

Children's Environmental Health Center of the Hudson Valley

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CHILDREN'S ENVIRONMENTAL HEALTH CENTER OF THE HUDSON VALLEY

PROTECTING CHILDREN AGAINST ENVIRONMENTAL THREATS

www.ChildrensEnvironment.org

**August 2017: Children's Health Advisory
Dental Product Safety & Children's Health**

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Adults, as well as children, are reminded that proper oral health consists of brushing and flossing teeth twice a day to keep teeth bright, and help reduce the risk of future dental problems. Common dental products, such as toothpastes, contain numerous chemicals. For example, sodium lauryl sulfate and cocamidopropyl betaine are two such chemicals, which are added to toothpastes in order to create a foaming action, and maintain a consistent flavor throughout the tube. These chemicals can cause allergies, or exacerbate already existing allergies. Diethanolamine is another chemical ingredient used in toothpaste to create a foaming action. This chemical has been linked to skin irritation and hormonal disruption. Titanium dioxide is also added to certain toothpastes in order to give the paste a bright white color. Research has reported the possibility of titanium dioxide being a human carcinogen. Triclosan is added to dental products because it reduces the formation of bacteria, while sodium fluoride is added to make teeth more resistant to decay. Although studies have reported the effectiveness of triclosan and sodium fluoride in preventing gingivitis, there are still various health concerns associated with these ingredients. Some health concerns include: disruption of hormone function, triclosan-resistant bacteria, and environmental toxicity.

Even with this daily oral health routine, many individuals feel as though their smile is not as bright as they would like it to be. There are a variety of product treatments available for at-home use to whiten your smile. These popular products include extra whitening toothpaste, whitening mouthwash, whitening gels, and bleaching strips. Many of these

products contain hydrogen peroxide and carbamide peroxide. These chemicals are designed to improve the appearance of the teeth by removing surface stains, or by penetrating through the enamel to break down stains. In addition, methylparaben is a chemical commonly found in mouthwash. Parabens are used as preservatives and are routinely found in personal care products. Parabens imitate the function of estrogen – a naturally occurring chemical found in the human body – but can also act as a potential endocrine disrupter. The various chemicals used within these dental care products are intended to protect individuals' oral health, but have important use restrictions, as well as the potential for harm.

Cosmetic Products vs. Drug Products:

Personal care products related to oral health can either be considered cosmetic products, or drug products. Some toothpastes are considered cosmetics – products designed to cleanse or beautify. This means the U.S. Food and Drug Administration does not need to regulate the ingredients used in these items. Other oral health products such as mouthwashes, marketed with therapeutic claims, as well as toothpaste with anti-cavity claims, are considered drugs – products that are designed to treat or prevent disease. These items are regulated by the U.S. Food and Drug Administration, and ingredients used in these items must pass approval before being made available to consumers.

Many oral care products have been approved by the American Dental Association, are regulated by the U.S. Food and Drug Administration, and meet specific criteria for safety and effectiveness. Even so, consumers – especially children – should still use caution when using these products, because of the various chemicals included within the ingredients.

Threats to Oral Health:

Over time, the white outer shell (enamel) of the tooth can change color. Personal factors, as well as socio-environmental factors can contribute to an individual's oral health. Exposure to certain foods, beverages, medication, and tobacco use, can cause teeth to stain. Facial trauma is another factor which can cause the discoloration of teeth, in addition to the obvious: overall neglect. Treating dental problems is important, but making healthy lifestyle choices and taking the necessary steps to prevent dental problems is best.

What Are Some Common At-Home Dental Products? How Do They Work?

❖ Toothpastes

All toothpastes help to remove surface stains when brushing your teeth. Most toothpastes contain abrasive ingredients which scrub away plaque and germs, but are gentle to the actual teeth and do not damage the enamel. Toothpastes also work to polish the teeth and give them a bright shine. Common chemicals used in toothpastes include: sodium lauryl sulfate, cocamidopropyl betaine, diethanolamine, titanium dioxide, triclosan, and sodium fluoride.

❖ Extra Whitening Toothpastes

There are some toothpaste products with extra whitening power. These products have similar chemicals as regular toothpastes as well as added ingredients to help brighten teeth by removing surface stains. These oral care products do not change the color of the actual teeth, because they do not penetrate through the enamel. A common ingredient in extra whitening toothpaste is titanium dioxide. This chemical is used to give the toothpaste a bright white color. Health concerns associated with this chemical include its potential to act as a human carcinogen.

❖ Whitening Mouthwash

Whitening rinse is used the same way as traditional mouthwash. The difference is that whitening mouthwash has additional chemicals, which are used to remove surface stains, help prevent new stains from forming, and freshen breath. One of these chemicals, methylparaben, is a commonly used ingredient in many different mouthwashes. Studies have suggested that this chemical can increase the risk of breast cancer.

❖ Whitening Gels

The whitening gel is placed in a tray, which is placed directly onto the teeth. These products contain chemicals which are used to bleach teeth. Chemicals such as hydrogen peroxide and carbamide peroxide are used in order to penetrate through the enamel and break stains into smaller pieces. This allows for a less concentrated color appearing on the teeth.

❖ Bleaching Strips

Flexible whitening strips are placed on the teeth, and mold around the top and bottom of each tooth. The ingredients used in the whitening strips are virtually identical to those used in the whitening gels, mainly hydrogen peroxide and carbamide peroxide. These bleaching strips are held against the teeth so the chemicals can be absorbed sufficiently, which result in brighter teeth.



Parents should always remember when purchasing these dental care items for yourself, or for your children, make sure to look for the American Dental Association Seal of Acceptance for safe dental care products. In addition, consumers can check the product label for a list of active ingredients.

Are There Side Effects from Using These Dental Products?

Toothpaste is not known to have many severe side effects. However, there are numerous potential side effects to other dental care products. Some individuals have reported losing their sense of taste after using mouthwash. Overuse of dental whiteners can damage gums, enamel or roots of the teeth. In addition, some individuals who use teeth whitening products have reported experiencing tooth sensitivity and tissue irritation. Tooth sensitivity occurs when the chemicals, hydrogen peroxide and carbamide peroxide, used in the whiteners, penetrate through the enamel to the softer layer of the tooth (dentin). Tissue irritation may be a result from a poor fitting dental tray which contains the bleaching product. In rare instances, irreversible tooth damage has been reported. Parents and children should be advised that there is not a sufficient amount of information available on the long-term, repeated use, of dental bleaching products.

Key Points to Remember:

Toothpaste is considered a safe and effective product for children over two years of age, as well as most adults. Generally, extra whitening toothpastes, whitening mouthwash, teeth whitening gels, and bleaching strips are also safe and effective. However, this does not mean the products will be effective for everyone. While there are many different teeth whitening products available, parents and children should still use caution when purchasing and using any of these types of products. Parents should pay close attention to the chemicals used as ingredients, as well as check for the seal of approval stamp. Furthermore, the American Dental Association suggests consulting your dentist prior to using dental whitening products. Your dentist will determine if dental bleaching is an appropriate course of treatment to discolored teeth, and will be able to recommend safe oral care products for you and your family.

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