# Clinical Practice Guideline for Oral Conscious Sedation of Children Being Performed By Non Anaesthetic Personnel

## Preface

The following guidelines are applicable to procedures performed in a variety of settings throughout the hospital by **non-anaesthesia** medical and nursing staff. They do not apply to patients receiving minimal sedation for anxiolysis, patients receiving general anaesthesia or major regional blockade or patients receiving anaesthetic induction agents for procedural sedation (see separate guidelines).

## Definition:

Conscious (moderate) sedation is a medically controlled state of depressed consciousness for non painful procedures/tests in the Outpatient and Emergency Departments, Diagnostic Imaging and Wards.

For children over the age of 6 years old, this equates to adequate anxiolysis, whilst being able to maintain rational verbal contact. For children less than 6 years of age it should be recognised that it is tempting to achieve deeper levels of sedation in order to gain co-operation and that this tendency makes this age group more vulnerable to complications. The aim for these children is to maintain a level of consciousness that enables the child to mount a purposeful response to commands or stimulation.

A response limited to reflex withdrawal from a painful stimulus is not considered a purposeful response and may represent a state of general anaesthesia (ANZCA guidelines[1]).

## Aims:

1. The child will receive the appropriate care pre, during and post sedation.

2. To provide sufficient sedation, anxiolysis and amnesia for the patient during the procedure while maintaining adequate cardio-respiratory function and maintaining the ability for the patient to respond to physical stimulation and /or verbal command.

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**Goals**

1. Avoid the need for general anaesthesia in selected patients unable to tolerate uncomfortable procedures.

2. Prevent anticipatory anxiety symptoms for those patients likely to require subsequent procedures.

3. Expedite conduct of procedures that are not particularly uncomfortable but that require the patient not to move.

**Risks/Complications**[4]

- Medications used in paediatric sedation have caused complications, even when used in the recommended dose.

- Factors contributing to adverse events include:
    - inadequate patient evaluation of underlying pulmonary, cardiac, respiratory and neurological conditions contribute to sedation complications.
    - Inadequate patient monitoring
    - Inadequate practitioner skills
    - Premature discharge (as per pharmacokinetics)

- Respiratory depression, airway obstruction and apnoea are the most frequent adverse events. The use of multiple drugs (sedatives and opioids) is related to the greatest risk of respiratory depression.

- Drug error and /or overdose is a common problem and cause of complications.

- Sedation complications can occur in healthy children. Children < 6 years of age and those with developmental delays are at greater risk[2].

- Failure of sedation with up to two different agents should result in postponement of the procedure and rescheduling with a view to performing the procedure under general anaesthesia.

## Preparation for all children undergoing Conscious Sedation

A medical record must be generated and available at the time of sedation.

**Pre-sedation Assessment** [3,4]

A pre-sedation medical assessment of suitability for sedation should be performed and documented. For those children attending Outpatient

Department who have been medically assessed prior to the day of procedure nursing staff will re-assess suitability for sedation (eg, cold, change in medical condition). Medical staff should be contacted to reassess suitability for sedation if there has been any change since the initial assessment. Appropriate pre-sedation evaluation increases the likelihood of satisfactory sedation and decreases the likelihood of adverse outcomes.

High-risk patients include:

- Infants
- Children with chronic respiratory, cardiovascular or neurological conditions
- Airway compromise such as current respiratory infection or history of upper airway obstruction, eg. obstructive sleep apnoea.
- Previous adverse sedation or anaesthetic events
- Syndromic/significant developmental delay eg, Down Syndrome.

The following information is to be obtained at the pre-sedation assessment and documented in the medical record.

- Age and weight
- Fasting status
- Past medical history
    - Major illnesses
    - Allergies
    - Current medications
    - Previous sedation/anaesthetic history and complications
- Current health and systems review
- Examination
    - Baseline observations (TPR, BP and SaO2)
    - Cardiovascular, respiratory and neurological assessment.
    - Airway assessment

**Fasting**[3,4,5]

**The aims of fasting:**

- To minimise the risk of aspiration of gastrointestinal contents.
- To maximise patient comfort in the sedation phase.
- To minimise any potential significant physiological changes that may occur from prolonged restriction of oral intake.

**Minimum requirements are the same as for General Anaesthesia.**

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| Although it is acknowledged that these fasting times are conservative and not necessarily reflective of what may occur in other institutions, there is currently very little evidence for reducing fasting times for safe sedation. This will be reviewed regularly. |

Click here for fasting requirements

## Consent[3,8]

The Consultant, Registrar or Resident responsible for the child needs to:

- Explain procedure and anticipated effects of sedation medication to parent and patient
- Where possible, obtain written consent from legal guardian and/or patient if over 16 years of age
- Document on the hospital **consent form or in patient record**

## Personnel [2,3,4]

The Consultant, Registrar or Resident responsible for the child needs to prescribe the sedation. For the procedure itself there should be a separate staff member (doctor or nurse) whose dedicated duty is monitoring the patient whilst they are sedated. **This person must be separate from the person performing the procedure.**

At least one of the staff members present should have current training in cardio-pulmonary resuscitation. **If patient becomes compromised, or loses consciousness at any time during the procedure, the procedure should be stopped, and all available staff members should be free to help if it is required.**

## Facilities[3,4]

Sedation procedures should be carried out in a clinical area with facilities for resuscitation and cardio-respiratory monitoring.

The minimum requirement for equipment includes;
2 sources of oxygen (eg oxygen cylinder plus wall oxygen)

- self inflating bag
- suction
- equipment for IV access
- equipment for airway management (a range of Guedel airways and masks)

The minimum requirement for resuscitation drugs includes;

- naloxone
- flumazenil
- atropine
- suxamethonium
- lignocaine
- adrenaline
- IV fluid

## Monitoring [3,4]

To be performed by a dedicated nurse
At a minimum all patients receiving oral sedation should have:

- Continuous pulse oximetry, respiratory rate, heart rate and sedation score recorded at 15 minutely intervals.
- Monitoring should commence with administration of agents until return to pre-sedation state.

## Documentation

The clinical record should include the names of staff performing sedation and the procedure, with documentation of the history, examination, details of the medications and fluids administered (including time, dose, route), monitoring used, and any resulting complications for both during the procedure and the recovery phase.

## Recovery[3,6]

Close observation and monitoring by appropriately trained staff in a suitable clinical area with immediate availability of oxygen, suction, resuscitation drugs and equipment as outlined above should continue until the patient returns to their pre-sedation state of consciousness and cardio-respiratory function**.**

## Discharge Criteria [3,4,7]

- Patient should return to pre-sedation level of consciousness
- Patient should have appropriate motor-skills and verbalisation for age/development.
- Patient should be able to tolerate clear fluids
- Patient's vital signs should be within normal limits, allowing for any under lying conditions

If the criteria can not be met then the responsible medical officer should be contacted.

An information sheet should be given to the parent/carer and should contain information discussed verbally. Patients should be discharged into the care of a responsible adult and transport home should be by private vehicle (i.e. not public transport)

## Medications

Some of the medications to be considered for conscious sedation are:
Chloral Hydrate, Midazolam, and Ketamine

When drugs are administered allowance should be made for the time required for drug absorption before supplementation is considered. The use of multiple agents markedly increases the potential for complications. For information refer to pharmacological references.

**For further information on alternative routes of administration consult an anaesthetist.**

**For further information regarding standards for conscious sedation review the sources listed in the references.**

## Links:

**Health Facts – Conscious Sedation**
**Reference List**
**Bibliography**

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