Royal Papworth Hospital
NHS Foundation Trust

Hypoxic challenge (flight assessment)

Patient information sheet

What is a hypoxic challenge?

When a person goes on a flight, there is less oxygen available in the air on board than normal. The hypoxic challenge (also known as a flight assessment test), helps us to understand how well a person's body will cope with this change in oxygen during a flight. The results of this test will help doctors decide whether someone with lung disease needs extra oxygen when flying.

Who needs the test?

If you are planning to fly, you may be asked to have a hypoxic challenge assessment if:

- you have a breathing disorder that causes you to carry less oxygen in your blood.
- you already use oxygen as part of your treatment.
- you have experienced a noticeable deterioration in your condition since you last went on a flight.
- you have previously had breathing problems or associated symptoms, during or following a flight.

What does the test involve?

Normally, there is 21% oxygen in the air we breathe, but during the test you will breathe air containing 15% oxygen. This is the same as the air you would breathe in an aircraft cabin.

The test is performed in the respiratory physiology department, by a clinical physiologist. It consists of a maximum of three phases, lasting up to 20 minutes each. Some baseline readings are taken at the very start and recovery readings at the end.

- You will wear a probe on your finger or forehead, which will monitor your oxygen levels and pulse rate throughout the test.
- You will wear an open, clear face mask with an attachment. This will be connected to a supply of gases, which lowers the level of oxygen you are breathing to the required 15%.
- Underneath this mask, you will wear a nasal tube, which will deliver extra oxygen during the test, if it is required.

At the very beginning of the test and at the end of each phase, you will have an earlobe capillary blood gas test. This is to accurately measure your body's response to the changes in the level of oxygen.

- A small amount of heat rub e.g. Deep Heat cream will be put on your earlobe for 10 minutes. This will flush the area with blood.
- Once the cream is removed, the area is sterilised and a small scratch is made to draw a blood sample, which is then analysed immediately.
- At each stage, the result of this blood test determines if we need to increase the level of oxygen and continue.

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Large print copies and alternative language versions of this leaflet can be made available on request.

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Frequently asked questions

How long will the test take?

The length of the test depends upon how many phases we have to perform. The shortest test may take 45 minutes, whereas the longest test may take around 90 minutes.

We advise you to set aside up to two hours for the test, to allow for any delay.

What do I need to bring with me?

It may be useful to bring a list of medications you are taking, or a copy of your prescription, so that we know what medication you are on at the time.

There is no need to withhold any medication prior to this test.

As the test may take some time, with little activity on your part, you may want to bring a book or magazine to read, or music to listen to.

What symptoms might I get during the test?

The hypoxic challenge rarely causes any side-effects.

On occasion some people may experience a dry mouth, chest tightness, drowsiness or slight headache. You will be able to tell your physiologist about any symptoms during the test. Depending on the nature of the symptom, the test may be stopped early.

Such circumstances are rare and normally resolve rapidly upon breathing room air.

How do I find out my results?

The clinical physiologist performing your test will not be able to give you your results.

It is up to your consultant to make appropriate recommendations for your plans to travel.

Depending on the urgency, this may take up to three weeks to achieve. In some circumstances you may need to contact your consultant directly to discuss the result. Your physiologist will be able to provide you with the necessary contact details.

Who do I contact if I need further information?

Please contact the respiratory physiology department if you have any questions or concerns about your test or appointment.

We can be reached by phone on 01223 638207 09:00 - 16:00.

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