

**Wellend Health**  
 Breast Density and Breast Cancer Risk: New Understandings

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2018

## High Mammographic Breast Density (HMBD)

1. Masking effect
2. Increased risk of breast cancer
3. Management guidelines

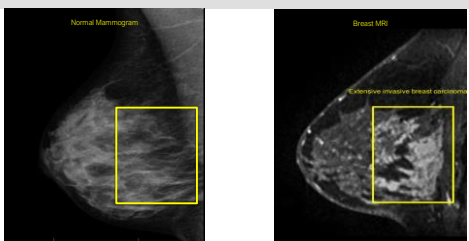
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## High Mammographic Breast Density (HMBD)

### Masking Effect

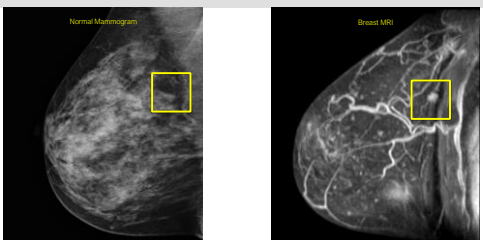
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## Decreased Sensitivity of Mammography



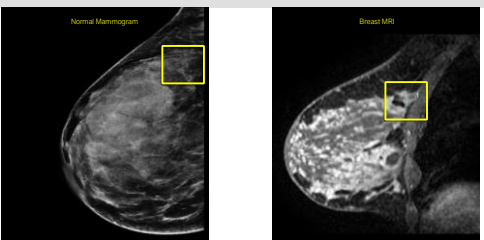
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## Decreased Sensitivity of Mammography



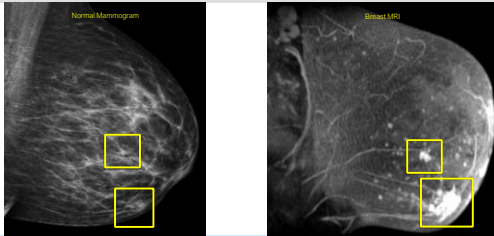
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## Decreased Sensitivity of Mammography



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## Decreased Sensitivity of Mammography

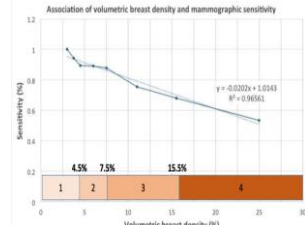


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## Norwegian Screening Results ~250,000 women

Destounis et al AJR Jan 2017



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## High Mammographic Breast Density (HMBD)

Increased Risk

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## Bi-Rads

### Normal Mammograms

The breast is almost all fatty tissue with very little dense tissue.

The breast contains scattered areas of dense glandular and fibrous tissue.

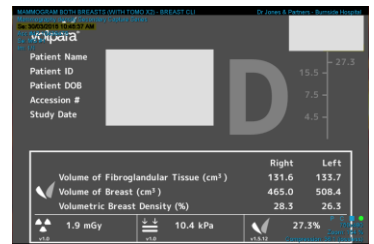
More of the breast is made of dense glandular and fibrous tissue. This can make it hard to see small tumors near or around the dense tissue.

The breast is extremely dense, which makes it hard to see tumors in the breast.

Image and interpretation from mammography

HIGHEST DENSITY

## Volpara® report



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## Breast Cancer Risk Calculator

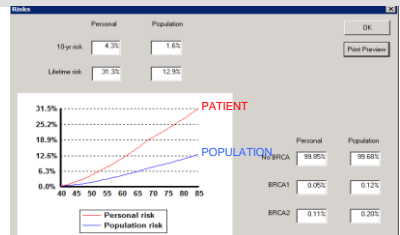
Tyrer-Cuzick Model

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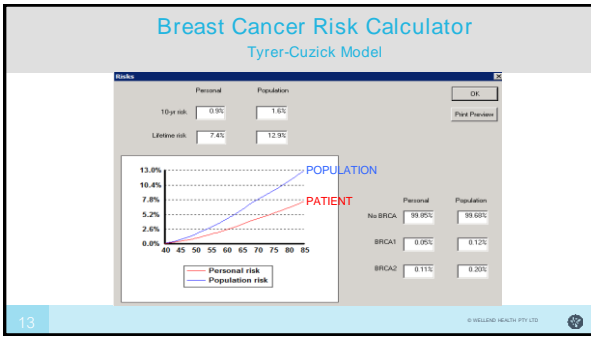
## Breast Cancer Risk Calculator

Tyrer-Cuzick Model



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### Risk Factors for HMBD

Most (60%) of the risk for developing HMBD is inherited.

Other risk factors include:

1. Family history of breast cancer
2. Early (age 12-17) and/or prolonged use of OCP
3. IVF treatments, particularly if over the age of 35
4. HRT (MHT), particularly combination HRT
5. First child after the age of 30
6. Nulliparous

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### Women's Health Initiative Re-examined Byrne, et al JNCI March 2017

ARTICLE

#### Mammographic Density Change With Estrogen and Progestin Therapy and Breast Cancer Risk

Celia Byrne, Gisèle Ursin, Christopher F. Martin, Jennifer D. Peck, Etiodia B. Cole, Donglin Zeng, Eunhee Kim, Martin D. Yaffe, Norman F. Boyd, Gerardo Heiss, Anne McTiernan, Rowan T. Chlebowski, Dorothy S. Lane, JoAnn E. Manson, Jean Wactawski-Wende, Etta D. Pisano

- Every 1% increase in MBD = 3.4% increase in BCa risk
- Increase in MBD warrants cessation of HRT
- Significantly reduced detection of BCa
- Top 20<sup>th</sup> percentile 3.6 fold increase in risk

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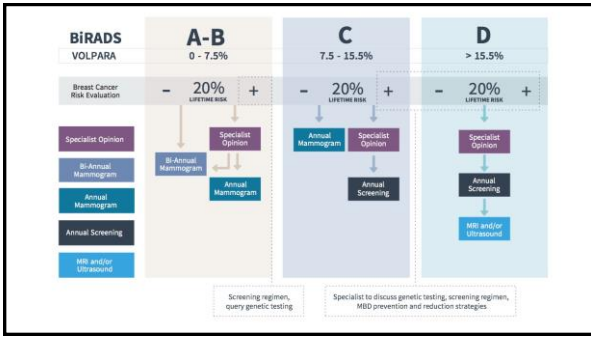
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### High Mammographic Breast Density (HMBD)

#### Management Guidelines

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### Prevention Strategies

#### Tamoxifen-Induced Reduction in Mammographic Density and Breast Cancer Risk Reduction: A Nested Case-Control Study

Jack Cuzick, Jane Warwick, Elizabeth Pinney, Stephen W. Duffy, Simon Cawthorn, Anthony Howell, John F. Forbes, Ruth M. L. Warren  
JNCI August 2011

- In the tamoxifen arm 46% patients > 10% reduction in breast density at 18 months
- 10% reduction = 63% reduction in BCa risk  
This persisted after 5 years of treatment
- PBS listed Jan 2016
- Tolerability of tamoxifen problematic

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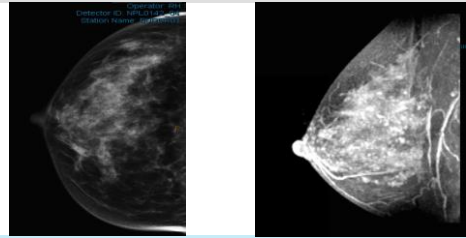
Open labelled trial of androgen/aromatase inhibitor in premenopausal women 8<sup>th</sup> IDM San Francisco June 2017



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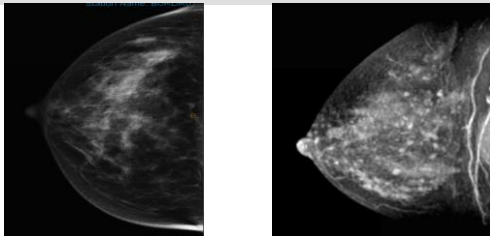
Therapeutic Intervention to reduce MBD



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Therapeutic Intervention to reduce MBD



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Take home messages

- Reducing MBD is a surrogate endpoint for breast cancer prevention
- Order mammography to include density score in the report to enable accurate risk calculation
- Do a risk assessment, if >20% lifetime risk - needs specialist opinion
- Preventative strategies are best commenced in specialist setting
- Offer MMG baseline screening to 35 yo women on long-term use of OCP, family history of MBD, IVF use, and/or nulliparous
- Offer baseline MMG at 40 for 'non-at-risk' patients
- DO NOT increase MBD if it can be avoided

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**WellDen Health** GP Info  
www.welldenhealth.com

**Breast Density summary**

**Risk Factors for High Breast Density**

- More than 20% of the time for developing high breast density is unknown
- Risk factors include:
  - Family history of breast cancer
  - Early age at 1st primary breast cancer or OCP
  - Long-term use of OCP
  - IVF use
  - Nulliparous
  - History of breast cancer
  - History of breast cancer in a first-degree relative

**GUIDELINES**

**High Breast Density (HBD) Conversion Chart**

**Density Info Brochure for Patients**

**High Mammographic Breast Density**