NQ Surgical Dentistry

# YOUR MEDICAL HISTORY AND SURGERY

**Your medical history influences treatment so inform your Dental Surgeon of any changes in your medical history.**

Like all medical and dental practices, at NQ Surgical Dentistry, we need to obtain an accurate, detailed medical history from all our patients. The medical history form is the first stage in collecting this information. At your consultation, Dr Priestland will discuss your medical history in more detail and may ask further questions to identify any additional information required to provide you with the best care possible and manage your medical conditions as they may relate to the treatment planned.

If a patient has a number of medical issues, Dr Priestland may ask their doctor for a medical summary with a full drug history. This can be very useful in helping to plan surgery and ensure we offer the best combination of drugs to avoid any drug interactions.

Following any surgery we provide all our patients with one page of post-operative instructions that are concise and cover the main points to facilitate a safe recovery.

The more detailed information contained in this article is a reference source for our patients to access should they want additional information on a range of issues that relate to patients' general medical health and how it can influence our dental management before, during and after dental surgery. The list below outlines the contents of this leaflet with detailed information being provided under each heading:

**Medical History and how it can impact surgical care**

- Osteoporosis and cancer medication influences dental extractions and dental surgery
- Diabetes and dental treatment or surgery
- Dental extractions and surgery after radiation therapy of the head and neck
- Knee or hip replacement surgery influences future dental management
- The influence of cardiac disease on dental management
- Anticoagulant and anti-platelet medications influence management of dental extractions and dental surgery
- Angina (heart-related chest pain) medications and dental treatment
- Codeine sensitivity or allergy
- Patients who routinely take steroid medications
- Age and medication

**Osteoporosis medications and anti-angiogenic agents influence dental extractions and dental surgery**

It is not the osteoporosis or the tumors that presents a problem to the dentist but rather it is the drugs used to treat osteoporosis or tumnors that may cause problems after dental extractions or any surgical intervention involving the jaws.

Commonly used groups of drugs to treat osteoporosis and metastatic bone disease and Paget's Disease include *Bisphosphonates* and *receptor activator of nuclear factor kappa-B ligand (RANK-L inhibitors) monoclonal antibody.*

Anti-angiogenic agents that inhibit the formation and growth of new blood vessels are used in the treatment of gastro-intestinal (gut), renal cell (kidney) and Neuro-endocrine (pituitary) tumors.

The Bisphosphonates used in treating osteoporosis include risedronate (Actonel), ibandronate (Boniva), Bonefos, panidronate (Aredia), alendronate (Fosamax), zoledronate (Zometa,

Reclast), tiludronater (Skelid), clodronate (Bonefos, Loron, Ostac), etidronate (Didropnel). The RANK-L inhibitors monoclonal antibody also used for the prevention of osteoporosis progression includes denosumab (Prolia). The Bisphosphonates and RANK-L inhibitors monoclonal antibody work by altering the balance of natural bone turnover. These drugs allow new bone to form but reduce the rate of removal of old bone and in this way the bone density increases. This is useful when treating Osteoporosis, Paget's Disease and metastatic bone cancer.

The anti-angiogenic agents used in the treatment of certain tumors include sinitinib (Sutent) and sorofenib (Nexavar). Anti-angiogenic agents inhibit the growth of new blood vessels is useful in the treatment of tumors associated with the gut, kidney and pituitary gland.

**Osteoporosis treatment may have side effects**

With increased bone density, the bone of the jaws may become more sensitive to damage and appears to lack the ability to repair. As a result the damage caused by a tooth extraction can be sufficient to lead to a localised lesion of bone destruction. This can be painful and an ulcer forms from which dead bone fragments are shed. This condition is referred to as Bisphosphonate related Osteonecrosis of the jaw (BRONJ). This condition can be painful and resistant to treatment. It can spread leading to the loss of adjacent teeth and distortion of the bone. Secondary infection is common.

The aim of treatment for BRONJ is to prevent the lesion becoming infected. It can take many months or even years to resolve the lesion and in some cases it can become a chronic and long-standing condition. There is no accepted single and reliable treatment for this condition.

The risk of suffering from this condition depends on the dose of Bisphosphonate and the route of administration. Low oral doses have been reported to cause BRONJ in 1 person in approximately 1100 patients taking Bisphosphonates who undergo dental extraction.

Patients suffering from malignant bone cancer that has spread (metastatic bone cancer) may be given Bisphosphonate drugs intravenously in far higher doses and in these patients the risk of BRONJ is much higher having been estimated to be around 1 person in 10.

Dental extractions in all patients taking Bisphosphonates must be performed only after full discussion of the risks and after considering alternative treatment in order to try to avoid extractions whenever possible. Such alternatives may include root canal therapy or sectioning of the tooth and leaving uninfected roots in the bone covered by the gum.

More recently other drugs have been identified as being potentially linked with this jaw condition and therefore the name has been changed to Medication-related Osteonecrosis of the jaw or "**MRONJ**". Other drugs identified as possibly leading to MRONJ include denosumab, sunitimib, sorofenib and Bevacizumab.

**CTX testing to identify patients at risk of suffering "MRONJ"**

It is now possible to carry out a test on blood serum for patients medicated with Bisphosphonate in an attempt to assess the risk of Biosphosphonate or medication related osteonecrosis of the jaw (MRONJ) occurring after a surgical procedure in the jaw area. While this test helps identify those patients most at risk, it is not 100% sensitive and there will be patients who are identified as high risk but who fail to develop MRONJ. Likewise there may be patients who according to the test are at low risk of developing the condition but after dental extractions or surgery go on to develop the condition. However, the availability of the test may be useful for those patients on higher doses of Bisphosphonates or who receive the

drug intravenously. Generally it is felt that the reliability of CTX testing is inadequate and can be misleading.

**How does CTX testing work?**

Patients on Bisphosphonate will have a reduced turnover of their bone as the medication reduces the removal of old bone but allows the continued formation of new bone resulting in an increase in the density of the bone. With reduced bone turnover, there are less breakdown products of bone found in the blood.

*Carboxy-terminal telopeptide* collagen crosslinks, known as "CTX", is a breakdown product of bone released during bone turnover. It is therefore referred to as a "biomarker" detectable in serum. The test used to detect CTX is called Serum Cross Laps. This test was introduced in 2000.

The CTX result in a healthy patient not taking Bisphosphoate medication would be expected to be over 300 picograms per millilitre and often as high as 400-550 picograms/ml.

Osteoporotic patients taking Bisphosphonate who present for a dental extraction must be carefully managed to avoid causing BRONJ. This may occur following any procedure that causes even minor trauma to the bone supporting the teeth. While avoidance of extractions and any oral surgery is the ideal approach to the management of these patients, sometimes tooth removal is the only option likely to result in elimination of pain and infection.

**Arranging a "drug holiday"**

In cases where extraction or surgery cannot be avoided, it has been the practice of some dentists and oral surgeons to discuss medical management with the patient's general medical practitioner in order to investigate the withdrawal of the Bisphosphonate medication for a period of time, usually 3-6 months. This is often called a "drug holiday". However the benefits of reducing the risk of MRONJ must be balanced against the increased risk of a pathological fracture occurring during the period when the medication is withdrawn. Evidence for the benefit of drug holidays remains to be clarified.

**CTX test results**

After varying periods of time, the patient's serum can be re-tested to assess their CTX level. After a drug holiday, the CTX level should increase reflecting an increase in bone turnover. This increase often appears to take place at the rate of 25-30 picograms per ml per month and therefore over a 6-month drug holiday it is possible to see the CTX increase by around 150picograms.

With the raised CTX level, indicating increased bone turnover, the risk of MRONJ appears to be reduced. This then suggests that any necessary surgery can proceed, albeit with risk of MRONJ still being present, but at a reduced level.

***Avoiding MRONJ is important; medical practitioners and dentists should be mindful that any patient who is being considered for Bisphosphonate treatment should be advised to visit their dentist for clinical and X-ray examination to determine if there are any teeth with a poor future that may be better removed prior to starting Bisphosphonate therapy.***

**Diabetes and dental treatment or surgery**

If you are coming to the practice to have an extraction or a surgical procedure under local anaesthesia (oral injections), you should take your normal medication and eat your normal food intake. There should be no need for any change to your diabetic medication. If you

have a blood sugar monitor, please bring it with you to your surgical appointment to do a test both before and on completion of your procedure.

If you are going to be treated at a day surgery unit and receive general anaesthetic for the extraction or surgery and you have been told to fast for 6 hours before your general anaesthetic, your usual medication dose will have to be modified to ensure your blood sugar level does not become too low when you fast. In most cases diabetic patients are treated at the start of the morning operating list to make their blood sugar management less complex. The majority of diabetic patients will have an understanding of their diabetic management and will know their usual blood sugar values. It would be best to discuss the management of blood sugar with Dr Priestland well before the date of surgery. For longer procedure, Dr Priestland will involve the anaesthetist in your diabetic management around the time of your surgery and you will then be assured of a stable blood sugar despite the need for a period of fasting.

Some diabetic patients may have their surgery planned at the practice under local anaesthetic with intravenous sedation. If this is the case, fasting is required before sedation and therefore diabetic medication dose may be altered. It is important to discuss this part of your care with Dr Priestland well before the date of surgery. If you have a blood sugar monitor, please bring it with you to your surgical appointment to do a test both before and on completion of your procedure.

It is important that diabetic patients perform home monitoring of their blood sugar level after surgery. While the level will fluctuate during the day and night and after food, it is best to limit the range of this fluctuation. A stable and well-controlled blood sugar is safer and will place a diabetic patient at less risk of health complications.

Healing after surgery in diabetics need not be a problem if their blood sugar is stable. A patient with a widely fluctuating level will be far more likely to suffer from post-operative infection and delayed healing.

Avoiding an infection is therefore especially important for diabetics. For this reason Savacol mouthwash (containing Chlorhexidine 0.2%) must be used as a gentle mouth bath for 2 minutes every morning and night after brushing the teeth for 3 days before surgery (*if possible*) and for 10 days after surgery. This will help to control the vast numbers of bacteria that exist in the mouth and thereby reduce the chance of infection.

It is best not to "swish" the mouthwash around the mouth vigorously. If you "swish" around you may open up the stitches or disturb the surgical site and the blood clot that has formed. If the blood clot is lost from the extraction socket, then the tooth socket can become a food trap. Consequently bacteria and food accumulate and an infection may occur leading to a "dry socket". A dry socket is characterised by increasing severe pain, usually arising 3-7 days after surgery. Usually the gum surrounding the extraction site is very tender.

Dry sockets are easy to treat but you will need to call the practice (*normal working hours from Mon to Thu 0800-1730 call 4725 1656*) or call Dr Priestland's mobile number outside these hours (*his number is to be found on the post-operative instruction leaflet you were given at your consultation appointment and on the practice business and appointment cards*).

You will need to make an appointment to return as soon as we can see you to gently flush out any accumulated food particles and then Dr Priestland will place a dry socket dressing called Alvogyl, into the infected tooth socket. Within 30 minutes much of the pain will have been eliminated and over the next 24-48 hours the dressing will treat the infection.

We advise all diabetic patients to follow the advice they will have received from their own doctor and from their diabetic nurse concerning the management of their diabetes. Diet is an important part of diabetic control and medication is a support therapy to maintain health. But good dietary decisions are the foundation of successful diabetic management.

**Dental extractions or surgery after radiation therapy of the head and neck**
Radiotherapy is designed to damage the cancer cells and cause a tumour to shrink. However the adjacent normal body cells will also be damaged by the radiation too. As part of the damage caused to local body tissue near the tumour, the blood vessels will become partially closed by the formation of scarring or fibrous tissue. The narrow blood vessels can no longer deliver the usual quantity of blood to the local area. This is of particular relevance to the bone in the jaws.

For example, a patient who previously received radiotherapy to the salivary gland tissue to shrink a tumour, will receive some radiation in the nearby normal tissues, which may include the bone of the jaws. Radiotherapists try to limit the area of radiation scatter and this focusing of the radiation beam is referred to collimation. Modern techniques have greatly improved the success of collimation reducing the degree of collateral damage to normal tissue during radiotherapy but sometimes the jaws can be affected by the radiation.

If the radiation has affected the adjacent jawbone, the blood supply will be compromised and the ability of the jaw to repair can be reduced. This can then result in failure of the extraction site or surgical site to heal with the development of a large area of damaged and dying bone at the surgical site. This is referred to as Osteo-radio-necrosis (ORN).

If a patient has received radiotherapy of the head and neck region, they must inform the dentist and then the dentist can contact the Radiation Oncologist who will be able to advise on the risk of ORN depending on the site of radiation and the collimation achieved. The incidence of ORN is between 1.6% and 6% (varies between studies).

In some patients who have received radiation therapy it is necessary to arrange for hyperbaric oxygen therapy sessions at the Townsville Hospital before and after surgery to improve the blood supply to the operation site. If this is required, Dr Priestland and the consultant in the hyperbaric chamber at the Townsville Hospital will provide additional details.

**Knee or hip replacement surgery influences future dental management**
Most orthopaedic surgeons prefer that all their joint replacement patients be given antibiotics before dental extractions or oral surgery. This is because during surgery in the mouth where there are large numbers of bacteria present, it has been found that “showers” of bacteria manage to gain entry into the small blood vessels of the surgical site and then circulate in the blood system. This is called a bacteraemia. Such a situation can occasionally lead to infections associated with prosthetic joints. Please inform your dentist or surgeon if you have received joint replacements.

**The influence of cardiac disease on dental management**
Infective endocarditis is a relatively uncommon condition that arises from a bacterial infection of the damaged heart lining called the endocardium. All surfaces of the heart chambers and the heart valves are covered by endocardium. It is when this surface is damaged that a patient can suffer from a condition called endocarditis. Endocarditis is initiated by colonisation of the damaged endocardial surface by bacteria circulating in the blood stream (bacteraemia). A bacteraemia may occur as a result of an invasive medical or dental procedure.

In an attempt to prevent such infection, many cardiac patients have been directed by their cardiologist to receive a specific antibiotic therapy before they receive dental treatment,

however the evidence to support the effectiveness of this practice is weak and current standards of evidence-based medicine call into question the need for, and the effectiveness of prophylactic antibiotics for patients with a number of cardiac problems. Indeed the risk of suffering from side effects of the antibiotics including allergy responses and gastrointestinal effects appear to be greater than the likelihood of benefitting from the medication.

There are a number of conflicting medical guidelines at this time concerning which patients need to receive antibiotics before invasive medical or dental procedures to prevent endocarditis developing in *susceptible patients*. It is important therefore to define who are the susceptible patients; this is covered in the next few paragraphs.

The *2006 British Society of Antimicrobial Chemotherapy, 2007 American Heart Association* and the *2008 UK Department of Health National Institute for Clinical Excellence (NICE) Guidelines* all list slightly different groups who are considered susceptible to endocarditis.

It is agreed that patients with a history of previous endocarditis or patients who have prosthetic heart valves should receive appropriate antibiotics before invasive medical or dental procedures that may lead to a bacteraemia. The American guidelines also include heart transplant patients with valvulopathy. However the 2008 UK NICE guidelines most recently have advised that the provision of antibiotics purely to prevent endocarditis is not necessary for any patients as there is no evidence base to indicate that such a practice has any beneficial effect.

The most recent *Australian guidelines (2008)* advise the provision of prophylactic antibiotics for patients who have a previous history of:

- endocarditis
- prosthetic heart valves
- prosthetic material used to repair heart valves
- heart transplant patients with subsequent valvulopathy with full consultation with the cardiologist
- all patients who have a history of Rheumatic Heart Disease and are in a high risk group for endocarditis, in particular patients in low socio-economic groups
- Some patients with congenital heart disease may also need prophylactic antibiotics. *This would be discussed with the cardiologist*.

Dr Priestland will use the recommended antibiotics if your cardiac history indicates there is a need or if your cardiologist advises this is recommended.

**Anticoagulant and anti-platelet medications influence the management of dental extractions and dental surgery.**

Many patients with cardiac problems take either anticoagulant or anti-platelet medications, often referred to a “blood-thinners”. The problem with these drugs is that dental extractions or surgery may result in excessive bleeding during and after the procedure.

Patients who take anticoagulants or anti-platelet medications can provide a management problem balancing the concern for possible excessive bleeding during and after surgery against the danger of stopping anticoagulants or anti-platelet drugs and risking the formation of blood clots within the circulation that can then lead to a stroke.

A stroke is a seriously adverse outcome that may lead to death. Therefore we prefer our patients to continue to take their anticoagulant medications and anti-platelet medications knowing that bleeding can be stopped using a series of local measures. However, sometimes it may be considered appropriate by the surgeon and the cardiologist to modify your

medication to allow for a narrow window of reduced anticoagulation around the time of surgery and then allow a return to the usual medications.

If a patient is taking Aspirin, Warfarin or Clopidogrel, it is important that they inform their dentist, especially if they are due to have teeth removed or have any minor dental surgery performed.

There are also new fibrin inhibitors that are used to avoid blood clots forming in the circulation. These include Dabigatran, Rivaroxiban, and Apixaban. It is very important that patients inform Dr Priestland of every drug that they take along with the dose of each drug. All patients are advised that it is always a good idea to have this information carefully recorded in your handbag or wallet at all times.

For those patients taking Warfarin, it is possible to check on the effectiveness of the anticoagulant effect by performing a simple blood test called an INR (*International Normalised Ratio*). This is a ratio of your ability to stop bleeding compared to an internationally accepted normal value.

- Generally if you have an INR below 2.0-2.5, then it is safe to have dental extractions and other dental surgical procedures.

- If the INR is above 2.5, then your dentist or surgeon must determine the likelihood of significant bleeding. It is possible to apply other procedures to assist in stopping bleeding, including the use of special haemostatic foams in dental extraction sockets that make the blood clot, and stitches can be used to help apply pressure to the wound and assist in bringing bleeding under control.

- Patients with a raised INR of more than 3.0 should normally have the medication adjusted to bring them nearer to 2.5 but if surgery is unavoidable then special measures may be taken to assist in controlling bleeding.

In more severe cases with a raised INR, and an extensive surgical procedure likely to give rise to significant bleeding, a suspension of Tranexamic acid 5% can be applied to bite packs and pressure applied to stop bleeding. This medication is only available on prescription by your surgeon who will advise you on the need for its use if it is required.

**Angina medications and dental treatment**

Heart related chest pain, also known as Angina, indicates that the heart muscle is receiving insufficient oxygen due to a reduced blood supply normally resulting from narrowing of the coronary blood vessels. These vessels can become very severely narrowed due to a build up of what is called atheromatous plaques. These plaques gradually build up in the blood vessels supplying the heart muscle and the angina becomes more frequent and severe and medical treatment by an interventional cardiologist becomes necessary.

Patients who suffer episodes of angina, and who have medication for their angina, must bring their medications with them to all dental and surgical appointments. Angina, can be brought on by exercise induced stress or emotional stress. Dental treatment therefore may cause emotional stress sufficient to initiate angina in some patients.

The most common medications used to treat angina is Glyceryl Trinitrate (oral spray or small tablet placed under the tongue), anti-platelet therapy using daily Aspirin 100mg and beta-blockers including such drugs as Atenolol.

**Codeine sensitivity or allergy.**

If you have taken pain control medications in the past that contain Codeine and have suffered a rash, this is a true allergy and must be listed in the allergies on your medical history form. In this case always inform the dentist or your doctor and avoid the drug in the future.

Codeine can cause some patients unpleasant side effects that are not an allergic response. Codeine is a strong pain medication. It is absorbed and converted by your liver into Morphine, which is classified as a narcotic analgesic (*an extremely strong pain control drug*). If you take Codeine you are therefore taking a narcotic drug with several potential side effects that may include:

- drowsiness
- dizziness
- disorientation
- hallucinations
- nausea
- vomiting
- constipation.

This is why we always suggest you use the least strong medication that keeps you comfortable after surgery.

Our advice on pain control after surgery is as follows:

For minimal pain it is suggested you take Naproxen 500mgs every 12 hours (*anti-inflammatory*) as prescribed by Dr Priestland, and simple Paracetamol 500mg tablets (also known as Panadol), 2 tablets every 4-6 hours for adults. Avoid more than 8 Paracetamol tablets in 24 hours or you may damage your liver.

For more severe pain take your Naproxen 500mgs every 8 hours and 2 Panadeine Forte tablets no more than every 6 hours. Panadeine Forte contains both Paracetamol 500mg and Codeine 30mg.

For severe pain use your Naproxen 500mgs every 8 hours and 2 Paracetamol (Panadol) tablets every 4-6 hours not exceeding 8 in 24 hours. Then see you GP and obtain Oxycodone (Endone) 5mg tablets and take one tablet every 4-6 hours only when the pain becomes unacceptable in addition to the other two drugs (Naproxen and Paracetamol).

**DO NOT take Endone and Panadeine Forte as this is dangerous.**

Sometimes if a procedure is expected to cause severe pain after day surgery under general anaesthetic at the Mater Hospital Day Surgery Unit, your anaesthetist may give you a prescription for Endone (*Oxycodone*) just in case you need it to save you going to see your doctor to obtain additional pain control.

Please Remember, that if you are taking Endone, you should only take Paracetamol and avoid any medicines containing Codeine.

***Any person taking tablets containing Codeine or taking other narcotic pain drugs should not drive, use machinery, make legally binding decisions, sign legal documents, work in an environment governed by Workplace Health and Safety directives forbidding such medications, or use social media.***

**Patients who routinely take steroid medications**
Steroid medications are rarely used in dentistry but in general medicine they may be used to control certain inflammatory and autoimmune conditions. These drugs, often referred to as corticosteroids, suppress the immune response and may, therefore, have an adverse effect on general health and wellbeing. Such adverse effects are largely dose related.

The regular use of corticosteroid medications can cause suppression of the adrenal gland production of natural steroids that are needed in times of stress. This can result in collapse of the patient due to a stress related incident if steroid medication is suddenly withdrawn. For this reason patients on steroids must never cease the drugs suddenly but rather should gradually reduce their dose. Generally these patients need their steroid medication dose increased prior to surgery to assist in their body in its reaction to surgical, physical and mental stress related to the surgical event.

Other side effects of long term regular steroid medication include the development of diabetes, gastric ulceration, osteoporosis, development of thin skin that damages easily, recurrent infection and immunosuppression.

**Age and medication**
The 2012 population statistics revealed that 50% of Australians between the ages of 65 and 74 years were living with five of more long-term health conditions increasing to 70% for those over 85 years old.

As a result of health conditions 65% of Australians over 75 years take at least one prescription medication regularly and 50% over 80 years take 6 or more medications. As the number of medications increases, so does the chance of drug interactions and adverse drug reactions. Others issues that may be of concerns include poor adherence to medications protocols due to poor memory, vision or manual dexterity, a lack of interest and inability to afford medications. Added to these problems are changes in how medications affect the aging body and how the body deals with the medications.

Changes may take place in different stages of the medications moving through the body. These stages include changes in absorption, distribution through the body, metabolism and usage of the drug and finally excretion of the drug from the body. Generally absorption across the stomach wall remains unchanged but patches introducing medications via the skin involve trans-dermal absorption and due to the increased fragility of skin, absorption rate is increased.

With increased fat deposition, those drugs that are fat-soluble can build up in the fat and hence the period of time for which these drugs remain active as they gradually leak from the fat stores, is increased. This means the effects of the drug can also be prolonged and less frequent dosing may be required.

As we age so the body is less able to break down drugs as effectively as it did when we were young. The liver is the organ usually responsible for metabolising drugs and with slower metabolism of drugs, the concentration in the blood is greater and prolonged. Added to this issue is the reduced capacity of the body to excrete the drugs after metabolism. Excretion is normally achieved through the kidneys where the blood is filtered to remove impurities, including the breakdown products of medications, and excrete them in urine. This means that as we age and the kidney filtering of our blood slows down, so our ability to excrete the drug is reduced. Normal adult kidney filtering (glomerular filtration rate) is 90ml of blood per minute. This measurement can be obtained by having a Urea & Elecrolytes blood test through your GP near the time of surgery. This can allow a build up of the drug in the blood.

If you have **medically-diagnosed reduced liver or kidney function please inform Dr Priestland**.

Some examples of the effect of these changes influencing the dose of drugs we provide are given below for information:

Antibiotics:
Amoxicillin, Cephalexin, and Augmentin are all excreted by the kidneys. A reduction in dose is therefore advised where the kidneys ability to filter the blood , known as glomerular filtration rate, is reduced to less then 30ml/min.
Clindamycin is broken down by the liver and excreted by the kidney and generally no dose adjustment is made for Clindamycin.
Metronidazole (Flagyl) is metabilised in the liver and has both liver and kidney extretion so dose is generally lower to the lower end of the dose range and given 12 hourly due to prolonged activity.

Analgesics:
Paracetamol is metabolised at the liver and can also be toxic to liver cells if the safe dose is exceeded. In elderly patients it is best to reduce the dose to a maximum of 3 doses per day of 2 (500mg) tablets (total dose 6 tablets). Younger adults would normally not exceed 4 doses per day (8 tablets).
NSAIDs like Nurofen (Ibuprofen) and Naproxen and the more modern Cox-2 inhibitors (Mobic) and metabolised in the liver and excreted by the kidneys. NSAIDs should be used at low dose and for the shortest period of time possible. Never take NSAIDs if kidney function is poor (glomerular filtration rate of less than 60ml per minute). The GP can arrange for tests to establish this figure if required. In seriously ill elderly patients with a significantly reduced kidney function, a 5 day course of NSAIDs at the normal adult dose could put them into kidney failure.
Codeine and Morphine are also metabolised in the liver and excreted by the kidneys. If renal function is reduced to 30-60ml per minute then the dose must be reduced by 25% and if filtration is less then 30ml per minute the dose must be reduced by 50%.
Oxycodone (Endone) is also metabolised in the liver and excreted by the kidneys. Most elderly patients should only receive 50% of the adult dose.

Local anaesthetics:
Lignocaine is the most commonly used dental local anaesthetic and is metabolised at the liver and excreted by the kidneys. In view of the very small doses used for dentistry, no change in the dose is required for the elderly patient.

Sedating agents:
Diazepam is metabolised in the liver and excreted by the kidneys and in view of the long period of action by this drug, it must not be used for elderly patients.
Lorazepam is metabolised in the liver and excreted by the kidneys. Generally half the adult dose is effective and safe for elderly patients.

**Any queries?**

If you have any questions after reading through this article as it relates to your own medical history and you are due to see Dr Priestland, please discuss all your medical issues and questions with him at your initial consultation appointment.

**All patients taking medications prescribed by their GP, medical specialist or other healthcare professional MUST TAKE THEIR NORMAL MEDICATION before surgery even if they have been asked to fast for 6 hours before general anaesthesia or sedation. They can take their drugs with a tiny amount of water only.**

If you have already seen him and have a surgical appointment but you now remember there is a medical issue that you did not discuss with Dr Priestland, please contact the practice as soon as you are able.

If you have problems and have recently had surgery you can call us on the practice telephone number 07 4725 1656 during our usual working hours Mon to Thur 0830am until 5.30pm.

In the case of an emergency, our patients can call Dr Priestland outside his normal working hours on his mobile telephone number that is shown on your printed post-operative instructions and on your appointment card.

If you read this and feel there is an area of medical information we have left out, please contact us through our website (*www.nqsurgicaldentistry.com.au*) or call our helpful team on 07 4725 1656 and we can address the information you would have liked to find and add this onto our website for the benefit of future patients.