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Life Extension Toothpaste
4 oz (113.4 g) tube
Item Catalog Number: 705

Maintaining a pretty smile should not be the only motivation for keeping gums healthy. It is a vital part of a proactive health maintenance regimen.

Life Extension has developed a toothpaste with active ingredients coenzyme Q10, xylitol, folic acid, tea tree oil, lactoferrin, and squalene to promote healthy teeth and gums.1-16* Hydrogen peroxide has also been added because of its ability to reach bacteria hiding among gingival folds and gaps. Its frothing action exposes anaerobic-type bacteria that thrive in an airtight environment to oxygen-rich air contained in its bubbles. Hydrogen peroxide has been used effectively for years in dentistry.17,18

Life Extension Toothpaste is an all-natural oral hygiene product without the potentially toxic agents found in commercial brands.

Follow these steps to maintain good oral health:

- Minimize the consumption of food and drinks containing sugar.
- Brush effectively after every meal.
- Floss at least once a day.
- Visit a dentist at least twice a year for oral health exams.
- See a dentist immediately at any signs of oral discomfort or bleeding.

References

Supplement Facts

1 tube contains

Active Ingredients
Hydrogen Peroxide 0.20%
Menthol 0.14%

Other Ingredients
Purified Water, Calcium Carbonate, Glycerine, PEG-8, Peppermint Oil, Cellulose Gum, Xylitol, Cocamidopropyl Betaine, Carrageenan (*Chrondrus Cripus*), Methyl Paraben, Propyl Paraben, Potassium Sorbate, Sodium Benzoate, Sodium Citrate, Green Tea Extract (Decaffeinated), *Aloe Bardadensis* Leaf Extract, Tea Tree Leaf Oil (*Melaleuca Alternifolia*), Cinnamal, Cinnamon Leaf Oil (*Cinnamomium Cassia*), Lactoferrin, Clover Leaf Oil (*Eugenia Caryophyllus*), Squalene and

Ubiquinone (Coenzyme Q10), D-Tocopheryl, Folic Acid.

Dosage and Use

- Adults and children 2 years and older: brush teeth thoroughly after meals or at least twice a day or as directed by a dentist. Supervise children's brushing until good habits are established.

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LE Magazine April 2006

REPORT

Preventing Disease by Improving your oral health

By Matthew Solan



Even health-conscious people may be surprised to learn that gum disease is the most common disease of all in adults, affecting an estimated 80% of Americans over the age of 35. As researchers investigate the causes and effects of gum diseases such as gingivitis and periodontitis, they are uncovering startling links between poor oral health and many chronic diseases that afflict aging adults. Mounting research studies indicate that poor oral health frequently accompanies or contributes to a wide array of systemic illnesses such as heart disease, stroke, diabetes, and arthritis.



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Maintaining optimal oral health not only will give you a brighter, healthier smile, but also may help you fend off many potentially deadly diseases. By safeguarding the health of your teeth and gums through healthy diet and lifestyle, proper brushing and flossing, and targeted nutritional strategies, you increase your odds of living a long and healthy life.

Poor Gums, Poor Health

According to a recent report from the federal Centers for Disease Control and Prevention, researchers have uncovered potential links between periodontal disease and many serious health conditions. The reason, according to many medical experts, is that the bacteria that contribute to gingivitis and periodontitis provoke inflammation or infection, which can trigger certain diseases. Periodontal disease may even aggravate or worsen existing health conditions. This article discusses the most common ailments associated with gum disease, along with novel approaches to optimize your oral health.

GUM DISEASE BASICS



The mouth is home to more than 450 species of microorganisms. Most of these are necessary to maintain healthy teeth and gums; in fact, fewer than 5% have been linked to periodontal (gum) infections. Still, even this small number can do significant damage.

The path to gum disease has many steps, beginning with plaque formation. Plaque is an invisible, sticky film that covers your teeth when starches and sugars in food interact with bacteria normally found in your mouth. Although it is removed each time you brush, plaque can reform within 24 hours. Plaque that stays on your teeth for longer than two or three days can harden under your gum line and turn into tartar. This white substance acts as a reservoir for bacteria and makes plaque even more difficult to brush away. Tartar is bound so tightly to teeth that it can be removed only by a professional cleaning.

The longer that plaque and tartar persist, the more damage they inflict. Initially, they may just irritate and inflame the gingiva, the part of the gum around the base of your teeth. This is commonly known as gingivitis and is the mildest form of gum disease. Its trademark signs include bad breath and swollen, red, bleeding, or receding gums.

Left untreated, however, gingivitis can progress to more severe periodontitis. This final stage of gum disease occurs when ongoing gingivitis leads to the development of pockets between your gums and teeth that fill with more plaque, tartar, and bacteria. Over time, these pockets can spread under your gum tissue and cause infections that may result in tissue or tooth loss. More than one in three people over the age of 30 have periodontitis, and conservative estimates put the number of Americans with periodontitis at 35.7 million.[1]

Heart disease. Researchers have discovered that people with periodontal disease are much more likely to suffer from coronary artery disease than those without the disease. A 2004 study in the Journal of Periodontology found that 91% of 108 patients with cardiovascular disease suffered from moderate to severe periodontitis, compared to 66% of the non-cardiac patients.[7]

Scientists have advanced several theories to explain the link between periodontal disease and heart disease. One theory holds that inflammation caused by periodontal disease leads to impaired functioning of the vascular endothelium, which contributes to arterial disease.[8] Still another hypothesis is based on several studies showing that periodontal infections can be correlated with increased levels of inflammatory mediators, such as fibrinogen, C-reactive protein, or cytokines, which have been correlated with increased risk of cardiovascular disease.[9,10]

In a pilot study reported in early 2006, investigators found that treating

moderate to severe periodontal disease in 22 otherwise healthy adults led to significant improvements in endothelial function, as well as decreases in interleukin-6, an inflammatory cytokine. Periodontal treatment was also associated with reductions in C-reactive protein.[8] Although more studies are needed, these findings suggest that treating periodontal disease not only boosts oral hygiene, but also improves several measures of cardiovascular health.



Stroke. The presence of gum disease also may increase risk of stroke. Previous research found that the severity of gum disease is proportionally related to the amount of arterial plaque located in the carotid arteries, the two major arteries on each side of the neck that supply blood to the brain. Blockage here may reduce blood flow to the brain or advance blood clots, which can lead to a stroke. A 2005 study from the University of Minnesota found a direct link between high levels of bacteria that cause gum disease and thickness of the carotid arteries. This research stands out as the first to link atherosclerosis with the type of bacteria that causes gum disease, and not with other oral bacteria.[11]

THREATS TO DENTAL HEALTH

While lack of proper brushing can lead to excessive plaque build-up and eventual gum disease, other factors also contribute. These include:

- **Smoking.** By some estimates, smoking causes more than 50% of adult gum diseases in the US. Tobacco use in any form, including chewing tobacco, can damage your immune system and increase your risk of periodontal infection.
- **Drugs.** Many prescription and over-the-counter drugs such as cold remedies, antihistamines, and antidepressants have the side effect of decreasing your body's production of saliva. Saliva has a cleansing effect on your teeth and helps inhibit the bacterial growth that causes plaque. Other drugs, especially anti-seizure medications and immune suppressants, sometimes cause an overgrowth of gum tissue, which makes plaque more difficult to remove.
- **Nutritional deficiencies.** A diet lacking proper amounts of calcium and vitamin C can contribute to gum disease. Calcium helps to build density in the alveolar bone that supports the teeth. People who consume little dietary calcium each day may experience up to a twofold greater risk of periodontal disease.[2] Vitamin C is a powerful antioxidant that helps to maintain and repair healthy connective tissue. Researchers who analyzed vitamin C intake and periodontal disease indicators in 12,419 US adults found that those who consumed less than the recommended 60 mg a day of vitamin C (approximately the amount found in one orange) were about 30% more likely to develop severe gingivitis than those who consumed three times the RDA (more than 180 mg).[3] German researchers recently found that people with gum disease who ate two grapefruit a day for two weeks had significantly less bleeding of the gums. To explain these effects, they pointed to an increase in blood levels of vitamin C (each grapefruit contains 92.5 mg of vitamin C).[4]
- **Genetic influences.** Research shows that approximately one half of the general population

may be genetically susceptible to gum disease.[5] Research from Boston's Forsyth Institute showed that a form of early-onset periodontal disease may be caused by a deficiency in white blood cell function. The study focused on mice, but the researchers added that this form of gum disease may be inherited and affects 1-10% of Americans.[6]

Diabetes. Diabetes is associated with increased risk of infection, which may include oral infections such as periodontitis. Researchers have noted that periodontal disease is a common complication of diabetes.[12] In fact, people with type I or type II diabetes are more susceptible to severe, progressive periodontal disease than non-diabetic individuals.[13,14]

Studies suggest that periodontal disease may adversely affect blood sugar control in people with diabetes. Controlling periodontal infection in diabetic individuals has been found to help improve blood sugar control, as measured by a decreased demand for insulin and decreased levels of hemoglobin A1C, a marker of long-term blood sugar control.[12]

Measures to combat complications of diabetes, especially periodontitis and gingivitis, may be important in reducing additional systemic inflammatory burden, thus potentially preventing other conditions such as cardiovascular disease.[12]

Premature and low-weight births. New findings indicate that gum disease can affect the health of pregnant women and their unborn children. A University of Chile study found that women with gingivitis were at higher risk of delivering premature infants and low-weight babies than women with healthier gums. The likely reason is that periodontitis or gingivitis bacteria contribute to an inflammatory response of the placental membrane, which may induce preterm labor. Periodontal treatment reduced the risk of premature and low-weight births in women with pregnancy-related gum disease.[15]

Other conditions. Gum disease may also contribute to other physical problems. For instance, some evidence suggests that periodontal disease may contribute to lung infections like pneumonia, or may worsen chronic conditions such as emphysema.[16] Experts believe this may be due to oral bacteria that move into the airways of the throat and lungs. Poor oral health may also accompany poor joint health. People with moderate to severe periodontitis experience an increased risk of rheumatoid arthritis.[17] Gum disease is also present in many patients who suffer from juvenile idiopathic arthritis.[18]

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How to Brush Away Gum Disease

The best way to fight gum disease and avoid periodontitis is to stop it before it starts. This means adopting a lifestyle that includes a healthy diet, regular exercise, daily brushing and flossing, and a visit to your dentist at least every six months. Just devoting yourself to a diet that includes plenty of fruits and vegetables, along with regular exercise (five sessions of moderate activity or three of vigorous intensity each week), can reduce your chance of developing periodontitis by 40%.[19]



A review of 50 years of clinical trial data found that when it comes to proper brushing, brushing twice a day is optimal.[20] Common sense might dictate that the longer and harder you brush, the better your likelihood of eliminating plaque. However, a group of European scientists discovered that the optimal method is to brush for about two minutes at medium force (150 grams of pressure) using a power toothbrush. They added that brushing longer and using more than 150 grams of pressure offered little additional benefit in removing plaque and that more vigorous cleaning may in fact be harmful. Heavy brushing may damage gums and wear down teeth, both of which can lead to oral health problems.[21] Another recent study found that power (electric or electronic) toothbrushes were superior to manual ones in removing plaque and reducing gingivitis.[22]

Nutrients for Healthy Gums

Your toothpaste is a crucial weapon in the fight against gum disease. Many ingredients are effective in controlling gingivitis and promoting oral health. These include coenzyme Q10, xylitol, hydrogen peroxide, lactoferrin, folic acid, and squalene, as well as natural agents such as tea tree oil, green tea extract, and essential oils. Their benefits in helping to prevent gum disease are supported by the latest scientific research.

Coenzyme Q10. The antioxidant compound CoQ10 aids energy production in the body. Research has found that the gum tissue of people with periodontal disease is often significantly deficient in CoQ10.[23] Initial evidence suggests that topical CoQ10 supplements may be effective in slowing periodontitis by reducing bleeding and swelling.[24] While additional research is needed, the consensus

is that CoQ10 helps supply the energy needed for the body to heal and repair mouth tissue.



Xylitol. Pure xylitol is a white crystalline substance that resembles and tastes like sugar. It is found naturally in fruits such as plums, strawberries, and raspberries. Xylitol is used commercially to sweeten sugarless gum and candies. It has 40% fewer calories than regular sugar and appears to have none of sugar's negative effects on insulin release.[25] It is also believed to prevent cavities by inhibiting the growth of cavity-causing bacteria such as Streptococcus mutans.[26] A double-blind, placebo-controlled study of 2,630 children compared a standard fluoride toothpaste with one that also contained 10% xylitol. Over a three-year period, children given the xylitol-enriched toothpaste developed notably fewer cavities than those using the fluoride-only toothpaste.[27]

Hydrogen peroxide. Commonly used in toothpastes and whitening gels to help eliminate stains and brighten teeth, hydrogen peroxide is also added to some mouthwashes to reduce gingivitis and whiten teeth.[28] Its foaming action works to carry away food particles and bacteria from gum tissue.

While higher concentrations of the whitening agents hydrogen peroxide and carbamide peroxide may damage tooth enamel, recent findings suggest that the concentrations of these agents found in over-the-counter dental care products pose negligible risk to tooth enamel.[29] Hydrogen peroxide has been associated with DNA-damaging effects in some animal and cell studies; however, a recent review noted that dental care products containing hydrogen peroxide are unlikely to damage DNA in humans, and that such products can be used safely by the general population.[30]

Lactoferrin. Lactoferrin, a naturally occurring antimicrobial agent, is found in saliva and gingival fluid, as well as in breast milk, tears, and other bodily fluids. Lactoferrin may bind to and slow the growth of periodontitis-associated bacteria.[31] In an animal study, locally applied lactoferrin powder appeared to support the healing of oral lesions.[32]



Folic acid. The body relies on folic acid for red blood cell production. Folic acid is the most commonly deficient B vitamin. A lack of folic acid can increase the risk of gingivitis, tongue inflammation, and periodontitis. Studies have shown that rinsing with 5 ml of mouthwash containing 5 mg of folic acid for one minute, twice daily, can improve gingivitis symptoms, including gum redness and bleeding.[33] A 2004 study from India found that children who used folic acid along with proper oral hygiene practices reduced their incidence and severity of gingival overgrowth related to prescription drug use compared to a group that practiced only basic oral care.[34]

Tea tree oil. A recent study in the Australian Dental Journal showed that a toothpaste gel containing tea tree oil, used twice daily, reduces the presence of gingivitis compared to placebo.[35] Tea tree oil's anti-flammatory and antimicrobial properties may be

responsible for its effects in promoting oral health.

Squalene. Extracted from shark liver oil, squalene has been embraced for its antioxidant properties. Squalene has been used as an adjunct therapy in the management of some cancers. A recent study found high doses of squalene to be beneficial against bacterial, viral, and fungal infections.[36]

Essential oils. Natural essential oils from cinnamon leaf, peppermint, and clove leaf act as natural breath fresheners. Steven Green, DDS, notes these natural oils "work longer than other similar ingredients used by many commercial toothpastes because they can soak into the gums and tissue."

Green tea extract. Long em-braced for its antioxidant properties, green tea may also offer benefits for oral health. Green tea extract has been shown to help ease swollen gums in adults.[37]

Conclusion

There are many ways to improve one's health: eating a healthy diet, exercising regularly, and periodically visiting your doctor. Health-conscious adults should add proper oral hygiene to this list of health fundamentals. Oral hygiene is a simple way to improve your well-being today and greatly increase your chances of enjoying a healthy, disease-free future.

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