

generations

The UK study of the causes of Breast Cancer

Generations Study Participants: 112k Women (4th Largest UK Cohort Study)

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Demographics

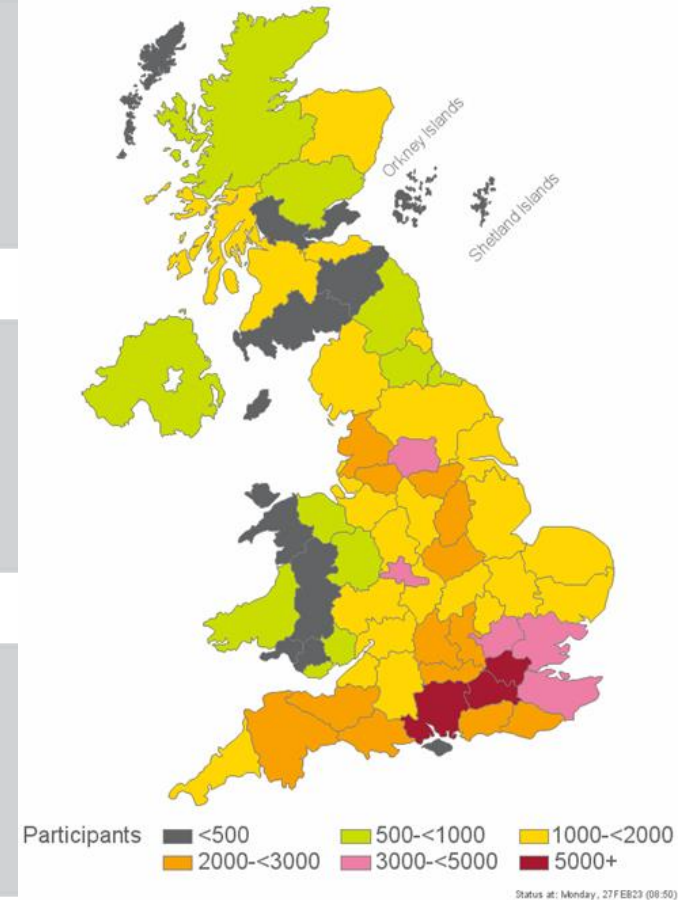
- Age at entry: 18-91 years
- 46% highest SES
- 99% white

History of cancer

- 7500 had been diagnosed with cancer
 - 4500 prevalent cases of breast cancer

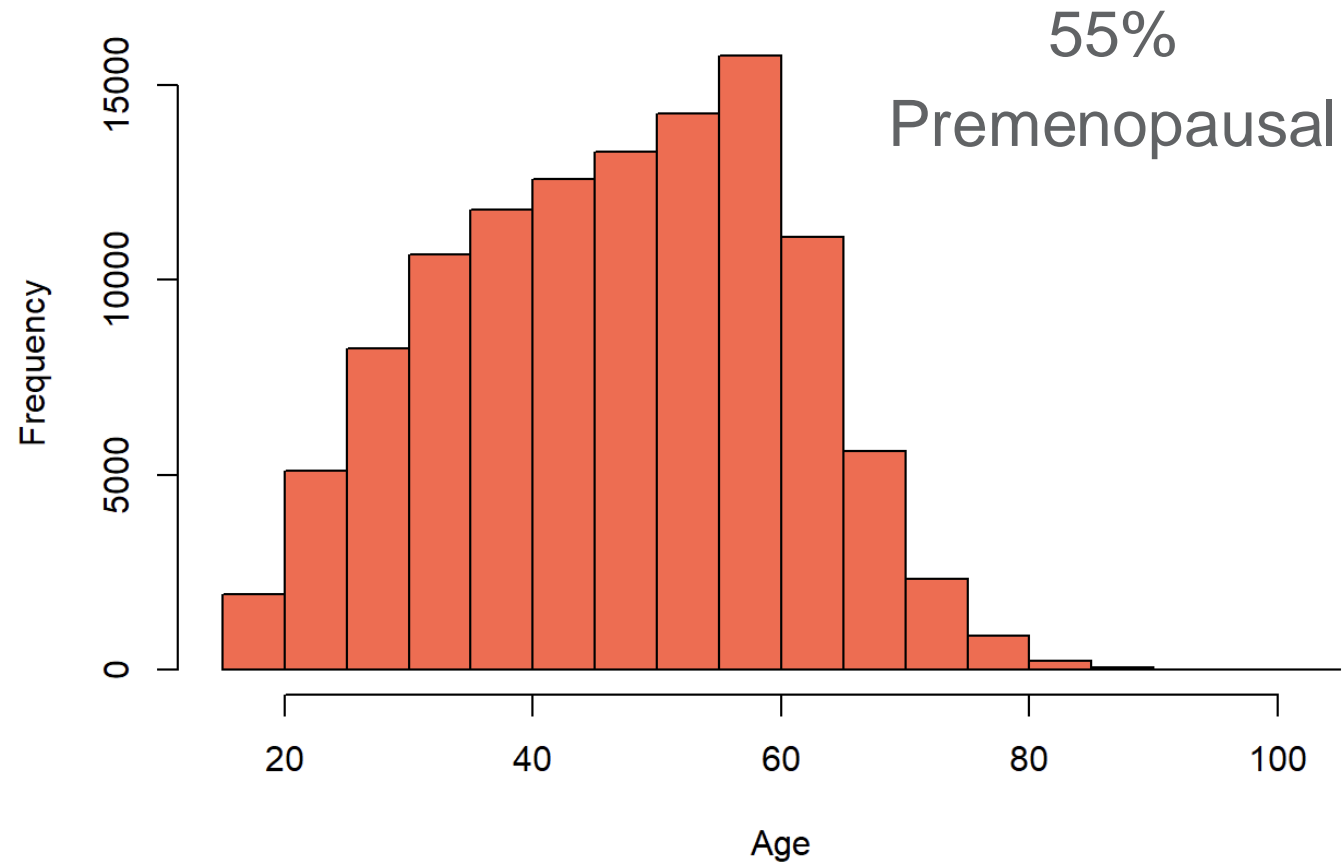
Recruitment

- Recruitment from 2003-2011
- 92% provided blood samples



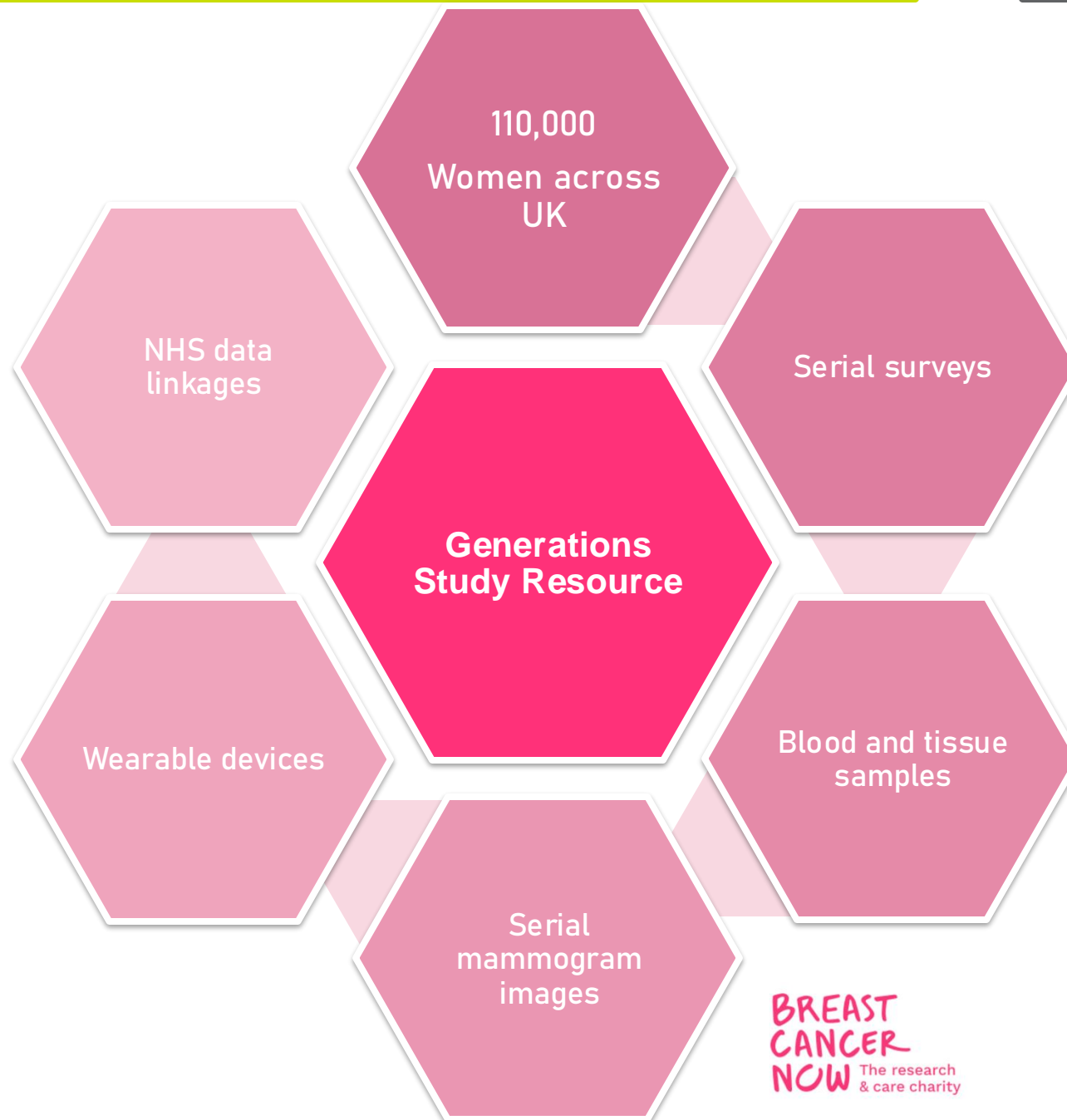
Participant characteristics at enrollment (2003- 2011)

Wide age distribution at enrollment



Prospective
cohort in the UK

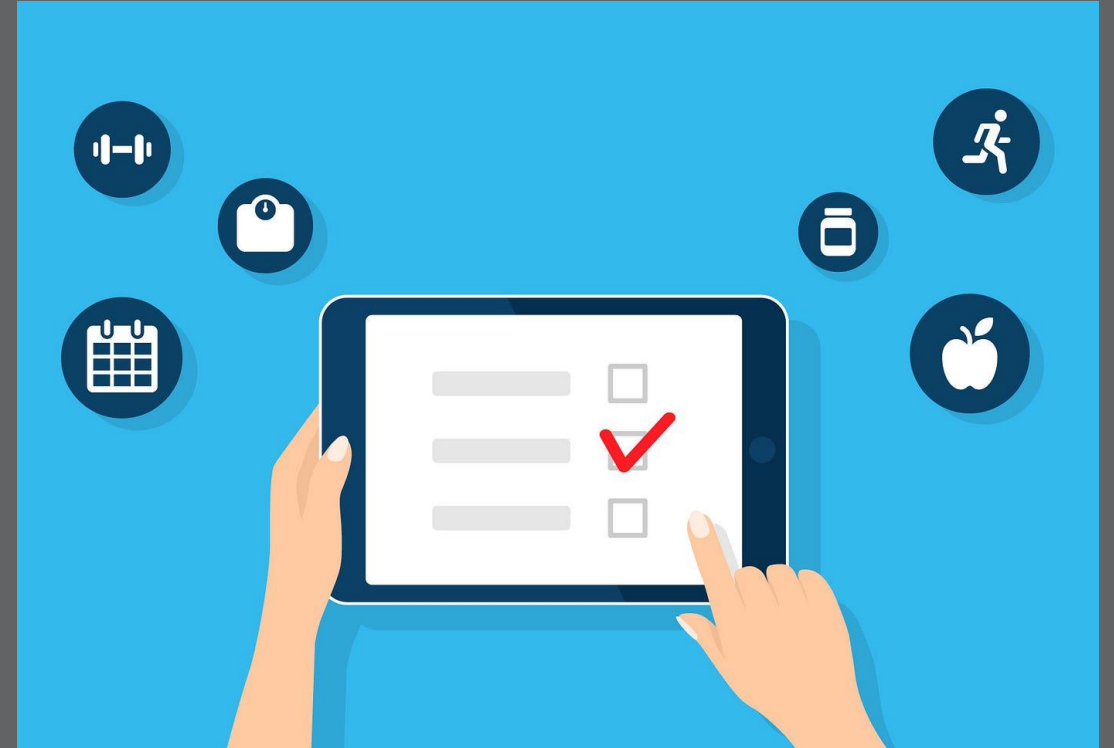
Comprehensive
research resource
focusing on
breast cancer



Questionnaire Data on Lifestyle and Medical History

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- Questionnaires sent every 3 years
- Lifestyle eg physical activity
- Family history of cancer
- Reproductive history eg children
- Medical history eg diabetes



Blood Samples available for 92% of the participants

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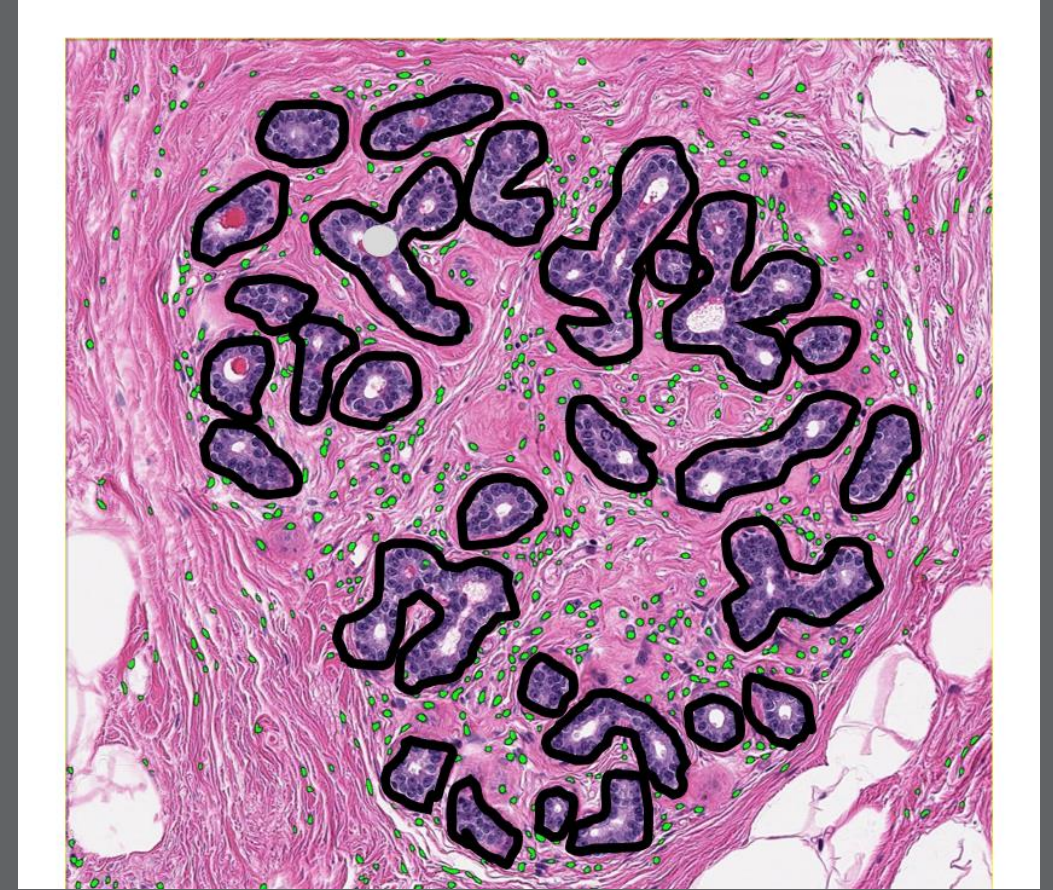
- Have been used to measure hormone levels and genetic testing in 2000 women who have breast cancer
- We plan to perform genetic testing on the whole study population to study other types of cancer and other diseases



Breast Cancer Tissue Biobank

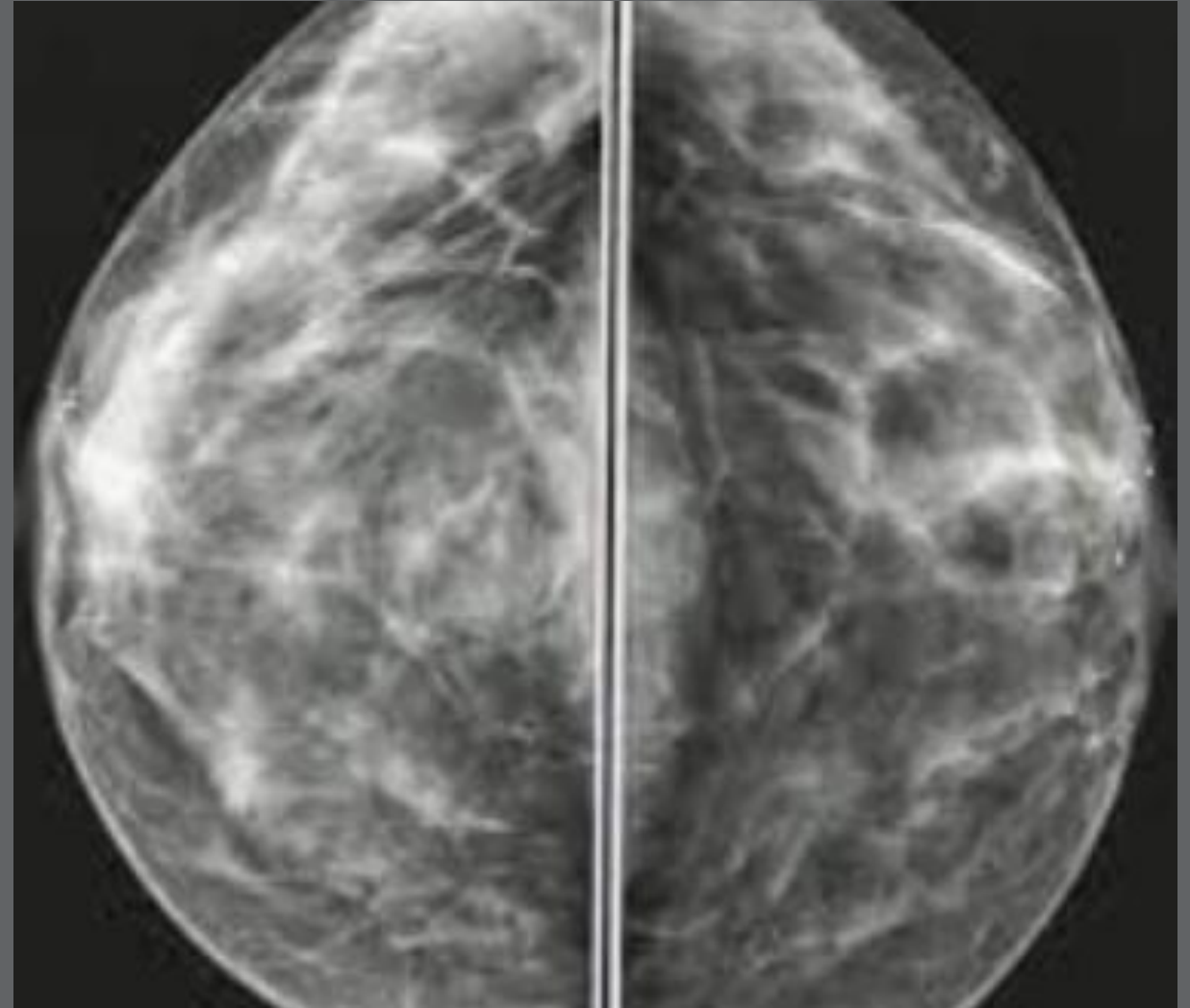
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- Women with breast cancer asked for permission to obtain tissue samples after their surgery
- Biobank of 2000 breast cancer tissue samples at ICR
- Images of the tissue analysed using AI



Digital Archive of Mammograms

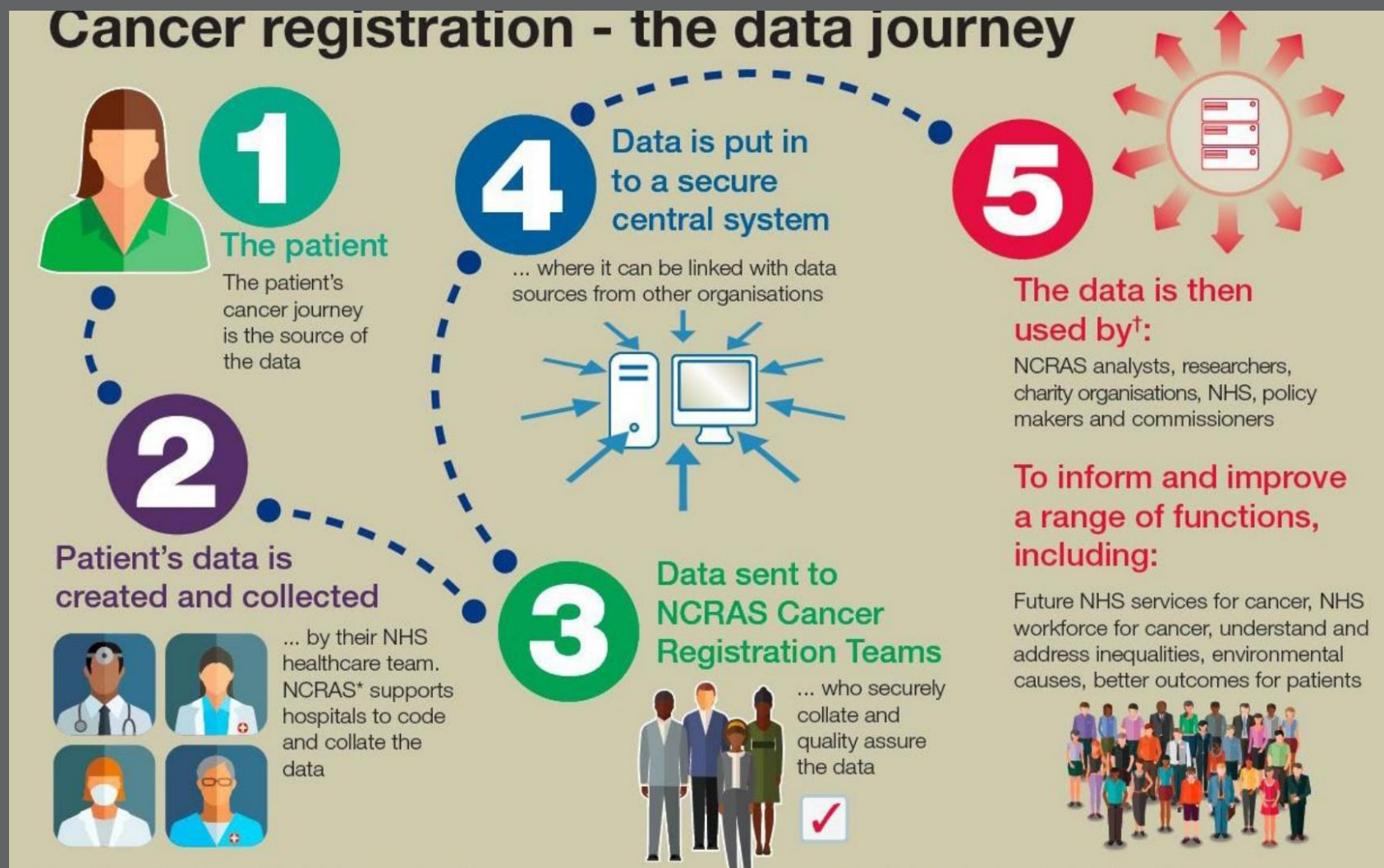
- NHS screening centres provide mammograms for women who attend screening
- Digital archive of mammograms for 2000 women who had breast cancer and 2000 women who did not
- Image analysis using specialist software to study changes in the images that can predict breast cancer



NHS Medical Record Data

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- We have permission to collect information from the participants medical records
- Details of their cancer diagnosis
- Cancer treatments they receive
- Hospital admissions and other diagnoses



New Cancers Diagnosed in the Generations Study Participants

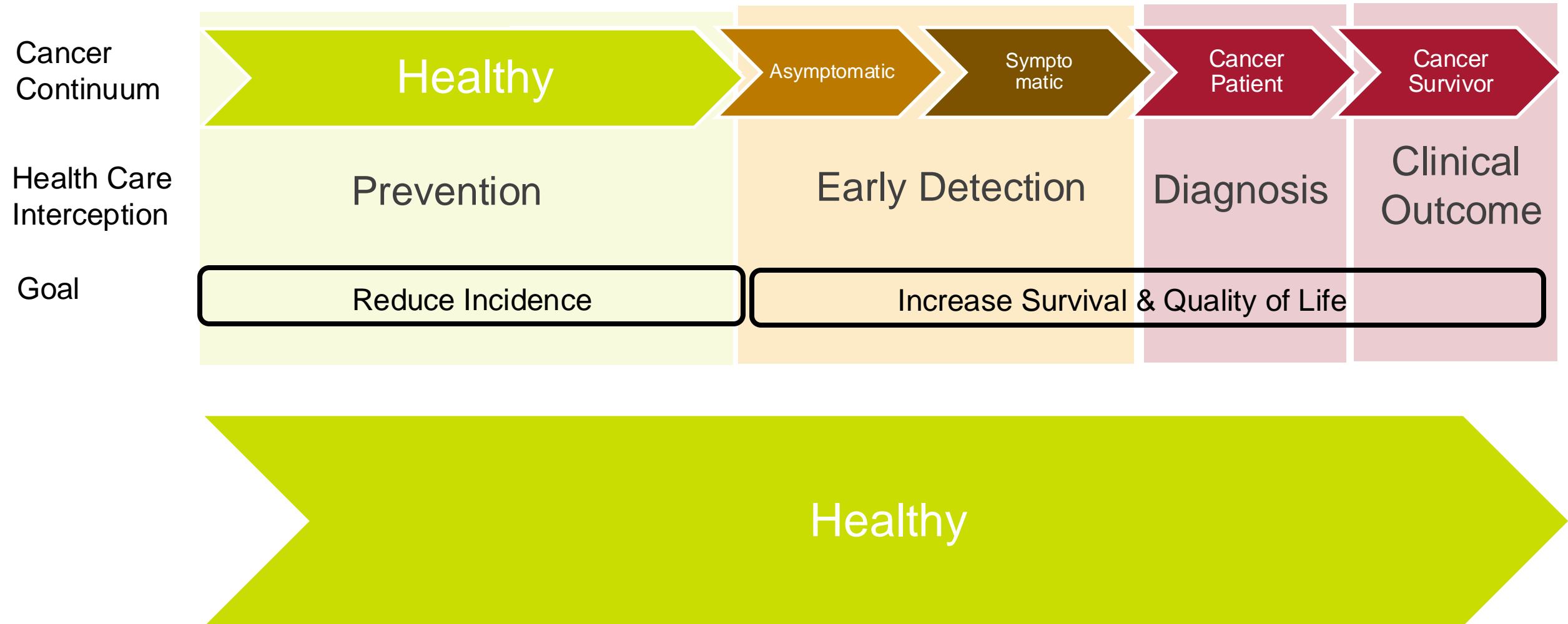
We have focused on studying breast cancer but the data can be used for many other important questions about what causes cancer in women in the UK

Cancer type	Incident cases
All cancers	7271
Colon	478
Rectum	171
Pancreas	130
Lung	310
Melanoma	601
Breast	3300
Endometrial	318
Ovarian	331
Kidney	115
Brain	102
Thyroid	117
Lymphoma	209
Leukemia	158

Distinctive Features of the Generations Study

Study name	Sample size (females)	Baseline age (yrs)	Baseline years	Follow-up questionnaires	Mammo - grams	Tumour tissue	ER Status
Generations Study	112,000	16-102	2003-11	4 follow-ups	Yes	Yes	>90%
Million Women Study	1,320,000	50-64	1996-01	4 follow-ups	Sub-set	No	40%
UK Biobank	273,000	40-69	2006-10	Subsets	No	No	na
EPIC Oxford	14,652	23-73	1993-99	3 follow-ups	No	No	nk
EPIC Norfolk	22,593	41-76	1993-98	3 follow-ups	No	No	nk

Prospective studies across the cancer continuum



The Generations Study Team



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