

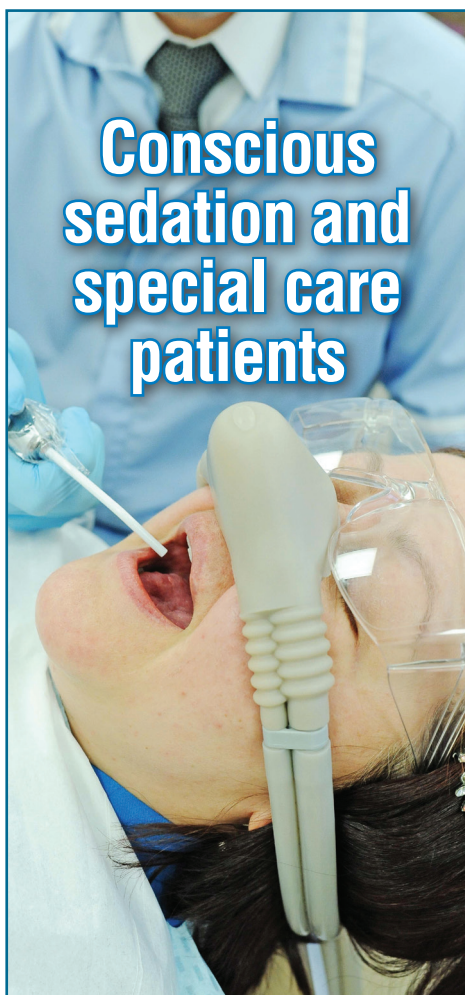
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Learning outcomes

After reading this 'Guide to Conscious Sedation and Special Care Patients' you should be able to:

- Explain why conscious sedation is a useful method to provide routine dental care for people with special care needs
- Understand how the dental nurse has an important role in the success and safety of sedation techniques
- Discuss how sedation is a key part of the management of pain and anxiety
- Describe the different techniques to safely administer conscious sedation.



GUIDE TO... Conscious Sedation and Special Care Patients

Conscious sedation offers an easy and safe technique to carry out dental treatment in patients with special care needs. This article discusses the benefits of using conscious sedation, the dental nurse's role, and the various techniques available

Special care dentistry is concerned with providing and enabling the delivery of oral care for people with an impairment or disability. This encompasses those with a wide range of medical problems, stress and anxiety disorders.

Dental anxiety is experienced by a high proportion of the population. Figures from the UK 1998 Adult Dental Health Survey suggests that 64% of the population who have their own natural teeth are anxious about visiting the dentist (Office for National Statistics, 1999).

Fear and anxiety are common responses to anticipated or actual dental treatment (Rafique et al, 2008). This may range from feelings of unease about needles, choking, noise, or blood, to physical signs of anxiety such as an increase in heart rate, blood pressure, respiration rate, sweating, nausea and vomiting. These patients often find it difficult to accept dental treatment with local anaesthesia alone (Longman, 2006).

The provision of adequate anxiety control is an integral part of the practice of dentistry. The General Dental Council has indicated that this is both a right for the patient and a duty placed upon the dentist (Scottish Dental Clinical Effectiveness Programme, 2012). The use of sedation often allows patients to accept dental interventions.

This article looks at inhalation sedation in the management of anxiety in a special care setting. It will look at communication strategies, indications for inhalation sedation and its use for those with learning difficulties, the medically compromised, and as part of a combination strategy to overcome a patient's gag reflex.

Inhalation sedation produces sedation using a titrated mixture of nitrous oxide with oxygen by a dedicated machine, through a nasal mask (Figure 1). Nitrous oxide is suitable for



Figure 1. Nasal mask in place

patients with mild-to-moderate dental anxiety (Fiske et al, 2007). It has excellent sedative properties, with little depression of breathing or circulation, has a rapid onset and recovery, and the level of sedation is easily altered to suit the patient.

The main objective for the use of sedation in dentistry is to provide light-but-sufficient sedation in order for the patient to cooperate and be more easily influenced by the behavioural techniques (Nunn, 2000).

Indications for conscious sedation

- To treat anxious or phobic patients (especially those with a needle phobia)
- For patients with an exaggerated gag reflex
- For patients with a movement disorder, physical or mental disability unlikely otherwise to allow safe completion of dental treatment, who would otherwise be denied access to dental care
- To enable an unpleasant procedure to be carried out without distress to the patient
- To enable a less medically fit or elderly patient with dental anxiety to cope with treatment. Ideal in the situation where an

above atmospheric oxygen concentration is desirable, e.g. angina

- To avoid general anaesthesia.

Success in using inhalation sedation is directly proportional to the degree of relaxation in the patient. This can be achieved by ensuring all the required dental equipment and specialised sedation equipment is present and in working order beforehand so that you are ready to welcome your patient into a calm environment (Combined Community Dental Service, 2013).

The patient needs:

- Soothing, hypnotic voice
- Encouraging and praising
- Talking to, not over (at their own level)

Structuring your suggestions

- Never say you won't feel anything. If you can't feel anything, then you are dead or unconscious. Explain carefully what they may feel, and the steps you are taking to make things comfortable, such as surface anaesthetic, slow injection, etc. This type of preparatory information has been shown to reduce anxiety (Jackson and Lindsay, 1995)
- Use permissive language. People respond in different ways, e.g. you *may* feel some tingling in your fingers or toes as you relax rather than you *will*. Some patients may think the procedure is not working if they do not feel the suggested sign
- Don't be too specific. Not all beaches are sunny and warm. Some people don't like gardens. Find out first what they like, or use a special place to them
- Praise frequently. Let them know how well they are doing, rather than 'are you alright?'

The delivery

- Speak rhythmically. Match your language to the patient's breathing (this also relaxes you!)
- Speak slowly and quietly
- Emphasise important words slightly to make them stand out
- Don't worry if you 'dry up'. This happens to everyone. Just say, 'I'm going to keep quiet for a few moments now to allow you to enjoy this comfortable relaxed feeling.'

Special care patients

The use of nitrous oxide/oxygen inhalation has become increasingly important in the management of medically compromised patients (Malamed, 2009). Normal physiological responses to anxiety and fear is not usually harmful; however, in a medically compromised patient they may present a risk to the patient's health. The use of sedation reduces physiological responses to anxiety and fear (Ireland, 2004). Below are a few common disorders.

Cardiovascular disease

The use of nitrous oxide and oxygen in patients with cardiovascular disease is one of the most valuable methods of minimising risk to the patient during dental care (Malamed, 2009).

Angina caused by narrowed diseased coronary arteries (ischaemic heart disease) may be exacerbated by anxiety and stress because of the increased cardiac workload and oxygen demand. The use of nitrous oxide/oxygen inhalation not only reduces anxiety, preventing the raising of blood pressure, but it also provides the heart and entire body with at least 30% oxygen, and more frequently 50–70% (Malamed, 2009).

Always ensure the patient is relaxed, comfortable and reassure them. Although electromechanical monitoring is not required for inhalation sedation, the use of a pulse oximeter (*Figure 2*) gives evidence of oxygen levels which is a useful adjunct to clinical monitoring.

It may be appropriate to ask the patient to use their routine rescue medication, e.g. glyceryl trinitrate (GTN), immediately before the start of treatment (Craig and Skelly, 2004).

Epilepsy

Epilepsy affects around 400 000 people in England. Seizures can be triggered by a number of factors, including stress and anxiety. Inhalation sedation with nitrous oxide is useful for reducing the risk of a stress-induced fit in patients who are anxious about dental care (Fiske and Boyle, 2012). Before embarking on any treatment, confirmation that the patient has taken their normal medication, is well, and is not excessively tired should be made.



Figure 2. Placement of the pulse oximeter

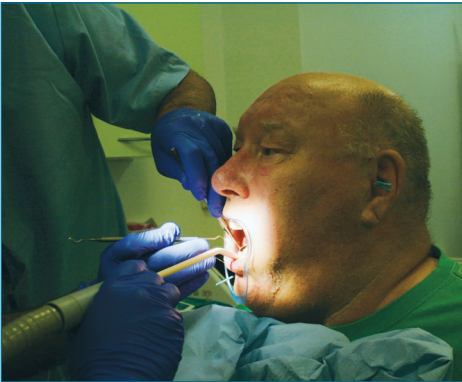


Figure 3. Acupuncture points CV24 and points left and right ear

Non-urgent dental treatment should be deferred if seizure control is poor (Broderick and Douglass, 2009a).

Respiratory disease

The use of inhalation general anaesthetics is frequently contraindicated in patients with acute or chronic respiratory disease. However, nitrous oxide/oxygen is used quite successfully and without untoward incident in many patients with respiratory disease (Malamed, 2009).

Asthma is an increasing problem within the population at large. Two types of asthma exist: extrinsic (allergic asthma) and intrinsic asthma (usually related to emotional stress) (Broderick and Douglass, 2009b).

Well-controlled asthma is not a contraindication to the use of sedation. As with angina, it is sometimes appropriate to ask the patient to use their routine rescue medication prior to treatment.

Inhalation sedation can also be used for patients with mild chronic obstructive airways disease (COPD), although it is advisable to consult their respiratory physician first, particularly when their disease is more severe.

Learning difficulties

The use of inhalation sedation can work well with some people who have a mild-to-moderate learning difficulty. The patient needs to be able to breathe through their nose with their mouth closed and understand they cannot talk (Edwards and Boyle, 2013). You can encourage your patient by speaking slowly, smile and use reassuring gestures, repeat what you say, and praise frequently. A calming relaxed environment will make the patient feel safe and secure. Having family and carers present can be comforting to the patient and are a valuable resource for advice on the best behavioural techniques to use. Some patients may require more powerful drugs, including IV sedation and/or general anaesthesia.

Gag reflex

A pronounced gag reflex can be a severe limitation to a patient's ability to accept dental care and for a clinician's ability to provide it. Nitrous oxide can give a constant depth of sedation to control gagging, which is useful in longer dental procedures (Dickinson and Fiske, 2005).

Overcoming patients' gagging problems requires the combination of an empathetic approach to care using individualised, tailored, flexible treatment solutions (Dickinson and Fiske, 2005). The following case study highlights this.

Case study

A 69-year-old gentleman with a complex medical history, including type 1 diabetes, angina ischaemic heart disease, dental anxiety, and hypersensitive gag reflex, who has avoided dental care in the past, is now motivated to access dental treatment due to toothache.

Clinical examination had previously proved impossible due to his hypersensitive gag reflex. Acupuncture (Figure 3) offered a rapid, simple and very reliable method of controlling the gag reflex sufficiently to allow a detailed clinical and

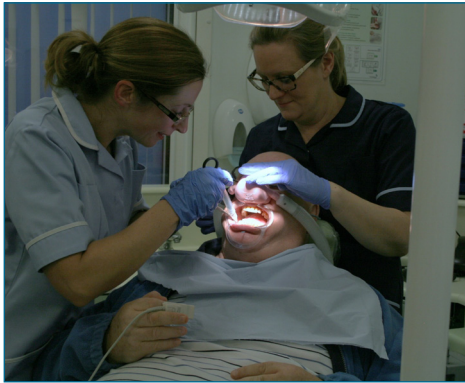


Figure 4. A combination of a basic pharmacological technique (inhalation sedation) with an alternative non pharmacological technique (acupuncture) reduced gag reflex exacerbated by the patient's anxiety. These simple techniques successfully managed a difficult problem

radiographic exam. This enabled a definitive diagnosis, treatment options and a planned specialist treatment centre.

The patient required extraction of two teeth with local anaesthetic. Taking into account the invasiveness of the treatment and the anxiety of the patient, acupuncture and inhalation sedation was prescribed. Inhalation sedation also has a significant ability to control gag reflex, and as an adjunct to acupuncture, is an effective analgesia, anxiolytic and can improve ischaemic heart disease symptoms during dental treatment (Figure 4).

The sedation-trained team managed the patient's airway and monitored the vital signs. Verbal contact was maintained with the patient throughout the procedure to give reassurance and positive reinforcement. The hypersensitive gag reflex and dental anxiety were controlled and treatment completed.

Conclusion

Many dentists will be unable to offer the full range of sedation techniques (Longman, 2006) but they should be aware of local services and be able to make appropriate referrals. Dental nurses are vital in their role as the second appropriate person; additional training is required for this, either on an approved course or appropriate supervised training. Up-to-

date enhanced life support training is also a requirement.

Working with special care patients requires a flexible, team-centred approach to patients that often find it difficult to access regular routine care. The role of the experienced sedation trained/special care nurse is integral to the success of that care.

Acknowledgment

The author would like to thank all the staff involved in the case study.

- Birmingham Dental Hospital (2012). Care of the patient undergoing Conscious Sedation. A course for dental nurses. Course workbook. Birmingham Dental Hospital, Birmingham
- Broderick D, Dougall A (2009a) Medically compromised patients: part two. *Dental Nursing* **5**(2): 75–83
- Broderick D, Dougall A (2009b) Medically compromised patients: part one. *Dental Nursing* **5**(1): 19–2
- Combined Community Dental Service (2013) Guidelines for providing dental treatment under inhalation sedation 1. April 2013. Policy number CH 517. Combined Community Dental Service, Birmingham
- Craig D, Skelly M (2004) *Practical Conscious Sedation*. Quintessence Publishing Co. Ltd, London
- Dickinson CM, Fiske J (2005) A Review of gagging problems in dentistry: clinical assessment and management. *Dental Update* **32**: 74–80
- Edwards J, Boyle C (2013) Conscious sedation In patients with learning disabilities. *Dental Nursing* **9**(5): 254–60
- Fiske J, Boyle C (2002) Epilepsy and oral care. *Dental Update* **29**(4): 180–7
- Fiske J, Dickinson C, Boyle C, Burke M, Rafique S (2007) *Special Care Dentistry*. Quintessence Publishing Co. Ltd, London
- Ireland R (ed) (2004) *Advanced Dental Nursing*. Blackwell Munksgaard, Denmark
- Longman L (2006) Sedation in special care dentistry. *Dental Nursing* **2**(6): 286–8
- Macpherson A, Kwasnicki J (2011) Conscious sedation. Part one: review of indications and techniques. *Dental Nursing* **7**(2): 70–5
- Malamed SF (2009) *Sedation a Guide to Patient Management*. 4th edn. Mosby, Philadelphia
- Nunn JH (2000) *Disability and Oral Care*. FDI World Dental Press, Switzerland
- Office for National Statistics (1999) *Adult Dental Health Survey, 1998*. ONS, London
- Rafique S, Banerjee A, Fiske J (2008) Management of the petrified patient. *Dental Update* **35**: 196–207
- Scottish Dental Clinical Effectiveness Programme (2012) Conscious Sedation in Dentistry: Dental Clinical Guidance. 2nd edn. <http://www.sdcep.org.uk/?o=2331> (accessed 12 February 2014)

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