

Shunt Complications



Shunts remain the mainstay of treatment for Hydrocephalus and, in the majority of cases, this remains an effective treatment.

However, they can never perfectly mimic normal physiology and, like any mechanical device, they are prone to malfunctions of various sorts.

Knowing what symptoms to watch for will help you become more at ease. If you suspect there is a problem with the shunt, you are advised to have it checked by the neurosurgeon rather than ignore it. It is better to have a false alarm checked than to leave it unattended. Remember, although shunt complications can be very serious, they can almost always be treated successfully when they are discovered early.

Types of Complications

In most cases, shunts are intended to stay in place for life, although alterations or revisions might become necessary from time to time.

Possible complications of shunts in the treatment of Hydrocephalus may include, but are not limited to:

- Mechanical failure
- Infections
- Obstructions
- The need to lengthen or replace the catheter.

Generally, Hydrocephalus shunt systems require monitoring and regular medical follow-up. When complications do occur, usually the shunt system will require some type of revision.

Shunt malfunction is usually a problem with a partial or complete blockage of the shunt. The fluid backs up from the site of the obstruction and, if the blockage is not corrected, almost always results in recurrent symptoms of Hydrocephalus.

Shunt infection is usually caused by a person's own bacterial organisms; it is not acquired from exposure to other children or adults who are ill.

Over-draining occurs when the shunt allows CSF to drain from the ventricles more quickly than it is produced.

Under-draining occurs when CSF is not removed quickly enough and the symptoms of Hydrocephalus recur.

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Signs & Symptoms of a Shunt Complication

Shunt blockage, along with shunt infection, remains the most common cause of a shunt malfunction. In the vast majority of cases of shunt blockage prompt investigation and revision of the shunt is associated with full recovery and discharge from hospital within a few days. In rare situations shunt blockage can be fatal, particularly when the diagnosis is delayed.

Symptoms of shunt malfunction vary considerably from person to person, but tend to be similar each time for a particular person.

Infants

- Enlargement of head*
- Full or tense fontanelle*
- Swelling or redness on shunt tract*
- Fever
- Irritability
- Seizures
- Sunset eyes (eyes looking downward)

Toddlers

- Enlargement of head*
- Fever
- Swelling or redness on shunt tract*
- Vomiting*
- Headache*
- Sleepiness
- Seizures*
- Irritability

Children & Adults

- Headaches*
- Vomiting*
- Fever
- Swelling or redness on shunt tract
- Irritability
- Ataxia*
- Personality changes
- Visual disturbances*
- Decline in academic performance*
- Decline in motivation*
- Confusion*
- Seizures*
- Sleepiness*
- Incontinence*

Pay Particular Attention to Symptoms Marked*

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People, who were diagnosed and treated in adulthood, including those with Normal Pressure Hydrocephalus, tend to revert to the symptoms they experienced before initial treatment during a malfunction.

Less common symptoms include seizures, abdominal swelling and cranial nerve palsies. If a shunted child becomes unwell, it's important that the possibility of a shunt complication is considered as soon as possible.

Although the early symptoms of shunt malfunction or infection in children—fever, vomiting and irritability—are similar to many childhood illnesses; you will learn to determine the symptoms associated with shunt complications in a particular individual.

ANYONE WITH A SUSPECTED SHUNT BLOCKAGE (OR MALFUNCTION OF THIRD VENTRICULOSTOMY) NEEDS TO CONTACT THEIR SPECIALIST NEUROSURGICAL UNIT WITHIN 4 HOURS OF ACUTE SYMPTOMS DEVELOPING FOR ADVICE

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Protocol for Suspected Shunt Complications

For those living WITHIN County Dublin:

UNDER the age of 16

1. Go directly to Accident & Emergency Department at Children's University Hospital, Temple Street (The team are on call 24 hours a day 7 days a week) on 01 878 4200
2. Give the A & E medical staff your Shunt Alert Card
3. Ask the A & E medical staff to contact the Neurosurgical Team **as a matter of urgency. Do Not Let Them Leave A Message With The Neurosurgical Team – Make Sure They Speak To A Member Of The Team**
4. Inform the Next of Kin

OVER the age of 16

1. Go directly to Accident & Emergency Department at Beaumont Hospital (the team are on call 24 hours a day 7 days a week) on 01 809 3000
2. Give the A & E medical staff your Shunt Alert Card
3. Ask the A & E medical staff to contact the Neurosurgical Team **as a matter of urgency. Do Not Let Them Leave A Message With The Neurosurgical Team – Make Sure They Speak To A Member Of The Team**
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For those living OUTSIDE County Dublin:

UNDER the age of 16

1. Go directly to your nearest Accident & Emergency Department.
2. Give the A & E medical staff your Shunt Alert Card
3. Ask the A & E medical staff to contact the Neurosurgical Team at Children's University Hospital, Temple Street (The team are on call 24 hours a day 7 days a week) on 01 878 4200 **as a matter of urgency. Do Not Let Them Leave A Message With The Neurosurgical Team – Make Sure They Speak To A Member Of The Team**
4. Inform the Next of Kin

OVER the age of 16

1. Go directly to your nearest Accident & Emergency Department.
2. Give the A & E medical staff your Shunt Alert Card
3. Ask the A & E medical staff to contact the Neurosurgical Team at Beaumont Hospital (the team are on call 24 hours a day 7 days a week) on 01 809 3000 **as a matter of urgency. Do Not Let Them Leave A Message With The Neurosurgical Team – Make Sure They Speak To A Member Of The Team**
4. Inform the Next of Kin

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Diagnosing a Shunt Complication

Diagnosing shunt complication is not always straightforward. Commonly there will be an alternative explanation for the symptoms for example ear infection, common colds etc. In fact, parents can be as successful at diagnosing shunt blockage as GPs and paediatricians.

Whilst additional investigations such as CT scan, plain X-rays and a shunt tap may be decisive, a definitive diagnosis is sometimes only possible through surgery.

Shunt Alert Cards

A small information card stating the type of shunt a person has and the symptoms of malfunction. Mainly for use in emergency situations, is available through SBHI or your Family Support Worker.



Referral Procedure

If you have not been seen by a neurosurgeon in the last 5 years and had your shunt checked, you will need to be re-referred to Beaumont Hospital for those over 6 years of age and Children's University Hospital, Temple Street for those under the age of six via your GP or Family Support Worker.

Baseline Scans

Even though you are not experiencing any problems with your shunt; it is advisable that a baseline scan is taken when you are well. This will help to determine treatment, should you develop any pressure problems, ie the consultant will know the size of your ventricles when well. If you have not had a scan in the last 5 years, you may need a referral - see referral procedures above.

Eye Examinations

Individuals with a shunt are advised to have eye checks every 6 months. Raised intracranial pressure may cause pressure at the back of the eyes. Eye checks therefore assist early diagnosis.