

# Apnea (newborn)

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**Apnea**, or apneic pause, is the absence of breath lasting longer than **20 seconds** with a decreased in **O<sub>2</sub> saturation** (cyanosis) or even **bradycardia** (heart rate < 100/min.). They often appear in premature babies as so-called *idiopathic apnea* caused by the immaturity respiratory center.<sup>[1]</sup>

## Types of apnea according to etiopathogenesis

### Obstructive

Airflow is absent, but respiratory movements are preserved. They are most often of pharyngeal origin, the provoking factors include, among others. pronation position = prone position and head flexion. Other causes: obstruction of airways stenosis, atresia compression of airways.

### Central (most common)

There is a lack of air flow and breathing movements. Causes: immaturity, maternal or child medication, sepsis, congenital heart defects, CNS insults- congenital developmental defects, trauma, bleeding, inflammation, convulsions, hypothermia/hyperthermia, shock, asphyxia, anemia. Metabolic causes- acidosis, hypoglycemia, hypocalcemia, hyponatremia, DPM.

### Mixed

They usually start as peripheral with a subsequent central respiratory disorder. They are most often associated with accompanying bradycardia.

### Reflective

Cause: GER – the intermediary here is the vagus nerve.

### Idiopathic

Interruption of breathing for more than 15-20 s without a clear pathological cause. In premature infants who do not have fully developed axodendritic connections of respiratory neurons in the brainstem – they respond to hypoxia with an apneic pause instead of hyperventilation. Common in children with a birth weight of less than 1000 g, the incidence subsides after 36 weeks of postconceptional age.

*Note: any apnea in a term newborn should be considered pathological.*

### Symptomatic

Caused by intracranial hemorrhage, Respiratory distress syndrome (pediatrics), sepsis, aspiration, maternal drug abuse, airway obstruction, pneumonia, meningitis...<sup>[2][1]</sup>

## Clinical picture

Apnoeic pause, cyanosis, hypotonia, bradycardia.

## Diagnosis

„Baby sense monitor“, monitoring of vital functions, pulse oximetry, (pauses lasting < 10 seconds, which often accompany feeding, defecation or movements of the newborn, should be excluded<sup>[2]</sup>).

## Therapy

- General precautions:
  - thermoneutral environment (cave! hypothermia),
  - correct head position (cave! anteflexion),
  - orogastric tube preferred over nasogastric tube,
- tactile stimulation,
- casual treatment of the cause<sup>[2]</sup>.

# Links

## Related Articles

- Dyspnea

## References

1. MUNTAU,, *Pediatric*. 4. edition. 2009. ISBN 978-80-247-2525-3.
2. HAVRÁNEK, Jiří: *Respirace*.