

3M Unitek

Giving teeth an aesthetic look

Dr. Christian Drost has been running an orthodontic practice in Zug. Poorly positioned teeth are common. There are various forms of treatment, including the Clarity™ SL Brackets.

Dr. Drost, what are the most common forms of dental malpositions and their causes?

It is undoubtedly mandibular crowding. This occurs on its own and in combination with other forms of dental malposition. Its cause is the tendency for the lateral teeth to migrate towards the front throughout life. Cleaning your teeth is difficult in such circumstances and usually results in chronic inflammation of the gums and the periodontal apparatus. In addition, crowding of the anterior teeth does not look so nice. In central Europe, two out of three children require treatment, of which one case is urgent. The reasons for this are probably our worsening genetic makeup and an inappropriate diet. According to a German study, only 1% of children, 3% of adolescents and 2% of adults have healthy dentition. 30% of children and 22% of adolescents and adults show extensive malpositions. 70% of all those examined were rated as requiring treatment. As this issue always also has a health-political spect, it is dealt with in different ways in different parts of the world. This is based upon the view of what type of orthodontic treatment the given society can afford to provide. Provision in Switzerland and Germany is of a comparatively high standard, while in India and China it is in relation to the size of the population.

At what stage are dental malpositions corrected?

That depends mainly on the parents or the patients. Around the age of 8, parents

should take their child to see an orthodontist for the first time. Early, step-by-step, treatment is recommended in cases of crossbite or strong mandibular growth. Following the consultation, the parents can decide whether they wish to start relatively early or prefer to wait. The patient's circumstances must be taken into consideration, in other words their schooling or profession, planned holidays etc., as well as their current financial status.

The aesthetic aspect is prominent among the motives for a visit to an orthodontist. A feeling of an unprepossessing appearance is associated with fears of social discrimination and psychological problems. This applies both to the parents who have taken their children to consult an orthodontist as well as to adult patients.

Aesthetics and their psycho-social implications are therefore the main motive for laymen seeking seek orthodontic treatment. In comparison, functional losses that have been experienced play a lesser role. This is due to the fact that the slow development of an anomaly and the simultaneous development of compensatory mechanisms by the masticatory apparatus and getting used to the situation are not consciously perceived. However, if a change also becomes noticeable to the affected layman

or a dentist notices the anomaly during a routine check-up, then concern for the healthy maintenance of the dentition may of course be a further motive for treatment. Exceptions are those anomalies that have already resulted in massive functional disorders and pain.

What are the options for treatment?

We basically distinguish between removable, e.g., Bionator, and permanent methods of treatment, e.g., 3M Unitek. These options can then be divided into the visible and the invisible: www.lingualtechnik.de and www.invisalign.ch. Furthermore, we distinguish between treatments that affect the growth of the jaw and treatments involving collaboration with an orthodontic surgeon once growth is complete. In the latter case, the jaw can be specifically optimised through surgery at any age.

What typifies 3M Unitek products?

You really need to tell me that (laughs). They are tested in great depth before they are released onto the European Market. There is a variety of information on the medical packaging about shelf-life, storage etc. During my work at 3M, I was able to gain an impression of various areas of research and was surprised at how



Christian Drost bending a piece of wire

many guidelines need to be adhered to. The new Clarity SL Brackets are simpler for us orthodontists to use and they shorten treatment times. For the patient, this means fewer consultations are needed. The position of the teeth is corrected gently – with little pain due to pressure.

How long does the treatment take?

That depends mainly on the patient's wishes. The average treatment following the examinations is extended over a longer period: a good 3 years. We distinguish between the somewhat rarer early treatment, frequent treatment during the late phase of mixed dentition and the frequent late treatment once all of the permanent dentition is present. It is never too late, so long as the periodontal apparatus is in a healthy condition. The proportion of adult patients is continually on the increase at my practice. During early treatment, it is easier to shift the bite and positively influence bone growth or gains in bone. This advantage is associated with longer treatment times and higher costs. Most treatment using the new Clarity SL Brackets takes approximately 12 months, while in cases where extraction is required, i.e. treatment involving pulling out teeth, the treatment lasts about 18 months. Compared with the duration of treatment using the older systems, this is a reduction of a few months. In accordance with the criteria of sufficiency, economy and utility, we conduct a final consultation towards the end of the treatment. In this case, the patient makes the decision about how far he wishes to go. As regards the finishing process, tiny changes often no longer bear any relation to the costs involved and motivation is reduced by the duration of the treatment. This also means that once the patient is satisfied, the termination of treatment can then be discussed. What is important to me is informing the patient.

What needs to be considered during treatment?

Cooperation, also called compliance, has always been a problem in orthodontics. In

spite of the attempts by the person performing the treatment in motivating the patient, patient compliance is on average inadequate. A substantial proportion of failures are due to non-compliance. Treatment is terminated prematurely in approximately 13% of cases. Studies into this reveal moderate to low cooperation in 30% of cases. According to another study,

- There are unpleasant factors associated with the treatment: Pressure, increased saliva production, conspicuousness, speech impairment.
- The requirements interfere with every day life and are "occasionally" forgotten as fulfilling them is difficult to check up on.



Standard treatment using brackets and ligatures



Clarity™ SL Brackets from 3M Unitek: aesthetic, functional and time-effective

approximately 43% of children admit to not having worn their braces as instructed to for short periods – with 9.5% not wearing them even for longer periods. However, in orthodontics, the instructions not only refer to the length of time the brace should be worn. Other instructions refer to looking after the brace, oral hygiene, dietary habits and keeping appointments. There are, of course, reasons for unsatisfactory compliance, in particular with regard to wearing the brace:

- The average treatment after examinations is extended over a long period: this results in signs of fatigue.
- Non-compliance has no severe consequences.
- Many young patients are at a stage in their development that is characterised by phases of psychological instability and the rejection of authority.

Only when we have knowledge of the causes of good or bad cooperation can we start to take targeted measures

What are the costs the patient is likely to face? Can health insurance cover some of the cost?

This is also a question of what the patient wants. Switzerland has the highest health costs worldwide. Our system is relatively complicated. An international comparison shows it to be more expensive, but overall of a very good standard. The costs to the patient also depend on whether he has additional insurance for orthodontics. In rare cases, institutions like council school dentistry or basic health insurance will cover part of the cost. In very rare cases, social security will even cover the costs. Your orthodontist is best placed to advise you on this. All this is individually assessed for each patient after the initial consultation. Only then can the patient assess whether he wishes to decide on a minimal solution, an intermediate one, or a maximum or even luxury solution. Based on my statistics, permanent braces often have a cost of around 4,000 Swiss Francs per jaw. Lingual technique is calculated as for external treatment, whereby only the laboratory costs for invisible dental braces are calculated as an additional cost of approx. 1,400 Swiss Francs per jaw. Treatment using the new ceramic Clarity SL Brackets results in an additional cost of approximately 200 Swiss Francs per jaw. The costs are not all incurred at the same time. The costs can also be paid in instalments should this be requested. When it comes down to it, most of my patients are more concerned about the quality of the treatment than the price. My grandfather always said: "If you want to save, buy good quality". This is my reason for working with 3M products.

*Tatjana Brunner
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Career history

- 1987-1996 Read dental medicine and medicine at the Free University Berlin and the Charité Berlin
- 1995-1999 Training in dentistry specialised in orthodontics
Doctorate awarded by the Department of Jaw Orthopaedics and Orthodontics
1st, Student Progress Award, Charité Berlin
- 1999-2001 Private Orthodontics Practice
Berlin Steglitz-Zehlendorf
- 2000 Orthodontics Consultant
University Charité Berlin
- 2002-2006 Director of Orthodontics
St. Gallen School Dental Clinic
- 2004 3M Unitek Switzerland representative
- 2006 Succeeded Dr. Peter Aschwanden in Zug
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