

INVESTIGATION OF SALIVA OF PATIENTS WITH PERIODONTAL DISEASE USING NAA



healthy tooth
always



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We intend to stimulate the biochemical analysis of whole saliva as a diagnostic fluid, mainly for periodontal disease that has high incidence in Brazilian subjects. In this study, 11 female patients with **PERIODONTAL DISEASE** and 26 female adults (control group) participated of this study. The imbalance of Ca and S in whole saliva suggests that these elements can be indicators of periodontal disease.

SALIVA

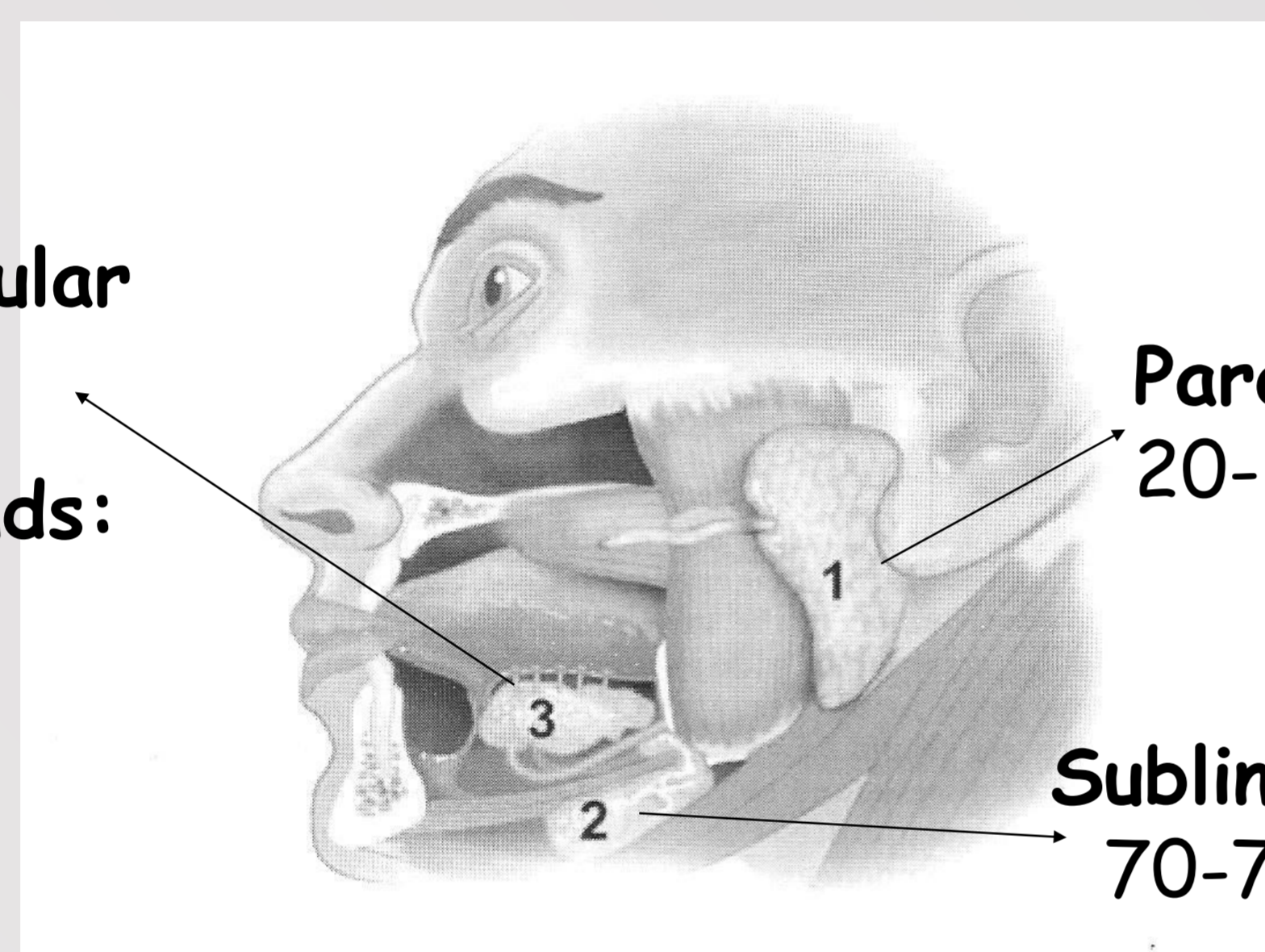
It consisting of water ~98%, electrolytes and enzymes.

Functions:

- keeps the acidity of the mouth prevents dental caries
- participates in the digestion
- participates in the maintaining the water balance
- has hormonal function (it secretes a hormone which has an important role in the development of taste buds)

There are three pairs of major glands that contribute to the formation of saliva

Submandibular
and
small glands:
1-5%



Parotid:
20-25%

Sublingual:
70-75%

Whole Saliva is the mixture of these glandular secretions, bacterias and epithelias cells.



PERIODONTAL DISEASE

It is an infectious inflammatory disease that affects the gum tissue and support the teeth (bone loss);

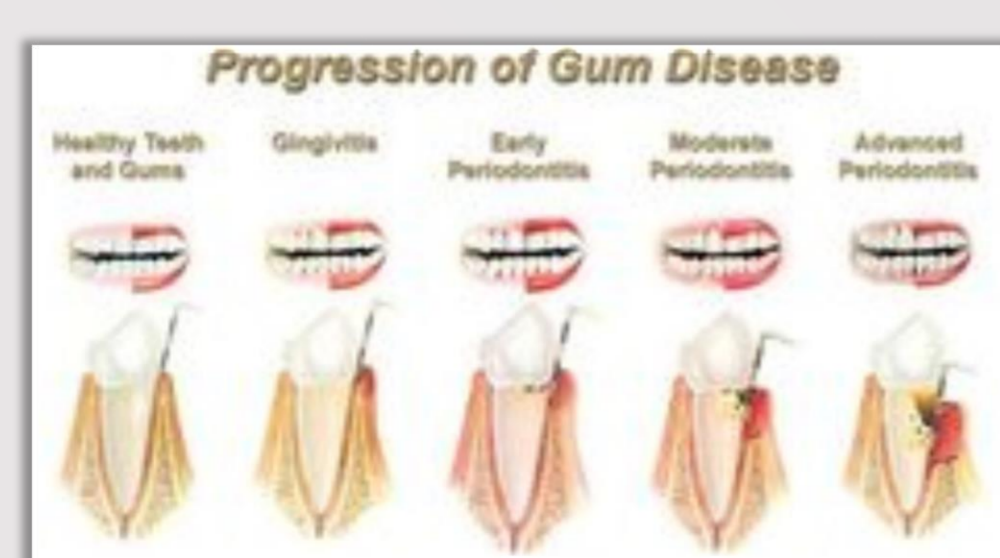
It begins with the accumulation and mineralization of the plaque and can lead to tooth loss.

According to Public Health Service (ANVISA, 2009) severe forms affects between 5 to 20% of the Brazilian population, while moderate occur in most adults

Health



Evolution



Periodontal
disease



OBJECTIVE

We intend to stimulate the biochemical analysis of whole saliva as a diagnostic fluid, mainly for periodontal disease that has high incidence in Brazilian subjects.

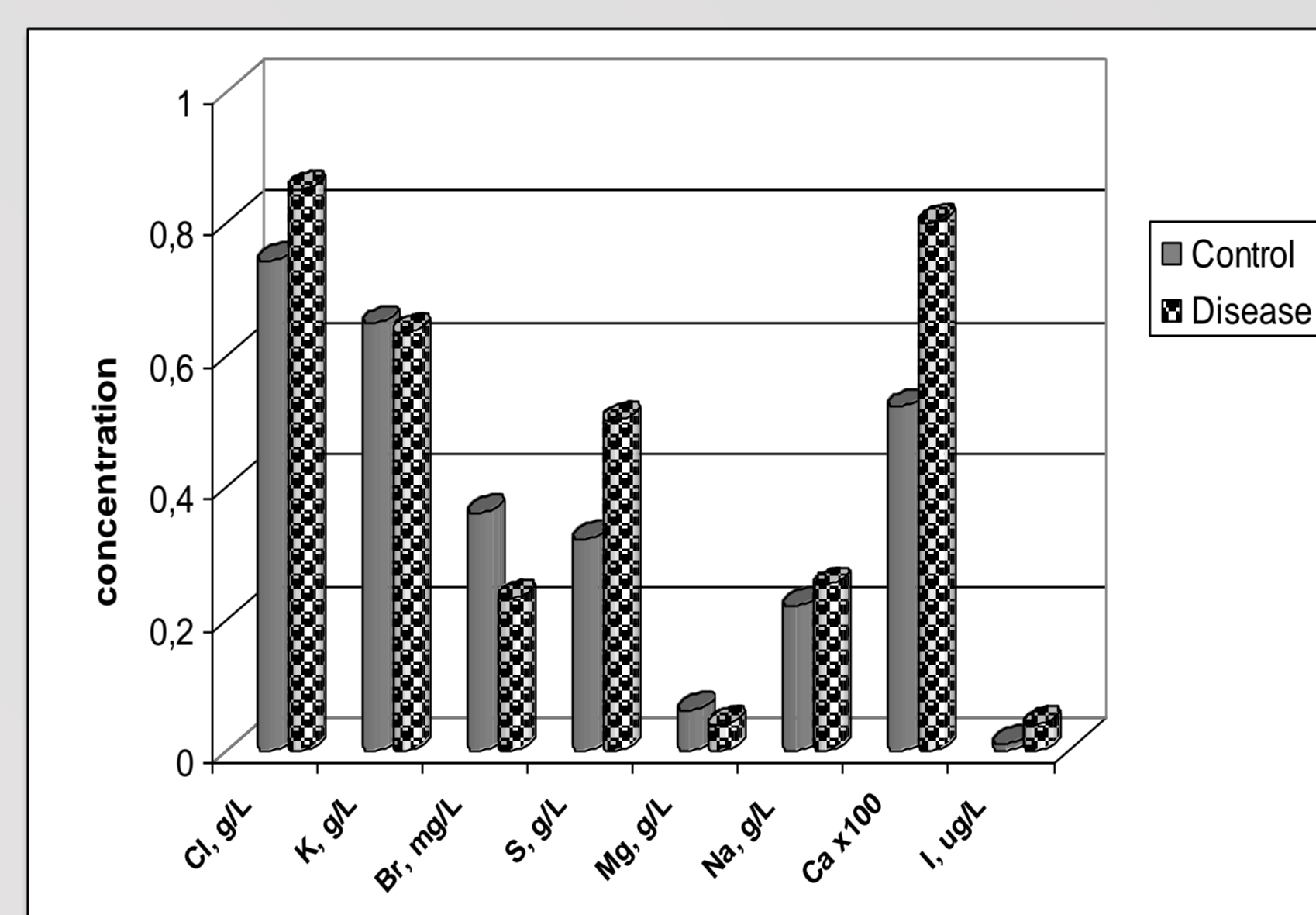
EXPERIMENTAL PROCEDURE

- Prior to collection, the donors made a rinse with distilled water;
- 2mL of saliva was collected spontaneously in dental office by a dentist directly in sterilized plastic containers;
- Samples $400 \pm 5\mu\text{L}$ were irradiated at IEA-R1 nuclear reactor at IPEN and gamma counting using HPGe detector connected MCA

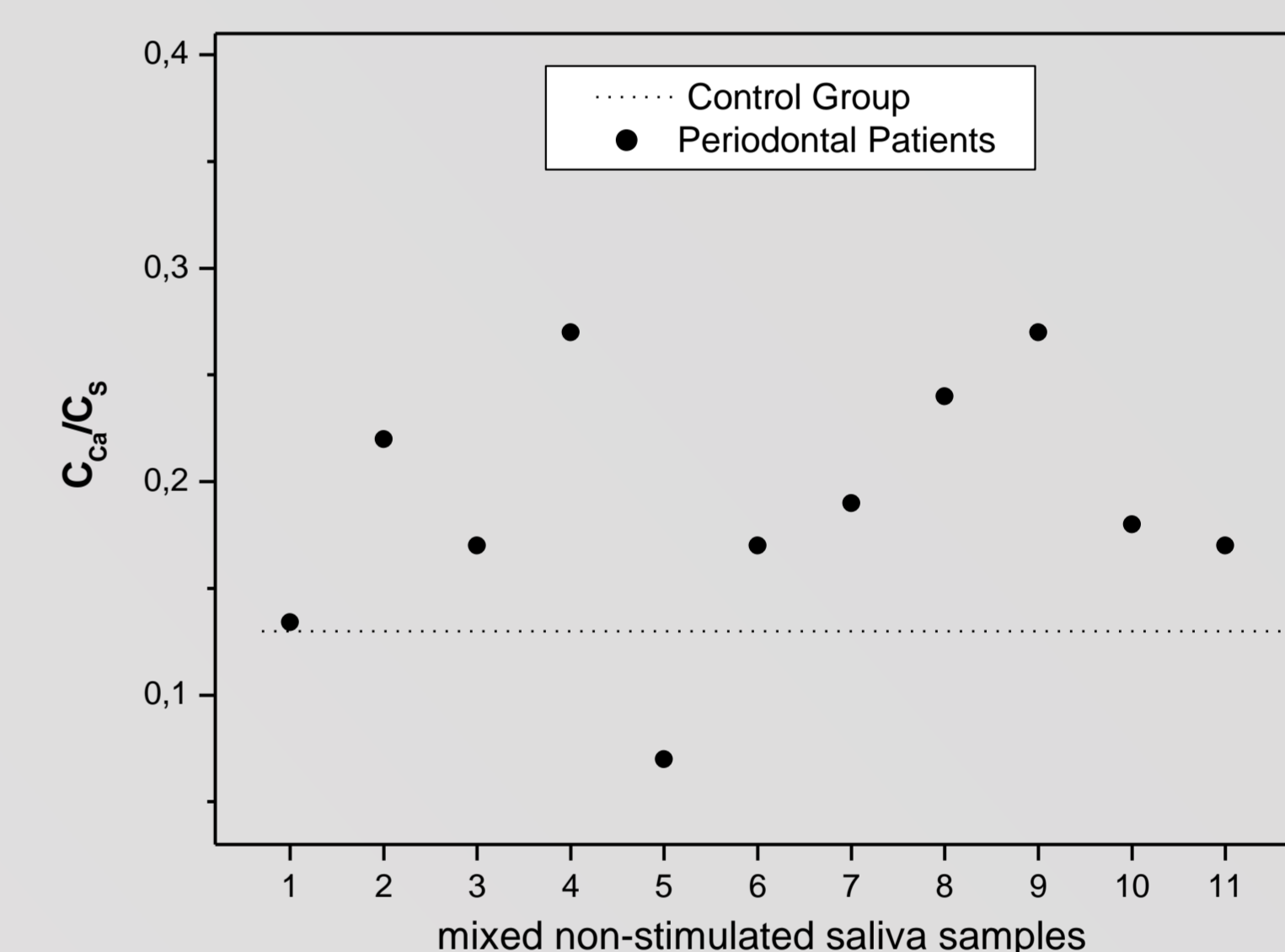


RESULTS

Comparison between element's concentration



Comparison between Ca:S concentration ratio



The effect of this disease is accentuated in C_{Ca}/C_S concentration ratio: 98% of the estimates are very high.

CONCLUSIONS

- NAA can be an alternative procedure to perform analyses in saliva
- The increase of Ca and S in saliva suggests that these elements can be monitors of periodontal disease

OTHER INTERESTING CONCLUSIONS

In all works consulted, most patients (donors) were female, so men do not like going to the dentist.



Keep Sulfur in the normal level because bad breath (oral malodor) has finished with lot of love story