The Impact of Dietary Fiber on Breast Cancer Incidence

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Introduction

- Breast cancer is the second most common cancer in American women and takes the lives of over 42,000 individuals annually.
- Post-menopausal women are affected more than any other group (National Cancer Institute).
- All types involve the uncontrolled proliferation of cells, leading to the formation of abnormal lumps or masses (Farvid et al., 2020).
- Higher serum levels of estrogen increase the risk (Narita et al. 2017).
- Dietary fiber can help stave off obesity and aid in the extraction of serum estrogen (Key et al., 2018).
- Study purpose: Among post-menopausal women of various cultures, what is the effect of high dietary fiber intake compared to low intake on the risk of developing breast cancer?

Figure 1

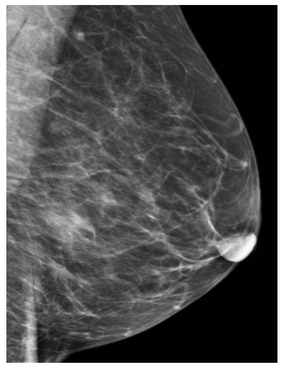


Photo: Kruger, G. (2012). Lobular carcinoma in left breast. [photograph]. Retrieved from Radiopedia.org

Background

Statistics

- 1 in 8 American women will develop breast cancer at some point in their lifetime.
- In 2020, nearly 17 billion dollars were spent on treatment
- Around 255,000 American women will get breast cancer every year (National Cancer Institute).
- A decreased quality of life can be due to changes in physical appearance (such as from a mastectomy), sexual function, mental health, drug side effects, financial burdens, and the inability to perform daily roles and tasks (Romieu et al., 2016).
- Nearly one-third of women diagnosed with this disease receive a subsequent diagnosis of depression (National Cancer Institute).

Nursing Significance

- While healthcare providers must stay up-to-date on the most effective treatment options for this disease, prevention is crucial, and nurses play a key role in the dissemination of information that women can use to protect their bodies from breast cancer.

Literature Review & Methods

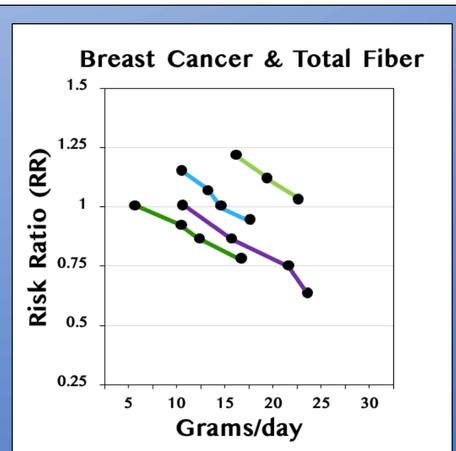
- The search was for literature examining the effect of dietary fiber on breast cancer development.
- The university's scholarly search engine was utilized to find five medical research studies.
- Key terms such as "dietary fiber" and "breast cancer" were used and only sources published within the past five years were included.

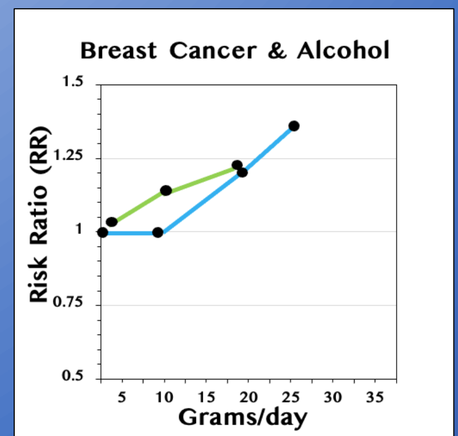
Findings

- Risk ratios were used to measure the strength of association between breast cancer and dietary factors. Values > 1 show positive correlations and values < 1 represent negative correlations.
- Studies 2-5 showed negative correlations between total dietary fiber and breast cancer incidence. The protection appears to increase with rising consumption of dietary fiber (Key et al, 2018; Narita et al., 2017; Romieu et al., 2016; Sangaramoorthy et al., 2018).
- Studies 2 & 4 both showed alcohol to have a positive correlation with breast cancer. The risk appears to increase with rising consumption (Key et. al., 2018; Romieu et al., 2016).

Study 2
Study 3
Study 4
Study 5

Alcohol:
10g = 1 serving (1 beer, 6oz wine)





Conclusions & Implications

- High total dietary fiber intake (> 25 grams/day) shows a protective effect on the risk of developing breast cancer (Key et al, 2018; Narita et al., 2017; Romieu et al., 2016; Sangaramoorthy et al., 2018).
- Fiber intake appears to mitigate the carcinogenic effects of alcohol consumption (Romieu et al., 2016).
- Nurses should promote dietary fiber intake from a wide variety of sources and discourage the consumption of alcohol.

References

Statistics | Study 1 | Study 2 | Study 3 | Study 4 | Study 5