

Advising Orthodontic Patients *about Their Wisdom Teeth*

Dr. Gene Jensen's Rebuttal of Dr Randy Lang's September 1, 2013 editorial entitled "Advising Orthodontic Patients about Their Wisdom Teeth"



The subject of wisdom teeth and the debate about whether they should be extracted or not, dates back to about the year 1900, when Dr Edward Angle, the patriarch of modern orthodontics, and Dr Case, one of his disciples, had a running feud which lasted for years, regarding the necessity to extract teeth, or not, in order to facilitate orthodontic correction. As history would later prove, Dr Case was the winner of that argument, at least temporarily, since extraction of bicuspid teeth became a routine procedure in the orthodontic protocol of most orthodontic practices, from about 1920 to approximately 1980. Notwithstanding, Dr Angle continued to incorporate all of the permanent teeth, including the bicuspid teeth, as well as, the wisdom teeth into his orthodontic treatment, and his teachings, during his tenure. He believed that 32 permanent teeth could be accommodated in the jaws of most modern-day humans. Needless to say, the repercussions of this philosophy were numerous, not the least of which were over-expansion, bimaxillary dental protrusion, labio gingival recession, dental relapse, periocoronitis, dental impactions, periodontal bone loss, root resorption, dental infection and pain, and all of the aforementioned, a full forty years before the discovery of antibiotics and effective analgesics.

6000 years ago, the Cro-Magnons and Neanderthals had

32 teeth with good dental alignment, and space for all 32 permanent teeth. Back in those days there were neither eating utensils nor fire, and the food had to be eaten raw, therefore, the jaws and jaw muscles of these individuals had to be robust and well developed. However, today, much of our food is processed, cooked and tenderized ie. pasta, rice, bread, mashed potatoes, hamburger etc. Consequently, our jaws have become smaller, and weaker, through thousands of years of disuse atrophy. Nevertheless, we still have 32 teeth; even though, we only need 28 permanent teeth, or less, in order to masticate our food effectively. The good news is, that most humans can survive quite well with 28 teeth, without any serious repercussions.

Through all of mankind's trials and tribulations the present-day North American population has evolved through secular trends, dietary changes, environmental changes and interracial marriage, especially in Canada and the US, so that we now have the most diverse gene pool in the world. Add to this dilemma, the fact that human jaws have become smaller and smaller, over the past 20,000 years, however, phylogenetically, we still possess 32 permanent teeth, that need to fit into those jaws. So to put it simply, the reduction in jaw size has not been accompanied by the reduction in the number of teeth. Consequently, the wisdom teeth often get whatever space is left over, in the alveolar trough. Because the wisdom teeth often



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don't have sufficient space to erupt into normal occlusion, they can cause a multitude of problems, many of which are unpredictable and sometimes detrimental to our health and well-being. They are analogous to the proverbial "time bombs", waiting to go off, spontaneously, and without warning, in the middle of exams, during pregnancy, while on a business trip, on a honeymoon, or during old age.

After two or more years of comprehensive orthodontic treatment with fixed appliances (braces), followed by three or more years of retention, why would anyone, of sane mind, want to put this investment of time, money and effort, at risk, for wisdom teeth, that may try to erupt, or cause disruption at any time in your life, usually when you least expect it, and when you're not prepared, physically, emotionally or financially, to deal with the consequences of ignoring the signs and/or symptoms of impacted or potentially impacted, wisdom teeth, which for most of us are considered "extra baggage", anyway.

Unerupted or partially erupted wisdom teeth can become a problem at any time, but especially between twelve years of age and onward. When I first graduated as an orthodontist, it was common practice to leave them in their unerupted, partially erupted, or impacted state. I usually wrote letters, following the orthodontic treatment of our teenage patients, to their referring dentists, requesting that radiographs be taken of the wisdom teeth, annually, to check on their status. Needless to say, this was not done on a consistent basis, so I would frequently receive calls or complaints from former patients in their late teens or early 20's, informing me that their teeth were going crooked, or their bite was changing, or their retainers didn't fit, because their wisdom teeth were trying to erupt, albeit unsuccessfully, causing pain, pericoronitis or TMJ dysfunction. I frequently saw these patients, especially since their referring dentists usually only treated them on a crisis management basis, without regard to the orthodontic repercussions. Subsequently, I was obliged to retreat many of these patients, after the wisdom teeth were removed.

After three years of taking care of these emergency patients with wisdom teeth problems, the Halifax area acquired a few more excellent oral and maxillofacial surgeons like Dr David Precious, Dr Reg Goodday and Dr Philip Cyr. About 1975 the City of Halifax, and particularly Dalhousie University Oral Surgery Department, under the leadership of Dr. David Precious, became the epicentre in eastern Canada for the training and development of a new genre of oral and maxillofacial surgeon, with their BSc's, DDS, MSc's and MD degrees including 15 years of training. This superior brand of oral and maxillofacial surgeons practiced with newer and safer oral surgical techniques, more appropriately designed and engineered instruments, as well as, vast improvements in analgesia and anaesthesia. Fortunately, we as orthodontists and our patients were the beneficiaries of these leading-edge oral surgical techniques and practices introduced in 1979 by Dr. Precious. We owe Dr. Precious a

great debt of gratitude for his futuristic thinking and his determination in raising the bar for all oral and maxillofacial surgeons throughout the world, so that no patient or parent should ever have any fear or trepidation about having wisdom teeth removed now, or in the future. Early preventive wisdom tooth removal was soon followed by advances in orthognathic (jaw) surgery, and improvements in Cleft lip and Palate surgery, as well as, oral surgical expertise in oncological head and neck surgery. We now have a nucleus of oral and maxillofacial surgeons in the Halifax area who are experienced, and well-trained, and who are second to none. They can, atraumatically, remove 4 wisdom teeth in a 14 year old, in 20 minutes, under conscious sedation. "The patient is asleep, doesn't remember anything, and bounces back in 24 hours". This has been the protocol for the past 36 years in my practice as well as, most oral and maxillofacial surgery practices in the area. Generally speaking, this is presently the accepted and practiced protocol throughout the USA and Canada, as well as several western European countries.

Since using the resources and expertise of the oral and maxillofacial surgery fraternity, I have had minimal orthodontic retreats and minimal problems with wisdom teeth, that in previous years, were left in situ too long, making them more difficult to remove. As a result, the wisdom teeth became more deeply impacted, impinging on the neurovascular sheath surrounding the inferior alveolar neurovascular bundle, making these teeth difficult to remove, contributing to paresthesia and numbness of the lower lip and chin. This latter sequelae can prevent normal kissing, and contribute to drooling while eating or sleeping. Wisdom teeth, if left in situ too long ie. beyond 17 years of age, can develop percoronitis, periodontal problems, TMJ dysfunction and dilacerated roots. When wisdom teeth are impacted under the anterior fibres of the temporalis muscles, they can also cause infection, swelling, referred pain, TMJ dysfunction and overuse of antibiotics.

Today, in 2014, no orthodontically treated patients leave my office, without an oral exam, a panoramic radiograph, 8 photographs, and a set of maxillary and mandibular biostar/Éssix retainers in their mouths. All post-orthodontic treatment patients, with wisdom teeth present, along with their parents, receive detailed instructions, from me, personally, on how, when, and for how long the retainers need to be worn, usually 3 years at night, on a decreasing scale. They are also given before, and after, photographs in a certificate format. They are informed as to when and why the wisdom teeth should be removed and how the retainers should be worn immediately following wisdom teeth removal. They are also given written instructions. Each patient's post-orthodontic treatment panoramic radiograph is reviewed with both the patient and the parents. The wisdom teeth are outlined on the pan, noting how wide the crowns are, mesiodistally, (usually 10-12 mm) and how long and where the roots are predicted to develop. Next, an outline is made on a

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copy of a digital pan, of the anterior and posterior borders of the mandibular rami, as well as, the inferior alveolar nerve. Next a projection is made on the pan, of where the apices of the roots of the wisdom teeth will develop, within 1-3 years; (usually 28mm is the average length of the whole tooth). This measurement often places the apices of the mandibular wisdom teeth roots well beyond the inferior alveolar nerve and its canal, and sometimes within 2-5mm of the inferior border of the mandible, which could possibly weaken the mandible, especially during contact sports. On the other hand, the maxillary wisdom teeth, if left impacted, can encroach upon the maxillary sinuses, or the distal roots of the maxillary second permanent molar teeth, possibly threatening external root resorption and/or premature periodontal bone loss adjacent to the distal aspect of the second permanent molar roots.

Finally, the horizontal distance is measured from the anterior border of the ramus (taking into consideration 2-3mm of mucosal thickness, and the approximate location of the anterior border of the temporalis muscle, to the distal of the crown of the mandibular second permanent molar tooth. If the distance is 5mm or less, in a 16 year old, then I would recommend that all 4 wisdom teeth be removed within one year from that date ie. 17 years of age. If the distance is 5mm or less in a 12 year old, then I would recommend that the patient have the wisdom teeth evaluated by an oral and maxillofacial surgeon for possible removal by age 14. Generally speaking, the earliest I have the wisdom teeth removed is 12 years of age, (approximately 5% of patients), especially, if the mandibular wisdom teeth have a mesioangular orientation in their developmental crypts and are developing occlusal to the second permanent molar teeth and/or fused to them, or if they are, in any way, threatening to prevent the normal eruption of the second permanent molar teeth. The latest that I have wisdom teeth surgically removed is at 17 years of age, which represents approximately 20% of all of my patients. Most patients (75%) will have their wisdom teeth removed at 14 years of age, because the roots are short, the bone is spongy, they are as close to the surface as they are going to be, and finally, because the roots have not begun to encapsulate, or become “hooked” under the inferior alveolar nerve, which can, and has caused paralysis of the lower lip and chin, especially if the nerve is injured during surgery, ie. when the roots of the mandibular wisdom teeth are fully developed, usually between the ages of 18 and 21.

We have carried out this protocol for 36 years, uneventfully, without any repercussions, and with very few complaints, on approximately 7000 patients in my practice alone. This is a phenomenon I refer to as “evidence based research”. The maxillary wisdom teeth are also removed at the same time as the mandibular wisdom teeth, because they often don’t have space to erupt in the posterior aspect of the maxillary tuberosity. This approach prevents their over-eruption, which could later interfere with mandibular lateral excursions during

mastication. Wisdom teeth removal is routinely performed on all of our orthognathic surgery patients at the same time as orthognathic (jaw) surgery is undertaken, because impacted wisdom teeth may interfere with bone union, or could even flare-up during post-orthognathic surgical convalescence.

After many years of observation, I believe that the mandible undergoes a minor post-pubertal horizontal growth spurt, especially in males. That is why the wisdom teeth need to be removed, prior to this mandibular growth phenomenon, to allow some “give” or resiliency in the mandibular arch, as well as, some slight (1-2mm) distal movement of the buccal teeth, so that the labial incisal edges of the mandibular anterior teeth are not “forced” or “trapped” against the lingual surfaces of the maxillary anterior teeth, which also have the added support of the obicularis oris muscles. Notwithstanding, if the wisdom teeth are removed the mandibular incisor teeth will not have to take all of the pressure from the forward mandibular jaw growth vector. Only by having the wisdom teeth removed early will the mandibular anterior teeth have sufficient “give” and stability during this post-pubertal growth period, to maintain their alignment. As a matter of principle, the collapse of the canine width should not occur, if the canine width was not expanded beyond the resting buccinator and obicularis oris muscle lengths, during orthodontic treatment.

You would think that if the first and second bicuspid teeth were removed during orthodontic treatment, that the wisdom teeth might have sufficient space to erupt uneventfully; not so. Keep in mind that the bicuspid teeth are usually, in the mesio-distal width range of 7-8 mm, while the wisdom teeth are in the range of 10-12mm in mesiodistal width, therefore, the wisdom teeth may still not erupt uneventfully, or may not penetrate the alveolar mucosa at all.

Generally speaking, on younger patients (7-10 years of age) who have potentially impacted permanent canine teeth, which are usually between 8-10 mm wide, the d’s, e’s, and 6’s are distalized with .016” bypass arch-wires, before the second molar roots are fifty percent developed, and when the wisdom teeth are barely visible on the pan. In this manner it is possible to take full advantage of the alveolar growth that is in the second and third molar areas, but is not present in the canine areas. By using this knowledge and ground-breaking research produced by Dr. Donald Enlow and Dr. Arne Bjork, using implants on growing individuals, back in 1968-1970, we are essentially taking the space away from the 8’s and giving it to the 3’s, which are far more important teeth, for purposes of function, TMJ biofeedback, aesthetics and stability, especially in canine protected occlusions. The canines and their eminentia also help prevent deep intra-labial folds and keep us looking younger, longer. In these cases the wisdom teeth are always removed by 14-16years of age, leaving the second molars intact, and in good occlusion. I have only observed five cases of impacted mandibular second molars in 36 years, and have only had to remove a relatively small

number of bicuspid teeth during my career as a result of this most valuable, game-changing research by the “giants” in the world of growth and development.

In my opinion it is neither prudent, nor wise, nor in the patient’s best interest to minimize the possible sequelae of potentially impacted or impacted wisdom teeth, by telling a patient that we, (the patient’s orthodontist or dentist), are of the opinion that the wisdom teeth should remain in situ, because they are dormant, too expensive to remove, or that, in our opinion, they will never cause a problem in the future. These are all lame excuses for not using the voluminous research, knowledge and experience that we now have before us. We, as dental professionals, should be taking the time and responsibility to explain to each patient and their parents, the reasons for having the wisdom teeth removed, while the patient is still healthy, willing and physically able to tolerate the procedure (ie. between 12 and 17 years of age). Notwithstanding, when those patients who still have impacted wisdom teeth reach middle age, they will inevitably start to experience other systemic maladies such as, high blood pressure, diabetes, cancer, dementia, GIT problems, arthritis, and so on. If and when these patients have any problems with their wisdom teeth at this critical stage in their lives, they will remember the poor advice they were given. It will be far more difficult and riskier to remove the wisdom teeth at 65, instead of at 14 or 15 years of age. Furthermore, the bone in a middle-aged patient is denser, more prone to fracture, the roots of the wisdom teeth longer and more dilacerated, and/or the roots would have approximated, the inferior alveolar nerves or maxillary sinuses. All in all, it would be far easier and more beneficial to the patient to have the wisdom teeth removed when they are younger and stronger, and the alveolar bone is spongier, rather than older and weaker, with far fewer complications and associated risks, and certainly less expense to the health care system. A hundred years ago the average life

span was 35-40 years, and insurance companies wouldn’t insure anybody over 40. Today, the average life span is 85-90, and insurance companies will insure most people up to 85, without a health questionnaire. The baby-boomers have arrived, and hopefully without their wisdom teeth. I concur with the Canadian and American Associations of Oral and Maxillofacial surgeons, in recommending the removal of wisdom teeth between 12 and 17 years as a valuable preventable health service, for the reasons mentioned herein.

I trust this rebuttal of Dr. Lang’s editorial will shed some additional light on this controversial topic. I have given this subject much thought over the years, since it is very near and dear to my heart, my patients and the success of my practice. Like most preventive practices and philosophies in dentistry and medicine, they are too often not seen or appreciated until several years later, when you see someone who is in crisis, because their doctor practiced one of two philosophies of “wait till it hurts” or “if it doesn’t hurt, don’t fix it” attitude, which, in my opinion, is analogous to “supervised neglect”. ■



Dr. Gene Jensen obtained his DDS from Dalhousie Dental School, located in beautiful Halifax, Nova Scotia. He spent a year in Northern British Columbia following graduation as a member of the BC Children’s Extern Program. He then earned his MSc degree in Oral Biology and a Diploma in Orthodontics at the University of Manitoba in Winnipeg.

He joined the teaching staff at Dalhousie University Dental School for 15 years. During this period he was the orthodontic consultant for the Victoria General Hospital Graduate Oral Surgery Program. He was also an orthodontic consultant for the IWK Cleft Palate Clinic for many years for many years. He also spent 10 years as the orthodontic consultant for the Stadacona Military Hospital in Halifax. He has co-authored many publications across the country on a variety of orthodontic topics. Dr. Jensen maintains an orthodontic practice in Dartmouth, Nova Scotia and enjoys the challenge of treating of difficult cases, for patients of all ages.

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