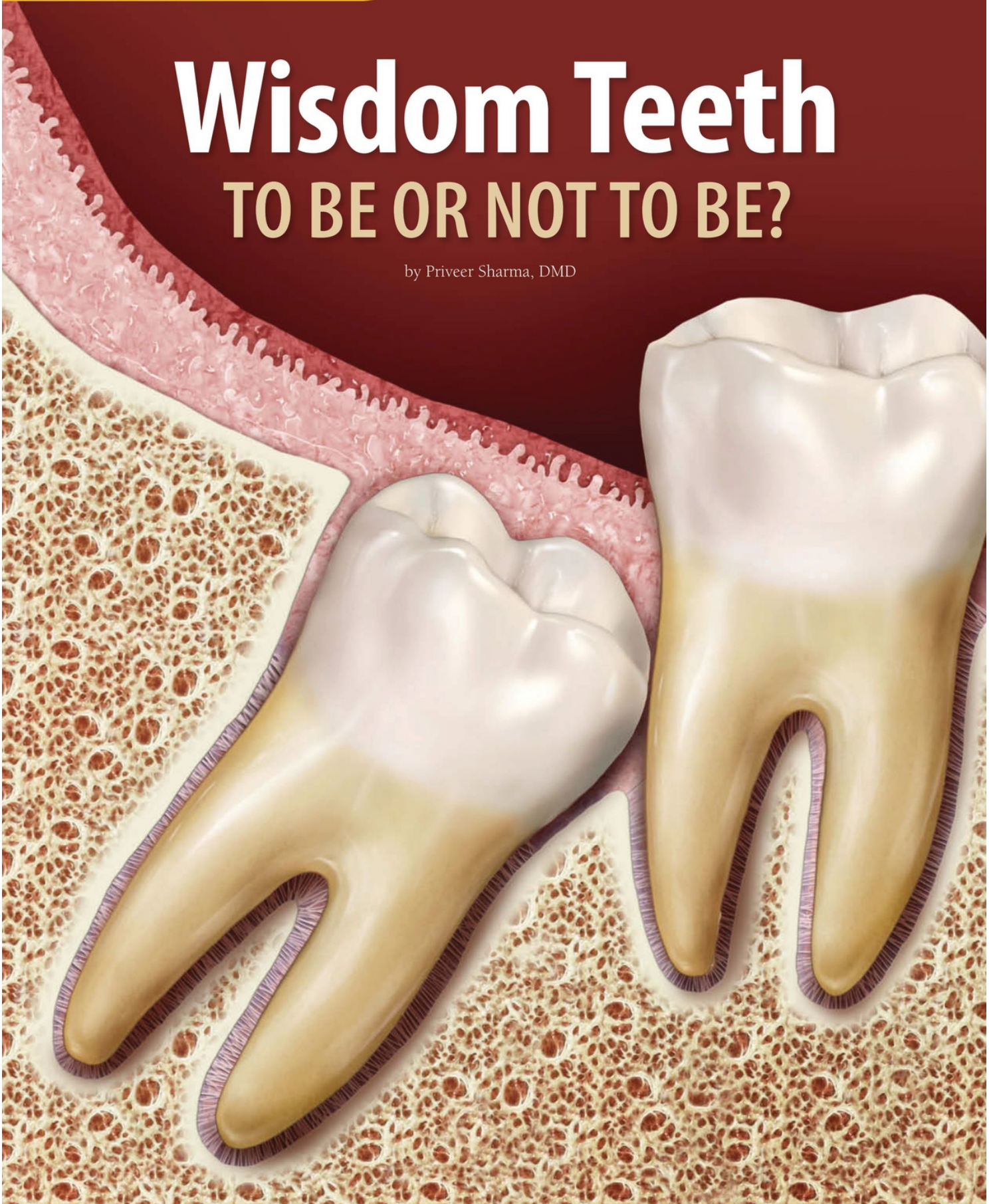


Wisdom Teeth

TO BE OR NOT TO BE?

by Priveer Sharma, DMD



What are the consequences of an impacted wisdom tooth?

“Wisdom teeth,” a rather curious name for teeth if you think about it, is the folklore name for third molar teeth, which usually make their appearance later in life. So-called because a moderate amount of wisdom is supposedly achieved at about the same time these teeth typically make their appearance, between the ages of 17 and 25. Interestingly, current research shows that the brain is not fully mature until age 25, so there may actually be some truth to the myth.

Most adults have four wisdom teeth; although, it is possible to have more (supernumerary teeth) or fewer to none at all (hypodontia). However, there is little wisdom to the problems that seem to be associated with them more often than not. Wisdom teeth commonly affect other teeth as they develop by becoming impacted, coming in sideways, or in fact it seems – every which way, but up!

Below is a summary of facts you need to know about this very topic and a review of problems associated with them and their retention and/or removal.

THE NATURAL HISTORY OF WISDOM TEETH

While it is not possible to predict the way your wisdom teeth will erupt (become visible) or come into proper position and useful biting function, in all cases adequate space seems to be necessary to allow for successful eruption. Simply put, there has to be enough room for them in the mouth. Assessment of this space can be determined using a variety of radiographic (x-ray) and other imaging techniques. However, the fact they can erupt does not guarantee they will, and if they do surface, that they will arrive healthy, particularly with respect to the surrounding gum tissue.



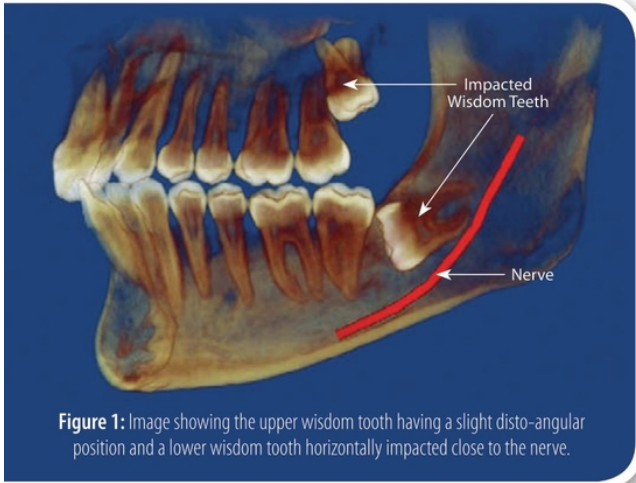


Figure 1: Image showing the upper wisdom tooth having a slight disto-angular position and a lower wisdom tooth horizontally impacted close to the nerve.

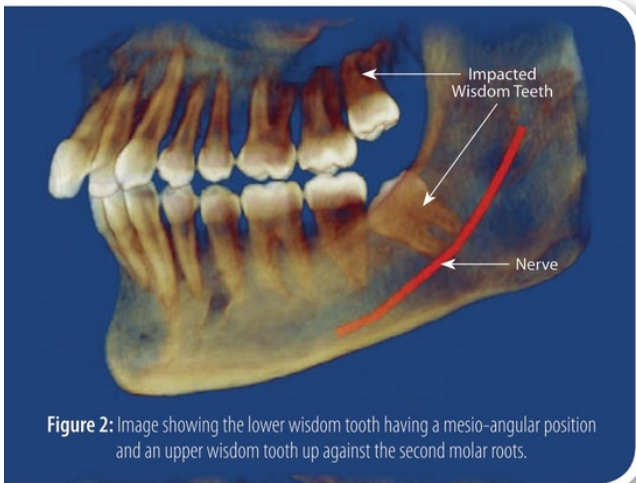


Figure 2: Image showing the lower wisdom tooth having a mesio-angular position and an upper wisdom tooth up against the second molar roots.

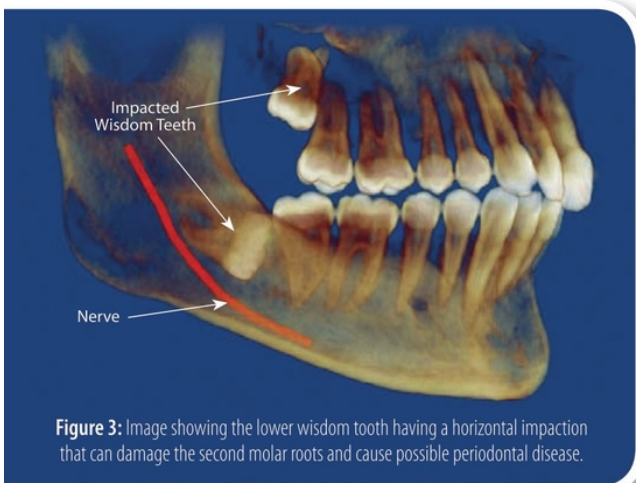


Figure 3: Image showing the lower wisdom tooth having a horizontal impaction that can damage the second molar roots and cause possible periodontal disease.

WHAT IS THE IMPACT OF IMPACTED WISDOM TEETH?

The term “impact” generally refers to the influence or effect of an object on another. In regards to wisdom teeth, this term typically means that the tooth or teeth are impinging upon or plain jammed against other important structures. These can include adjacent teeth, gum or other soft tissues in the mouth, nerves and blood vessels, or other structures. The direction in which a problematic wisdom tooth is pointing is often used to characterize the impaction, for example horizontal, disto-angular (“disto” – backward; “angular” – forming an angle; together they describe a tooth growing in a backwards direction) [Figure 1], or mesio-angular (“mesio” – forward; a tooth angled forward) [Figure 2].

Why isn't there enough room? Most often there is a discrepancy between jaw and tooth size with too little space available to accommodate the third molar (wisdom) teeth.

CONSEQUENCES OF IMPACTED WISDOM TEETH

The most common consequences of impacted wisdom teeth are periodontal (gum; “perio” – around; “odont” – tooth) problems and are the most frequent consideration for their removal. Their presence can adversely affect the periodontal tissues of the adjacent second molars by disrupting the periodontal tissue attachment — the mechanism that anchors the teeth in their surrounding bone — leading to their loss by predisposing them to bacterial, plaque-induced, periodontal disease. They can also cause root resorption (eating away) and damage to adjacent tooth roots [Figure 3].

The presence of visible (erupting) third molars is often associated with overall elevated levels of periodontal disease and that of adjacent teeth. Periodontitis involving adjacent teeth may be progressive and only partially responsive to therapy because they are difficult to reach and treat, including limitations to mechanical removal of bacterial (dental) plaque biofilm. The presence of pocket depths greater than 4-5 mm and/or bleeding when probed during examination should alert your dentist of potential future progression of periodontal disease.

Painless: One interesting fact is that in most cases, impacted teeth can exist quite asymptotically; in other words, you wouldn't even know they are there, let alone causing problems.

However, impacted, submerged, third molar teeth can become cystic (surrounded by a closed sac or membrane) and cause loss of the surrounding jawbone and possible infection. They can also interrupt vital structures: in the lower jaw, like the neurovascular bundle (“neuro” – nerve; “vascular” – blood vessels; “bundle” – just like wires running in a cable) that supplies sensation or in the upper jaw, impacting or entering into the sinus. In either case, these teeth are located where they’re not supposed to be yet are causing no pain.

Painful: On other occasions, they will really let you know they are there with a painful pericoronitis (“peri” – around; “corona” – crown; “itis” – inflammation) [Figures 4 and 5]. This is an acute inflammation and infection of the surrounding gum tissues that typically occurs with a partially erupted, lower wisdom tooth. It is usually treated with gentle irrigation (washing out) to remove bacteria and other trapped debris, warm soothing saline rinses, non-steroidal anti-inflammatory drugs like aspirin or ibuprofen, and sometimes antibiotics. Since this condition is likely to be recurrent, it is important to have the affected tooth or teeth evaluated for removal.

Risk Factor: It is especially important to have routine dental exams between the ages of 17 – 25, when third molars are typically coming in, because impacted wisdom teeth may cause no pain. An additional periodontal risk factor for third molars is whether or not their presence — asymptomatic or otherwise — influences the risk for adjacent teeth to develop periodontitis.

Consensus: An impacted wisdom tooth is called asymptomatic if the person does not experience signs or symptoms of pain or discomfort associated with this tooth. General agreement exists that removal is appropriate in cases of symptoms of pain or pathological (disease causing) conditions.

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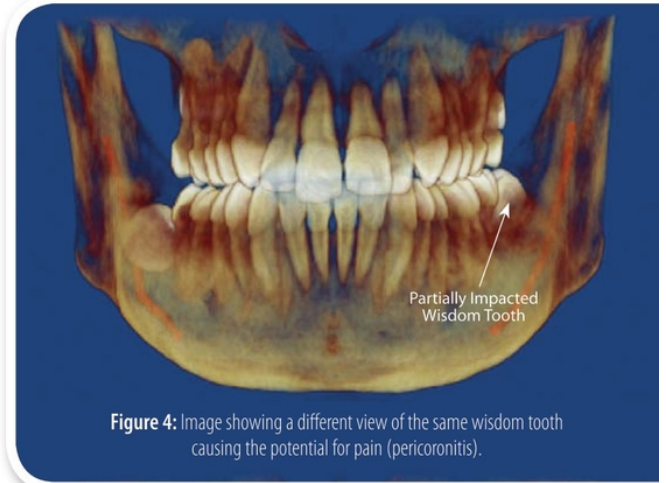


Figure 4: Image showing a different view of the same wisdom tooth causing the potential for pain (pericoronitis).

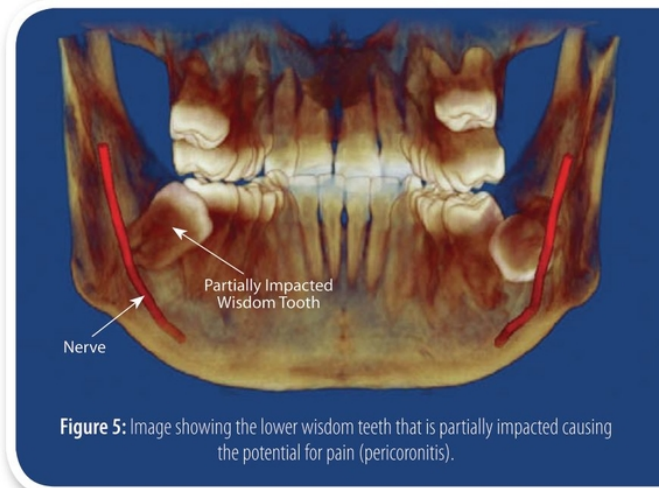


Figure 5: Image showing the lower wisdom teeth that is partially impacted causing the potential for pain (pericoronitis).



CONSIDERATIONS FOR REMOVAL OF WISDOM TEETH

We'll leave the "how" to your oral surgeon, but the timing of removal can be critical. If wisdom teeth need to be removed, it is better to remove them early when you are young rather than waiting until periodontal disease has started. However, regardless of age, removing impacted third molars can potentially have a negative impact on the periodontal tissues of your adjacent second molars. The prior existence of a periodontal defect, your age, and your level of oral hygiene may serve as predictors of adverse outcomes.

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As individuals age, the effects of retained and impacted wisdom teeth can be more consequential. Periodontal defects tend to get worse in the presence of retained third molars as you age. So too does the prevalence of caries (**tooth decay**). And the incidence of postoperative morbidity (**ill effects of disease after surgery**), including symptoms following third molar removal, is higher in people over age 25.

It is also important for dental professionals to remove wisdom teeth carefully so that they don't accentuate or start a periodontal problem. While there currently is no single surgical approach for removing third molars that will particularly minimize loss of periodontal attachment, there are many techniques available to remove them carefully while promoting good healing outcomes. Some of these include:

- Scaling, root planing, and plaque control have the potential to reduce the loss of gum attachment after surgery.
- Periodontal surgical techniques may be beneficial in instances where there is evidence of significant pre-existing periodontal attachment loss. See our previous article on periodontal surgery ("Periodontal Surgery – Where Art Meets Science," Volume 2, Issue 3).



ORTHODONTIC AND OTHER CONSIDERATIONS

Controversial statements have long existed with regard to the prophylactic (preventive) removal of asymptomatic or disease-free impacted wisdom teeth. In fact, a systematic review of the scientific literature found some reliable evidence that suggests removing impacted third molars cannot be justified in adolescents as a step towards reducing or preventing late incisor (front teeth) crowding.

Despite good intentions, we are not able to explain, predict, or prevent dental crowding no matter what the cause as there can be many contributing factors. While it is likely that third molars may play a role in crowding, this is only one factor to consider when making a decision about removing or keeping them. For some people, third molars may cause significant concerns; however, to date there is no scientific evidence for identifying with accuracy who is at risk.

Another factor is that the position and disposition of un-erupted wisdom teeth has been found to be both dynamic and unpredictable. This is critical for anyone considering having an impacted third molar removed that is currently under an existing or planned removable prosthesis (denture). Therefore, the ultimate decision regarding the management of such teeth is best made by an expert dental health professional. And this decision should only then be made after clinical examination and review of factors such as your age, position of the tooth, anticipated difficulty of removal, type of overlying prosthesis, and risks associated with the removal. As with all areas of medicine, proper assessment and diagnosis of a situation is paramount to successful surgery, healing, and prevention of unfavorable effects.

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PREVENTION, EVALUATION, AND MANAGEMENT OF THIRD MOLARS

A variety of clinical and radiographic (x-ray) techniques are available to image and assess the position of wisdom teeth and their proximity to other structures. Standard 2D (Dimensional) x-ray techniques are used to provide information about the shape and position of wisdom teeth roots and adjacent structures. However, the evolving method for obtaining the exact position of impacted third molars is a 3D CT (“C” – Computed; “T” – Tomography; “tomo” – slice or cut) image that is like thinly slicing a plum cake so you can see what is inside each slice. (Imagine cutting through a plum cake, where the tooth is the plum and the bone is the surrounding cake [Figure 6].) While this innovative technology warrants further investigation to standardize its use, it is proving very beneficial in individual situations.

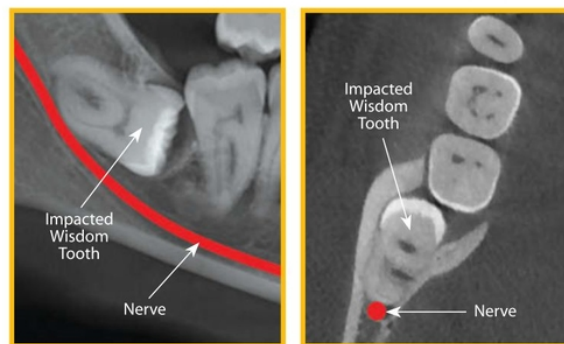


Figure 6: Cat Scans showing different views of a horizontal impaction and its relationship to the nerve.

Nerve Damage: A common occurrence with lower wisdom teeth is their proximity to the neurovascular bundle (“neuro” – nerve; “vascular” – blood vessel; “bundle” – trunk) that runs in the lower jaw, as well as the nerves to the tongue that affect feeling and taste respectively. And while damage to these nerves can occur during extraction, only a small percentage have complications. Of that small percentage at least 50% of people who experience this recover spontaneously.

THE ADVANTAGES OF EARLY REMOVAL OF WISDOM TEETH

The early removal of the tooth crown before root development may be linked to fewer problems after surgery. In other words, by predicting impaction and thus removing wisdom teeth as they are forming, it may make removal and healing easier with fewer complications.

CONCLUSIONS

Wisdom teeth and their associated problems are commonplace in the practice of dentistry. An oral surgeon who is trained in their assessment and surgical removal typically performs this routine procedure that is just one aspect of an oral surgical practice.

Note: General dentists with special training in surgical techniques may also be comfortable in accessing and removing third molars.

However, prior to any procedure it is critical that your dental professional conduct a proper evaluation — not only to assess the clinical health of the wisdom teeth but also the health of neighboring teeth and other vital structures. X-ray and digital imaging techniques play an important role in determining the exact position of third molar teeth in the jaws, which in turn has a direct impact on the ease or difficulty associated with their removal and the prevention of complications.

Most often surgical removal of wisdom teeth will involve some mild to moderate post-operative discomfort. Wisdom teeth removal, third molar surgery, has provided a model system for post-operative pain control research and therefore much is known about it. Non-steroidal,

anti-inflammatory drugs like aspirin or ibuprofen for a few days after surgery will provide pain relief, and control most swelling and symptoms. Codeine or other opiate derivatives may be helpful following some surgical cases depending upon the degree of ease or difficulty in removal. Antibiotics may be prescribed particularly if grafting is needed to promote bone growth or regeneration and to ensure infection-free healing. Dry socket, an occasional complication of wisdom tooth removal, can be avoided by keeping the socket area clean and by washing and rinsing with saline or other antibacterial rinses. But more importantly, careful surgery will promote good healing with minimal periodontal consequences to adjacent second molar teeth.

A full assessment and consultation with an oral surgeon or your dentist that includes all the risks, benefits, likely consequences, and alternative treatment options, will provide you with the facts (and wisdom) you need for determining what is best for your wisdom teeth.

Questions to ask your dentist or oral surgeon

- When is the right time to remove my third molars?
- How difficult will it be to remove my third molars?
- Are any of my wisdom teeth close to the nerve?
- What should I expect after the extraction of my wisdom teeth?

ABOUT THE AUTHOR



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Dr. Priveer Sharma is a graduate of the University of Florida for both his undergraduate and dental school education. He received his surgical training at the Washington Hospital Center and Children's National Medical Center in Washington DC, and is a Board Certified Oral & Maxillofacial Surgeon and Diplomate of the Association of Oral & Maxillofacial Surgeons. He is a member of the Charlotte Dental Society, North Carolina Society of Oral & Maxillofacial Surgeons and is the Director of the Outer Loop Education Study Club. Dr. Sharma is recognized for his expertise in Wisdom Teeth, Dental Implantology, Bony Reconstruction, Facial Reconstruction, and Outpatient Anesthesia.

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