Dental Erosion: The Acid War

"Do you intend to change my lifestyle?". My patient asks in amazement in reply to my insistent concern over the kind of eating habits she/he has. What my patient (of healthy and athletic appearance) would never have thought is that the reason for my question, paradoxically, is related to her/his eating habits, which were very healthy indeed.

Among dentists, there is a progressive concern about the steady increase of the loss of dental surface due to acid erosion or, what some specialists suggest should be known as "Dental Corrosion". Until a few years ago this state of affairs passed unnoticed both by clinicians and researchers. The persistent publicity making an invitation to change our habits to enjoy a healthy life, indeed implies the consumption of food and beverages predominantly of vegetable origin which are usually acidic. Citric fruit juice (with a pH value of approximately 3.2), fruits in general and vegetables are essential in a diet, but consumed in excess have enough potential to remove minerals from the dental surfaces. Healthy and modern lifestyles also imply physical exercise, which in excess also has great erosion potential since it increases gastroesophageal reflux (GERD). Besides, if we add the loss of body fluids, the decrease in salivary flow that this exercise generates and the consumption of sports’ drinks (whose general pH values are between 2.7 and 3.1), we obtain the best possible medium to generate acid erosion.

Today teeth have in fact greater longevity due to the widespread diffusion of dental hygiene and care in general. As a result, teeth are exposed to the environment for a longer period of time and are therefore in greater contact with foods and drinks that generate corrosion. The signals that usually appear may vary. Hypersensitivity, which may be provoked or spontaneous, discoloration, teeth transparency, surface changes (rounded or coarse teeth), enamel loss and on occasions dentine exposure and fissuring (Figs. 1 & 2).

This affects both men and women of any age although today one of the groups of greater risk is children and teenagers due to the consumption of sodas. The consumption of carbonated drinks is known to be of between 88 and 201 liters per year on average. Research has shown that the greater the consumption of these beverages, the smaller the consumption of milk (whose pH value is around 7). This brings about the phenomenon known as ‘Displacement of Diet’, since the ingestion of essential nutrients is discontinued. On the other hand, the great increase in the consumption of high-energy drinks increases the risk of dental erosion in young people. These drinks, which contain taurine, caffeine and sugars, have the potential when mixed with alcohol (vodka, whisky or others), to dissolve enamel provoking among other factors the deterioration of teeth surfaces.

What Can Be Done?

First, the signals of corrosion must be identified. A thorough examination of the dental surfaces must be carried out verifying enamel loss and the other signals mentioned above. The patient must be informed of such a situation and a change in habits must be proposed. A systematic control focusing on reduction of the acid diet must be done to try to minimize the risks that erosion brings about.

As regards to the therapeutic measures that we have within ease of reach for the treatment of the symptoms, teeth can be treated with remineralizing agents such as fluoridated mouthrinses, fluoride containing toothpastes, varnishes and Recaldent® (CPP-ACP) pastes. These pastes contain...
Casein Phosphopeptide (CPP) and Amorphous Calcium Phosphate (ACP). The Casein Phosphopeptides are natural occurring molecules which are able to bind calcium and phosphate ions and stabilize the Amorphous Calcium Phosphate. This special milk-derived protein can help replace lost minerals in teeth, make them stronger and helps in protecting them from decay and erosion.

The inclusion of chewing gums containing Recaldent and commercial beverages containing additional calcium, phosphate and fluoride to the diet, will with the above mentioned measures ensure, at least better chances of improving our dental health.

References: