

LAY ABSTRACT

TITLE: Gene Expression Signature of Atypical Breast Hyperplasia and Regulation by SFRP1

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Often breast imaging and subsequent biopsies result in a diagnosis of atypical breast hyperplasia (AH). This diagnosis describes what the doctor sees when the cells of the breast milk duct overgrow and look abnormal. This diagnosis is not cancer, but it can be a source of stress for the general public because women diagnosed with AH have an increased risk of developing breast cancer. This study sought to examine the differences between the cells that over grow and the cells that don't, in hopes of identifying critical changes that might cause the increased susceptibility to cancer development.

Results: The level of 99 genes (pieces of your genetic material which code for proteins) were identified that were significantly different between the normal and abnormal tissues. Furthermore, we found that the level of a particular tumor suppressor was

consistently lower in the abnormal areas and that the level could affect 13 other genes. Many of those genes control the growth and cell accumulation. This research is important because it highlights a target which could possibly reverse or prevent the susceptibility to cancer.