

POLICY DOCUMENT

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	Guidelines for Dentists in Controlling Patient Anxiety Using Responsive Sedation				

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Foreword

These guidelines are for the use of sedation techniques being provided by dentists who are registered as such with the HPCSA. The aim is to enable dental treatment for anxious or stressed patients, who are not able to handle dental procedures without some assistance, to be treated in the dental chair using procedural sedation techniques without having to resort to full anaesthesia or deep sedation.

Currently there are no longer any academic courses in Procedural Sedation and Pain Control in South Africa. The original course was offered through the University of the Western Cape's Dental Faculty under the direction of Prof. James Roelofse. The course provided training to dentists, doctors and anaesthetists in all techniques related to sedation and pain control. As dentists have limited training in anaesthesia and in diagnosing and treating medical complications that may arise from the administration of sedative drugs, extra modules were designed to train dentists specifically in these aspects. These modules involved additional contact sessions for the dentists. Besides the extra modules, the course was the same for all practitioners. The additional modules were designed and presented by one of the authors of this paper (LL). Over the 12 years the course ran, more than 100 dentists qualified from the course and who are trained to provide procedural sedation in South Africa.

These guidelines were compiled with the above training in mind and includes additional information provided by Prof MA Gillman who has offered both theoretical and practical training in the use of nitrous oxide sedation in dentistry and medicine for over 35 years to local and overseas practitioners. His training courses have been accredited by SADA since the advent of CPD by the HPCSA

It is also compiled with reference to the following documents: -

- *Conscious Sedation in the Provision of Dental Care* released by the Standing Dental Advisory Committee of the British Dept. Of Health. (2003)
- *Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists:* An Updated report by the American Society of Anesthesiologists on Sedation and Analgesia by Non-Anesthesiologists (2005)
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- Guidelines on Conscious Sedation for Dental Procedures Australian and New Zealand College of Anaesthetists, Royal Australian College of Dental Surgeons (2003)
- South African Society of Anaesthetists Sedation Guidelines (2010)
- *Guidelines for Conscious Sedation and Monitoring.* American Society of Gastroenterologists (2004)
- *Guidelines for Conscious Sedation* Society of Sedation Practitioners of South Africa (SOSPOSA) (2006)
- Nice Guidelines to Sedation. National Institute for Health and Clinical Excellence UK (2010)
- Standards for Conscious Sedation in the Provision of Dental Care RCS (2015)
- American Dental Association Guidelines for the Use of sedation and anaesthesia by dentists (2016)

Introduction

Fear of dentistry and the pain associated with its practice can be traced back to the earliest writings. In a search for ways to make dentistry more acceptable to those who avoided it due to fear and anxiety, numerous potions were used. In the days of the barber surgeons "benumbing gasoline" was a favourite but it was dentists who discovered the effects of nitrous oxide as a general anaesthetic agent and later pioneered the advent of intravenous sedation for the provision of dentistry.

Dentistry consistently appears in the top of the hierarchy of fears and numerous scientific papers report that fear of dentistry will keep up to 20% of people from seeking assistance when in pain. Ogden Nash wrote "some tortures are physical and some are mental, but the one that is both is dental".

Until the 1960's, it was felt that the trauma of the dental procedure kept people away from the dentist until pain or sepsis made a visit unavoidable. Local anaesthesia was almost as traumatic as the procedure itself and was seldom used for routine conservative dentistry. The high-speed handpiece was just making an appearance. However, in the late 1960's and early 1970'sthe advent of preventive dentistry stressed the importance of routine dental examinations rather than just interventional dentistry. This truly highlighted the extent to which fear and anxiety would keep people away from visiting the dentist.

In 1935 Drummond Jackson (a dentist) published his first paper on Intravenous sedation to control and allay fear during dentistry and 3 years later the first nitrous oxide unit for dentistry was made. It was during the late 1940's and the 1950's that great strides were made to allay these fears. Use was made of both psycho-sedation as well as pharmaco-sedation techniques. The former included relaxation and hypnosis, modeling and desensitization methods.

In the years that followed, inhalation and intravenous sedation techniques were described with Langa having the greatest influence in terms of inhalation and Jorgensen with intravenous sedation. However, safety guidelines were poorly defined with technique being uppermost in the practitioners' minds. There was a tendency to oversedation with concomitant complications. As a consequence, the various modalities of treatment went in and out of vogue as complications were described and deaths during procedures were reported. Nonetheless, there is no doubt that conscious sedation, as for general anaesthesia, was pioneered by dentists, with the medical profession following the dentists' lead in both disciplines.

Refinement of the techniques, newer drugs and emphasis on safety have revolutionized the practice of anxiety and pain control into a safe and reliable treatment modality. With its increasing use over the last few decades, due in no small measure to the fact that internationally, medical insurance companies have been refusing to pay for general anaesthesia for an increasing number of procedures, procedural sedation has become recognized as an affordable and safer alternative to general anaesthesia for use in ambulatory patients.

Sedation Levels

Most of sedation texts define the various levels of sedation thus: -

Procedural sedation



	Minimal sedation (anxiolysis)	Moderate Sedation (Conscious Sedation	Deep Sedation	General anaesthesia
Responsiveness	Normal response to verbal stimulation	Purposeful response to verbal or tactile stimulation	Purposeful response to repeated or painful stimulation	Unarousable even with painful stimulation
Airway	Unaffected	No intervention required	Intervention may be required	Intervention usually required.
Spontaneous Ventilation	Unaffected	Adequate	May be inadequate	Frequently inadequate
CVS function	Unaffected	Usually maintained	Usually maintained	May be impaired

However, in dentistry the objective is to induce a state of **<u>ataraxia</u>** (a serene state of mind free from worry and preoccupation) given that, with few exceptions, pain control can be totally effective using local anaesthesia. The practitioner is attempting to control the fear and apprehension knowing that the pain will be controlled with the local anaesthetic.

Perhaps a better classification for dentists would be **<u>Responsive Sedation</u>** and <u>**Non-Responsive**</u> <u>**Sedation**</u> with the dental practitioner always ensuring that the clinical state of sedation, regardless of technique, would be a state of responsive sedation. With this guideline in place, one would be sure that all the reflexes are intact, breathing and airway would be adequate and spontaneous and the CVS would be maintained within physiological parameters for that patient.

For the sake of these guidelines, the terms minimal and moderate sedation have been maintained for the sake of consistency in respect of the techniques used.

Minimal sedation applies to

- The use of a single drug which can be administered at home without supervision.
- The use of nitrous oxide with the use of local anaesthesia to control pain.

The addition of any other drugs to the regime would then constitute moderate sedation. One should also remember that in hyper-responders, although rare, nitrous oxide <50% can produce moderate sedation hence the use of a modality falling into the classification of minimal sedation, does not absolve the operator of the vigilance necessary to take immediate remedial action.

It is pertinent to note that both these types of sedation can be classified as responsive sedation whereas deep sedation and general anaesthesia would be non-responsive sedation.

Explanations and definitions

- 1. Sedation and analgesia comprise a continuum of states ranging from minimal sedation through to general anaesthesia.
- 2. <u>Minimal sedation involves</u> the use of a single drug or the use of nitrous oxide (with no other pharmacological contributions aimed at sedation) to decrease the level of anxiety. In the case of the use of a drug to minimize anxiety, this would be any medication that the patient would be able to take unsupervised at home. It includes mild tranquilizers or alternative medicine options. In these, as in all cases in the dental setting, the environment and staff must be conducive to a relaxed ambience and pain control is achieved through skillful atraumatic use of local anaesthesia.
- 3. <u>Conscious sedation</u> is a technique for administering sedative or dissociative agents, with or without analgesics, to induce a state of ataraxia that allows the patient to tolerate an unpleasant procedure while maintaining cardiorespiratory function and all protective reflexes. Conscious sedation is intended to result in a depressed level of consciousness while allowing patients to maintain oxygenation and airway control independently in such a way that a sufficient margin of safety is provided ensuring loss of consciousness would be highly unlikely. Its aim is also to ensure that adverse reactions from drugs due to too high a concentration or potentiation would be minimized. Clinically conscious sedation results in patients who will respond to verbal commands and will be able to obey instructions from the operator.

- 4. Medications that elicit pharmacological effects such as anxiolysis, amnesia and analgesia provide patient comfort while the procedures are being carried out.
- 5. Within a dental surgery, one should confine oneself to providing responsive sedation which in classical terms would be minimal and conscious sedation.

Deep Sedation and General Anaesthesia require the presence of full resuscitative capabilities. These techniques should only be administered in a setting where these facilities are available and practitioners are properly trained in Advanced Life Support.

Environment and Equipment for Conscious Sedation

- 1. The treatment area should provide adequate space for dental treatment as well as the extra equipment and personnel that would be needed for sedation.
- 2. The dental chair must be able to recline into a head down position.
- 3. Equipment for resuscitation from respiratory depression or cardiac arrest must be readily available and easily accessible. These include good suction apparatus, airways and a fully stocked emergency tray.
- 4. During any intravenous or any sedation other than nitrous oxide sedation, blood pressure monitoring equipment and pulse oximetry must be used. A cardiac defibrillator as well as antagonist drugs must be at hand in these cases.

(The availability of a cardiac defibrillator should be encouraged in all surgeries that treat the elderly where the risk of a cardiac incident is increased or where children are treated where overdose of local anaesthesia rapidly causes cardiac arrhythmias which can lead to cardiac failure).

- 5. Oxygen must be at hand preferably as a portable cylinder easily activated.
- 6. There should be easy and unimpeded access for an emergency medical team into the building.

Indications for Sedation

- Anxious or phobic patients who would otherwise avoid dental treatment.
- Where the real or imagined discomfort of traumatic procedures leads to avoidance of treatment.
- Patients with mental or physical disabilities.
- To reduce the dependency on the use of general anaesthesia which has a greater risk profile than procedural sedation.

Patient choice and Assessment

- 1. A thorough screening of the patient is mandatory paying careful attention to the completed health questionnaire and particularly to any previous adverse reactions during general anaesthesia or to the drugs which would be used. This includes paradoxical reactions to drugs.
- 2. Careful assessment of the airway must be made as well as ascertaining whether sleep apnoea is a problem.

- 3. Previous traumatic experiences, allergic reactions or difficulty with venepunctures should be explored.
- 4. Only ASA type 1 and 2 patients are suitable for treatment with intravenous sedation outside of a hospital setting.
- 5. Extra care must be taken in the very young and patients over the age of 65 years.

Pre – Sedation Discussions

- All alternative approaches including psychosedation techniques viz. relaxation techniques and hypnosis should be presented to the patient with a description of the advantages and disadvantages of each. The patient should be informed that occasionally the method of choice may fail and that alternative approaches may be necessary.
- The patient must be advised that with the use of any sedative drugs whether administered orally or intravenously, they must not drive or operate heavy machinery until the following morning and need to be escorted home. In the case of nitrous oxide sedation, the patient may drive after being suitably oxygenated and allowed to recover completely and to the satisfaction of the practitioner.
- Once the patient has indicated that they have understood the concept of sedation and the potential problems that may occur, a written consent form should be presented for signature. It is important that this is done prior to the patient receiving any medication.
- The question of fasting has not been scientifically determined prior to sedation hence the guidelines for general anaesthesia are followed viz. solid food should be avoided for 6 hours prior to the procedure, small amounts of clear liquids, including coca cola, may be imbibed up to 1 hour before. However, a definitive study has shown that patients who were starved required higher doses of sedative and had a longer recovery. Hence a sugar loaded clear drink should be considered 1 hour pre-operatively. RCS guidelines state that fasting is not necessary providing the patient is maintained in a responsive state which will ensure the airway reflexes are intact. The NICE guidelines for children state that fasting is not necessary for minimal sedation, nitrous oxide sedation or sedation wherein the child will maintain verbal contact with the practitioner. Common sense must prevail and any food intake should be small amounts of easily digestible food.

Personnel and Monitoring for Pharmacosedation. (Excluding nitrous oxide as a single sedating agent).

- 1. If there is a dedicated sedationist, he is responsible for administering the drugs as well as monitoring the patient.
- 2. If the situation is one of an operator sedationist, (where the dentist is providing the sedation as well as doing the dentistry) there should be a staff member, trained in sedation, who is tasked with being a dedicated monitor.
- 3. All members of the team must have attended at least a BLS course if working on adults. This must be done every 2 years.
- 4. A sedationist doing children, with techniques other than minimal sedation with nitrous oxide, must have completed an APLS course. This too needs to be done every 2 years.
- 5. Monitoring should begin at base line levels before any sedation has commenced and continue until the patient is ready for discharge.
- 6. Both clinical and electronic monitoring are essential to ensure patient safety.
- 7. The following constitute minimum monitoring requirements in all cases of pharmacosedation :-
 - Diligent clinical and visual monitoring.
 - Oxygen saturation
 - Blood pressure

- Respiratory rate and depth.
- Level of consciousness in which the patient must be able to communicate or responds to mild stimulation.
- Pain (often referred to as the 5th vital sign)

Monitoring for Nitrous Oxide Sedation

Because of the rapid onset and offset of the effects of nitrous oxide and its safety with regard to maintaining normal physiological function, monitoring should include: -

- 1. Diligent clinical and visual monitoring with the sedationist being in attendance at all times. A second person must also be in attendance during the procedure.
- 2. Observation and responding immediately to change in mood or behaviour or position (e.g. sudden sitting, hand movements lack or lack of normal verbal interaction).
- 3. Signs of impending nausea.
- 4. While airway obstruction is always an emergency and requires immediate cessation of treatment, lack of inflow of nitrous oxide will immediately allow for the effects of nitrous to reverse and normal attention to airway (jaw thrust or chin lift + oxygen) should allow the situation to correct.

Records and Documentation for Pharamacosedation

Accurate and contemporaneous records are essential. These should be kept either by the sedationist or by the dedicated observer.

The record must show: -

- 1. The reason for the choice of the specific regime employed.
- 2. That a consent form has been completed.
- 3. Whether any pre-operative medication was given.
- 4. Baseline BP and respiratory levels.
 - 5. The treatment procedure including venepuncture site, if applicable, the dose, route and time of administration of the drugs.
 - 6. The record of the regular monitoring of the vital signs.
 - 7. The details of the dental treatment.
 - 8. The post sedation assessment and time of termination of the sedation and discharge.

Post-operative Evaluation

It is always of great value to do a post-operative evaluation in the form of a telephone call the following day. This will enable one to gauge the effectiveness of the sedation procedure, the patient's evaluation of the experience and to judge whether the correct technique was chosen and whether the drugs used were in the correct dosage.

This evaluation should be entered onto the sedation record.

Guidelines for discharge with Pharmacosedation

Prior to discharge the sedationist must ensure that: -

- 1. The patient is alert, responsive and oriented and has returned to presedation level of responsiveness.
- 2. Vital signs are stable and within acceptable limits.
- 3. There is no pain, nausea or vomiting.
- 4. That the patient can keep their eyes open.

- 5. The patient is discharged into the care of a responsible adult who will take the patient home.
- 6. Parents ensure that children are not strapped into a car seat in a sitting position but a strapped in lying down on the back seat to prevent the head falling forward and obstructing the airway.
- The patient or the accompanying adult has written instructions regarding postoperative diet, medication and care. They should also have contact telephone numbers in case of emergencies.
 - Guidelines for discharge for patients undergoing Nitrous Oxide sedation.
 - Provided the patient is appropriately oxygenated, can maintain coherent conversation and is normally mobile and steady on their feet and they have been checked by the operator-sedationist before discharge, they can safely drive and/or operate machinery post-operatively

Training for Nitrous Oxide and other minimal sedation techniques

- 1. Training should be via an accredited post-graduate training programme. The training should be done by a person who has had post-graduate training and who has had teaching experience both in presenting theory and practical knowledge. The course should preferably be approved or accredited by SADA or other recognized body.
- 2. All the topics covered in this overview must be thoroughly covered in the training programme which will include theoretical knowledge of the anatomy and physiology of the airway; detailed knowledge of the drugs used, their actions, side-effects and potentially harmful effects as well as potential drug interactions.
- 3. The medico-legal implications will be emphasized.
- 4. There should be extensive coverage of medical emergencies which may occur during sedation procedures, their recognition and treatment.
- 5. All students will need to complete at least a BLS course.
- 6. All students should complete a defined number of cases under supervision and perform a defined number of cases of minimal sedation techniques keeping detailed records of each case. During this period, the student will need to be in constant contact with the course provider as to the outcome of each case.
- 7. The support staff will need to undergo thorough training in their duties and should all undergo at least a BLS course which would need to be repeated every 2 years.

Training for Moderate Sedation

Adequate initial and ongoing training of the practitioner administering sedation remains the mainstay for providing effective and safe treatment.

- Training should be via an accredited post-graduate training programme. The training should be done by a person who has had post-graduate training and who has had teaching experience both in presenting theory and practical knowledge. The course should preferably be approved by SADA or other recognized body.
- All the topics covered in this overview must be thoroughly covered in the training programme which will include theoretical knowledge of the anatomy and physiology of the airway; detailed knowledge of the drugs used, their actions, side-effects and potentially harmful effects as well as potential drug interactions.
- Theoretical knowledge of the practice of the various sedation techniques, the advantages and disadvantages of each and their potential complications must be included.
- The medico-legal implications must be covered.
- The student will have extensive coverage of medical emergencies which may occur during sedation procedures, their recognition and treatment.

- All students must complete at least a BLS and preferably an ALS certified course. Those choosing to do intravenous sedation in children must complete the APLS course.
- All students should complete a defined number of cases under supervision and will perform a defined number of cases of simple sedations using both minimal and moderate sedation techniques keeping detailed records of each case before attempting any form of advanced sedation. During this period, the student will need to be in constant contact with the course provider as to the outcome of each case. (See Simple and Advanced Techniques page 10)
- The support staff will need to undergo thorough training in their duties and should all undergo at least a BLS course and have attended the practical training courses with the practitioner.
- Ongoing updated training for practitioners is mandatory.

Sedation techniques for the operator sedationist

While all techniques will, in all probability, lead to excellent control of fear, apprehension and pain, consideration must always be given to choosing a technique that will provide the most appropriate and least invasive means of anxiety relief. It should be borne in mind that in dentistry, local anaesthesia is the mainstay of pain control and one should not try and control the pain centrally. The main consideration in offering sedation is to control anxiety, apprehension and fear of the dental procedure. Analgesics are used to increase the pain threshold intra-operatively and provide post-operative pain relief.

Minimal Sedation Techniques

Minimal sedation creates a decreased awareness of the environment without depressing consciousness to a noticeable degree. It is recognized that while cognitive function and co-ordination may be impaired in techniques for minimal sedation, response to verbal stimulation is normal and respiratory and cardiovascular functions remain unaffected.

- Examples of minimal sedation include:
 - o nerve blocks,
 - o local anaesthesia,
 - inhalation sedation using a titrated administration of <50% nitrous oxide + local anaesthetic with no other oral sedative or oral analgesic agents,
 - a single oral sedative or oral analgesic agent in doses appropriate for unsupervised treatment of insomnia, anxiety or pain.
 - Minimal sedation techniques imply minimal risk and hence are excluded by guidelines with regard to monitoring which other forms of sedation require. However, the use of an oximeter would add an additional layer of safety in case of malfunction of the oxygen delivery. Nitrous oxide provides an ideal solution in the dental environment as it is easily titrated to the required concentration, it has a rapid onset and recovery rate within seconds, it has almost no after-effects and it provides both sedation and analgesia. In the dental setting it would seem that it is seldom necessary to exceed a nitrous concentration of 40% as no additional benefits are normally found. Nitrous oxide provides an ideal solution in the dental environment as it is easily titrated to the required concentration, it has a rapid onset and recovery begins within seconds, it has almost no after-effects and it provides an ideal solution in the dental environment as it is easily titrated to the required concentration, it has a rapid onset and recovery begins within seconds, it has almost no after-effects and it provides both sedation and analgesia. Nitrous oxide is also extremely useful as a "premed" in the anxious patient who will require moderate sedation. In these cases, it allays apprehension, increases the pain threshold and causes a peripheral vasodilatation which facilitates venepuncture. Once the venepuncture has been achieved the nitrous oxide can be removed.
 - <u>In children a single oral sedative drug should be regarded as a moderate sedation technique</u> <u>(see section under moderate sedation).</u> If nitrous oxide is used in conjunction with an oral sedative, the case should be construed as moderate sedation for the sake of monitoring etc.

Moderate (Conscious) Sedation Techniques

Moderate sedation is a drug induced depression of consciousness and level of awareness. This will allow the toleration of unpleasant procedures during which the patient maintains the ability to breathe spontaneously and maintain their airway, will respond to verbal commands or light tactile stimulation and will maintain a normal cardiovascular function. The use of nitrous oxide alone with local anaesthesia and no other oral analgesic or oral sedative is excluded from this category of sedation.

Within the dental setting the standard technique is for the control of anxiety is the administration of a sedative which is fast acting and has a short half-life. A titrated dose of a single drug, currently a benzodiazepine (midazolam), is used to bring about this state. The titration allows the administration of that dose which would be appropriate for the specific needs of each patient.

The current recommended technique is the administration intravenously of 1 mg of midazolam. Then allow 90 seconds for its effect to be seen and then slowly administer 1mg per minute until the correct depth of sedation is achieved. The titration must be in doses which would not allow unintended loss of consciousness.

It should be borne in mind that the benzodiazepines can cause respiratory depression and the sedationist should at all times be alert to this and be able to recognize the condition and be able to effect an immediate recovery of the patient.

Should the sedationist and/or operator feel the need for additional pain control, the drugs used should have no potentiating effect on the respiratory depressant properties of the benzodiazepine. It would thus be inappropriate for the dentist to use opioids or propofol as both of these drugs are respiratory depressants. Hence a potentiation effect can occur.

Suggested analgesics are intra-venous non-steroidal anti-inflammatories, pre-operative slow infusion of 1gm paracetemol (Perfalgan) or a continuous infusion of ketamine at a dose not to exceed .2mg/kg/hour. This latter drug produces an excellent synergistic effect with the midazolam. At no time should parenteral analgesics be used to attempt to compensate for inadequate local

At no time should parenteral analgesics be used to attempt to compensate for inadequate local anaesthesia.

Where the procedure is being done by a single operator- sedationist, the requisite level of sedation should be achieved prior to any dentistry being performed. At that point the patient should be adequately sedated and any maintenance of sedation would be via an infusion pump.

Monitoring of the levels of sedation should be done using one of the recognized sedation scales and this level noted prior to the commencement of dentistry. Detailed monitoring of the patient is mandatory using the guidelines indicated in the relevant section above.

ORAL SEDATION FOR CHILDREN

Even if a single oral drug is used, one would classify it as moderate sedation in children because of the unpredictable reaction of drugs in children who may exhibit great variation in their response to a "normal" pharmacological dosage with respiratory depression and rapid cerebral anoxia being a very real danger. Additionally, the anatomical considerations in the upper airway of children makes rapid cerebral anoxia a very real possibility due to the ease with which the airway can be obstructed. In all cases where CNS depressants are used in children, the use of a pulse oximeter to detect early changes in blood oxygenation must be mandatory.

For these reasons, intravenous sedation is not recommended for children under the age of 6 years outside of a hospital setting. In persons under the age of 12, moderate sedation should be carried out by a dedicated sedation practitioner.

Simple and Advanced Techniques

Regardless of the method of administration, <u>simple sedation</u> is regarded as the administration of a single agent. It includes the use of titrated intravenous midazolam. In simple moderate sedation, the monitoring guidelines outlined above would apply.

<u>Advanced moderate sedation</u> implies the use of a combination of drugs by any route, the use of any intravenous agent other than midazolam or the use of any inhalation agent other than nitrous oxide. Both these techniques fall under the moderate sedation banner.

The use of drugs such as Propofol and the Opioids are not suitable for an operator sedationist. This is because both of these drugs can cause respiratory depression and can potentiate the respiratory depression which midazolam could cause.

A dentist wishing to use these drugs as a dedicated sedationist should have undergone further advanced training as well as having done the ALS certificate course. Once this training has been done, there should be no problem with a trained dentist acting as a dedicated sedationist.

Summary

In terms of the dentist being the operator-sedationist, the guidelines should be very clear.

- 1. The dentist should have undergone proper training both theoretical and supervised practical hands-on training.
- 2. If the operator-sedationist is going to use intravenous sedation, the simplest approach must be adopted.
 - a. Where possible, only intravenous midazolam should be used according to the procedure outlined above.
 - b. Should any additional analgesics be required, the drug chosen should not have respiratory depressant properties hence no opioids should be used. Either IV paracetamol 1000mg should be administered slowly before the midazolam or an intravenous non-steroidal anti-inflammatory can be used intra-operatively. However, it must be very clear that local anaesthesia is the mainstay of pain control in the dental procedure.
 - c. Inhalation sedation with nitrous oxide may be used as an adjunct to intravenous sedation to relax the patient and facilitate the venepuncture. The nitrous oxide administration should be terminated once the intravenous technique is started.
 - d. Dentists offering multidrug drug sedation using drugs such as ketamine and tramadol (a weak opioid) must have undergone supervised practical hands-on training in multidrug sedation.
- 3. A dentist acting as a dedicated sedationist and wishing to use a multidrug technique, including the use of opioids, should have undergone further training.

Conclusion

Sedation, in the hands of a trained, caring practitioner, offers a very safe, affordable solution to those patients who are apprehensive, have had previous traumatic dental experiences or who are due to undergo surgical procedures that might cause discomfort and pain.

The emphasis remains on proper training, continual attendance at workshops to update one's knowledge of procedures and an awareness of the potential problems which may occur and how to handle these.

Bearing all of the above in mind, sedation does afford one the opportunity to provide a service which was summed up thus by Carl Buechner:-

"They may forget what you said but they will never forget how you made them feel".

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