Medical Knowledge

Prostate cancer risk factors

A risk factor is anything that affects your chance of getting a disease such as cancer. Different cancers have different risk factors. Some risk factors, like smoking, can be changed. Others, like a person's age or family history, can't be changed.
But having a risk factor, or even several, does not mean that you will get the disease. Many people with one or more risk factors never get cancer, while others who get cancer may have had few or no known risk factors.
Researchers have found several factors that might affect a man's risk of getting prostate cancer.

Age

Prostate cancer is rare in men younger than 40, but the chance of having prostate cancer rises rapidly after age 50. About 6 in 10 cases of prostate cancer are found in men older than 65.

Race/ethnicity

Prostate cancer occurs more often in African-American men and in Caribbean men of African ancestry than in men of other races. African-American men are also more than twice as likely to die of prostate cancer as white men. Prostate cancer occurs less often in Asian-American and Hispanic/Latino men than in non-Hispanic whites. The reasons for these racial and ethnic differences are not clear.

Geography

Prostate cancer is most common in North America, northwestern Europe, Australia, and on Caribbean islands. It is less common in Asia, Africa, Central America, and South America.
The reasons for this are not clear. More intensive screening in some developed countries probably accounts for at least part of this difference, but other factors such as lifestyle differences (diet, etc.) are likely to be important as well. For example, Asian Americans have a lower risk of prostate cancer than white Americans, but their risk is higher than that of men of similar backgrounds living in Asia.

Family history

Prostate cancer seems to run in some families, which suggests that in some cases there may be an inherited or genetic factor. (Still, most prostate cancers occur in men without a family history of it.)
Having a father or brother with prostate cancer more than doubles a man's risk of developing this disease. (The risk is higher for men who have a brother with the disease than for those who have a father with it.) The risk is much higher for men with several affected relatives, particularly if their relatives were young when the cancer was found.

Gene changes

Several inherited gene changes seem to raise prostate cancer risk, but they probably account for only a small percentage of cases overall. For example:

- Inherited mutations of the *BRCA1* or *BRCA2* genes raise the risk of breast and ovarian cancers in some families. Mutations in these genes (especially in *BRCA2*) may also increase prostate cancer risk in some men.
- Men with Lynch syndrome (also known as *hereditary non-polyposis colorectal cancer*, or HNPCC), a condition caused by inherited gene changes, have an increased risk for a number of cancers, including prostate cancer.

Other inherited gene changes can also raise a man's risk of prostate cancer. For more on some of these gene changes, see What causes prostate cancer?.

Factors with less clear effect on prostate cancer risk

Diet

The exact role of diet in prostate cancer is not clear, but several factors have been studied.
Men who eat a lot of red meat or high-fat dairy products appear to have a slightly higher chance of getting prostate cancer. These men also tend to eat fewer fruits and vegetables. Doctors aren't sure which of these factors is responsible for raising the risk.
Some studies have suggested that men who consume a lot of calcium (through food or supplements) may have a higher risk of developing prostate cancer. Dairy foods (which are often high in calcium) might also increase risk. But most studies have not found such a link with the levels of calcium found in the average diet, and it's important to note that calcium is known to have other important health benefits.

Obesity

Being obese (very overweight) does not seem to increase the overall risk of getting prostate cancer.
Some studies have found that obese men have a lower risk of getting a low-grade (less dangerous) form of the disease, but a higher risk of getting more aggressive prostate cancer. The reasons for this are not clear.
Some studies have also found that obese men may be at greater risk for having more advanced prostate cancer and of dying from prostate cancer, but not all studies have found this.

Smoking

Most studies have not found a link between smoking and *getting* prostate cancer. Some research has linked smoking to a possible small increased the risk of dying from prostate cancer, but this finding needs to be confirmed by other studies.

Chemical exposures

There is some evidence that firefighters can be exposed to chemicals that may increase their risk of prostate cancer.
A few studies have suggested a possible link between exposure to Agent Orange, a chemical used widely during the Vietnam War, and the risk of prostate cancer, although not all studies have found such a link. The Institute of Medicine considers there to be "limited/suggestive evidence" of a link between Agent Orange exposure and prostate cancer. To learn more, see *Agent Orange and Cancer*.

Inflammation of the prostate

Some studies have suggested that *prostatitis* (inflammation of the prostate gland) may be linked to an increased risk of prostate cancer, but other studies have not found such a link. Inflammation is often seen in samples of prostate tissue that also contain cancer. The link between the two is not yet clear, and is an active area of research.

Sexually transmitted infections

Researchers have looked to see if sexually transmitted infections (like gonorrhea or chlamydia) might increase the risk of prostate cancer, because they can lead to inflammation of the prostate. So far, studies have not agreed, and no firm conclusions have been reached.

Vasectomy

Some studies have suggested that men who have had a vasectomy (minor surgery to make men infertile) have a slightly increased risk for prostate cancer, but other studies have not found this. Research on this possible link is still under way.

Prostate Cancer Prevention and Early Detection

Prostate cancer can often be found early using a simple blood test, but it's not clear if the benefits of testing all men for prostate cancer outweigh the risks, such as finding (and treating) cancers that probably never would have caused any problems. Because of this, it's important to talk to **a healthcare provider** about the uncertainties, risks, and potential benefits of prostate cancer screening before deciding whether or not to be tested.

Prostate Physical Side Effects

http://www.cancer.org/treatment/treatmentsandsideeffects/physicalsideeffects/index

Breast Cancer

What are the risk factors for breast cancer?

Most women who have one or more breast cancer risk factors never develop breast cancer, while many women with breast cancer have no known risk factors (other than being a woman and growing older). Even when a woman with risk factors develops breast cancer, it’s hard to know just how much these factors might have contributed.

Some risk factors, like a person's age or race, can't be changed. Other risk factors are linked to cancer-causing factors in the environment or to personal behaviors, such as smoking, drinking, and diet. Some factors affect risk more than others, and your risk for breast cancer can change over time, due to things like aging or lifestyle.

Breast cancer risk factors you cannot change

1. **Being a woman**

   Simply being a woman is the main risk factor for breast cancer. Men can have breast cancer, too, but this disease is about 100 times more common in women than in men. This might be because men have less of the female hormones estrogen and progesterone, which can promote breast cancer cell growth.

2. **Getting older**

   As you get older, your risk of breast cancer goes up. Most invasive breast cancers (those that have spread from where they started) are found in women age 55 and older.

3. **Certain inherited genes**

   About 5% to 10% of breast cancer cases are thought to be hereditary, meaning that they result directly from gene defects (called *mutations*) passed on from a parent.

Genetic testing: Genetic testing can be done to look for mutations in the BRCA1 and BRCA2 genes (or less commonly in other genes such as *PTEN* or *TP53*). While testing can be helpful in some cases, the pros and cons need to be considered carefully.

Having a family history of breast cancer

1. Women who have close blood relatives with breast cancer have a higher risk of the disease.

Your race and ethnicity

Overall, white women are slightly more likely to develop breast cancer than African-American women, but African-American women are more likely to die of this cancer. In women under 45 years of age, breast cancer is more common in African-American women. Asian, Hispanic, and Native American women have a lower risk of developing and dying from breast cancer.

Starting menstruation (periods) before age 12

Women who have had more menstrual cycles because they started menstruating early (before age 12) have a slightly higher risk of breast cancer. The increase in risk may be due to a longer lifetime exposure to the hormones estrogen and progesterone.

Going through menopause after age 55

Women who have had more menstrual cycles because they went through menopause later (after age 55) have a slightly higher risk of breast cancer. The increase in risk may because they have a longer lifetime exposure to the hormones estrogen and progesterone.

Lifestyle-related breast cancer risk factors

Drinking alcohol

Drinking alcohol is clearly linked to an increased risk of developing breast cancer. The risk increases with the amount of alcohol consumed. Compared with non-drinkers, women who have 1 alcoholic drink a day

have a very small increase in risk. Those who have 2 to 5 drinks daily have about 1½ times the risk of women who don't drink alcohol. Excessive alcohol consumption is known to increase the risk of other cancers, too..

Being overweight or obese

Being overweight or obese after menopause increases breast cancer risk. by balancing your food intake with physical activity and avoiding excessive weight gain.

Physical activity

Evidence is growing that physical activity in the form of exercise reduces breast cancer risk. The main question is how much exercise is needed. In one study from the Women's Health Initiative, as little as 1¼ to 2½ hours per week of brisk walking reduced a woman's risk by 18%. Walking 10 hours a week reduced the risk a little more.

To reduce your risk of breast cancer, the American Cancer Society recommends that adults get at least 150 minutes of moderate intensity or 75 minutes of vigorous intensity activity each week (or a combination of these), preferably spread throughout the week.

Having children

Women who have not had children or who had their first child after age 30 have a slightly higher breast cancer risk overall. Having many pregnancies and becoming pregnant at an early age reduces breast cancer risk overall.

Birth control

Oral contraceptives: Studies have found that women using oral contraceptives (birth control pills) have a slightly higher risk of breast cancer than women who have never used them. contraceptives, women should discuss their other risk factors for breast cancer with their health care provider.

Breastfeeding

Some studies suggest that breastfeeding may slightly lower breast cancer risk, especially if it's continued for 1½ to 2 years. But this has been hard to study, especially in countries like the United States, where breastfeeding for this long is uncommon.

Factors with unclear effect on breast cancer risk

Tobacco smoke

For a long time, studies showed no link between cigarette smoking and breast cancer. But in recent years, more studies have shown that heavy smoking over a long-time is linked to a higher risk of breast cancer. In some studies, the risk was highest in certain groups, such as women who started smoking before they had their first child. The 2014 US Surgeon General's report on smoking concluded that there is "suggestive but not sufficient" evidence that smoking increases the risk of breast cancer.

Night work

Some studies have suggested that women who work at night, such as nurses on a night shift, might have an increased risk of breast cancer. This is a fairly recent finding, and more studies are looking at this. Some researchers think the effect may be due to changes in levels of melatonin, a hormone that's affected by the body's exposure to light, but other hormones are also being studied.

References:

For men:
http://www.cancer.org/cancer/prostatecancer/
http://www.cancer.org/cancer/prostatecancer/detailedguide/prostate-cancer-risk-factors
http://www.cancer.org/treatment/treatmentsandsideeffects/physicalsideeffects/index
For women:
http://www.cancer.org/search/index?QueryText=breast+cancer&Page=1