

Monoclonal gammopathy of undetermined significance (MGUS)

Monoclonal gammopathy of undetermined significance (MGUS) is a condition that occurs when your plasma cells develop in an unusual way in your bone marrow.

MGUS itself is generally a harmless blood condition, however a small number of people with MGUS go on to develop blood cancer.

What is MGUS?

Plasma cells are a type of white blood cell that help your body fight infection. We all have small numbers of plasma cells in our bone marrow.

Plasma cells produce antibodies (also known as gamma globulins or immunoglobulins). These are made of proteins and help fight infection. If there's an infection in your blood, the plasma cells in your bone marrow should multiply to form a group of cells which produce large numbers of antibodies to fight the infection.

If you have MGUS, the plasma cells in your bone marrow form a group of identical (clonal) plasma cells, even though there isn't an infection obviously present. These cells will all produce an identical antibody which is called a paraprotein, monoclonal protein or M-protein.

The M in MGUS stands for 'monoclonal' (meaning 'from one clone') because the plasma cells are all clones of one cell and create one type of antibody.

For more information about how your blood and bone marrow works, visit our website bloodwise.org.uk

MGUS itself is harmless, and most people with it remain well. However, research suggests that a small number of people with MGUS (1% every year) will go on to develop a type of blood cancer called myeloma. And sometimes, people with MGUS develop a rare form of lymphoma called Waldenstrom's macroglobulinaemia (WM).

If you've just found out that you – or someone you know – has MGUS, it's important to remember that most people with MGUS (we think about 80%) never go on to develop blood cancer.

What causes MGUS?

We don't know what causes MGUS but we do know that you can't catch it from someone else (it's not contagious).

There are certain factors that affect your risk of developing MGUS:

- › **Age** – MGUS becomes more common as people get older and is often diagnosed in people over 70 years old. Around 5–10% of people over 70 have MGUS and 3% of over 50s have MGUS.
- › **Sex** – MGUS is more common in men than women.

- › **Ethnicity** – black people from an African background are more likely to develop MGUS than white people from a European background. We're not yet sure about the differences in people from other ethnic backgrounds.
- › **Immune conditions** – MGUS is more common in people with conditions such as rheumatoid arthritis that affect their immune system. Your immune system is the network of cells, tissues and organs which protect your body against infection.
- › **Family history** – MGUS can't be passed down from parent to child (inherited), although there's some evidence that having a family member with MGUS means you're more likely to develop it yourself. We don't know if this is because of a genetic fault or if it's because members of the same family are more likely to have the same type of lifestyle.

What are the symptoms?

People with MGUS usually have no or few symptoms. Some people have numbness or tingling in their hands and feet, or problems with their balance due to damage to the nerves (peripheral neuropathy) caused by the paraprotein in the blood.

If you experience any of these symptoms or they get worse, you may be referred to a neurologist (a doctor who specialises in conditions of the nervous system).

How is MGUS diagnosed?

Most people are diagnosed with MGUS when they're having blood tests as part of a routine check-up or when their doctors are screening or testing them for other medical problems.

The first thing that's usually noticed is a high level of protein in your blood.

What tests will I need?

If your doctor thinks you might have MGUS, you'll usually have blood and urine tests. You may also

have some more tests to check for any symptoms of myeloma or lymphoma. These tests may include x-rays, scans and sometimes, a bone marrow test.

Blood tests

To give an initial diagnosis of MGUS, you'll have some blood tests to:

- › measure the type and amount of paraprotein produced by the plasma cells
- › look for anaemia and measure numbers of normal blood cells; this is called a full blood count (FBC)
- › check your kidney and liver function
- › check your calcium levels.

Urine tests

You may also be asked to give samples of your urine, which will be checked for paraproteins.

Bone marrow test

If the paraprotein level is high in your blood, or your blood test results are abnormal, or you have some symptoms, your doctor may suggest you have a bone marrow biopsy. This is normally done as an outpatient.

X-rays and scans

In some cases, you may have a full body x-ray, CT or MRI scan to check for any bone damage.

After these tests, if your doctor has ruled out myeloma and lymphoma, and the only problem found is a raised level of paraprotein in your blood, then you'll be told you have MGUS.

Find more information about blood tests and bone marrow tests at bloodwise.org.uk/information-and-support

Will I need treatment?

MGUS doesn't need treatment and it doesn't usually cause any symptoms.

However, because of the risk of MGUS developing into myeloma, you'll be monitored regularly by your healthcare team.

You should always check with your doctor if you experience any new symptoms including:

- › constant pain, which may be in the bones, in one area (back, ribs, hip or pelvis) for no apparent reason
- › breathlessness
- › extreme tiredness
- › recurring infections.

Follow-ups

You'll have follow-up appointments with your GP or at a haematology (blood disorder) outpatient clinic at the hospital.

You can discuss where you'd prefer to have these appointments. This will depend on your personal circumstances and the level of the paraprotein in your blood.

Once a diagnosis of MGUS is confirmed, and as long as you remain well, your follow-up appointments will happen every six months. Your doctor will check for any new symptoms; for example unexplained bone pain or signs of feeling tired which can be caused by anaemia – a low level of red blood cells.

If everything has remained stable for some time, your tests may happen less often.

Living with MGUS

Although most people with MGUS will never experience any symptoms and remain well, being told that you, or a loved one, have MGUS can be very worrying.

There may be a lot of information to take in, so it's important that you look after yourself emotionally by talking to others.

You can read about the experiences of other people who are going through, or have been through, the same thing on our website bloodwise.org.uk/our-community/patient-voices

Looking after yourself physically like keeping active, and eating a varied and balanced diet can help you feel better too.

Your outlook

Most people with MGUS will never develop any symptoms. However, each year about 1% of people with MGUS will develop myeloma or a related condition.

For more information about myeloma you can read our booklet [Myeloma](#).

Help and support

Although MGUS doesn't generally affect your health or require any treatment, you might still feel anxious about your diagnosis and around the time of your check-ups.



If you would like extra support, you can find us online at bloodwise.org.uk/information-and-support



Or you can call our support line on **0808 2080 888** (Mon-Fri 10am-4pm). This is a freephone number.

To order any of our booklets or fact sheets visit bloodwise.org.uk/all-blood-cancers/patient-information-booklets or call us on **0808 2080 888**.

We'd like to thank Consultant Haematologist, Dr. Andrew Chantry for his help and support in developing the content and checking for clinical accuracy. This information was also reviewed by a member of our Medical Advisory Panel, Dr. Stella Bowcock. A list of references used in this fact sheet is available on request. Please email information@bloodwise.org.uk

Our fact sheets contain general information. Always listen to the advice of your specialist about your individual condition – because every person is different.

Disclaimer

We make every effort to make sure that the information in this fact sheet is accurate, but you shouldn't rely on it instead of a fully trained clinician. It's important to always listen to your specialist and seek advice if you have any concerns or questions about your health.

Bloodwise can't accept any loss or damage resulting from any inaccuracy in this information, or from external information that we link to.

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