

Swedish National  
Breast Cancer Study

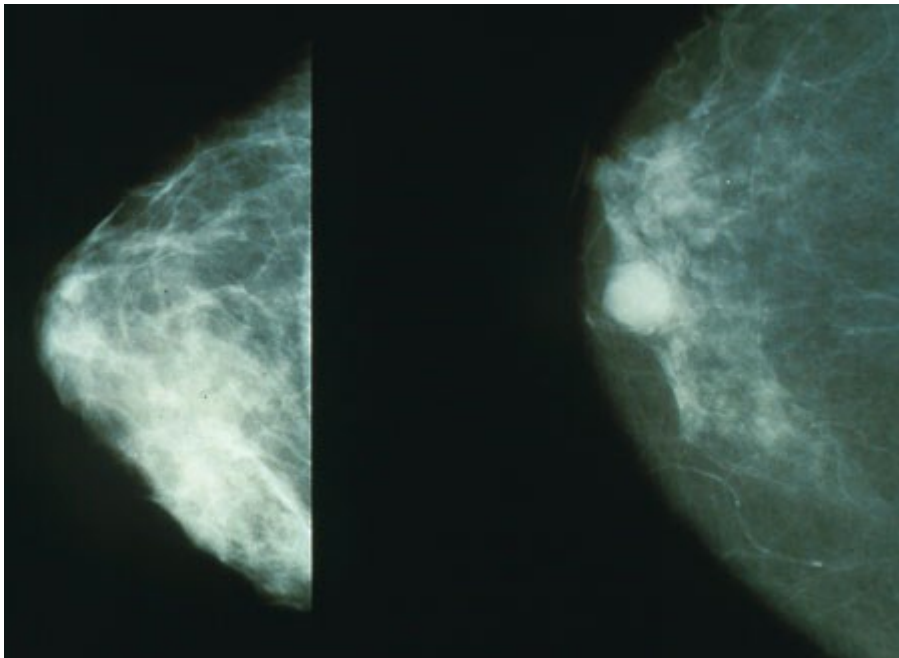
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**Karma**

## **Karma Imaging variables**

Karma collects all mammograms from women participating in the study. The images are collected from the mammographic screening where the women are recruited to Karma. Karma collects images at the time the women comes to Karma, and also retrospective and prospective images. The images are further processed in Karma for calculation of breast density.

The following picture shows an example of a normal breast and a breast with cancer.



Karma holds the following imaging variables. Note that a woman usually has 4 images per mammography visit (two images from above, called CC view, and two images diagonal from the side, called MLO view. For each view one image is for right breast and one is for left breast. A woman can also have images from several mammography visits.

## ***Image tag data***

Each mammogram holds metadata in so called tags describing image characteristics. The names are according to the DICOM standard (<http://medical.nema.org/>)

### **quality**

Raw or processed image. (Raw images appear all white to the eye and images are therefore processed in order to make images viewable by the eye)

### **digital**

Digital or analog digitized image.

### **manufacturer**

Manufacturer of machine used for mammography.

### **manufacturersmodelname**

Model of machine used for mammography.

### **viewposition**

View position of breast, e.g. CC, MLO.

### **Modality**

Type of mammogram. Digital mammograms area measured.

**imagelaterality**

Left or right breast imaged.

**mammography\_date**

Date of mammography. The date the mammography was performed.

**rows**

Number of rows in the images, height.

**columns**

Number of columns in the image, width.

**dateOfSecondaryCapture**

Date of scanning analog image at MEB.

## *Density measurements*

**PD**

Percent breast density score. The score from 0 to 100 percent denotes the percentage of dense tissue as a percentage of the full breast size.

**densearea\_cm2**

Dense area of the breast measured in cm<sup>2</sup>.

**breastarea\_cm2**

Total breast area measured in cm<sup>2</sup>.

## **cbirads**

Percent mammographic density classified into BI-RADS similar categories (almost entirely fatty, scattered areas of dense tissue, heterogeneously dense, extremely dense)