



## **Chances of Getting Breast Cancer in Women Who Start Smoking as Teenagers**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

**Introduction:** Yes it is a fact that even young people can get breast cancer, even if it is rare but its reality and case is much neglected, so it should not be underestimated. Breast cancer is so prevalent among young people that most organizations do not keep track of the disease at this age. Adolescents, however, may be concerned that changes in their breasts during puberty are a sign of breast cancer. They should check their breasts for improvement and get confirmation from their doctor if they have any questions.

**Aim:** The purpose of this study is to see how smoking affects the risk of breast cancer in a wide number of women, many of whom started smoking as teenagers.

**Material and Methods:** From November 2019 to April 2021, we tracked 150 women aged 30 to 50 who completed a mailed questionnaire as part of the Datta Meghe Medical college Cohort Study in Datta Meghe Medical College and Shalinitai Meghe Hospital and Research Center, Nagpur in collaboration with JNMC & ABVRH (Datta Meghe Institute of Medical Sciences Deemed To Be University), Sawangi, Wardha, Maharashtra. We looked at the entire sample population, as well as

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women who had smoked for at least 20 years, nondrinkers, and each country separately.

**Results:** The distribution of these traits depends depending on whether or not you smoke. Except for alcohol intake of breast cancer (P0.0001), smokers and non-smokers vary insignificantly on all of the variables mentioned in the graph.

**Conclusion:** Our study found that women who started smoking at an early age and continued to smoke for at least 20 years had a higher risk of breast cancer. The fact that today's smokers started smoking at an early age than in previous generations may be a good way to prevent breast cancer.

*Keywords: Breast cancer; smoking; teenagers; puberty.*

## 1. INTRODUCTION

For decades, the connection between smoking and the risk of breast cancer has been a mystery, and whether or not young people should be warned about the risk of breast cancer remains a contentious issue [1-4].

In 1982, MacMahon et al. [5] proposed a beneficial effect, while Hiatt and Fireman proposed a negative effect on breast cancer risk four years later. Studies have tended to find positive, inverse, or null relations since then [6,7].

According to a pooled study of 53 epidemiologic studies conducted in 2002, the positive correlation between smoking and breast cancer was mainly attributed to confounding by alcohol consumption, a recognized trigger of breast cancer [8,9]. However, a poor effect may have been diluted because this study used crude smoking scales, such as ever versus never smokers, which included passive smokers in the reference group. Even a small increase in the prevalence of breast cancer among women who smoke could account for a large amount of cancer cases in areas where smoking is widespread, according to public health experts [10].

In 1982, Russo et al.[11] hypothesized that the mammary tissue is particularly susceptible to carcinogenic exposures in the years leading up to the first birth, when the mammary cells differentiate. As a result, we investigated the connection between cigarette smoking and the incidence of breast cancer in a large population-based study of women who were teens at a time when the prevalence of smoking among young Scandinavian women was skyrocketing.

## 2. MATERIALS AND METHODS

### 2.1 Population Study

From November 2019 to April 2021, we tracked 150 women aged 30 to 50 who completed a

mailed questionnaire as part of the Datta Meghe Medical college Cohort Study in Datta Meghe Medical College and Shalinitai Meghe Hospital and Research Center, Nagpur in collaboration with JNMC & ABVRH (Datta Meghe Institute of Medical Sciences Deemed To Be University), Sawangi, Wardha, Maharashtra. We looked at the entire sample population, as well as women who had smoked for at least 20 years, nondrinkers.

A letter was sent to all of the women asking them to take part in the research. The letter included a lengthy questionnaire that they had to complete and return in a pre-stamped envelope, along with a written informed consent request. The typical set of questions included questions about smoking habits, alcohol use, contraceptive use, menstrual history, history of breast cancer in the mother and sister(s), height and current weight [allowing one to measure body mass index (BMI) as weight in kilograms divided by the square of height in meters], and other aspects of lifestyle habits.

### 2.2 Study Design

Total 150 patients were taken for the study and were distributed in two groups.

Group I included 75 smoker Breast cancer patients while group II included 75 non-smoker breast cancer patients.

### 2.3 Analytical Statistics

We looked at the entire survey population, as well as long-term smokers, nondrinkers, and each country individually. We also looked at the prevalence of breast cancer in long-term smokers by region, as well as two classes (high/low risk) of risk factors for breast cancer. Following that, as a test group, we looked at passive smoking. We also run experiments where we removed BMI and age at menopause from models one by one and all at once, as well as setting menopause at 54 years for never

**Table 1. Difference between active smokers and others who have never smoked**

Characteristics	Smokers	Non Smokers	P-Value
Age (Year)	40.5±5.0	40.1±5.9	P=0.6549
Age of diagnosis	48.6±5.2	47.9±5.5	P=0.4245
Family History (%)	4.9	4.8	-----
Age at first birth	22.9±4.2	25.4±4.9	P=0.0010
No. of Children	2.0 ± 1.1	2.0 ± 1.2	P=1.0000
Alcohol Consumption(g/d)	6.5±4.6	3.6±2.9	P<0.0001
BMI	23.1±3.5	23.0±3.3	P=0.8574

smokers and 52 years for current smokers, since smoking affects BMI and age at menopause. The PHREG protocol in the SAS mathematical kit was used to run the Cox relative hazards checks.<sup>12</sup> In the proportional risks model, we used multiplicative terms concerning smoking and possible effect causes to measure interaction, and we used Wald 2 figures to look at strata heterogeneity. 95 percent confidence intervals are used to generate RRs. The findings were considered statistically significant if the value of P was less than 0.05, and 95 percent confidence intervals were reported in the paper. The two-sided nature of P values is undeniable.

### 3. RESULTS

The distribution of selected characteristics varies according to smoking status, as seen in Table 1. Except for alcohol intake of breast cancer (P<0.0001), smokers and non-smokers vary insignificantly on all of the variables mentioned in the graph.

BMI is calculated by dividing one's weight in kilograms by the square of one's height in meters.

### 4. DISCUSSION

According to the report, women who have smoked for at least 20 years are at lower risk of developing breast cancer. The existence of a clear correlation of volume response between the various indicators of smoking use and the risk of breast cancer supports an understanding of the underlying cause of these findings. In addition, people who do not drink are as vulnerable as those who do. Our study found no evidence that breast cancer history, menstrual age, or any other known breast cancer factor alters the link between smoking and breast cancer. In contrast, women who have been smoking for 20 years or more, but started after their first birth, do not experience an increased breast cancer risk.

There are a few flaws in our research. We only have rudimentary and limited data on passive smoking. Furthermore, because the onset and duration of smoking are highly associated, it is difficult to isolate the effects in this very young sample. Furthermore, we lack updated information on changes in smoking habits, hormonal contraceptive use, hormone replacement treatment, BMI, menopausal status, and alcohol use across time, as well as lifetime alcohol consumption. However, beyond the age of 30, which is the lowest age of inclusion in our study, few Scandinavian women begin to smoke. Our findings could have been skewed if existing smokers left during the follow-up period. We've already established that having the same age at menopause for smokers and nonsmokers skews the results in favour of the null. Horn-Ross et al.<sup>13</sup> discovered that recent alcohol drinking was linked to a greater risk of breast cancer, with no clear trend for earlier in life consumption [14]. Our study's lack of lifelong alcohol intake could also be a cause for concern. Since the distribution of identified breast cancer risk factors varies by smoking status in our cohort, unknown risk factors may do the same. Due to the reasons mentioned above, there may be some residual confounding in both directions [15-17].

### 5. CONCLUSION

Our study discovered that women who begin smoking at a young age and continue to smoke for at least 20 years have a higher chance of breast cancer. The reality that today's smokers start smoking at a younger age than past generations may have ramifications for targeted breast cancer prevention initiatives. Another justification for teen girls and adult women to stop and quit smoking should be given.

### CONSENT

As per international standard or university standard, Participants' written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. Kuper H, Boffetta P, Adami HO. Tobacco use and cancer causation: association by tumour type. *J Intern Med.* 2002;252:206–24.
2. Chaturvedi P. Does smoking increase the risk of breast cancer? *Lancet Oncol* 2003;4:657–8.
3. Jr, BFP, & Federico R. Tewes. What attorneys should understand about Medicare set-aside allocations: How Medicare Set-Aside Allocation Is Going to Be Used to Accelerate Settlement Claims in Catastrophic Personal Injury Cases. *Clinical Medicine and Medical Research.* 2021;2(1):61-64. Available: <https://doi.org/10.52845/CMMR/2021v1i1a1>
4. Beral V, Doll R, Peto R, Reeves G. Does smoking increase the risk of breast cancer? *Lancet Oncol.* 2003;4:658.
5. Vineis P, Alavanja M, Buffler P, et al. Tobacco and cancer: recent epidemiological evidence. *J Natl Cancer Inst.* 2004;96:99–106.
6. MacMahon B, Trichopoulos D, Cole P, Brown J. Cigarette smoking and urinary estrogens. *N Engl J Med.* 1982;307:1062–5.
7. Daniel V, Daniel K. Diabetic neuropathy: new perspectives on early diagnosis and treatments. *Journal of Current Diabetes Reports.* 2020;1(1):12–14. Available:<https://doi.org/10.52845/JCDR/2020v1i1a3>
8. Hiatt RA, Fireman BH. Smoking, menopause, and breast cancer. *J Natl Cancer Inst* 1986;76:833–8.
9. Terry PD, Rohan TE. Cigarette smoking and the risk of breast cancer in women: a review of the literature. *Cancer Epidemiol Biomarkers Prev.* 2002;11:953–71.
10. Daniel V, Daniel K. Perception of Nurses' Work in Psychiatric Clinic. *Clinical Medicine Insights.* 2020;1(1):27-33. Available: <https://doi.org/10.52845/CMI/2020v1i1a5>
11. Morabia A. Active and passive smoking in breast cancer. *Epidemiology.* 2002;13:744–5.
12. IARC Working Group. Tobacco Smoke and involuntary smoking (IARC Monographs on the Evaluation of Carcinogenic Risks to Humans).IARC Monogr. 2004;83:11452.
13. Daniel V, Daniel K. Exercises training program: It's Effect on Muscle strength and Activity of daily living among elderly people. *Nursing and Midwifery.* 2020;1(01):19-23. Available:<https://doi.org/10.52845/NM/2020v1i1a5>
14. Hamajima N, Hirose K, Tajima K, et al. Alcohol, tobacco and breast cancer-collaborative reanalysis of individual data from 53 epidemiological studies, including 58,515 women with breast cancer and 95,067 women without the disease. *Br J Cancer .*2002;87:1234–45.
15. Russo J, Tay LK, Russo IH. Differentiation of the mammary gland and susceptibility to carcinogenesis. *Breast Cancer Res Treat.* 1982;2:5–73.
16. SAS/STAT®. User's Guide Version. 8th ed. Cary (NC): SAS Institute, Inc.; 1999.
17. Horn-Ross PL, Canchola AJ, West DW, et al. Patterns of alcohol consumption and breast cancer risk in the California Teachers Study cohort. *Cancer Epidemiol Biomarkers Prev.* 2004;13:405–11.

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