



احیا نوزاد در بدو تولد (European Resuscitation Council) (Guidelines 2021



- بهاره متقی دستنایی

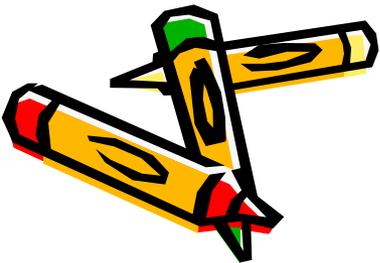
- مربی عضو هیئت علمی مامایی علوم پزشکی شهرکرد

- نرگس دادخواه

- مربی عضو هیئت علمی مامایی علوم پزشکی شهرکرد

- دکتر فرشته راستی

- استادیار عضو هیئت علمی گروه بهداشت باروری علوم پزشکی شهرکرد



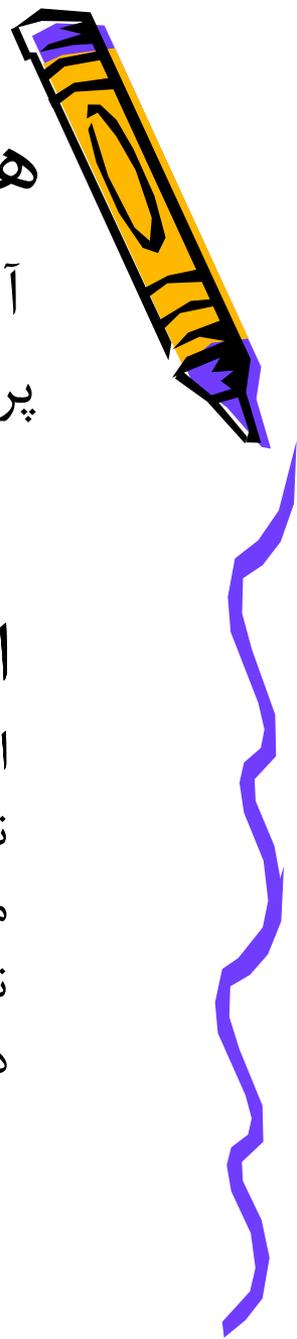
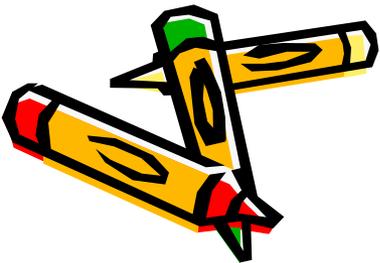
هدف کلی

آشنا کردن و توانمندسازی پرسنل و دانشجویان رشته های مامایی، پرستاری و اتاق عمل در پروسه احیا نوزاد

اهداف ویژه

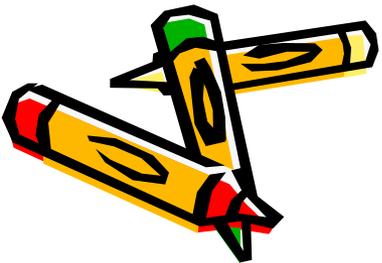
از گروه هدف انتظار می رود در پایان این دوره:
نوزادان نیازمند به احیا را شناسایی کنند
مراحل احیا را توضیح دهند.

نوزادان نیازمند به احیا پیشرفته را سریعاً شناسایی و اقدامات لازم را انجام دهند.



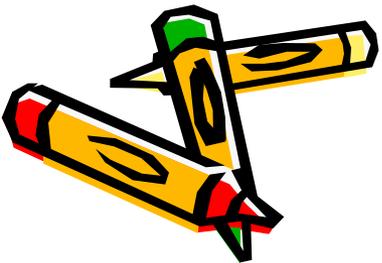
Introduction and scope

These guidelines are based on the International Liaison Committee on Resuscitation (ILCOR) 2020 Consensus on Science and Treatment Recommendations (CoSTR) for Neonatal Life Support. For the purposes of the ERC Guidelines the ILCOR recommendations were supplemented by focused literature reviews undertaken by the ERC NLS guidelines Group for topics not reviewed by 2020 ILCOR CoSTR. When appropriate, the guidelines were informed by the expert consensus of the ERC. These guidelines were drafted and agreed by the Newborn Life Support Writing Group members. The methodology used for guideline development is presented in the Executive summary guidelines group membership.

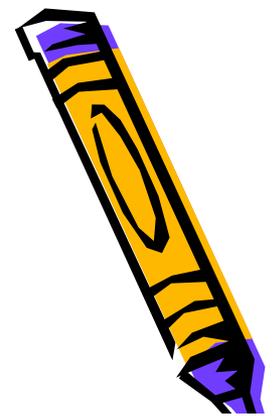


Transition and the need for assistance after birth

Most, but not all, infants adapt well to extra-uterine life but some require help with stabilisation, or resuscitation. Up to 85% breathe spontaneously without intervention; a further 10% respond after drying, stimulation and airway opening manoeuvres; approximately 5% receive positive pressure ventilation. Intubation rates vary between 0.4% and 2%. Fewer than 0.3% of infants receive chest compressions and only 0.05% receive adrenaline.



Common factors associated with an increased risk of a need for stabilization, or resuscitation at birth



Antepartum factors

Fetal

- Intrauterine growth restriction
- < 37 weeks gestation
- Multiple pregnancies
- Serious congenital abnormality
- Oligo and polyhydramnios

Maternal

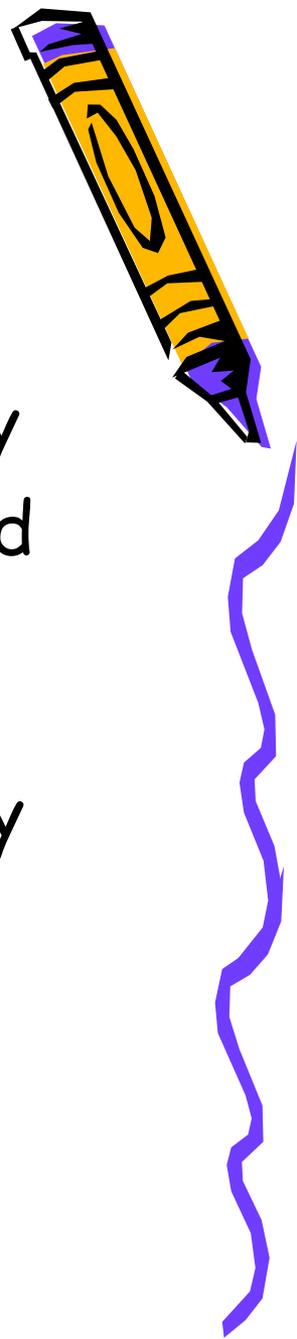
- Infection
- Gestational diabetes
- Pregnancy-induced hypertension
- Pre-eclampsia
- High BMI
- Short stature
- Preterm lack of antenatal steroids

Intrapartum factors

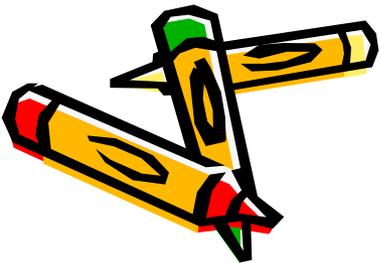
- Evidence of fetal compromise (non-reassuring CTG etc.)
- Meconium stained amniotic fluid
- Delivering vaginally by breech
- Forceps or vacuum delivery
- Significant bleeding
- C-section before 39 weeks
- Emergency C-section
- General anaesthesia



Staff attending delivery



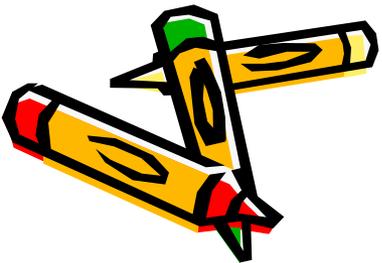
- Personnel competent in newborn life support should be available for delivery
- If intervention is required, there should be personnel available whose sole responsibility is to care for the infant.
- A process should be in place for rapidly mobilising a team with sufficient resuscitation skills for any



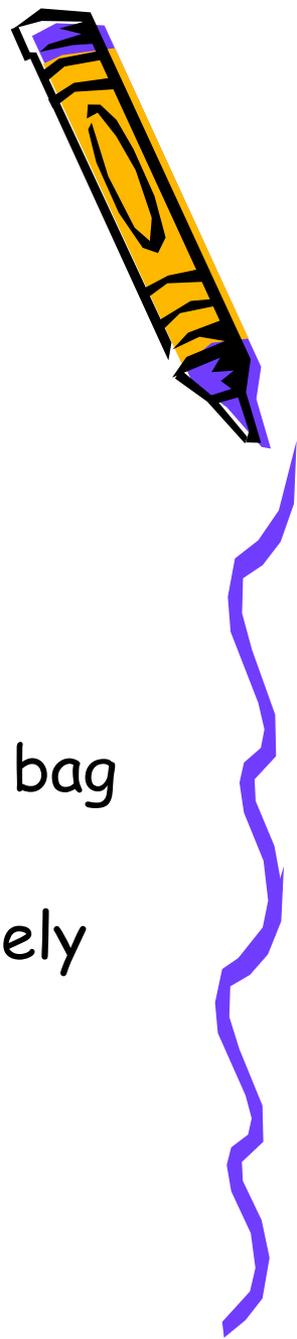
Equipment and environment



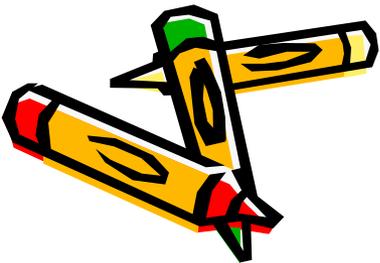
- All equipment must be regularly checked and ready for use.
- Where possible, the environment and equipment should be prepared in advance of the delivery of the infant. Checklists facilitate these tasks.
- Resuscitation should take place in a warm, well-illuminated, draught-free area with a flat resuscitation surface and a radiant heater (if available).
- Equipment to monitor the condition of the infant and to support ventilation should be immediately available.



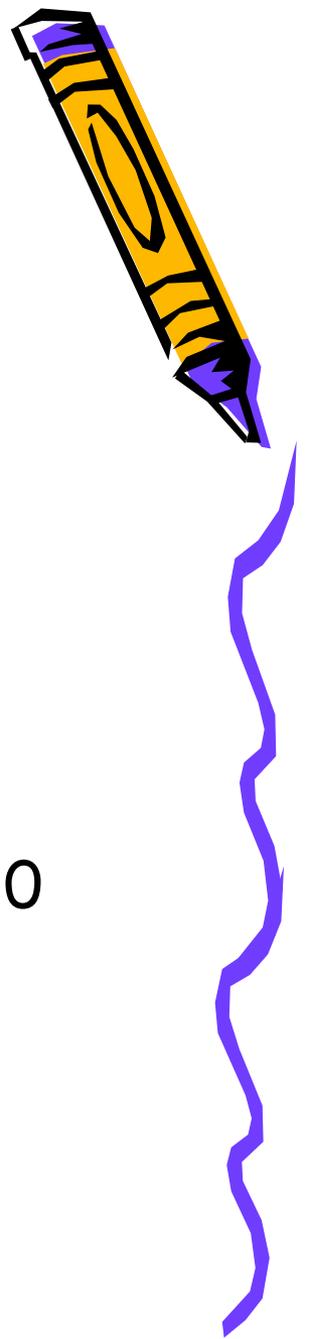
Planned home deliveries



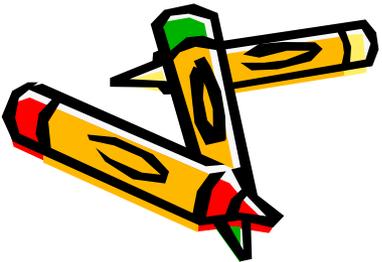
- clean gloves for the attendant and assistants
- means of keeping the infant warm, such as heated dry towels and blankets
- a stethoscope to check the heart rate
- a device for safe assisted lung aeration and subsequent ventilation such as a self-inflating bag with appropriately sized facemask
- sterile instruments for clamping and then safely cutting the umbilical cord.



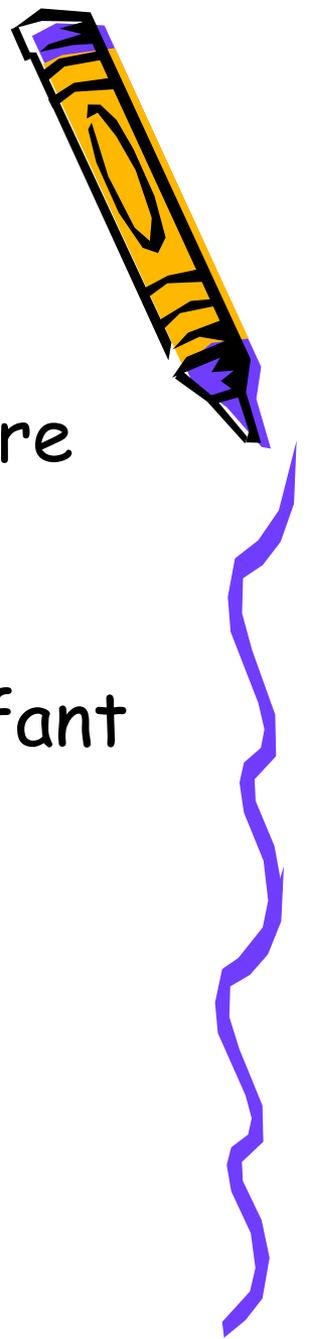
Thermal contro



The infant's temperature should be regularly monitored after birth and the admission temperature should be recorded as a prognostic indicator. The temperature of newborn infants should be maintained between 36.5°C and 37.5°C. Hypothermia (<36.0°C) should be avoided. In appropriate circumstances, therapeutic hypothermia may be considered after resuscitation (see post-resuscitation care).



Environment

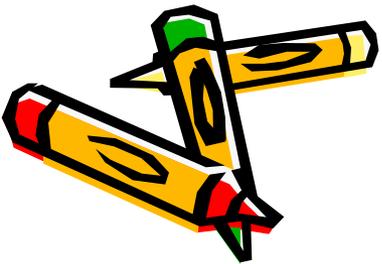
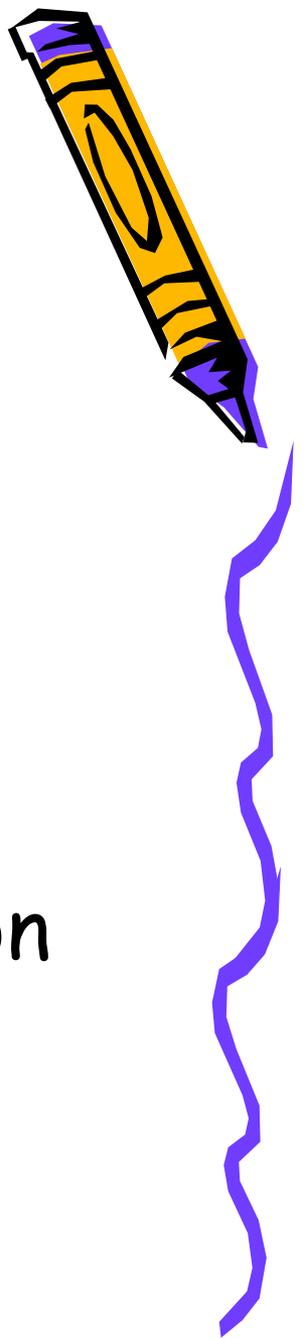


- Protect the infant from draughts. Ensure windows are closed and air-conditioning appropriately programmed.
- □ Keep the environment in which the infant is looked after (e.g. delivery room or theatre) warm at 23-25 C.
- □ For infants 28 weeks gestation the delivery room or theatre temperature should be >25 □

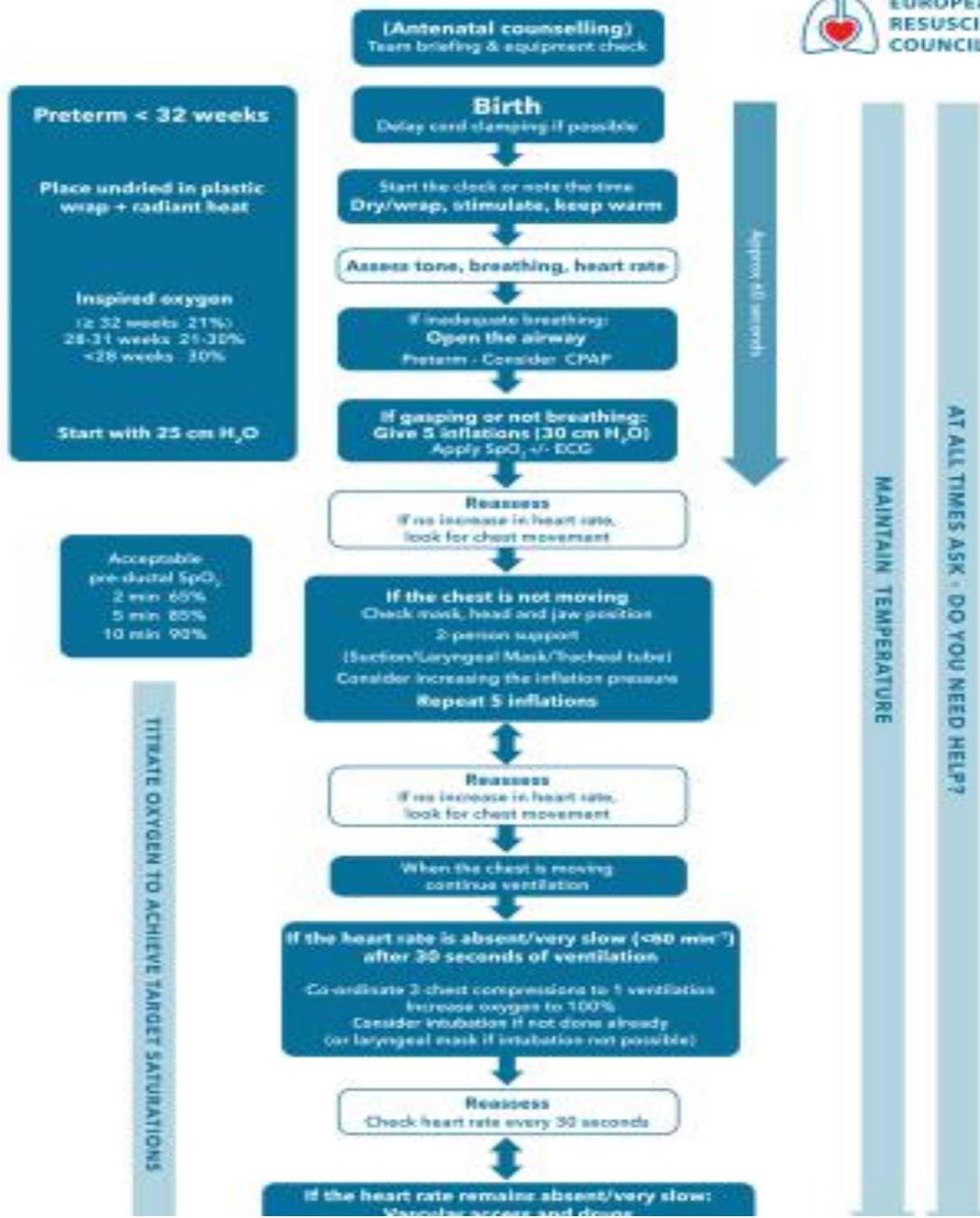


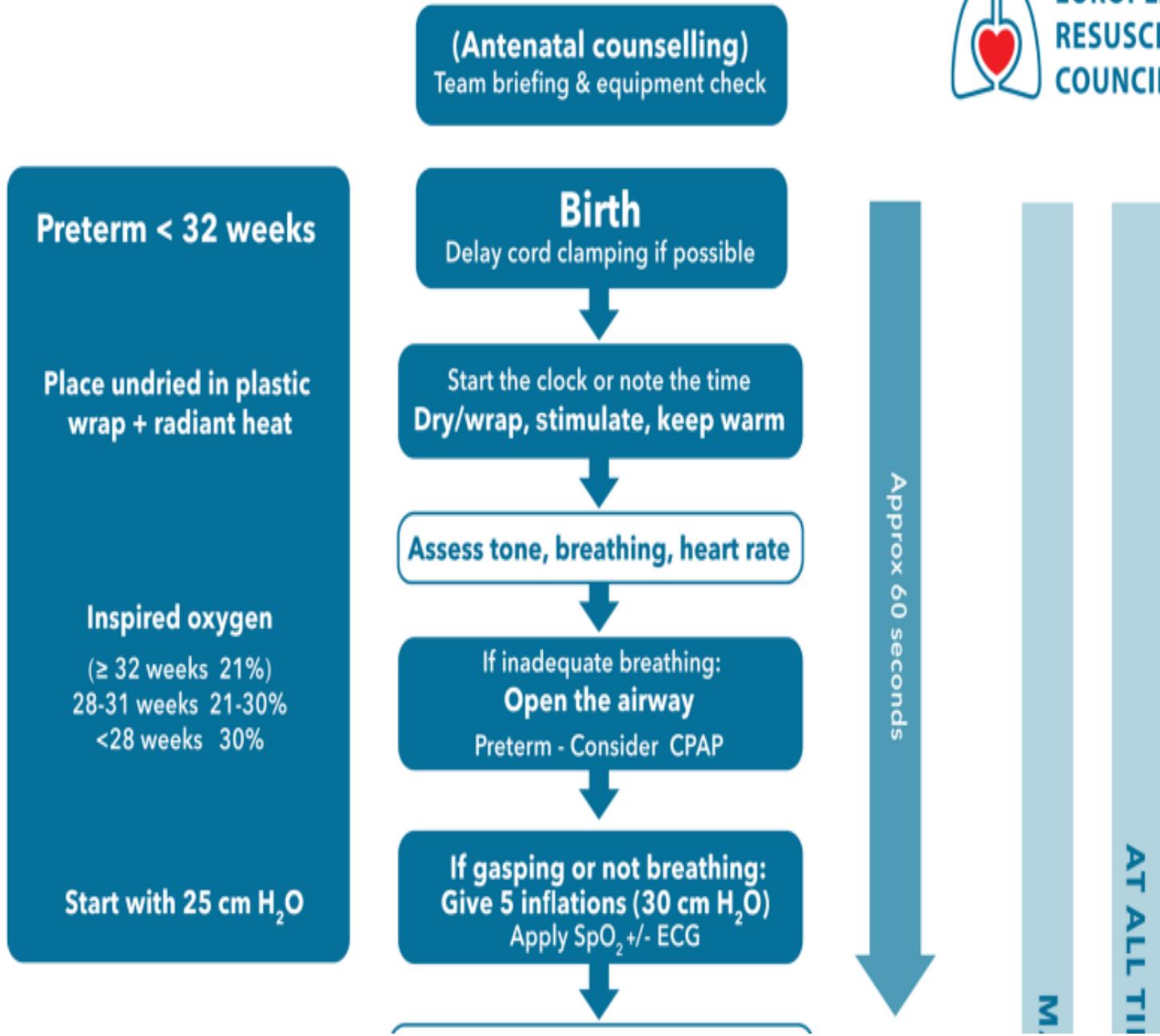
Term and near-term infants >32 •
weeks gestational.

- Preterm infants 32 weeks gestation

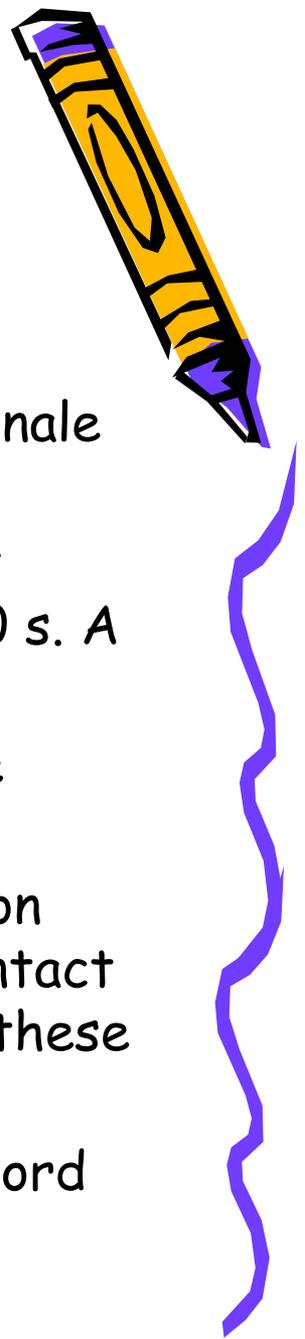








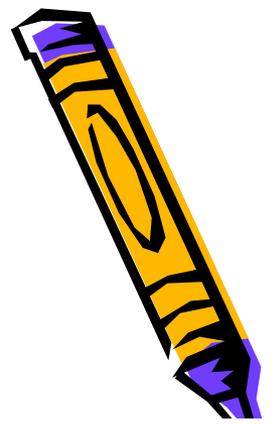
Management of the umbilical cord after birth



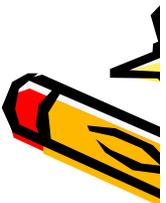
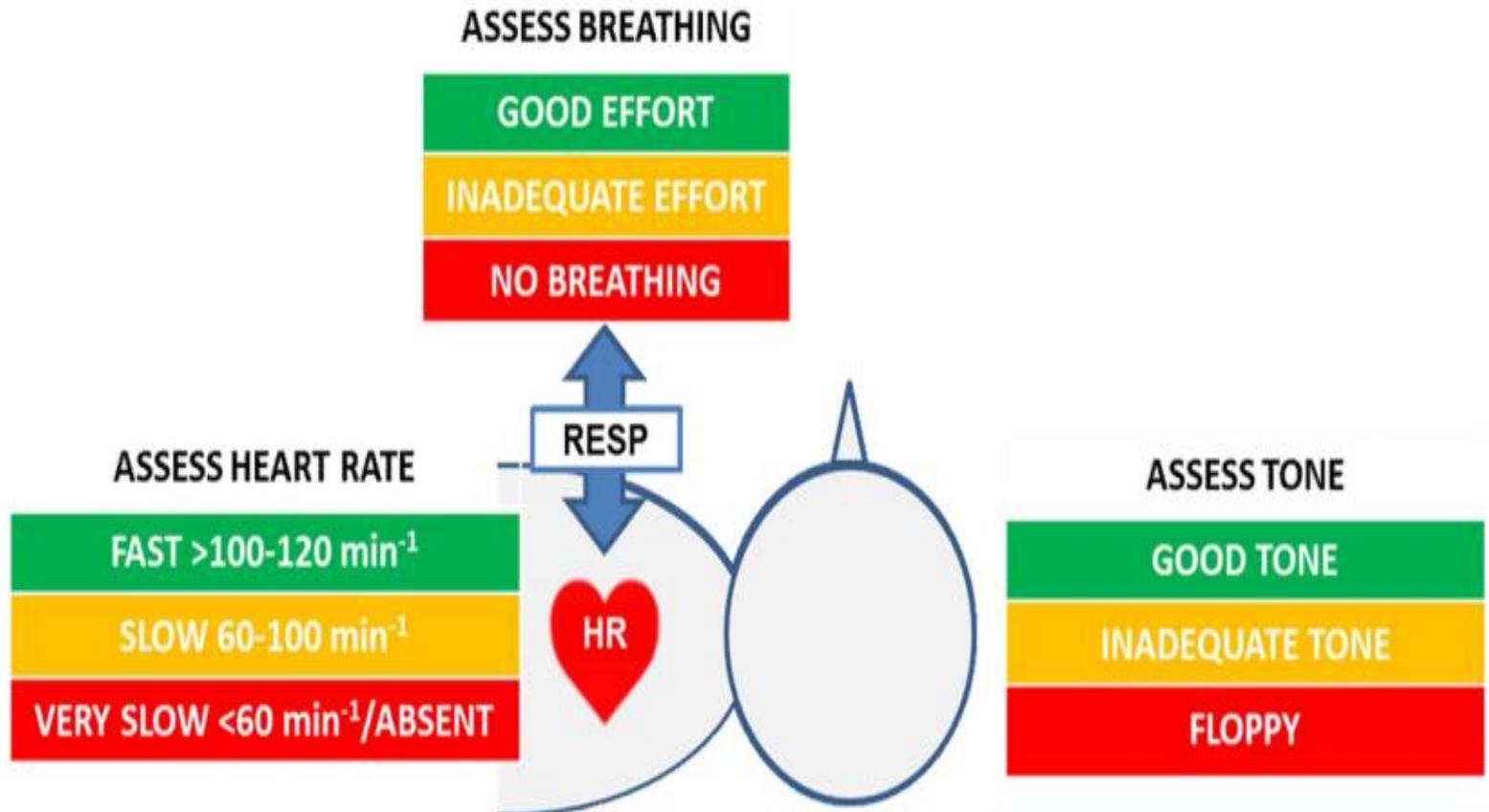
- □ The options for managing cord clamping and the rationale should be discussed with parents before birth.
- □ Where immediate resuscitation or stabilisation is not required, aim to delay clamping the cord for at least 60 s. A longer period may be more beneficial.
- □ Clamping should ideally take place after the lungs are aerated.
- □ Where adequate thermal care and initial resuscitation interventions can be safely undertaken with the cord intact it may be possible to delay clamping whilst performing these interventions.

Where delayed cord clamping is not possible consider cord milking in infants >28 weeks gestation





Assessment of tone, breathing and heart rate help determine the need for intervention





Assessment of tone, breathing and heart rate help determine the need for intervention

- May occur before the umbilical cord is clamped and cut (typically performed in this order):
 - □ Observe Tone (& Colour) □
 - Assess adequacy of Breathing □
 - Assess the Heart Rate □
- Take appropriate action to keep the baby warm during these initial steps. □
- This rapid assessment serves to establish a baseline, identify the need for support and/or resuscitation and the appropriateness and duration of delaying umbilical cord clamping. □
- Frequent re-assessment of heart rate and breathing indicates whether the infant is adequately transitioning or whether further interventions are needed.



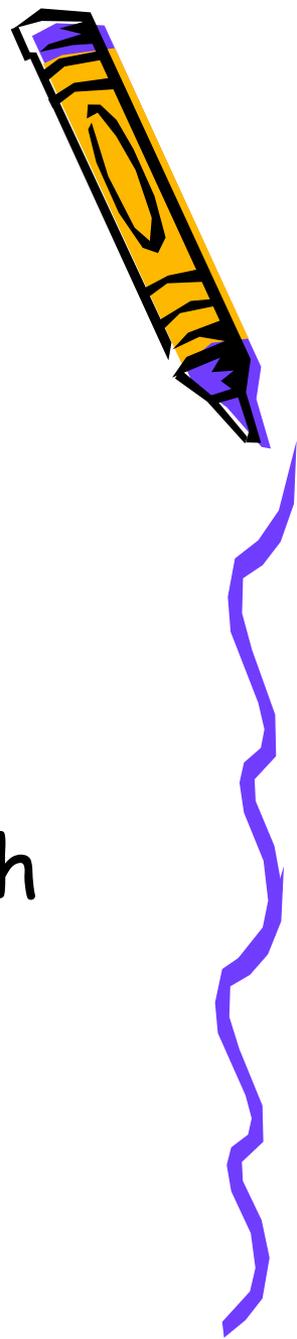
Tone and colour



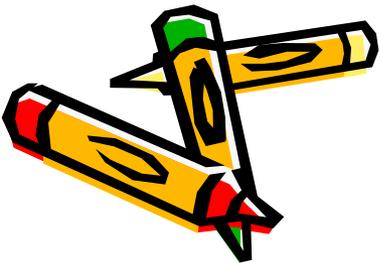
- □ A very floppy infant is likely to need ventilatory support.
- □ Colour is a poor means of judging oxygenation. Cyanosis can be difficult to recognise.
- Pallor might indicate shock or rarely hypovolaemia consider blood loss and ~~plan~~ appropriate intervention



Breathin



- Is the infant breathing? Note the rate, depth and symmetry, work/effort of breathing as Adequate.
- Inadequate/abnormal pattern such as gasping or grunting Absent



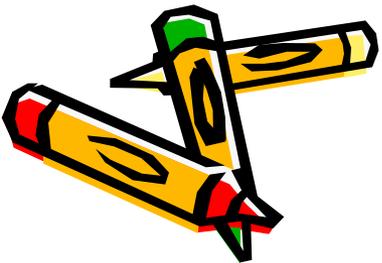
Heart rate

□ Determine the heart rate with a stethoscope and a saturation monitor □ ECG (electrocardiogram) for later continuous assessment

. Fast (≥ 100 min $^{-1}$) satisfactory

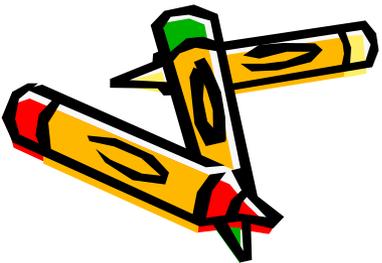
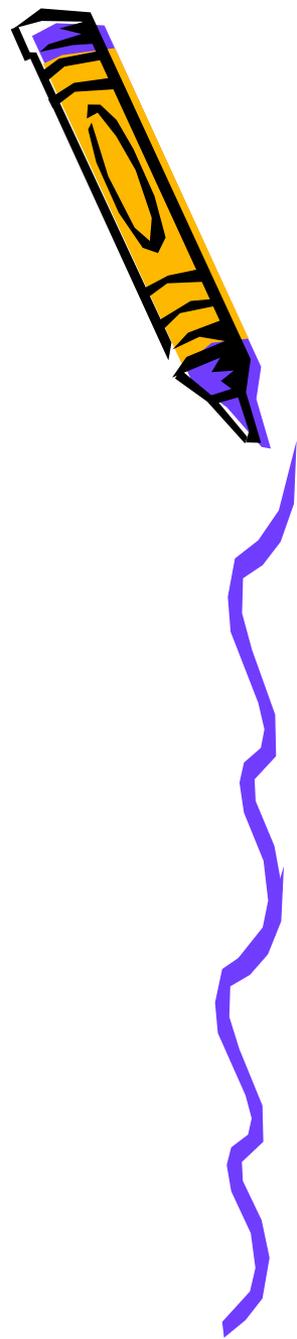
Slow (60 100 min $^{-1}$) intermediate, possible hypoxia

Very slow/absent (< 60 min) critical, hypoxia likely

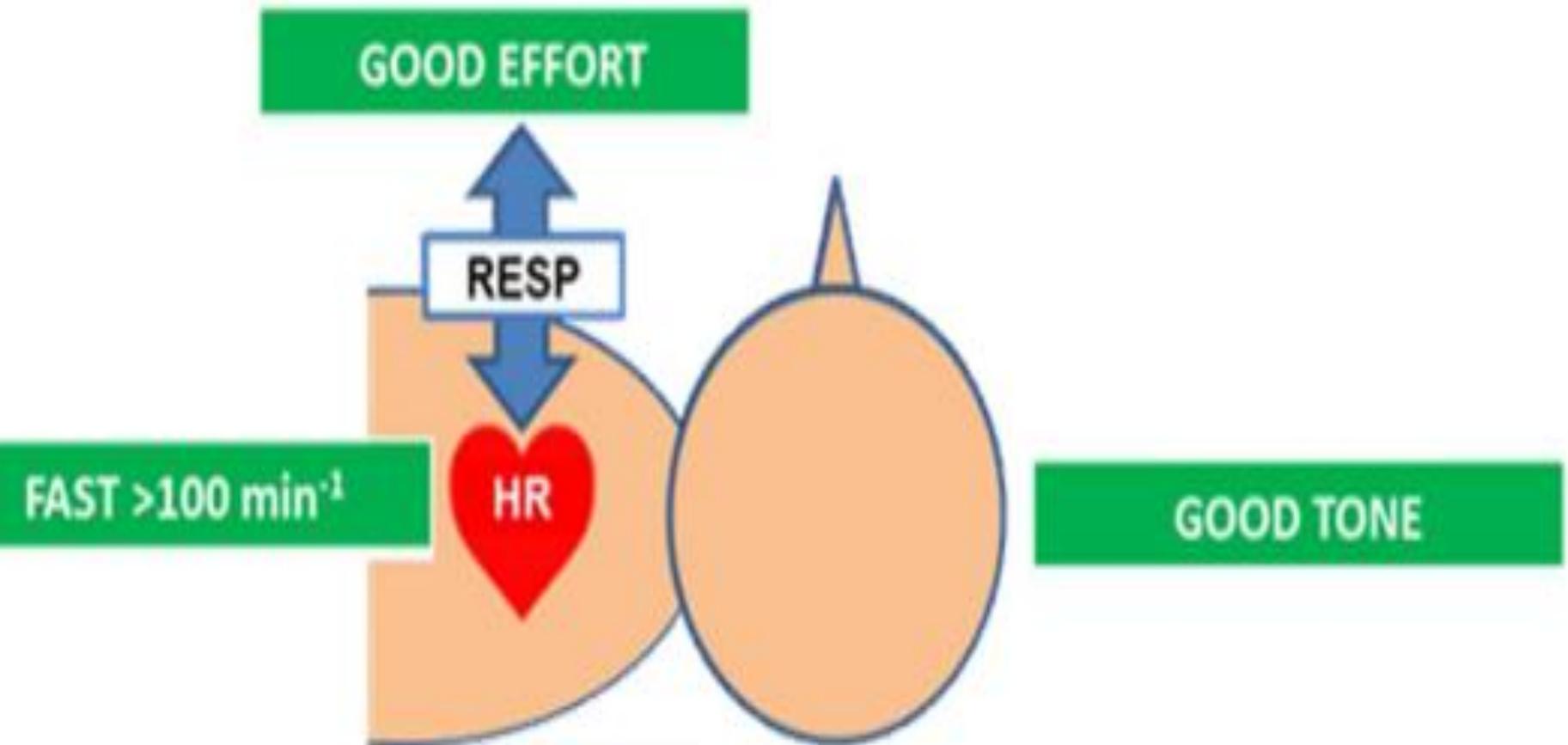
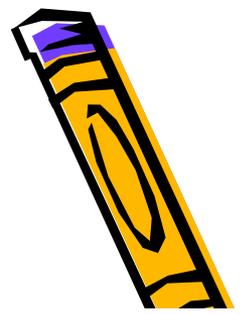


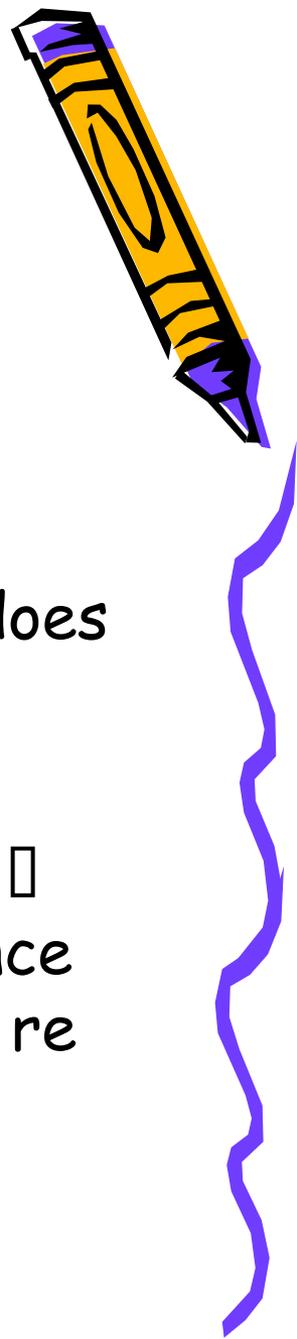
Classification according to initial assessment

- Satisfactory transition
- Incomplete transition
- Poor/failed transition



Satisfactory transition





Good tone

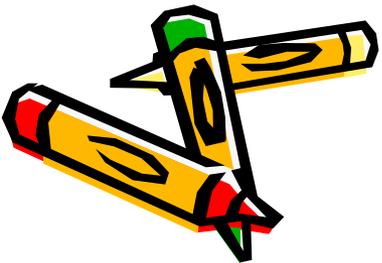
Vigorous breathing or crying

Heart rate fast ($\square > 100$)

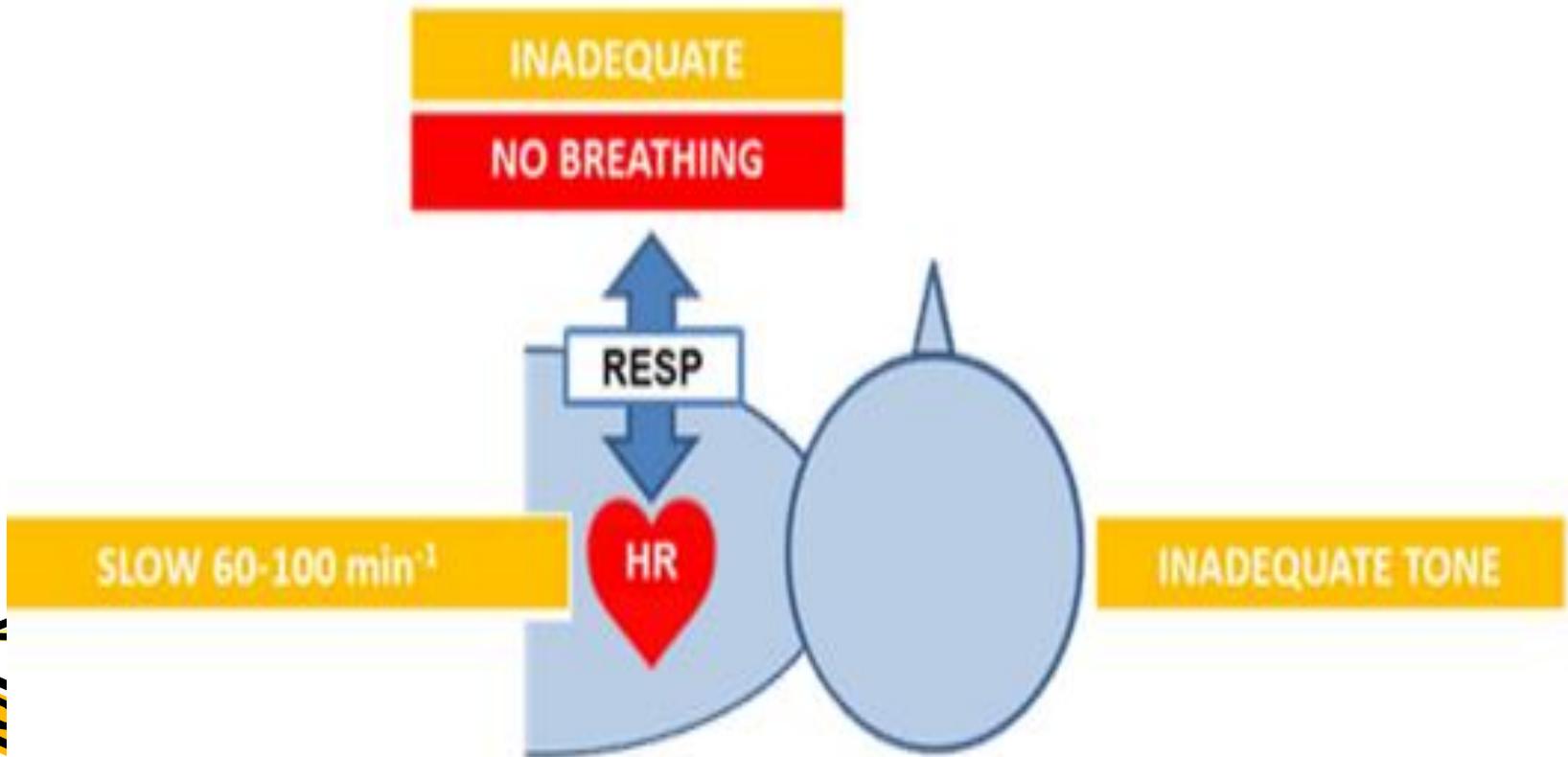
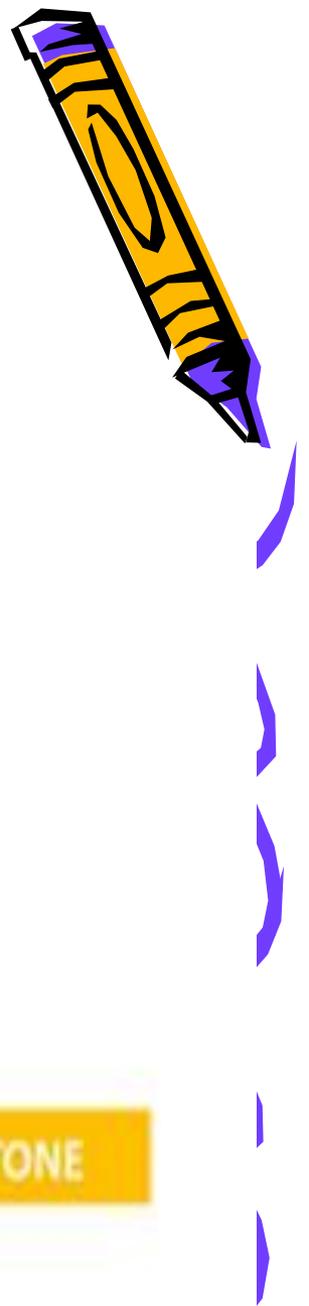
Assessment: Satisfactory transition Breathing does not require support. Heart rate is acceptable

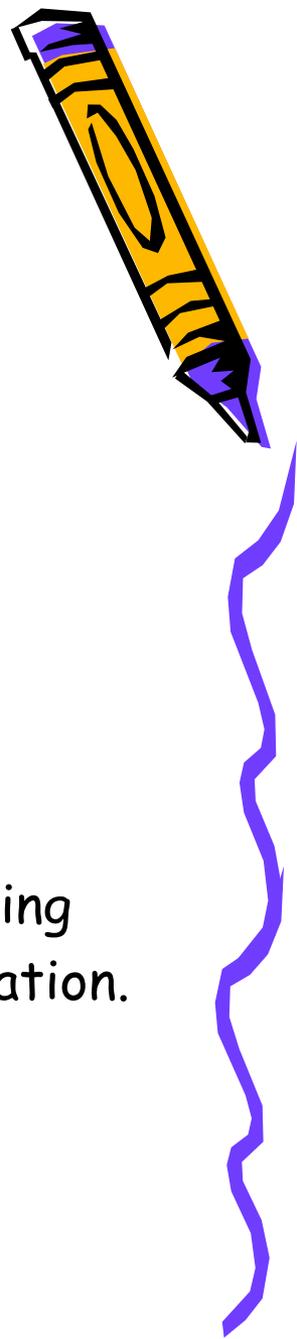
Actions: \square

Delay cord clamping. \square Dry, wrap in warm towel. \square Keep with mother or carer and ensure maintenance of temperature. \square Consider early skin-to-skin care if stable

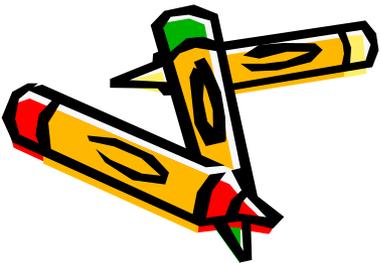


Incomplete transition

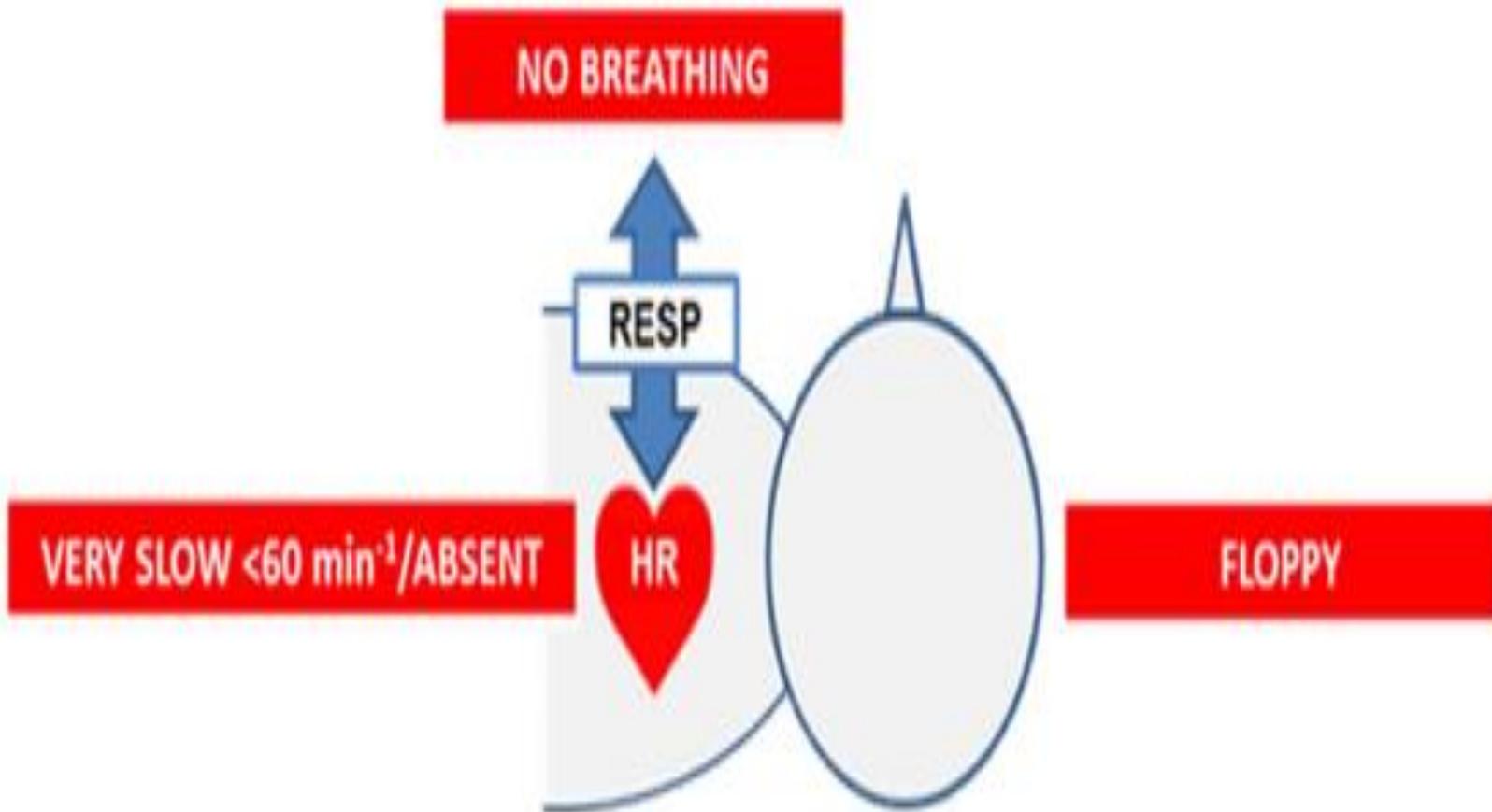


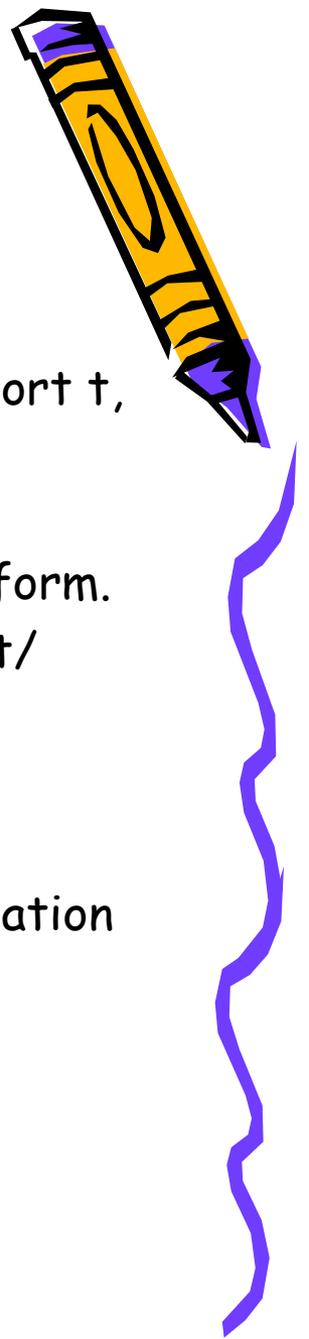


- Reduced tone
- Breathing inadequately (or apnoeic) Heart rate < 100
- Assessment: Incomplete transition Breathing requires support, slow heart rate may indicate hypoxia
- Actions: □ Delay cord clamping only if you are able to appropriately support the infant
- Dry, stimulate, wrap in a warm towel.
- □ Maintain the airway, lung inflation and ventilation.
- □ Continuously assess changes in heart rate and breathing
- □ If no improvement in heart rate, continue with ventilation.
- □ Help may be required



Poor/failed transition

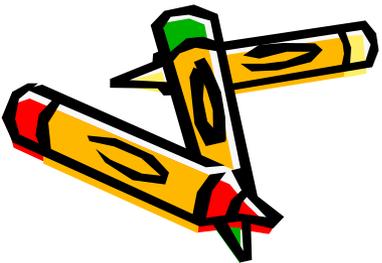




- Floppy ± Pale Breathing
- inadequately or apnoeic
- Heart rate very slow (<60) or undetectable
- e Assessment: Poor/Failed transition Breathing requires support t, heart rate suggestive of significant hypoxia

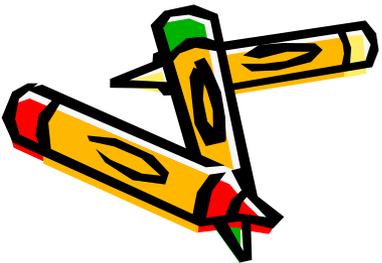
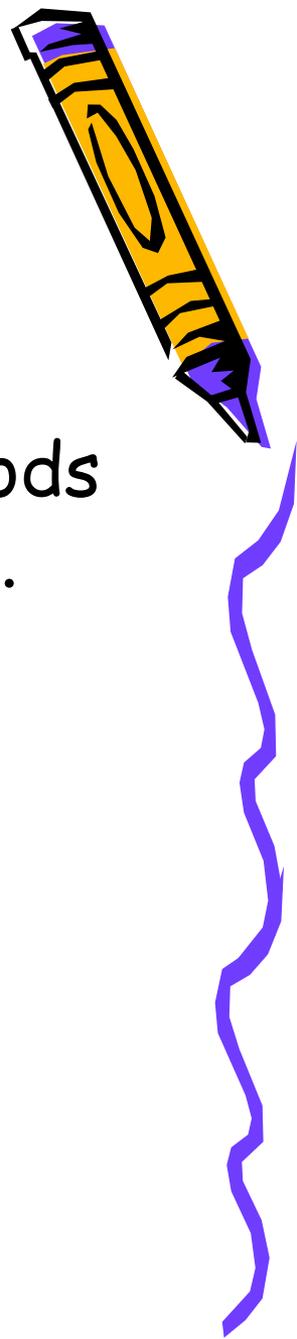
. Actions:

- Clamp cord immediately and transfer to the resuscitation platform. Delay cord clamping only if you are able to appropriately support/resuscitate the infant.
- Dry, stimulate, wrap in warm towel.
- Maintain the airway lung inflation and ventilation.
- Continuously assess heart rate, breathing, and effect of ventilation on. □ Continue newborn life support according to response.
- Help is likely to be req



Preterm infants

- □ Same principles apply.
- □ Consider alternative/additional methods for thermal care e.g. polyethylene wrap.
- □ Gently support, initially with CPAP if breathing.
- □ Consider continuous rather than intermittent monitoring
- (pulse oximetry \pm ECG)

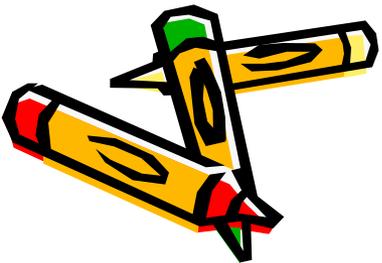
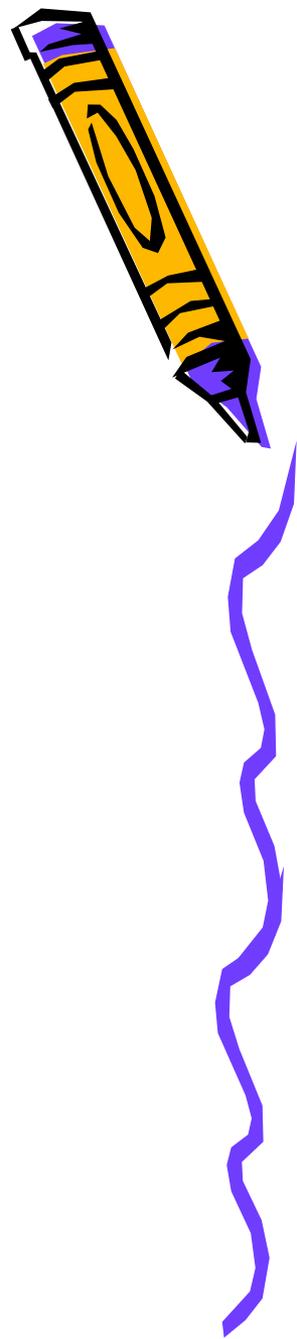


References

European Resuscitation Council Guidelines 2021

[NRP2020](#)

[WWW.UP](#) TO DATE.COM





تقلیب به نگاه
گلستان

