

Chews Control

BROBSON LUTZ, M.D.



Do you cringe at the thought of cold snowballs and hot gumbo? Do you avoid acidic foods? Do you want all of your food and drink at room temperature? The diagnosis is probably dentine hypersensitivity, commonly called sensitive teeth. All sorts of dental problems can cause oral pain. However, if you are in that group of some 45 million Americans with sensitive teeth, you know the kind of recurrent, sudden-onset discomfort precipitated by certain temperature foods and other specific conditions. Tooth sensitivity begins with a sharp, momentary, stabbing pain from cold air, foods or drinks. The differential diagnosis of tooth sensitivity includes tooth decay, old broken fillings and actual cracks in a tooth. But the root cause of most tooth

sensitivity is what dentists call exposed dentine – the tissue, not the chewing gum. To understand tooth sensitivity, some simple dental anatomy is in order. Teeth are composed of a central pulp surrounded by a middle layer called dentin and protected by a tougher outer layer. A thin layer of pearl-like enamel, the strongest substance in the body, encases and protects exposed surfaces of teeth just like a coat of paint protects an underlying structure. Below the gum line, a different, softer surface called cementum covers the root and helps anchor the tooth into the jaw. The pulp is the tooth's center and serves as its neurovascular supply. The primary purpose of the pulp is to provide sensation and to produce dentin, a microtubular structure that hydrates and cushions the tooth during mastication. Dentin is a complex, lighter-weight substance containing tiny tubules connecting to the center or pulp part of the tooth. Both enamel and cementum cover and protect the dentin. Sensitivity to temperature and certain foods is generally caused by fluid movement inside these microscopic cocktail-strawlike structures, which connect the outer covering of the tooth to the central pulp, according to Dr. Art Scott, a dentist who practices in Metairie. "Anything that causes irritation or the exposure of the open ends of these straws can potentially cause pain," says Scott. Hot and cold foods cause teeth to expand and contract normally. Decades of cold snowballs and hot gumbos cause microscopic cracks in the enamel. With time, gums recede and the more sensitive roots are exposed. There are multiple other causes of enamel erosion and gum recession. Anything that wears away the protective enamel or exposes the roots allows the stimulation of cells within tiny tubes located in the dentin. Anyone with a sensitive tooth that causes discomfort with hot and cold foods for several days should see a dentist to exclude any fixable structural problem. Cavities and dental abscesses can cause similar discomfort. Certain toothpastes can aggravate or actually cause sensitivity problems. The chemicals in toothpastes marketed for tartar control and whitening can increase tooth sensitivity. All good toothpastes have mild abrasive action to help remove plaque. Overly abrasive toothpastes such as those that remove smoking stains can damage the gums and increase sensitivity. Hard toothbrush bristles and overly aggressive brushing probably cause more damage than the abrasives in most brands of toothpaste. Most tartar-control toothpastes contain pyrophosphate, a chemical that reduces tartar buildup above the gum line rather than actually removing tartar. Up to 20 percent of long-term users of these tartar control toothpastes develops hypersensitivity over time. Switching to a toothpaste for sensitive teeth usually solves this problem. But a trip to the dentist can precipitate tooth sensitivity, as happens sometimes with a new filling or bleaching treatments. "The filling material can be a good thermal conductor. The deeper the filling, the longer the sensitivity may last. It will generally go away in a few days to weeks. However, there can be cases where this sensitivity, usually to cold, can last for many months. This extended period of cold discomfort is not the norm. If it becomes more intense, then a visit back to the dentist is definitely indicated," says Scott. "There is often a transient thermal sensitivity after tooth bleaching. If thermal sensitivity is present prior [to bleaching] and is of some significance, the bleaching is contraindicated until the sensitivity can be resolved," adds Scott. The first step for people with sensitive teeth not caused by decay, abscess or other problems best handled in the dental office is a desensitizing toothpaste. These toothpastes contain a desensitizing agent that protects the exposed dentine by blocking the microtubules in the teeth that are connected to the nerves. Many brands of toothpaste contain various agents that will help block the abnormal nerve impulses. Give the selected brand at least two to four weeks before declaring it a failure. Try several brands and pick the one that is most pleasant-tasting and works the best. According to the American Dental Association, strontium chloride and potassium nitrate are two chemicals that can reduce the discomfort associated with hypersensitive teeth. Dental products containing these ingredients can block the tube-like channels that pass through the teeth and connect to the pain-sensitive nerves. The toothpaste aisle at a large drugstore contains more choices than the Crescent City truck parade has trucks. Some popular desensitizing toothpastes include Crest Sensitivity Protection Fluoride Toothpaste, Orajel Sensitive Pain Relieving Toothpaste for Adults, Colgate Sensitive Maximum Strength Toothpaste, Sensodyne and Thermodent. Gentle brushing and flossing is always best. Toothbrushes with hard, stiff bristles can damage the tooth's protective layer at the root level and expose sensitive spots. If your toothbrush bristles look frazzled and are pointing in all directions, you are probably brushing too hard. If the sensitivity persists, dentists can use or recommend various solutions, gels and pastes. These include desensitizing agents and protective coatings to plug the microtubules. Often a fluoride application is all that is needed. Topically applied fluoride binds to the tooth to reduce the transmission of painful stimuli and also help strengthen the enamel of a damaged tooth. Another attack is to use a bonding agent to "reupholster" the enamel portion of the tooth with a tooth-colored restorative material while also applying a plastic sealant to the exposed root. Special dentin bonding agents are also used. More permanent solutions include inlays, crowns, root canals and even surgical gum grafts to cover the exposed root of a tooth. "I have sensitive teeth, and my dentist recommended Colgate Gel-Kam [fluoride treatment, \$12 for two tubes]. It is 0.4 percent fluoride. Or, he said, I could just rub regular toothpaste into the sensitive spots. That worked, believe it or not," e-mailed a friend in response to a query about sensitive teeth. This anecdote brings home an important point. The most effective way of using these desensitizing toothpastes is by direct application of a small dab to the sensitive areas. Dentists recommend doing this with a cotton swab, but in my book a clean finger is easier. Fortunately, easy solutions such as the desensitizing toothpastes are usually effective in controlling the sensitivity, but these agents do not cure the problem and must be used on a regular basis. Meanwhile, keep smiling.