

## Carotid Sinus Hypersensitivity

### What is the Carotid Sinus?

The carotid sinus is a small bundle of nerve endings situated next to the carotid arteries in your neck. There are 2 carotid arteries, one on each side of the neck, which provide the main blood supply to the brain and scalp. There is a carotid sinus on each side of the neck situated where the carotid artery separates into two (roughly just below your ears).

The carotid sinus has chemical and pressure receptors that provide information to the brain on blood flow and blood pressure. This helps the body maintain a controlled supply of blood to its organs including the brain, the heart and the muscles..

### What is Carotid Sinus Hypersensitivity?

When external pressure is placed on the carotid sinus it automatically reduces your heart rate, normally this is only by a small amount. In some people, though, the carotid sinus overreacts to such pressure causing their heart rate to slow down or their blood pressure to drop a significant amount. This overreaction is called carotid sinus hypersensitivity.

Any pressure on the artery may cause this reaction; this includes wearing tight clothing around the neck or even turning the head.

When hypersensitivity is accompanied by a brief blackout that results in a fall it is known as carotid sinus syndrome.

### What causes it?

We don't know why the carotid sinus overreacts in some people. We do know it is more common in the over 40s.

There are some medications that increase the sensitivity of the carotid sinus. However, it is not always possible to stop taking these drugs as they are usually given to treat heart disease.

### How is it diagnosed?

A diagnosis is made from your history of falls – which would typically be several falls that happened without warning and for no obvious reason. You may or may not remember blacking out as sometimes this is very brief.

A short test is then carried out. Pressure is applied to the side of your neck, over the carotid artery, for several seconds whilst monitoring your heart rate and blood pressure. A positive test would result in a blackout and a drop in your heart rate and/or blood pressure

## How is it treated?

If the carotid sinus hypersensitivity test causes your heart rate only to fall or your heart rate and blood pressure to fall you would be offered a referral for “pacing”.

A pacemaker is a small implanted device that regulates your heart rate. This has shown to be effective in reducing the effects of carotid sinus hypersensitivity, particularly the number of falls you may experience.

When the carotid sinus hypersensitivity affects only your blood pressure it becomes more difficult to treat. There are some medications that may be prescribed but these are not always effective.

## How can I help myself?

- Take note of any activity that precedes a blackout – if possible avoid or modify this activity
- Avoid wearing tight clothing around your neck or rubbing your neck hard e.g. when washing
- Maintain adequate hydration by drinking plenty of fluids especially water
- Take medications as prescribed

## References

European Society of Cardiology *Guidelines on management (diagnosis and treatment) of syncope* 2001

Benditt D et al *The evaluation and treatment of syncope* 2003

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