





Thermoregulation
Denise Cole, MS, RNC-NIC
Denise-Cole@ouhsc.edu

Mechanisms of Heat Transfer

	Mechanism	Ways to Prevent Heat Loss
	Conduction	
		
		
		Be careful to prevent radiant heat GAIN!

Babies at Risk for Cold Stress

- a. Preterm/SGA
 - i. Less Brown Fat and insulating white fat
 - ii. Greater surface area in relation to body weight
 - iii. Thinner skin
- b. Sick Babies
 - i. Stress on metabolism related to increased oxygen and calorie use
- c. Babies with open defects (myelomeningocele, gastrochisis, etc.)

Non-Shivering Thermogenesis

- a. Heat is produced by increasing metabolism, especially in brown adipose tissue
 - i. Cold environment sensed
 - ii. Hypothalamus stimulated
 - iii. Brown adipose tissue metabolized
 - iv. Heat generated

What is the recommended delivery room temperature for a **term** baby? _____

What is the recommended delivery room temperature for a **preterm** baby? _____

4. Therapeutic/Neuroprotective Hypothermia

- a. Utilized to treat HIE (H_____ -I_____ E_____)
- b. Asphyxia - _____
- d. Asphyxia can lead to HIE
- e. Head Cooling or Total Body Cooling
- f. Candidates for Therapeutic Hypothermia
 - i. Started within ___ hours of birth
 - ii. >36 weeks gestation
 - iii. >1800 g
 - iv. One of the following:
 - 1. APGAR < 5 at 10 minutes
 - 2. Continued need for resuscitation at 10 minutes
 - 3. Cord pH or arterial pH <7.00
 - 4. Base Deficit = or >16
 - v. Signs of encephalopathy:
 - 1. Hypotonia
 - 2. Abnormal reflexes
 - 3. Absent or weak suck
 - 4. Seizures
 - vi. Abnormal EEG (performed at tertiary center)

Draw the best position for the temperature probe

