

# FACT SHEET

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## SYMPATHETIC NERVE BLOCK

Sympathetic nerve blocks are used to treat neuropathic pain associated with symptoms caused by reversible changes in the size of peripheral blood vessels.

These injection techniques are sometimes used when other conservative measures, such as physical therapies and medication, don't work.

## WHAT ARE SYMPATHETIC NERVES?

The sympathetic nerves are part of the autonomic nervous system (ANS) and run on the front surface of the spinal column (the nerves within the spinal canal are part of the central nervous system). The ANS controls functions such as blood flow to extremities, sweating, heart rate, digestion, blood pressure, and goose bumps. In other words, the ANS controls things that you do not think about or have direct control over.

There is a connection between the autonomic and central nervous systems. Sometimes arm or leg pain is caused by a malfunctions of the autonomic system, secondary to an injury.

## TYPES OF SYMPATHETIC BLOCKS

Initial sympathetic nerve blocks have a diagnostic, and potentially therapeutic component.

The diagnostic phase occurs during the temporary nerve blocking phase of the local anaesthetic. It is determined by whether the injection relieves all or some of the symptoms for the anaesthesia's duration, which would indicate that the symptoms are sympathetically mediated. Sometimes the injection can produce longer term effects (a therapeutic effect).

Usually the nerves are blocked where they form the sympathetic trunks and ganglia, or plexuses, in front of the vertebral column. Sympathetic nerves are most concentrated in these regions. The site of the block used depends on the region targeted.

## VALIDITY OF THIS TREATMENT

The accuracy of a sympathetic block is confirmed by signs of alternation in the function of the blood vessels, particularly by venodilatation, which is:

- Increase in capillary blood flow and perfusion
- Increase in skin surface temperature (seen as long as the room temperature is low)

In the case of a stellate ganglion or sympathetic plexus block, a Homer's syndrome develops. This temporary syndrome is characterised by an increase in diameter of the eye pupil, and a drooping eyelid.

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## WHAT IS A SYMPATHETIC NERVE BLOCK & WHY IS IT HELPFUL?

A nerve block is an injection of local anaesthesia (with or without other medication) onto a nerve. This can temporarily relieve symptoms, and sometimes relieve them long term. A sympathetic nerve block involves injecting this material around the sympathetic nerves.

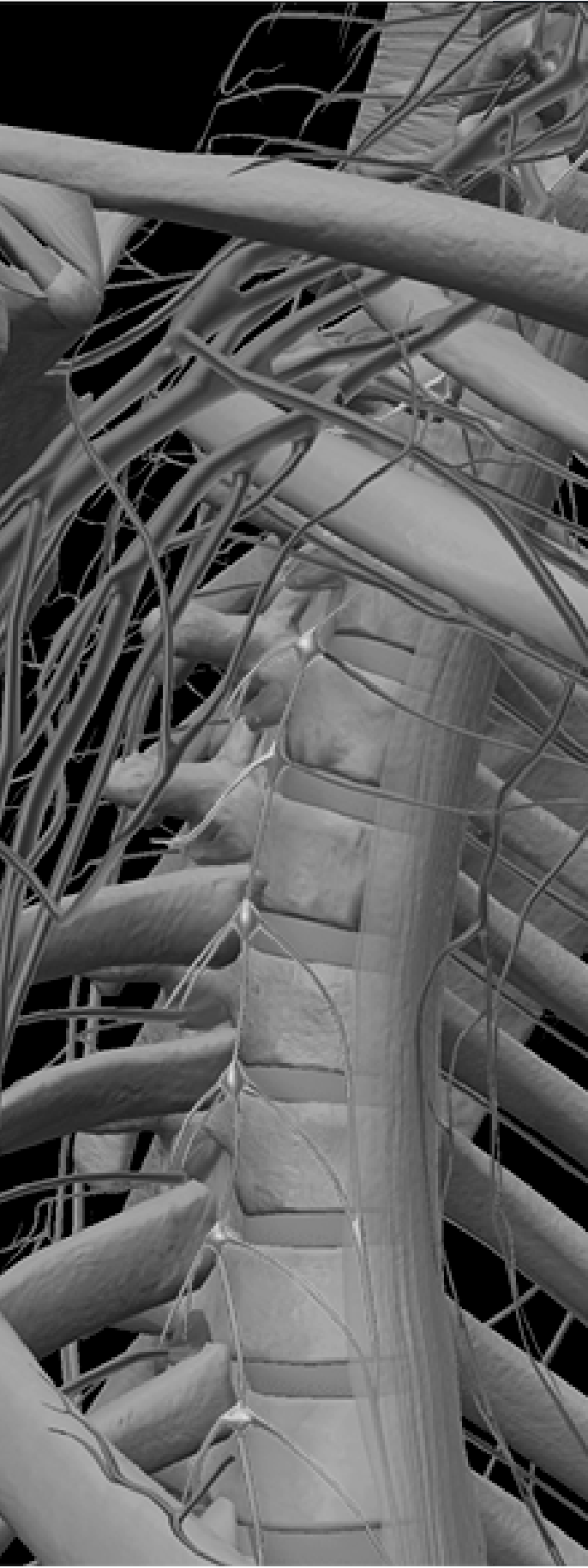
If the initial block is successful in relieving pain for longer than the duration of the local anaesthetic, which generally only lasts a few hours, then additional blocks may be repeated in 7-14 days, and again later if there is some success.

Sympathetic nerve blocks are designed to produce temporary or permanent interruption of sympathetic nervous system activity. More specifically, the efferent sympathetic pathways, which transmit information from the CNS out to the muscles or glands. A nerve block may also interrupt accompanying afferent nerves, which carry information from nerve receptors to the brain or spinal cord.

Alteration in the sympathetic nervous system may be associated with or cause pain. When there are accompanying clinical features, we often suspect that the sympathetic nervous system isn't working properly, such as observing changes in blood vessel calibres or the nature of pain. The latter produces symptoms such as:

- Temperature changes (hot and/or cold) in the limbs
- Colour changes (blue and/or red) in the limbs
- Increased sweating

Pain is typically neuropathic, characterised by a burning/stinging/shooting feeling. It is commonly associated with frank nerve injury, in which case there may be abnormal sensations such as numbness.



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## COMPLICATIONS

The risk of complications appears to be acceptably low. Published case reports pertain largely to neurolytic blocks (the use of alcohol/phenol instead of local anaesthetic). Systematically, the potential complications of sympathetic blocks include:

- The inadvertent puncture of adjacent structures
- Injection of agents into adjacent structures
- Spread of agents to other nerves
- Fainting (postural hypotension)
- Ejaculatory failure (short term)



## RESCHEDULING AND ENQUIRIES

Should you have any enquiries or require rescheduling of your procedure, please notify the Clinical Support Team on 03 8548 0339.

## FOR MORE INFORMATION



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