

Thermoregulation Sequence

⌌
Baby at-risk

⌌
Resuscitation

⌌
Support

⌌
Infection

Respiratory

Thermoregulation

⌌
Primary Survey

Cardiovascular

⌌
Problem List

Fluid & Glucose Management

⌌
Sequences

⌌
Consider transport

Neurology

Surgical Conditions

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Thermoregulation Sequence

Alerting signs

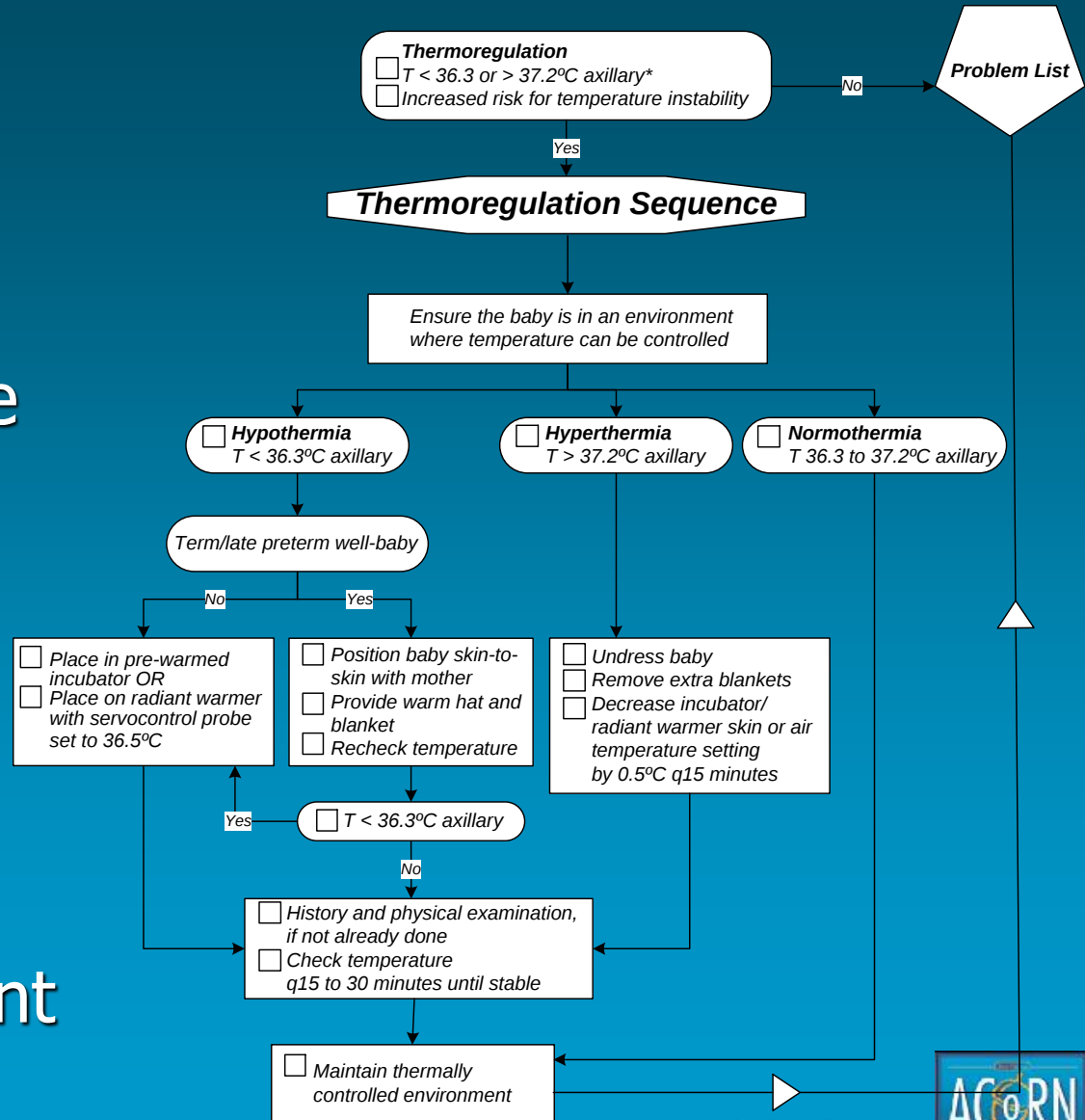
Core steps

Organization of care

Response

Next steps

Specific management



Alerting Signs

Thermoregulation

☐ $T_{\text{axillary}} > 38.5$ or $T_{\text{axillary}} < 36.0$ °C axillary*

☐ Increased risk for temperature instability



Hypothermia

- All newborns are at risk for temperature instability
- Babies at increased risk for **hypothermia** include:
 - unwell
 - preterm, especially LBW (<2500g), VLBW (<1500g) and particularly ELBW (<1000g)
 - SGA
 - wet babies
 - open lesions
 - ambient temperature is < 23°C or air drafts exist
 - being cared for by us!

Hypothermia

Cold stress can cause:

- irritability (initially) / lethargy
- pale, mottled
- metabolic acidosis
- hypoglycemia / hyperglycemia
- respiratory distress, apnea, tachypnea
- bradycardia / tachycardia
- vasoconstriction, hypoxia, shock

Hyperthermia

- Causes include:
 - **iatrogenic**
 - **maternal epidural**
 - maternal hyperthermia
 - infection
 - CNS disorders
 - administration of PgE_1
- Babies with intrapartum or neonatal hyperthermia are at increased risk of neurodevelopmental complications

Core Steps

- ☐ *Ensure the baby is in an environment where temperature can be controlled*

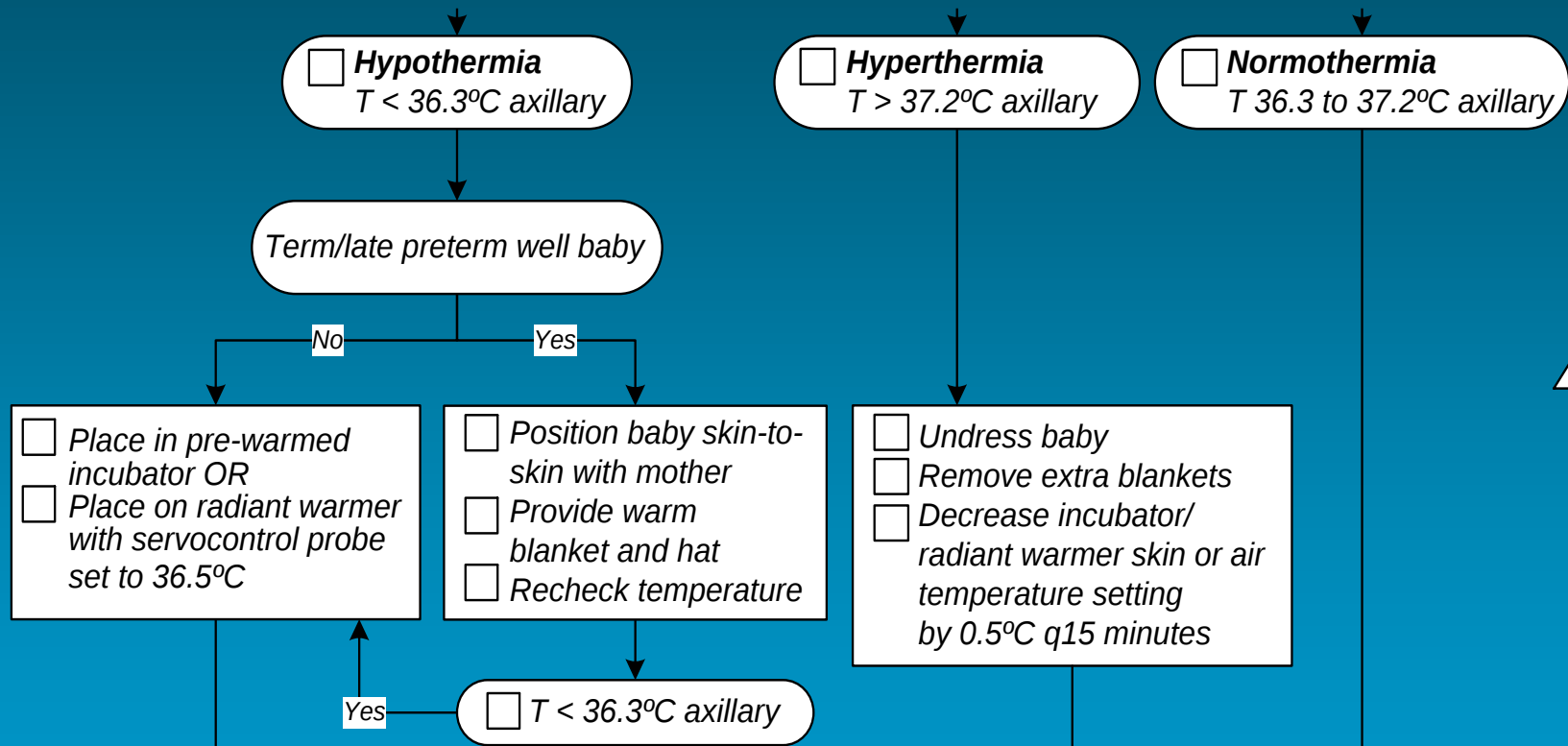


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Organization of Care and Response



Specific Management

- ☐ *Maintain thermally controlled environment*

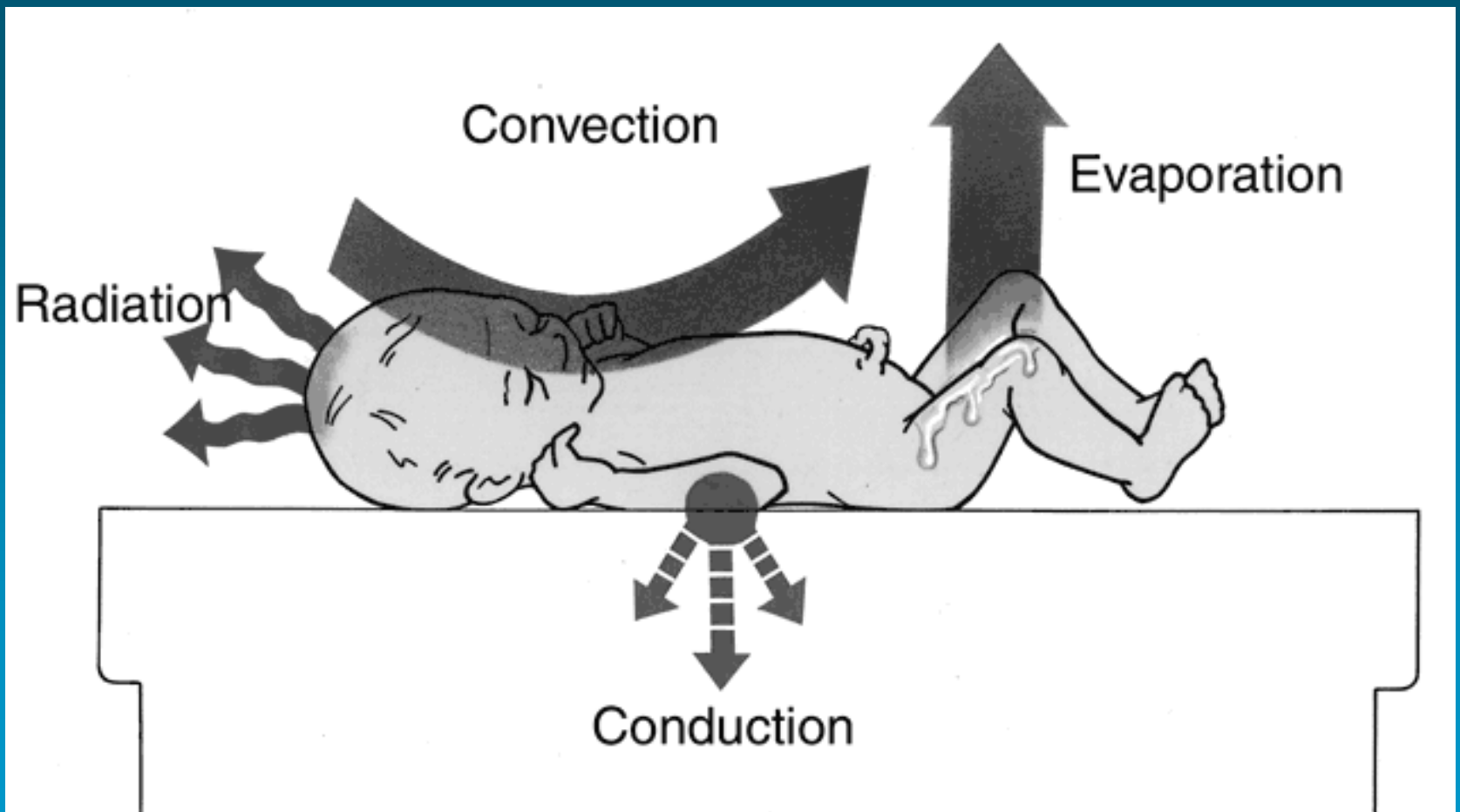
Initial incubator temperature

Choosing initial incubator temperature in first 12 hours of age

Birth weight (grams)	Air temperature setting °C (double wall, humidified incubator)
< 750	39.5 (37.5)
750 to 1000	39.0 (37.0)
1000 to 1200	37.5
1200 to 1500	36.5
1500 to 2000	35.5
> 2000	34

Adapted from: Jaimovich DG, Vidyasagar D. Handbook Pediatric and Neonatal Transport Medicine (2d Edition). Philadelphia: Hanley & Belfus, Inc. 2002, p. 483

Heat loss



Heat loss prevention

Conduction

- Pre-warm bedding
- Cover weigh scale
- Change wet bedding as soon as possible (eg oxyhoods)

Convection

- Ambient temperature ~ 25°C
- Avoid air drafts: air vents, open/swinging doors

Evaporation

- Use medium to high humidity in incubators
- Place baby < 28 weeks gestation in plastic bag

Radiation

- Flexed nested position
- Double wall incubator

Keeping warm



Questions?

