

Special Report

Making Dental Injections Comfortable

Many people worry more about the injection than any other part of their dental treatment. Will it hurt? Will it work? How long will it take for things to come back to normal?

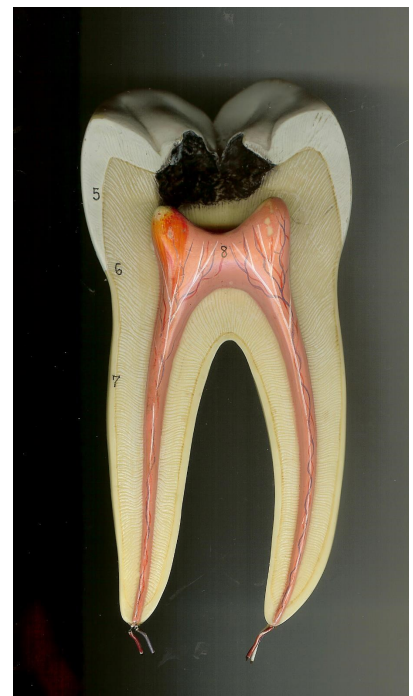
At Avenue Road Dental Practice we do our very best to make sure you're not put off having the treatments you want and need because of fear of the injection and as with everything else we do we take special care to ensure your treatment is as comfortable as possible.

Why Are Injections Necessary?

Unless it's had its nerve removed during root canal therapy a tooth is a living thing. It will react to hot and cold and to damage. Most of us are aware of how sensitive teeth can be when, for example we bite into an ice cream; if a filling comes out or if a tooth is chipped.

Normally teeth are covered with a protective layer of enamel which also insulates them from hot and cold. When a tooth is filled some of this enamel is removed exposing nerve endings just below the surface. As soon as these nerve endings are reached the tooth becomes painful. As the drilling gets deeper the main nerve chamber gets closer and the pain increases.

Unless a dental procedure is so minor that only the surface is involved or the tooth being filled has no living nerve drilling will be painful. Even teeth without nerves are surrounded by living bone and gums which will react to the touch of a drill or the vibration it produces. For these reasons most people find it very necessary to be numb before treatment.



What Do Injections Do?

Dental injections numb a tooth or groups of teeth by blocking the nerves that send painful sensations to the brain. To do this the injection needs to be given either next to the tooth to be numbed or placed close to the nerve that supplies that tooth with feeling. As well as numbing the tooth the injection will numb the gum around the tooth and sometimes the lips and sides of the tongue. Injection solutions are powerful medicines which become effective within a few minutes. It can take up to six hours for their effect to wear off.

Why Do Dental Injections Sometimes Hurt?

Usually because they're given too quickly. Additionally in many cases not enough time is allowed for them to work before treatment begins. Think about it. The average injection syringe contains about 2ml of liquid. It has to go somewhere! If it is squirted rapidly into the gum it tears the delicate tissues apart causing pain and bruising. It normally takes 2-3 minutes for the tooth to go numb so if treatment is started immediately after the injection is given it's not surprising that pain will result.

There are other factors which can affect whether an injection is comfortable or not and these will be discussed later in this report.

While it is impossible to guarantee that nothing will be felt during an injection there are things which can be done to make the procedure as comfortable as possible.

Making Injections Comfortable – The Steps

1/ The Pinprick

To get to the tooth the injection needle must first pass through the skin. The skin of the mouth is very sensitive and anyone who has ever bitten their tongue or cheek will know. This is because just under the surface are numerous nerve receptors that tell your brain if the skin is being damaged. The sort of warnings your brain receive are if the skin is being burned with hot things, burned with chemicals like chilli or damaged by cuts and trauma. An injection needle falls into the 'cuts or trauma' category. To make the pinprick comfortable we either have to avoid the surface nerve endings or numb them first.

Different parts of the mouth have different numbers of nerve endings. The front of the mouth (under the lips) tends to be the most sensitive area so here gently numbing the skin before giving the injection is often an advantage. At Avenue Road Dental Practice we use surface anaesthetic pastes to desensitise this area before proceeding. The paste contains the same sort of medicine used in the injection itself and is applied on a cotton wool roll. It takes at least 2 minutes for the paste to be effective but it's well worth the wait as it greatly improves the comfort of these injections.

The quality of the injection needle is also of great importance. The needles used must be very sharp with a good bevel so that they glide almost imperceptibly through the skin rather than puncture a hole in it. Dental needles are precision-engineered products. Some are coated with materials that reduce friction as they pass through the skin. The finer the needle the less chance it will hit nerve endings on the way in. This may sound obvious but just like anything else needles are made in different qualities. The more expensive ones tend to give better results. At Avenue Road Dental Practice we source the best needles we can find to improve comfort for our patients.



How the needle is inserted is also of importance. The skin needs to gently fall over the needle tip rather than be punched through while it is taut. That's why you'll often hear us say 'Close your mouth a little' before the injection is given. Closing up a little makes the skin less tense and this simple step alone can make the difference between feeling or not feeling the pinprick.

Needles are designed for single patient use but they dull quickly and while nowadays no dentist would consider re-using a needle on another patient in a situation where a single patient needs 2 or 3 injections on the same appointment changing the needle each time ensures the tip is always sharp; again improving comfort.

2/ The Speed Of The Injection

We've already looked at this briefly. Injecting quickly causes pain by tearing and bruising tissues. Injecting slowly makes the injection much more comfortable as the liquid slowly diffuses into the spaces between the cells of the skin. To reduce discomfort to a minimum the rule of thumb is to inject at the rate of '1 millilitre per minute' so a 2ml injection should take 2 minutes to administer. 2 minutes? That's a long time. Count slowly to 120 and you'll get an idea of how long a carefully administered injection should take. Is it worth it? Well, it can be the difference between an injection that really hurts or one you hardly know you've had. What do you think?



3/ The temperature Of The Injection

Our normal body temperature is 37 degrees Celsius. Our bodies are very good at noticing temperature change. At best, temperature changes feel uncomfortable and at worst downright painful.

A common cause of pain during dental injections is the sudden rush of cold liquid from the syringe into the tissues. In the winter months especially injection solutions can become very cold indeed and warming them to about body temperature before injecting can greatly improve the experience. At Avenue Road Dental Practice we take care to ensure our injection solutions are warmed to around about body temperature before administering them.

4/ Confusing Your Nerves

In general nerves can transmit the sensation of pain or vibration to the brain but not both



together. At Avenue Road Dental Practice we use high-technology equipment to exploit this physiological feature. A Vibroject™ vibrator attached to the syringe produces a gentle humming feeling to reduce the risk of pain sensations being transmitted to the brain. As a result injections are more comfortable and often almost imperceptible.

5/ Allowing Enough Time

After the injection has been given it needs time to work. Around 2 minutes is about right for an upper tooth while lower teeth can take twice that long to go numb. It's essential the clinician waits long enough before starting for the injection to work. Rushing treatment is counter-productive for both dentist and patient as a tooth drilled before it is numb tends to become more resistant to the injection than it was before. If a tooth really won't go numb after one injection a second one will normally do the trick. This second injection will normally be completely painless as the skin it goes into will already have been numbed by the first injection.

How Long Do Injections Last?

How long will it take for the injection to wear off? This depends on the type of injection used, the position of the injection and variation among individuals but normally the skin will come back to normal after about 2-hours though some people stay numb for up to 6 hours. During this period great care needs to be taken to avoid biting the lips, tongue or cheeks or scalding them with hot drinks. It is recommended that drinks are kept luke-warm until the injection has worn off. This will avoid scalding the numb part of the mouth before the heat is felt on normal tissue. Drilled teeth can become sensitive to temperature and extremes of temperature can damage them during the healing phase. You won't know if you're damaging a sensitive tooth with heat while it's numb so it's sensible to keep the temperature of food or drink moderate until you're sure the tooth can withstand more extreme temperatures.

Dental injections are designed to numb teeth but there will always be numbing of the soft tissues of the lips, cheeks or tongue associated with the injection. It is just too easy to bite these tissues while they are numb and severe damage can be caused leading to a great deal of after-pain. Ideally you should avoid eating until the injection has worn off; otherwise at least don't eat tough foods which require a lot of chewing to avoid the risk of chewing yourself!

What Can Go Wrong With Injections?

1/ Injections That Don't Work

As discussed above the usual reason is not allowing enough time for the injection to work. Although there are recognised average times some people take longer than others to go numb. You know who you are! You're the people who feel every part of your treatment then go profoundly numb on the way home! If you fall into this group TELL your dentist. Ask your dentist if he or she can arrange for you to have your injection and then wait a while before treatment begins; perhaps while your dentist sees another patient.

2/ Allergies To Injections

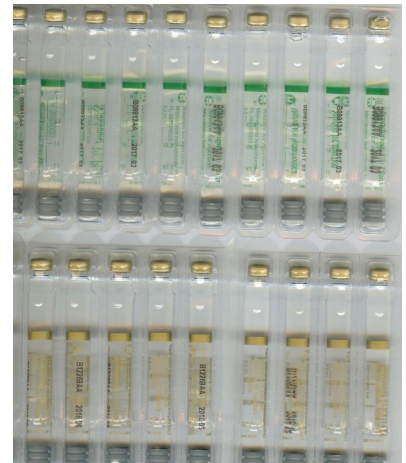
True allergies to injections are extremely rare. The symptoms of true allergies usually occur within seconds of the injection being given and can include:

- Itching
- A rash
- Swelling
- Difficulty in breathing
- Sudden drop in blood pressure

These symptoms may be caused by the anaesthetic itself or the preservative or other ingredients which are included in the solution.

If you experience any of these symptoms you will need to be investigated at a hospital allergy department to determine precisely what you are allergic to and which injection materials are safe for you.

The most common reaction to dental injections is the sensation of a racing heart and palpitations. This reaction is usually associated with the adrenaline which is included in most preparations. Added adrenaline has the advantage of making the injection stronger and stopping it wearing off too quickly. If it is accidentally injected directly into a blood vessel during the injection it can lead to the problems described above. A true allergy to adrenaline is very rare indeed as adrenaline is a substance produced naturally in our bodies. The chances are that if you have a reaction of this sort on a single occasion it will not happen again; however, if you experience these symptoms each time you have a dental injection your dentist can select a solution which does not contain adrenaline. The reason these solutions are often not used routinely is that they may not be so effective and you may require more than one injection to adequately numb the area.



3/ Bruising And Bleeding

As described above, bruising and swelling of tissues after a dental injection is usually associated with the injection being given too quickly which results in tearing the tissues apart and causing local damage. Bleeding at the injection site is not uncommon and usually stops within minutes. Other causes can include:

- **a/ Deep injections**

Most dental injections barely penetrate the skin. The solution is deposited just a couple of millimetres under the surface so there is little risk of puncturing a major blood vessel.

The deepest injection dentists normally give is the one designed to numb the very back lower teeth. This is the injection that often makes the side of your tongue go numb as well as your lower teeth. The further the needle has to travel the more risk that a blood vessel will be hit along the way. Modern syringes warn dentists if a blood vessel has been punctured but by then it's too late! Bleeding into the surrounding tissues can cause fairly severe bruising that may even appear on the skin of the cheek and often results in several days of discomfort and difficulty opening the mouth. The risk of hitting a blood vessel with a deep injection really can't be avoided but normally the area will heal within a few days.

- **b/ Blood Problems**

Some people have medical conditions which stop their blood clotting normally. Patients with severe clotting problems like haemophilia will usually be treated in hospital. Medicines can also affect the way blood clots. Patients being treated with medicines designed to make the blood thinner like Warfarin or Heparin can be at greater risk of bruising and bleeding after dental injections. Even self-administered medicines like Aspirin can have an effect so it is essential you update the medical history your practice provides regularly and inform your dentist if there has been any change to your medical condition or the medicines you take.

How Many Injections Can I Have?

Generally, as many as you need.

Of course there are limits but these depend upon individual circumstances including your weight, height, age and medical conditions. Some people need multiple injections; for example if they're having lots of teeth extracted. As mentioned above, lots of injections usually means lots of adrenaline which can lead to short-term palpitations but the amount of solution which can be given safely will be assessed by your dentist.

When You Really Can't Face An Injection....

Hopefully, after reading this report you will feel re-assured. Dental injections don't need to be scary. Administered properly they should not stop you choosing any dental treatment you want or need. We realise, however that some people really have a phobia and cannot be convinced. Don't abandon hope! There are other things that may help:

The simple solution is to take a mild tranquiliser before your appointment. If appropriate your dentist will be able to arrange this. Some people find hypnosis, acupuncture or relaxation therapies may help. Alternatives to conventional injections including electronic analgesia and needle-free injections are sometimes available although not entirely without discomfort. General anaesthesia (going to sleep) is no longer available in general dental practices but some hospitals may offer this service for extractions. If you would like to discuss any of these options please give Avenue Road Dental Practice a call on 01983 759567 or email us at: info@wightdental.co.uk

The Bottom Line

Giving comfortable injections is a skill that any clinician can learn but it does require time, patience and attention to detail; however, learning and applying these techniques are of enormous benefit to everyone. If you have any concerns about dental injections make sure your dentist knows and understands your worries.

To find out more about this and other dental topics you can contact us in a number of ways:

Write to us or pop in to meet us at:

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We're also on Facebook:

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