

Blood Gas Test

Respiratory

This leaflet has been written to provide information on how and why we measure your blood oxygen levels. It is not intended to replace talking to a healthcare professional.

Introduction

This leaflet aims to provide information on blood gas testing. A blood gas is a special blood test which is used to assess the gases in your blood, in particular your blood oxygen but also your carbon dioxide levels.

Why do I need to have this test?

The blood gas test measures the levels of oxygen and carbon dioxide in your blood. By measuring the levels of these two gases we can tell how efficiently your lungs are working.

Some people with very low oxygen levels may benefit from using oxygen therapy.

A blood gas test is typically used during an oxygen therapy assessment, which is a set of tests used to measure the levels of oxygen in your blood and to see if they are low enough for oxygen therapy to be helpful.

What happens before the test?

Before the test begins, a healthcare professional will explain the test to you in detail and will answer any questions that you may have.

What happens during the test?

The method we use to obtain a blood gas sample is called an earlobe capillary blood gas sample. You can find a brief overview of this method below.

What is an earlobe Capillary Blood Gas (CBG) sample?

This method of blood gas testing is commonly referred to as either a CBG ('see-bee-gee') or 'cap-gas'. It is a relatively simple and painless way of obtaining a blood sample from a small blood vessel called a capillary.

We have capillaries all over the body, but the most accessible for this type of test is from the earlobe. By taking the blood from an earlobe capillary (capillaries are the smallest blood vessels located inside all tissues), and not directly from an artery (a large blood vessel carrying oxygenated blood away from your heart), we can ensure very little discomfort and less post test side effects.

The prevention of infection is a major priority in all healthcare and everyone has a part to play.

- **Please decontaminate your hands frequently for 20 seconds using soap and water or alcohol gel if available**
- **If you have symptoms of diarrhoea and/or vomiting, cough or other respiratory symptoms, a temperature or any loss of taste or smell please do not visit the hospital or any other care facility and seek advice from 111**
- **Keep the environment clean and tidy**
- **Let's work together to keep infections out of our hospitals and care homes.**

The test involves having a small amount of a warming cream applied to an earlobe that helps increase blood flow, the cream will make your earlobe feel hot and appear red in colour.

After approximately 20 minutes the healthcare professional will then prick the earlobe with an automated incision device that punctures the skin. The blood droplets that form are then captured in a small plastic tube called a capillary tube.

The collected blood is then put through a blood gas machine which analyses the blood gases, for example, the oxygen and carbon dioxide levels.

The earlobe blood gas test cannot be used if you are acutely unwell or currently admitted into hospital.

The advantage of the earlobe method of blood gas testing is that numerous samples can be taken without any significant pain or discomfort. This can be particularly useful during an assessment for oxygen therapy when multiple samples may be required both on and off oxygen.

Why do I need a blood gas test?

In respiratory medicine the most common reason for a blood gas test is if an oxygen assessment has been requested by your doctor or healthcare professional.

An oxygen assessment will be performed when your lung condition is stable and when you do not have a chest infection.

Oxygen levels can dip down during a chest infection, but unless your oxygen level stays low it is usually not necessary to have oxygen at home.

The assessment involves measuring your blood gases on 2 occasions, a few weeks apart. Your oxygen levels will be tested while you are sitting down by taking a CBG.

As well as the CBG we may also assess your resting oxygen levels using an oximeter. This involves attaching a clip to the end of your fingertip. This will tell us the percentage of oxygen in your blood. The oximeter only provides information on your oxygen levels, it does not provide information on the other blood gas which is the carbon dioxide level.

Sometimes you will be asked to do a walking test to see if your oxygen levels go down as you exercise and, if that happens, whether extra oxygen means you can walk further. Just in case we need to do a walking test please make sure you are wearing comfortable shoes for the appointment.

Some people who do not need to use oxygen all the time can benefit from oxygen when they exert themselves. This is called ambulatory oxygen. This is only beneficial in people whose oxygen levels fall significantly when they walk.

The oxygen assessment needs to be completed before any oxygen can be prescribed.

When will I get my results?

The blood sample is analysed immediately after it has been obtained, in most instances these results will be discussed with you during your appointment, especially if the blood gas is being taken as part of an assessment for oxygen therapy.

What happens if I have low levels of oxygen?

If your oxygen levels are low and you need to be started on oxygen therapy, your blood gases will be checked again while you are breathing in extra oxygen.

The oxygen is delivered via the nose by small see-through tubes known as nasal cannula or sometimes via a face mask covering the nose and mouth. This check will help work out how much oxygen you need to improve the level of oxygen in your blood.

How should I prepare for the test?

If you are already on oxygen therapy then this may need to be removed for 30 minutes before the blood sample can be obtained.

In some instances the blood sample will be taken whilst you are still using your oxygen treatment.

Please also remove any earrings prior to your visit to enable easy access to the earlobe.

Please do not wear any nail varnish or false nails as these can affect signal quality and give inaccurate readings from the finger probe oximeter.

How long will the appointment take?

The actual measurement of obtaining the blood gas takes approximately 20–30 minutes, however, it is important to understand that a blood gas test is commonly performed as part of a wider medical assessment, for example assessing if you need oxygen treatment. Therefore the time of the appointment may vary. Typically an oxygen assessment which includes blood gases can take between 30–60 minutes to complete.

Are there any medical conditions that would prevent me from having the test?

If you have a current, or have a recent chest infection (within the last four to six weeks post antibiotics) or if you are currently being treated with antibiotics for a chest infection, then please contact the department to discuss (contact details can be found at the end of this leaflet).

If you have a chest infection it is important that you do not delay starting antibiotics (or rescue medication) to enable you to attend your appointment.

A current or recent chest infection will impact on the baseline accuracy of the blood gas sample.

What should I do if I cannot attend on the day of my appointment?

If you are unable to attend, please inform the department as soon as possible so that the appointment time can be offered to another patient.

If you are unfortunately admitted into hospital please inform the ward staff of this appointment so they can re-arrange the test for you when you are feeling better.

Typically blood gas samples taken during an oxygen assessment need to be obtained when you are feeling well or when your medical condition is stable.

Further information

If you have any concerns or questions or require further information please contact:

The Respiratory Centre (B1)

New Cross Hospital
Wolverhampton Road
Wolverhampton
WV10 0QP

01902 695061

(Select option 3 from the telephone menu)

Monday to Friday 9:00am to 5:00pm

English

If you need information in another way like easy read or a different language please let us know.

If you need an interpreter or assistance please let us know.

Lithuanian

Jeigu norėtumėte, kad informacija jums būtų pateikta kitu būdu, pavyzdžiui, supaprastinta forma ar kita kalba, prašome mums apie tai pranešti.

Jeigu jums reikia vertėjo ar kitos pagalbos, prašome mums apie tai pranešti.

Polish

Jeżeli chcieliby Państwo otrzymać te informacje w innej postaci, na przykład w wersji łatwej do czytania lub w innym języku, prosimy powiedzieć nam o tym.

Prosimy poinformować nas również, jeżeli potrzebowaliby Państwo usługi tłumaczenia ustnego lub innej pomocy.

Punjabi

ਜੇ ਤੁਹਾਨੂੰ ਇਹ ਜਾਣਕਾਰੀ ਕਿਸੇ ਹੋਰ ਰੂਪ ਵਿਚ, ਜਿਵੇਂ ਪੜ੍ਹਨ ਵਿਚ ਆਸਾਨ ਰੂਪ ਜਾਂ ਕਿਸੇ ਦੂਜੀ ਭਾਸ਼ਾ ਵਿਚ, ਚਾਹੀਦੀ ਹੈ ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਸਾਨੂੰ ਦੱਸੋ।

ਜੇ ਤੁਹਾਨੂੰ ਦੁਭਾਸ਼ੀਏ ਦੀ ਜਾਂ ਸਹਾਇਤਾ ਦੀ ਲੋੜ ਹੈ ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਸਾਨੂੰ ਦੱਸੋ।

Romanian

Dacă aveți nevoie de informații în alt format, ca de exemplu caractere ușor de citit sau altă limbă, vă rugăm să ne informați.

Dacă aveți nevoie de un interpret sau de asistență, vă rugăm să ne informați.

Traditional Chinese

如果您需要以其他方式了解信息，如易读或其他语种，请告诉我们。

如果您需要口译人员或帮助，请告诉我们。