

RCPCH GUIDELINE APPRAISAL

Scottish Intercollegiate Guidelines Network (SIGN)

Evidence-based Guidelines for the Safe Sedation of Children Undergoing Diagnostic and Therapeutic Procedures



The original guideline is NOT the work of the Royal College of Paediatrics and Child Health. The original guideline document was produced by SIGN, and may be accessed at the following website: www.sign.ac.uk

KEY POINTS

- Despite appropriate guideline development methodology, there are significant discrepancies between the evidence cited and the recommendations. All recommendations in the guideline should therefore be approached with caution.
- The scope includes healthy children of normal development, in hospital and community settings.
- It excludes children requiring sedation in the context of intensive care, premedication for general anaesthesia, postoperative analgesia, night sedation or in the home.

THIS GUIDELINE HAS NOT BEEN ENDORSED BY THE RCPCH

Recommendations	Grade
<ul style="list-style-type: none"> • Children who have any of the following contraindications should not be sedated with nitrous oxide: • Intracranial air e.g after skull fracture, pneumothorax, pneumopericardium, bowel obstruction, pneumoperitoneum, pulmonary cysts or bullae, lobar emphysema, severe pulmonary hypertension, nasal blockage (adenoid hypertrophy, common cold), pregnancy. (Original statement, grade B). <i>Comment: none of the 17 cited studies related to the statement.</i> 	*
<ul style="list-style-type: none"> • The references cited provide no evidence that sedative drug combinations in children are associated with deeper levels of sedation or with more adverse effects. (Original statement, grade B: Sedative drug combinations should be avoided in children as they are often associated with deeper levels of sedation and with more adverse effects). <i>Comment: only one study (their reference 77) calculated the rate of adverse events, and found these to be no more common.</i> 	B/C
<ul style="list-style-type: none"> • Inhaled nitrous oxide produces the most rapid onset and offset of analgesia and may be appropriate for painful procedures in children who are able to cooperate (Original statement, grade B). <i>Comment: neither of the two cited studies related to nitrous oxide.</i> 	*
<ul style="list-style-type: none"> • The references cited provide no evidence of increased incidence of adverse effects with combinations of opioids and other sedatives. (Original statement, grade B: Combinations of opioids and other sedatives should not be used to sedate children). <i>Comment: none of the six studies cited demonstrated an increased incidence of adverse effects, and one additional prospective observational study (reference 77) demonstrated no significant increase with combinations including opioids.</i> 	B
<ul style="list-style-type: none"> • General anaesthesia should be the first choice for paediatric gastrointestinal endoscopy (Original statement, grade A). <i>Comment: none of the studies cited provided supporting evidence.</i> 	*
<ul style="list-style-type: none"> • For brief, but painful or distressing oncology procedures, a combination of behavioural techniques and local anaesthesia is recommended. Systemic analgesia with inhaled nitrous oxide or opioids may be needed and some children may require a general anaesthetic depending on their age and degree of distress. (Original statement, grade B) <i>Comment: none of the studies cited provided supporting evidence.</i> 	*
<ul style="list-style-type: none"> • For repeated or prolonged oncology procedures, general anaesthetic is recommended. (Original statement, grade B) <i>Comment: none of the studies cited provided supporting evidence.</i> 	*

Recommendations	Grade
<ul style="list-style-type: none"> General anaesthetic drugs, combinations of sedative drugs, or other routes of administration should not be used in General Dental Practice and the Community Dental Service. (Original statement, grade B) <i>Comment: this recommendation is supported by guidance from the General Dental Council on professional conduct. None of the other studies cited provided supporting evidence.</i> 	C

* *Could not be graded with the available cited references.*

LEVELS OF EVIDENCE LEADING TO GRADES OF RECOMMENDATIONS

The levels of evidence used throughout are those derived from the US Agency for Health Care Policy and Research, 1993 (see below). **Please note that those recommendations ORIGINALLY ascribed a Grade C or D have not been appraised by the College.**

- Grade A:** Requires at least one randomised controlled trial as part of the body of evidence of overall good quality and consistency addressing the specific recommendation.
- Grade B:** Requires availability of well-conducted clinical trials but no randomised clinical trials on the topic of the recommendation.
- Grade C:** Requires evidence from expert committee reports or opinions and/or clinical experience of respected authorities. Indicates absence of directly applicable studies of good quality.
- Grade D:** Requires non analytic studies and expert opinion OR extrapolated evidence from well conducted case control or cohort studies with low risk of confounding or bias and a moderate probability that the relationship is causal.

SUMMARY OF 'AGREE' FINDINGS

The methods used to identify the evidence

Internet searches were carried out on the Web sites of the Canadian Practice Guidelines Infobase, the New Zealand Guidelines Programme, the UK Health Technology Assessment Programme, and the AHCPR. Searches were also carried out on the search engines Northern Light and OMNI, and all suitable links followed up. Systematic searches were carried out on Cochrane Library, CINAHL, Embase, Healthstar and Medline from 1988-1998. The main searches were supplemented by later material identified by individual members of the development group. All selected papers were evaluated using standard methodological checklists before conclusions were considered as evidence. The references were selected based on both the SIGN scoring procedures and against a set of guiding principles for applicability to Scottish practice.

Which professionals were involved

The guideline development team included consultants in paediatric anaesthesia, paediatric accident & emergency medicine, paediatric dentistry, paediatric radiology, paediatrics, anaesthesia and paediatric surgery, a paediatric pain control nurse specialist, a pharmacist, a general practitioner and a SIGN programme manager.

Involvement of parents &/or children

A patient representative was on the guideline development committee.

Consensus method used

No formal consensus method was used.

OTHER PUBLICATIONS ON RELATED TOPICS

None found.

The Role of the Royal College of Paediatrics and Child Health

In order to raise awareness about the existence of the original guideline and to ensure its relevance for children's health, the College (through its Quality of Practice Committee) appraised the original guideline against the 'AGREE' checklist laid out in its 'standards' document. Having established the quality of the guideline's methodology in this way, the College's Clinical Effectiveness Coordinator peer reviewed the A and B graded recommendations presented in the guideline document in the context of the original research papers from which they were derived.

Acknowledgements: The members of the Quality of Practice Committee oversaw the process of the review: Dr Harry Baumer (Chairman), Dr Paul Buss, Mrs Linda Haines, Dr Monica Lakhanpaul, Professor Neil McIntosh, Dr Maud Meates, Richmal Oates-Whitehead, Dr Karen Turnock, Dr Kate Verrier Jones, Dr William Whitehouse. Additional assistance was provided by Dr Ian Maconochie.