

## Market Analysis of Breast Cancer

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Breast cancer is a cancer that forms in the cells of the breasts. Breast cancer can occur in women and rarely in men. The symptoms of the breast cancer include a lump in the breast, bloody discharge from the nipple, changes in shape and size of the nipple or breast. There are 2 types of breast cancer: Non-invasive cancers stay within the milk ducts or lobules in the breast. They do not grow or invade in normal tissues within or beyond the breast. Non-invasive cancers are called as carcinoma in situ (in the same place) or pre-cancers. Invasive cancers do grow in normal, healthy tissues. Most breast cancers are invasive. Depending upon the type of cancer the treatment is determined, i.e., whether it is invasive or non-invasive cancer. Treatment varies depending upon the stage of cancer. It may consist of chemotherapy, surgery or radiation.

Early detection of breast cancer greatly increases the chances of successful treatment and saves the life. There are 2 major components of early detection of breast cancer: educate to promote early diagnosis and screening. There are 3 different types of screening tests available; they are the mammogram, clinical breast exam (CBE) and MRI (magnetic resonance imaging).

### Is Breast Cancer a Modern Illness?

Ancient Egyptians were the first to diagnose, treat and prevent breast cancer more than 3,500 years ago. Breast cancer is now the most well-known and researched cancers in the medical world today. People diagnosed with breast cancer at an early stage have a very good chance of a cancer-free future. But this was not the case earlier. The first case of any type of cancer documented in Egypt was a breast cancer in 1600 BC. Edwin Smith Papyrus, an ancient text found in 1860 in an Egyptian tomb, described 8 cases of ulcers or tumors of the breast. The first doctor, who attempted to treat this type of cancer, wrote: "There is no treatment!" Physicians and medical researchers in ancient period posited the following theories regarding the cause of the breast cancer: humoralism, punishment, divine, lack of sexual activity, physical injuries, fear of breast cancer, without the benefit of 21st-century diagnostics. In ancient times, they used to call it "the wandering womb" where they believed that the uterus could move throughout the body leaving health problems of every kind in its wake. It was not diagnosed until the 19th century, unless and until the cases of breast cancer increased. But the disease is somewhat controlled with improvement in sanitation and hence the lifespan of an individual is increased.

The first successful treatment for breast cancer was done by French surgeon Jean Louis Petit and later Scottish surgeon Benjamin Bell where the lymph nodes, breast tissue, and chest muscle are removed surgically. Surgeon William Stewart Halsted began performing and perfecting mastectomies around 1882. Halsted's mastectomies were invasive where breasts, lymph nodes, and underlying muscles are being removed and the procedure was deemed necessary to prevent cancer from recurring but often left patients with severe pain and disability.

By the 1970's, researchers began to develop lumpectomy- more limited surgery to remove only the cancerous tumor and any surrounding tissue affected by the tumor.

By 1985, researchers found that radiation followed by lumpectomy gave a chance of survival equal to the considerably more invasive mastectomy.

Around the 20th century, doctors used radiation therapy to shrink the cancerous cells. Chemotherapy became an option. It helped to shrink cancerous cells before surgery and prevent recurrence after surgery and treat cancer that is metastasized or has spread to other parts of the body. Scientists began to experiment with combined treatments to improve outcomes. Throughout the 1970's, this procedure has been continued and this led to a better understanding of how cancer can develop and spread throughout the body. This understanding led to the development of more effective targeted treatments. This approach to treat cancer and research is still continuing today.

In 1923, the first large-scale review of women with breast cancer was done by English scientist Janet Lane-Clayton, which identified several risk factors that are still considered today.

In 1980's and 1990's, thousands of women undergoing breast cancer treatment and high dose bone marrow transplants hoping to have a good result, which turned it to a disaster after the loss of 15-20% of women's life due to the treatment.

In 1995 report from the Nurses' Health Study and 2002 results of research from the Women's Health Initiative concluded that hormone replacement therapies which had become popular among menopausal women could significantly increase the risk of breast cancer.

In the late 1990's, scientists found that certain variants of the genes BRCA1 and BRCA2 are associated with 80% of breast cancer risk. Some women who discover this gene mutation within their genetic makeup will take proactive steps to reduce their risk of cancer, including preemptive mastectomies and

even hysterectomies.

As scientists deepen their understanding of the role of genetics in breast cancer risk, research on developing new techniques has been increased. Meanwhile, some research is being done on repair or even replaces harmful genes before breast cancer occurs.

As research continues to improve, there are several chances of every person to survive and can prevent breast cancer or any type of cancer. Taking healthy food, avoiding alcohol and smoking may be an important precaution from developing cancer. Regular self-exams and annual mammograms after 40 years old are recommended.

