Introduction into Dental Sedation Nursing
Course content

- Conscious Sedation
- Administration of Sedation
- Anatomy and Physiology
- Patient Assessment
- Dental Anxiety

- Pharmacology
- The role of Chairside Support
- Multidisciplinary Team
- Medico-Legal
- Good Clinical Practice

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Conscious Sedation:

Is defined as:

‘a technique in which the use of a drug or drugs produces a state of depression of the central nervous system enabling treatment to be carried out, but during which verbal contact with the patient is maintained throughout the period of sedation. The drugs and techniques used to provide conscious sedation for dental treatment should carry a margin of safety wide enough to render loss of consciousness unlikely.’
Conscious Sedation

- It is used for minor procedures that do not require the use of general anesthesia, and for procedures involving patients who cannot tolerate the procedure or cooperate with care providers.
- During the period of conscious sedation, an anesthesiologist or certified nurse anesthesiologist always monitors the patient.
- You must monitor the heart rate, breathing, and dissolved oxygen levels in the blood.
- Any adverse reactions can be quickly identified and addressed.
- Conscious sedation is known to be effective, but medical professionals still debate the safety and efficacy of conscious sedation because of its effects on your breathing and heart rate.
Conscious Sedation

Conscious sedation is now usually referred to by medical professionals as procedural sedation and analgesia. Its previously been referred to as:
- sleep dentistry
- twilight sleep
- happy gas
- laughing gas
- happy air

Patients must remain conscious and able to respond to requests.

Any loss of consciousness is classed as a general anaesthetic.
Conscious Sedation

Indications for conscious sedation:

- A small percentage still avoid attending the dentist due to fear
- Those who do not attend due to fear can be classified as being phobic
- Sedation helps those patients overcome their fear of treatment but will not cure them of their phobia
- Phobia is a deep-rooted long-lasting fear which rarely goes away
- It can be very hard to overcome this condition
Conscious Sedation

- Conscious sedation is a type of sedation in which the individual can respond to verbal directions.
- It helps reduce anxiety, discomfort, and pain during certain procedures. This is accomplished with medications and (sometimes) local anesthesia.
- Patients will feel little to no pain and have an altered level of consciousness.
- Like any form of anesthesia and sedation, there are some risks, but it is significantly less dangerous than general anesthesia.
- It is used for dental and medical procedures in which it is necessary for the patient to be responsive.
Conscious Sedation

The distinction between conscious sedation and general anaesthesia:

- The availability of conscious sedation has reduced the number of patients who need general anaesthesia to tolerate dental treatment.
- There are still a significant amount of patients who can face the thought of any dental treatment without being ‘put to sleep’.
- The Department of Health produced the report ‘A Conscious Decision’. Clear guidance is available on the delivery of safe and effective general anaesthesia for the dental team.
- This report advises that sedation should be used in preference of general anaesthesia.
Conscious Sedation

The distinction between conscious sedation and general anaesthesia:

- General anaesthesia is a state of controlled unconsciousness
- During a general anaesthetic, medications are used to send you to sleep. You will not be aware of the surgery; you will not feel pain or be able to move
- GA is essential for some surgical procedures where it may be safer or more comfortable for you to be unconscious
- It's usually used for long operations or those that would otherwise be very painful
- All anaesthetics interrupt the passage of signals along the nerves. Therefore, any stimulation to the body doesn’t get processed or recognised by the brain
Conscious Sedation

The distinction between conscious sedation and general anaesthesia:

- **GA - General Anaesthesia**
  - Patients under general anesthesia have a complete loss of consciousness
  - The patient will not feel, hear or remember anything
  - Local anaesthetic will not be needed

- **CS - Conscious Sedation**
  - With conscious sedation, the patient will be in a state somewhere between being very sleepy and relaxed in consciousness
  - The patient will receive local anaesthetic so will not feel pain, but will be aware of what is going on around them
Conscious Sedation

Conscious Sedation Techniques:

- Common forms of dental sedation include;
  - Intravenous
  - Inhalation
  - Oral
  - Transmucosal

- All conscious sedation techniques will relax the patient but will enable them to respond to verbal requests and instructions
Intravenous Sedation

Intravenous sedation:

- Using a canula, a drug is administered directly into the patient's blood stream which results in sedation.
- This drug is titrated according to the needs of the patient and their response.
- The patient's age is taken into account rather than weight as it is with general anaesthesia.
- The most commonly used drug is Midazolam and belongs to the family of Benzodiazepines.
Intravenous Sedation

Advantages of Intravenous sedation:

- It produces anterograde amnesia
- It has a rapid onset and is short acting
- It is water soluble so non-irritant
- Recovery is quicker than Oral or Intramuscular
- Reduces gag reflex
- Nausea is rare
Intravenous Sedation

Disadvantages of Intravenous sedation:

- Venepuncture is mandatory so not always appropriate for phobics
- Venepuncture requires a great skill
- The site of venepuncture can cause problems
- An experienced second appropriate person must be available
- It does not provide analgesia
- Paradoxical effects can occasionally occur in children and the elderly
- Patient must be reminded to remove any nail varnish to secure correct readings
Intravenous Sedation

Complications of Intravenous sedation:

- Patients may experience minor symptoms;
  - Headaches
  - Cardiovascular effects
  - Nausea
  - Drowsiness
Intravenous Sedation

- The wrong drug or an expired drug may be administered due to staff failure
- Allergic reaction
- Venepuncture complication
  - Extravasation
  - Looseness of cannula
- Over sedation
Intravenous Sedation

Midazolam:
- 1 of 35 Benzodiazepine drugs currently being used as sedative drugs
- Produced in the 1970s
- Accepted for its uses in the management of status epilepticus
- Controlled drug
- Short acting
Intravenous Sedation

- Ampoules can be obtained as:
  - 10mg in 5ml
  - 10mg in 2ml
  - 5mg in 5ml
- To help prevent the risk of over sedation the recommended ampoule is 5mg in 5ml
Intravenous Sedation

Phases of sedation with midazolam:

- Benzodiazepine drugs bind to our benzodiazepine receptors which are found within our central nervous system (CNS)
- These receptors are parallel to gamma-aminobutyric acid (GABA) receptors
- Benzodiazepine enhances the effect the neurotransmitters on the GABA receptors resulting in inhibition of brain activity
- Conscious sedation is achieved by midazolam acting on the CNS by reducing the excitability of the neurons in the mid brain, resulting in the slowing down or stopping of certain nerve signals with the brain
Intravenous Sedation

- Phase I
  - The sedation technique will be at its maximum when the midazolam is within the blood at the site of the brain

- Phase II
  - The midazolam will now be redistributed to other tissues within the body
  - As the midazolam in the blood starts to decrease so will the effects of sedation
Intravenous Sedation

- **Phase III**
  - The patient will now start to feel more normal
  - The anxiolytic effect of midazolam will still be active so the patient will not be anxious

- **Phase IV**
  - Only the alpha half-life has occurred
  - The patient will look recovered and may suggest they have recovered
Intravenous Sedation

Side effects of midazolam:

- Minor side effects experienced by a patient include;
- Cardiovascular effects
- Respiratory effects
- Coughing
Intravenous Sedation

- Headaches
- Drowsiness
- Nausea & vomiting
- Loss of inhibition
- Irritation at cannula site
Intravenous Sedation

Contraindications of midazolam:

- Kidney or liver impairment
- Cardiorespiratory disorders
- Alcohol Abuse
- Drug Abuse
- Children
Intravenous Sedation

- Pregnant patients
- Nursing mother
- Elderly
- Allergies
- Analgesics
- Erythromycin
- St johns wort
Intravenous Sedation

Signs and symptoms of an overdose of midazolam:

- We will notice the following signs;
- Chin dropping
- Lack of response to verbal requests
Intravenous Sedation

Patients may experience the following symptoms;

- Drowsiness
- Mental confusion
- Hypotension
- Cardiorespiratory depression
Intravenous Sedation

Treatment of an overdose midazolam:

- Flumazenil is the antidote for an overdose of a benzodiazepine
- Careful observation of the patient
- Airway maintenance
- If necessary cardiopulmonary resuscitation will need to be undertaken
- Careful titration of midazolam and good patient management can prevent over sedation
Intravenous Sedation

Contraindications of flumazenil:

- Benzodiazepine
- Patients taking benzodiazepine for medical conditions may be at risk when treated with flumazenil
- Patients who have had flumazenil to treat an overdose will also have their benzodiazepine reversed
Intravenous Sedation

- Coronary heart disease
- Treating patients with midazolam will reduce the strain on the patient heart
- Reversing the effects will increase the heart rate and will cause unnecessary strain
- Epileptic patients
Inhalation Sedation

Inhalation sedation:
- Also known as relative analgesia and RA
- Least invasive sedation technique as no cannula is needed
- Patients are sedated through their respiratory system
- Widely used to sedate children
- Patients will feel relaxed and calm during treatment
- Patient cooperation will be greatly improved
- Patient centred approach and good communication is needed to fully support the patient
Inhalation Sedation

Oxygen:
- Essential for life
- Clear, colourless and odourless gas
- Supplied in cylinders under pressure at 2000psi, black with a white collar
- Oxygen is not flammable but will support combustion
Inhalation Sedation

Nitrous Oxide:

- Was introduced as a recreational drug in 1799 to the upper class
- Users would giggle, stumble and have slurred speech
- 36 years later it was used for medical purposes
- Inhalation sedation was very unpredictable due to lack of knowledge
- Nitrous oxide is compressed at 800psi in a blue cylinder
- Nitrous oxide does not cause irritation to the respiratory system but will depress the CNS
- If used at 80% will lead to unconsciousness
Inhalation Sedation

- 30% oxygen and 70% nitrous oxide
- Patients will feel the effect within 3-5 minutes
- A relative analgesia machine is required to administer an appropriate amount of nitrous oxide together with oxygen to produce a sedated state
- Machines can be mobile or piped systems
- Inhalations sedation should be administered in a calming and quiet environment
- Clinicians should be sympathetic
- Staff should be well trained
Inhalation Sedation

Acclimatisation:

- Acclimatisation will prepare the patient for their treatment
- Patients will become familiar with equipment before treatment
- Patient can try on various masks in order to establish their size
- Patients will experience the nasal sensation
- Patients can experience a short dose of oxygen at this appointment with their mask
Inhalation Sedation

Patient Management during Inhalation sedation:

- Quiet environment
- Good patient management
- Team must have confident and sympathetic manner and approach
- The team should give praise and encouragement
- Sedation must be explained fully to the patient and they must be able to ask any questions
- Patient must feel relaxed for sedation to be effective
- The clinician should evaluate the appointment so it can be improved at the next visit
Inhalation Sedation

Stages and planes of anaesthesia during Inhalation sedation:

- There are 4 stages to the planes of anaesthesia
- Stage 1:
  - Induction stage
  - Patients are conscious
- Stage 2:
  - Patients lose consciousness
Inhalation Sedation

- Stage 3:
  - Surgical stage
- Stage 4:
  - Overdose stage
Inhalation Sedation

Administering inhalation sedation step by step:

- Machine and equipment are checked
- Gasses are switched on
- Oxygen set at 100%
- Medical history, pre-operative instructions and consent is checked and obtained
- Procedure and inhalation sedation is again explained
- Nasal mask is chosen, checked and placed
- Clinician will begin to explain the sensations the patient can expect to feel
Inhalation Sedation

- Oxygen flow rate is 8L/min for adults and 6L/min for children
- Reservoir bag must be observed to ensure it fills
- Scavenging system is now switched on
- Patient begins to relax
- Oxygen mixture is now turned to 85%, introducing 15% nitrous oxide
- If no response you can administer 5% nitrous oxide and if required a further 5% until 30% nitrous oxide is reached
- You should allow time for inhalation sedation to take effect and remember that every patient is an individual and will differ
Inhalation Sedation

Advantages of Inhalation sedation:

- Inhalation sedation is very safe
- Patients airway is not compromised
- Patients can undertake any of their normal responsibilities and activities
- Patient receives a minimum of 30% oxygen - 10% more than the atmospheric air
- Patients will feel effects within 20 seconds and full effect between 3-5 minutes
- Ideal for short and long appointments
- Nitrous oxide and oxygen can be altered to suit the patients needs
- Quick recovery
Inhalation Sedation

Disadvantages of Inhalation sedation:

- Team must provide psychological support
- An appointment for inhalation sedation must be cancelled if the patient has a cold or breathing problems
- Nitrous oxide is potent, and some patients may not achieve a suitable level of sedation
- Cost for providing inhalation sedation is high
- Storage space can cause problems for practices due to size and shape of the machines and equipment’s
- Long term exposure of nitrous oxide can cause harm to the team
Oral Sedation

Transmucosal (Off-licence) sedation:
- Off-licence is the use of a drug in an alternative way to which it was researched, tried and tested
- This is an advanced technique of sedation
- The clinician has no control over the absorption of the drug within the body
- If an incident occurred using this technique the clinician would have to establish why they used this form of sedation
- This technique is very useful in the management of special need patients and needle phobics
oral Sedation

Oral Sedation:

- Lightest form of sedation which can be offered to patients
- Oral sedation can be prescribed by the clinician or the patient's GP
- Used to treat anxiety and fear. Some patients may have little memory of treatment
- Oral sedation can be taken in liquid form or by tablet
- Oral sedation can be administered by the dental team before the appointment or at home by the patient
- Common drugs used for oral sedation belong to Benzodiazepines
oral Sedation

Buccal midazolam:
- Licensed for the management of status epilepticus
- Sugar free liquid called Epistatus
- Available as 10mg per 1ml
- Placed against the sides of the gingiva and cheek
- Its absorbed directly into the bloodstream
- If it is swallowed it may not be as effective
oral Sedation

Nasal Administration of Transmucosal midazolam:

- A mucosal atomising device is used to place the midazolam when intranasal technique is used
- When squirted the midazolam provides a fine aerosol which allows the drug to be directed up the nose for absorption
- The sedative effect is thought to be slightly faster than that through the oral route
General anaesthetics

General Anaesthetic Techniques:

- Before you have your surgery, usually you’ll be taken to a room where your anaesthetist will give you the general anaesthetic
- It will either be given as a:
  - liquid that’s injected into your veins through a cannula
  - gas that you breathe in through a mask
General anaesthetics

- The anaesthetic will take effect very quickly
- You’ll start feeling light-headed, before becoming unconscious within seconds.
- Your anaesthetist will stay with you throughout the procedure, making sure you continue to receive the anaesthetic and that you stay in a controlled state of unconsciousness
- They’ll also give you pain relief medicine into your veins, so that you’re comfortable when you wake up
General anaesthetics

Advantages of General Anaesthesia:

► The elimination of the sensory capacity to feel pain during the surgical procedure
► This will also benefit the surgeon, who would otherwise have a hard time dealing with the body’s physiological response to stress
► General anesthesia is easily and rapidly administered and is reversible
► The patient will have complete amnesia
General anaesthetics

Risks of General Anaesthesia:

- General anaesthesia is overall very safe
- Specific conditions increase the risk to the patient such as:
  - sleep apnea
  - seizures
  - heart, kidney or lung conditions
  - alcoholism and smoking
General anaesthetics

- Death, very rare and occurring in roughly 1 in every 100,000
- Estimated that 1 or 2 in every 1000 may be partially awake during a GA and will experience unintended intraoperative awareness. For some patients this can cause psychological problems or post traumatic stress disorder
General anaesthetics

Disadvantages of General Anaesthesia:

- May cause side effects, such as:
  - nausea
  - vomiting
  - headache
  - dry mouth
  - muscle aches
  - a delay in the return of normal memory functioning
Administration of Sedation

Patient preparation:

► Before taking the patient into surgery you should confirm the following;
► Consents have been signed
► Any payments needed have been made
► Follow up appointments have been scheduled
► Ensure the patient has fully understood the treatment and post-operative instructions
► Be confident that the patient has followed the pre-operative instructions
Administration of Sedation

- It is important to also record the escorts details
  - Name
  - Relationship to patient
    - Must be an appropriate adult
  - Contact number
- You should be confident that they fully understand the post-operative instructions and their duty of care towards the patient
Administration of Sedation

You will take the patients:

- Pulse rate
- Respiratory rate
- Blood pressure
- Oxygen percentage saturation levels
- Weight - if required
- The results must be recorded
- You will then find this information useful when monitoring the patient during treatment
Administration of Sedation

Clinical monitoring:

- Monitoring of patient’s viral signs is imperative to ensure that the patient is comfortable.
- It will assist in the early detection of an emergency and improve patients’ chances of a speedy recovery.
- The Department of Health states that stringent clinical monitoring must take place where all forms of sedation are administered.
- For intravenous sedation, a pulse oximeter and blood pressure monitor must be used.
Administration of Sedation

Heart rate:
- Manual technique - strong/weak pulse for future reference
- Radial pulse
- Use middle and index finger to palpate the area
- Count the number of beats over 30 seconds and double the figure
- Normal pulse range for an adult is 60 and 80 beats per minute with a resting pulse of 72
Administration of Sedation

Respiratory rate -

- Drug used for sedation can cause respiratory depression
- Discreetly observe the rise and fall of the chest for 30 seconds and double the figure
- Observe number of breaths per minute
- Observe depth of respirations
- Normal range for an adult is 12-18 breaths per minute
Administration of Sedation

Using the pulse oximeter:

- The second appropriate person will;
- Ensure the pulse oximeter is working correctly
- Place it in a position which can be seen
- Position the patient comfortably
- Place the probe onto a vascular bed explaining the process to the patient
- Record the outcome
Anatomy and Physiology

Tooth Structure:

- Enamel
- Dentine
- Cementum
- Pulp
Anatomy and Physiology

Periodontium:
- Periodontal Ligament
- Alveolar Bone
- Gingivae
- Cementum
Anatomy and Physiology

The Jaw:

- The jaw bones are part of the facial skeleton
  - Maxilla - pair of bones form the upper jaw
  - Mandible - single horse-shoe shaped bone forms the lower jaw
Anatomy and Physiology

Temporomandibular Joint:
- Two joints that connect the jawbone to the skull
- Frequently referred to as the TMJ
- Function - move the Jaw
- During normal movement, the jaw allows 3 basic types of mandibular movements to occur
  - Gliding movement
  - Rotational movement
  - Lateral movement
Anatomy and Physiology

Muscles of Mastication:

- Mastication is the act of chewing
- There are 4 muscles of mastication
  - Temporalis Muscle
  - Masseter Muscle
  - Lateral Pterygoid
  - Medial Pterygoid
Anatomy and Physiology

Salivary Glands:

- Three pairs of Salivary Glands produce saliva
  - Saliva passes through tubes called ducts and into the mouth
  - Exocrine Glands do not secrete directly into the blood stream
  - Endocrine Glands secrete directly into the blood stream
Anatomy and Physiology

Venepuncture:

- For sedation to be provided the clinician must place a cannula safely and securely into the patient’s vein.
- This will also provide continuous venous access for the administration of emergency drugs.
- Selected site is chosen on the clinician’s preferred site and identifying a suitable vein.
- Common sites for venepuncture are the,
  - Dorsum of the hand
  - Antecubital fossa
Anatomy and Physiology

The dorsum of the hand:

- Back of the hand
- Relatively safe place for a cannula as a patient is unable to bend their hand back
- Veins are immediately under the skin meaning there are no deeper anatomical structures to cause concern
- The veins are known as the dorsal venous network
- Drain from the cephalic and basilic veins
- The advantage of this site is easy access for the clinician
- Disadvantages of this site is that any bruising which may occur will be obvious and can be painful
Anatomy and Physiology

Antecubital fossa:

- Inner aspect of the elbow
- Basilic vein (inner side of arm) and the cephalic vein (outer side of arm) supply this area and are both used for venepuncture
- The brachial artery lies in this area and MUST be avoided along with other anatomical structures
- If the clinician uses a butterfly needle, the patient's arm must be stabilised using an arm board to prevent movement, avoiding the needle being forced out into other structures
- Stabilisation is not needed if using a Venflon as the cannula is made of pliable plastic
Anatomy and Physiology

- Advantages of this site are that the veins are larger and any bruising which may occur can be hidden.
- Disadvantages of this site include accidental injection into the brachial artery from poor stabilisation of the arm.
Anatomy and Physiology

Respiratory system:

- The function of the respiratory system is to supply the blood with oxygen to transport to all parts of the body.
- This takes place through breathing.
- Oxygen is necessary for life.
- Oxygen can enter the body when we breathe in and carbon dioxide can be expelled when we breathe out.
Anatomy and Physiology

Inhaled atmospheric air consists of:

- 79% nitrogen
- 20% oxygen
- 1% traces of gas - 0.04% is carbon dioxide
- The body only uses 4% of inhaled oxygen as it is exchanged for 4% carbon dioxide. We exhale 16% oxygen and 4.04% carbon dioxide
Patient Assessment

- Before any treatment with conscious sedation takes place, all patients must attend for an initial assessment.
- The patients suitably for conscious sedation will be assessed.
- Correct patient management is essential to providing safe sedation.
- During this appointment the clinician will take into account their knowledge, skills and experience and that of the dental team.
- The patients expressed wish, medical, dental and social history will also be considered.
Patient Assessment

- The clinician or dental nurse will record;
  - Medical history
  - Dental history
  - Social history
- The patient will have an opportunity to express their wishes and opinions
- Any radiograph's needed will be taken and reviewed
- The patient's anxiety levels may be assessed
Patient Assessment

- After establishing all information needed the clinician can put together a treatment plan including all options available to the patient.
- Pre and port operative instructions relating to the form of conscious sedation being provided is discussed and provided in writing.
- Written consent may be obtained at this appointment.
Patient Assessment

The clinician should question patients about their;

- Smoking habits
- Alcohol consumption
- Recreational drugs
- Domestic circumstances
Patient Assessment

- To assess the patient's suitability for conscious sedation a medical history is vital.
- A physical examination in conjunction with a medical history will enable the clinician to fully assess the patient.
- Only patients in ASA classes I and II should be dealt with in the dental setting.
- Patients in ASA class III should be referred to an appropriate secondary care establishment.
- Patients requiring intravenous sedation must have an assessment of vital signs to:
  - Determine patient's fitness for sedation
  - Provides baselines for comparison
  - Screening for possible undiagnosed disease
Patient Assessment

Oxygen saturation -

- Pulse oximeter monitors the arterial oxygen saturation
- Average oxygen saturation values in a health human are 97% to 99%
- 95% may be clinically acceptable for sedation in a patient with a normal haemoglobin level
Patient Assessment

- When assessing the suitability of patients for sedation, you should remember the range of treatment options;
  - Local analgesia
  - Sedation and local analgesia
  - General anesthesia
  - Individual patient
Patient Assessment

- Medical fitness
- Social circumstances
- Degree of anxiety
- Expected level of co-operation
- Duration of treatment
Patient Assessment

Potential problems administering conscious sedation:

- The clinician must have a clear understanding of specific pathological and physiological processes and their relevance to sedation including;
  - Cardiovascular disease
  - Respiratory disease
  - Hepatic and renal disorders
Patient Assessment

- Neurological disorders
- Endocrine disease
- Haematological disorders
- Drug therapy
- Pregnancy
Patient Assessment

Peripheral veins:

- Veins are blood vessels that carry blood toward the heart
- Most veins carry deoxygenated blood from the tissues back to the heart
- Pulmonary and umbilical veins carry oxygenated blood to the heart
- Veins are less muscular than arteries and are often closer to the skin
Patient Assessment

- There are valves in most veins to prevent backflow
- (Arteries carry blood away from the heart)
- The site of venepuncture can cause problems
- Extravasation - cannula exists the vein
- Collapse of the vein
- The right anatomical site should be chosen with the correct size cannula
Patient Assessment

Effective communication is needed for;

- Informed consent
- Treatment discussions
- Expression of wishes
- Improve patient and clinician rapport
- Patient education
Dental Anxiety

- It's reported that dental anxiety does not only affect the patient but also the general dental practitioner.
- The anxious patient can have a significant effect on the GDP and can be a major source of stress during the planning and the procedure.
- Conscious sedation will relax the patient and, in many cases, leave the patient feeling sleepy yet responsive to directions.
- Most patients will not remember events pre procedure, during the procedure or post procedure.
Dental Anxiety

History of pain and anxiety:

- 2009 United Kingdom Adult Dental Health Survey reported
  - 36% of adults had moderate dental anxiety
  - 12% of adults reported extreme dental anxiety
- Anxiety can also have a significant effect on the clinician
- Major source of stress
- Anxiety is multifactorial and will evolve with time
Dental Anxiety

- Attitudes of family and friends
- Media influence
- For the dental team to recognise and manage anxious patients it is vital that they understand the individual components of dental anxiety
- Undertake regular training in identifying anxiety
- Understand how to manage anxiety and medical emergencies
Dental Anxiety

Fear:

- Considered an essential emotion
- Fight or flight response in times of danger
- Relates to the anticipation of danger
- Fears are found throughout childhood, adolescence and adulthood
- Generally subsides with maturity and the development of an ability to reason
Dental Anxiety

Phobia:
- A form of fear
- Irrational to that of the situation
- Beyond voluntary control
- Cannot be reasoned
- Persists over a period time
- Not age specific
Dental Anxiety

Anxiety:

- General non-specific feeling
- Unpleasant emotional state
- Signaling the body to prepare for something unpleasant to happen
- Anxiety is accompanied with physiological and psychological responses
Dental Anxiety

Traumatic experiences -

- Negative dental experiences are often a major factor in the development of dental anxiety, including;
  - Painful events
  - Frightening events
  - Embarrassing experiences
Dental Anxiety

- Traumatic medical experiences can have a significant relationship with negative dental behaviour and may be important factors in the development of dental anxiety.
- Experiences can occur in childhood, adolescence and adulthood.
- For dental anxiety to develop it is the nature of the event that appears to be more important rather than the age.
Dental Anxiety

Measuring dental anxiety:

- A wide range of methodological approaches and techniques are used to measure dental anxiety
- Such measures include;
  - Children's drawings
  - Observations of behaviour
  - Visual analogue scales
- Most common method is by using questionnaires and rating scales
- You should ensure the measures used are reliable, valid and applicable to those they are aimed at
Pharmacology

Sedation Agents:

- All sedation agent should have;
  - Simple administration
  - Predictable action and duration
  - Rapid onset
  - Rapid recovery
  - Rapid metabolism
  - Low incidence of side effects
Pharmacology

Sedation agents are administered through the following routes;

- Inhalation
- Intravenous
- Oral
- Intranasal

- The route of administration affects the timing of drug action
- All drugs arrive at the brain via the bloodstream
Pharmacology

Inhalation:
- Agents are readily absorbed by the lungs
- The agent reaches the brain by;
  - Crossing the alveolar membrane into the pulmonary veins
  - Returning the with the blood to the left side of the heart
  - Passing into the systemic arterial circulation
- Provides rapid onset of sedation
- Rapid elimination and recovery
Pharmacology

Basic pharmacology:

- Each breath of sedation raises the partial pressure of the gas in the alveoli
- Alveolar partial pressure rises
- The gas is forced across the alveolar membrane into the bloodstream
- Carried to the site of action in the brain
- Gas passes down a pressure gradient from areas of high partial pressure to areas of low partial pressure
Pharmacology

Inhalation sedation agents:
- Nitrous oxide
- Sevoflurane
- Oxygen
Pharmacology

- Nitrous oxide is a mild sedation agent producing both a depressant and euphoriant effect on the CNS
- It is a potent analgesic
- Associated risks with nitrous oxide relate to the staff providing the sedation due to chronic exposure
- Nitrous oxide causes the oxidation of vitamin B12 and affects the functioning of the enzyme, methionine synthetase required for DNA synthesis
- Impairs cellular production
Pharmacology

Oxygen:

- Not a sedation agent
- Inhalation sedation agents are always delivered in an oxygen rich mixture containing a minimum of 30% oxygen
- Oxygen is stored as gas in black cylinders with white shoulders
- Stored with an initial pressure of 2,000 pounds per square inch
- This oxygen should be kept separate from the supply needed for emergencies
- No naked flames should be allowed in an area where oxygen is being used
Pharmacology

- Intravenous sedation agents are injected directly into the bloodstream.
- The agent is carried in the plasma to the tissues.
- The plasma level of the sedative attained during injection causes the agent to diffuse down its concentration gradient and across the lipid membranes to the site of action in the brain.
- The factors that influence the plasma level of the drug are instrumental in determining the onset of action and recovery.
Pharmacology

Basic pharmacology:

- Upon intravenous injection the plasma level of a sedation drug will rise rapidly.
- The agent passes through the venous system to the right side of the heart and then via the pulmonary circulation to the left side of the heart.
- Once in the arterial system it will reach the brain.
- The effect of sedation will normally commence in approximately 35 seconds.
- The final plasma concentration of the sedation agent will depend on the total dose of drug, the rate of the injection, the cardiac output and the circulating blood volume.
Pharmacology

Intravenous sedation agents:

- Benzodiazepines
- Diazepam
- Midazolam
- Flumazenil
The role of Chairside Support

- A Registered Dental Nurse (RDN) is a member of the dental team and works competently in a variety of clinical and non-clinical settings. Supporting the clinician, provides more efficient dental treatment for patients.
The role of Chairside Support

The dental nurse's role during all visits:

- Meet and greet
- Ensure medical history has been taken
- Ensures dental chart is up to date and correct
- Develop radiographs
The role of Chairside Support

- Assist with study models
- Provide relevant literature
- Provide patient care and pre & post instructions
- Communicate effectively with other members of the interdisciplinary team
The role of Chairside Support

Dental nurse’s role during sedation:

- Second appropriate person in the surgery
- Must have received proper training
- Acquired additional knowledge and skills attained from a recognised course in conscious sedation
- Advanced training is important to help them understand their role within the team
- Best practice for a dental nurse is a course which leads to the National Examining Board for Dental Nurses qualification in dental sedation nursing
The role of Chairside Support

Before treatment, the second appropriate person will;

► Check if a signed consent form is present
► Possibly take payment for the treatment in advance (during recovery the patient should not make any financial transactions)
► Book follow up appointments
► Ensure the patient has followed all pre-operative instructions relevant to the sedation techniques chosen
► Answer any questions presented to you honestly
► Discuss the treatment and post operative instructions with the patient and escort
► Record the escorts details
The role of Chairside Support

Once satisfied the second appropriate person will:

- Take the patient’s pulse rate
- Take the patient’s respiratory rate
- Take the patient’s blood pressure
- Take the patient’s oxygen percentage saturation levels
- Take the patient’s weight if required

The results must be recorded

You will then find this information useful when monitoring the patient during treatment
The role of Chairside Support

Before the patient arrives, the second appropriate person will;

- Prepare the surgery
- Disinfection
- Primary and secondary zones
- Preparation of medicines and post-operative care
- Prepare the sedation equipment
The role of Chairside Support

- Sedation technique would have been decided during the planning stages
- Visual and monitoring equipment checks
- Medical emergency equipment must be present and functioning appropriately
- Preparation of clinical records, radiographs and consent forms
The role of Chairside Support

- Medical history will be checked - and again confirmed with the patient on arrival
- All clinical notes should be concise and contemporaneous
  - The dental team will rely on these for reference purposes
  - Clinical notes will provide a history of the patient’s treatment
  - If conscious sedation has been used before this will allow for reflection and possible modifications
- You should have available, the reversal drug Flumazenil

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The role of Chairside Support

Preparation of the cannulation

- Tourniquet
- A cannula
- 22-gauge Venflon cannula
- A Y-can cannula
- 23-gauge butterfly needle
The role of Chairside Support

- A disinfectant surface medi-wipe
- Two 23-gauge drawing-up needles
- A 5ml sodium chloride flush
- A 2ml syringe with sodium chloride label placed
- A 5 ml syringe with drug label (midazolam) placed
The role of Chairside Support

During treatment for both techniques:

- The second appropriate person will;
  - Act as a chaperone to both the patient and the clinician
  - Aid the clinician in the clinical and electrical monitoring of the patient’s vital signs
  - Alert the clinician to any changes and respond accordingly
  - Assist the clinician throughout treatment
  - Respond and assist in the event of an emergency
The role of Chairside Support

Assist in the recovery of the patient:

- Assist when assessing the patient for discharge
- Assist with post-operative instructions
- Practice excellent
- Cross infection
The role of Chairside Support

- Ensure health and safety
- Maintain the patient’s
- Dignity
- Diversity
- Confidentiality
The role of Chairside Support

At the end of treatment for both techniques - Recovery stage

- Once instructed, you will invite the escort into the surgery
- Reassure the patient, answer any questions they may have
- Continue to monitor the patient
- Possibly take a post-operative blood pressure
- If requested, give verbal post-operative instructions
  - Must be in written form
The role of Chairside Support

- Assist in the assessment of patient discharge
- A little walk to see how steady the patient is on their feet
- Emergency drugs must be reordered if these have been used
- All clinical notes be correctly and adequately recorded
- Correct documentation of all drugs used
- Expiration dates and batch numbers must be recorded
- Surgery must be disinfected
Multidisciplinary Team

Interdisciplinary Team:
Those involved in the planning and treatment of conscious sedation include;
- The Dental Team
- Clinician
- Dental nurse
- Treatment Coordinator
- Receptionist
- The Patient
Multidisciplinary Team

- Team-work divides the task & multiplies the success
- Team-work is vital in the successful treatment of patient care
- Working together as a team will promote and encourage knowledge, skills and development
- Good practice for a team to work together regularly and establish a routine
- Constructive feedback should be provided to all members of the dental team
- This will allow for development and improvements
- Training needs will be identified
**Medico-Legal**

- To provide safe and effective dental treatment and avoid patient complaints, you must comply with the law and ethics within dentistry.
- The GDC regulates dentistry to protect patients.
Medico-Legal

- Guidelines in place for clinicians practicing dental sedation techniques:
  - The clinician will justify each provision of sedation
  - The clinician will ensure the sedation technique is appropriate for the patient's anxiety levels, medical, dental and social history and the treatment to be undertaken
  - All members of the dental team involved with treatment must undergo suitable practical and theoretical training
  - The surgery must be suitable for the provision of sedation
  - All equipment must be specific to the sedation technique and stored as per manufacture's guidelines. All electrical equipment must be calibrated
Medico-Legal

- To prepare the patient before sedation and treatment, a written treatment plan must be provided to the patient. They must be encouraged to ask any questions and the clinician should confidently believe the patient has fully understood the treatment.

- Written and verbal pre and post-operative instructions must be provided to the patient and their escort.

- Following treatment, patients must be supervised by an appropriate member of the team who will monitor the patient’s recovery.

- Patients must be allowed time to recover appropriately. This will not be in the waiting area. During this period, the clinician must be available.
Medico-Legal

- Clinical monitoring is mandatory during intravenous sedation. The team providing the sedation must be capable of monitoring:
  - Patient’s colour
  - Pulse
  - Respiration
  - Blood pressure
  - Level of consciousness
  - Anxiety
  - Airway is maintained
Medico-Legal

Follow good practice for record keeping:

- Medical, dental and social history
- Previous conscious sedation / general anaesthesia
- Assessment appointment
- Mode of sedation and its justification of use
Medico-Legal

- Written consent
  - Verbal / implied consent should be recorded, including all discussions
- Treatment
- Monitoring details
- Drugs used, batch number, expiry date, cannula sites, drug titrations, times administered
- Recovery information
- Any complications
Medico-Legal

Dental nurses:

- Dental nurses are registered dental professionals who provide clinical and other support to registrants and patients.
- As a dental nurse, you can undertake the following if you are trained, competent and indemnified:
  - Prepare and maintain the clinical environment, including the equipment.
  - Carry out infection prevention and control procedures to prevent physical, chemical and microbiological contamination in the surgery or laboratory.
  - Record dental charting and oral tissue assessment carried out by other registrants.
  - Provide chairside support to the operator during treatment.
Medico-Legal

- Keep full, accurate and contemporaneous patient records
- Prepare equipment, materials and patients for dental radiography
- Process dental radiographs
- Monitor, support and reassure patients
- Give appropriate patient advice
- Support the patient and their colleagues if there is a medical emergency
- Make appropriate referrals to other health professionals
Medico-Legal

- Working outside your scope of practice could put your registration at risk
- Regardless of what your clinician asks you to do, if you are not trained and confident, you must say no.
- Failure to do so would leave you responsible at a GDC hearing - not your clinician
Medico-Legal

Consent:

- When a person gives another person their permission to undertake something such as dental treatment
- The person giving consent must fully understand what is going to happen
- Consent can be withdrawn at any time
- Many clinicians routinely request written consent where complications may occur in dental procedures
- Only the clinician can gain the consent
- Consent forms must contain the patient’s personal details and the practice details
Medico-Legal

Gaining consent during conscious sedation:

- Patients must be able to understand and retain the information being provided
- Patients must be able to consider the information and reach a decision themselves
- They must give their consent without feeling pressurised by anyone - it must be given voluntary
- Adequate information must be given to the patient for them to be able to make an informed decision
Medico-Legal

Who can give consent:

- A competent adult

- Between the ages of 16-18 if the clinician establishes, they are competent - if not consent must be sought from the parent. The person with parental responsibility can override a decision of the 16-18-year-old if it is in their best interest

- A legal guardian appointed by the court when the patient is deemed not competent

- Adults deemed not competent in other aspects of life may consent to simple treatment - the clinician should undertake treatments which are in their best interest

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Medico-Legal

Protecting and educating the patient:

- When the treatment plan is discussed in detail the patient will be aware of what is involved throughout the process
- This will enable them to make an informed decision
- All information received must be treated as confidential unless permission is granted to share it
Medico-Legal

Improve patient and clinician communication:
- During treatment discussions the clinician will build a rapport with the patient
- Patient and clinician will build trust over time
- The patient will start to feel more comfortable with the clinician
- Anxiety levels may be reduced
Medico-Legal

- Record keeping is an essential clinical tool for the dental profession
- Record keeping enables continuity of care for the patient
- Record keeping provides evidence of your standard of care
- Clinical records that we hold in dentistry need to be;
  - Clear
  - Accurate
  - Honest
  - Timely
Good Clinical Practice

General Dental Council:
The Role of The GDC is to:
- Protect patients
- Promote confidence in dental professionals
- Be at the forefront of healthcare regulation
Good Clinical Practice

- Register qualified professionals
- Set out standards of dental practice and conduct
- Ensure professionals keep up to date
- Help patients with complaints about a dental professional
- Work to strengthen patient protection
Good Clinical Practice

Standards for the Dental Team:

► When you register with the General Dental Council you will be sent ‘STANDARDS FOR THE DENTAL TEAM’
► This guidance booklet came into effect on Monday 30th September 2013
► There are nine principles around which the guidance is built
► These should be at the centre of everything you do as a healthcare professional
Good Clinical Practice

National Examining Board of Dental Nurses:

- NEBDN works closely with the General Dental Council (GDC), whose role is to examine existing and new courses that lead to registration for both dentists and dental care professionals.

- The GDC has produced Standards for Education which include the requirements that apply to all UK programmes leading to registration with the GDC.

- The General Dental Council recognises NEBDN’s National Diploma in Dental Nursing as meeting their Standards for Education, meaning that students who achieve it can apply to be registered and work as a Dental Nurse.

- You should familiarise yourself with the GDC Standards for Education.
Good Clinical Practice

Conscious Sedation:

- All members of the dental team must have undergone suitable practical and theoretical training
- Every staff member assisting with sedation who are still training must be supervised
- All training must include;
  - The drugs used
  - The equipment
Good Clinical Practice

Immediate Life Support:

- You should be adequately trained and undertake regular ILS training
- Guidelines in place by the UK and European Resuscitation Council 2015 you should be able to;
  - Understand the four main life support signs, temperature, pulse, blood pressure and respiration
  - Have an understanding on interrupting vital signs in the deteriorating and trauma patients
  - Understand the chain of survival
  - Be safely able to use the ILS algorithm to treat a patient
Good Clinical Practice

Good Practice provides:

- Practice development and assessment against requirements
- A framework for developing a patient centred service
- Tools for growing a confident, professional and inspired team
- Opportunities for business development
- Assurances to increase chances of successful tendering
Well done, you have now completed this course
Please complete the assessment
You must achieve 100% to pass