

# Breast cancer implications on chinese, asian american, and american populations



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As far back as 1600 B. C., cancer has been a global phenomenon that has touched every individual in nuanced ways. Cancer is always being discussed; family members have been diagnosed and cured, traumatizing epidemiological statistics are constantly being reported, and innovative research and treatments are constantly debated about on the news. Although death rates for many individual cancer types have also declined, rates for a few cancers have stabilized or even increased. In the realm of breast cancer, rates in America have recently plateaued and decreased, whereas rates in China and the Asian American community have increased exponentially.

Breast cancer is the health condition in which tumors originate in the breast or metastases appear in other organs and spread towards breast tissue. 5-10% of breast cancer cases are genetic: inherited from parents (ex: BRCA). Breast cancer is one of most common cancers worldwide and in American women of all ethnic and racial groups. There is a 12.4% risk (one in every eight individuals) for breast cancer during lifetime. The most common breast cancer conditions are ductal or lobular carcinoma. There are 18 sub-types (ex: pre-invasive lesions) that have been found thus far to affect the health of the general population.

There are an abundance of biological and environmental risk factors that could lead or predispose oneself to breast cancer. Environmental risk factors include being of the female gender, being overweight or obese, lacking in appropriate physical exercise, excessive amounts of fast food intake, large amounts of alcohol consumption, hormone replacement therapy, late childbearing, not bearing a child at all, rapid industrialization and urban

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growth, and radiation that could lead to free radicals in the body. Biological risk factors include higher levels of oestrogen (a hormone that directly causes the growth of breast tissue), having one's first menstruation at an early age, family (genetic) history, and long life spans (older age allowing more genetic mistakes to occur).

Many treatments have been developed over the years to prevent or counter the effects of breast cancer. Preventative measures include mammographic screening every 2 years for women 40-70 years old and medications such as tamoxifen or raloxifene. One may also undergo preventative surgery in which you remove both breasts, due to breast cancer prevalence in your genetic history, in order to prevent breast cancer from occurring and metastasizing to other parts of your body. After breast cancer diagnosis, one may also undergo breast-conserving or mastectomy surgery. There have been a recent development of various therapies that could reduce a certain sub-type of breast cancer and/or prevent the breast cancer from reoccurring; these therapies include radiation and chemotherapy (non-specific) or hormone and targeted gene therapy (specific). Non-specific treatments target all the cells in the body in hopes of cover all continuously growing cells. Non-specific treatments are effective at killing off tumor cells, but they unfortunately kill off more normal cells such as hair follicles and digestive cells. Hormone therapy and targeted gene therapy aim to change a miniscule, extremely-focused part of the body in hopes of altering the genome or shifting the biological system into producing more or less of a specific signal.

Biological factors such as genetics and public health awareness, as well as social factors such as lifestyle habits and cultural mandates play influential and impactful roles, both directly and indirectly, in rates of oscillating breast cancer among communities in America and China. This begs the question: how have recent trends in cancer and mutations differed from patterns and rates in the past? As we adapt to industrialized western diets and lifestyles, are we suffering from cancer and mutations as unfortunate effects of the recent assimilation of sedentary routines? Particularly, how can cancer evolved throughout the demographics and populations in the United States and the Republic of China? Through studying Chinese immigrants in the American community (who represent a cross-cultural biological entity), I aim to observe cancer trends of individuals whose intersection of biological and social history straddle the two countries. When comparing a first world country with a rising, rapidly industrializing nation, how do cancer types and rates vary in communities with cross-cultural differences in socioeconomic status, diets, living conditions, etc.? What is breast cancer specifically, and how is this type of cancer implicit to cultural and regional differences? Finally, what are health, economic, and social implications of cancer to individuals at large and to the community as a whole?

Through a holistic and in-depth study of American, Chinese, and Chinese-American residents, I have gained a greater perspective in how our daily lives and environments can influence epigenetics and our biological systems to react in different ways. Although there are slight differences in informational access that have led to differences in breast cancer rates among various populations, biological and social factors such as rapid

industrialization, urban growth, late or infrequent childbearing, lack of breastfeeding, increase hormone regulating medications, stress, lack of physical activity, greater fast food intake, increased alcohol consumption, lack of public health awareness, and longer life spans have allows for greater incidences of breast cancer in Chinese, American, and Asian-American communities.

Breast cancer is currently the second most common cancer (behind skin cancer): there are more than 3.5 million American women currently living with breast cancer. There is a 252.7 thousand invasive-cancer case rate, a 63.4 thousand abnormal-cell case rate, and a 40.6 thousand individual-mortality rate (World Health Organization, 2016). A woman living in the United States has a 12.4% risk (1 in 8 individuals) to be diagnosed with breast cancer over her lifetime, a very intense percentage when looking at the general population size.

Five subtypes of breast cancer recently identified; these subtype occurrences correlate with genetic predisposition (and therefore breast cancer rates) in different racial and ethnic populations. In regards to racial trends, white and black populations (excluding Hispanic-intersecting demographics) have higher breast cancer incidence and mortality rates than other racial and ethnic groups. White women used to have slightly higher rates of breast cancer than blacks women, but that has changed in 2011-2015, when black women had breast cancer rates that were 42% higher than that of white women. Triple-negative breast cancer (a particularly aggressive subtype) is twice as common in black women than in whites. Lower rates of

luminal A (the most common subtype) correlate with the overall lower breast cancer rates in Hispanic women (American Cancer Society, 2015).

Common public health issues are all factors that affect breast cancer rates: positive factors included better access to care, higher socioeconomic status, early high quality diagnosis and treatments, fully following through with completing chemotherapy or radiation, and reducing hormone therapy. Negative factors included childbearing at a later age, birthing fewer babies, increased mammogram rates. Breast cancer rates rose significantly in the 1980's and 1990's, likely due to growing trends in delayed childbearing and giving birth to fewer children, both known and established risk factors of breast cancer. A more widespread use of mammograms has led to earlier diagnosis, increasing incidence numbers. There was a rates decrease in 2002 and 2003, primarily for white women, likely correlated to reduced menopausal hormone therapy. Early diagnosis and new treatments have prevented 322.6 thousand breast cancer deaths, correlating to the 39% breast cancer death rate decline from 1989 to 2015. This negative trend in breast cancer rates show promise for the public health of Americans in the community, showcasing a positive example regarding the direction of where healthcare should be heading in terms of education, outreach, and community awareness.

Asian-American immigrants, on the other hand, have seen an increased in breast cancer rates while other U. S. racial groups have seen breast cancer rates plateau or decline. The Cancer Prevention Institute of California analyzed seven major Asian-American ethnic groups (Chinese, Japanese, Korean, Filipino, Vietnamese, South Asians (Indians, Pakistanis), and <https://assignbuster.com/breast-cancer-implications-on-chinese-asian-american-and-american-populations/>

Southeast Asians (Cambodians, Laotians, Hmong, and Thai)) by age and stage of cancer. They have amassed data from 46, 000 invasive breast cancer cases in California, with Korean women having the greatest rate increase at 4. 6% per year from 1988 to 2006. All Asian-American women have increased in rates over the past 15 years in breast cancer incidence per 100, 000 women from 1988 to 2013 (Prois, 2017), a startling revelation when compared against the 39% decrease in breast cancer rates in America as a whole, and showcasing a severe gap in healthcare resources or outreach to help prevent breast cancer from occurring as frequently.

Changes in lifestyle behaviors may have fostered greater rates of breast cancer “ Westernization” may also be a cause in the rise of breast cancer incidences: this phenomenon includes differences and risk factors in behavior, such as drinking, eating more fats and concentrated sugars, greater obesity levels, getting less exercise, procuring fewer children, and producing children later in life (Prois, 2017). Asian countries are also more likely to eat soy products; soy intake during earlier life stages may be protective against cancer. Consuming lesser amount of meat or dairy products, in turn, might also indirectly cause this outlook. Lifetime soy consumption at a moderate level may prevent breast cancer reoccurrence through tumor biology-changing mechanisms. Women who consumed soy throughout childhood have significantly reduced breast cancers that develop through reduced human epidermal growth factor receptor 2 (HEGF-2) levels (Hilakivi-Clarke, 2010). Soy and isoflavones have properties that prevent cancer, lengthen the menstrual cycle, and alter the metabolism of estrogen away from cancer-causing compounds. Soy has also been claimed to

demonstrate anti-proliferative properties within the human body. Isoflavones have been suggested to behave as weak estrogens: decreasing the hormone's effect on breast cancer growth and development.

The Asian-American demographics that had recently immigrated to the U. S. in significant waves have the largest breast cancer rate increases, while Chinese and Japanese Americans (two Asian groups that have lived the longest in the U. S.) saw little to no increase. Pacific Islander and Filipino women were 20-60% more likely than white women to receive a late-stage cancer diagnosis, whereas Chinese and Japanese women were 30-40% less likely, perhaps due to basic barriers of medical care. These barriers include language, lack of transportation, lower insurance rates, and cultural issues such as filial piety and not wanting to trouble others. Because of social, financial, and cultural obstacles, Asian immigrants are struggling to overcome the many setbacks that they are faced with from the start of their American experience.

The stigmatization of women with breast cancer within Asian communities may play a role in breast cancer rates increase, inhibiting women from learning about their genome and genetic risk factors. Breast cancer is one of the most common cancers in American women of all ethnic and racial groups. Detection and treatment has improved in the recent decades: yet incidence rates have been increasing in the fast-growing and diverse Asian American population. Social challenges include emotional suppression, shame, self-stigma, and stigma regarding being a breast cancer survivor (Warmoth et al., 2017). Other barriers include unfamiliarity with the

American healthcare system, language barriers, pressure from surviving in a  
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new country, stress from fulfilling professional and familial roles and responsibilities, and communication barriers with outsiders and family members. Cultural beliefs or superstition, such as karma or “deserving” one’s fate, may cause individuals to be less vocal and encourage them to hide their condition from individuals who could provide potential help.

Misunderstandings regarding breast cancer may also occur, such as perceptions of the disease as an incurable “death sentence”, juxtaposing the many treatments that are now available. A cultural gap in knowledge and myth dispelling can possibly cause a drastic difference in the breast cancer incidence rates between Asian American communities and other American racial groups. Solutions explored to aid patients in the course of recovery include providing greater healthcare and social resources: such as counseling services addressing stigma and communication, information tailored to Chinese-American communities regarding diagnosis and breast cancer treatment, and greater access to health insurance.

Increased rates may be caused by lack of self-awareness (self-examination or observance) or lack of access (lack of healthcare education and knowledge about available treatment options and medical advances), particularly among newer Asian American communities who have only begun to arrive en masse within the recent 21<sup>st</sup> Century. Breast cancer victims may also be reluctant to see a doctor if no obvious outward symptoms are showing, even though the tumor may have already advanced into terminal stages by the time one feels the lump. Asian-American women are less likely to receive follow-up treatment after an abnormal mammogram; in a 50,000-women San Francisco study, only 57% of Asian Americans receive follow-up

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tests at 30 days and were less likely to follow up after one year, compared to the 77% of white women. The largely fragmented and uncoordinated healthcare system, as well as lack of medical record sharing between physicians, can cause some patients to “fall through the cracks”, and this correlates with Asian Americans being more likely to delay their treatment and care. These theories offer enormous scientific, social, and medical significance, and could open gateways for further research and public health initiatives to help close the breast cancer incidence gap.

On a much larger, international scale, breast cancer rates have also been shifting upward among women living in China in comparison to their Chinese counterparts in America (both immigrants and Chinese American citizens). In the last 20 years, China has experienced a steadily increasing incidence of breast cancer, twice the speed of global rates, despite having traditionally been believed to be a low-incidence breast cancer area. Social healthcare concerns in China are rising along with the increased rates of diagnoses, higher mortality rates, and breast cancer's rise to the status of most common cancer in Chinese women. Chinese cases accounted for 12.2% of the world's newly diagnosed breast cancers and 9.6% of worldwide breast cancer deaths in 2014 (Fan et al., 2014). Current breast cancer control measures in China are exploring epidemiological and socioeconomic inequalities and disparities for access to care in subpopulations, and the differences are clear in demographic statistics between China and other high-income countries. Differences from China include younger onset of breast cancer, lower rates of breast cancer screenings, inadequate resources, lack of breast cancer

awareness, and diagnosis delays that may increase cases of incurable advanced stages of the disease and increase the death rate.

All of these factors can be compared to that of the United States populations: especially Chinese Americans. Chinese populations have one age peak of breast cancer at 45-49 years old, whereas Chinese Americans have two age peaks (Chen et al., 2016). Mainland Chinese populations also had younger onset ages, positive lymph nodes, larger tumor sizes, and lower proportions of stage 1 patients (but higher proportions of stage 3 and stage 4 patients, perhaps because patients were only diagnosed when the doctor caught the cancer at a later time point). Chinese American patients showed significant differences, including lesser proportions of younger patients, smaller tumor sizes, more negative lymph node abnormalities, less delocalized stages, less oncogenic hormone receptors, and smaller amounts of human epidermal growth factor receptor 2 compared to the more aggressive breast cancer characteristics of China (Cao et al., 2017). Correlating to or being affected by rapid industrialization and urban growth, late or infrequent childbearing, lack of breastfeeding, increase hormone regulating medications, stress, lack of physical activity, greater fast food intake, increased alcohol consumption, and generally longer life spans have allowed for greater incidences of breast cancer within China. Better qualities of the American cancer healthcare system, such as new treatments, technological advances, more widespread medical procedures, and new healthcare policies, could possibly to improve the wellbeing of Mainland Chinese populations.

Breast cancer is now one of the most common cancers among women in China (according to China's national cancer registry), and urbanization is <https://assignbuster.com/breast-cancer-implications-on-chinese-asian-american-and-american-populations/>

likely having a great impact. Breast cancer is currently the 4<sup>th</sup> leading cancer-related death in Chinese females, created immense social and economic burden on the government, communities, and families.

Socioeconomic disparities, insufficient financial resources, inadequate resource and service distribution, lack of manpower, lack of training, lack of equipment, and lack of equal care for populations differing in socioeconomic status and geographical factors are epidemiological characteristics and risk factors in China (Wang et al., 2015) with heavy emphasis on healthcare faults. 0.1% of Chinese women (1.6 million out of 1.379 billion) are diagnosed with breast cancer each year (World Bank, 2017), in comparison to 0.07% of women (252.7 thousand out of 323 million) diagnosed with breast cancer each year in America (United States Census Bureau, 2017). Breast cancer rates in China have increased at a rate of 3.5% per year from 2000 to 2013, perhaps corresponding to China's second industrial revolution starting from 1998 and leading into the present day, in comparison to the 0.4% drop per year in the United States. Rates are higher in China's urban areas (30-60 women in every 100,000) than China's rural areas: the higher the population density, the higher the rate. This rate may also have been affected by the rapid development of China's economy, prompting more people to move from rural areas and towns to larger "megacities" (with populations above ten million individuals) and shifting the population dynamics.

Aging is the biggest risk factor for breast cancer; the life expectancy of Chinese women has risen to 75.99 years old in 2015 according to the National Bureau of Statistics in 2015, in comparison to 78.74 years old for

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women in the United States, according to the 2015 World Bank. This is an extra 18 months longer than the average age expectancy at 77. 24 years old of Chinese women in 2010 (National Bureau of Statistics, 2010), a greater difference compared to an extra 10 months longer (77. 9 years old in 2010) for American women. A larger and more significant increase correlates with steeper increase in breast cancer rates in China; because women are now living longer in China, 4. 74 years longer than the world average, more genetic damage and a reduced ability to repair those damages become rampant.

Biological and mental stress, more likely to be experienced in large cities as a result of increased responsibilities and increased pollution, has been linked to increased risk of developing cancer, affecting the levels of various hormones and suppressing the immune system. Once cancer has developed, stress also aids its progression. Women are also less physically active in modern China than those in previous generations: physical activity levels for adults in China fell by also 50% between 1991 and 2011, declining more rapidly for women than for men. Unhealthy diet, especially with the recent proliferation of fast food outlets, has become more common in urban China and increased obesity and breast cancer risk among Chinese women.

Increased alcohol consumption has long been associated with increased risk of breast cancer development, and China's alcohol consumption is increasing faster than in other parts of the world. Increased pressure, lack of exercise, unhealthy eating, and substance abuse serve as impactful biological stressors on the body, creating fluctuations in hormones and increased rates of heart disease, high cholesterol, high blood pressure, diabetes, high sugar

levels, obesity, liver damage, lung damage, and hypertension. Unhealthy environments for cells therefore cause changes in epigenetic expression of genes and proteins.

Social mandates have also had an important impact on breast cancer incidences. Childbearing, or lack thereof, is observed to have increased breast cancer rates. Having more than one child, and at a younger age, has been research to lower breast-cancer risk. The one-child policy placed in 1979, however, has restricted women (especially in the city) to follow the policy to avoid being fined. Although the policy has been replaced in 2015 with a two-child policy, any positive benefits on breast cancer incidence with take more than a decade to show. Many Chinese women have also chosen to delay having a child because of work pressure and cultural change; negating any protective benefit they could gain from pregnancy and having a child at age 35 or younger. Breastfeeding has also been proven to reduce a woman's risk of developing cancer due to matured (milk-producing) cells and less oestrogen exposure, reducing the amount of hormone-stimulating breast cancer cells to grow. Lack of breastfeeding (compared to previous generations) may also affect breast cancer incidences in China. There has also been correlation between "reproductive factors" (such as oral contraceptives and hormone replacement therapy) and the rise in breast cancer incidence in China. Because of legal decrees that have governed the nation, direct social impact and indirect hormonal impact is clearly apparent in the effects of breast cancer rates throughout the nation.

Increased breast cancer rates may be caused by lack of self-care, self-awareness, self-examination or observance, or lack of healthcare access. <https://assignbuster.com/breast-cancer-implications-on-chinese-asian-american-and-american-populations/>

There should be a more vigorous monitoring and tracking process for breast cancer: younger women also need to be informed about breast cancer risks (and how to prevent risk factors early on) through facilitating education and coordinating outreach. More education, awareness, and discussion need to be had among families and communities regarding medical conditions, genetic history, and what can be done to cure them. There are many risk factors than could be reduced by raising cancer awareness and implementing better education regarding a healthier diet, increased exercise, stress reduction, and increasing breast cancer screening. Chinese public health authorities can play a crucial role in developing better-defined strategies to address the increased breast cancer issue and reduce incidence burden in China's health system and society. These biological and social connections and intersections have enormous scientific and social significance, and could open gateways for further research and public health initiatives to better the lives of Chinese residents for the long term.

There is an urgent need for breast cancer detection, diagnosis, and treatment to improve, and the Chinese government has established several measures to overcome the challenges of the health transition: developing an affordable and accessible health-care system to cover both urban and rural areas (although breast cancer rates are lower in rural areas, they still suffer from social disparities that could prevent them from getting the help and education they need to establish early intervention). The population enrolled is nearing full coverage, and out of pocket expenses are decreasing to around 35% of all general medical costs. The national insurance program now covers 70% of in-patient medical expenses, and oncological drugs are

being made more available for the nation as a whole (Fan et al., 2014).

Because there exists two extremes of over-treating patients via aggressive surgery and unnecessary chemotherapy, as well as lack of radiotherapy or insufficient chemotherapy after diagnosis, there should be increased investments in health-care systems, education, and medical assessments to upgrade care quality to reduce breast cancer mortality and morbidity.

Establishing initiatives for early detection and public awareness of breast cancer can reduce and redistribute the financial burden to more productive treatments and resources for patients in both China and America. More effort should be funneled into expanding cancer-care infrastructure for Chinese women and insurance benefits for Chinese-Americans. There should be a more vigorous monitoring and tracking process for breast cancer in China, as well as a greater implementation of staff in America with diverse language skills, cultural background awareness, and outreach training. Asian Americans and Asian immigrants can also participate in greater numbers in breast cancer research and clinical trials to better represent their data in the general population and in potential cures. Younger women also need to be informed about breast cancer risks early on through facilitating greater educational programs and coordinating outreach. More awareness and discussion need to be had among families and communities regarding medical conditions, genetic history, and what can be done to cure them. Although breast cancer rates are at an all time high in Chinese and Chinese (and Asian) American populations, steadfast steps can be taken in bettering the lifestyles and decreases the social disparities preventing them from achieving optimal health.



## Bibliography

- American Cancer Society, Breast Cancer Sub-types in American Women, 2015.
- Cao, TZ. (2017) Breast cancer characteristics in Mongolian and disparities of ethnicities among Chinese patients. *International Journal of Clinical and Experimental Medicine*. 10: 5046-5053.
- Chen, C. (2016) Characteristics of breast cancer in Central China, literature review and comparison with USA. *Breast*. 30: 208-213.
- Douglas, C. (2013) Soy and its isoflavones: the truth behind the science in breast cancer. *Anti-Cancer Agents in Medicinal Chemistry* . 13 (8): 78-87.
- Fan, L. (2014) Breast cancer in China. *The Lancet Oncology*. 15: 279-289
- Hilakivi-Clarke, L. (2010) Is soy consumption good or bad for the breast? *The Journal of Nutrition*. 140 (12): 26-34.
- Wang, F. (2015) Current status of breast cancer prevention in China. *Chronic Diseases and Translational Medicine*. 1: 2-8.
- Warmoth, K. (2017) Exploring the Social Needs and Challenges of Chinese American Immigrant Breast Cancer Survivors: a Qualitative Study Using an Expressive Writing Approach. *International Journal of Behavioral Medicine*. 10: 1-9
- World Health Organization, American Breast Cancer Incidences and Rates, 2016.