

MALIGNANT HYPERTHERMIA

What is malignant hyperthermia?

Malignant hyperthermia (MH), also called malignant hyperpyrexia, is a rare genetic condition that runs in some families. In people who are susceptible, some anaesthetic drugs and gases can cause a rapid rise in body temperature. Susceptible means that the people who have variations of certain genes are at higher risk of having a reaction to some anaesthetics. During the reaction, the body temperature rises very quickly, muscle cells are damaged and the heart rate can become irregular. MH can be fatal if not treated quickly. Anaesthetists are trained to deal with this emergency.

How common is MH susceptibility?

This condition is rare. Studies show that a reaction happens between 0.3 and 2 times in 100,000 general anaesthetics. MH is hereditary, which means that it can be passed from parents to children in their genes. A person at increased risk of MH has a 50:50 chance of passing it on to their children. It affects both males and females.

It is difficult to predict whether someone is going to have a reaction. Even in people at higher risk of MH, anaesthetics do not always cause a reaction. This means that, if someone at risk has had multiple anaesthetics without problems, they could still have a reaction in the future.

Do I need to be tested for MH susceptibility?

Patients are not routinely tested for MH susceptibility. However, you should let your GP or anaesthetist know if:

- you have had a reaction in the past
- you know of someone in your family who has had a reaction
- you know of a family member whose death could not be explained while under a general anaesthetic.

Your GP or anaesthetist can contact the UKMH Investigation Unit at St James's University Hospital in Leeds for advice on testing (see later for full contact details). You should also let your family members know so that they can be tested for the condition.

There are two types of tests to confirm MH susceptibility: genetic screening through a blood test and muscle biopsy (removing a small piece of muscle from the leg). Your GP or anaesthetist will be able to advise you on the most appropriate type of test for you after discussing your case with the specialist unit in Leeds.

You can read more detailed information on MH for patients and relatives (ukmhr.ac.uk/patients-relatives/what-is-mh) on the UKMH Registry website.

How is an MH reaction treated?

From the earliest stages of their training, anaesthetists are trained on how to recognise and treat an MH reaction. If an MH reaction is suspected, the anaesthetist will stop the anaesthetic that has caused the reaction and give an antidote called dantrolene, a drug that helps to cool the body down. For this reason, dantrolene is available in all hospitals where general anaesthetics are given. After a reaction, a patient might need to go to the intensive care or high dependency unit for closer monitoring, depending on the severity of the reaction. Almost all patients make a full recovery with no long-lasting effects.

How do anaesthetists manage patients at risk of an MH reaction?

If you are at increased risk of an MH reaction, you will need to have an anaesthetic without any of the drugs and gases that can cause a reaction. The anaesthetist will use only drugs known to be safe in patients with MH susceptibility. The anaesthetist will prepare the anaesthetic machine so that there are no traces of any anaesthetic gases known to cause a reaction.

Is there anything I should do if I am or might be MH susceptible?

It is important that you tell your anaesthetist and other healthcare professionals looking after you that you are at increased risk of MH.

You should also keep an MH warning card in your wallet or purse and wear a warning disc or bracelet in case you are brought into hospital unconscious after an accident or with a serious illness. This is because some anaesthetics known to cause an MH reaction are used in emergency situations.

You should consider signing up to the UKMH Registry. More information on how to sign up (ukmhr.ac.uk/registry) can be found online. Your GP or anaesthetist can also refer you to the register.

Contact details for the UKMH Registry

UKMH Investigation Unit
Clinical Sciences Building
St James's University Hospital
Beckett Street
Leeds LS9 7TF

Email: mhunit@leeds.ac.uk

Tel: +44 (0) 113 206 5270 (during office hours)

Web: ukmhr.ac.uk

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AI (ChatGPT 4o mini) has helped create and simplify some of this content, but this leaflet has been checked and reviewed by clinicians and patient representatives.

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If you have any general comments, please email them to: patientinformation@rcoa.ac.uk.

Your feedback helps us understand who is using our information, how useful it is and how our resources have helped you. Thank you.



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