



## Exercise Biochemistry Review

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Proceedings of IBEC 2018, Beijing, China, October 23-25  
PO-285

### A review of effects of exercise on the quality of life in breast cancer survivors

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**Objective** Breast cancer is one of the most common malignant tumors in women. The number of women diagnosed with breast cancer each year is also increasing. It is also the leading cause of cancer deaths in women, accounting for 14-23% of cancer deaths. However, with the development of medical technology, the survival rate of breast cancer patients is improving. In general, the treatment of breast cancer mainly includes surgical treatment, adjuvant chemotherapy and radiotherapy, but these treatments can do a lot of damage to breast cancer patients. These injuries can limit some of the physical activity of breast cancer patients, and can be accompanied by significant psychological damage. Therefore, the quality of life of breast survivors is largely destroyed. Physical exercise is one of the important ways to improve the overall health of the human body. It also plays an important role in increasing people's mood and quality of life. So whether physical exercise has a positive impact on improving the quality of life of breast cancer survivors or there is some doubt. Therefore, the main purpose of this study is to explore the impact of physical exercise on the quality of life of breast cancer survivors, and then to prove the impact of supervised exercise and individual exercise on the quality of life of breast cancer survivors.

**Methods** Data bases searched were MEDLINE, EMBASE, CINAHL, PubMed. Keywords were "breast cancer and quality of life" in combination with "exercise" or "physical activity". At the same time, the references of the included articles were reviewed to obtain more relevant studies. In terms of the criteria for inclusion and exclusion of literature, the paper was initially screened to determine whether the title and abstract of the paper were consistent with the research topic. The criteria for inclusion are ① the subjects were breast cancer survivors, ② the type of intervention was physical exercise, ③ the measured result is quality of life, ④ the type of experiment is randomized controlled trial. The exclusion criteria of the article are ① the subject's occupation was athlete, ② quality of life is not measured on a formal scale, ③ article type is review or abstract.

**Results** A total of 14 articles are included in our review. Quality of life was measured using scale tools in all included studies, of which two scales were used in all included articles. The two scales used can reflect the real life quality of the subjects, of which FACT-G is a mass life quality scale and FACT-B is a life quality scale designed specifically for breast cancer patients. Both scales are globally recognized by the public. In our review, we found that exercise significantly improved the quality of life of breast cancer survivors, particularly aerobic exercise. In the studies included in our study, except Nanette et al. used aerobic exercise combined with resistance strength training as the intervention method in their study, all the other studies used aerobic exercise as the intervention method for the subjects. Among the 14 included studies, 10 indicated that physical exercise significantly increased the quality of life of breast cancer survivors, and 4 found that compared with the control group, the quality of life of breast cancer survivors did not have significant changes, but there was a trend of improving the quality of life. At the same time, our review found that monitoring breast cancer survivors improved quality of life. In two of the studies we included, subjects were divided into individual exercise groups and supervised exercise groups. In their study, Anne et al. divided the recruited research samples into the supervision intervention group and the routine control group. Among them, the supervision intervention group received physical exercise 5 times a week for 12 weeks, and the quality of life of breast cancer survivors was significantly improved. In the study of

Cadmus et al., the subjects recruited were divided into individual exercise group, supervised exercise group and routine control group, and the exercise group performed physical exercise with the same load and frequency. The result was that there was no physical activity in the home individual exercise group or the routine control group that improved the quality of life for breast cancer survivors. However, in the supervised exercise group, breast cancer survivors' scores for FACT-B and SF-36 (a measure reflecting quality of life) were significantly improved.

**Conclusions** Exercise can improve the quality of life for breast cancer survivors, especially aerobic exercise. Supervised exercise intervention for breast cancer survivors can better improve their quality of life and alleviate social and psychological problems than individual exercise. The supervised aerobic exercise can be integrated into the life of breast cancer survivors so as to better promote the recovery of breast cancer survivors.