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Understanding the Relationship between Microbiome, Diet and Cancer Risk

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Abstract

When it comes to the microbiome, people usually think of the gut, but there is also the breast microbiome, and its role in the health and risk of breast cancer is not fully understood. A microbiome is a collection of microorganisms that live in a specific environment in the body. Diet can affect the breast microbiome, which shows that like the gut microbiome, breast microbiomes can respond to diet. New research now shows that diet, including fish oil supplements, can alter not only the breast microbiome but also its cancerous tumors.

Keywords: Cancer; Cells; Tissues; Tumors; Prevention; Prognosis; Diagnosis; Imaging; Screening, Treatment; Management

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Introduction

To better understand the relationship between microbiome, diet, and cancer risk, researchers took a multidisciplinary approach to studying animal models and breast cancer patients. Obesity, which is typically associated with a

high-fat diet, is a known risk factor. Menopausal breast cancer; But we still do not know much about the link between obesity and microbiome and its effect on breast cancer and its consequences. In the first part of the study, mice prone to breast cancer were fed a high-fat, low-fat diet. Mice fed a high-fat diet had more tumors that grew faster and larger than those on



a low-fat diet. Next, to study the microbiome, the researchers performed a stool transplant. Mice on a low-fat diet received a microbiome transplant on a high-fat diet, and mice on a high-fat diet received a microbiome transplant on a low-fat diet; Surprisingly, the mice on the low-fat diet and the high-fat diet microbiome had breast tumors just as much as the mice on the high-fat diet and the low-fat diet microbiome transplant. Replacing the low-fat intestinal microbiome with the high-fat diet animal microbiome was sufficient to increase the risk of breast cancer in our models. These results highlight the association between microbiome and breast health. Patients received placebo or fish oil supplements approximately two to four weeks before lumpectomy or mastectomy. The results showed that fish oil supplementation significantly modified the breast microbiome in noncancerous and malignant breast tissue. For example, scientists found that long-term use of fish oil supplements (four weeks) increased the frequency of *Lactobacillus* in normal breast tissue adjacent to the tumor. *Lactobacillus* is a bacterium that reduces the growth of breast cancer tumors in clinical models, indicating the potential anti-cancer properties of this intervention. The researchers also found that the proportionate proportion of bacteroid and ruminococcin microbes in cancer tumors decreased in patients taking supplements, but their significance was unclear. This study shows further evidence that diet plays an important role in the formation of the gut and breast microbiome. has it. Finally, our study suggests that potential dietary interventions may reduce the risk of breast cancer [1-567].

Results and Discussion

By performing breast surgery to treat cancer, part or all of the breast is removed and emptied. Most patients experience pain in the surgical area after this operation, which is called postoperative pain syndrome or mastectomy. Of course, the occurrence of pain syndrome can be treated with rehabilitation. Burning and stabbing pains, tingling, stabbing, or cold and

heat in the surgical area, under the armpits or inside the arm, are pains that are aggravated by moving the shoulder, pulling the hand, or touching clothing. Also, at the same time, the patient feels tightness and fullness in the axilla. This chronic pain is often not progressive, but can accompany the patient for many years and remain in the body. In half of the cases, the pain may persist for at least 9 years after surgery. With a clinical examination and a series of diagnostic tests to rule out differential diagnoses, such as mammography, whole body scan, MRI of the spine, nerve and muscle tape. This syndrome can be diagnosed and treated. Rib fractures, tumor recurrence, lung disease, radiotherapy-induced neural network injuries, intercostal nerve involvement, thoracic radiculopathy, chemotherapy-induced nerve damage, and paranoid plastic neuropathy. There are differential diagnoses of this syndrome. In general, 60% of patients experience severe severe pain in the surgical area, which is one of the causes of long-term pain in the surgical site and should be treated immediately. Pain control is also done with medication and early desensitization techniques. In general, the first line of treatment is prevention. In such a way that the work does not involve steps such as removing the minimum breast tissue, during surgery or using different surgical methods with nerve preservation and early pain control.

Conclusions

Other treatments include rehabilitation, nerve block, injection of anesthetic, Botox in painful muscles and finally surgery. If they do not respond to routine treatments. Rehabilitation in these patients includes various steps such as stretching the pectoralis and latissimus dorsi muscles, improving and maintaining range of motion, shoulder joint, correcting shoulder girdle function, anterior and posterior chest, specific training for proper return and Gradual to daily life and work.



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