



The Heart Rhythm Charity

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## Inappropriate Sinus Tachycardia (IST)

### What is IST?

Inappropriate Sinus Tachycardia (IST) is a condition in which an individual's resting heart rate is abnormally high – greater than 100 beats per minute or rapidly accelerating to over 100 beats per minute without an identifiable cause for the tachycardia, although small amounts of exercise, emotional or physical stress are triggering factors.

An ECG will not show any abnormalities as IST arises within the Sinus Node where normal sinus rhythm is generated.

It is a relatively new disorder (first recognized in the late 1970s) that is underappreciated by many in the medical profession and with many doctors regarding it as a psychological condition. Individuals with this condition can find themselves increasingly disabled and experiencing high levels of anxiety.

### Symptoms

IST is primarily experienced by young women in their thirties, who may have been suffering symptoms for a few years. The main symptoms of IST include:

- ♥ Palpitations
- ♥ Shortness of breath
- ♥ Exercise intolerance
- ♥ Fatigue
- ♥ Resting heart rate of greater than 100bpm
- ♥ Sleeping heart rate of 70 – 90bpm
- ♥ Minimal exertion, heart rate will rapidly reach 150bpm

### Potentially related symptoms:

- ♥ Drop in blood pressure upon standing
- ♥ Blurred vision
- ♥ Dizziness
- ♥ Syncope
- ♥ Pre-syncope
- ♥ Sweating

### What causes IST?

Unfortunately, to date nobody knows. There is a belief that IST is a result of the sinus node having an abnormal structure. There is another view that individuals with IST might be super-sensitive to adrenaline as the smallest amount of exertion can cause a pronounced rise in the heart rate. However, a number of informed medical professionals believe there is a number of factors and disorders which point to disturbance within the autonomic nervous system. It is for this reason that it is a condition that is frequently mistaken for POTS (Postural Orthostatic Tachycardia Syndrome).

### How is IST diagnosed?

The following guidelines will help towards securing the correct diagnosis for an individual presenting with IST symptoms. However, the results of these tests will not necessarily produce a definitive diagnosis.

1. ECG for resting heart rate: a resting heart rate generally must exceed 100bpm

24hr ECG/ Holter monitor – the mean heart rate during 24 hrs is usually >95bpm

Exercise/stress test – demonstrate an inappropriate heart rate response to exercise

For further information contact Arrhythmia Alliance



President: Prof A John Camm Trustees: Dr Derek Connelly,  
Mr Nigel Farrell, Dr Adam Fitzpatrick, Mrs Trudie Lobban

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2. Symptoms as documented should indicate tachycardia
3. Other known causes of sinus tachycardia must be excluded – these include anaemia, hyperthyroidism, phaeochromocytoma, diabetes induced autonomic dysfunction, fever, and dehydration
4. Sometimes an EP Study will be performed to exclude atrial tachycardia before an IST diagnosis is finally made.

### What help is there?

#### Self help

It is very important to recognise that, however disabling symptoms may be, this is not a life threatening disorder and lifespan is normal with no increased risk of strokes or heart attacks. The number of people who develop any problems with their heart function as a result of a long-term fast heart rate is also very small. So, in some people, the best thing is to wait and see how things develop – it may improve on its own, particularly once a person has been reassured that there is no other sinister problem. Where there is an overlap with autonomic dysfunction, increasing salt and fluid intake may help.

#### Medication

A variety of medications have been tried and it is a matter of trial and error to see if a helpful medication can be found for each individual. Beta-blockers are often tried first; calcium channel blockers are an alternative. Where there is an overlap with autonomic dysfunction, Fludrocortisone, Midodrine, and serotonin-reuptake inhibitors have all been used. More recently newer drugs such as Ivabradine have been tried, but with varying results. It is important not to make things worse with

side-effects from the drugs, which may be worse than the symptoms of IST itself.

#### Ablation

Ablation of the sinus node (either to modify the node or destroy it completely) has been used with some success, but this is variable and may not be long-lasting, and ablation carries its own risks. It is best to discuss this with an Electrophysiologist who specialises in this form of treatment.

#### Cognitive behavioral therapy (CBT)

CBT has had some success in helping a patient come to terms with IST, and help manage their lives.

#### IMPORTANT POINTS

Where sinus tachycardia is identified it is important to rule out other treatable conditions before making the diagnosis of IST – it may be that there is a curable cause.

IST is not a life threatening condition but it can be very disabling.

A variety of therapies exist, but it is important not to make things worse with any treatment.

The opinion of a specialist, usually an electrophysiologist, can be helpful.

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