

## RESPONSE

Dear Editor,

We are pleased to reply to Benzian et al's letter to the editor concerning our paper '*Total and Free Fluoride Concentrations of African Dentifrices Marketed in West Africa*'.

The correspondents argue that

1. gas chromatography for measurement of total fluoride concentration is correct;
2. fluoride probing for measurement of free fluoride concentration of sodium fluoride toothpaste is correct;
3. the method for measurement of free fluoride concentration of sodium monofluorophosphate toothpaste is not correct, as the chemical bond is to be ionised before measurement. This could be done by hydrochloric acid or a phosphatase prior to measurement.

Concerning the method of detection of free fluoride concentration of sodium monofluorophosphate toothpastes, we explain our position below:

There is a general set of problems with in vitro measurement of free fluoride concentration of sodium monofluorophosphate toothpaste, because an adequate in vitro simulation for determination of free fluoride of sodium monofluorophosphate tooth-

pastes is nonexistent. Ionisation of fluoride from sodium monofluorophosphate is dependent on the individual oral activity of the enzyme phosphatase, resulting in a highly individual bio-availability of fluoride ions in these kind of toothpastes. It is further dependent on the intraoral contact time between the toothpaste and the enzyme.

Therefore, we decided not to account for that individual factor of bio-availability but rather to measure the actual free fluoride concentration of sodium monofluorophosphate toothpastes in our study. To compensate for these in vitro limitations, we additionally performed gas chromatography to determine total fluoride concentration in these toothpastes.

Sincerely,

*Rainer A. Jordan\* and Stefan Zimmer*

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