McMaster Children's Hospital
NEONATAL NURSERIES

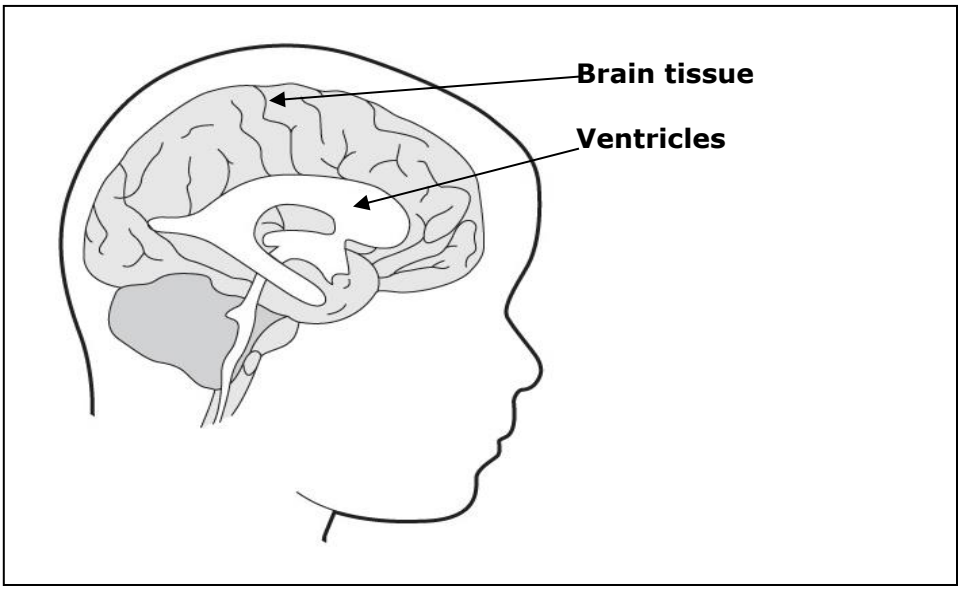
Periventricular Leukomalacia

(Perry-venn-**trik**-yoo-lar Loo-co-ma-**lay**-shuh)

What is periventricular leukomalacia?

Periventricular leukomalacia (PVL) is a softening of the brain tissue that surrounds the fluid spaces inside the brain. This medical term comes from several small words:

- 'peri' means near
- 'ventricular' refers to 4 fluid-filled spaces inside the brain called ventricles
- 'leuko' means white, which refers to the type of brain matter that is affected
- 'malacia' means softening



What causes PVL?

The softening occurs because the brain tissue was injured. This may be the result of a lack of blood flow and oxygen. PVL may occur before birth, just after birth or during a critical illness. PVL may occur alone or along with bleeding in the fluid spaces (intraventricular hemorrhage).

Premature babies have a greater risk of PVL. Their brain tissues are fragile and can be injured easily. Illness or infection can also increase the risk of PVL.

How do you know if my baby has PVL?

There are usually no visible signs of PVL. An ultrasound scan or MRI (magnetic resonance imaging) of the brain can identify areas where there is softening or bleeding. It may take a few weeks before PVL can be detected.

If your baby is at risk for PVL, he or she will have an ultrasound or MRI a few weeks after birth. Your baby's doctor will explain the results of these tests.

If your baby has PVL, you may feel anxious or upset and have many questions. The members of your baby's health care team will give you information and support. They can help you learn about your baby's condition and care. Please feel free to ask questions at any time.

How will PVL affect my baby?

Your baby may not have any noticeable signs of PVL. The effects of PVL usually develop over time.

The area around the ventricles of the brain contains nerve fibres that carry messages within the brain and to the muscles of the body. If these nerve fibres are damaged or lost, your baby may develop problems with movements and stiffness.

- If the damage is mild, this may only lead to stiffness in the feet or legs.
- If the damage is more extensive, movement problems may be seen in the arms and face, as well as in the legs.

Sometimes the problems that lead to PVL can affect other areas of the brain as well. This could lead to problems with learning, understanding, speaking and seeing, in addition to the movement problems caused by PVL.

These problems may delay your child's "developmental milestones". This means it may take longer for your child to do what most children can do at a certain age.

It is not possible to predict exactly how your baby will be affected. This will depend on the extent of the brain injury, as well as your baby's gestational age and overall health. Some babies have mild problems; others may develop major disabilities.

Can PVL be treated?

There is no specific treatment for PVL. Your baby's health care team will support his or her development and help manage symptoms.

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What care will my baby need?

After you leave the hospital, your baby's care will continue at the Neonatal Follow-up Clinic. The health care team at the clinic will regularly assess your child's health and development.

Depending on your child's needs, follow-up may include:

- visits with other health professionals
- supportive treatments such as physiotherapy, occupational therapy or speech/language therapy
- hearing and vision tests

If your child needs care or support at home or in the community, the health care team at the clinic can help connect you with the services you need.

If you have any questions about PVL or your baby, please speak with a member of your care team.