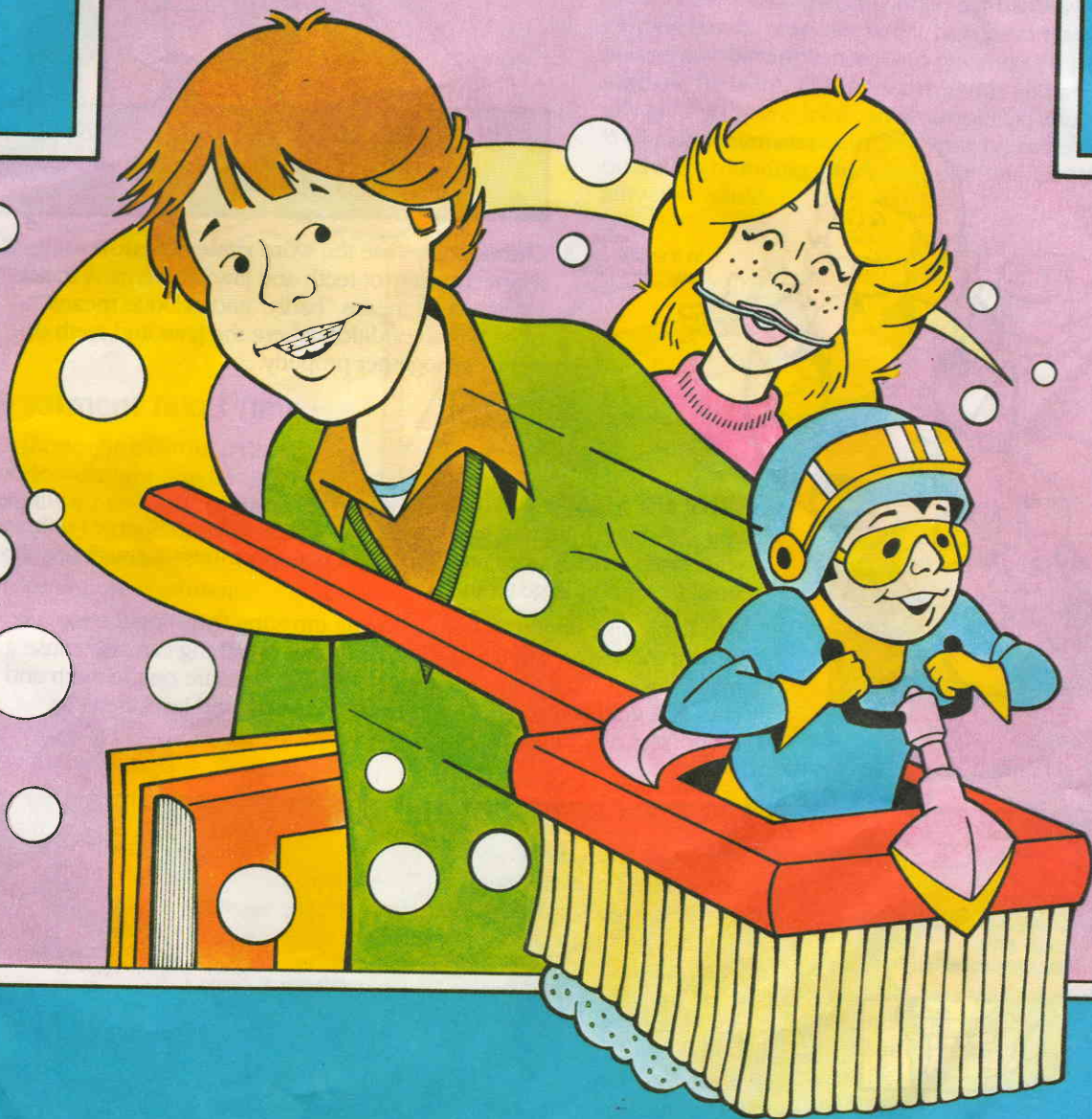


A Guide to the Wearing and Care of Braces

# BRACES OWNER'S MANUAL

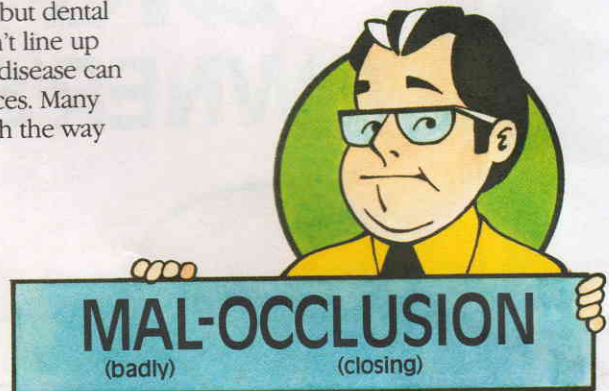


## Straight Talk about Your Teeth

Did you know that more than 4 million people in this country are now wearing braces? So you're not alone if your family dentist or your orthodontist has recommended braces for your teeth.

### Why Do I Need Braces?

People have their teeth straightened for lots of reasons, but dental health is the most important. If your teeth and jaws don't line up properly in good biting position, tooth decay and gum disease can develop. Appearance is another reason for wearing braces. Many people get braces because they simply aren't happy with the way their teeth look.

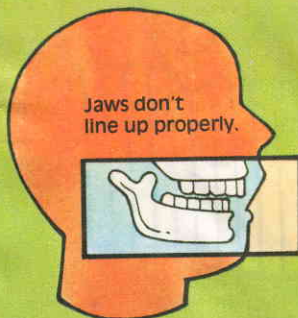


Orthodontists use the word **malocclusion** to describe a variety of teeth and jaw problems. A malocclusion (mal means "badly" and occlude means "to close") is a condition where the jaws and teeth do not close together properly.

### Why Do I Have a Malocclusion?

You may have inherited it. For example, if your father has large teeth and your mother has a small jaw, you could possibly inherit a jaw that is too small to support large teeth.

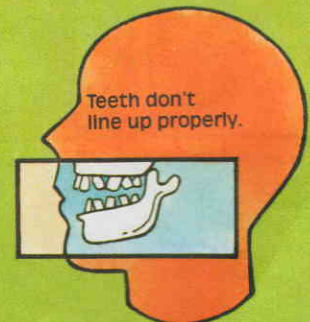
Bad habits like fingernail biting, tongue thrusting (pushing the tongue against the teeth), thumb sucking, or mouth breathing can also cause a malocclusion. That's because they put steady pressure on the teeth and jaws and gradually move them out of line. Teeth and jaws aren't as motionless as you might think!



**Skeletal malocclusion**

### Types of Malocclusions

There are two kinds of malocclusions. The most common kind is a **skeletal malocclusion** where one jaw has not grown in alignment with the other. The other kind is a **dental malocclusion**, which occurs when the teeth are out of line, turned, crowded, or spread out. It's also possible to have both at the same time. The type of malocclusion you have is a key factor in determining when you'll start orthodontic treatment and the type and length of treatment you'll need.



**Dental malocclusion**

This booklet is not intended as a substitute for professional orthodontic care.

©1981, 1983, 1984, 1985 by Krames Communications, 1100 Grundy Lane, San Bruno, CA 94066-3030. (800) 333-3032. All rights reserved. It is a violation of United States copyright laws to reproduce any portion of this publication in any form or by any means without written permission from the publisher. Lithographed in Canada.

## Orthodontics to the Rescue!

### Why Should I Have My Teeth Straightened?

Poorly arranged teeth can break easily and can trap food particles that cause tooth decay and gum disease. What's more, they can interfere with your ability to chew, which can prevent you from digesting your food properly. Poor digestion can be bad for your overall health. Sometimes a malocclusion can even cause a speech problem. Fortunately, orthodontic treatment can usually solve these problems.

Orthodontics, often called **Dentofacial Orthopedics**, is a special branch of dentistry that deals with straightening teeth and altering bone growth. The orthodontist uses specially fitted appliances—including bands, brackets, wires, headgear, elastics, and removable appliances—to put constant pressure on the teeth. This pressure gently and gradually guides the teeth into their proper positions. Well-aligned teeth require less care, place less strain on the surrounding gums and bone, and give you an attractive smile.



### Treatment Takes Time

Orthodontic treatment doesn't work overnight — in fact, there is usually a 2-to-3 year period of active treatment which is followed by another 2 or 3 years of "retention" treatment.



It's a long haul, and you'll have to wear your orthodontic appliances faithfully if the outcome is to be successful. You'll need to brush thoroughly after every meal and snack, avoid certain foods, and make regular visits to your orthodontist and family dentist.



But most people who've worn braces think it's worth the effort. If you follow your orthodontist's instructions to the letter, you can hurry the process along. At the end of treatment, you'll have healthy teeth and a smile that you can be proud of — for the rest of your life.



**This booklet** was written for you and your parents to help you understand how orthodontic treatment works and what you need to do to make it a success.

## More to Teeth Than Meets the Eye

To understand where orthodontic problems begin and how treatment works, let's first take a look inside the mouth.

Nature has given us two sets of teeth. The primary set (commonly called "baby teeth") has 20 teeth. As you grow, these fall out and are gradually replaced by permanent teeth — 32 in all.

Your teeth are divided into four different types, each suited to do a particular kind of biting or chewing.

**Molars** are ideal for heavy chewing and grinding.

**Bicusplds** (found only in permanent teeth) aid in tearing and chewing.

Developing adult teeth

Sharp-edged **incisors** cut food.

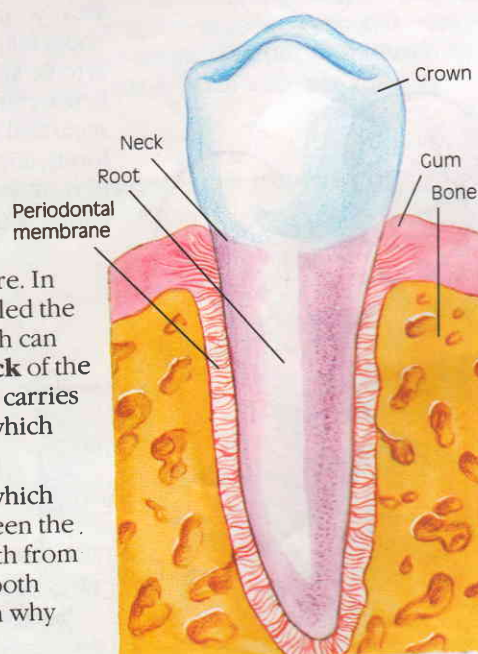
Pointed **cusplds** grasp food and guide teeth while chewing.

In order to chew properly, teeth should work like gears. The upper jaw and teeth are normally a bit bigger than the lower jaw and teeth, so when you close your mouth, the upper jaw overlaps the lower one slightly, and the teeth mesh snugly together. But if the teeth are turned, crowded, or spread out, or if the jaws don't line up properly, the teeth don't mesh together and may even clash against each other. Orthodontics works to correct these problems by gradually moving the jaws and teeth into their proper position, often before all the permanent teeth are in.

### The Living Tooth

You may not think of your teeth as living organisms, but they are. In fact, they're a bit like plants. The "flower" part of the tooth, called the **crown**, is covered with a hard substance called **enamel** which can become decayed if the tooth is not brushed regularly. The **neck** of the tooth, buried under the gum, is like the stem of the plant, and carries the nutrients to the crown. At the bottom of each tooth is a **root** which anchors the tooth to the jaw.

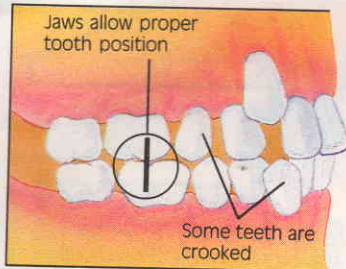
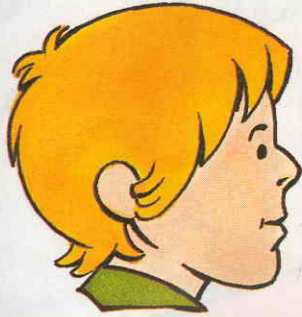
The root rests in the "soil" of the **periodontal membrane** which consists of millions of tiny fibers that provide a cushion between the tooth and the jaw when you chew. Food is supplied to the tooth from the surrounding bone and blood vessels. Like a plant, if the tooth doesn't get the right nutrients, it can't thrive. That's one reason why eating the right foods is so important for healthy teeth.



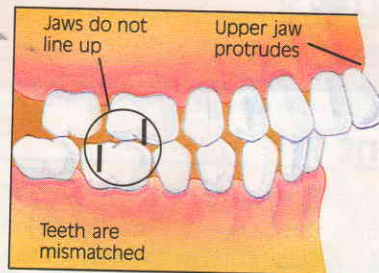
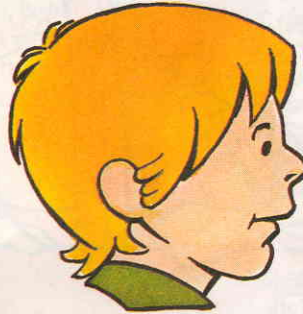
## Types of Orthodontic Problems

Teeth can last a lifetime if they're properly aligned and well cared for. Unfortunately, dental and jaw abnormalities do often occur. Teeth can be impacted (trapped in the jaw bone), turned, crowded, spaced, or even missing altogether. Fortunately, most of these problems can be corrected by ortho-

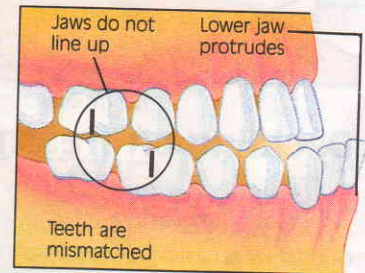
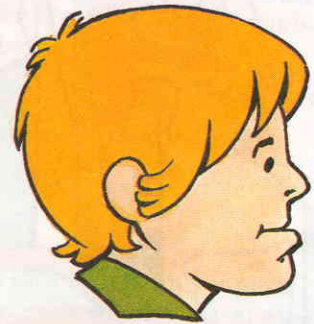
dontic treatment. Orthodontic problems are divided into three main categories called **Class I**, **Class II**, and **Class III malocclusion**. Each condition calls for a different type of treatment. It is possible, though, to have a combination of these malocclusion problems.



**Class I** This problem occurs when your jaws line up with each other but your **teeth do not mesh together properly**. You may have teeth that are either too large or too small for your jaw, making it hard to chew properly, and possibly detracting from your looks.



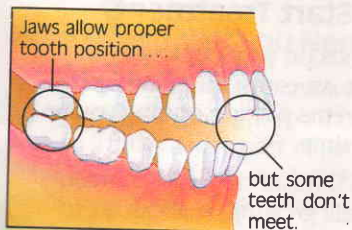
**Class II** This condition is known as an **overbite**, "buck teeth," or "rabbit teeth." It occurs when the upper jaw grows too much and sticks out, or when the lower jaw doesn't grow enough and recedes. A receding lower jaw may require oral surgery.



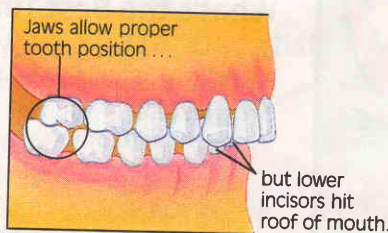
**Class III** Sometimes called an **underbite**, this malocclusion is much less common than the other types. It occurs when the lower jaw has outgrown the upper one. An underbite can be a serious threat to health, and surgery may be necessary to correct it.

## Other Common Orthodontic Problems

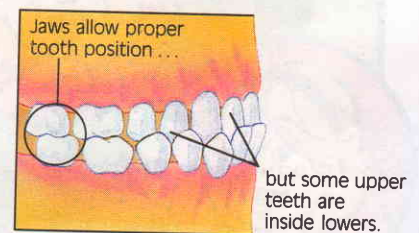
There are three other common orthodontic problems that can accompany any type of malocclusion.



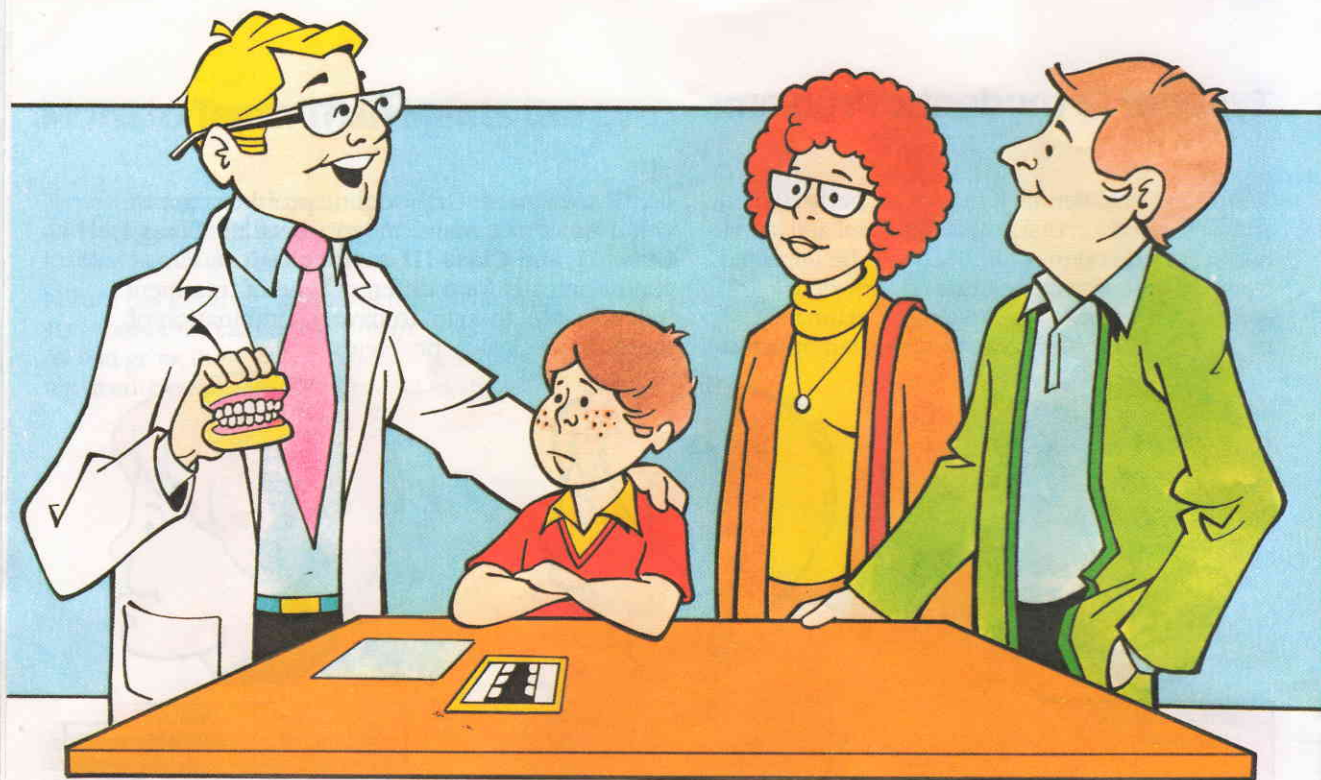
**Open Bite** A few poorly placed teeth prevent the teeth from **closing together completely**. The molars close, but the front teeth don't meet.



**Closed Bite** The upper teeth overlap the lower teeth too much, causing the lower incisors to press into the roof of the mouth when you chew.



**Cross Bite** One or more of the upper teeth, which normally fit just outside the lower teeth, actually close inside the lower teeth.



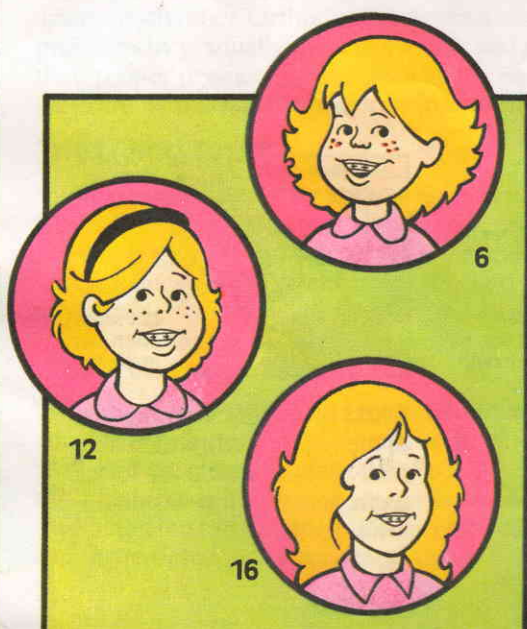
## Deciding on Treatment

During your first visit to the orthodontist, the orthodontist or an assistant will examine the general condition of your teeth and gums. The orthodontist will then evaluate your jaws and throat, and determine the type of malocclusion you have. Any X-rays available from your dentist also will be reviewed.

The orthodontist will then probably be able to tell you and your parents whether treatment is advisable or not. If treatment is recommended, you will be advised when it should begin, about how long it will

take, what kinds of appliances you will wear, and what your schedule of appointments will probably be. The cost of your treatment also may be discussed at this time.

Like any other health care procedure, there are problems that can come up during and after orthodontic treatment. Your orthodontist will discuss the possible—but uncommon—risks so that you and your parents can take them into consideration when you make your final decision about treatment.



## What's the Best Time to Start Treatment?

When you begin treatment depends on your particular problem and dental development. An early visit to the orthodontist will help you and your parents plan on starting your treatment at the most opportune time.

If your jaws are out of line (Class II malocclusion), treatment should start while your jaws are still growing, at about six to nine years of age. Sometimes treatment can even begin as early as infancy. If only your teeth are out of line (Class I), you may want to wait until all your permanent teeth are in, usually by about the age of 11.

Don't worry, though, if your treatment doesn't begin that early—it can still be completely successful. In fact, many people don't begin treatment until they're adults.

## Before Your Braces Go On

If you choose to have orthodontic treatment, your next visit is likely to be a long one. In addition to X-rays of your teeth, your orthodontist (or a nearby X-ray laboratory) will take special X-rays that show your entire head and neck. This enables your orthodontist to see your teeth in relation to the rest of your head so that a more detailed diagnosis can be made. As your treatment progresses, your orthodontist will compare these X-rays with later ones to make sure your teeth are moving according to plan. (Only as many X-rays as are necessary for proper treatment will be taken.)

During this visit, impressions will be taken so that a model of your upper and lower teeth can be made. There's nothing painful about this procedure — the orthodontist simply puts some soft material on your teeth which stiffens and is removed about a minute later. Plaster is later poured into the impressions to make models of your teeth. You'll be asked to bite into a soft piece of wax for a few seconds so that the models can be lined up correctly. The finished model is an exact duplicate of your teeth and gums, and allows the orthodontist to study your teeth even when you're not in the office.

**Special Note** If you suck your thumb or push your tongue forward against your teeth, you will have to give up the habit in order to have successful treatment. Fingernail biting and mouth breathing can also push the teeth out of line, and can work to slow down orthodontic treatment.



## How Often Will You Need to See Your Orthodontist?

Your first few appointments will be only a week or so apart. Soon, though, you'll be going about once a month for the active part of your treatment, and then less often after your braces are removed. It won't be possible to schedule all your appointments after school because most of your orthodontist's patients, like yourself, also go to school. But every effort is made to schedule appointments during your least important school activities.

You'll also need to make regular visits to your family dentist throughout your treatment. Periodic check-ups are necessary to prevent tooth decay and gum disease.



# Orthodontic Appliances

Your orthodontist will use appliances specially tailored to fit your mouth to guide your teeth, muscles, jaw joints, and bones into proper position.

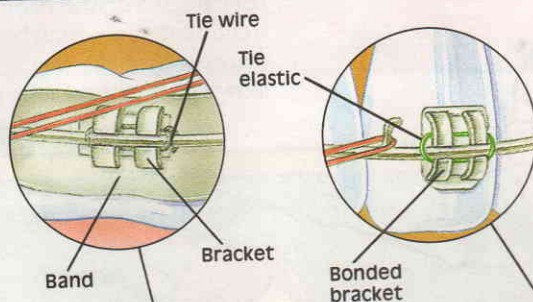
## Spacers

**Spacers** may be placed between your teeth before you are fitted with appliances. These small elastics or wires fit snugly between each tooth to help move the teeth slightly apart so that bands can be fitted around them about a week later. Spacers can be uncomfortable, especially when you try to sleep. Aspirin or an aspirin substitute may be prescribed by your orthodontist to help relieve the soreness.

A spacer can fall out on its own if it has made enough space between your teeth. Unfortunately, it can also fall out if you poke it with your tongue or fingers. If you do lose a spacer, find out if it has done its job by slipping some dental floss between the two teeth. If the floss gets stuck, the spacer hasn't made enough space, and you'll need to get it replaced before your banding appointment.

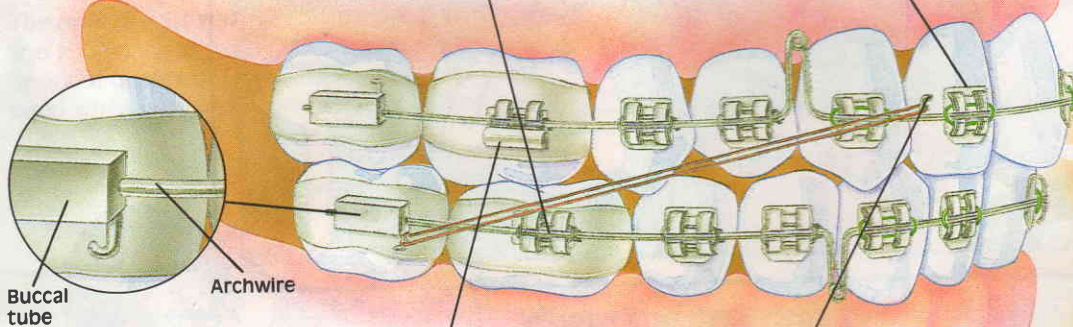
## Braces: A Parts List

Stainless steel **bands** encircle and are usually cemented to your molars. Although bands don't move teeth, they provide an anchor for brackets that hold the wires that do move your teeth.



**Brackets** are attached to the bands, or are bonded directly to the front of each tooth, eliminating the need for bands.

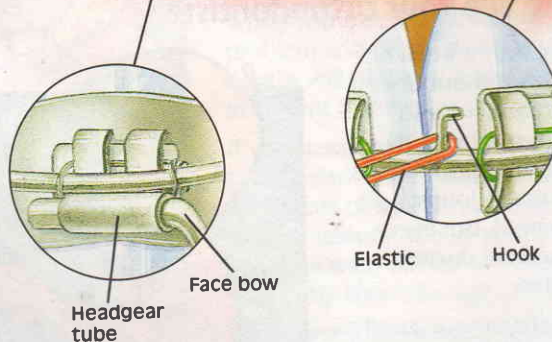
**Tie wires** are fine wires that fasten the archwire to the brackets. Small **tie elastics** may be used instead.



The **buccal tube** holds the end of the archwire securely in place.

The **archwire** forms a track to guide the movement of teeth.

The **headgear tube** holds the **face bow** of your headgear. (You'll find out all about headgear on page 10.)

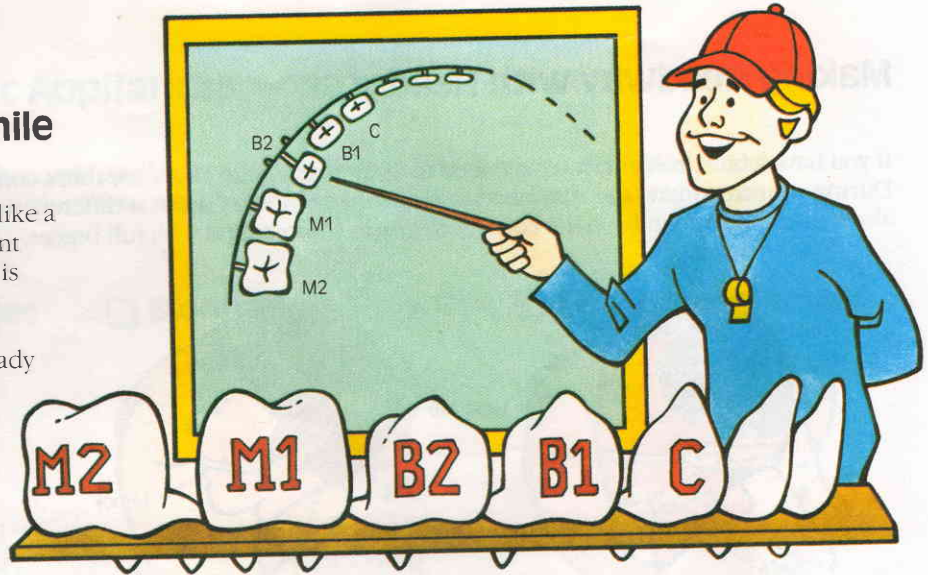


**Elastics**, or **rubber bands**, attached to **hooks**, achieve the precise fit of individual teeth. They may be worn from the upper teeth to the lower teeth in various ways depending upon your bite problem.



## Braces— For a Winning Smile

Your orthodontist is a little like a coach. Before your treatment starts, a game-plan strategy is devised to move your teeth and jaws into winning positions, using gradual but steady pressure.

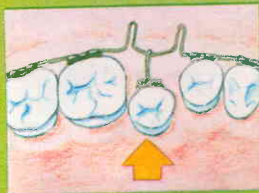


During each visit, the archwires are adjusted slightly to put new pressure on your teeth, causing them to move a little closer to their ideal positions. After each adjustment, you'll feel some soreness, which is a sign that your teeth are moving. This soreness should quickly disappear. You may even be able to wiggle your teeth a little — that's because

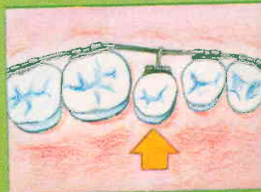
the appliances actually loosen your teeth in moving them. This loose feeling also goes away in a few days.

You may also need to wear elastics, or rubber bands, which you'll quickly become an expert at removing and replacing. Wear them as much as your orthodontist directs — a skipped day can mean extra wearing time!

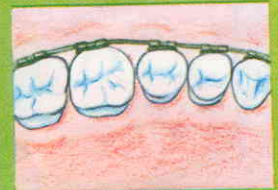
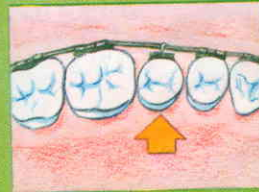
Looking at the teeth from the chewing surface, you can see how the wires help move them into place.



As the tooth begins to move, a flexible archwire or spring and a long tie wire help.

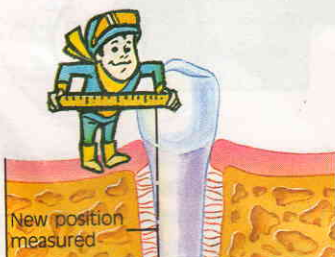


As the tooth moves in, tie wires are shorter and archwire less flexible.



A rigid archwire is used when the tooth is properly positioned.

Looking at the tooth anchored in the jaw bone, you can see how pressure from braces moves the tooth into a new position.



This is the position of the tooth before it is moved by braces. The bone supports the tooth on both sides.



Braces apply gentle pressure to the tooth. Bone is resorbed on one side where ligaments are compressed.



On the side where the ligaments have been stretched, new bone grows to support the tooth in its new position.

## Making Headway with Headgear

If you have a bite problem, you may need to wear a headgear. There are three common types of headgear. During your treatment, you may need to wear one or more of these at different times. They may be worn alone (attached to bands on the back teeth), or in combination with full braces.



**Neck gear** may be used to hold back upper jaw growth or pull teeth back.



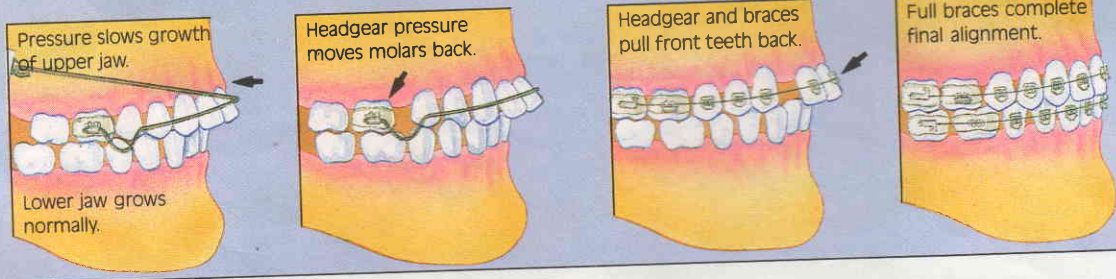
**Head cap or J-hook** may be used to pull protruding teeth up and back.



**Reverse-pull style** pushes against chin and forehead to pull upper jaw forward.

### How Does Headgear Work?

By using your neck or head as an anchor, the strap or elastic bands produce a steady pressure that gradually aligns the protruding upper jaw and teeth with the lower jaw and teeth. The headgear can work by slowing the growth of the upper jaw, allowing the lower jaw time to catch up. Or it can work by pulling back protruding upper teeth.



### The Ins and Outs of Wearing Headgear

Putting on and taking off your headgear isn't hard after you've practiced a few times in front of a mirror. Your teeth may be a bit sore for the first few days of wear, but the more you wear it, the sooner you'll become accustomed to it.

**Caution** Remove the strap first when you take off your headgear. This helps protect your appliances and prevents the face bow from snapping back into your eyes. Don't force your headgear or yank on it. You could loosen a band.



### Wear It!

Steady pressure is the key to successful headgear treatment. That's why you need to wear it at least 14 hours or more every day. (In fact, many people wear their headgear 24 hours a day, except at mealtimes!) The more you wear your headgear, the shorter your treatment time will be. If you forget to wear it for just one day, though, you may need to wear it many extra days to make up the lost ground. If you do forget to wear your headgear, don't try to catch up with your wearing schedule by tightening the strap or using more elastics. You could damage your teeth.

## Other Orthodontic Appliances

There are numerous other orthodontic appliances available to your orthodontist to treat your particular bite problem. These devices, which may be removable or fixed (cemented temporarily in place), can be worn alone or with braces.

### Functional Appliances

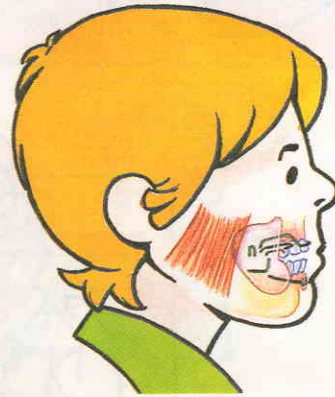
If your jaws are still growing, functional appliances are often worn before or with braces to help retrain the muscles and position the jaws into a better bite. Your orthodontist may recommend a **Bionator**, **Activator**, or **Frankel Appliance**, which will help you bite with your lower jaw in proper position. These appliances are removable, but it is important that they be worn all the time except during meals, unless otherwise instructed.

Other functional appliances that your orthodontist may use include a fixed Herbst Appliance, an Orthopedic Corrector, or a Bite Plane.

### Bionator or Activator    Frankel Appliance



**The Bionator or Activator** fits on the upper jaw. It forces you to bite correctly, bringing your lower jaw into alignment with your upper jaw. Plastic covers some teeth to hold or guide them into position.



**The Frankel** has plastic guards that hold your cheek and lip muscles away from your teeth, giving them room to grow into a good bite. This appliance also positions your lower jaw into a correct bite.

### Special Purpose Appliances

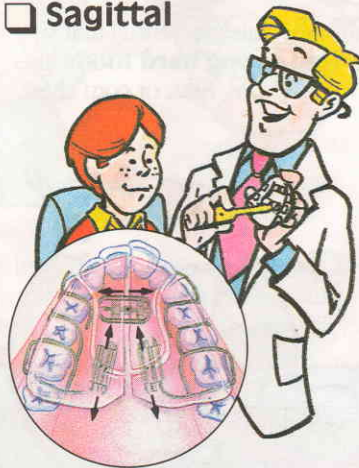
Appliances that treat a specific bite problem include the **Palatal Expander**, **Sagittal**, and **Habit Corrector** described below. Your orthodontist may also use a Bite Plate, Crozat, Retainer, or one of many other appliances that accomplish minor tooth movement.

### Palatal Expander



**The Palatal Expander** gently separates the bony sutures in the roof of your mouth to widen your upper jaw. It is often worn for a few months, and is routinely adjusted.

### Sagittal



**The Sagittal Appliance** is frequently used when teeth are crowded or misplaced. The appliance is adjusted periodically to place gentle pressure on individual teeth.

### Habit Corrector



**The Habit Corrector** discourages thumb sucking and reminds your tongue to press against the roof of your mouth when you swallow instead of thrusting against your front teeth.



## Life Won't Be Much Different

You'll be surprised at how little time it takes to adapt to your appliances. In fact, after the break-in period, life won't be much different at all. There are very few restrictions. As long as you wear a mouthguard, you can participate in any contact sport. And you can still play your musical instrument, too. All it takes is a little determination.



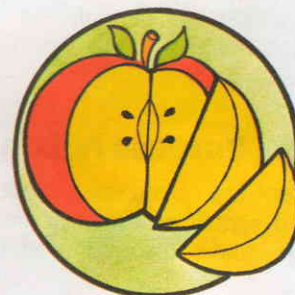
## A Few Helpful Hints

**Be careful of your appliances.** They're not indestructible! In fact, they can be easily dislodged or even broken, if you're not careful. If you do lose or break an appliance, be sure to call your orthodontist's office for an appointment right away. Remember, a broken or lost appliance can't correct your teeth—it can only delay treatment.

Sometimes a tie wire can get loose and poke the inside of your mouth. When that happens, **gently tuck the wire back into place** under the archwire with a blunt object such as a popsicle stick. If you can't nudge it back into place, cover it with a piece of wax until you can get to your orthodontist's office.



It's absolutely essential that you **avoid eating hard foods** like ice, popcorn, nuts, or corn chips.



If you eat raw fruits and vegetables or hard French bread, it's a good idea to **cut them into bite-size pieces first.**



**Sticky foods are out, too.** Bubble gum, caramel, taffy, and other sticky foods can loosen your bands and brackets.



**Cut down on sugary foods and carbonated soft drinks.** Whenever you do have something sweet, brush your teeth immediately afterward.

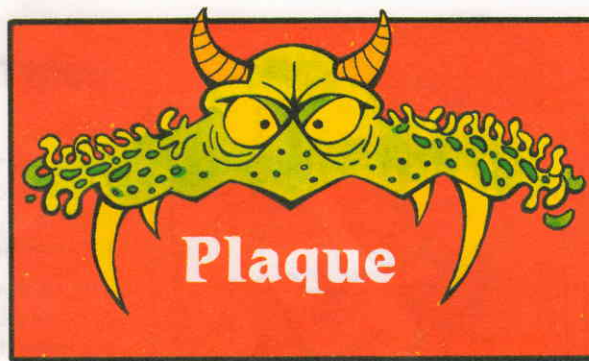


**Be sure to keep foreign objects out of your mouth.** Pencils, fingernails, and other objects can loosen or even break your appliances.

## Cleaning

Keeping your teeth and appliances sparkling clean is a must. Brackets, wires, and loose bands can trap food particles and make it difficult to brush away **plaque**, the layer of harmful bacteria that attack your teeth and gums.

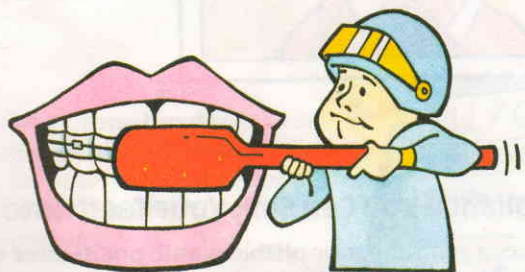
Brushing after every meal or snack is the only way to prevent plaque build-up and tooth decay. When you're not at home, you can carry a small kit containing toothpaste and a folding toothbrush.



### Tips for Good Brushing

There are lots of ways to brush teeth, but here's a good method for braces wearers:

Using a soft-bristle toothbrush and fluoride toothpaste, start brushing the outside surface of your teeth with a back-and-forth motion. Try to brush each tooth 10 times.



Be sure to tilt the bristles into the area right next to the gums (called the **sulcus**). Bacteria love to hide out there.

Brush the inside surface of your teeth with the same back-and-forth motion.

Now brush near the gums — as well as the gums themselves — this time using circular strokes.



Brush the chewing surface of your teeth last.

Rinse your mouth thoroughly. If you've brushed correctly, your teeth and bands should sparkle!

A fluoride mouth rinse may be prescribed to help prevent cavities. Some orthodontists recommend an oral irrigator for braces wearers. This device shoots a strong stream of warm water between the teeth where a toothbrush can't reach. But even though an oral irrigator helps keep teeth clean, it's never a substitute for brushing or flossing!



### The Importance of Flossing

Because a toothbrush can't clean between your teeth, brushing alone won't keep your teeth entirely free of plaque. **Flossing**—at least once a day—is the best way to prevent a build-up of plaque between teeth and between the teeth and gums. Dental floss actually polishes your teeth, and makes it hard for food to stick to them.

Flossing can be a bit tricky for braces wearers at first, but your orthodontist can help you get the hang of it. Ask your orthodontist about a floss threader which helps you get under the archwire. It is available through your orthodontist or pharmacy.



## Hold That Smile!

So you've worn your appliances faithfully, taken good care of your teeth, and kept regular appointments with your orthodontist and family dentist. Congratulations... it's time for your braces to come off!

The removal of your braces is a painless process. Your orthodontist slips the bands off with a special pliers and then removes the cement.

## An Appliance You Can Sink Your Teeth Into

Sometimes a soft rubber or pliable plastic **positioner** will be recommended by your orthodontist to complete the movement of your teeth immediately after your bands are removed. In order to get the full benefit of the positioner, you'll need to wear it exactly as your orthodontist instructs you.

Cleaning the positioner is no problem. Just soak it a few minutes each day in a solution of baking soda and water.

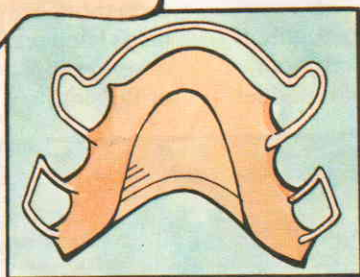


## Graduating to Retainers

You may be fitted with removable **retainers** as soon as your bands are taken off or after a period of wearing a positioner. Retainers hold your teeth in their new positions while the bones and gums adapt to the change.

Although it may not seem like it, this final part of treatment is every bit as important as the first. That's because without the retainers, your teeth would soon go back to their old positions, and all that time of wearing braces would be lost!

Wearing retainers really isn't much trouble. They may make your mouth sore for 2 or 3 days, but they should soon feel comfortable and secure.



You will probably need to wear your retainers for about 18 to 24 months. Wear them all the time or as much as your orthodontist directs.

After eating, take time to brush both your teeth and the retainers. Holding the retainer in the palm of your hand, carefully brush both surfaces. Then rinse them before putting them back in place.



## Helpful Hints for Wearing Braces

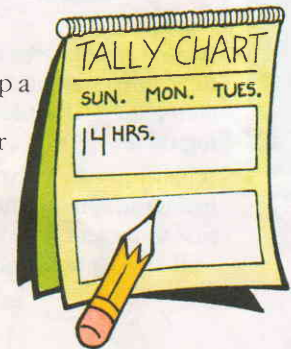
Remember, you play an all-important role in your treatment. Here are a few pointers to keep in mind:



**Brush your teeth** after every meal and snack. Carry a folding toothbrush so that you can brush when you're away from home.

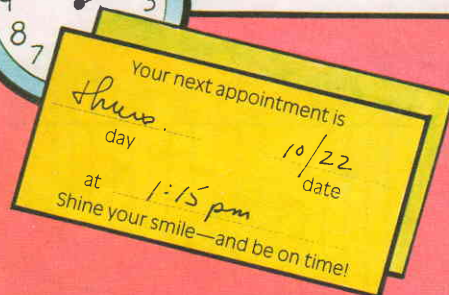
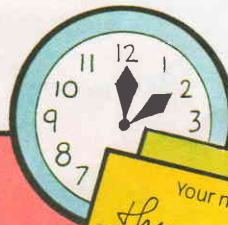
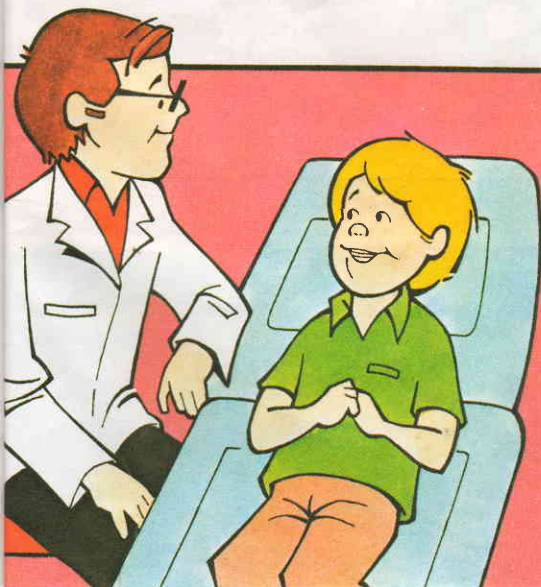
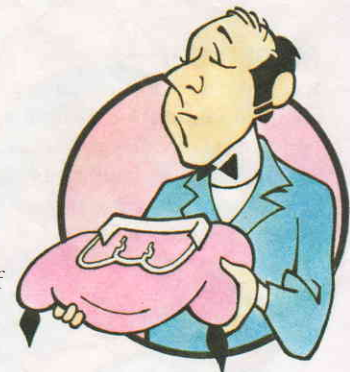


**Wear your headgear** as directed. You might want to keep a tally chart of the number of hours you wear your headgear each day.



Don't forget to **take your headgear and retainers** along with you when you go on outings or vacation.

**Your appliances are breakable and easily lost.** Call your orthodontist's office right away if you break an appliance or if you lose your headgear or retainer.



**Keep every appointment** with your orthodontist — and please be punctual! Don't forget to bring your appliances to every appointment.

Be sure to have regular check-ups with your family dentist.

## Maintenance Guide for Braces Wearers

To protect your appliances and teeth, here are a few things to watch out for:



- ✔ Handle your headgear carefully when putting it on or taking it off. Don't force it or tug on it.
- ✔ When you take off your headgear, remove the strap first to protect your eyes as well as your appliances.



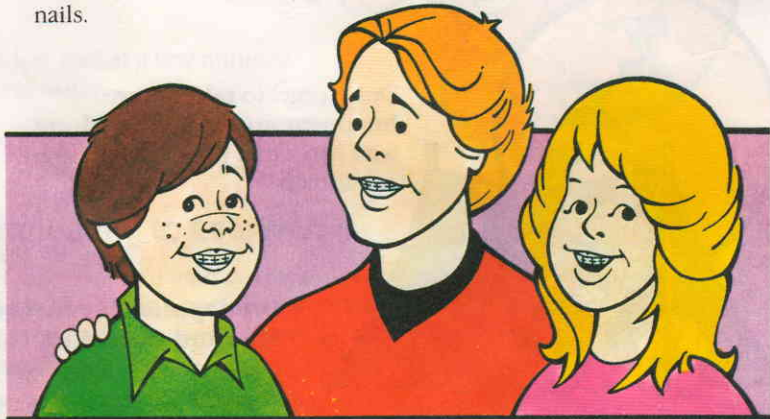
- ✔ Cut down on sugary foods and carbonated soft drinks. They lead to tooth decay.
- ✔ Avoid hard or sticky foods. They can loosen or damage your appliances.
- ✔ Keep foreign objects out of your mouth—including pencils, toothpicks, and fingernails.



- ✔ Don't risk breaking your retainers. When you're not wearing them, wrap them up in a moist paper towel, and store them safely in their case.
- ✔ Keep your retainers away from heat. They can warp if they're left out in the sun or on top of a hot stove.

### Remember—

You make the most important contribution to your treatment by taking care of your appliances, keeping your appointments, and brushing and flossing as your orthodontist directs.



**Consultant:**  
Keith A. Vodzak, DMD, MSD,  
Orthodontics