

**NEW ZEALAND DENTAL ASSOCIATION
DENTAL COUNCIL OF NEW ZEALAND**

CODE OF PRACTICE: CONSCIOUS SEDATION FOR DENTAL PROCEDURES

April 2006

PURPOSE OF THIS CODE OF PRACTICE

The provision of dental care can at times be unpleasant for the patient. In addition to local anaesthesia, sedation techniques are available to the dentist to make treatment more comfortable and more readily accepted by the patient.

Sedation, however, is not without inherent risk as it may result in depression of cardiac and respiratory function which may lead to potentially serious treatment outcomes. Important issues relating to minimising the risk of sedation include the level of training and experience of the dentist and assistant, evaluation of prior medical history, minimum levels of staffing and equipment during the procedure, and discharge of the patient following treatment.

The Code of Practice: Conscious Sedation for Dental Procedures, as the name implies, is not intended to regulate techniques that result in loss of consciousness as this is considered general anaesthesia and necessarily requires the presence of a specialist anaesthetist throughout the procedure. Similarly, the administration of any sedative drug as premedication for a general anaesthetic is also not regulated by this Code of Practice.

For the purposes of this Code of Practice, conscious sedation is defined as:

The administration of any drug by any route intended to produce an altered state without loss of consciousness by which painful or otherwise unpleasant procedures may be facilitated.

Routes of administration include (but are not limited to):

- Oral;
- Intravenous;
- Inhalation;
- Intranasal;
- Rectal

The dentist may provide both the sedation and the dental treatment only if an appropriately trained assistant is present throughout the procedure to assist in monitoring the level of consciousness and cardiorespiratory function of the patient.

This New Zealand Dental Association/Dental Council of New Zealand joint Code of Practice is primarily based on the ***Australian and New Zealand College of Anaesthetists Guidelines on Conscious Sedation for Dental Procedures: PS21 (2003)*** and this document is fully acknowledged in the Code of Practice.

1. INTRODUCTION

Sedation for dental procedures (with or without local anaesthesia) includes the administration by any route or technique of all drugs, which result in depression of the central nervous system. The objective of these techniques is to produce a degree of sedation of the patient, **without loss of consciousness**, so that uncomfortable procedures may be facilitated. The drugs and techniques used should provide a margin of safety, which is wide enough to render loss of consciousness unlikely. Loss of consciousness due to sedation constitutes general anaesthesia and carries specific risks.

These techniques are not without risk because of the:

- 1.1 Potential for unintentional loss of consciousness.
- 1.2 Depression of protective reflexes.
- 1.3 Depression of respiration.
- 1.4 Depression of the cardiovascular system.
- 1.5 Wide variety and combinations of drugs which may be used, with the potential for drug interactions.
- 1.6 Possibility of excessive amounts of these drugs being used to compensate for inadequate analgesia.
- 1.7 Individual variations in response to the drugs used, particularly in children, the elderly and those with pre-existing medical disease.
- 1.8 Wide variety of procedures performed.
- 1.9 Differing standards of equipment and staffing at the locations where these procedures may be performed.

It is important to recognise the variability of effects which may occur with sedative drugs, however administered, and that over-sedation, airway obstruction or cardiovascular complications may occur at any time.

2. GENERAL PRINCIPLES

- 2.1 The patient should be assessed before the procedure and this assessment should include:
 - 2.1.1 A concise medical history, examination (including blood pressure measurement), performance of appropriate investigations and identification of risk factors. The American Society of Anaesthesiologist's classification system is convenient for this purpose. (See Appendix 1)
 - 2.1.2 Informed consent for sedation as well as the planned procedure.

- 2.1.3 Written instructions for preparation for the procedure (**including the importance of fasting**), the recovery period, and discharge of the patient (including avoidance of driving, other dangerous activities, undertaking responsible business).
- 2.2 If the patient has any serious medical condition then the appropriate treating general medical practitioner and/or their specialist should be consulted prior to any planned treatment under sedation. If the patient is deemed to be seriously medically compromised then an anaesthetist should be present to administer sedation and to monitor the patient during the procedure.
- 2.3 The practitioner administering sedation requires sufficient knowledge to be able to:
 - 2.3.1 Understand the actions of the drug or drugs being administered.
 - 2.3.2 Detect and manage appropriately any complications arising from these actions. **In particular medical and dental practitioners administering sedation must be skilled in airway management and cardiovascular resuscitation.**
 - 2.3.3 Anticipate and manage appropriately the modification of sedative drug actions by any concurrent therapeutic regimen or disease process, which may be present.
- 2.4 Techniques intended to produce loss of consciousness must not be used unless an anaesthetist is present.
- 2.5 A written record of the dosages of drugs and the timing of their administration must be kept as a part of the patient's records. Such entries should be made as near the time of administration of the drugs as possible. This record should also note the regular readings from the monitored variables.
- 2.6 Techniques, which compensate for inadequate local analgesia by means of heavy sedation, must not be used unless an anaesthetist is present.

3. STAFFING

- 3.1 If an appropriately trained medical or dental practitioner is not present to solely administer sedation and monitor the patient then there must be an assistant present during the procedure and the recovery period, appropriately trained in observation and monitoring of sedated patients, and in resuscitation whose duty shall be to assist the operating practitioner monitor the level of consciousness and cardio-respiratory function of the patient.
- 3.2 The operator may provide the sedation and be responsible for care of the patient provided that the patient response to verbal commands or stimulation is continuously possible during the procedure.
- 3.3 If at any time spontaneous respiration and/or protective reflexes are lost, or the patient does not respond to verbal commands or stimulation, both the dentist and assistant must devote their entire attention to monitoring and treating the patient until recovery, or until such time as another medical or dental practitioner becomes available to take responsibility for the patient's care.
- 3.4 If general anaesthesia or loss of consciousness is sought for the procedure, then an anaesthetist must be present to care exclusively for the patient.

4. FACILITIES

The procedure must be performed in a location which is adequate in size and staffed and equipped to deal with a cardiopulmonary emergency. This must include:

- 4.1 An operating table, trolley or chair which can be readily tilted.
- 4.2 Adequate uncluttered floor space to perform resuscitation.
- 4.3 Adequate suction and room lighting including alternative means of providing suction and light in the event of a power failure.
- 4.4 A supply of oxygen and suitable devices for the administration of oxygen to a spontaneously breathing patient.
- 4.5 A self inflating bag suitable for artificial ventilation together with a range of equipment for advanced airway management.
- 4.6 Appropriate drugs for cardiopulmonary resuscitation and a range of intravenous equipment. (See Appendix II.)
- 4.7 A pulse oximeter.

5. MONITORING

All patients undergoing intravenous sedation must be monitored continuously with pulse oximetry and this equipment must alarm when certain set limits are exceeded. There must be regular recording of pulse rate, oxygen saturation and blood pressure. According to the clinical status of the patient, other monitors such as ECG or capnometry may be required.

6 OXYGENATION

Degrees of hypoxaemia occur frequently during intravenous sedation without oxygen supplementation. Oxygen administration diminishes hypoxaemia during procedures carried out under sedation and should be routinely available.

Pulse oximetry enables the degree of tissue oxygenation to be monitored and must be used on all patients during sedation.

7. TRAINING IN SEDATION FOR DENTAL PROCEDURES

An appropriately trained medical or dental practitioner must be present and be responsible for administration of sedation. The clinician is to be one of the following:

- 7.1 A dentist who has successfully completed relevant training leading to at least the equivalent of the New Zealand Society for Sedation in Dentistry's Conscious Sedation Course.

[The undergraduate qualification is considered sufficient training for dentists to administer oral sedation and nitrous oxide sedation subject to the dentist maintaining competence and continuing professional development in these areas].

- 7.2 A specialist anaesthetist.

8. SPECIALISED EQUIPMENT FOR NITROUS OXIDE SEDATION

When nitrous oxide is being used to provide sedation, the following equipment requirements must be satisfied:

- 8.1 There must be a minimum oxygen flow of 2.5 litres/minute with a maximum flow of 10 litres/minute of nitrous oxide, or in machines so calibrated, a minimum of 30% oxygen. There must be the capacity for the administration of 100% oxygen.
- 8.2 The circuit must include an anti-hypoxic device which cuts off nitrous oxide flow in the event of an oxygen supply failure, and opens the system to allow the patient to breathe room air.
- 8.3 There must be a non-return valve to prevent re-breathing, and a reservoir bag.
- 8.4 The patient breathing circuit must provide low resistance to normal gas flows, and be of lightweight construction.
- 8.5 Installation and maintenance of any piped gas system must be according to appropriate standards.
- 8.6 Servicing of equipment and piped gases must occur on a regular basis and at least annually.
- 8.7 An appropriate method of scavenging of expired gases must be in use.
- 8.8 There should be a low gas flow alarm.
- 8.9 Risks of chronic exposure to nitrous oxide should be considered.

9. DISCHARGE

The patient should be discharged only after an appropriate period of recovery and observation in the procedure room, or in an adjacent area, which is adequately equipped and staffed. Oxygen must be available in any area used for patient recovery.

Discharge of the patient should be authorised by the practitioner who administered the drugs, or another appropriately qualified practitioner. The patient should be discharged into the care of a responsible adult to whom written instructions should be given. Transport should normally be by car.

Adequate staffing and facilities must be available in the Recovery Area for managing patients who have become unconscious or who have suffered some medical mishap. Should the need arise; the patient must be transferred to appropriate medical care.

APPENDIX I

The American Society of Anesthesiologists' classification of physical status:

- Class I A normal healthy patient
- Class II A patient with mild systemic disease
- Class III A patient with a severe systemic disease that limits activity but is not incapacitating
- Class IV A patient with an incapacitating systemic disease that is a constant threat to life
- Class V A moribund patient not expected to survive 24 hours

APPENDIX II

Emergency drugs should include at least the following:

- Adrenaline
- Atropine
- Dextrose 50%
- Lignocaine
- Naloxone (if Narcotic analgesics used)
- Flumazenil (Anexate)
- Portable emergency oxygen supply