Therapeutic Hypothermia is a safe intervention if administered by appropriately trained Neonatal teams. Nursing care is of paramount importance and avoiding cold water flows (fig 1). Alternatively, partially selective cooling is achieved using a special mattress or body wrap through which cold water flows (fig 2). How do we cool?

How do we cool?

**Features**

- **Cooling Cap**: The use of a cooling cap for head cooling during the first few weeks of life is followed up in the clinic/office for a regular basis for the first few years to look for any neurodevelopmental complications.

- **Selective Head Cooling**: This method is used to cool the brain by selectively cooling the head or the head and upper trunk. This method is less effective than whole body cooling as it can increase the risk of reperfusion injury.

- **Whole Body Cooling**: This method is used to cool the body as a whole. Whole body cooling is more effective than selective head cooling and is used when the head and upper trunk are not exposed to the cold environment.

- **Core Body Temperature Monitoring**: The core body temperature (as measured continuously with a rectal temperature probe) is maintained at 33.5°C for 72 hours. After this period, the temperature is gradually increased to a normal temperature of 8-12°C.

- **Criteria for Cooling**:
  - **Criteria A**:
    - Absent or weak suck
    - Absent or weak breath
  - **Criteria B**:
    - Altered consciousness
    - One of the following:
    - Base deficit
    - Apgar score <5 at 10 min following birth
    - +/− Abnormal amplitude integrated EEG (if available)
  - **Criteria C**:
    - +/− Abnormal movement
    - +/− Intra-ventricular haemorrhage
    - +/− Focal signs (motor or neurological in origin)

- **Therapeutic Hypothermia for Neonatal Asphyxia**: This form of hypothermia is used to treat newborn infants with moderate-severe HIE. The core body temperature is maintained at 33.5°C for 72 hours. After this period, the temperature is gradually increased to a normal temperature of 8-12°C.

- **Consequences of Perinatal Asphyxia**:
  - **Maternal**:
    - Placental evaluation
    - Fetal anomaly scan
    - Early pregnancy scan
  - **Uterine**:
    - Umbilical Cord
    - Cord prolapse, cord occlusion
  - **Fetal**:
    - Congenital & valvular heart diseases
    - Maternal blood pressure monitoring and treatment
    - First trimester and second trimester serum screening
    - Down Syndrome screening, nuchal translucency ultrasound scan, first trimester and second trimester serum screening
  - **Obstetric**:
    - Maternal weight monitoring and treatment
    - Intra-uterine growth restriction (IUGR)
    - Gestational diabetes mellitus (GDM)
    - Pre-eclampsia
    - Intra-uterine infection
    - Placental abruption

- **Obstetrics & Gynaecology Services**:
  - **Routine antenatal care at the booking clinic**
  - **Early Pregnancy Unit (EPU)**
    - Shopper conditions in women
    - Climateric psycho-somatic problems
    - Postnatal blues & postpartum depression
    - Ovarian Cryopreservation
    - Menopause Clinic
    - Adolescent Gynaecology Clinic
    - Sexual Dysfunction Clinic
    - Fertility Augmentation Clinic
    - Centre for Assisted Reproduction (CARE)
  - **Obstetric Services**
    - Incontinence surgery including tension-free vaginal tape (TVT & TVT-O)
    - Cancer surgery
    - Vulva Clinic
    - Colposcopy & LEEP Clinic
    - Gynaecological Oncology
  - **Reproductive Medicine**
    - Intra-uterine insemination (IUI)
    - In-vitro fertilization (IVF)
    - Intracytoplasmic sperm injection (ICSI)
    - Donor programs for oocyte, embryos and sperm
  - **Neonatal Services**
    - Neonatal High-Dependency and Normal Nursery
    - Neonatal Neurodevelopmental follow up programme
    - Developmental Screening
    - Universal Hearing Screening
    - Ambulatory Paediatrics
    - Neonatal  Neurodevelopmental follow up programme

- **Neonatal High Dependency Unit**
  - **CARE Services**
    - Clinical Nurse Consultant: 6228 6860
    - Clinical Nurse Coordinator: 6321 4383
  - **Obstetrics & Gynaecology Services**
    - Consultant: 6321 4377
### Congenital & Neonatal Varicella Infections

Varicella-zoster virus (VZV) is the virus responsible for varicella (chickenpox) and herpes zoster ("shingles"). Varicella is usually a mild and self-limiting illness in healthy children. However, it can affect the pregnant or postpartum woman, causing problems for the fetus or newborn.

#### Clinical Features

- **Incubation Period**: 14-17 days
- **Prodromal Illness**: 1-2 days before rash
- **Rash**: 1-2 days after fever, starts on the face and scalp and then spreads to the trunk and limbs
- **Duration**: 5-6 days
- **Complications**: Meningoencephalitis, pneumonia, otitis media, orchitis

#### Prevention

- **Varicella-zoster immune globulin (VZIG)**: Recommended for infants born to mothers who had varicella or zoster from 5 - 28 weeks of pregnancy. The risk appears to be highest in the first 2 weeks of gestation and decreases thereafter. Infants who receive VZIG before 12 hours of age have a higher likelihood of protection than those receiving it later. VZIG should not be given after 72 hours of age.
- **Varicella-zoster vaccine (VZV)**: Recommended for infants born to mothers who had varicella in the 5-28 weeks of pregnancy. The vaccine is 80-90% effective in preventing chickenpox and zoster and can reduce the severity of these illnesses. A single dose is recommended for infants born to mothers who had varicella in the 5-28 weeks of pregnancy. The vaccine is 80-90% effective in preventing chickenpox and zoster and can reduce the severity of these illnesses. A single dose is recommended for infants born to mothers who had varicella in the 5-28 weeks of pregnancy.

####Chickenpox in Pregnancy

- **Varicella is a highly contagious viral disease that is spread via respiratory droplets or direct contact with vesicle fluid.** The incubation period is 14-17 days, and the rash appears 1-2 days after fever.
- **Virological diagnosis**: Varicella-zoster virus (VZV) DNA may be considered. If both ultrasound and PCR are normal, the possibility of maternal varicella should be assessed.
- **Management**: Women with uncomplicated chickenpox may be managed outpatient. Complications include encephalitis, meningitis, pneumonia, and postpartum infection. Women with more severe disease should be managed in an inpatient setting.
- **Varicella-zoster immune globulin (VZIG)**: Considered for infants born to mothers with varicella in the 5-28 weeks of pregnancy.
- **Varicella-zoster vaccine (VZV)**: Considered for infants born to mothers who had varicella in the 5-28 weeks of pregnancy.

#### Varicella-zoster virus (VZV) in Pregnancy

- **Risk factors for complications**: Invasive disease is more common in women with a history of varicella or zoster, women with atypical chickenpox or zoster, women with immunodeficiency, and women with a history of chronic lung disease.
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