

# Making Choices: Options for Lowering My Risk of Breast Cancer



A Decision Aid for Women 50  
Years Old and Older

# University of Ottawa Breast Cancer Prevention Decision Aid Group

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## Welcome !

This workbook and cassette tape prepare you to meet with your practitioner to discuss options for lowering your risk of breast cancer.

### Instructions:

1. Set aside 30-40 minutes.
2. Have a pencil ready
3. Place the cassette in a tape recorder, press the play button
4. Stay on the page until you are asked to turn to the next page

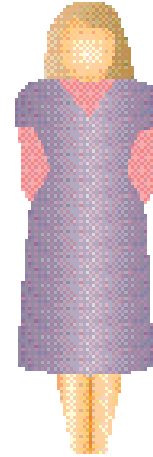
### Please Note:

Research studies that support the information provided are referenced by numbers such as "1". The complete list of references is at the back of this workbook.

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## This workbook is for you if



- You are a woman 50 years old or older
- You do not have breast cancer
- You want to consider options to lower your risk of getting breast cancer

## You will learn about

- Breast cancer risks and options to lower your risk of breast cancer



- The benefits and risks of each option

- How to weigh the benefits and risks in your situation



# Breast Cancer



- Breast cancer occurs when abnormal cells in the breast grow out of control
- Invasive breast cancer can spread to the bones, liver, lungs, and brain
- Non-invasive (in situ) breast cancer has not spread to other parts of the body.
- Of those who get invasive breast cancer, 3 out of 10 die within 10 years <sup>1</sup>

## How women describe the effects of Breast Cancer <sup>2</sup>

### Physical

- Change in appearance after breast surgery
- Temporary side effects from chemotherapy: nausea, vomiting, fatigue, hair loss, increased risk of infection
- Temporary side effects from radiation therapy : fatigue, skin reaction in the treatment area

### Emotional

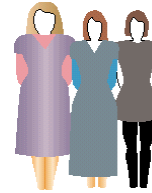
- Feeling worried, down or depressed
- Fear that the cancer will return or spread
- Fear of death

### Social

- Feeling of being alone
- Effect on the family
- Worry about sexuality

# Major Risk Factors for Breast Cancer <sup>3,4</sup>

Major risk factors that increase your chance of getting breast cancer are :



- Increasing age
  - Family history (mother, sister or daughter with breast cancer)
  - Previous breast biopsies showing abnormal cells
- 
- Never having children or having your first child after age 30
  - Starting menstrual periods before 12 years old
  - Having menopause after 55 years old



## Screening Tests <sup>5,6,7,8,9</sup>



1. **Breast screening** finds breast cancer early to increase the chance of a cure.

All women 50 years or older should have a:

- mammogram every one to two years;
- professional breast exam every year;
- breast self-exam every month.

2. **Genetic tests** can tell us if a woman has a high risk of inherited breast cancer. It is not for everyone as only 5 out of 100 breast cancers are inherited. Talk with your practitioner about its usefulness in your situation.

# Ranking Studies That Test Ways to Lower Risk of Breast Cancer <sup>10,11</sup>

## Randomized Trials

Gold #1



- Treatment chosen by tossing a coin. Participants studied closely.
- More confident about the results because users are more comparable to non-users

## Observation Studies

Silver #2



- “Circumstantial” evidence
- Compares those who choose to use an option with those who don’t
- Less confident about the results because users may be different from non-users (e.g. healthier, wealthier, better health habits)

Bronze #3



## Expert Opinion

- Based on experience, case studies, or reports of expert committees.

## Lab Studies



- Based on lab experiments with human breast cells in a test tube or non-humans
- Not sure how a woman will respond to the option.

# Lifestyle Options to Lower the Risk of Breast Cancer <sup>6,7</sup>

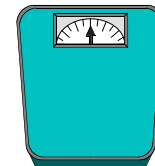
May cut risk by one third to one half



- Exercise regularly  
- aim for about 20-30 minutes most days of the week.



Silver #2  
16/21 Studies <sup>12</sup>



- Maintain a healthy weight after menopause  
Healthy weight range <sup>13</sup> :  
5’0” = up to 124 Lbs  
5’5” = up to 145 Lbs  
5’10” = up to 168 Lbs



Silver #2  
3/3 studies <sup>14,15,16</sup>



- Limit alcohol to one drink per day <sup>17</sup>  
One drink is a 12 oz. beer,  
a 6 oz glass of wine,  
or 1 oz of liquor



Silver #2  
32/39 studies <sup>17</sup>



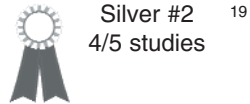
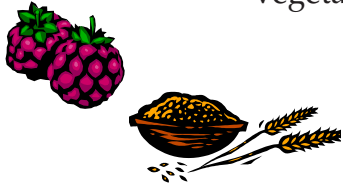
- Eat 5 or more fruits and vegetables a day.  
- choose carrots and green leafy vegetables (like cauliflower, broccoli and cabbage)  
- Fruit and vegetables are a good source of vitamins, minerals, and fibre



Silver #2  
15/22 studies <sup>18</sup>

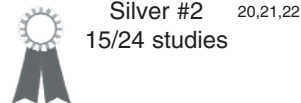
## Lifestyle Options Under Investigation <sup>6,7</sup>

- High fibre foods  
(whole wheat, bran, fruits, vegetables, legumes, prunes, blackberries)



Olive oil

- Lower fat foods (lean meat, poultry with skin removed, low fat and skim milk products) and vegetable-based oils (olive, canola, peanut)



- Phytoestrogens
  - Soy (found in soymilk, tofu, tempeh, miso)
  - Flaxseed



## Tamoxifen Option <sup>24,25,26,27</sup>

- Tamoxifen is an anti-estrogen that is used in some healthy women at higher risk of breast cancer
- Tamoxifen binds to receptors for estrogen and prevents the action of estrogen on the cell
- Because many breast cancers are very sensitive to estrogen, stopping the estrogen from getting into the cell is a treatment for breast cancer
- Tamoxifen has been used for more than 20 years in women who already have breast cancer



- It is a pill taken every day for 5 years
- Three randomized trials have been completed testing Tamoxifen in women who don't have breast cancer.
- Two very small Italian and British studies have shown no benefit with Tamoxifen in women with normal risk or in younger women with family history of breast cancer.<sup>24,25</sup>
- One very large study of American and Canadian women showed that Tamoxifen cut the risk in half in women who were at high risk either because they were older (over 60 yrs) or had other risk factors such as a family history.<sup>26</sup>

See Appendix for more detail on the studies

# Results from the North American Tamoxifen Research Study <sup>26,28</sup>



## Benefits

- Lower risk of breast cancer
- Lower risk of broken bones (hip, spine, wrist) from osteoporosis
- Lower blood level of bad cholesterol (LDL) <sup>29,30</sup>



## Risks

- Increased risk of cancer in the uterus
- Increased risk of blood clots. (legs, veins, lung, brain)
- Increased risk of cataracts
- Side effects included hot flashes and vaginal changes (dryness, discharge, itching)
- A small chance of having sexual problems

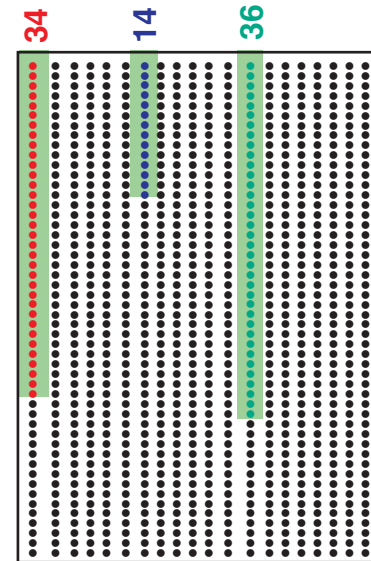


## No difference

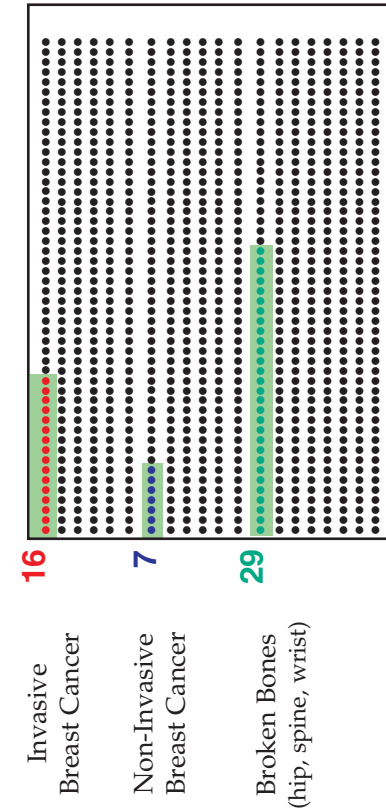
- No significant difference was found between those taking Tamoxifen and those who did not in terms of weight gain or depression.

### Benefits of Tamoxifen for every 1000 women who took it in the North American Study <sup>26</sup>

Women 50 years old and older who took the placebo over 5 years



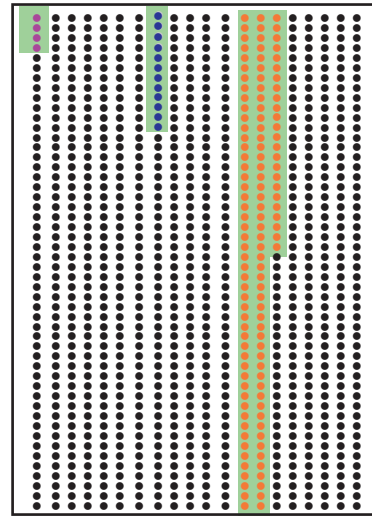
Women 50 years old and older who took Tamoxifen over 5 years



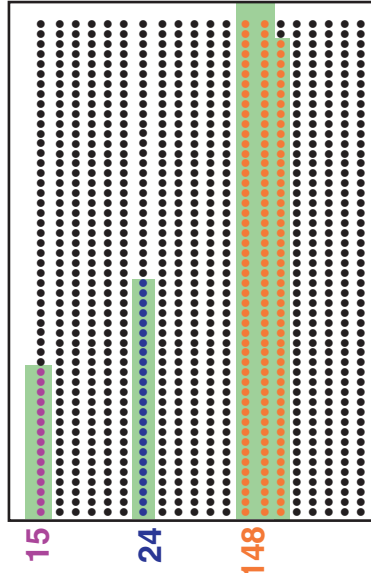


## Risks of Tamoxifen for every 1000 women who took it in the North American Study <sup>26</sup>

Women 50 years old and older took the placebo over 5 years



Women 50 years old and older who took Tamoxifen over 5 years



## Research Trial: Raloxifene Option <sup>31,32,33</sup>

- Raloxifene is a Selective Estrogen Receptor Modulator (SERM) that is very similar to Tamoxifen.
- It is approved for use in women who are post-menopausal for preventing and treating osteoporosis



- Women who took Raloxifene did not seem to have as high a risk of cancer of the uterus, when compared to women who took Tamoxifen, but more studies are needed.
- Side effects include mild leg cramps, an increased risk of blood clots similar to Tamoxifen, and an increase in hot flashes, but possibly not as common as with Tamoxifen.



- If you are at increased risk of breast cancer, you may be asked to join a study comparing Tamoxifen to Raloxifene. The purpose of the study is to find out which drug is better at preventing breast cancer.
- If you are interested in finding out more about this study, ask your practitioner.





# Molly's Situation



What am I doing for early detection ?

- I examine my breasts some months
- a nurse examines my breasts every 2 years
- I have a mammogram every 2 years



Do I want to consider a research study comparing Raloxifene to Tamoxifen ?

- I am not sure



Who should decide about Tamoxifen ?

- My practitioner and I together



What questions do I need answered before deciding ?

- How often will I have doctor's visits ?
- Is there something else I should be doing ?

# Sally's Situation



What is my personal risk of breast cancer ?

My personal risk of breast cancer in the next 5 years is : 34 out of 1000 women. (for women Sally's age with no risk factors, the risk is 10 out of 1000 women.)

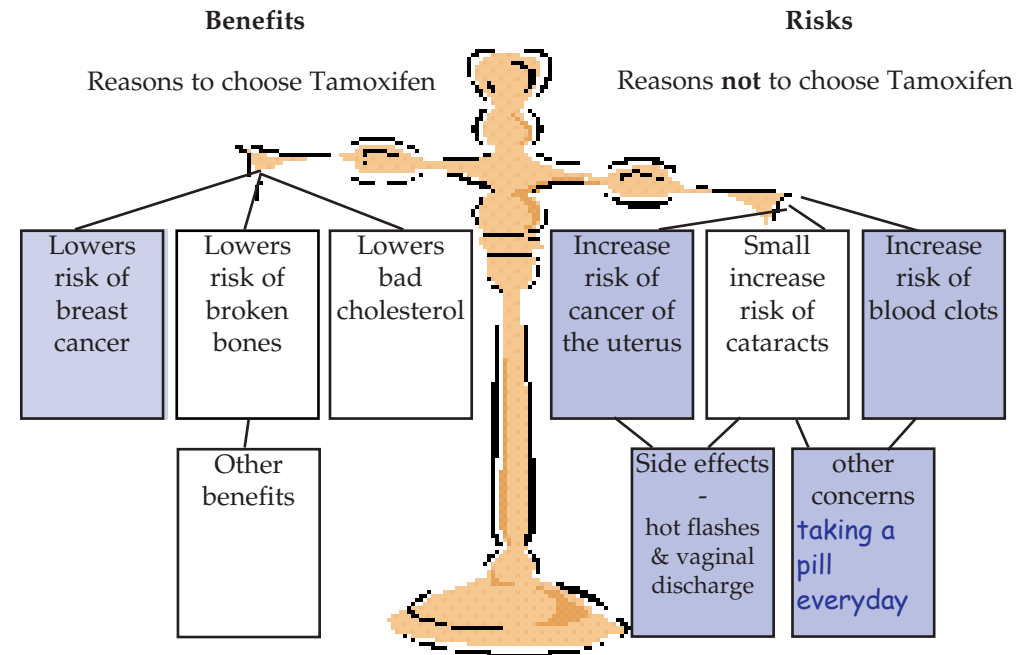


What am I doing to lower my risk of breast cancer ?

- I exercise regularly
- I am trying to eat more fruits and vegetables
- I am trying to maintain a healthy weight



What do I think of the possible benefits and risks of Tamoxifen ?



Yes Tamoxifen             No Tamoxifen

## Sally's Situation



What am I doing for early detection ?

- my doctor examines my breasts every 2 years
- I have had a mammogram done



Do I want to consider a research study comparing Raloxifene to Tamoxifen ?

- No, I do not want to join a research study



Who should decide about Tamoxifen ?

- I should, after considering my options



What questions do I need answered before deciding ?

- Do I have to give up drinking 2 glasses of wine with dinner every night ?
- I am not comfortable examining my own breasts so should I have a mammogram more often ?

## Appendix

There have been 3 gold ranked studies done testing Tamoxifen in women who do not have breast cancer.

### North American Study:<sup>26</sup>

- Found 45% decrease in the number of breast cancers in the premenopausal and postmenopausal women who took tamoxifen.
- It included 13,388 American and Canadian women who were 35 to over 70 years old and were at higher risk for breast cancer because of being over 60 years old or other risk factors such as family history.

### British Study:<sup>24</sup>

- Found no decrease in the number of breast cancers in the women who took tamoxifen.
- It included 2471 British women who had a strong family history of breast cancer.

### Italian Study:<sup>25</sup>

- Found no decrease in the number of breast cancers in the women who took tamoxifen.
- It included 5408 healthy Italian women who had recently had a hysterectomy and were at a normal risk for breast cancer.

There were several reasons why the decrease was only seen in the North American study:

- When compared to the Italian study, the North American women were at higher risk of getting breast cancer and were more likely to have taken the Tamoxifen as prescribed. More of the Italian women stopped taking the Tamoxifen early.
- When compared to the British study, the North American women were older, less likely to have an inherited type of breast cancer, and there were differences in the length of treatment with women in the British study taking Tamoxifen for 8 years.

Presently, there is another international study underway testing Tamoxifen in women at increased risk of breast cancer.

## For More Information

### Books

**Altman, Roberta.** *Every Woman's Handbook for Preventing Cancer: More than 100 Simple Ways to Reduce Your Risk.* **Toronto: Pocket Books, 1996.**

A medical journalist and breast cancer survivor shares many ways that women can change to help prevent cancer.

**American College of Sports Medicine.** *ACSM Fitness Book.* **1998**

A guide for what exercises to do, when to do them and how to execute them properly. After a four-item fitness test, there are step-by-step instructions to create an exercise program that is perfectly suited to you. The ACSM is dedicated to promoting healthier lifestyles for people around the world.

**American Institute for Cancer Research's Program for Cancer Prevention.**

*Stopping Cancer Before it Starts.* **New York: Golden Books, 1999.**

Helps the reader understand the cancer process, presents some of the most important science behind the new recommendations to prevent cancer, provides practical tools to make changes to lower cancer risk, and shares some recipes for a healthier you. Primary focus on nutrition and exercise. The AICR conducts research and education programs.

**Canadian Cancer Society.** *Healthy Eating: Reducing Your Risk of Cancer.*

**Toronto: The Author, 1996.**

A free information booklet with healthy eating tips that include: what foods to buy, how best to prepare the foods, and what to eat.

**Love, Susan and Lindsey, Karen .** *Dr. Susan Love's Breast Book.* **Don Mills, Ontario: Addison-Wesley Publishing Co, 1995**

A resource book with information on breast care, screening, diagnosis, treatment, and research. The section on causes of breast cancer covers genes, and environment, risk factors (genetic, hormonal, external), pre-cancerous conditions, prevention, and screening.

**Michnovicz, JJ and Klein, DS.** *How to Reduce Your Risk of Breast Cancer.* **New York: Warner Books, Inc., 1994.**

The latest scientific information about breast cancer - who gets it and how to prevent it. Steps are given that you can take to help guard yourself and your family's health. Information is provided on low fat diet, phytochemicals, antioxidants, aerobic exercise, body shape, types of dietary fibre that eliminate estrogen from your body, soybeans, cabbage,... and more.

## For More Information

### Books

**Potter, John, F.** *How to Improve Your Odds Against Cancer.* **Lifetime Books Inc. 1998**

A health guide for the lay person on prevention strategies and techniques of early detection. Prevention focuses on changing your patterns of living addressing the risk of developing cancer with tobacco use, excessive alcohol ingestion, dietary factors, excessive exposure to sunlight, chemicals, drugs, sexually transmitted diseases, and X-ray's. Dr. Potter is a professor of surgery.

**Sharkey, Brian.** *Fitness and Health..* **1997.**

Explains in plain English how the body responds to physical activity, why physical activity is so important to health and how best to become physically active. Sharkey is past president of the American College of Sports Medicine and a world renowned fitness authority.

**Winawer, Sidney and Shike, M.** *Cancer Free: The Comprehensive Cancer Prevention Program.* **New York: Fireside Book/ Simon and Schuster, 1995.**

Two physicians from Memorial Sloan-Kettering Cancer Center give guidelines to help people design a personal program to increase their odds of staying cancer free. Information on assessing your cancer risk, understanding the link between the mind and cancer, re-evaluating your diet and lifestyle, and designing your personal prevention program is discussed.

## For More Information: Websites and Telephone Numbers

### Websites

**American Cancer Society**  
<http://www.cancer.org>

**American Dietetic Association & Canadian Dietetic Association  
position on Women's health and nutrition**  
<http://www.eatright.org/awomenshealth.html>

**American National Cancer Institute**  
<http://cancernet.nci.nih.gov>

**Canadian Cancer Society**  
<http://www.cancer.ca>

**University of Pennsylvania Cancer Centre**  
<http://oncolink.com>

### Toll-Free Telephone Numbers

**American Cancer Society**  
1-800-ACS-2345

**Cancer Information Service - Canadian**  
1-888-939-3333

**National Cancer Institute Cancer Information Service- U.S.A.**  
1-800-4-Cancer

## References

1. National Cancer Institute of Canada. (1998) Canadian Cancer Statistics 1998. Toronto: Author.
2. Levine M., Guyatt G.H., Gent M., DePauw S., et al. (1988). Quality of life for stage II breast cancer: an instrument for clinical trials. Journal of Clinical Oncology, 6(12), 1798-1810.
3. Gale, M.H., Brinton, L.A., Byar, D.P., Corle, D.K., Green, S.B., et al. (1989). Projecting individualized probabilities of developing breast cancer for white females who are being examined annually. Journal of the National Cancer Institute, 81(24), 1879-1886.
4. Alberg, A.J., & Helzlsouer, K.J. (1997). Epidemiology, prevention, and early detection of breast cancer. Current Opinion in Oncology, 9, 505-511.
5. Clinical Guidelines from Canadian Task Force on Preventive Health Care - Breast (1998) [www.ctfphc.org](http://www.ctfphc.org)
6. Canadian Cancer Society, 1999 [www.cancer.ca](http://www.cancer.ca)
7. American Cancer Society, 1999 [www.cancer.org](http://www.cancer.org)
8. Miller, A.B. (1997). Controversies in breast cancer screening. Cancer Prevention & Control. 1(1), 73-79.
9. U.S. Prevention Services Task Force, 1996. [www.guideline.gov](http://www.guideline.gov)
10. Canadian Prevention Task Force On the Periodic Health Exam (1994) - The Canadian Guide to Clinical Preventative Health Care, Canada Communication Group Publishing Catalogue no. H21-117/1994E p. xxxvii
11. U.S. Prevention Services Task Force. Guide to Clinical Preventative Services. International Medical Publishing Inc; Alexandria, Virginia.

## References

12. Friedenreich, C.M., Thune, I., Brinton, L.A., Albanes, D. (1998). Epidemiologic Issues Related to the association between physical activity and breast cancer. CANCER Supplement, 83(3), 600-610.
13. American & Canadian Dietetic Society-1998 [www.eatright.org/awomen-health.html](http://www.eatright.org/awomen-health.html)
14. Franceschi, S., et al. (1996). Body size indices and breast cancer risk before and after menopause. International Journal of Cancer, 67, 181-86.
15. Trentham-Dietz, A. et al. (1997). Body size and risk of breast cancer. American Journal of Epidemiology, 145, 1011-1019.
16. Yong, L.C., Brown, C.C. Schatzkin, A. & Schairer, C. (1996). Prospective study of relative weight and risk of breast cancer: The breast cancer detection demonstration project follow-up study, 1979 to 1987-1989. American Journal of Epidemiology, 143(10), 985-95.
17. Longnecker, M.P. (1994). Alcoholic beverage consumption in relation to risk of breast cancer: meta-analysis and review. Cancer Causes and Control, 5, 73-82.
18. World Cancer Research Fund in association with the American Institute for Cancer Research. (1997). Food, Nutrition and the Prevention of Cancer: A Global Perspective. The author.
19. Cline, J.M. & Hughes, C.L. (1998). Phytochemicals for the prevention of breast and endometrial cancer. Cancer Treatment & Research, 94, 107-134.
20. Boyd, N.F., Martin, L.J., Noffel, M., Lockwood, G.A., Trichler, D.L. (1993). A meta-analysis of studies of dietary fat and breast cancer risk. British Journal of Cancer, 68(3), 627-36.
21. Holmes, MD, Hunter, DJ, Colditz, GA, Stampfer, MJ, Hankinson, SE, et al. (1999). Association of dietary intake of fat and fatty acids with risk of breast cancer. Journal of the American Medical Association, 281(10), 914-920.
22. Boyd, NF, Greenberg, C., Lockwood, G., Little, L., Byng, J., et al. (1997) Effects at two years of low-fat, high carbohydrate diet on radiologic features of the breast: results from a randomized trial. Canadian Diet and Breast Cancer Prevention Study Group. Journal of the National Cancer Institute, 89 (7), 488-96

## References

23. Tham, D.M, Gardner, C.D., Maseell, W.L., Clinical Review 97: Potential health benefits of dietary phytoestrogens: a review of the clinical epidemiological, and mechanistic evidence. Journal of Clinical Endocrinology and Metabolism, 1998,83(7) :223-35
24. Powles, T, Eeles, R, Ashley, S, Easton, D, Chang, J, et al. (1998). Interim analysis of the incidence of breast cancer in the Royal Marsden Hospital Tamoxifen randomized chemoprevention trial. The Lancet, 352, 98-101.
25. Veronesi, V, Maisonneuve, P, Costa, A., Sacchini, V., Maltoni, C., et al. (1998). Prevention of breast cancer with Tamoxifen: Preliminary findings from the Italian randomised trial among hysterectomised women. The Lancet, 352, 93-97.
26. Fisher, B., Joseph, P., Costantino, D., Wickerham, D.L., Redmond, C.K., et al. (1998). Tamoxifen for prevention of breast cancer: Report of the National Surgical Adjuvant Breast and Bowel Project P-1 Study. Journal of the National Cancer Institute, 90(18), 1371-1388.
27. Pritchard, K.I. (1998). Is Tamoxifen effective in prevention of breast cancer? The Lancet, 352, 80-81.
28. Day, R., Ganz, P.A., Constantino, J.P., Cronin, W.M., (1999) Health-related quality of life and Tamoxifen in breast cancer prevention: A report from the NSABP. PI study. Journal of Clinical Oncology, 17(9): 2659-2669.
29. Love, R.R., Wiebe, D.A., Newcomb, P.A. et al (1991) Effects of Tamoxifen on Cardiovascular Risk Factors in Postmenopausal Women. Annals of Internal Medicine. 115:860-4
30. Grey, A.B., Stapleton, J.P., Evans, M.L., (1995) The Effect of the Anti-Estrogen Tamoxifen on Cardiovascular Risk Factors in Normal Postmenopausal Women. Journal of Clinical Endocrinology and Metabolism. 80 (11), 3191-3195
31. Delmas, PD, Bjarnason, NH, Mitlak, BH, Ravoux, AC, Shah, AS, Huster, WJ, Draper, M, Christiansen, C. (1997). Effects of Raloxifene on bone mineral density, serum cholesterol concentrations, and uterine endometrium in postmenopausal women. New England J of Medicine. 337(23), 1641-1647.

## References

32. Cummings, S.R., Eczert, S. , Krueger, K.A., Grady, D., Powles, T.J., et al. (1999) The effect of Raloxifene on risk of breast cancer in postmenopausal women. Journal of the American Medical Association, 281(23), 2189-2197.
33. Ettinger, B., Black, D.M., Mitlak, B.H., Knickerbocker, R.K., Nickelson, T., et al.(1999) Reduction of vertebral fracture risk in postmenopausal women with osteoporosis treated with Raloxifene: results from a 3-year randomized clinical trial. Journal of the American Medical Association, 282 (7): 637-45