

# INTRAVENOUS AND ARTERIAL ACCESS

Babies admitted to the Centre for Newborn Care (CNC) may need one or more of the following catheters for venous and arterial access:

## 1. Peripheral Intravenous Catheters (IV's)

### **What is an intravenous catheter for?**

Many babies admitted to the CNC will have an IV. Reasons why this may be required are:

- To give antibiotics to treat an infection or suspected infection
- To give medication that has to be given into the vein
- Your baby is not able to be fully fed and requires IV nutrition

### **Where are they placed?**

A doctor or a nurse will place the IV through the skin into a vein either in the hand or the foot. Peripheral IV's are safe, but usually only last two or three days as they tend to leak or become blocked.

### **Complications are rare and include:**

- Blockage
- Leakage causing swelling and skin breakdown which may lead to infection
- Bruising

## 2. Umbilical Arterial and Venous Catheters

### **What is an umbilical catheter?**

An umbilical artery catheter (UAC) is inserted into the artery in your baby's umbilical stump. An umbilical venous catheter (UVC) is inserted into the vein in your baby's umbilical stump. The catheters are soft tubes that are used in the first week of life.



<http://www.craigrom.com/catheter/wp-content/uploads/umbilical%20catheters.jpg>

**Why are they used?**

UAC's are used for measuring blood pressure and taking blood samples. UVC's are used to provide intravenous fluids and medications.

**How are they inserted?**

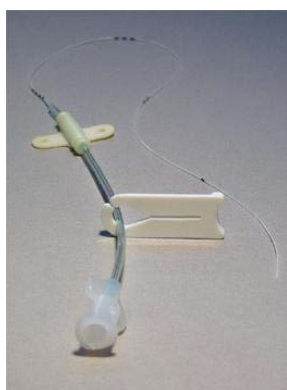
The UAC and UVC are inserted using a sterile procedure. After the catheters have been put in, an X-ray is taken to make sure the tips of both lines are in the right place. The procedure may take up to 30 minutes in most cases.

**What are the complications of umbilical lines?**

- Infection
- Blood clot formation around the tip or within the vein (Thrombosis)
- Dislodgment of thrombus (Thromboembolism)
- Haemorrhage from line displacement
- Inflammation of the vein (Thrombophlebitis)
- Migration of the line to unintended organ (rare)

**3. Peripherally Inserted Central Catheter (PICC line)****What is a PICC Line?**

A PICC line is a soft, flexible intravenous (IV) line, about 20-30cm long which is inserted through a vein in the arm or foot and threaded into one of the major blood vessels leading to the heart.



[http://www.chw.edu.au/parents/factsheets/picc\\_lines.htm?print](http://www.chw.edu.au/parents/factsheets/picc_lines.htm?print)

**Why does my baby require a PICC line?**

A PICC line is used for babies requiring IV access or a cannula for a prolonged period of time to provide total parenteral nutrition (TPN) or antibiotics. PICC lines can stay in place for many days or weeks. This line reduces the need for lots of peripheral intravenous cannulas. Sometimes, despite having a PICC line your baby may need another intravenous cannula for receiving a blood transfusion or a medication that cannot be given through the PICC line.

**How are they inserted?**

The PICC line is inserted like a cannula but as a sterile procedure. After the line has been put in, an X-ray is taken to make sure the tip of the PICC line is in the right place. The procedure may take up to 30 minutes in most cases. Your baby will be given pain relief in the form of sucrose before the procedure.

**What are the complications of a PICC line?**

- Infection
- Swelling
- Blood clot formation around the tip or within the vein (Thrombosis)
- Inflammation of the vein (Thrombophlebitis)
- Vascular perforation (rare)

- Migration of the line to unintended organ (rare)
- Breakage of the PICC line itself (rare)

#### **4. Jugular/Subclavian Central Venous Catheter**

##### **What is a jugular/subclavian central venous catheter?**

A central venous catheter is a soft intravenous line 10-20 cm long inserted into the jugular (vein in the neck) or subclavian vein (vein under the clavicle).

##### **Why does my baby require a jugular/subclavian central venous catheter?**

These lines are used when all other options for intravenous access are no longer available and intravenous access is required to provide essential nutrition and medications.

##### **How are they inserted?**

These central venous lines are inserted by an anaesthetist, sometimes using ultrasound guidance. After the line has been placed, an X-ray is taken to make sure the tip of the line is in the right place. The procedure may take up to 60 minutes. Your baby will be given pain relief in the form of local anaesthetic and may also receive sucrose before and during the procedure.

##### **What are the complications of a jugular/subclavian central venous catheter?**

- Infection
- Swelling
- Pneumothorax (rare)
- Blood clot formation around the tip or within the vein (Thrombosis)
- Inflammation of the vein (Thrombophlebitis)
- Vascular perforation (rare)
- Migration of the line to unintended organ (rare)
- Breakage of the line itself (rare)

#### **5. Peripheral Arterial Catheter**

A catheter is placed into an artery by a doctor either on the wrist or on the foot using a small catheter the same as used for a peripheral IV.

##### **Why does my baby need one?**

Peripheral arterial lines are used for measuring blood pressure and taking blood samples.

##### **Complications are rare and include:**

- Blockage
- Spasm
- Leakage
- Bruising
- Swelling of the limb
- Change in colour of distal fingers or toes

All of these different types of catheters will be removed when they are no longer required or as soon as any of the above complications occur.

If you have any further questions please ask the medical and nursing staff.

Approved by Canberra Hospital Neonatal Intensive Care Unit, 2012  
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