Pediatric Premedication
Is premedication a necessary part of pediatric anesthesia?
About 70% of all children exhibit significant stress and anxiety before surgery.
Premedication is far superior to either a behavioral preparation program or parental presence during induction of anesthesia.
Separation anxiety does not develop before the age of 8–12 months.

At what age does premedication become useful?
What are the drugs used as premedicants?
<table>
<thead>
<tr>
<th>Benzodiazepines</th>
<th>α2 agonists</th>
<th>Antihistamines</th>
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</thead>
<tbody>
<tr>
<td>Anticholinergics</td>
<td>Opioids</td>
<td>Ketamine</td>
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<tr>
<td>Phenothiazines</td>
<td>Barbiturates</td>
<td>Nonbarbiturate sedative</td>
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</tbody>
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**Premedication of the Child Undergoing Surgery**

C. Abdallah and R. Hannallah
PO
0.5mg/kg

IV
0.1mg/kg

Short onset & offset of action

Sedation

Anxiolysis

Anterograde amnesia

Bitter taste

hicups
Clonidine

4 mcg/kg PO

Prolonged onset time: 45 min

Peak time: 60-90 min

Dose-related sedation

Anxiolysis

Analgesia

Decrease anesthetic requirements
1mcg/kg intranasal

Shorter onset time than clonidine: 25–30min

Dose-dependent sedation

minimal respiratory depression

maintains ease of arousability and cooperation

Low bioavailability when given orally (15%) but may be more effective when given intranasally
Intranasal dexmedetomidine produces more sedation than oral midazolam when children were separated from their parents and at induction of anesthesia.
Oral clonidine pre-medication is a possible approach to facilitating postoperative analgesia in children undergoing minor surgery.
Premedication with oral clonidine appeared to be superior to oral midazolam.

Quality of mask acceptance was comparable between groups but oral clonidine was better accepted by the child, produced more effective preoperative sedation, showed a trend towards better recovery from anesthesia and had a higher degree of parental satisfaction.
Premedication with clonidine is superior to benzodiazepines. A meta analysis of published studies

S. DAHMANI, C. BRASHER, I. STANY, J. GOLMARD, A. SKHIRI, B. BRUNEAU, Y. NIVOCHE, I. CONSTANT, I. MURAT

Premedication with clonidine is superior to midazolam in producing sedation, decreasing postoperative pain and emergence agitation

However, the superiority of clonidine for PONV prevention remains unclear
The clonidine group had greater preoperative anxiety, required more postoperative analgesia.

Midazolam was superior to clonidine as oral preanesthetic medication for these patients.
The incidence of sevoflurane-induced emergence agitation was significantly lower in children premedicated with a midazolam and hydroxyzine combination compared to those premedicated with midazolam only.

The midazolam and hydroxyzine combination provided better premedication quality than midazolam alone.
Premedication with midazolam 0.5 mg/kg PO delayed emergence and recovery in children 1–3 yr of age after brief (<30 min) sevoflurane anesthesia

Except for the improved quality of sleep the night after surgery, premedication did not affect the quality of recovery.
Emergence agitation after cataract surgery in children: a comparison of midazolam, propofol and ketamine

Jiayao Chen MD, wenxian Li MD, Xiao Hu MD, Dinding Wang MD

There were significantly more agitated children in the ketamine-group when compared to the midazolam-group or to the propofol-group.
2 main competitors
<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
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<table>
<thead>
<tr>
<th></th>
<th>Midazolam</th>
<th>Clonidine</th>
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<tbody>
<tr>
<td><strong>Shorter onset &amp; offset of action</strong></td>
<td>+</td>
<td></td>
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<td><strong>Analgesia</strong></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td><strong>Anterograde amnesia</strong></td>
<td>+</td>
<td></td>
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<tr>
<td><strong>Better accepted</strong></td>
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<td>+</td>
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<tr>
<td><strong>More effective preop sedation</strong></td>
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<tr>
<td><strong>Decreases salivation</strong></td>
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Premedication in pediatric anesthesia should be individualized.
Have a nice day!