

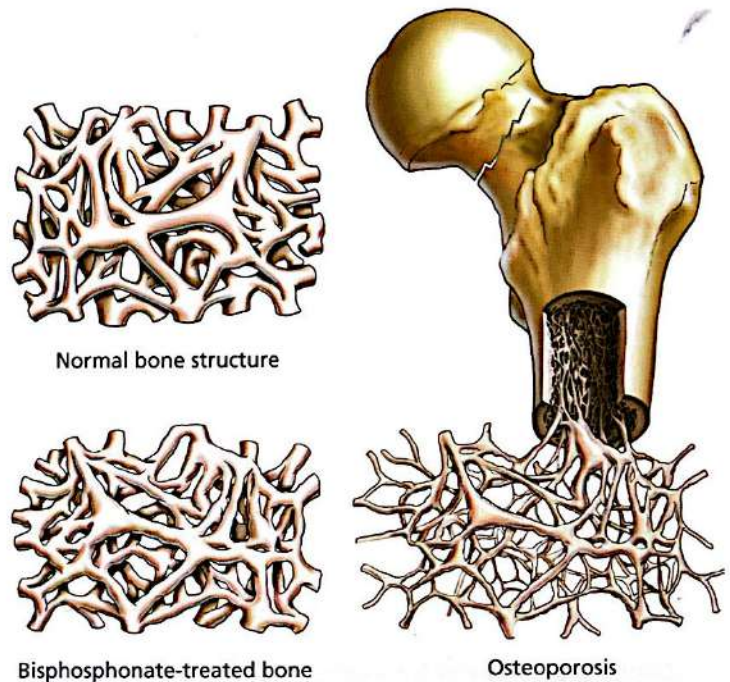
# Oral Health and Bisphosphonates

And other anti-resorptive medications — Patient information to assist informed consent

**M**edicines called bisphosphonates have been very effective in treating some bone diseases, preventing fractures and controlling pain. About 400,000 Australians take a bisphosphonate. People who take a bisphosphonate to treat a bone condition may rarely develop a complication called osteonecrosis of the jaws (ONJ).

Bisphosphonates have been helpful in treating:

- Osteoporosis or “thinning” of the bones, where calcium is lost from bone structure (see illustration, right). Bones then become brittle and prone to fracture. The condition worsens with age and is often seen in postmenopausal women. The most common use of bisphosphonates is to treat osteoporosis. Of every 100 people taking a bisphosphonate, 95 take it for osteoporosis. Of all Australians older than 55, about five in every 100 have osteoporosis and take an oral bisphosphonate.
- Paget’s disease of bone, where normal bone tissue is replaced by bone that is abnormal and fragile. The condition is often painful and affects mostly the pelvis, legs and skull of elderly people. Bisphosphonates can help to reduce pain and strengthen the bone.
- Cancers involving bone. Some of the more common cancers such as breast, prostate and gut cancers may spread to the bones. Uncommon cancers, for example multiple myeloma, may also involve the bones. The pain and disability of cancer involving bone can be well controlled with intravenous bisphosphonate.



Normal bone is dense and strong. A bone with osteoporosis is thinner, weaker and at greater risk of fracture. Bisphosphonate-treated bone structure is stronger and has much less risk of fracture.

## OSTEONECROSIS OF THE JAWS

Bisphosphonates have been associated with a condition called osteonecrosis of the jaws (ONJ). Osteonecrosis means, literally, “bone death”. ONJ is an uncommon condition where affected bone of the upper jaw (maxilla) or lower jaw (mandible) becomes exposed and open to the mouth (the oral cavity).

Effects of ONJ include pain of the gums and lips, bad breath (halitosis),

loose teeth, loss of one or more teeth, difficulty in eating, severe infections of the jaw and neck, and deformation of the jaw, which can affect facial appearance.

ONJ tends to heal slowly and sometimes incompletely or poorly, usually in cancer patients treated with higher doses of bisphosphonates.

People can have different degrees of ONJ, from mild to severe. Even mild cases can persist for a year or more.

It is crucial that your dentist knows

*Continued on page 2*

## TALK TO YOUR DENTIST

This pamphlet provides general information about bisphosphonates and ONJ. It does not replace advice from your dentist and does not contain all known facts on this subject. Read this pamphlet carefully, and save it for reference.

If you are not sure about the risks of ONJ while taking bisphosphonates, your dentist will be pleased to answer questions.

Give your dentist your complete dental and medical history, including ALL medicines you have taken or are taking (including any bisphosphonates), and reactions to medicines.

If you are taking or plan to take a medicine for your bones, you must maintain a high standard of dental health and oral hygiene.

Stay in touch with your dentist for advice about ONJ and bisphosphonates. Do not stop or alter the dose of bisphosphonate without the advice of your doctor. Your doctor will be able to advise you on the most effective way to treat your bone disease.

### Important: Fill in all details on the sticker below.

Dear Dentist: When you discuss this pamphlet with your patient, remove this sticker and put it on the patient’s medical history or card. This will remind you and the patient that this pamphlet has been provided. Some dentists ask their patients to sign the sticker to confirm receipt of the pamphlet.

PEEL HERE

**TREATMENT INFORMATION PAMPHLET**

PROCEDURE: \_\_\_\_\_

PATIENT’S NAME: \_\_\_\_\_

DOCTOR’S NAME: \_\_\_\_\_

EDITION NUMBER: \_\_\_\_\_      DATE: DD / MM / YYYY

**YOUR DENTIST**

whether you take a bisphosphonate and if you have had any signs or symptoms of ONJ. ONJ is limited to the jaws and does not affect other bones in the body.

**Cause of ONJ:** The cause of ONJ is not known. It is thought that bisphosphonates slow down the renewal (or "turnover") of jawbone more than they affect other bones. When jawbone is exposed, for example, by a tooth extraction, bacteria get into the jawbone. Then, due to poor bone turnover, poor blood supply and the presence of bacteria, the socket does not heal, and ONJ occurs.

Bone turnover can be measured by a blood test. If patients have a tooth extraction while taking a bisphosphonate, then their risk of developing bisphosphonate-related ONJ is about two patients in 100. However, if patients stop taking a bisphosphonate and good bone turnover returns, then they are unlikely to develop bisphosphonate-related ONJ.

Intravenous bisphosphonates and anti-resorptive drugs have recently been developed. Denosumab (Prolia) is pre-

scribed for both osteoporosis and bone cancers. It stops all bone turnover for six months, and then the bone turnover resumes. While the drug is working, the patient has a high risk of denosumab-related ONJ.

Importantly, not all drugs for osteoporosis have a risk of bisphosphonate-related ONJ. Examples are vitamin D and hormonal preparations, among others.

## ONJ AND DENTAL SURGERY

Everyone who takes a bisphosphonate has some risk of developing ONJ, but the risk is low in healthy people. The risk of ONJ increases greatly if the person taking a bisphosphonate has any of the following:

- extraction of a tooth (or teeth); this is known to be strongly associated with ONJ, accounting for three out of four cases of ONJ
- denture-related trauma
- gum (periodontal) disease
- dental implants.

Elderly and ill patients with weak immune systems are most at risk.



Osteonecrosis of the jaw (ONJ) can result in localised loss of jawbone.

## RISK OF ONJ

About 60 in 100 patients with ONJ have severe cases that heal slowly and imperfectly. ONJ resolves within a year in about one in four cases.

The risk of ONJ must be balanced against the significant benefit of taking a bisphosphonate for your bone condition. Untreated osteoporosis has a high risk of generalised bone pain and fractures.

### Bisphosphonates and anti-resorbatives available in Australia

Generic name	brand name	administration	potency
Etidronate	Didronel; Didrocal	oral	low
Clodronate	Bonefos	oral	low
Alendronate	Fosamax; Fosamax Plus; Alendro	oral	high
Risedronate	Actonel; Actonel Combi	oral	high
Tiludronate	Skelid	oral	high
Pamidronate	Aredia; Pamisol	intravenous	high
Zoledronate	Zometa; Aclasta	intravenous	high
Denosumab	Prolia	subcutaneous injection	high

Other bisphosphonates may come onto the Australian market.

### Risk of developing ONJ before and after a tooth extraction

Patient's condition	bisphosphonate administration	ONJ risk without extraction	ONJ risk with extraction
Osteoporosis	oral	1 in 10,000 to 100,000	up to 1 in 50 to 1,100
	intravenous	not known	not known
Paget's disease	oral/intravenous	risk is elevated but uncertain	
Bone cancer	intravenous	up to 1 in 90	up to 1 in 11

These risks are estimates based on current research. Further research and results regarding risk are ongoing. Some people will be at much less risk.

## DENTAL TREATMENT BEFORE STARTING A BIPHOSPHONATE

It is best to complete all necessary dental work, especially if "invasive" treatment is needed, such as a tooth extraction.

If you have good dental and oral health before taking a bisphosphonate, with no need for a tooth extraction, the risk of ONJ is very low.

Once bisphosphonate treatment is started, an invasive procedure on jawbone is best avoided. That is not always possible because teeth require ongoing care, particularly in elderly patients.

## DENTAL TREATMENT DURING BIPHOSPHONATE TREATMENT

If you are taking a bisphosphonate, discuss the risk of ONJ with your dentist before having dental work. People with no symptoms of ONJ can develop ONJ after dental work. The risk varies

depending on dose, length of time taking a bisphosphonate, type of bisphosphonate, extent of invasive dental treatment, age and general health.

If you take a high dose of intravenous bisphosphonate, then the risk of ONJ is higher. Your dentist may refer you to a specialist dentist, particularly if you need an extraction.

If a tooth needs to be extracted or treated, your dentist will try methods to reduce the risk of ONJ. However, your dentist cannot guarantee that ONJ will not be triggered by dental treatment.

After you start to take a bisphosphonate, have regular dental check-ups. If you have pain in your mouth or jaw, tell your dentist and prescribing doctor immediately.

## DENTURES

If you wear dentures, they must fit well.

Use well-maintained soft liners to reduce injury to the gums and other oral tissues. If dentures do not fit well, leave them out and have them assessed by your dentist. Dentures may need to be renewed.

## TREATMENT OF ONJ

ONJ usually resolves slowly in most patients who stop taking the drug (oral or intravenous). However, ONJ may persist for months or years. Your dentist or medical practitioner can provide treatments that minimise symptoms and risks of ONJ.

Patients with ONJ require special management. They may be referred to an oral and maxillofacial surgeon or a specialist in Special Needs Dentistry.

Treatment may involve mouth rinses and antibiotics to control infection. Further treatment and surgery will depend on whether the ONJ worsens.

# Bisphosphonate Treatment and Oral Health

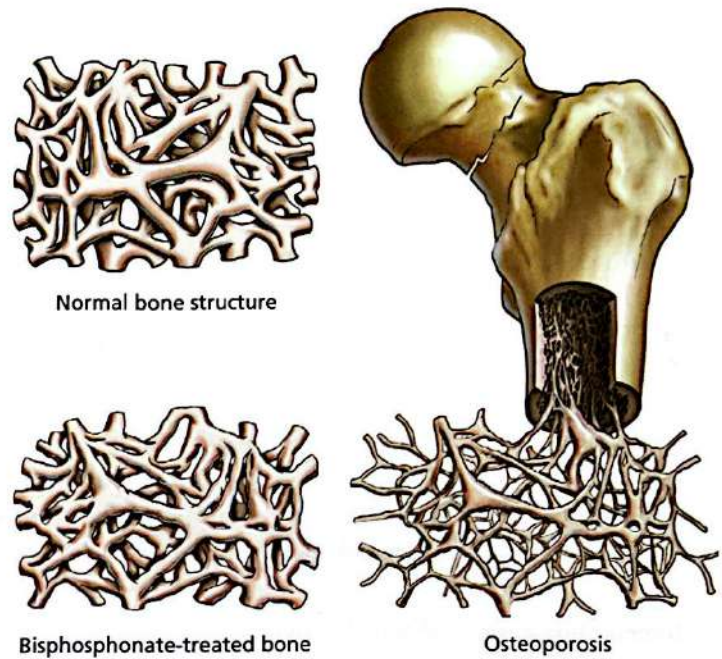
A guide for patients

People who take a bisphosphonate to treat a bone condition may rarely develop a complication called osteonecrosis of the jaws.

MEDICINES called bisphosphonates (pronounced biz-fos'-fon-ates) have been very effective in treating some bone diseases, preventing fractures and controlling pain. About 300,000 Australians take a bisphosphonate.

These medicines have been helpful in treating:

- Osteoporosis or "thinning" of the bones, where calcium is lost from bone structure (see illustration, right). Bones then become brittle and prone to fracture. The condition worsens with age and is often seen in postmenopausal women. The most common use of bisphosphonates is to treat osteoporosis. Of every 100 people taking a bisphosphonate, 95 take it for osteoporosis. Of all Australians older than 55, about five in every 100 have osteoporosis and take an oral bisphosphonate.
- Paget's disease of bone, where normal bone tissue is replaced by bone that is abnormal and fragile. The condition is often painful and affects mostly the pelvis, legs and skull of elderly people. Bisphosphonates help to reduce pain and strengthen the bone.
- Cancers involving bone. Some of the more common cancers such as breast, prostate and gut cancers may spread to the bones. Uncommon cancers, for example multiple myeloma, may also involve the bones. The pain and disability of cancer involving bone can be well controlled with intravenous bisphosphonate.



Normal bone is dense and strong. A bone with osteoporosis is thinner, weaker and at greater risk of fracture. Bisphosphonate-treated bone structure is stronger and has much less risk of fracture.

## OSTEONECROSIS OF THE JAWS

Bisphosphonates have been associated with a condition called osteonecrosis of the jaws (ONJ). Osteonecrosis means, literally, "bone death". ONJ is an uncommon condition where affected bone of the upper jaw (maxilla) or lower jaw (mandible) becomes exposed and open to the mouth (the oral cavity).

Effects of ONJ include pain of the gums and lips, bad breath (halitosis), loose teeth, loss of one or more teeth, difficulty in eating, severe infections of

the jaw and neck, and deformation of the jaw, which can affect facial appearance.

ONJ tends to heal slowly and sometimes incompletely or poorly, usually in cancer patients treated with higher doses of bisphosphonates.

People can have different degrees of ONJ, from mild to severe. Even mild cases can persist for a year or more.

It is crucial that your dentist knows whether you take a bisphosphonate and if you have had any signs or symptoms of ONJ. ONJ is limited to the jaws and

*Continued on page 2*

## TALK TO YOUR DENTIST

This pamphlet is intended to provide general information about bisphosphonates and the risk of ONJ. It does not replace advice from your dentist and does not contain all known facts on this subject.

If you are not sure about the risks of ONJ while taking bisphosphonates, your dentist will be pleased to answer questions.

Give your dentist your complete medical and dental history, including ALL medicines you have taken or are taking (including any bisphosphonates you have ever taken), and any reactions to medicines.

If you are taking or plan to take a bisphosphonate, you must maintain a high standard of dental health and oral hygiene.

As this condition has been a recent development and much is being discovered, stay in touch with your dentist for advice about ONJ and bisphosphonates. Do not stop or alter the dose of bisphosphonate without the advice of your doctor. Your doctor will be able to advise you on the most effective way to treat your bone disease.

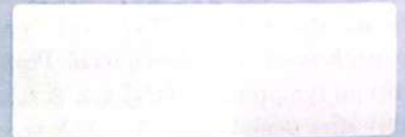
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### TREATMENT INFORMATION PAMPHLET

PROCEDURE:.....  
 PATIENT'S NAME:.....  
 DOCTOR'S NAME:.....  
 EDITION NUMBER:..... DATE: (day).....(month).....(year).....

### YOUR DENTIST



does not affect other bones in the body. **Cause of ONJ:** The cause of ONJ is not precisely known. It is thought that bisphosphonates slow down the renewal and replacement (called "turnover") of jawbone more than they affect the turnover of other bones. When jawbone becomes exposed, for example, by a tooth extraction, bacteria in the mouth get into the jawbone. Then, due to poor bone turnover, poor blood supply and the presence of bacteria, the socket does not heal, and ONJ occurs.

The first cases of bisphosphonate-related ONJ were reported in the US in 2003. In the same year, cases were reported in Australia. ONJ has since been reported in all countries where bisphosphonates are prescribed.

### ONJ AND DENTAL SURGERY

Anyone taking a bisphosphonate is at risk of developing ONJ, although the risk is low in healthy people. The risk of ONJ

increases greatly if the person taking a bisphosphonate has any of the following:

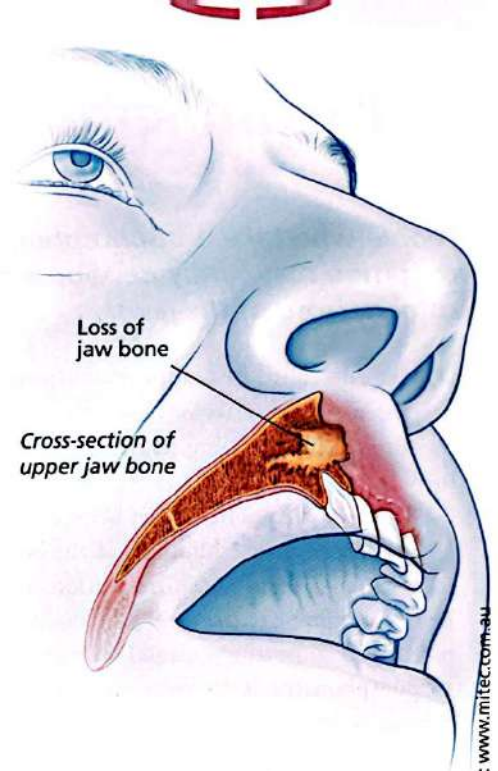
- extraction of a tooth (or teeth); this is known to be strongly associated with ONJ, accounting for three out of four cases of ONJ
- denture-related trauma
- gum (periodontal) disease
- dental implants.

Elderly and ill patients with weak immune systems are most at risk.

### RISK OF ONJ

About 60 in 100 patients who have ONJ will have severe cases that heal very slowly and imperfectly. ONJ resolves within a year in about one in four cases.

The risk of ONJ must be balanced against the significant benefit of taking a bisphosphonate for your bone condition. Untreated osteoporosis has a high risk of generalised bone pain and fractures.



Osteonecrosis of the jaw (ONJ) can result in localised loss of jawbone.

Bisphosphonates available in Australia			
Generic name	brand name	administration	potency
Etidronate	Didronel; Didrocal	oral	low
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Alendronate	Fosamax; Fosamax Plus; Alendro	oral	high
Risedronate	Actonel; Actonel Combi	oral	high
Tiludronate	Skelid	oral	high
Pamidronate	Aredia; Pamisol	intravenous	high
Zoledronate	Zometa	intravenous	high

Other bisphosphonates may come onto the Australian market.

Risk of developing ONJ before and after a tooth extraction			
Patient's condition	bisphosphonate administration	ONJ risk before extraction	ONJ risk after extraction
Osteoporosis	oral	1 in 10,000 to 100,000	up to 1 in 1,100
Paget's disease	oral/intravenous	risk is elevated but uncertain	
Bone cancer	intravenous	up to 1 in 90	up to 1 in 11

*These risks are estimates based on current research. Further research and results regarding risk are ongoing. Some people will be at much less risk.*

### DENTAL TREATMENT BEFORE STARTING A BISPHTHOSPHONATE

It is best to complete all necessary dental work, especially if "invasive" treatment is needed, such as a tooth extraction.

If you have good dental and oral health before taking a bisphosphonate, with no need for a tooth extraction, the risk of ONJ is very low.

Once you have started bisphosphonate treatment, an invasive procedure on jawbone is best avoided. However, that is not always possible because teeth require ongoing care, particularly in elderly patients.

### DENTAL TREATMENT DURING BISPHTHOSPHONATE TREATMENT

If you are taking a bisphosphonate, discuss the risk of ONJ with your dentist before having dental work. People with no symptoms of ONJ can develop ONJ after dental work. The risk varies depending on dose, length of time taking

a bisphosphonate, type of bisphosphonate, extent of invasive dental treatment, age and level of health.

If you are taking a high dose of intravenous bisphosphonate, the risk of ONJ is higher. Your dentist may refer you to a specialist dentist, particularly if you need an extraction.

Stopping the bisphosphonate even for a few months before dental treatment will not necessarily prevent ONJ because the bisphosphonate persists in the jaw bone for a long time.

If a tooth needs to be extracted or treated, your dentist will try methods that may help to reduce the risk of ONJ. However, your dentist cannot guarantee that ONJ will not be triggered by dental treatment.

After you start to take a bisphosphonate, have regular dental check-ups. If you have pain in your mouth or jaw, tell your dentist and prescribing doctor immediately.

### DENTURES

If you wear dentures, they must fit well. Use well-maintained soft liners to reduce injury to the gums and other oral tissues. If your dentures do not fit well, leave them out and have them assessed by your dentist. You may need new dentures that fit better.

### TREATMENT OF ONJ

There is no simple treatment to reverse ONJ. It may persist for months or years. However, your dentist, specialist or doctor can apply a range of treatments to minimise symptoms and risks of ONJ.

Patients with ONJ require special management. They may be referred to an oral and maxillofacial surgeon or a specialist in Special Needs Dentistry.

Treatment may involve mouth rinses and antibiotics to control infection. Further treatment (for example, surgery) will depend on whether the ONJ worsens.