



# Mayo Mammography Health Study (MMHS) Update

March 2013

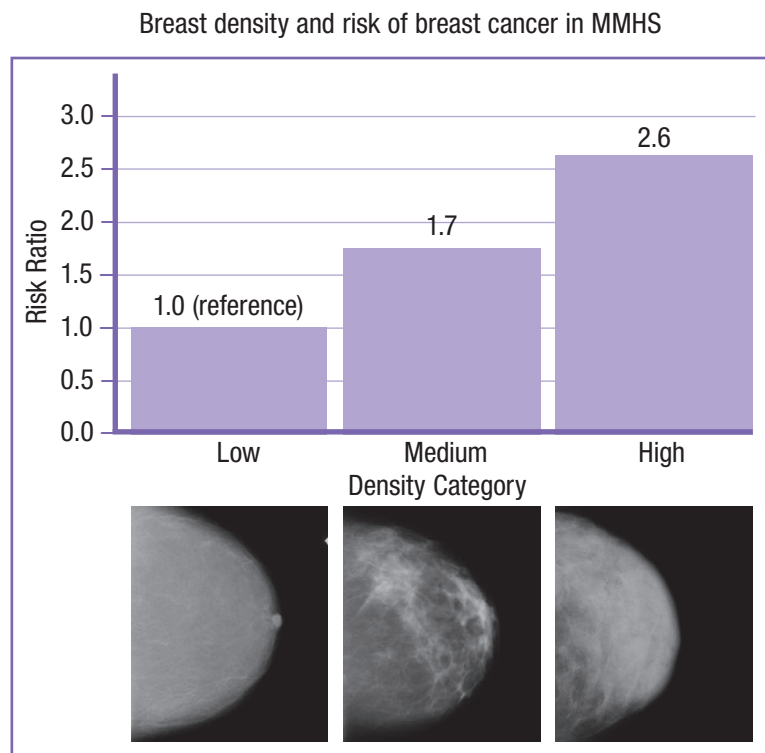
We are sending you this study update because you previously participated in our mammography study called the Mayo Mammography Health Study or MMHS. This study is the largest observational study of mammography and breast cancer ever performed at Mayo Clinic. Over 24,000 women joined our study and provided information through questionnaires, mammograms and blood samples. The goal of our study is to better understand the connection between breast density and breast cancer. With your help, we are on our way.



*Celine Vachon, Ph.D.  
Principal Investigator*

## Study Findings

Over the past 10 years, we have confirmed that breast density, or the proportion of fibroglandular tissue revealed on the mammogram, is one of the strongest risk factors for breast cancer (See figure below). Using the MMHS, we were able to measure breast density on mammograms from women before they developed breast cancer and compare them to breast density on mammograms from women who did not develop cancer over the same time period. With your help, we have shown that for the same age and weight, women with the densest breasts have the greatest risk of breast cancer (See figure below).



We know that the amount or proportion of breast density is not the only important feature on the mammogram that may contribute to an increased risk in breast cancer. So, we also studied how dense tissue is spread throughout the breast, or the variation in the dense tissue. We found that in addition to the proportion of breast density, the variation in the density is also associated with breast cancer. We published these findings in the Journal of the National Cancer Institute earlier this year. You can find the full article at (<http://jnci.oxfordjournals.org/content/104/13/1028.long>).

## On the Horizon

With the MMHS, we have the opportunity to answer many important questions regarding breast density and breast cancer. Currently, we are studying the following topics:

- A) Our prior studies of breast density were performed using film mammogram images. With improved digital mammography technology now used throughout the United States, we are working to determine which breast density measures will show the strongest association with breast cancer in this setting.
- B) Within other studies, we have several new genetic variations that are associated with breast density. These variations are not necessarily new genes associated with breast cancer, but instead, they may help us understand what causes breast density and the biology behind this complex trait.
- C) We know that breast density can change over time as a result of age and taking certain therapies. We are looking at how density changes for women who are taking hormone therapies. We are also looking at whether these changes in density can help us know which women will derive the greatest benefit from therapy.

We are thankful for your ongoing participation that allows for these studies to happen.

## Frequently Asked Questions

We have been in touch with many of you over the years and have received a number of questions that we would like to address in this update letter.

*Q: I already completed your study materials. Why are you contacting me now, several years after I enrolled in the study?*

**A:** There are several reasons we might contact you again. One of the most important reasons we contact you is to find out about any new information regarding your health, including cancer diagnoses. Another reason we may contact you is to give you an update on the progress that has been made in this study. Finally, in some cases, we may contact you when we have started new studies and, due to certain criteria, we want to ask whether you would like to participate.

*Q: Will you let me know if you find out anything important?*

**A:** Our study is striving to use the mammogram to identify new risk factors for breast cancer. As we discover and validate new risk factors, we will communicate these findings to you through a newsletter similar to the format of this current letter. Further, our main goal is to translate these findings to future patient care.

*Q: I forgot I participated in this study. What did I agree to again?*

**A:** When you consented to participate in the Mayo Mammography Health Study (MMHS), you agreed to complete a short questionnaire and provide access to your mammograms and any extra blood available from clinical tests. You also gave us permission to contact you for follow-up of new cancers.



### Keep us informed!

We would appreciate hearing from you if you have a change of address or phone number or have any questions about the study. Please call us at 507-538-6276 or toll-free at 1-866-795-5381.