# Policy Statement 6.17 – Conscious Sedation in Dentistry[1]

**(Including the ADA Recommended Guidelines for Conscious Sedation in Dentistry and Guidelines for the Administration of Nitrous Oxide Inhalation Sedation in Dentistry)**

AUSTRALIAN DENTAL ASSOCIATION

## 1. Introduction

1.1. Sedation for dental procedures 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 dental procedures may be facilitated.

1.2. Conscious sedation in dentistry has been safely practised in Australia for many years under various levels of regulation dependent upon jurisdiction.

1.3. A Registration standard for conscious sedation has been adopted by the Dental Board of Australia.

1.4. Until 2010, the ADA had recognised the ANZCA and RACDS document PS21 published in 2003. This was replaced by PS9 in 2009.

1.5. In 2010, the *ADA Guidelines for Conscious Sedation in Dentistry* were adopted.

**Definitions**

1.6. ANXIOLYSIS includes minimal sedation through single low dose oral or inhalation-type medications for treating anxious patients, but not inducing a state of conscious sedation. Appropriate initial dosing of a single enteral drug should be no more than the maximum recommended dose of a drug that can be prescribed for unmonitored home use. Minimal sedation does not include polypharmacy.

1.7. BOARD is the Dental Board of Australia.

1.8. CONSCIOUS SEDATION is a technique in which the use of a drug or drugs by any route or routes produces a state of depression of the central nervous system enabling treatment to be carried out, and in which;

(a) verbal contact with the patient can be maintained or the patient responds appropriately to stimulation throughout the period of sedation, and

(b) the drugs and techniques used have a margin of safety wide enough to render unintended loss of consciousness unlikely.

1.9. GENERAL ANAESTHETIC is any drug or substance which when administered to a patient will induce a controlled state of unconsciousness accompanied by a partial or complete loss of protective reflexes, including inability to maintain an airway independently and continuously, and inability to respond to physical stimulation or verbal command.

## 2. Principles

2.1. Patient safety should be the prime consideration in forming guidelines for sedation for dental practice.

2.2. Regulation of sedation in dental practice should be evidence based.

2.3. Dentists who provide conscious sedation should be appropriately qualified and endorsed by the Board.

## 3. Policy

3.1. The Board should adopt the ADA Recommended Guidelines for Conscious Sedation in Dentistry (Appendix 1).

3.2. Dentists practising conscious sedation must comply with the Board's registration standard.

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This Policy Statement is linked to other Policy Statements: *5.8 Dental Acts, the National Law and Boards, 5.9 Dental Accreditation Authority & 5.21 Regulatory Authorities*[1]

3.3. A dentist must not carry out any procedure forming part of the practice of dentistry on a patient under general anaesthetic unless the general anaesthetic is administered by an appropriately qualified registered medical practitioner.

3.4. Only dentists who have been endorsed by the Board should practise conscious sedation.

3.5. Only dentists should administer nitrous oxide anxiolysis in dental practice.

3.6. Dentists using nitrous oxide anxiolysis should follow the ADA Guidelines for the Administration of Nitrous Oxide Inhalation Sedation in Dentistry (Appendix 2).

**Policy Statement 6.17**

Adopted by ADA Federal Council, November 18/19, 2010.

Amended by ADA Federal Council, November 17/18, 2011.

Amended by ADA Federal Council, April 10/11, 2014.

Amended by ADA Federal Council, April 6/7, 2017.

# Appendix 1 to Policy Statement 6.17 – ADA Guidelines For Conscious Sedation In Dentistry

These guidelines are designed to help dentists with conscious sedation in dentistry, however dentists have an obligation that they practice conscious sedation in accordance with the standard of the Dental Board of Australia.

## 1. Introduction

1.1. Sedation for dental procedures (with or without local anaesthesia) includes the administration by any defined 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 overriding principles and techniques described in these guidelines are to ensure patient safety. The drugs and techniques used should provide a margin of safety that is wide enough to render loss of consciousness unlikely. Loss of consciousness constitutes general anaesthesia and carries specific risks.

1.2. Conscious sedation is not without risk because of the:

(a) Potential for unintentional loss of consciousness

(b) Depression of protective reflexes

(c) Depression of respiration

(d) Depression of the cardiovascular system

(e) Wide variety and combinations of drugs which may be used, with the potential for drug interactions

(f) Possibility of excessive amounts of these drugs being used to compensate for inadequate analgesia

(g) Individual variations in response to the drugs used, particularly in children, the elderly and those with pre-existing medical disease

(h) Wide variety of procedures performed, and

(i) Differing standards of equipment and staffing at the locations where these procedures may be performed.

1.3. 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.

1.4. These guidelines do not apply to the use of nitrous oxide and oxygen in dental practice. They are also not intended to constrain the use of a single low dose sedative pre-operatively as an anxiolytic drug (for example low dose of a short acting benzodiazepine).

**Definitions**

1.5. ANXIOLYTIC DRUG means one of a group of drugs used to treat anxiety of various causes.

1.6. CONSCIOUS SEDATION means a technique in which the use of a drug or drugs by any route or routes produces a state of depression of the central nervous system enabling treatment to be carried out, and in which;

(a) verbal contact with the patient can be maintained or the patient responds appropriately to stimulation throughout the period of sedation, and

(b) the drugs and techniques used have a margin of safety wide enough to render unintended loss of consciousness unlikely.

1.7. DENTAL ASSISTANT means a dental assistant with an appropriate Australian qualification.

1.8. GENERAL ANAESTHETIC means any drug or substance which when administered to a patient will induce a controlled state of unconsciousness accompanied by a partial or complete loss of protective reflexes, including inability to maintain an airway independently and continuously, and inability to respond to physical stimulation or verbal command.

## 2. Assessment of the Patient

2.1. The patient should be assessed before the procedure and this assessment should include:

(a) An examination and a complete medical history, including appropriate investigations and identification of risk factors,

(b) Informed consent for sedation as well as the planned procedure, and

(c) Instructions for preparation for the procedure, the recovery period, and discharge of the patient.

2.2. If the patient has any significant 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 medically compromised, then an anaesthetist should be present to administer sedation or treated in a hospital environment.

## 3. Practitioner and Staffing

3.1. The practitioner administering sedation requires sufficient knowledge to be able to:

(a) understand the actions of the drug or drugs being administered,

(b) 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,

(c) anticipate and manage appropriately the modification of sedative drug actions by any concurrent therapeutic regimen or disease process which may be present. Techniques intended to produce loss of consciousness or compensate for inadequate local analgesia by means of increased level of sedation must not be used unless an anaesthetist is present,

(d) provide 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.

3.2. 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;

(a) A dentist who has completed relevant postgraduate training

(b) A medical practitioner with formal training at least equivalent to the Graduate Diploma in Clinical Dentistry (Conscious Sedation and Pain Control) from the University of Sydney, or training in accordance with ANZCA current professional requirements, or

(c) A registered anaesthetist

3.3. A dentist must not administer conscious sedation to a patient unless:

(a) The dentist has completed a course of training in conscious sedation that is acceptable to the Dental Board of Australia. The Board has approved the Graduate Diploma in Clinical Dentistry (Conscious Sedation and Pain Control), University of Sydney and has a process for assessing other qualifications.

(b) The dentist is assisted by another person, in addition to the usual dental assistant, whose sole duty shall be to monitor the level of consciousness and cardio-respiratory function of the patient and who is usually a registered nurse or enrolled nurse with training as outlined in the Board's guideline.

## 4. Facilities

4.1. 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:

(a) an operating table, trolley or dental chair which can be readily tilted,

(b) adequate uncluttered floor space to perform resuscitation,

(c) adequate suction and room lighting,

(d) a supply of oxygen and suitable devices for the administration of oxygen to a spontaneously breathing patient,

(e) a self-inflating bag suitable for artificial ventilation together with a range of equipment for advanced airway management,

(f) appropriate drugs for cardiopulmonary resuscitation and a range of intravenous equipment as per PS9 (See Appendix I),

(g) a monitor for pulse oximetry, heart rate, blood pressure, ECG, and capnography, and

(h) ready access to a defibrillator.

## 5. Monitoring

5.1. All patients undergoing sedation must be monitored continuously with pulse oximetry, blood pressure and end tidal CO2 and this equipment must alarm when certain set limits are exceeded. According to the clinical status of the patient, other monitors such as ECG may be required.

## 6. Oxygenation

6.1. Degrees of hypoxaemia may occur during sedation without oxygen supplementation and therefore oxygen should be administered routinely during sedation procedures.

## 7. Drugs Used for Sedation

7.1. A variety of drugs and techniques are available for sedation. Drugs must only be used by an appropriately trained medical or dental practitioner, and titrated in doses which do not allow for intended loss of consciousness. Monitoring of consciousness by whatever means must be maintained during sedation procedure.

## 8. Continuing Education

8.1. All dentists practising conscious sedation must attend an accredited course relevant to the practice of sedation in emergencies in the dental surgery every twelve months.

## 9. Discharge

9.1. 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.

9.2. Discharge of the patient should be authorized 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 and verbal instructions should be given.

9.3. Transport should be by private transport.

9.4. Adequate staffing and facilities must be available in the recovery area for managing patients.

## 10. Other

10.1. A number of ANZCA Professional Documents should be noted where appropriate, particularly the following:

PS4 Recommendations for the Post-Anaesthesia Recovery Room,

PS6 Recommendations on Minimum Requirements for the Anaesthesia Record,

PS7 Recommendations on the Pre-Anaesthesia Consultation,

PS9 Guidelines on Sedation and/or Analgesia for Diagnostic and Interventional Medical or Surgical Procedures, and

PS18 Recommendations on Monitoring During Anaesthesia

## Appendix

Emergency drugs should include at least the following:

- Adrenaline
- Atropine
- dextrose
- lignocaine
- naloxone
- flumazenil
- portable emergency oxygen supply

# Appendix 2 to Policy Statement 6.17 – Guidelines For The Administration Of Nitrous Oxide Inhalation Sedation In Dentistry

**Introduction**

Nitrous oxide mixed with oxygen is the most commonly used inhalation sedation in dentistry. When used alone, it is reliably incapable of producing general anaesthesia. When combined with other inhalation and/or intravenous and oral agents it can be a general anaesthetic. However, as a single agent, it has impressive safety and is excellent for providing minimal sedation for apprehensive dental patients.

## 1. Objectives:

The objectives of these guidelines are to describe the standards for the provision of nitrous oxide inhalation sedation in dentistry by ensuring that:

- facilities and staff are appropriate;
- present protocols are safe;
- dentists have undertaken the appropriate training to safely administer nitrous oxide inhalation sedation;

The techniques used for nitrous oxide inhalation sedation are not without risk because of:

- The potential for unintentional loss of consciousness.
- Depression of protective reflexes.
- Drug combinations which potentiate their effect
- Individual variations in response to the drugs used, particularly in children, the elderly and those with pre-existing medical disease.
- Differing standards of equipment and staffing at the locations where these procedures may be performed.

## 2. General Principles

The patient should be assessed before the procedure and this assessment should include:

- A concise medical history and examination, with special attention to nasal obstruction and tolerance to the nasal hood,
- Informed consent for sedation as well as the procedure.

The practitioner administering sedation requires sufficient knowledge to be able to:

- Understand the actions of the inhalation agent being administered.
- Detect and manage appropriately any complications arising from these actions.

Techniques intended to produce loss of consciousness must not be used unless an anaesthetist is present.

A written record of the percentage of nitrous oxide, flow rate and the timing of administration must be kept as a part of the patient's records.

## 3. Staffing

Dentists using nitrous oxide sedation must be trained in its use in accordance with these guidelines.

- 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 treating and monitoring the patient until recovery.

- A dental assistant must be present in the room at all times during the procedure.

## 4. Facilities

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

- A supply of oxygen and suitable devices for the administration of oxygen to a spontaneously breathing patient.
- A self-inflating bag suitable for artificial ventilation.

## 5. Monitoring

Nitrous oxide inhalation sedation requires no special monitoring equipment; this does not obviate the need for visual monitoring of the patient to ensure their level of sedation is appropriate.

## 6. Training In Sedation for Dental Procedures

Training for use of nitrous oxide sedation should be a dedicated course.

An example of an appropriate course is the one day Australian Dental Association-Australian Society of Dental Anaesthesiology Nitrous Oxide Inhalation Course.

## 7. Specialised Equipment for Nitrous Oxide Sedation

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

- 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.
- 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.
- There must be a non-return valve to prevent re-breathing, and a reservoir bag.
- The patient breathing circuit must provide low resistance to normal gas flows, and be of lightweight construction.
- Installation and maintenance of any piped gas system must be according to appropriate standards (ANZCA PS54 Statement of safety requirements for anaesthetic machines and workstations for clinical practice).
- Servicing of equipment and piped gases must occur on a regular basis and at least annually.
- An appropriate method for scavenging of expired gases must be in use.
- There must be a low gas flow alarm/cutoff.
- Risks of chronic exposure to nitrous oxide should be considered.

## 8. Discharge

The patient should be discharged only after an appropriate period of recovery and observation. Oxygen must be available in any area used for patient recovery.

## 9. Use with Other Drugs

Nitrous oxide inhalation sedation is recognised as a very safe technique given that it has minimal effects on the cardiovascular system, however in combination with other drugs it may potentiate their effects. Therefore nitrous oxide inhalation should not be used in combination with drugs unless administered by a dentist endorsed to

perform conscious sedation, a medical practitioner or an anaesthetist.