

## Tamoxifen for Five Years?

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### Abstract

Tamoxifen is an effective anti-cancer drug in breast cancer treatment. However, very few women could do the complete 5-year treatment due to the side effects of the medication. The irregular bleeding, osteoporosis, and hormonal imbalance symptoms always cut the time short. Since every woman is different in body weight, genetic compose, reproductive history, and personal habits, the treatment with tamoxifen should also be different. Moreover, since estrogen has the similar positive effects as Vitamin K2 in bone formation; tamoxifen, as a estrogen blocker, should be used with proper vitamin K2 supplement, to which, current medical world has not paid enough attention.

### Introduction

If you are not a woman on Tamoxifen, you would never know how it feels when there is a painful vaginal bleeding. It feels like sharp blades scratching that part of the skin. Also, when a woman's hip hurts, it is not because she is getting old; it is the long term shortage of proper vitamin and mineral intake. As effective as tamoxifen is, it also brings women these unnecessary symptoms such as skin deterioration, body pain from bone loss, or fractures [1]. This paper will be about how to deal with these symptoms to make these women possibly stay with the treatment.

### Method

This research will use a qualitative research method. It is not using data to find a causal relationship. It is a literature review of previous documents. Also it is about this researcher's personal experience of how it felt. The goal of this paper is to investigate some everyday factors in life to help women in tamoxifen treatment to achieve the right bone health, bright skin, and feel overall good.

### Result and Discussion

To understand the side effects of tamoxifen, people should first make clear how it works. It blocks the estrogen receptor for all cells in a human body [2]. After surgeries, the sample biopsy can detect whether the tissue is oestrogen receptor positive. If it is positive, the patient will be on tamoxifen. Tamoxifen can be for treatment in primary or secondary breast cancer. Doctors even use it for breast cancer prevention among people who have family histories. Patients with primary breast cancer are supposed to take tamoxifen for five to ten years [2]. In another word, many woman might have to expect being on tamoxifen for five years or longer. Therefore, long before she is on this drug, she should be ready for dealing with the side effects.

As popular as tamoxifen is, it has many side effects [1]. Amenorrhea, fluid retention, hot flash, nausea, vaginal discharge and bleeding, weight loss, body pain, and skin changes are some of them [1]. In this paper, this researcher will focus on two aspects, skin and bone ache. The reason behind this is that a brilliant skin is what a lot of women care about, and bone health damage can severely affect life quality [2].

Improving skin health according to Mayo Clinic, first is to protect from sun, second is to stop smoking, third is to treat skin gently, fourth is to eat a healthy diet with fish oil, and fifth is to relieve stress [3]. By treating skin gently, one should avoid the sun, avoid the long bath, and apply lotion [3]. On the other hand, Vitamin D is also very important for skin health, and sun exposure is an important source of Vitamin D. 20 minutes of sun exposure that gets skin slight red can produce 10,000 IU of Vitamin D, which is a much higher dose than many daily supplements [4]. Therefore, the good way in improving skin health other than intensive skin care, is to slightly expose to sun daily, no more than 20 minutes, eat fatty fish, and avoid long bath or shower.

Estrogen is an important factor in bone metabolism in both men and women [5]. With estrogen supplement, menopause women do not have obvious bone loss. It is unclear what the mechanism is, estrogen does prevent osteoporosis [5]. Therefore, tamoxifen, as an estrogen receptor blocker, will cause bone problems. One of the solutions is Vitamin K2 supplement [6].

Current research for Vitamin K2 is still limited. There is no clinical test to find out Vitamin K2 concentration in human body. The only way to figure whether someone has a Vitamin shortage is to find protein markers. Currently, circulating undercarboxylated osteocalcin level is the marker for vitamin K status [7]. It is not very

clear how Vitamin K2 works to improve bone formation, but clinical trials show it's really working. The combination of MK4, one type of Vitamin K2, and Vitamin D treatment increases the bone mineral density of lumbar spine in primary osteoporosis and postmenopausal women with osteoporosis [8]. In a Norwegian trial for postmenopausal women, 360 ug/day of Vitamin K2 (MK7) did not affect bone loss [9]. However, a Dutch postmenopausal women trial with 180ug/day MK7 for three years significantly reduced femoral neck and Lumbar spine bone loss [10]. MK7 supplement might supposed to be a long term thing. Personally, this researcher felt that eating natto and cheese always bring about different types of leg cramp, which means different forms of Vitamin K2 might function differently in human body.

### Conclusion

Tamoxifen plays important role in treating women with breast cancer, but it has some serious side effects such as skin and bone damages. To deal with these side effects, a patient should firstly, have about 20 minute of sun-shine everyday to get enough Vitamin D; secondly eating variety of food that contains different forms of Vitamin K; and thirdly, make taking in Vitamin D, MK4, and MK7 a long term habit to grow strong bones. Further research will focus on how to take bath and sunbath to get a healthy balanced skin. Moreover, the research will also focus on different forms of Vitamin K: MK4 and MK7. What are the foods that are rich of these forms of Vitamin K2, how to cook them and eat them, and how differently they work?

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