

Contact Information

NNI@TTSH

Tan Tock Seng Hospital, NNI Block, Neuroscience Clinic
11 Jalan Tan Tock Seng, Singapore 308433
Main Tel: (65) 6357 7153
Appt. Tel: (65) 6330 6363
Email: appointments@nni.com.sg
Website: www.nni.com.sg



NNI@SGH

Singapore General Hospital, Block 3, Clinic L
Outram Road, Singapore 169608
Main Tel: (65) 6222 3322
Appt. Tel: (65) 6321 4377
Email: appointments@sgh.com.sg
Website: www.nni.com.sg



NNI@CGH

Changi General Hospital
2 Simei Street 3
Singapore 529889
Appt. Tel: (65) 6850 3333

NNI@KKH

KK Women's and
Children's Hospital
100 Bukit Timah Road
Singapore 229899
Appt. Tel: (65) 6294 4050

NNI@KTPH

Khoo Teck Puat Hospital
90 Yishun Central
Singapore 768828
Appt. Tel: (65) 6555 8828

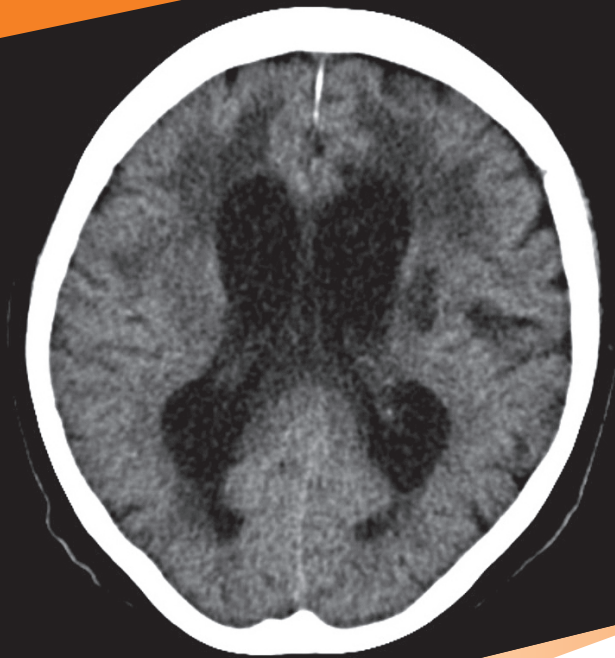
NNI@SKH

Sengkang General Hospital
110 Sengkang East Way
Singapore 544886
Appt. Tel: (65) 6930 6000



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Neurosurgery Department



The National Neuroscience Institute operates out of
two main campuses (TTSH, SGH) and
four partner hospitals (CGH, KKH, KTPH, SKH).



Adult Hydrocephalus

Brochure content serves as a guide only
Seek the advice of your doctor for more details

Information correct as of September 2020

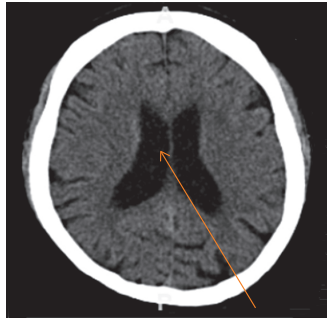


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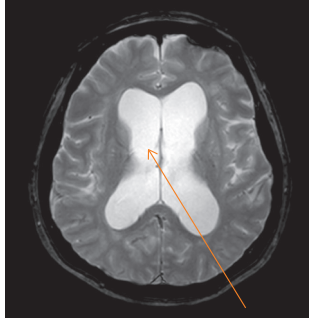
Understanding Adult Hydrocephalus

Cerebrospinal fluid (CSF) is produced by and flows through the brain and spinal cord. It protects and provides nutrients to the brain and spinal cord. CSF is absorbed into the bloodstream.

Hydrocephalus is a condition where there is excessive CSF in the brain. When the production and absorption of CSF are affected, the cavities (ventricles) of the brain enlarge, increasing brain pressure (Figure 1).



Normal ventricles



Enlarged ventricles

Figure 1
Comparison between normal ventricles and enlarged ventricles

The cause of hydrocephalus is usually unknown but could develop due to:

- Injury or trauma to the head or brain
- Infection
- Bleeding
- Tumour

Signs & Symptoms of Hydrocephalus

- Headache
- Blurred/double vision
- Nausea and/or vomiting
- Drowsiness
- Problems with thinking and memory
- Balancing and/or walking issues
- Inability to control bladder

Diagnosing Hydrocephalus

An examination and a Computed Tomography (CT) or Magnetic Resonance Imaging (MRI) scan are needed to confirm the diagnosis.

Treating Hydrocephalus

Treatment depends mostly on the type of hydrocephalus and the patient's condition.

1. External Ventricular Drain (EVD)

A drain is temporarily inserted to remove excess CSF and reduce brain pressure.

2. Shunt

A permanent tube (shunt) may be inserted to direct CSF from the brain to other parts of the body like the abdomen for absorption (Figure 2).

Though uncommon, shunt complications include:

- Infection
- Bleeding
- Stroke
- Shunt malfunction
- Flow obstruction
- Over or under-draining of CSF

Generally, patients are on long-term monitoring but can go about their daily activities.

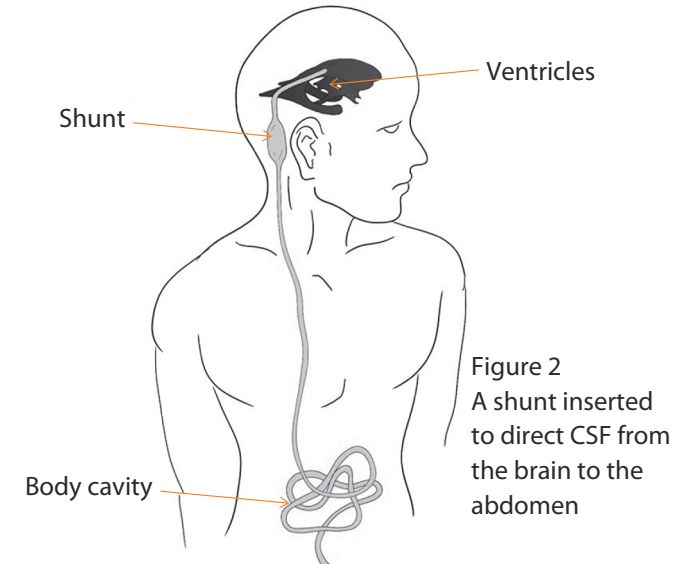


Figure 2
A shunt inserted to direct CSF from the brain to the abdomen

3. Endoscopic Third Ventriculostomy (ETV)

Procedure to open a path in the brain cavities for CSF to flow.

Understanding Normal Pressure Hydrocephalus

Normal Pressure Hydrocephalus (NPH) is seen in older adults and occurs when CSF builds up slowly in the brain cavities. Brain enlargement takes place over time and common signs and symptoms include:

- Difficulty walking, resulting in falls and head injuries
- Memory issues
- Inability to control bladder

Not all symptoms are present at the same time. Sometimes, only one or two show up.

Patients with NPH may respond to shunt treatment. Speak to your doctor for details on how to manage NPH.