

# Renal monitoring

We monitor diuresis as a basic physiological indicator in all children in intensive care. In critical situations, accurate hourly collection and balance is required. This new the insertion of a permanent urinary catheter.

**In case of absolute or relative hypovolemia** the organism compensates for insufficient effective circulating volume mmj. vasoconstriction of the splanchnic and this leads to a decrease in diuresis. The kidneys thus represent a "mirror" of tissue perfusion. **Polyuria** is found in some types of acute renal failure and in chronic renal failure. Polyuria is an important indicator of a number of syndromes in CNS affections - diabetes insipidus or *cerebral salt wasting syndrom*.

## Reference/pathology values

- normal diuresis: > 1 ml/kg/hours
- oliguria: 0,5–1 ml/kg/hours
- anuria: < 0,5 ml/kg/hours
- polyuria: long-term increase in diuresis > 4 ml/kg/hours in infants and > 3 ml/kg/hours in children older than 1 year.

 For more information see *Polyuria, Oliguria, Anuria*.

## Urine ion waste

The laboratory indicates the amount of urine in ml collected in X hours and the numerical value of the waste in mmol/l. he goal is to list the waste **in the value of mmol/kg/24 hours**.

### Example

Urine amount 403 ml, collected in 14 hours., U-Na<sup>+</sup> 120 mmol/l, child's weight 12,0 kg.

- $120 \times 0,403 = 48,36$  mmol (corresponds to U-Na<sup>+</sup> waste in volume of 403 ml)
- $48,36 / 14 = 3,45$  mmol (corresponds to U-Na<sup>+</sup> waste in 1 hour.)
- $3,45 \times 24 = 82,9$  mmol (corresponds to U-Na<sup>+</sup> waste in 24 hours)
- $82,9 / 12 = 6,9$  mmol (corresponds to U-Na<sup>+</sup> waste/kg/24 hours.)

Waste U-Na<sup>+</sup> in urine in mmol/kg/day is 6,9 mmol.

## Links

### Related articles

- Hypovolemic shock (pediatrics)
- Cardiopulmonary monitoring
- Monitoring in neurointensive care

### Source

HAVRÁNEK, Jiří: *Ostatní monitoring*.