

Facts about orthodontics



GREEK
ASSOCIATION
FOR ORTHODONTIC
STUDY &
RESEARCH

ATHENS 2006

What is Orthodontics and who is the orthodontic care provider?

Orthodontics is the specialty of dentistry which deals with the proper position of the teeth in the dental arches and the guidance of the jaws into a harmonious relationship. Its main goal is to restore proper function of the mouth and achieve harmonious esthetics of the face.

Orthodontics is one of the recognized specialties of dentistry and equivalent to the medical specialties. For the practice of orthodontics, special knowledge is required which is in addition to the curriculum of the general dentist. That knowledge is obtained after the completion of the Dental Surgery Degree, in post-graduate orthodontic programs that exist in most countries of the world.

Formally the title of an orthodontist is obtained through the Ministry of Health and Social Solidarity after the successful completion of an examination. Only the doctors who have that title from the Ministry of Health and Social Solidarity are allowed to call themselves "orthodontists".

Orthodontists, these are the specialized dentists that they are only performing orthodontic treatments exclusively.

Since orthodontics was only recently recognized as a specialty in Greece and taking in consideration that the number of specialized orthodontists is limited, people who seek orthodontic treatment should first check, through their local dental societies, whether the dentist they visited is an accredited orthodontist.

**All children should have the first orthodontic consultation
no later than the age of 7!**

When orthodontic treatment is necessary?

Orthodontic treatment is considered necessary in cases of dental, skeletal or functional problems of the mouth. The orthodontist is expected to achieve one or more of the following goals:

- a Proper function of the mouth (chewing, speech)
- b Allowing better oral hygiene possible, which results in fewer future problems of the teeth and gums and in keeping the teeth in the mouth longer. In the following pictures the difference in the condition of the gums before and after treatment is illustrated



- c Alignment of the teeth and restoring proper function of the oral system enables the general dentists and other specialists to achieve better results in their dental work (fillings, crowns, bridges, dentures, periodontal and gum treatments)
- d Reduce the risk of teeth fractures especially when the teeth are protruding from the lips, mostly in younger patients, as is illustrated in the picture below



- e Reduce the risk of problems in the Temporomandibular Joint (TMJ), which is the joint that connects the lower jaw with the skull

- f A beautiful smile and more harmonious face which in turn results in a better self-esteem for the patient, as is illustrated in the following case



3

Malocclusions that are usually addressed by orthodontists

first category

There are three basic categories of malocclusions. The first category consists of **dental problems**, in which the teeth (for various reasons) don't have the correct position on their osseous base (dentoalveolus), and as a result they appear crowded, spaced or rotated. Usually these problems are not visible when the mouth is closed, as is illustrated in the following case.



second category



The second category consists of **skeletal problems**, where the jaws have not grown harmoniously and that in turn has a negative effect on the function of the mouth and the esthetics of the face. In this category the goal of orthodontic treatment is to correct the position of the teeth and restore the balance of the face.



third category



Finally, in the third category the patient has a combination of **dental and skeletal problems**, which not only affect the oral cavity but also the esthetics of the face.

The improvement with orthodontic treatment is obvious in the post treatment records.



Causes of orthodontic problems

The cause of orthodontic problems can be **hereditary**, **environmental** or combination of the two. Teeth and jaw size, as well as their relationship with each other, are characteristics that can be inherited from parents to children.

An example of a **hereditary factor** is the child who inherited large teeth from the father and small jaws from the mother. In that case the teeth don't fit in the jaws and they are very crowded.



Environmental factors are various non-natural habits, such as oral breathing, sucking of fingers or the tongue, biting of nails or objects (ex. pencils), which result to movement of the teeth and also they have negative consequences on the esthetics of the face because the harmonious relationship of the jaws is compromised.



Another condition that often causes orthodontic problems is the premature loss of primary teeth due to caries. This happens because the primary teeth hold the space for the eruption of the permanent teeth. If a primary tooth is lost, the adjacent teeth take up some of that space and when the time comes for the permanent tooth to erupt, it may not have enough space which results to crowding and/or other similar problems.



THE SOONER THE BETTER

Prevention is necessary in every specialty of medicine and dentistry, therefore we would recommend that the first visit to the orthodontist should take place no later than the age of 7. That way the orthodontist will assess whether there is a problem or not, its severity and decide the proper time to start treatment. Generally speaking, orthodontics can be preventive.

Preventive orthodontics, aimed at young patients, treat problems such as premature loss of primary teeth, prolonged sucking of a finger and tongue-thrusting.

Placing a space retaining device in the case of premature loss of primary teeth, can avoid some of the future problems of crowding, as is illustrated in the following pictures.



In cases of finger sucking and tongue thrusting, it is possible to stop the habit without the placement of orthodontic appliances, if the parents and children are guided properly.

In the case that follows it is obvious how the teeth positions improved after the child stopped tongue thrusting.



Interceptive orthodontics usually starts at the age of 7-9. Its goal is to avoid the development of skeletal problems of the jaws, facial asymmetries or even dental problems which would get worse without timely treatment. The restoration of symmetry in the face and the mouth after treatment is illustrated in the following case.



Corrective orthodontics, finally, deals with the already developed problems of children or adults. Treatment initiation is determined by the orthodontist, depending on the severity of the problem and the stage of dental and skeletal development of the child.



Advantages of initiating treatment at the right time!!!

1. Better prognosis of avoiding extraction of permanent teeth.
2. Better guidance of skeletal problems, since the orthodontist can control and guide the skeletal development prior to the onset of puberty.
3. Better tissue response to treatment.
4. Better adaptation of the young patients to the appliances and better cooperation
5. Practically easier treatment, since elementary school children have fewer obligations than those of high school.
6. Younger children don't feel embarrassed and generally they don't have the psychological issues of adolescents.
7. When the treatment starts early, it is almost finished by the time the child enters puberty and they have more self-esteem as teenagers because of their improved facial esthetics.
8. Adult patients whose skeletal development is completed, have extractions of permanent teeth more often or when they have severe skeletal problems occasionally require orthognathic surgery.



What kind of orthodontic appliances exist?

Appliances that can be used during orthodontic treatment are either removable, which patients can remove them at will or fixed appliances, when they are permanently bonded on the teeth during treatment and can only be removed by the orthodontist. A slight discomfort is considered normal and is expected during the first couple of days after the placement of the appliances.

Expansion appliances:

These are appliances that are used for the modification of the shape of the dental arches. They include removable expansion appliances that they have to remain in the mouth 24 hours a day, and fixed expansion appliances.



Functional appliances:

They are removable or fixed appliances that can be used for the correction of skeletal problems when the orthodontist wants to achieve guidance, stimulation or arrest of the development of the jaws. They are used on young children, but mostly in the prepubertal and pubertal period. The removable functional appliances are mostly used during the night and some hours during the day, while the fixed one's cannot be removed.



The advantages of the removable appliances are that they can be cleaned more easily and can be removed for the meals. Nonetheless, on non-cooperative patients the fact that they can be removed at will can constitute a disadvantage.

Extraoral appliances

They are anchored on the back of the neck or the head with elastic strips and they are used either in orthodontic problems to provide extra space for the teeth or in skeletal problems to maximize or diminish jaw growth.



Fixed appliances

Elastic rings, elastic chains, or special springs which are used in addition to the archwires that connect the brackets, result in three dimensional movement of the teeth towards the desired direction. They are used at all ages, whenever it is necessary to move teeth with precision.



Perfect oral hygiene is a prerequisite for their use, otherwise the oral health can be compromised.



Retaining devices

After removal of the active appliances it is necessary to retain the achieved result for a period of time that is determined by the orthodontist. That can be achieved with removable or permanent retainers. **Patient cooperation in this phase is crucial, and assures that the treatment result will not relapse or maturation changes will be avoided.**

Harmful habits

Various habits that children have may often cause problems in the development of the teeth and the mouth. Such habits are oral breathing (which is often correlated with oversized adenoids, chronic asthma, allergic conditions), grinding of the teeth, tongue pressure, biting of the lower lip, nails or other objects (pencils, erasers), chewing on one side, sucking fingers etc.



Thumb or finger sucking in young children usually stops at the age of 2-3, in which case any minor damage done is self-cured without any intervention. A child who continues after that age even through the school years, can be concealing some kind of insecurity or stress that can be due to several reasons such as a younger sibling, long absence of the parents or a change of school or house.

In these cases support, affection, friendly conversation are the best assistance to eradicate the problem in its source. In persistent cases the orthodontist can support the effort of the parents with appliances, which succeed in stopping the habit. Yelling and punishment are the worst possible approaches. On the contrary, what works the best is praise of the child for the effort or a small gift when the goal is achieved.

Do we have to extract teeth during an orthodontic treatment?

During treatment we might need to extract some primary teeth, when they remain in the mouth too long. Extractions or not of permanent teeth is a very serious decision that the orthodontist has to make. In certain cases such as when there is a disharmony between teeth and jaws or when the extractions are made necessary by the skeletal development of the face.

The timing of the extraction and the teeth that will be extracted are determined by the orthodontist who is responsible for the decision.

Adult orthodontics Cooperation of the orthodontist with other specialties

Patients with orthodontic problems that were not addressed when they were young, can benefit from orthodontic treatment as adults. Adult treatment often requires that the orthodontist cooperates with other specialties of dentistry or medicine (dentist, periodontist, endodontist, prosthetic dentist, ENT, oral surgeon, plastic surgeon etc). That cooperation is not only for prolonged orthodontic treatments but also concern the orthodontic treatments of limited extent and duration, as an assistance to other treatments (periodontal, reconstructive etc). These treatments can ensure the best functional and aesthetic results possible as the patient takes advantage of the treatment capabilities of different specialties.



Combination of orthodontic and surgical treatment





Combination of orthodontic, periodontal and reconstructive treatment



Combination of orthodontic and reconstructive treatment

Requirements for a successful orthodontic treatment

Successful orthodontic treatment requires a **specialized orthodontist** and a **cooperative patient**.

The patient is cooperative when he/she follows closely the instructions of the orthodontist on the use of the appliances, keeps the appointments and has impeccable oral hygiene. That means that he/she has to brush **effectively** 3 times a day after the main meals, and has to avoid consuming sweets, candy and chewing gum in between meals. That's the only way the treatment can achieve its goals in the shortest possible time.

As far as the **duration of the treatment** is concerned, it varies from few months to a couple of years, depending on the nature and the severity of the problem. More complex cases may take longer time.

The variety and complexity of the problems and the available appliances show clearly that orthodontics requires knowledge in depth, experience and abilities in both diagnostic and clinical level. These requirements are necessary in order to recognize the real nature of orthodontic problems and apply the proper appliances to achieve an excellent and stable result. This is the allure and the challenge of orthodontic treatment.

This booklet has been published by the
GREEK ASSOCIATION FOR ORTHODONTIC STUDY & RESEARCH

1 KYVELIS STR., 106 82 ATHENS • TEL.: +30 210 8227576
FAX: +30 210 8253176 • [http: //www.eogme.gr](http://www.eogme.gr) • email: info@eogme.gr