ordered by their doctors. According to Chlebowski, this amounted to one "otherwise

avoidable" [biopsy](#) for every 25 women taking combined HRT, and one abnormal mammogram for every 10 combined HRT patients.

In contrast to prior studies that found combined HRT relatively harmless for younger women, Chlebowski noted that "the finding may impact women just entering [menopause](#) as well."

Up to one year after the discontinuation of combined HRT, "adverse effects on mammogram and breast biopsy performance were seen even in younger women [in their 40s]," he said.

The rate of positive biopsies was slightly lower among women in the combined HRT group than women in the placebo group. This suggests that the early phases of combined HRT interfere with the ability of mammograms and biopsies to properly diagnose breast cancer.

This effect may come from the fact that combined HRT is well-known to thicken women's [breast tissue](#); studies have shown that mammograms have more trouble detecting tumors in more dense breasts. But some researchers warned that the effects of HRT are complex, and that scientists do not necessarily understand them well.

"We have clinical trials that show women's mammograms over time, and anyone can see with a naked eye that the breast tissue has changed. There are so many hormone-sensitive cells in the breast," said Dr. Christina Clarke of the Northern California Cancer Center and the Stanford Comprehensive Cancer Center. "These mammograms are harder to read. It's concerning that mammography doesn't work as well in these women."

Chlebowski urged women who are considering HRT to "take the results of this study into consideration and consult with their physicians before undergoing even short-term hormone [therapy](#)."

Susan Kutner, of the Kaiser Permanente Santa Teresa Medical Center in San Jose, Calif., agreed. She encouraged women to consider not just the physical consequences, but also the psychological impacts of having to undergo more biopsies.

"Psychologically, it's a big deal for a woman to be told that there's something abnormal," she said.

[Lean mass loss is associated with low protein intake during dietary-induced weight loss in postmenopausal women.](#)

J Am Diet Assoc. 2008 Jul;108(7):1216-20

Authors: Bopp MJ, Houston DK, Lenchik L, Easter L, Kritchevsky SB, Nicklas BJ

The health and quality-of-life implications of overweight and obesity span all ages in the United States. We investigated the association between dietary protein intake and loss of lean mass during weight loss in postmenopausal women through a retrospective analysis of a 20-week randomized, controlled diet and exercise intervention in women aged 50 to 70 years. Weight loss was achieved by differing levels of caloric restriction and exercise.

The diet-only group reduced caloric intake by 2,800 kcal/week, and the exercise groups reduced caloric intake by 2,400 kcal/week and expended approximately 400 kcal/week through aerobic exercise. Total and appendicular lean mass was measured using dual energy x-ray absorptiometry. Linear regression analysis was used to examine the association between changes in lean mass and appendicular lean mass and dietary protein intake. Average weight loss was 10.8 $\pm$ 4.0 kg, with an average of 32% of total weight lost as lean mass.

Protein intake averaged 0.62 g/kg body weight/day (range=0.47 to 0.8 g/kg body weight/day). Participants who consumed higher amounts of dietary protein lost less lean mass and appendicular lean mass ( $r=0.3$ ,  $P=0.01$  and  $r=0.41$ ,  $P<0.001$ , respectively). These associations remained significant after adjusting for intervention group and body size. Therefore, inadequate protein intake during caloric restriction may be associated with adverse body-composition changes in postmenopausal women.

PMID: 18589032 [PubMed - indexed for MEDLINE]

# Teens carry 30 per cent more BPA than rest of population

Submitted by [Drew Kaplan](#) on August 30, 2010 – 12:48 pm

Teenagers may carry the highest levels of bisphenol A – about 30 per cent more than the rest of the population, according to the first national survey about the compound conducted by Statistics Canada, but exposure to the estrogen-mimicking chemical is widespread, with detectable levels in 91 per cent of Canadians.

The survey, released Monday, found that the average level of BPA, as the substance is known, was just over one part per billion, an exceedingly small amount, but still a thousand times higher than natural levels of estrogen found in the body.

Statistics Canada said its data, based on urine samples collected from more than 5,400 people aged six to 79, suggest there is “continual widespread exposure in the Canadian population” to BPA. The Statscan sampling is the largest such effort done to date in the world.

“Although BPA may constitute a health risk, no guidance values are currently available in Canada for urinary BPA,” the federal agency said of its findings.

The everyday chemical is used to produce everything from CDs to the liners of nearly all tin cans, and has emerged as one of the most debated substances in use because of concerns that exposures amount to receiving an extra dose of estrogen.

Two years ago, Canada was the first country in the world to propose declaring it a toxic substance, although it has yet to do so. Both the U.S. Environmental Protection Agency and the Food and Drug Administration have announced that they are conducting safety of the chemical.

Some scientists and public-health advocates are worried about even these trace amounts, saying they could contribute to increased risk of breast cancer and precocious puberty in girls, among other hormonally caused health impacts that have been observed in animal experiments using low-level exposures to the compound.

Health Canada said it wasn't surprised by the findings because the results are in line with research from other advanced countries showing nearly everyone has some BPA.

As for possible health concerns, it said its scientists are conducting research “related to the potential effects of low concentrations of BPA on human health.”

Food is considered the major source of BPA. Teenagers had the highest average amounts, possibly because they eat more food relative to their body size or have metabolic differences.

Monday's survey has led to calls to further regulate BPA.

“The No. 1 priority at the moment has got to be getting it out of the lining of tin cans,” said Rick Smith, executive director of Environmental Defence, an advocacy group.

“When nine out of 10 Canadians have a hormonally active chemical in their body, for which easy alternatives are available ... why not make some further changes with respect to BPA?”

The trade association representing companies making BPA said the Statscan findings show that Canadians shouldn't be worried about any possible health hazards.

Martin Mittelstaedt

From Tuesday's Globe and Mail

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BPA linked to male sex problems

More health risks

View

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The trade association representing companies making BPA said the Statscan findings show that Canadians shouldn't be worried about any possible health hazards.

The new data on consumer exposure to BPA in Canada "is very reassuring and confirms that people are exposed to only minute levels that are eliminated from the body," said Steven Hentges, a spokesman for the American Chemistry Council.

When people ingest BPA through food, about half is broken down in the digestive track into a harmless compound that doesn't have estrogenic activity every six hours or so.

The fact that most people have the chemical in their urine suggests they were having regular exposures in the 24 hours to 36 hours before their tests, says Frederick vom Saal, a biologist at the University of Missouri and a leading U.S. researcher on BPA.

Dr. vom Saal said he found it "really concerning" that younger people had higher levels than those who are older because exposure to hormones during key points in childhood development can cause permanent, lifetime changes in the way cells are organized and operate.

But the view that BPA represents a threat is disputed.

"The presence of a substance doesn't mean anything other than that it's there. It doesn't mean that it causes any harm," said Joe Schwarcz director of McGill University's Office for Science and Society.

Dr. Schwarcz says the bio-monitoring data would need to be followed up by decades of surveillance to find out whether health outcomes varied by exposure to the chemical.

<http://www.theglobeandmail.com/life/health/teens-carry-30-per-cent-more-bpa-than-rest-of-population/article1674153/>

# Thirty per cent of breast cancer 'is caused by obesity'

Submitted by [vermont](#) on March 31, 2010

Jenny Hope

Source: <http://www.dailymail.co.uk/health/article-1260716/Thirty-cent-breast-cancer-caused-obesity.html>

Up to a third of breast cancer cases could be avoided if women ate less and exercised more, researchers claim.

Experts believe more than 14,000 women a year would probably not develop the disease if they had adopted healthier behaviour from an early age.

Modern lifestyles which feature regular drinking, lack of exercise and increased obesity are fuelling the rise of the disease, the European Breast Cancer Conference heard yesterday.

**Around 4n 5,000 cases** of breast cancer are diagnosed each year in Britain.

Carlo La Vecchia, of Milan University, told the conference in Barcelona: 'What can be achieved with screening has been achieved. It's time to move on to other things.'

Dr La Vecchia said the International Agency for Research on Cancer estimates that 25 to 30 per cent of cases could be avoided if women were thinner and did more exercise.

But Robert Baan, an IARC expert, said it was not clear if already overweight women could lower their cancer risk by slimming down or if long-term damage had already been done.

More...

Moderate drinking lowers risk of developing rheumatoid arthritis and slows progression of disease, study finds

The calorie conqueror: Herbal pill 'can cut your appetite by a fifth ... and even cure a sweet tooth'

Around one in five British women is classified as obese. Research shows they are almost 50 per cent more likely to die from breast cancer than women carrying fewer pounds.

It is unclear why obese women are more at risk, although changes in sex hormone levels triggered by weight gain could be behind oestrogen-dependent tumours, which form the majority of cases.

The World Cancer Research Fund last year suggested up to 40 per cent of diagnosed women – around 18,000 a year – could avoid cancer by adopting a healthier lifestyle.

Studies show drinking one large glass of wine a day increases the chances of developing the disease by a fifth, say experts. Again, this could be linked to alcohol raising levels of oestrogen.

Dr Rachel Thompson said the WCRF had reviewed 954 separate studies.

‘The evidence is now convincing that drinking alcohol, being physically inactive and having excess body fat all increase risk of breast cancer,’ she said.

‘There is also convincing evidence that breastfeeding reduces the mother’s risk of breast cancer. Overall, we estimate about 40 per cent of breast cancer cases in the UK could be prevented through these lifestyle factors.’

Delegates also heard a warning from a British surgeon that increasing numbers of women who have a breast removed to treat cancer are panicking into having a second mastectomy.

Ajay Sahu, who works at Frenchay Hospital, Bristol, said many women diagnosed with the disease are extremely frightened and make the wrong decision in a hurry – despite little evidence it will improve their survival chances.

He said a study of 27 patients who had asked for the removal of their unaffected breast revealed all had overestimated their risk of developing a second tumour by five to ten times.

After ‘cooling off’ for a year, 23 chose not to have the second operation.

The conference will hear today how breast cancer survivors can safely try for a family without triggering a recurrence of the disease.

A review of 14 trials, involving thousands of survivors, showed that not only was pregnancy safe, it might improve their chances of beating the disease in the long-term.

Those who got pregnant had a 42 per cent cut in their risk of dying from cancer compared to those who did not have a baby, researchers found.

<http://www.dailymail.co.uk/health/article-1260716/Thirty-cent-breast-cancer-caused-obesity.html>

Drink more tea! Eat more vegetables! Throw out your antiperspirant!” Women are bombarded with advice on how to reduce their risk for breast cancer. What you often don’t hear is that none of these methods can guarantee you won’t get breast cancer, and much of this advice is based on inconclusive—and, sometimes, nonexistent—evidence. Before you start buying broccoli by the bushel, consider these facts about risk.

**Risk reduction is not the same as prevention.**

Until we know the causes of breast cancer, we cannot prevent it. Methods of risk reduction may lower your chances, but they don’t make you immune.

**70% of people with breast cancer have none of the known risk factors beside age.**

Not including being over age 50, the “known” risk factors for breast cancer (starting menstruation before age 12, starting menopause after age 55, having children after age 30 or not at all, having a parent, sibling or child with breast cancer) are present in only 30% of breast cancer cases.

*(Source: US General Accounting Office, GAO/PEMD-92-12, 1991)*

**Risk factors do not cause cancer.**

Finding out you are at “high risk” for breast cancer means you have a high number of risk factors for the disease. But risk factors do not cause breast cancer. Having one or more risk factors does not mean you will develop cancer.

**Measuring individual risk is still a matter of guesswork.**

Despite the fact that the “known” risk factors only explain 30% of cases, they are still used to determine whether you are at “high” risk. In addition, risk assessments are based on studies of large numbers of people. While these statistics are helpful at measuring trends, they are far less effective in calculating an individual’s risk.

**“One in seven” is a lifetime risk.**

This much quoted statistic is an individual’s cumulative risk over an 85-year lifetime. It does not mean that at any given point one out of every seven women has breast cancer. Rather, if all women lived to be 85, one in seven would develop the disease sometime during her life. The good news is that six out of seven people will never get breast cancer. The bad news is that 30 years ago 19 out of 20 people never would.

**Numbers aren’t always what they seem.**

There’s a difference between relative and absolute risk. For example, imagine a study with 200 people. 100 people eat prunes, and another 100 don’t. One person in the prune-eating group gets cancer, while 4 in the non-prune-eating group get cancer. While the difference is three people, the relative risk reduction from eating prunes is 75% (three divided by the four). Pay attention to the real numbers behind the statistics.

**It will take fundamental changes in society to truly prevent breast cancer.**

There is growing evidence that our increasing use of pesticides and environmental toxins is making us sick. Despite this fact, the predominant message in risk reduction is “exercise and eat right.” It is far easier to tell people to eat less fat than it is to get corporations to stop using harmful chemicals. And while it may seem easier for us to change our lifestyles than to push for changes in society, it may be the only way we can stop the epidemic.

Join us as we press for the changes that will lead to true prevention and a real cure!

**Myths and Facts about Breast Cancer Risk Factors:**

Many so-called risk factors are characteristics beyond our control. You can't change when you started your period or began menopause, or the fact that your mother has breast cancer (5–10% of breast cancer cases are inherited). Nor can you stop yourself from getting older (77% of breast cancer cases occur in women over age 50), or change your race (white women are at a slightly higher risk, but no racial group is without risk). So what can you do? There is a lot of talk about what you should and should not do to control your risk. Here are the facts:

**“Risk Increaseers”**

**Alcohol:** Studies have been inconsistent, but some studies show that 2 or more drinks a day can slightly increase risk.

**Antiperspirants:** Antiperspirants and many other body care products can contain parabens (a preservative), phthalates (often an ingredient in “fragrance”), and other harmful chemicals, some of which may be linked to breast cancer. Learn more at [www.ThinkBeforeYouPink.org](http://www.ThinkBeforeYouPink.org).

**Birth control pills:** Most studies show little or no increase in risk from taking birth control pills. A small increase in relative risk was seen during the use of birth control pills, and in the ten years after stopping use.

**Bras:** The idea that bras increase risk is based on the theory that bras slow the flow of fluids and keep toxins in the breast area. An interesting idea that hasn't been studied much. There is little evidence to show that bras have an impact on risk.

**High-fat diet:** There are plenty of reasons to avoid a high-fat diet, but breast cancer is not one of them. Studies have not conclusively shown that a high-fat diet increases breast cancer risk. One largely ignored theory as to a connection between fatty diets and cancer is that some fatty foods contain high concentrations of pesticides.

**Hormone replacement therapy (HRT):** Breast cancer is an estrogen-driven disease, so it is not surprising that estrogen replacement therapy and HRT combining estrogen with progestin has been shown to increase the risk of breast cancer.

**Obesity:** Some studies suggest that obesity pre-menopausally reduces the risk for breast cancer, while post-menopausally it increases risk. This may be related to an increased amount of estrogen in the body that results from post-menopausal obesity.

**Radiation:** Ionizing radiation is a known cause of breast and other cancers. Sources of radiation include x-rays and nuclear waste. People should avoid unnecessary x-rays, especially in the teen years, when their tissue is growing and developing.

**“Risk Reducers”**

**Breast-feeding:** Breast-feeding your child appears to slightly decrease your risk for breast cancer. One well-researched explanation is that breast feeding reduces the amount of estrogen in your body. Another theory is that breast-feeding expels some of the accumulated toxins from the breast.

**Diet/Nutrition:** From tomatoes to tea, and flax seeds to soy, numerous items have been called “anti-cancer foods.” How much they can reduce one's risk remains unknown. There appears to be some protection from monounsaturated fats like olive oil, and from green leafy vegetables and dark yellow/orange vegetables like carrots. This is a highly studied and highly controversial area of research.

**Exercise:** Results of studies have been mixed. While regular exercise is certainly good for your general health, its benefit for breast cancer risk reduction is not clear. Some studies show benefit from frequent strenuous exercise started in the teen years.

**Prophylactic mastectomy:** While a highly publicized study announced a 90% reduction in breast cancer deaths in women who had their healthy breasts removed, its important to note that in this study 7

women developed breast cancer despite the surgery, and over 600 women had needless surgery done.

**Raloxifen:** A drug currently prescribed for osteoporosis and being tested against tamoxifen for risk reduction (see below), raloxifen has not been approved for reducing the risk of breast cancer in healthy women.

**Tamoxifen:** Used to reduce the risk of recurrence in some women who have breast cancer and to treat breast cancer that has spread, this drug is being pushed as a so-called “prevention pill” for healthy women. The long term effects of the drug in healthy women is unknown. In one highly publicized study of this drug, 85 women taking the drug developed breast cancer, 3 of whom died, and an additional 2 women died as a result of side effects from the drug. Women considering tamoxifen for risk reduction should be extremely

cautious. Contact BCA for more information. The decision to take this drug should not be taken lightly.

*[Updated October 2004]*

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## **Good Night, Sleep Tight**

To read the full article please click on link below:

<http://www.womensinternational.com/connections/Sleep.html>

[Clin Oncol \(R Coll Radiol\)](#). 2010 May;22(4):281-8. Epub 2010 Feb 26.

## **Metabolic syndrome, central obesity and insulin resistance are associated with adverse pathological features in postmenopausal breast cancer.**

[Healy LA](#), [Ryan AM](#), [Carroll P](#), [Ennis D](#), [Crowley V](#), [Boyle T](#), [Kennedy MJ](#), [Connolly E](#), [Reynolds JV](#).

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### **Abstract**

**AIMS:** Obesity is associated with both an increased risk of postmenopausal breast cancer and increased mortality rates. The mechanism is unclear, and central (visceral) obesity, insulin resistance, altered sex steroids and altered adipokines are mooted as possible factors. These features may cluster in the so-called metabolic syndrome. The relevance of metabolic syndrome to the biology of breast cancer is unknown, and this was the focus of the present study.

**MATERIALS AND METHODS:** All postmenopausal women with newly diagnosed breast cancer (n=105) were recruited. A detailed clinical history was carried out, as well as a body composition analysis, metabolic screen and measurement of adipokines and inflammatory markers.

**RESULTS:** The median age was 68 years (40-94 years) and the mean body mass index was 28.3+/-5.2 kg/m<sup>2</sup>, with 87% of patients centrally obese. Metabolic syndrome was diagnosed in 39% of patients, and was significantly associated with central obesity (P<0.005) and increased inflammation, with C-reactive protein levels doubling in metabolic syndrome patients compared with non-metabolic syndrome patients (10.3 vs 5.8 mg/l; P=0.084). Patients with a later pathological stage (II-IV) were significantly more likely to be obese (P=0.007), centrally obese (P=0.009), hyperglycaemic (P=0.047) and hyperinsulinaemic (P=0.026); 51% had metabolic syndrome compared with 12% for early stage disease. Patients with node-positive disease were significantly more likely to be hyperinsulinaemic (P=0.030) and have metabolic syndrome (P=0.028) than patients with node-negative disease.

**DISCUSSION:** The data suggest that metabolic syndrome and central obesity are common in postmenopausal breast cancer patients, and that metabolic syndrome may be associated with a more aggressive tumour biology.

PMID: 20189371 [PubMed - indexed for MEDLINE]

# This Daily Mistake Can Make You Obese and Forgetful

Posted By [Dr. Mercola](#) | August 23 2010 | 215,486 views

People who sleep either more or fewer than seven hours a day, including naps, have an increased risk for cardiovascular disease, according to a new study.

Sleeping fewer than five hours a day more than doubles your risk of being diagnosed with angina, coronary heart disease, heart attack or stroke. And sleeping more than seven hours also increases your risk of cardiovascular disease; more than nine hours of sleep results in a 50 percent increase in risk.

The Daily Telegraph reports:

*"The most at-risk group was adults under 60 years of age who slept five hours or fewer a night. They increased their risk of developing cardiovascular disease more than threefold ... Women who skimped on sleep ... were more than two-and-a-half times as likely to develop cardiovascular disease."*

In related news, researchers have also found that sleeping in after a few days of missed sleep can help restore you after missed sleep, nearly erasing any lingering sense of fatigue and mental fuzziness.

How much recovery sleep you need to feel recharged depends on how much sleep you've lost.

In the study, volunteers deprived of about three hours of sleep a night for five nights felt nearly, but not quite, back to normal after ten hours of sleep.

To help you get the optimal amount of sleep each night, U.S. News & World Report suggests:

*"... [T]ry removing all electronic media devices — BlackBerry, TV, computer — from your bedroom. These distractions ... are a prime reason many of us turn out the lights an hour or two later than we originally intended."*

## Sources:

- » [The Daily Telegraph August 3, 2010](#)
- » [Physorg August 1, 2010](#)
- » [U.S. News & World Report August 4, 2010](#)
- » [Sleep 2010;33\(8\):1037-1042](#)
- » [Sleep 2010;33\(8\):1013-1026](#)

Dr. Mercola's Comments:

According to this year's "[Sleep in America Poll](#)" by The National Sleep Foundation, the majority of Americans are not getting enough shut-eye. Only about four in 10 respondents reported getting a good night's sleep every night, or almost every night, of the week.

Despite it being so common as to be considered "normal" by many, lack of sound sleep extracts a heavy toll on your health, both mentally and physically.

## How Lack of Sleep Impacts Your Health

Your circadian rhythm evolved over hundreds of generations to align your physiology with your environment. Your body clock is "set" to sleep at night and stay awake during daylight hours, just like your ancestors did.

If you deprive yourself of sleep, or switch your waking/sleeping rhythm due to shift work, for example, you send conflicting signals to your body.

Too little sleep impacts your levels of thyroid and stress hormones, which in turn can affect your memory, immune system, heart and metabolism, and much more. Over time, lack of sleep can lead to:

- High blood sugar levels and an [increased risk of diabetes](#) -- Sleep-deprived subjects tend to eat more sweet and starchy foods rather than vegetables and dairy products. Researchers suspect these cravings stem from the fact that your brain is fueled by glucose (blood sugar); therefore, when lack of sleep occurs, your brain searches for carbohydrates.

In short, sleep deprivation puts your body into a pre-diabetic state, and makes you feel hungry, even if you've already eaten.

- [Weight gain](#) -- When you are sleep deprived, your body decreases production of leptin, the hormone that tells your brain there is no need for more food. At the same time it increases levels of ghrelin, a hormone that triggers hunger.
- [Accelerated aging](#)
- [Hypertension](#) (high blood pressure) [Depression](#)
- [Increased risk of cancer](#) by altering the balance of hormones in your body. (Tumors grow two to three times faster in laboratory animals with severe sleep dysfunctions)

Likewise, working on a non-traditional schedule, which may include staying up all night, throws off your body's circadian rhythms. Attempts to sleep at inappropriate phases of the circadian cycle will usually result in shorter sleep episodes and more awakenings.

The short-term effects of shift work can be likened to symptoms of jet lag, such as daytime sleepiness, disturbed sleep, gastrointestinal problems and blunted alertness. Long-term, however, this state can take a toll, as shift workers continue live out of synch with their daily surroundings.

A number of studies indicate shift workers face a higher risk of heart disease -- possibly due to the metabolic effects of working and sleeping unusual hours.

In the latest [study published in the journal Sleep](#), your risk of heart disease and stroke are also significantly increased if you sleep more, or fewer, than seven hours per day:

- Less than 5 hrs/night doubles your risk of angina, coronary heart disease, heart attack or stroke
- More than 7 hrs/night increases your risk of cardiovascular disease
- More than 9 hrs/night increases your risk of cardiovascular disease by 50 percent

Although the researchers were unable to determine the direct causative relationship between certain amounts of sleep and cardiovascular disease, they believe it is related to your endocrine and metabolic functions.

As mentioned earlier, sleep deprivation can impair your glucose tolerance, reduce your insulin sensitivity and raise your blood pressure, all of which are associated with hardening of your arteries.

### Can You Really Repay a Sleep Debt?

The [second Sleep study](#) mentioned above found that by sleeping in, say on a Saturday, you can relieve some of the symptoms of sleep deprivation.

According to David Dinges, head of the sleep and chronobiology unit at the University of Pennsylvania School of Medicine,

*"An additional hour or two of sleep in the morning after a period of chronic partial sleep loss has genuine benefits for continued recovery of behavioral alertness."*

However, for most people who don't sleep well, it has become a lifestyle pattern, and sleeping in on the weekends is not going to undo the damage being done.

A *chronic* lack of high-quality sleep simply cannot be recovered. You may feel rested and mentally sharper after sleeping in, but the mental benefit is temporary, while the graver health hazards are compounding.

Remember, your body does most of its repairs during sleep, so not getting enough of it can impair your immune system, leaving you less able to fight off diseases of ALL kinds.

### What's the Ideal Amount of Sleep?

There have been many varied theories on this over the years, but it seems we're getting closer to answering this question – at least scientifically.

Interestingly, while doing research on behalf of federal agencies "to find ways to reduce sleep need," Dr. Dinges discovered that many of the published reports on chronic sleep restriction over

the past 100 years had failed to adequately control how much sleep was actually obtained by the subjects, and did not take into account caffeine intake and a number of other variables that can influence your sense of alertness and cognitive performance despite lack of sleep.

Many of these previous flawed studies have [perpetuated the myth that you can safely make do with less than eight hours of sleep a day.](#)

As it turns out, sleeping less than eight hours a night has significant *cumulative* consequences.

[According to Dr. Dinges,](#)

*"Loss of sleep insidiously affects sustained attention, cognitive speed and accuracy, working memory, reaction time, and overall behavioral capability, often without the sleep-deprived person being aware of the deficits.*

*... These experiments have consistently demonstrated that neurobehavioral deficits develop in proportion to the dosage of sleep that people were allowed each night. When sleep was less than eight hours night after night, subjects showed systematic accumulation of cognitive impairments.*

*Across 10 days of restricted sleep, participants became progressively worse and eventually entered a zone of impairment comparable to that found after total sleep deprivation. This is a zone of impairment where it would be unsafe to drive or engage in other safety-sensitive tasks."*

Likewise, chronic disease states such as heart disease and diabetes take time to develop, and are therefore also influenced, long-term, by your sleeping habits over time.

That said, what IS the ideal amount of sleep?

Well, despite what you just read above, there's no one magic number that covers everyone at every age and circumstance.

Your age and activity level will determine your sleep needs to some extent. Children and teens, for instance, need more sleep than adults. However, your sleep needs are individual to you. You may require more or less sleep than someone of the same age, gender and activity level.

Part of the reason for the difference has to do with what the [National Sleep Foundation \(NSF\)](#) calls your basal sleep need and your sleep debt:

- **Basal Sleep Need:** The amount of sleep you need on a regular basis for optimal performance
- **Sleep Debt:** The accumulated sleep lost due to poor sleep habits, sickness, environmental factors and other causes

Studies suggest that *healthy adults have a basal sleep need of seven to eight hours each night*, corresponding nicely with the research findings just discussed.

But your individual sleep requirement may be anywhere between six and nine hours of sleep a night.

Your best bet is to *listen to your body!*

If you still feel tired when the alarm goes off, you probably aren't getting sufficient sleep.

It's best to observe how you feel immediately upon awakening rather than after you're up and moving around. Those first few moments of wakefulness, before your mind fully kicks into gear, are a better measure of how your body is feeling.

## How to Improve Your Sleep

First of all, if you're staying up late watching TV, surfing the Web, or working, it's time to set some limits. Determine a set bedtime for yourself, just as you do for your children, and avoid watching TV or using electronics for about an hour prior to going to bed. It is too stimulating to your brain, making it more difficult to "shut down" and fall asleep.

Instead, try spending this wind-down time doing something that soothes and relaxes your mind. You may want to spend time journaling, meditating, sipping herbal tea, washing your face, or reading a calming or spiritual book.

I also recommend getting to bed as early as possible. Your bodily systems, particularly your adrenals, do a majority of their recharging or recovering during the hours of 11 p.m. and 1 a.m., so you should definitely try to be asleep during those hours.

If you're having trouble falling or staying asleep because your mind is still racing or you're emotionally overwhelmed, I recommend you use [Emotional Freedom Techniques \(EFT\) for insomnia](#).

Other tips for getting good quality sleep include:

- Avoid before-bed snacks, particularly grains and sugars. This will raise blood sugar and inhibit sleep. Later, when blood sugar drops too low (hypoglycemia), you might wake up and not be able to fall back asleep.
- Eat a high-protein snack several hours before bed. This can provide the L-tryptophan need to produce melatonin and serotonin.
- Keep the temperature in your bedroom below 70 degrees F. Many people keep their homes and particularly the upstairs bedrooms too hot.

For a comprehensive list of practical solutions for sleep problems, be sure to read my [33 Secrets to a Good Night's Sleep](#).

If you're even slightly sleep deprived I encourage you to implement some of these tips tonight, as high-quality sleep is one of the most important factors in your health and quality of life.