

## Sedative Premedication Guidelines at RCH

Premedication with sedative drugs is often used in paediatric practice as one of the modalities to reduce preoperative anxiety in children undergoing surgery.

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>• Reduces both patient and parental anxiety and improves overall satisfaction with the experience</li> <li>• Provides for anterograde amnesia</li> <li>• Reduces postoperative behavioural changes and adverse outcomes in children</li> </ul>	<ul style="list-style-type: none"> <li>• Non-compliance by the child may worsen anxiety</li> <li>• Paradoxical reaction may be seen in response to some drugs e.g. midazolam</li> <li>• May potentiate the effect of other sedative drugs e.g. opioids</li> </ul>

Indications	Contraindications
<p>Need for sedative premedication should be part of pre-anaesthetic assessment of every child. The following patients are likely to benefit from premedication:</p> <ul style="list-style-type: none"> <li>• children with disabilities or special needs e.g. Autistic, Asperger's, Downs syndrome</li> <li>• children having major surgery</li> <li>• children needing multiple operative procedures</li> <li>• children with past h/o stormy anaesthetic induction or emergence</li> </ul>	<p>Following are some conditions where a careful risk benefit assessment must be made prior to prescribing sedative premedication:</p> <ul style="list-style-type: none"> <li>• anticipated airway difficulty</li> <li>• increased risk of aspiration</li> <li>• central or obstructive sleep apnoea</li> <li>• raised intracranial pressure or altered GCS</li> <li>• acute systemic illness e.g. severe sepsis</li> <li>• reduced SpO<sub>2</sub> on room air</li> <li>• severe renal or hepatic impairment</li> <li>• previous allergic or adverse reaction to sedative premedication</li> </ul>

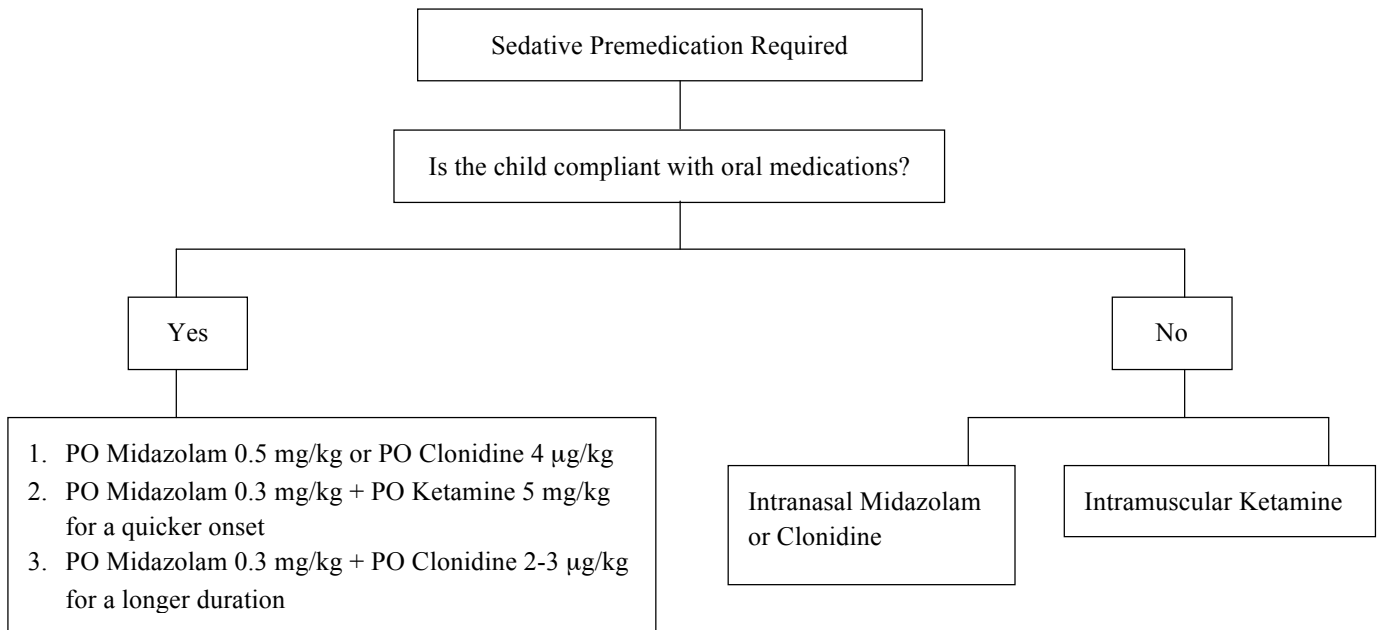
Practical Considerations
<ul style="list-style-type: none"> <li>• <b>Confirm fasting status</b> (refer to “fasting guidelines for all patients having an anaesthetic at RCH”)</li> <li>• <b>Inform parents and the child</b> (where appropriate) as to what <b>effects</b> they can expect from the premedication</li> <li>• <b>Chart the premedication route, dose and the time</b> when it should be administered (different drugs have variable onset times, see chart below)</li> <li>• <b>Inform the preoperative / day surgery nurse</b> responsible for the patient that a “premed” has been charted, to ensure it is given at the appropriate time</li> <li>• Oral premedication drugs can be given <b>mixed with a small volume (5-30 mls) of clear solution</b> (e.g. apple juice, lemonade, cordial or paracetamol mixture) which the child usually accepts to mask unpleasant taste</li> <li>• Sedative drugs should be provided in a <b>safe environment</b> where resuscitation equipment and drugs can be easily accessed</li> <li>• A sedated child should be <b>appropriately monitored</b> at all times, including when transferred from the day surgery or inpatient area to the pre-operative holding area and through to operating theatre</li> </ul>

Drug	Route	Dose	Onset (mins)	Duration (hours)	Note	Effects
Midazolam	Oral	0.5 mg/kg (Max. 20 mg)	20-30	1-2	Unpleasant taste	Sedation, anxiolysis, anterograde amnesia, paradoxical reaction in some children.
	Intranasal	0.2 mg/kg	10-15	1-2	Stinging	
	Buccal / Transmucosal	0.5 mg/kg (Max. 20 mg)	10-15	1-2		
Temazepam (in older children)	Oral	10-30 mg	<b>45-60</b>	<b>3</b>		Sedation, anxiolysis, amnesia
Ketamine (avoid in children under 2 years)	Oral	5-10 mg/kg	10-20	3	Increased salivation,	Sedation and analgesia
	Intranasal	3-5 mg/kg	10-15	1-3	Nystagmus,	
	Buccal / Transmucosal	5-6 mg/kg	10-15	1-3	Dissociative state	
	Intramuscular	5 mg/kg	3-5	1-3		
Clonidine	Oral	4 µg/kg	<b>45-60</b>	<b>6</b>	Bradycardia,	Sedation, analgesia, anxiolysis but no amnesia.
	Intranasal	2 µg/kg	<b>30-60</b>	<b>6</b>	Hypotension	
	Intramuscular	2-4 µg/kg	<b>30-60</b>	<b>6</b>	(large doses)	

#### Tips and trouble-shooting

- Oral midazolam has a quick & reliable onset and is most frequently used at RCH.
- Oral midazolam has an unpleasant taste that some children find unacceptable.
- Oral midazolam may be combined with oral ketamine for a quicker onset or with clonidine for a longer duration of action (Beware additive sedative effects and consider dose reduction).
- Clonidine is an alternative to midazolam and is preferred by some as the first-line agent. It has a slower onset of action and must therefore be timed accordingly.
- Children refusing oral midazolam due to its unpleasant taste may accept clonidine instead.
- In children with previous emergence agitation or paradoxical reaction to midazolam, clonidine given either as a premedication or intraoperatively, may have a beneficial effect.
- Intranasal/transmucosal route often has a quicker onset and may be used when oral premedications are refused, keeping in mind that trying the intranasal route in a distressed child may pose risk of injury to staff and child (Beware that absorption from the intranasal route may be variable).
- Intramuscular drugs (ketamine, clonidine) may be used as an alternative in noncompliant children if premedication is felt necessary (see footnote on use of Ketamine dart).

## Suggested Pathway For Choosing Sedative Premedication



## Ketamine Dart

Ketamine dart may be useful particularly in large or unco-operative children with disabilities e.g. Downs syndrome, Asperger's, Autism etc, and has a quick onset of action.

- Prepare parents and team about the approach.
- Prepare the 'Ketamine dart' with 5 mg/kg of Ketamine in a syringe with a 23-Gauge needle attached.
- Parents should distract the child, who is seated or lying down.
- Keep the child's thigh exposed if possible. Injecting through clothes is acceptable.
- Approach the child from out of their field of vision. The anaesthetic techs should be prepared to restrain the child as the anaesthetist injects quickly.
- Withdraw whilst the parents comfort the child.
- Ketamine will take effect in 3-5 minutes.