Orthodontic options

Orthodontics have been used for many years to straighten teeth, close spaces and realign crowded teeth. It's always been considered primarily a cosmetic option, however, advances in scientific knowledge and technology now allow us to use orthodontics to correct facial growth development, stabilise tooth position after jaw joint treatment and address underlying airway issues. This new area of facial growth development is called orthopaedics. Orthopaedics involves the development of the jaw and movement of the teeth effectively combining these two areas to achieve the best long-term aesthetic and functional outcome for you. There are a few different options when it comes to orthodontic and orthopaedic treatment and not all options are suitable for each person. Your dentist will careful assess your teeth, gums, airway, jaw joint, and bone development before recommending the best option for you. An ICAT scan, diagnostic models and thorough examination will all need to be completed as part of the initial diagnostic phase of orthodontic or orthopaedic treatment.

Facial Growth Development Orthopaedics

Jaw development plays a very big role in final tooth position. If the jaw is too small there won't be enough space for the adult teeth to come through so crowding problems occur. Crowding is when teeth are rotated or erupted almost on top of one another to try to squeeze into place in the small jaw. There are multiple causes of an underdeveloped jaw and these include but are not limited to airway issues, mouth breathing, prolonged dummy, thumb or finger sucking habits.

Dummy, finger or thumb sucking behaviours displace the tongue within the mouth creating a low tongue posture, that when the digit is not in the mouth, the tongue instead of being on the roof of the mouth sits low on the floor of the mouth. If the tongue is correctly positioned on the roof of the mouth, it creates pressure to allow for expansion and development of the jaw to the correct forward and lateral size to allow the teeth to fit normally. With children who are digit sucking, they often have narrow, vaulted upper jaws (called a V shaped palate) because the digit has caused the palate to be vaulted to create space for the digit and narrow due to the pressure from the sucking behaviour as well as because the tongue hasn't been in place to cause the pressure required to develop the jaw laterally to create a normal U shaped palate.

V Shaped Palate U Shaped Palate

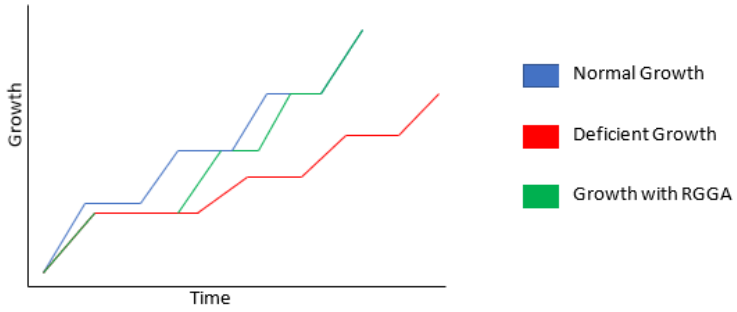
Airway issues, such as nasal congestion and mouth breathing is another common cause of an underdeveloped jaw-bone. Nasal congestion and consequent mouth breathing are very common in children suffering from allergies or asthma, however, it can also occur in people who have no apparent risk factors. This alteration from normal development can be seen in children as early as 4 or 5 years of age. While the child's baby teeth appear fine, it isn't until the adult teeth come through that most parents notice the problem and seek treatment. These airway issues are also a common concern in adults, and orthodontic and

orthopaedic treatment may be an option for you if you have any airway or crowding issues. If airway issues are a concern, your dentist may recommend a referral to an ENT specialist to further assess the tonsils, adenoids and sinus passages. Once these issues are addressed, the treatment that we perform will have a better long-term outcome, not to mention that some of the general health issues and problematic sleep patterns may also significantly improve.

There are two types of orthopaedic appliances that we use, depending upon your age, stage of dental development, presence of adult teeth, and available growth patterns among others.

Removable Growth Guidance Appliance (RGGA)

A RGGA is removable appliance that is used in children to facilitate jaw-bone growth. This appliance uses the child's normal growth patterns to develop the jaw and facial bones to the most ideal position and allow the bones to 'catch up' development wise to where they should be. As we use the physiological growth patterns of children, this option is only suitable for children aged approximately 7.5 years until 10 years of age. It is generally a painless treatment option, however, compliance in wearing the device is paramount. This appliance is worn at all times for approximately 12 months to allow for complete growth to occur. If the appliance is not worn, the treatment will not work. After achieving the desired development, the appliance is replaced with a fixed removable lingual arch (FRLA). This appliance is used to maintain the space that has been achieved with the RGGA until all the permanent teeth erupt into position.

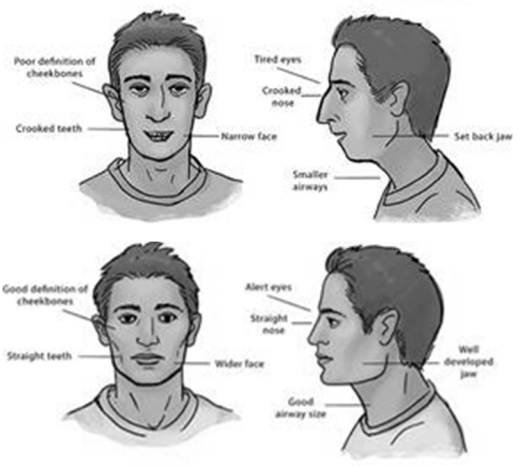


During treatment, pads will also be placed. These are small build-ups placed on the biting surfaces of the deciduous molar teeth which will allow the adult molars erupting behind to come through fully and erupt completely into place. These pads will also correct a deep bite (which is where the top teeth vertically overlap the bottom teeth almost completely) by allowing the back teeth to erupt a little further. Following the complete eruption of the adult teeth (excluding wisdom teeth), the need for controlled arch orthodontics (commonly known as braces) will be reassessed. These braces are only required to straighten any crooked or rotated teeth. The need for braces following treatment can be greatly reduced by allowing for early treatment.

The earlier we can catch up on the growth that has been missed out on, the less likely the need for any further additional treatment in the long-term. Furthermore, the earlier that we see children, and treat them with orofacial myology therapy and pads to correct any negative habits and allow normal tooth eruption, we may be able to avoid the need for a removeable appliance to begin with.

Fixed Growth Guidance Appliance (FGGA)

A FGGA is a fixed appliance used in adult or older children to achieve jaw-bone growth. This appliance expands the upper jaw to create more room for the tongue, open the airways and improve jaw joint issues. By moving the nasomaxillary complex forward (upper jaw), we are often also able to improve the appearance of the cheekbones, eyes, nose and lower jaw. This treatment option is suitable for most individuals from 11 years of age or older. Once the key teeth (first adult molars & first maxillary adult premolars) are in position, this appliance is able to be used. This is also generally a painless treatment option, and the appliance is worn for approximately 3-6 months to allow for sufficient growth to occur. This appliance will create spaces behind your canine teeth – this is normal and will be correct during the later phase of treatment.



After achieving the desired growth, the appliance is replaced with a fixed removable lingual arch (FRLA). This appliance is used to upright the teeth and move them into the bone that has developed as well as somewhat correct the biting relationship of the teeth. During treatment, pads will also be placed. These are small build-ups placed on the biting surfaces of the teeth which will allow other teeth to further erupt to correct a deep bite. These pads can also aid in recapturing the disc in the jaw joint or moving the lower jaw into a better and more stable position.

Following this, controlled arch orthodontics (commonly known as braces) will be placed. Braces are typically worn for 18 months, but this varies with each individual case. These braces are required to straighten the teeth, correct any rotations and close the spaces created earlier. These spaces are the amount of bony growth that was created in the earlier phase of treatment. We then move the posterior teeth forward into these spaces, closing the gaps and creating a healthy aesthetic new smile.

This option is the only facial growth development orthopaedic option for adults available and is most appropriate for adults suffering with airway issues. Adults who have an underdeveloped jaw are likely to have been digit suckers or mouth breathers as children and while their digit sucking behaviour may have ceased, mouth breathing behaviours are still quite common. Adults usually find that treatment takes a longer time than children and this is primarily due to the fact that as adults we have stopped growing so our rate of bone growth is much less than children.

Controlled Arch Orthodontics

Fixed braces are what most individuals commonly associate with orthodontic treatment. This is normally comprised of stainless steel brackets and wires used to move the teeth into alignment. Changes are made to the wires every few weeks, which alters the forces upon the brackets attached to your teeth to move the teeth up, down, across or around. Before applying the fixed braces, it is necessary to ensure there is sufficient space for the teeth to move into. Traditional orthodontics often required the extraction of 2, 4 or 6 teeth to allow this space to be created. Following this space creation by extracting these teeth, the remaining teeth were then moved into position, often retracting the jaw thereby reducing the airway, restricting the tongue and moving the jaw backwards. All of these outcomes may negatively influence your general health by repositioning your jaw backwards and causing additional pressure upon the jaw joint. Furthermore, by restricting the airway and reducing the space for the tongue, you may not be able to gain enough airflow into your body while you are sleeping, possibly causing you to grind your teeth and place additional forces upon your jaw joint.

At Anzac Avenue Dental, we do not believe in extracting teeth to make the space required for your teeth to fit well. This is why we use facial growth development orthopaedics to create the space needed, opening up your airways and creating room for your tongue to sit comfortably within your mouth and reducing the pressure upon the jaw joint. As an added benefit, facial growth development orthopaedics also addresses any underlying airway issues which is not done with traditional orthodontic treatment.

Fixed braces can take anywhere from 6 months to 3 years to complete depending on the amount of tooth movement required. It is generally not started until the adult teeth have erupted, approximately 10-12 years of age. The brackets are fixed into place so there is no issue with compliance, however, dental hygiene is extremely important. As these brackets are fixed to your teeth and trap food debris, the tooth structure around them becomes more difficult to clean and is highly susceptible to staining and decay. As such, your dental hygiene is of the utmost importance so that when your treatment is complete, your teeth are still healthy.

Many patients find that they experience some discomfort for 2 or 3 days after the braces are tightened each visit. This is because the forces used are quite strong and the ligaments around each tooth are being moved more than they normally would. The roots of the teeth are also moving in the bone and this causes some general discomfort. Simple analgesia such as Panadol or Nurofen is normally adequate to relieve the discomfort.

Following the completion of the fixed orthodontic treatment, most patients will need a retainer to prevent relapse and adverse tooth movement. This retainer may either be a plate that is worn at night or a small wire bonded to the back of your teeth.

Braces Invisalign

Invisalign

Invisalign is an orthodontic treatment that uses clear plastic aligners to achieve tooth movement instead of fixed braces. It uses the latest advances in computer 3D technology to carefully translate your dentists' instructions into a series of precise customised aligners. Each aligner is worn for approximately 2 weeks and gradually moves the teeth until they have reached the desired result. As there are no metal brackets or wires fixed to your teeth, Invisalign is often considered to be more comfortable. Additionally, as the aligners are removable, brushing, flossing and eating are no problem. Compliance, however, is of vital importance; If the aligners are not worn continually, the treatment will not work.

Invisalign does not have the ability to apply strong forces to the teeth for large tooth movements, so this option is only suitable for patients needing a small amount of movement. It can be used in conjunction with functional orthopaedics or fixed brackets to achieve a great final result. It has also commonly used for patients who have had fixed orthodontics in the past and who have experienced either a relapse or other tooth movement over the years. Invisalign is a great alternative for patients who don't want to wear fixed braces and who don't want to have natural tooth structure removed and ceramic crowns to be placed in order to achieve straight teeth.

When it comes to achieving straight teeth, there are a range of options and your dentist will advise you which option is the most suitable for your situation.