



Post-operative nausea and vomiting (PONV) is a **common complication after anesthesia** with an incidence from **33-82% following surgery** in pediatric patients.

PRESENTATION

Symptoms may begin in the post-anesthetic care unit within 6hrs (early onset), or > 6hrs and post discharge (late onset).

- Nausea
- Retching
- Vomiting
- Abdominal discomfort
- Pallor
- Diaphoresis

PATHOPHYSIOLOGY

Complex interactions between:

- **Drugs** (anesthetic gas, opioids)
- **Central nervous system** (fear, pain, vestibular system stimulation)
- **Peripheral agents** (gastric stimulation via blood or trauma)

These impact the nucleus tractus solitarius which release the following that contribute to nausea and vomiting:

- Histamine or muscarine
- Neurotransmitters (serotonin, dopamine, and neurokinin)

RISK FACTORS

Pre-operative

- ≥ 3 years old
- Hx PONV
- Hx motion sickness
- FHx PONV
- Post pubertal female

Intra-operative

- Strabismus surgery
- Adeno-tonsillectomy & otoplasty
- ≥ 30 minutes of anesthesia gas
- Volatile gas
- Anti-cholinesterases

Post-operative

- Long acting opioids

Eberhart Peds PONV

Factor	Points
Age ≥ 3 years old	1
Surgery ≥ 30 Minutes	1
Strabismus Surgery	1
History PONV	1

Low Risk,
≤ 1: Single agent prophylaxis

Moderate Risk, 2: Dual agent prophylaxis

High Risk, ≥3: Multi agent prophylaxis

PROPHYLAXIS

Low Risk

Consider adding ondansetron (5HT3 antagonist) OR dexamethasone

Moderate Risk

Ondansetron + Dexamethasone (any child >2yo getting general anesthetics)

High Risk

Ondansetron + Dexamethasone +/- total intravenous anesthetic (TIVA) +/- NK1 receptor antagonist (aprepitant)

Consider opioid sparing techniques including but not limited to **peripheral nerve blocks** & liberal fluid therapy. If there are multiple risk factors, consider a TIVA and/or aprepitant pre-op if prior strategies failed.

TREATMENT OF ACUTE PONV

If no prophylaxis provided: Ondansetron is first line, emerging evidence for NK1 receptor antagonist

If received prophylaxis: Anti-emetic from a different drug class

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