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**S**ometimes known as ‘interceptive’ or ‘phase I orthodontics’, early orthodontic treatment is often recommended for children aged six to 10 years to help correct certain malocclusions.

Unlike comprehensive orthodontic treatment, which focuses on full alignment of teeth and bite correction, the goal of early orthodontic treatment tends to be more preventive in nature, helping to correct certain bite problems or control jaw and arch development.

Although not indicated for every child, there are many benefits of referring for early orthodontic assessment to ensure a successful outcome down the road.

For those patients where early treatment is indicated, the benefit of a well-timed treatment is outstanding and can provide tremendous value to the young patient.

One of the major benefits of early treatment is that it can reduce – and may even prevent – the need for further complex treatment when the patient has permanent dentition.

In general, early treatment focuses on conditions such as:

- Excessive overjet; protruding upper incisors are more prone to trauma
- Anterior crossbites; if left untreated can result in dental wear or gingival recession
- Premature loss of primary canines or primary molars, which can lead to mesial drift of permanent teeth resulting in midline shift (in unilateral extraction cases) or impaction of a permanent tooth
- Posterior crossbites, which can result in functional shifts or dental wear
- Deep bites
- Narrow dental arches
- Severe crowding
- Excessive spacing.

Depending on the type of clinical problem

presented, there are various ways to achieve treatment goals in a young developing dentition. Common orthodontic appliances used include:

- Expansion appliances
- Space maintainers
- Removable appliances
- Limited phase of fixed braces on selected teeth
- Functional appliances
- Headgear.

#### PHASE I ORTHODONTIC TREATMENT

In April 2018, Align Technology introduced its phase I orthodontic treatment, allowing orthodontists to offer a much more exciting type of treatment modality using clear aligner therapy known as Invisalign First.



**FIGURE 1:** Case one – before



**FIGURE 2:** Case one – after

#### ENHANCED CPD

**GDC anticipated outcome: C**

**CPD hours: one**

**Topic:** Orthodontics

**Educational aims and objectives:**

To discuss early orthodontic treatment. This article qualifies for one hour of enhanced CPD; answer the questions on page 106.

**Avan Mohammed** discusses early orthodontic treatment and shaping young smiles using Invisalign First aligners

# Early orthodontic treatment

These clear snug fitting aligners are especially designed to address the broad range of early mixed dentition problems that may present in younger patients.

Align developed software driven features specifically designed to manage the challenges associated with a constantly changing mixed dentition, short clinical crowns of primary teeth and arch forms.

This has been an exciting development for orthodontists, parents and patients, making it possible for little smiles to be part of the Invisalign family.

This new technology came with the aim to provide younger patients a similar Invisalign clear aligner experience as that for adults and teens: comfort, convenience and predictable outcomes.

There are several key features and functionality of Invisalign First:

- Eruption compensation – this feature is designed to allow room for the eruption of permanent teeth in the early and mixed dentition phases. The aligner acts as a vertical stop helping the teeth to erupt into their desired position
- Optimised retention attachments – these are precisely designed attachments to help improve the retention of the appliance on short clinical crowns of primary teeth
- Optimised expansion attachments – like optimised retention attachments align will automatically size the attachments based on the size of the clinical crown helping to produce the forces necessary for arch form development
- Simultaneous movement staging pattern allows for the alignment of the incisors at the same time as arch expansions allowing for greater patient satisfaction and hence compliance early on
- Enhanced precision wings for early correction of class II malocclusion in pre-teens
- Smart track material makes teeth movement more controlled and predictable
- Compliance indicator means no more nagging children to wear their aligners. These special blue indicator dots will fade with time if the aligners are worn as instructed. If a child fails to wear the aligners, the blue dots will still be visible
- Invisalign stickables: these durable waterproof stickers come in a variety of shapes, patterns and colours and provide a fun way for children to express themselves using their aligners.

**BENEFITS OF EARLY INVISALIGN TREATMENT**

Younger children are more likely to follow their parent’s instructions than teenagers, making it easier to ensure compliance with treatment



FIGURE 3: Case two – before



FIGURE 4: Case two – after



FIGURE 5: Case three – before



FIGURE 6: Case three – after



FIGURE 7: Case four – before



FIGURE 8: Case four – after



FIGURE 9: Case five – before



FIGURE 10: Case five – after

instructions for wearing their Invisalign aligners. In addition, maintaining oral hygiene is much easier with Invisalign than with traditional fixed braces, reducing the risk for decay, staining and other dental problems.

Invisalign aligners can be removed for eating and drinking, allowing children to eat whatever they want with no diet restriction.

In general, there is less discomfort during treatment with aligners compared to other

traditional removable orthodontic appliances, which tend to be more bulky with wires that can injure the oral soft tissues.

Invisalign also reduces (and often eliminates) the need for emergency visits during treatment, which are often associated with fixed braces (poking wires and broken brackets). After all, Invisalign is designed to be comfortable.

Additional benefits for children using Invisalign First include:





**FIGURE 11:** Case six – before



**FIGURE 12:** Case six – after



**FIGURE 13:** Case seven – before



**FIGURE 14:** Case seven – during



**FIGURE 15:** Case seven – before



**FIGURE 16:** Case seven – during

- Improves confidence and self-esteem related to crowded or protrusive teeth
- Improves the aesthetic appearance a child's growing smile
- Allows for both arch and jaw development to create space for future eruption of permanent teeth
- Can simplify future orthodontic treatment when the patient is in the permanent dentition
- Helps to prevent dental trauma.

It is important to be aware that early orthodontic treatment does not apply to all orthodontic problems.

In certain cases where Invisalign First can help, it is also critical to know that these patients are still likely to need full braces, comprehensive Invisalign or Invisalign teen treatment once all permanent teeth erupt.

That said, early orthodontic treatment will certainly simplify and shorten future orthodontic treatment, making Invisalign First an excellent option for parents and children alike.

### CASE STUDIES

In my practice, I have treated a range of patients of various ages with Invisalign First (Figures 1 to 8). Treatment has included:

- Upper arch expansion to accommodate erupting permanent teeth in a 10-year-old female patient (Figures 9 and 10)
- Correction of deep overbite, increased overjet and arch expansion using precision wings and eruption compensation features of Invisalign First (Figures 11 and 12)
- Correction of anterior crossbite and alignment of erupting permanent anterior teeth in a male eight-year-old (Figure 13 to 16).

### SUMMARY

With a rapidly changing market and an increased demand for aesthetic orthodontic treatment, younger children and pre-teens want the same choices their older siblings have been able to benefit from – and with this great state of the art treatment, Align has once again proved it has so

much to offer to this new group of patients.

Appliance systems such as Invisalign are likely to become more and more common in the future. This technology is now shaping how we improve patients' smiles and it is likely given the advance state of modern Invisalign treatment, it can only be assumed that aligners will replace traditional fixed braces one day.

It is time for orthodontist to be proactive and get in the game; embrace Align's digital platform for kids and keep up with the future of orthodontics. [📄](#)

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### PRODUCTS USED

Invisalign First Align Technology

