

# Naturally Better, With Expert Care

Great dentists make the best of what a patient has got.



The Imperial Dental Specialist Centre (IDSC) is an integrated dental, orthodontic and aesthetic centre. A centre dedicated to excellence, it provides solutions for many dental, skeletal, soft tissue and craniofacial needs, in a comprehensive, holistic and well-planned manner. Apart from specialising in Invisalign and dental implants, IDSC features innovative technologies for better diagnostic and treatment pathways, resulting in unparalleled smiles and oral function for years to come.

Four of IDSC's consultant dentists speak about some of the centre's featured treatments and solutions, revealing how procedures work, and how beneficial and advantageous they are.



## Smile and Face Design with Invisalign by Consultant Orthodontist, Dato' Dr. How Kim Chuan

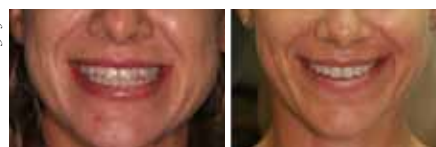
Invisalign – an orthodontic treatment – can alter and improve facial shape in a powerful yet non-invasive manner. By correcting upper and lower arches while considering proportional relationships between the cheeks, chin and lips, facial contours may be augmented and enhanced. In short, if patients complain of broad, A-shaped faces, doctors may create slimmer, more even V-shaped contours through proper consultation and Invisalign's unparalleled technology.

The patient in our photos has procumbent teeth. By retracting the teeth with Invisalign, we improved structural relationships between the teeth, nose and upper lip. Before treatment, this patient possessed Class 3 (crossbite) teeth. Because her front incisors interfered, her smile was non-aesthetic, displaying more lower teeth. We aligned dental units and also intruded the lower teeth behind top dental units. This birthed an aesthetic smile, and optimal Class 1 oral structures. We further expanded the upper arch so that the lower arch sits comfortably behind the overhead teeth. Where the nose, chin and lip relationships were concerned, we subdued the chin. By allowing the chin to rest behind the upper lips, we created symmetrical and harmonious relationships between the aforementioned facial features.

Pictures courtesy of Dato' Dr. How Kim Chuan.



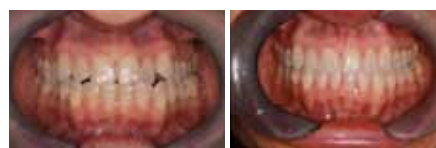
Significant facial improvements after inward and lateral retraction. The previously procumbent lips became smoother and more even.



Significant anterior smile arc creation with digital smile design software. We always create signature smiles for each patient.



Rickett's E line (nose, upper lip, lower lip, chin, neck) is a good indicator of the facial profile's relationship with the aforementioned facial features. When the upper and lower anterior teeth are retracted bodily with good torque control, significant facial aesthetic changes with concomitant soft tissue improvements are expected.



Reverse Class 3 overjet corrected with positive overjet and overbite. The midline was also centralised.



The overhanging upper lateral incisor was brought ahead of the lower teeth. The edge-to-edge crossbite was corrected with positive overjet and overbite.

Pictures courtesy of Dato' Dr. How Kim Chuan.



Invisalign moves incisors, canines and molars to Class 1- maximum intercuspation - positions.



The irregular arch form was resolved, producing a smooth ovoid arch form. These shapes are important when creating full-face smiles.



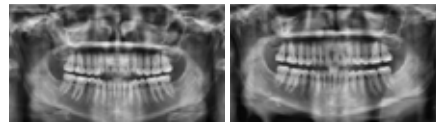
The square, broad and irregular lower arch form was beautifully shaped with Invisalign, forming a smooth and beautiful ovoid arch form.



Upper anterior smile arc creation is key to aesthetically-pleasing smiles.



Lower anterior smile arc corresponds with upper anterior arc, producing good fits or bites.



OPG panoramic X-ray proves optimal root parallelism.



Class 3 skeletal bite was corrected to a more harmonious Class 1 occlusion.



The broad, square jaw was slimmed, narrowed and elongated, producing an aesthetically-pleasing facial form.

With Invisalign's cutting-edge pathways, dental practitioners aren't just aligning teeth. We're taking it one step further by designing smiles, and to a certain degree, augmenting and enhancing facial silhouettes as well.

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### Implants vs. Dentures by Consultant Orthodontist, Dato' Dr. How Kim Chuan

Patients believe missing teeth can be resolved with dentures. However, dentures are nothing more than plastic or acrylic plates which compress tissues. Despite dentures addressing aesthetic qualms, long-term compression leads to future bone loss or resorption. Once resorption happens, bone shrinkage follows, causing decrements within archforms and facial structures, eventually triggering facial collapse. Subsequently, lower jaws may rotate upwards and hide the upper teeth during laughter or smiling. A resultant effect of excessive lower teeth display is austere facial ageing where patients look much older than their chronological age.

Implants are the only viable method to bone preservation. When implants are placed, prosthetics will integrate with bones. Like planting trees, implants embedded within bone become rooted, strengthening and supporting all structures



This patient presented with no upper teeth display when the denture was removed. She also experienced insufficient upper teeth display when wearing dentures. Finally, after implant plus crown and bridge restoration, the patient not only enjoyed full upper teeth display but whiter teeth as well.



The upper dentures supported the face inadequately. When dentures were removed, the lips and cheeks collapsed or drooped. Implants have abilities of appropriately supporting the face.



Old dentures presented with Reverse curve of Spee where the right side is higher than the left during smiling. When dentures were removed, only the lower jaw is exposed. Implants supported by bridges offer the best aesthetics and function because prosthetics sufficiently support facial bones.

Pictures courtesy of Dato' Dr. How Kim Chuan.

including hard and soft tissues. Once implants are fixed, dental practitioners move forward with crown and bridge placements atop embedded prosthetics. This not only reinstates facial heights and whiter teeth but also restores structures in a three-dimensional manner, to address facial collapse. By appropriately correcting distorted structures, mandibles are rotated back to original positions for accurate upper incisor display. In summation, dentists have capabilities of reinstating smiles and youthfulness through hard and soft tissue support via the utilisation of implants. Moreover, patients needn't worry about transient outcomes or future bone resorption, as implants are permanently rooted within hard tissues.

From a professional standpoint, although dentures may be 'quick-fix' solutions, they cause more harm than good. In truth, bone resorption loosens oral appliances and ages the face. If patients want ideal solutions to missing teeth, implants are the gold standard as prosthetics integrate with bones, sustain hard and soft tissues, and maintain facial support and youthfulness for years to come.

Pictures courtesy of 'Data' Dr. How Kim Chuan.



**There is a canting of the occlusal plane where the left side is lower than the right, creating a slanted appearance. When dentures were removed, the lower teeth overtook the upper arch, almost biting the upper gums. Implants have abilities of balancing the occlusal plane, providing good facial bone and soft tissue support.**



**With dentures, this patient suffered edentulous lower posterior teeth. She could only rely on the front teeth to eat. The lower teeth have also severely worn off. Implants have propensities of balancing the upper and lower occlusion to improve chewing efficiencies, thus aiding digestion.**



**Bone resorption occurs after long-term tooth loss. Because this patient has no teeth in the upper arch, upper bone resorption was more severe than the lower arch. It's important to replace extracted teeth with implants as soon as possible to prevent further bone loss. Implant placement halts bone resorption, preserving facial and alveolar bone quality and quantity.**



**Besides a torus palatinus at the centre of the palate which affected the denture's fit, the upper denture also sat loosely over the gingival mucosal. Implants planted into the alveolar ridge maintains arch integrity. The torus palatinus had zero adverse effects on implant retentions.**



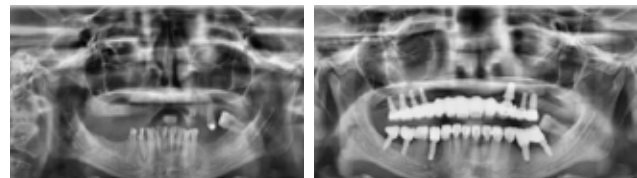
**The lower teeth were severely worn off due to the insufficient number of teeth following extractions. Implants restore the number of teeth and oral anatomy to full function.**



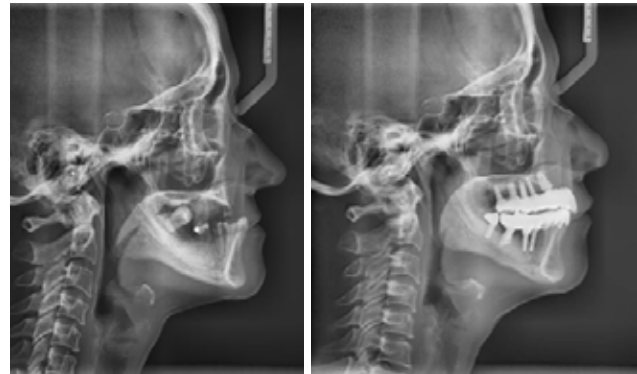
**Dentures offer decent aesthetic outcomes but doesn't stop bone loss. Dentures also compress onto the mucosal, causing them to shrink, affecting in flabby ridges. Implant supported crowns and bridges offer full bone and soft tissue support.**



**Teeth attrition cause discolourations. Zirconium crowns provide wear resistances and excellent aesthetic results.**



**Implants anchored into bone supports and strengthens hard tissues against bone loss.**



**Implants support vertical facial heights. Hence, also upholding soft tissues while resisting against wrinkle formation.**



**Facial canting is due to uneven bone loss. Implants balance the lopsidedness, making faces more symmetrical.**



**CT scans before and after treatment show bone density improvements. This is one of the major benefits of implant treatment due to its abilities of supporting the facial and alveolar bones.**



## Why We Take X-rays by Consultant Dentist, Datin Dr. Alice Wong

Dentist are often asked why we take X-rays (radiographs). We also encounter patients who are apprehensive of its radiative risks. Dental radiographs are images of your teeth that your dentist uses for oral health evaluation. These X-rays capture images of interior teeth and gums through low levels of radiation. Since we can only see about one-third of the actual tooth, X-rays provide valuable information that we cannot otherwise visualise. This, in turn, helps your dentist identify problems. I'm pretty sure you wouldn't feel comfortable if your doctor had a blindfold on, would you?

To help put in perspective why dental radiographs are so important, here are a few facts. X-rays are very common tools, just as important as teeth cleaning. They look for decay between teeth, and help dentists check for decayed underfillings, and infections at the tip of the root. X-rays also help us examine the area thoroughly and check for bone loss associated with gum disease.

### How often do you need X-rays?

The frequency of dental radiographs depends on the person. Your medical and dental history, as well as your current health, are factors. Some people may need X-rays as often as every six months. Others with no recent dental or gum diseases, or whose teeth have been regularly checked, may only get one every few years. If you are a new patient, we like to take a set of new radiographs as part of the initial exam to establish a baseline record from which to compare changes that may occur over time. We also take x-rays if we need to address any concerns that aren't visible to the naked eye.

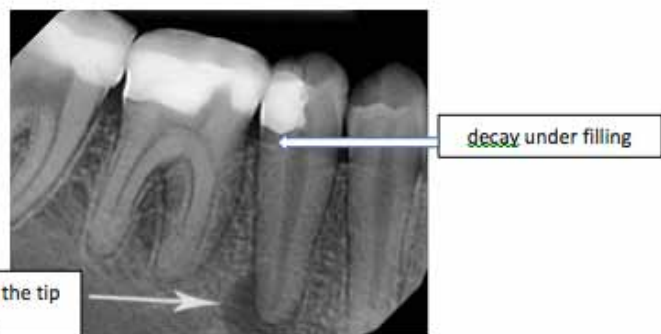
Children may need to have dental x-rays more often

than adults because dentists may need to monitor growth of their adult teeth. This is important because it can help patients determine if baby teeth require extraction to prevent complications, such as adult teeth growing behind baby teeth.

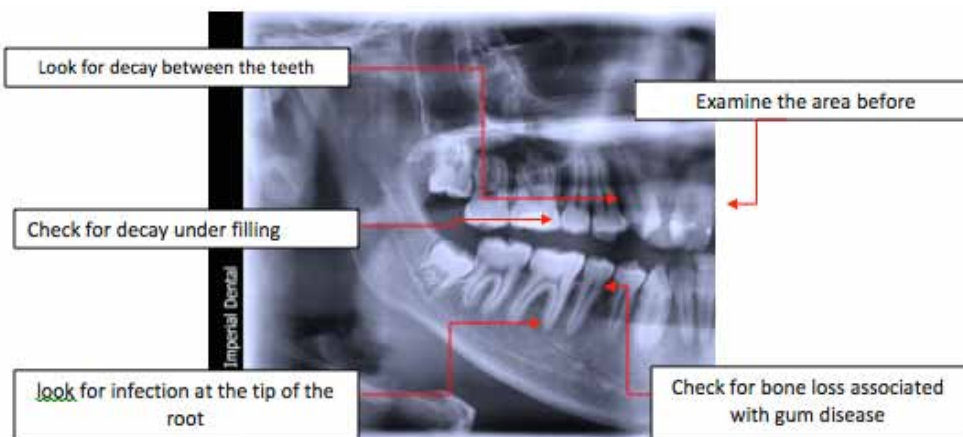
### Are X-rays harmful?

The amount of radiation is minute, and we mean super small. A dental radiograph only gives off 0.005 mSv (microsieverts). This comes up to a day's radiation, or what you naturally are exposed to on a daily basis. All of us are exposed constantly to background radiation produced by the natural environment – even such things as climbing mountains or flying in a plane adds to the amount of radiation but again, in minute amounts. To put it to scale, dental X-rays only have five percent of the radiation emitted during chest X-rays.

Pregnant and still worried about getting X-rays? Current research has okayed the use of radiographs while pregnant. However, we definitely only recommend them if you're having a problem. It's perfectly fine going ahead with routine dental check-ups and cleanings, but avoid X-rays unless issues arise. When pregnant, it's best to keep up with visits due to the hormonal changes which can wreak havoc in your mouth.



Pictures courtesy of Dato' Dr. Hoop Kim Chuan.





## Braces by Dr. David Tan

Fixed appliances – commonly known as braces – are utilised to straighten teeth, and have been available for many years. They consist of small brackets which are stuck onto teeth using dental adhesive. Wires that run through the brackets exert force, resulting in dental movement. The wire is similarly changed as teeth become straighter. In response, the jaw's bones along teeth will slowly remodel, as teeth move into optimal positions.

**Traditional metal braces are by far the most common type of fixed orthodontic appliance. Ceramic braces are a variation of the traditional system, providing a far less noticeable option, as brackets are translucent ceramic combinations which blend nicely with teeth's natural colours.**

The total treatment duration depends on the difficulties of each unique case. Patients are required to return for clinical review – on average – every month, depending on your dentist's recommendations.

There are two common brace brackets: steel or ceramic. Traditional metal braces are by far the most common type of fixed orthodontic appliance. Ceramic braces are a variation of the traditional system, providing a far less noticeable option, as brackets are translucent ceramic combinations which blend nicely with teeth's natural colours. Nonetheless, ceramic brackets are pricier and generally less durable than their metal counterparts.

During braces treatment, other orthodontic appliances like springs, elastic bands and Temporary Anchorage Devices (TADS) may be added for improved tooth movement. TADS are small, screw-like dental implants which are temporarily inserted into jaw bones to provide stable anchorage for better dental movement. They are normally applied to those requiring gummy smile correction.



Comparison between ceramic and metal brackets. Ceramic brackets are less visible compared to metal brackets.



Gummy smile patient before TADS insertion.



Powerchains (rubber bands) were used to hook on the inserted TADS and metal brackets. Overtime, powerchains (rubber bands) return to their original length, providing a pulling pressure which forces the teeth upwards.



Within 5 months and a few clinical visits, the teeth moved upwards, solving her gummy smile problems.

Pictures courtesy of Dr. Han Kim Chuan.



**Gum Disease by  
Dr. Raymond Su Wei Siong  
DDS (UKM), Msc Dental  
Implantology  
(UCLan, England), FICD**

Periodontal disease or gum disease is an infection of the supporting tissues and bone that hold teeth in place. If left unchecked, gum disease can lead to dental loosening, and teeth which pop right out of their sockets. Nine in ten Malaysians have experienced periodontal disease and dental caries, says a 2016 study done by the Malaysian Ministry of Health. As such, prevalence of this functionally destructive disease is at an all-time high.

According to the National Institute of Dental and Craniofacial Research, gum disease mainly affects adults in their mid 30s and 40s. Causative factors include poor oral hygiene, smoking, chronic illness like diabetes, certain medications, and genetic susceptibility.

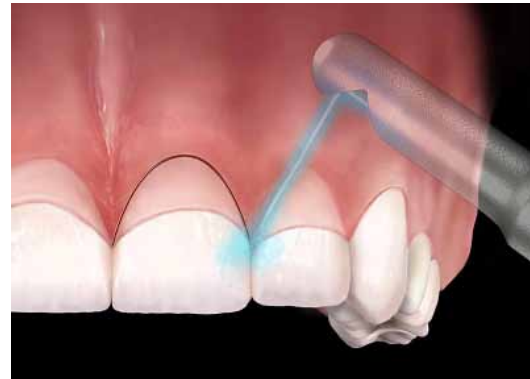
Typical treatment pathways are scaling and root planing. These conservative solutions are non-surgical methods of cleaning the surfaces of the teeth and their roots, which are exposed due to gum recession. Scaling and root planing remove tartar, plaque and bacteria from the gums surrounding the root, and promotes healthy regeneration of the gum's tissues. Alternatively, and if gum disease is severe, surgical intervention may be necessary. During the procedure, gums are cut and flapped back, allowing deep cleaning around the root underneath. The gums are then sutured back into place to allow healing.

In my practice however, I use state-of-the-art lasers to treat periodontal disease. This laser technology offers minimally-invasive pathways for severe gum disease or periodontitis which has affected bone and tissues which support teeth. This technology is gentler and more targeted than traditional flap methods which utilise scalpels. Hence, treatments aren't just more comfortable, but offer less trauma, faster healing and less downtime.

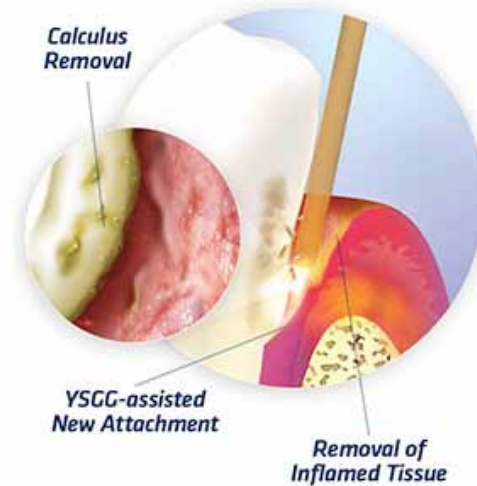
### **What is Laser-assisted Periodontal Therapy (LAPT)?**

During LAPT treatment, I use a special soft and hard tissue laser – WaterLase laser – which removes diseased tissues, leaving healthy tissues intact and bacteria free. Unlike most periodontal lasers, the WaterLase combines laser energy with patented waterjets to cut off soft tissues and bone without heat. The 'cool cutting' reduces swelling and post-operative sensitivity.

The laser cauterises blood vessels and nerve endings to reduce bleeding and pain, allowing doctors to clean infected bone and prepare roots in order for gums to reattach. With the WaterLase laser, there's no need for scalpels or instruments to cut gums or invade bones. The beauty of LAPT is how it allows me to selectively remove diseased gum tissues with pinpoint accuracy whilst leaving healthy tissues intact and bacteria free.



*Pictures courtesy of Dr. Raymond Su Wei Siong.*



**Periodontal disease or gum disease is an infection of the supporting tissues and bone that hold teeth in place. If left unchecked, gum disease can lead to dental loosening, and teeth which pop right out of their sockets.**

### **LAPT Benefits**

- No cutting with scalpels means no stitches and easier recovery with minimal bleeding
- Preserved healthy gum tissue
- Less trauma, yet highly effective
- Reduced root exposure and sensitivity
- Reduced infection
- Reduced expenses
- Reduced downtime