

# Phrenic nerve pacing for ventilator-dependent high cervical spinal cord injury

Information for the public

Published: 21 August 2024

[www.nice.org.uk](http://www.nice.org.uk)

This procedure can be used for ventilator-dependent high cervical spinal cord injury, because it has benefits, such as helping people to have some ventilator-free time and there are no serious concerns about its safety in this condition.

A high cervical spinal cord injury is an injury in the upper neck between the first and fourth cervical vertebrae (C1 to C4). The phrenic nerve controls the diaphragm, which is the main muscle used for breathing. High cervical spinal cord injury can affect the phrenic nerve, which means that some people need a mechanical ventilator to help them breathe.

In this procedure, an electrode is implanted around the phrenic nerve in the lower neck or chest. The electrode is connected to a receiver that is usually placed in the chest wall. An external transmitter then sends radiofrequency signals to the receiver, causing the electrode to stimulate (pacing) the phrenic nerve. The pacing makes the diaphragm contract. The aim is to help people breathe normally and to have some time without a ventilator, potentially improving their quality of life.

## Is this procedure right for me?

You should be included in [making decisions about your care](#).

Your healthcare professionals should explain the risks and benefits of this procedure and how it is done. They should discuss your options and listen carefully to your views and concerns. They should offer you more information about the procedure. Your family or carers can be involved if you want or need them to be.

You will be asked to decide whether you agree (consent) to have the procedure. Find out more about [giving consent to treatment on the NHS website](#).

## Some questions to think about

- How many appointments will I need?
- What are the possible benefits? How likely am I to get them?
- What are the risks or side effects? How likely are they?
- Will I have to stay in hospital?
- What happens if it does not work or something goes wrong?
- What happens if I do not want the procedure?
- Are other treatments available?

## Information and support

You can [search the NHS website for information about consultants and hospitals](#) that offer this procedure.

- [NICE's information on interventional procedures guidance](#) explains what an interventional procedure is and how we assess it.
- [NICE's information on interventional procedures recommendations](#) explains what standard arrangements are.

You can also get support from your local [Healthwatch](#).

ISBN: 978-1-4731-6413-0