

Other Neurological Issues

In children with spina bifida, the brain stem (lower part of the brain) is lower than usual and compresses the upper part of the spinal cord in the neck which leads to other neurological complications.

Chiari II Malformation

Nearly all individuals born with myelomeningocele have chiari II malformation. A small percentage of children with chiari II malformation develop severe symptoms such as aspiration (when food and liquid enter the lungs), apnea (when breathing stops for more than 5 to 10 seconds), or any of the other symptoms listed below. Symptoms of chiari II malformation may include:

- Hypersensitivity (increased sensitivity) to objects in the mouth (e.g. lumps in food, toothbrush),
- Hypersensitivity to light and loud sounds
- Gagging, choking, vomiting
- Stridor (high-pitched “croupy” sounds)
- Tightness and/or weakness of arms
- Arching of head backwards
- Weak suck when feeding (bottle feeding or breast-feeding)

What To Do If Symptoms of Chiari II Malformation Develop

If your child develops symptoms of chiari II malformation, report it to your neurosurgeon or other health care professional. You and the neurosurgeon should discuss options and plan the treatment. If symptoms persist or are severe, surgery may be required to reduce the pressure in the brain stem area. Some children with hypersensitivity in or around the mouth may be helped by an occupational therapist or a speech language pathologist. A physiotherapist may provide suggestions for positioning to reduce neck arching and tightness of arms. Children may outgrow the difficulties of choking and swallowing. The difficulties with eating and drinking may also diminish as they grow.

Tethered Cord

The spinal cord is normally elastic. In children with spina bifida, the spinal cord can get stuck at the site of the lesion and is often stretched over time. That stretch can lead to injury of the spinal cord, which will cause symptoms called tethered cord. Symptoms of tethered cord may include:

- **Bladder changes** - urgency and frequency in urinary wetness, increase in urinary infections, problems noted on x-rays or urodynamics (UDS)
- **Bowel changes** - urgency and frequency in bowel soiling, change in stool consistency
- **Back pain** - especially in the lower back and legs
- **Leg and foot changes** - increase in tightness of muscles, decrease in the range of movement or existing function, worsening of ankle and foot deformities, changes in walking, curling and clawing of toes
- **Increasing curving of the spine** which is called scoliosis

What To Do If Symptoms of Tethered Cord Develop

If your child develops any symptoms of tethered cord, report it to your neurosurgeon or health care professional. A magnetic resonance imaging (MRI) or other tests may be recommended and surgery may be necessary to release (detether) the spinal cord. This procedure may prevent the symptoms from getting worse, but it may not improve the present symptoms.

Syringomyelia or Syrx

(pronounced Si-rin-go-my-EEL-ee-a or Si-rinx)

This is an abnormal pocket of cerebrospinal fluid which forms inside the spinal cord. This condition is caused by pressure from the cerebrospinal fluid within the central canal of the spinal cord. Symptoms of syringomyelia may include:

- Increased scoliosis
- Changes in sensation and/or weakness of the hands, arms (e.g. pins and needles, numbness)

What To Do If Symptoms of Syringomyelia or Syrx Develop

If your child develops any symptoms of syringomyelia or syrx, report it to your neurosurgeon or health care professional. An MRI may be recommended and a shunt may be inserted or a shunt revision may be needed if the shunt is not working properly. A spinal shunt may be required to redirect the extra fluid away from the spinal cord to the abdomen.

Hydrocephalus Canada

We are the voice of
Canadians living with hydrocephalus and spina bifida.

Every day we strive to empower those impacted by both conditions to experience the best life possible.

We do this by establishing environments that protect, support and enhance the lives of those living with, or at risk of developing, these conditions.

Our work focuses on four areas of influence – Education, Support, Awareness and Research.

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