Royal College of Anaesthetists

FACT SHEET

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Patient Information Forum

SUXAMETHONIUM APNOEA (SCOLINE APNOEA)

What is suxamethonium?

Suxamethonium (also called succinylcholine or scoline) is a type of neuromuscular blocking drug, often referred to as a 'muscle relaxant'. Muscle relaxants are used to relax muscles in the body, which helps the anaesthetist get oxygen into your lungs during surgery. They are also used to enable surgeons to perform certain types of operations. They are not needed for all operations.

What is apnoea?

In medical terms apnoea is a condition where breathing is interrupted or stops.

What is suxamethonium apnoea?

Suxamethonium apnoea (SA) occurs when the body's plasma cholinesterase enzyme, which breaks down suxamethonium, isn't functioning properly. Normally, this enzyme works quickly, allowing muscles to recover and patients to breathe on their own shortly after the drug has been given. If the enzyme doesn't work correctly, the muscles responsible for breathing remain relaxed for longer, leading to apnoea when the anaesthetic is stopped. Mivacurium is another muscle relaxant that can cause a similar issue.

How common is SA?

Abnormalities in the plasma cholinesterase enzyme can be genetic or the result of certain medical conditions. About 4 in 100 people have a mildly reduced amount of the enzyme. In these cases, it takes a little longer than normal to break down suxamethonium and SA is usually short-lived. In rare cases (fewer than 1 in 2000 people) it can take up to four hours for the drug to wear off and SA will last longer.

How is SA treated?

All anaesthetists have training to recognise SA. If a patient develops SA, the anaesthetist will continue using the machine (a ventilator) to help the patient's breathing until the relaxant wears off. They will use a nerve stimulator to test how relaxed their muscles are. The patient is kept unconscious with anaesthetic drugs during this time. Sometimes they may be looked after in the intensive care unit until it is safe to wake them up. There should be no long-lasting effects once the patient has fully recovered.

Do patients need to test for SA before an operation?

Patients are not routinely tested for SA. If, however, a patient is aware of family members who have developed SA in the past, or have problems breaking down certain drugs, they should have a blood test to check their plasma cholinesterase enzyme levels. GPs can organise this test and it usually takes just a few weeks to get the results. You should also let other family members know if the test has shown that you are at risk of SA or if you have had SA in the past.

How do anaesthetists manage patients at risk of developing SA?

It's important that you tell your anaesthetist if you, or anyone in your family, is at risk of SA before any operation. The anaesthetist will choose a different drug to relax your muscles during surgery. There are several other muscle relaxants and using an alternative will not be a problem for the patient or anaesthetist.

Is there anything I can do if I am at risk of developing SA?

As well as informing your anaesthetist and other family members, we advise that you keep an SA warning card on you (an example can be found below and on our website: **rcoa.ac.uk/patientinfo/factsheets**).

You can also place this information in the emergency/medical section of your smartphone and consider wearing a warning disc or bracelet indicating SA, in case you are unable to let people know about it. For example, if you are unconscious after an accident or because of a serious illness.

Suxamethonium Apnoea Identification Card (Scoline Apnoea)

WARNING – ALERT ANAESTHETIST
Prolonged action of muscle relaxant drugs Suxamethonium and Mivacurium

Patient name: . . . . . .
Address: . . . . . .
. . . . . .
Date of Birth: . . . . . .
GP name & address: . . . . . .
. . . . . .
This patient was tested on: . . . . . .

Disclaimer

We try very hard to keep the information in this leaflet accurate and up-to-date, but we cannot guarantee this. We don't expect this general information to cover all the questions you might have or to deal with everything that might be important to you. You should discuss your choices and any worries you have with your medical team, using this leaflet as a guide. This leaflet on its own should not be treated as advice. It cannot be used for any commercial or business purpose. For full details, please see our website: **rcoa.ac.uk/patientinfo/resources#disclaimer**

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.

Information for healthcare professionals on printing this leaflet

Please consider the visual impairments of patients when printing or photocopying this leaflet. Photocopies of photocopies are discouraged because these tend to be low-quality prints and can be very difficult for patients to read. Please also make sure that you use the latest version of this leaflet, which is available on the RCoA website: **rcoa.ac.uk/patientinfo/leaflets-video-resources**.

Tell us what you think

We welcome suggestions to improve this leaflet. Please complete this short survey at: **surveymonkey.co.uk/r/factsheetstest**. Or by scanning this QR code with your mobile:

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

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