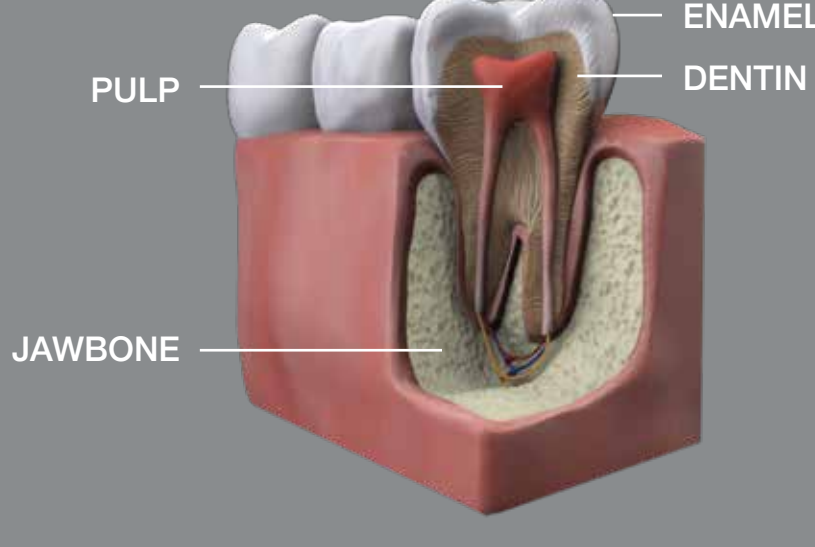


# TEETH WHITENING

Teeth whitening is the most popular type of cosmetic dentistry undergone by millions of Americans each year. Even with great oral hygiene and consistent dental visits, teeth naturally tend to discolor over time. Whitening your teeth is a simple and effective way of improving your smile.

## WHY DO TEETH CHANGE COLORS?



Several types of changes occur in our lifetime that can cause teeth to appear darker or more yellow in color. A quick dental anatomy review will help you understand these changes and the mechanism of true teeth whitening.

Teeth consist of a hollow chamber containing nerves and blood vessels (called the pulp), surrounded by a yellow hard substance called dentin. Dentin makes up the majority of every tooth. Enamel covers the dentin, forming a hard shell over the portion of the teeth not encased in jawbone (all but the roots). Enamel is white in color and slightly translucent.

### EXTERNAL CHANGES

Changes to the exterior surface of enamel can lead to a darker appearance of the teeth. By understanding these, you may be able to make different choices to prevent dark stains from continuing over your lifetime.

#### SURFACE STAINING

Dark pigments from the substances we eat and drink can accumulate on the enamel surface. Anything dark can cause extrinsic stains, but the true culprits are significant intake of coffee, tea and tobacco products.

#### ENAMEL THINNING

When enamel wears away or becomes thinner, you begin to see more of the underlying yellow dentin. The most common culprit of enamel thinning is acid erosion. This can occur as the result of a high intake of acidic beverages.

### INTERNAL CHANGES

Teeth can become darker or more yellow due to changes within the teeth. You cannot prevent these changes, but you can understand them and address them with your dentist to achieve the white smile you desire.

#### AGING

The natural thickening of dentin occurs in response to the normal wear and tear associated with chewing for many decades. As the dentin thickens, its yellow color becomes darker and more opaque. Because of enamel's translucence, the darkness underneath shows through, giving an overall yellow appearance.

#### TRAUMA

After undergoing severe shock, stress, or pain, the nerve and blood vessels inside the tooth may react to the trauma in one of two ways. One option is to shrink and close off, making the overall tooth appear grey or yellow. The other response is to grow and dissolve the tooth from the inside out. This makes a tooth appear purple due to the show-through of blood vessels.

## MOST COMMON CULPRITS OF TOOTH DISCOLORATION



### DIET

In addition to reducing dark-colored substances, you should also consider the pH of your diet. By avoiding acidic foods and drinks, you will preserve the thickness of your enamel, which helps you maintain a whiter smile.



### TOBACCO

Smoking has a drying effect on the inside of the mouth. This dryness worsens the staining ability of tobacco because it makes adherence to the enamel easier.



### AGE

Aging is one culprit we cannot prevent, but we can attempt to fight the natural yellowing inside the tooth by working to protect our enamel on the outside. Avoiding acidic diets, treating any acid reflux issues, and consistently using fluoride oral care products helps you strengthen your enamel.



### TRAUMA

You can prevent some trauma of the mouth by wearing an athletic mouthguard during any participation in contact sports. Mouthguards soften the blow of injuries to the teeth and reduce the effect of force by absorbing it upon impact.



### MEDICATION

Medications can affect the color of teeth during their formation. This means that pregnant mothers and young children should not take certain medications like Tetracycline and other antibiotics shown to affect tooth formation.

## WHO SHOULD NOT WHITEN THEIR TEETH?

WHILE TEETH WHITENING IS GENERALLY SAFE, THERE ARE A FEW PEOPLE WHO SHOULD TAKE PRECAUTIONS.

### PREGNANT AND NURSING MOTHERS

Because we know that everyone tends to swallow a small amount of the whitening ingredient during the process, we cannot guarantee that it will not have any effect on your baby. For that reason, doctors and dentists alike recommend that pregnant mothers wait until they have finished nursing to perform any type of teeth whitening.

### THOSE WITH CROWNS OR VENEERS

Only natural teeth will change color in response to whitening products. If you have toothcolored fillings of composite resin, dental crowns or veneers, they will NOT whiten. In fact, attempting to use teeth whitening products when you have existing dental work on front teeth, may make them look worse.

### THOSE WITH UNTREATED DENTAL PROBLEMS

People who have large cavities or severe gum disease should not use teeth whitening products. Doing so could aggravate the existing problems and lead to worsening pain. You should always have dental problems fixed before trying to whiten your teeth.

## HOW DOES WHITENING WORK?

There are only two ways to whiten the teeth. If a product does not fall into one of these categories, you should not expect to achieve noticeable results.



### TRUE TEETH BLEACHING

Hydrogen peroxide, and its close relative carbamide peroxide (which quickly breaks down into hydrogen peroxide), penetrates enamel and oxidizes dark pigmented molecules within the hard tooth structure itself. By breaking down darkly colored molecules, it literally bleaches the underlying tooth color to a whiter shade. The teeth whitening industry undergoes constant research and evolution. At this time, however, only peroxide chemicals show true whitening ability.



### SUPERFICIAL STAIN REMOVAL

Most people accumulate dark spots on the external surface of their teeth throughout their lifetimes. With consistent polishing, you can prevent significant staining from continuing to build up over time. Polishing away surface stains involves the use of very mild abrasive particles. The goal is to remove only stains and not enamel, too. Anyone who uses sandpaper knows that using a coarse abrasive material will actually make the surface texture rougher. Using a very fine abrasive material, however, will smooth and polish without removing the underlying enamel.

## WHITENING THAT LASTS



### TOOTHPASTE

Whitening toothpastes contain mild abrasive particles that provide a very fine sandpaper effect, gently scrubbing away the surface stains that collect each day. They do not change the actual color of the underlying tooth, but by removing dark particles on the exterior, whitening toothpastes can give the appearance of whiter teeth.



### STRIPS

Many over-the-counter whitening products contain the right active ingredient and produce noticeable changes. The type of product that consistently performs the best is whitening strips. The strips contain an embedded whitening gel that easily sticks to the teeth for the prescribed amount of time.



### TAKE HOME TRAYS

Dentists consider professional takehome whitening in custom-fitted trays to be the "gold standard". By making the trays from a replica of your teeth, the custom fit holds whitening gel in the perfect position for optimal results. The custom trays will last for many years, allowing you to simply purchase the whitening gel as needed for maintenance.



### YOUR DENTIST

For those who need the fastest and longest lasting whitening results, a professional in-office treatment is the right choice. In-office teeth whitening systems use a high strength whitening gel to produce visible color change in about an hour. Lights and lasers may produce an accelerated whitening effect by heating and/or activating the system's particular gel.

## WHAT DOESN'T WORK?



### PEROXIDE FREE

Because peroxide chemicals are the only true bleaching agents for now, you should avoid products claiming to be peroxide-free. These natural remedies to tooth whitening will not hurt you; they simply will not give effective results.



### FAST-ACTING FORMULAS

There are many over-the-counter products that claim to whiten and do contain a peroxide chemical. However, they also do not keep the active ingredient on the teeth for an extended period to allow for change. This includes whitening mouthwash, whitening floss, and whitening chewing gum. These should be safe, but they will not produce noticeable results.



### DIY

You must also avoid DIY or homemade recipes for teeth whitening. These typically contain ingredients that do not have enough research supporting their safety, like activated charcoal, or those that will damage your teeth, like lemon juice.

## NEXT STEPS

It is always best to seek your dentist's advice on any type of whitening option to confirm that you will not experience major side effects.

Whitening your teeth is a simple and effective way of improving your smile. Many people feel increased confidence after attaining a brighter, whiter smile! We invite you to schedule your consultation today to determine the best and safest teeth whitening method specific to you.



**WANT TO KNOW MORE. GET IN TOUCH!**  
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