

#FACT SHEET



DENTISTRY UNDER SEDATION

FOR ANXIOUS / PHOBIC PATIENTS & DIFFICULT PROCEDURES

IV (Intravenous) Sedation

Intravenous Conscious Sedation (aka “IV sedation”) is when a drug, usually of the anti-anxiety variety, is administered into the blood system during dental treatment.

What does it feel like? Will I be asleep?

A lot of dental offices and practices use terms such as “sleep dentistry” or “twilight sleep” when talking about IV sedation. This is confusing because it suggests that IV sedation involves being put to sleep. These terms are more descriptive of deep sedation. Deep sedation isn’t commonly used (in the U.K. at least) and is classified as general anaesthesia (even though sedation occurs on a continuum).

In reality, you remain conscious during conscious IV sedation. You will also be able to understand and respond to requests from your dentist. However, you may not remember much (or anything at all) about what went on because of two things:

IV sedation induces a state of deep relaxation and a feeling of not being bothered by what’s going on. The drugs used for IV sedation produce either partial or full memory loss (amnesia) for the period of time when the drug first kicks in until it wears off. As a result, time will appear to pass very quickly and you will not recall much of what happened. Many people remember nothing at all. So it may, indeed, appear as if you were “asleep” during the procedure.

Is it still necessary to be numbed with local anaesthetic? Will my dentist numb my gums before or after I’m sedated?

The drugs which are usually used for IV sedation are not painkillers (although occasionally added, see below for more info), but anti-anxiety drugs. While they relax you and make you forget what happens, you will still need to be numbed. If you have a fear of injections, you will not be numbed until the IV sedation has fully kicked in. If you have a phobia of needles, you will very probably be relaxed enough not to care by this stage. Your dentist will then wait until the local anaesthetic has taken effect (i.e. until you’re numb) before starting on any procedure.

How is IV sedation given?

“Intravenous” means that the drug is put into a vein. An extremely thin needle is put into a vein close to the surface of the skin in either the arm or the back of your hand. This needle is wrapped up with a soft plastic tube. It makes the entry into the vein, then is slid out leaving the soft plastic tube in place. The drugs are put in through that tube (which is correctly referred to as an “indwelling catheter”, but more commonly known by the tradename of Venflon). The tube stays in place throughout the procedure.

Throughout the procedure, your pulse and oxygen levels are measured using a “pulse oximeter”. This gadget clips onto a finger or an earlobe and measures pulse and oxygen saturation. It gives a useful early warning sign if you’re getting too low on oxygen, although if your dentist and the nurses are paying attention they should see it way before the machine does :grin: . Blood pressure before and after the procedure should be checked with a blood pressure measuring machine (a tongue-twister called “sphygmomanometer”, which for obvious reasons is referred to as “sphyg”).

But I’m terrified of all needles, not just dental injections!

You can get Ametop numbing cream to make the site where the needle goes profoundly numb. Ask your dentist or oral surgeon where the venflon will be going beforehand, and try it out! If you cannot get hold of Ametop, try EMLA cream. You may also be offered laughing gas to enable you to accept the IV sedation.

What drugs are used? Are there different types of IV sedation?

Good question!! The most commonly used drugs for IV sedation are benzodiazepines, or “benzos” for short. These are anti-anxiety sedative drugs. In the UK, a benzodiazepine is almost always the only drug used for IV sedation (although I have heard of fentanyl being used as well). However, the situation is different in the U.S. First of all, regardless of location,

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1) Anti-anxiety sedatives (benzodiazepines): Midazolam and Diazepam

Mostly the drug used for IV sedation is a short acting benzodiazepine, or “benzo” for short. This is an anti-anxiety sedative. IV administered benzos have 3 main effects: they reduce anxiety/relax you, they make you sleepy, and they produce partial or total amnesia (i.e. make you forget what happened during some or, less frequently, all of the procedure). Total amnesia is more common with midazolam compared to diazepam.

By far the most commonly used drug for IV sedation is Midazolam, but occasionally Diazepam can be used. Midazolam is the first choice because of its relatively short duration of action (meaning that it’ll be out of your system faster).

Valium is (marginally) cheaper but longer acting and a bit “harder” on the veins, so you may feel a burning sensation on your arm/hand when the drug first enters. Local anaesthetic solution can be mixed in with Diazepam to make things more comfortable. The latest IV Diazepam is an emulsion which is claimed to be easier on the veins.

The drug is put into the vein at the rate of 1mg per minute for Diazepam or 1 mg every 2 minutes (followed by an extra 2 minutes to evaluate the effect) for Midazolam (because Midazolam is stronger in terms of the dose needed to achieve sedation). Because there are differences between individuals in how much of the drug you need to be sedated, your response to the drug is monitored. Once the desired level of sedation is achieved, the drug is stopped.

The Venflon is left in place during the procedure so that the sedation can either be topped up or so that the reversal agent for benzos (Flumazenil) can be put in in the unlikely event of an emergency.

Is it safe? Are there any contraindications?

IV sedation is extremely safe when carried out under the supervision of a specially-trained dentist. Purely statistically speaking, it’s even safer than local anaesthetic on its own! However, contraindications include:

Pregnancy
Known allergy to benzodiazepines
Alcohol intoxication
CNS depression

Some instances of glaucoma
Cautions (relative contraindications) include psychosis, impaired lung or kidney or liver function, advanced age, and sleep apnea. Many people who have sleep apnea haven’t been officially diagnosed – if you are overweight and you snore, do mention this.

Heart disease is generally not a contraindication.

If you have been taking benzodiazepines for many years, your tolerance may be very high – so let your dentist know that you’ve been taking them!

The Dental Sedation Teachers Group uses the following classification for making the decision if and where conscious sedation should be provided:

I – Normal, healthy patient
II – A Patient with mild systemic disease, e.g. well controlled diabetes or epilepsy, mild asthma
III – A patient with severe systemic disease limiting activity but not incapacitating, e. g. epilepsy with frequent fitting, uncontrolled high blood pressure, recent heart attack

IV – A patient (usually hospitalised or bedridden) with incapacitating disease that is a constant threat to life

V – A patient who is expected to die within 24 hours with or without treatment

source: American Society of Anaesthesiology
Classification of Physical Status (ASA)

If you are in category I or II, then you can normally be treated in a general practice.

If you are in category III, it is best to be treated in an environment where more experienced support is available (a hospital-based clinic or a sedation clinic where medical support is available).

What are the main advantages of IV sedation?

IV sedation tends to be the method of choice if you don't want to be aware of the procedure - you "don't want to know". The alternative in the U.S. is oral sedation using Halcion, but oral sedation is not as reliably effective as IV sedation.

The onset of action is very rapid, and drug dosage and level of sedation can be tailored to meet the individual's needs. This is a huge advantage compared to oral sedation, where the effects can be very unreliable. IV sedation, on the other hand, is both highly effective and highly reliable.

The maximum level of sedation which can be reached with IV is deeper than with oral or inhalation sedation. Benzodiazepines produce amnesia for the procedure. The gag reflex is hugely diminished – people receiving IV sedation rarely experience difficulties with gagging. However, if minimizing a severe gag reflex is the main objective, inhalation sedation is usually tried first. Only if that fails to diminish the gag reflex should IV sedation be used for this purpose.

Unlike General Anaesthesia or Deep Sedation, conscious IV sedation doesn't really introduce any compromises per se in terms of carrying out the actual procedures, because people are conscious and they can cooperate with instructions, and there is no airway tube involved.

Are there any disadvantages?

It is possible to experience complications at the site where the needle entered, for example hematoma (a localized swelling filled with blood).

While IV sedation is desired precisely because of the amnesia effect (i.e. forgetting what happened while under the influence of the drugs), there can be a downside to this: if you can't remember that the procedure wasn't uncomfortable or threatening, you cannot unlearn your fears. However, it depends on the precise nature of your phobia and the underlying

causes to which extent this may be a problem. Some people would voice a concern that some patients can't be "weaned off" IV sedation, as dental anxiety tends to return to baseline levels. As a result, people who rely on IV sedation may be less likely to seek regular dental care. Other people would argue that this is not a concern if IV sedation is readily available to people.

Some dentists may resort to IV sedation too quickly, without exploring alternative options such as iatrosedation and psychological techniques in enough detail first. Sedation should not be used as a substitute for these techniques, but as an additional tool if other techniques alone don't work, or if it is a potentially traumatic procedure.

Recovery from IV administered drugs is not complete at the end of dental treatment. You need to be escorted by a responsible adult. You should want to be sedated. If, for any reason, you're unwilling to "let go", for example, because you're terrified of not being in control, it will be more difficult to be successfully sedated.

Cost is another disadvantage – IV sedation is more expensive than other sedation options.

What about eating and drinking before sedation?

Some dentists in the U.K. prefer to have people have a light meal about an hour before they come in (this is for conscious sedation using midazolam), but it may depend on the drugs used for the IV. In the U.S., the standard advice appears to be no eating or drinking for 8 hours beforehand. Where a GA drug like propofol or ketamine or a barbiturate is used, there is a danger that a person who regurgitates food while anaesthetised could get food or liquid into their lungs.

After IV sedation

Have your escort take you home and rest for the remainder of the day.

Have an adult stay with you until you're fully alert. Don't perform any strenuous or hazardous activities and don't drive a motor vehicle for the rest of the day.

Don't eat a heavy meal immediately. If you're hungry, eat something light, e. g. liquids and toast.

If you experience nausea, lie down for a while or drink a glass of coke.

Don't drink alcohol or take medications for the rest of the day unless you've contacted your dentist first. Take medications as directed by your dentist.

If you have any unusual problems, call your dentist.