

## **Author's response to reviews**

**Title:** Effect of a supplement rich in alkaline minerals on acid-base balance in humans

### **Authors:**

Daniel König ([daniel.koenig@uniklinik-freiburg.de](mailto:daniel.koenig@uniklinik-freiburg.de))

Klaus Muser ([klaus.muser@uniklinik-freiburg.de](mailto:klaus.muser@uniklinik-freiburg.de))

Hans-Herrmann Dickhuth ([hans-herrmann.dickhuth@uniklinik-freiburg.de](mailto:hans-herrmann.dickhuth@uniklinik-freiburg.de))

Aloys Berg ([alloys.berg@uniklinik-freiburg.de](mailto:alloys.berg@uniklinik-freiburg.de))

Peter Deibert ([peter.deibert@uniklinik-freiburg.de](mailto:peter.deibert@uniklinik-freiburg.de))

**Version:** 2 **Date:** 9 April 2009

**Author's response to reviews:** see over



UNIVERSITÄTSKLINIKUM FREIBURG  
Abt. Rehabilitative u. Präventive Sportmedizin, Hugstetter Straße 55, 79106 Freiburg

Editorial Board  
Nutrition Journal

Medizinische Universitätsklinik

Abteilung Rehabilitative und Präventive  
Sportmedizin

Ärztlicher Direktor:  
Prof. Dr. H.-H. Dickhuth

PD Dr. Peter Deibert

Hugstetter Straße 55  
79106 Freiburg  
Tel 0761 270-7450, -7451  
Fax 0761 270-7470  
E-Mail sportmedizin@  
uniklinik-freiburg.de  
Internet http://sportmedizin.  
uniklinik-freiburg.de

Tel 0761 270-7461  
Fax 0761 270-7470  
E-Mail peter.deibert@  
uniklinik-freiburg.de

Freiburg, 09.04.2009

MS: 2025015962230735 Revision  
Effect of a supplement rich in alkaline minerals on acid-base balance in hu-  
mans  
Daniel König, Klaus Muser, Hans-Herrmann Dickhuth, Aloys Berg and Peter  
Deibert

Funktionsbereiche:

Allgemeinambulanz:  
Anmeldung und Terminvergabe  
Tel. 0761 270-7460, -7473

Privatambulanz:  
Tel. 0761 270-7451, -7460, -7473

Spezialbereiche:  
Tel. 0761 270-7460, -7473

- Echokardiographie
- Duplexsonographie
- Carotis-Sonographie
- Langzeit-EKG
- Langzeit-Blutdruck-Messung
- Herzfrequenzvariabilität
- Lungenfunktion
- Körperkompositionsanalyse
- Spiroergometrie
- Laufbandergometrie
- Fahrradergometrie
- Rudergometrie
- Rollstuhlergometrie
- Handkurbelergometrie
- Laktatdiagnostik
- Lipidanalytik

Funktions- und Leistungsdiagnostik  
Prof. Dr. K. Röcker

Prävention, Rehabilitation,  
Sporternährung und Stoffwechselberatung  
Prof. Dr. D. König

Prävention im Kindesalter, Frauensport  
FITOC®-Programm  
PD Dr. U. Korsten-Reck

Arbeitsmedizin  
PD Dr. P. Deibert

Wissenschaftliche Beratung  
M.O.B.I.L.I.S.®-Programm  
Prof. Dr. A. Berg

Dear editors,

thank you for sending the reviewers comments to us.

All the comments from reviewer 1 (Juergen Vormann) and reviewer 2 (Mara Z  
Vitolins) have been addressed.

We agree with reviewer 3 (Prof. Burckhardt) that that the main result of the  
present study was related to changes in urinary, salivary and blood pH follow-  
ing acute and chronic ingestion of alkaline minerals. In was in our main focus,  
since beneficial alterations on bone metabolism following alkaline mineral in-  
take have been reported before, however, data on the underlying (or hypothe-  
sized) alteration in pH values are still scarce (or measured).

We agree with Prof. Burckhardt that we should also quote a study showing a  
beneficial effect of mineral water on bone health (See Ref. 10)



We do not fully agree with Prof. Burckhardt that the clinical use of this preparation may not be recommended only because the effect on bone health has not been demonstrated. Other conditions have been related with subclinical acidosis such as sarcopenia, kidney stones etc. However, we fully agree that respective effects have to be demonstrated before they can be rewarded. Therefore, we clearly stated that “The health related issues of these findings remain to be determined in future studies”.

#### Minor Comments

- We added to the following sentence to the result section:

The supplement was well tolerated and compliance was good.

- We think that Fig. 2 and 3 represent a central point in this paper and should therefore not be replaced by words. If, however, the editorial board disagrees with this viewpoint, we will change this accordingly.

We tried to bring Fig 4 and 5 together in one graph. However, the result was a very confusing graph. Therefore, if there are no serious objections we think that 2 graphs are clearer and more helpful for the readers.

Pral values were calculated and the following paragraph was added:

Dietary potential renal acid load ( $PRAL = 0.49 \times \text{protein (g/d)} + 0.037 \times \text{phosphorus (mg/d)} - 0.021 \times \text{potassium (mg/d)} - 0.026 \times \text{magnesium (mg/d)} - 0.013 \times \text{calcium (mg/d)}$ ) was slightly positive and comparable during both interventions when the alkaline minerals of the supple-

ments were not included in the equation. Inclusion of the alkaline minerals decreased PRAL levels from  $5.4 \pm 12$  mEq to  $-17.5 \pm 11.9$  mEq.

We hope that the manuscript now is acceptable and we would appreciate the publication in the Nutrition Journal very much.

Thank you again for discussing the manuscript

Yours sincerely

Peter Deibert