

## What medications will be needed once I am discharged home?

Once the clot has been treated in this initial phase, anticoagulant (clot preventing) medication will need to be continued after discharge from hospital. This will be offered in tablet form or injection form and will typically need to be taken for several months, years or sometimes life-long.

The most appropriate anticoagulant and the duration of treatment will depend on the events leading up to the development of the clot. The anticoagulant warfarin has been used to treat blood clots for many decades and is currently the treatment of choice for people with CVST. Newer anticoagulants have become available in the last decade for the treatment of DVT which require less monitoring than warfarin, however there is less information on how effective there are for people with CVST

Complications such as seizures may require antiepileptic medications to prevent recurrent seizures; the duration of these medications will be advised by your Stroke doctor/neurologist.

## How do I reduce the risk of further clots (venous thromboembolism, VTE)?

The risk of VTE may be reduced over time by:

- Avoiding medications that contain oestrogen, such as the combined oral contraceptive pill and some forms of Hormone Replacement Therapy (HRT)
- Safer options for contraception include; Progesterone Only Pill ("mini-pill") or devices (Implanon), intrauterine contraceptive devices (Mirena, Kyleena or Jaydess coils) or barrier contraception (condoms).

- Stopping smoking
- Losing weight
- Using preventative anticoagulant medication (often heparin injections under the skin) at high risk times such as when admitted to hospital, around surgery or during pregnancy and the postpartum period (6 weeks after delivery)

## Will I recover from this?

The majority (80%) of people with CVST recover or have only minor symptoms. However, in the initial phase, 5% of people with CVST can die so early recognition and treatment is essential. Some people may experience long term effects following CVST.

## Our sincere thanks to :-

**Dr. Paraic Behan** (Haematology Registrar BH),  
**Dr. Karl Boyle** (Consultant Stroke Physician,  
Joint Clinical Lead Beaumont Stroke Service)  
**Dr. Michelle Lavin** (Consultant Haematologist  
on behalf of the National Coagulation Centre)

*This leaflet is for general information only  
and is not a substitute for medical advice.*



Registered Charity  
No: 20154240

Cerebral Venous Sinus Thrombosis (CVST)  
Version 001 - March 2021

# Cerebral Venous Sinus Thrombosis (CVST)



Email: [info@thrombosisireland.ie](mailto:info@thrombosisireland.ie)  
[www.thrombosis.ie](http://www.thrombosis.ie)  
Phone: 087 363 4828  
Mon. – Fri. 9am – 1pm

# Cerebral Venous Sinus Thrombosis (CVST)

## What is cerebral venous sinus thrombosis?

The brain's venous sinuses are channels within the brain which allow blood to flow out of the brain and return to the heart. Cerebral Venous Sinus Thrombosis (CVST) happens when the blood slows and clots in one or more of these sinuses. As a result, blood cannot drain from the sinus towards the heart and the pressure in the sinus can build up. Patients may experience a headache, often severe, if they develop a CVST. As the pressure builds up in the blood vessel, there may be leakage of blood out of the blood vessels into the brain itself. This may result in signs and symptoms of a stroke or seizures. Patients also report experiencing vomiting, low blood pressure, high pulse rate & hallucinations. CVST is one form of blood clot or venous thromboembolism (VTE).

## How common is CVST?

CVST is a quite uncommon and is estimated to affect up to 15 people per million per year. Overall, the most common type of blood clot in people is a lower leg clot, known as a deep venous thrombosis; this is approximately 200 times more common than CVST.

## Who gets CVST?

CVST affects women three times more often than men, in particular younger women. This is because of one of the hormones present in women – oestrogen. Oestrogen levels are increased naturally in pregnancy and after giving birth but also by tablets that contain oestrogen, such as the Combined Oral Contraceptive Pill (COCP) and Hormonal Replacement Therapy (HRT). Oestrogen related CVST is one of the commonest causes of CVST.

Other factors which may increase risk of CVST include:

- ◆ Infections or trauma to the ear near the brain
- ◆ Inflammatory conditions such as lupus or inflammatory bowel disease
- ◆ A diagnosis of cancer
- ◆ A clotting disorder
- ◆ Obesity
- ◆ Smoking
- ◆ Low blood pressure in the brain

However, some people can develop a CVST without any risk factors.

## What symptoms are experienced in CVST?

Symptoms in CVST vary a lot between people. The clinical presentation can range from a mild, persistent headache to a more severe headache. Some patients experience vomiting, low blood pressure, high pulse rate & hallucinations. Some people may experience a change in speech, loss of power in an arm or leg, a change in sensation, seizures or even loss of consciousness. Typically the headache doesn't improve, even with pain killers. These symptoms arise as a result of increasing pressure in the brain or bleeding.

## How do doctors diagnose CVST?

If a CVST is suspected, doctors will order specialised tests to look at the brain and brain sinuses and veins. This is usually a CT scan, a MRI scan or both. These tests can help identify the blood clot causing the blockage in the sinuses.

## How do doctors treat CVST?

Management of CVST can be challenging. Due to the rarity of CVST, there are less research studies involving patients who experience CVST in comparison to other types of blood clots. Care is often managed by a Stroke

specialist or Neurologist, with input from the Haematology team. In rare cases, if the pressure on the brain is very high, then some patients may require surgery on the brain to relieve the pressure.

In general, treatment of blood clots involves the use of anticoagulant medications which stop the clot growing or new clots forming. When your CVST is first diagnosed, these can either be delivered as a drip into the veins (intravenous) or through injections under the skin (subcutaneous). It is also important to treat any cause for the CVST which might be present, such as infection or trauma and Oestrogen containing medications will be stopped.

The main risk with all anticoagulants is bleeding, so patients are very closely observed when they are started on these medications. Some patients with CVST already have bleeding into the brain due to the high pressure in the sinus; even in this situation anticoagulants may still be the right treatment because the main problem is the blood clot in the sinus causing the bleeding.

Most people will require a stay in hospital of between one and two weeks. Some people may require care to be delivered in the high dependency or intensive care unit and their stay in hospital may be longer.

Research studies have tried to use clot-busting medication to the site of the clot (thrombolysis), however, it is unclear if there is a benefit to this approach. In cases of severe CVST that have not improved with initial medical management with anticoagulation, stroke specialists /neurologists may occasionally recommend using clot-busting medication to the site of the clot (thrombolysis) or physically removing the clot (mechanical thrombectomy).