Frequently Asked Questions

Why are patients with breast cancer ≤ 30 or HER2+ breast cancer ≤ 35 referred to Genomic Medicine for testing?

These very young patients may opt to have more extensive genetic testing including TP53 (Li Fraumeni syndrome). These women will be seen in the Liverpool Centre for Genomic Medicine as a priority generally within 2-4 weeks of referral if their results could impact on immediate management decisions. Please state 'urgent cancer referral' and include histopathology with any referral to Genomic Medicine.

How can I check if my patient is eligible under the latest guidelines?

The national genomic test directory is updated regularly. For the latest eligibility please refer to R208 in the rare and inherited disease eligibility criteria document (a PDF) accessible via this website:
https://www.england.nhs.uk/publication/national-genomic-test-directories/

How can I check what genes are covered in the R208 genetic test?

The NHS GMS panel app website links to the genes currently on each panel
https://nhsgms-panelapp.genomicsengland.co.uk/panels search for R208 or inherited breast and ovarian cancer

Can patients with breast cancer diagnosed in the past have testing via the mainstream?

If a patient who has had breast cancer in the past, re-presents to a breast unit, is eligible for testing and has not had any prior testing, then R208 testing can be offered. There are no plans to recall patients with historic breast cancer to offer genetic testing.

Can patients who have had genetic testing in the past now be re-tested, so that more genes can be analysed?

There are no plans to recall patients who had historic genetic testing to offer more extensive genetic testing now.

If a family history appears significant then a referral back to Genomic Medicine may be suitable for a reassessment, especially for families who have had genetic testing 10+ years ago, or families who present due to new cases of breast/ovarian cancer in the family.

Can patients have genetic testing even if their relative had an uninformative result (no genetic cause found) in the past?

If your patient is eligible for genetic testing in their own right then you can offer the test, regardless of whether another relative has had testing before. E.g. a women has bilateral breast cancer aged 48 can be offered R208 even if she reports that her mother had genetic testing in the past due to her own breast cancer and this was uninformative (nothing significant found).

My patient is not sure about their family history of cancer, what should I do?

If your patient is eligible in their own right e.g. bilateral breast cancer under 50, then genetic testing can be offered. If testing eligibility depends on the family history and the details are not clear then you can make a referral to Genomic Medicine where ways of trying to obtain the necessary confirmation can be discussed. These may include contacting the regional cancer registry, requesting histopathology reports or the patient seeking further family history information from discussion with other relatives or seeking death certificates.

My patient is not sure about accepting the offer of genetic testing, what should I do?
If your patient has more questions about genetic testing and you feel would benefit from a more detailed discussion they can be referred to Genomic Medicine. Please state clearly on a referral that this patient has additional questions requiring further pre-test counselling otherwise a referral will be rejected.

Why am I being asked to offer mainstream testing?
As more genetic testing becomes possible there has been a national shift towards offering this via the mainstream. This can benefit patients who do not need to wait for a further appointment and can get results quicker which may impact on their treatment and care. Genomic Medicine will no longer be accepting routine referrals for patients with breast cancer who are now eligible for diagnostic genetic testing via the mainstream. Genomic Medicine wish to support their local colleagues in offering mainstream testing and can develop further educational resources as required.

How do I ensure I complete the request form correctly?
The rare disease referral form accessible via https://mft.nhs.uk/nwglh/documents/test-request-forms/
Print and complete form to accompany sample which needs to be sent to the local Genomics laboratory

- Clinical Details (type of test): tick Diagnostic Test
- Clinical Indication Code: enter **R208** inherited breast cancer.
- Test Details: document the patient's eligibility criteria and the test required e.g. *'Patient recently diagnosed with breast cancer. Eligible for genetic testing as patient has triple negative breast cancer under 60 years.'*

Email for any laboratory queries is mft.genomics@nhs.net
Email for any eligibility queries is lwft.clingen@nhs.net

What about patients that do not want the test but would like to store their DNA sample for their family to access in the future?
Some patients who are eligible for genetic testing do not consent to have genetic test now. They can be offered the option to have their DNA sample stored. In this situation the consent form does not need to be completed. Having a DNA sample stored allows the possibility of future genetic testing.

Testing of any stored DNA sample after the death of the patient can be discussed and arranged where suitable by Genomic Medicine only. A relative can be referred to Genomic Medicine to discuss this option.

To arrange DNA storage the referral form must be completed as follows:

- Clinical Details (type of test) – tick DNA Storage
- Clinical Indication Code/Test Code: R346 **DNA storage only**

Further guidance on the North West Genomic Laboratory Hub can be found here:
https://mft.nhs.uk/nwglh/

What about patients found to have a variant of unknown significance (VUS)?
VUS findings are now not routinely stated on R208 test reports. If a VUS is found and if this is later reclassified to a significant result the laboratory will contact the referring clinician.

What should I do if a patient has an uninformative genetic test result (nothing significant is found) and is not eligible for referral to the regional genetics centre, but I am still concerned about their family history?

Locally (Liverpool clinicians) can direct queries to the on-call team at the Liverpool Centre for Genomic Medicine via email: lwft.clingen@nhs.net or by telephoning 0151 802 5001

A quarterly R208 MDT meeting is planned for the Cheshire and Merseyside region, this will allow for case discussions, updates on the mainstream testing process and any questions following working through the teaching presentations. Clinicians from around the region can request discussion of cases with an unusual family history or if a clinician has questions about a test result. Email Genomic Medicine for details lwft.clingen@nhs.net

Family members of young patients with breast cancer or with extensive family history of breast cancer (including paternal family history) should still be referred to **local** family history clinic for consideration of additional surveillance.

For further information about appropriate referrals to local family history, please see this link: **https://www.nice.org.uk/guidance/cg164/chapter/Recommendations#care-of-people-in-secondary-care-and-specialist-genetic-clinics**

What about funding for the R208 testing?

The laboratories are centrally funded to provide this testing service for patients who meet eligibility criteria according to the latest national test directory.

Is there any other way a patient can be eligible for R208 testing?

CanRisk scores can be considered as part of the eligibility assessment. These should include as much family history as possible including relatives who do not have cancer. The hormone receptor status should be included in any CanRisk assessment. CanRisk is an online tool available via https://canrisk.org/

For patients who require referral to Genomic Medicine service (Clinical Genetics), how long will they have to wait for their appointment?

Patients whose referrals are accepted as urgent are usually contacted within 2-4 weeks, this would be the case for patients diagnosed with **breast cancer ≤ 30 OR HER2+ breast cancer ≤ 35 referred** and for patients with breast cancer where genetic results would affect surgical/radiotherapy/SACT management.

Individuals referred for a routine appointment in the genetics clinic will be typically be seen within 3 months. The waiting time may be longer if you have specifically requested an appointment in one of the genetics outreach clinics at a local hospital.

Why do we recommend referral to Genomic Medicine if the patient has a family history of certain other cancers?

There are other inherited disorders that can increase the risk of breast cancer so further information may be required to clarify if any other tests are suitable. Possible other diagnoses may include:

PTEN (Cowden's syndrome):

This gene error results in an increased risk of breast, thyroid and endometrial cancer, as well as benign growths in the skin and small and large intestine.

TP53 (Li-Fraumeni syndrome):
An altered TP53 gene causes an increased risk of breast cancer and several other cancers, including leukaemia, brain tumours, and sarcoma.

CDH1
An altered *CDH1* gene increases the risk of a rare type of stomach cancer (diffuse gastric cancer) and lobular breast cancer.

STK11 (Peutz-Jeghers syndrome):
An altered STK11 gene causes mucocutaneous pigmentation and gastrointestinal polyposis.

Are there any other training resources for R208 mainstreaming or genetics/genomics?
The Genetics team in Manchester had a dedicated website for their mainstream breast cancer resources. Some of our training material (including Manchester scoring guidance and flow chart) have been adapted from their work. https://gmcancer.org.uk/cancer-pathway-boards/breast/genetic-testing/
Breast cancer genetic testing pathway - information for clinicians - YouTube
https://youtu.be/wvxhaMcB5x8

Other training and information resources are available including via
Genomics Health England GeNotes
https://www.genomicseducation.hee.nhs.uk/genotes/
Health Education England Genomics Education Programme
https://www.genomicseducation.hee.nhs.uk/
Cancer Genetics Group (part of British Society of Genomic Mediciine)
https://www.ukcgg.org/information-education/ukcgg-leaflets-and-guidelines/
https://www.ukcgg.org/information-education/national-and-international-guidelines/
Future Learn
NW GLH
https://mft.nhs.uk/nwglh/nwglh-education-and-training-resources/
Liverpool Centre for Genomic Medicine
https://www.liverpoolwomens.nhs.uk/our-services/liverpool-centre-for-genomic-medicine-lcgm/

Who can I contact with questions about R208 mainstreaming
Email for any laboratory queries is mft.genomics@nhs.net
Email for clinical (case) queries or questions lwft.clingen@nhs.net