

Takotsubo Syndrome

Takotsubo syndrome or stress-induced cardiomyopathy

- Takotsubo syndrome is a condition which affects the heart muscle, giving the left ventricle a distinctive shape.
- It is thought to be brought on by extremely stressful events that might affect how the heart works.
- After the initial presentation most people recover within a few weeks or months..

What is Takotsubo cardiomyopathy?

Takotsubo causes the heart to balloon (become enlarged) and weakened, so it works less well than normal. This can lead to symptoms such as chest pain that can feel like a heart attack.

Who gets it?

It tends to affect women more than men and is most common in middle age. It is thought to affect around 5,000 people in the UK each year. Currently, it is not thought to be genetic.

Why 'Takotsubo'?

This condition was first described in Japan in 1990. Takotsubo is the name of a Japanese octopus trap, which is a similar shape to a heart with this condition. This happens because the left ventricle of the heart (the main pumping chamber) becomes weakened, particularly at the tip, and appears enlarged.

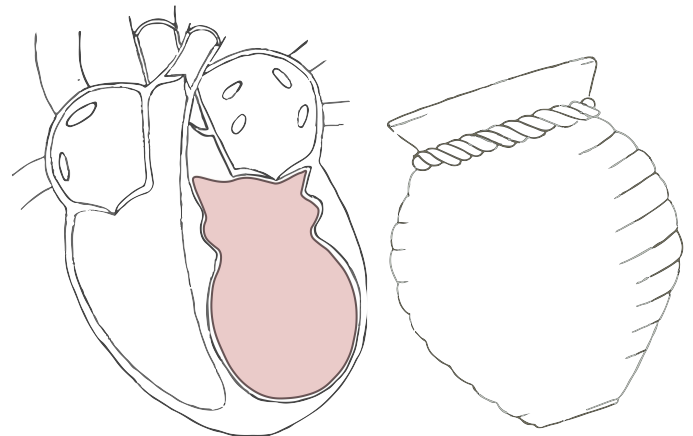
What causes it?

Although the exact cause of the condition is not known, there can be many triggers. For most people there is an identifiable trigger, which might be a physical stressor (such as an illness or extreme pain) or an emotionally stressful event (for example, the death of a loved one, an accident or a conflict). It is not the trigger which causes Takotsubo, but our body's response to these events that cause the brain and heart to interact in such a way that affects the shape of the heart and causes weakening of the pumping of the heart. This interaction is probably very complex and little is known about it. As it is often caused by stress, it is also known as 'stress-induced cardiomyopathy'. It is also possible that events causing positive emotions may also trigger the condition in some people. It can sometimes occur without any obvious trigger.

What are the symptoms?

Many people seek medical help because it feels like they are having a heart attack. Most people are initially treated for a heart attack until tests can diagnose the true cause.

A representation of the shape of the left ventricle in a heart with Takotsubo (left), and a Japanese octopus trap (right).



Others may see their doctor because they are experiencing shortness of breath, and a few because they lose consciousness. Typically, symptoms start just after the stressful event, but in others it can take some time before developing symptoms, which can include any of the following:

- sudden, intense chest pain;
- shortness of breath - caused by the heart not being able to pump properly, which causes fluid to build up in the lungs; and
- arrhythmia (abnormal heart rhythms) - where the heart beats either too fast or too slow, or may beat irregularly.



How is it diagnosed?

This condition is usually diagnosed when:

- the heart muscle, and the pumping action of the heart, is found to be weakened and the heart muscle is very swollen and lacking energy;
- the cause is shown to not be a heart attack (from a blocked artery);
- the heart has the typical Takotsubo shape (with narrowing at the middle and base of the heart and ballooning at the tip); and
- when any other conditions that could explain the symptoms have been ruled-out.

Usually several tests are done in hospital to confirm the diagnosis. These include the following.

- **ECG (electrocardiogram)** – to look at how electrical impulses are conducted in the heart. This condition commonly causes a similar ECG to a heart attack, although in the first few days after presentation a typical pattern can emerge.
- **Blood test** – to look for chemicals in the blood that show the heart muscle is strained.
- **Echo (echocardiogram)** – to look at the structure and function of the heart muscle and valves, using ultrasound.
- **Cardiac MRI (a type of scan)** – to look at the structure and function of the heart, the degree of swelling, rule out a heart attack and any other conditions that may affect how the heart works (such as viral infections).
- **Coronary angiogram** – to look at the blood supply to the heart (through the coronary arteries –which supply the heart muscle with blood), and check whether the arteries are not narrowed or blocked (such as in a heart attack).

How is it treated and managed?

Although the heart shape and function usually recovers, symptoms and any heart abnormalities need to be treated to avoid complications and help the heart recover. This usually consists of treatment for one or more of the following.

- **Treatment for a heart attack** – as the condition has the same symptoms as a heart attack, many people will be treated for this (until the doctors can be sure it is not a heart attack). This includes checking that the coronary arteries are not narrowed or blocked.
- **Breathlessness** – this is caused by a build-up of fluid on the lungs because the heart isn't working properly. If required, this can be treated with diuretics (or 'water tablets') – medication that helps to support the heart and reduce fluid build-up.

- **Reduced heart muscle function** – drugs such as betablockers and ACE inhibitors may be prescribed.
- **Low blood pressure** – in severe cases (which are uncommon) medication may be given to stabilise the blood pressure.
- **Heart rhythm disturbances** (causing the heart to work too fast or too slow) may be treated with drugs or a pacemaker. Often this is temporary, as it is only needed until the initial phase resolves.
- If someone has a cardiac arrest due to this condition (where dangerous abnormal heartbeats cause the flow of blood out of the heart to suddenly stop), they may be considered for an ICD (implantable cardioverter defibrillator) if there is a risk of this happening again, but this depends on the individual patient needs. ICDs monitor the heart rhythm and give an electric shock to the heart if a cardiac arrest happens due to a dangerous heart rhythm.
- **Blood clots** – any blood clots found are treated with blood thinning drugs such as warfarin. Warfarin may also be used for atrial fibrillation (an abnormal heart rhythm) which can cause an increased risk of having a stroke.

Complications

In a small number of people, the condition can cause complications. These usually only happen during the first few days after initial presentation. These include:

- low blood pressure which leads to a condition known as cardiogenic shock (when the blood supply does not meet the demands on the body);
- a stroke due to blood clots forming in the heart; and
- serious arrhythmias (chaotic heart rhythms) which, in some cases, can lead to cardiac arrest.

However, these complications are rare, and are reduced by effectively treating the symptoms of the condition.

Prognosis

The heart's size, shape and function often improves with time, though recent research suggests that for some people there may be a longer-lasting change to their heart function, which results in ongoing symptoms such as: extreme fatigue, shortness of breath, chest pain or palpitations. Takotsubo can recur in around 10% of people and the trigger may be similar or different on these occasions.



What next?

You may be reading this information resource because you, or someone you know, have been diagnosed with Takotsubo. It can be a difficult time and you may feel overwhelmed. It is natural to have lots of questions, and you may want to talk to someone who understands. Although a diagnosis of cardiomyopathy may feel devastating, with the right information and support most people can live full and active lives.

Much research is still ongoing in Takotsubo, because it is such a new condition and doctors are working hard to learn more about it, as well as find the right ways of treating it.

Find out more

Watch a presentation on Takotsubo by Dr Robert Jennings here - <https://youtu.be/XWuTre0KbVw>

Read about Caron's journey with Takotsubo here - <https://www.cardiomyopathy.org/carons-journey>

Find a support group here - <https://www.cardiomyopathy.org/find-support-groups>

We are here for you




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Send your feedback to contact@cardiomyopathy.org

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