

Improvement of the bioavailability of minerals and vitamin B1 by Strath Original Herbal Yeast.

Summary of an in vitro study by Dr. Karin Engelhart-Jentsch, 01/2017

Basic principles

In terms of nutrition, humans are reliant on sufficient quantities of the nutrients in food being taken up by the intestine. This applies in particular to micronutrients: vitamins, minerals and trace elements are important for us because a deficiency results in disease. It is well known that a lack of iron causes anaemia. Too little zinc adversely affects the immune system and a magnesium deficiency results in muscle cramps and loss of vitality. Fourteen days without an adequate intake of vitamin B1 reduces our stores by a half and problems may develop with the nerves.

A previous study (Leffler 2000) showed that taking Strath® Original can correct low levels of iron and hence of haemoglobin in pregnant women without the need for additional iron preparations. A laboratory study using an intestinal model was undertaken in order to strengthen these findings and support them with further scientific evidence.

Hypothesis: All nutrients are broken down in human bodies by enzymes. Only in this way can they be taken up by the intestines. For vital substances, it is the ionic form, in particular, and the essential combination with organic molecules (carriers) that have a decisive influence on bioavailability. Strath® Original tablets and Strath® Original liquid provide the organic molecules capable of binding that are necessary to ensure active and optimal absorption of the minerals and vitamins.

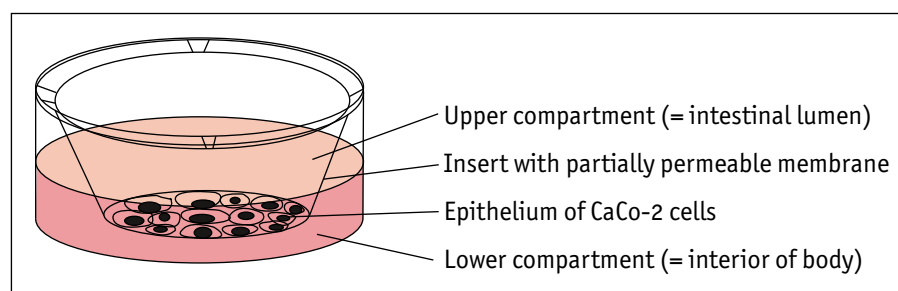


Figure 1.

The study

As can be seen in Figure 1, this scientifically recognised in vitro model consists of an arrangement of cells that simulates an intestine. The sterile, plastic culture dishes have an insert with a mesh at the bottom. Human epithelial cells (CaCo-2) are spread on this mesh and cultured until the layer is densely consolidated and the substances to be transported have to be pushed through by the cells. The density of the cellular epithelium is tested using electrical resistance, which must measure $>300 \text{ k}\Omega$. A culture medium with or without added micronutrients is then placed in the upper compartment as a control. For individual experiments to investigate the effect of Strath® Original, dissolved Strath® Original tablets or Strath® Original liquid were first artificially digested and then added at various concentrations, either alone or supplemented with magnesium, zinc, iron and vitamin B1. After 24 hours, the medium in the lower compartment was tested for the quantity of micronutrients taken up through the epithelium. This is a measure of the bioavailability.

The results

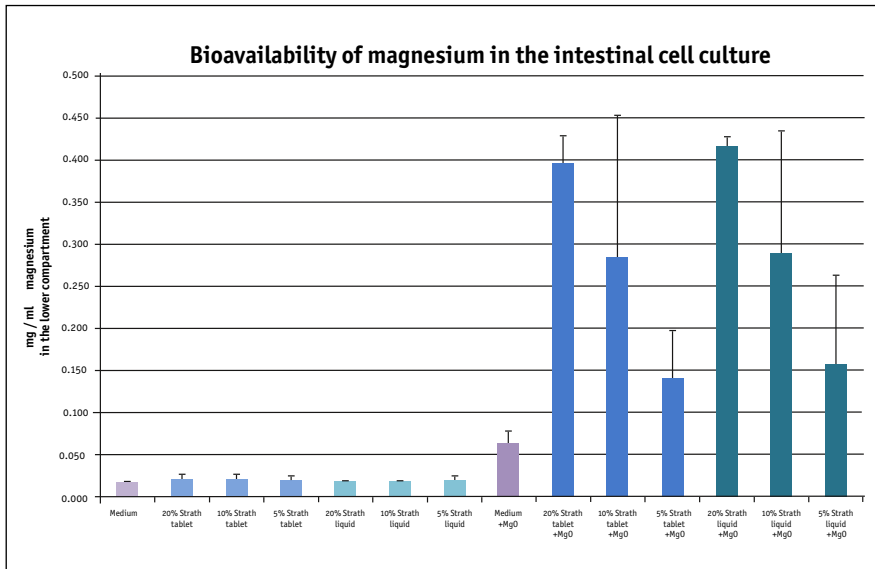


Figure 2.

Magnesium taken up through the intestinal epithelium (MgO = magnesium oxide) as a function of the additives. A total of 2.4 mg/ml magnesium was added to all the relevant batches. It can be clearly seen that little or no magnesium penetrates the intestinal epithelium as a result of passive diffusion. It is only when Strath® Original tablets or Strath® Original liquid is added that improved, concentration-dependent uptake of magnesium into the lower compartment (interior of the body) becomes possible.

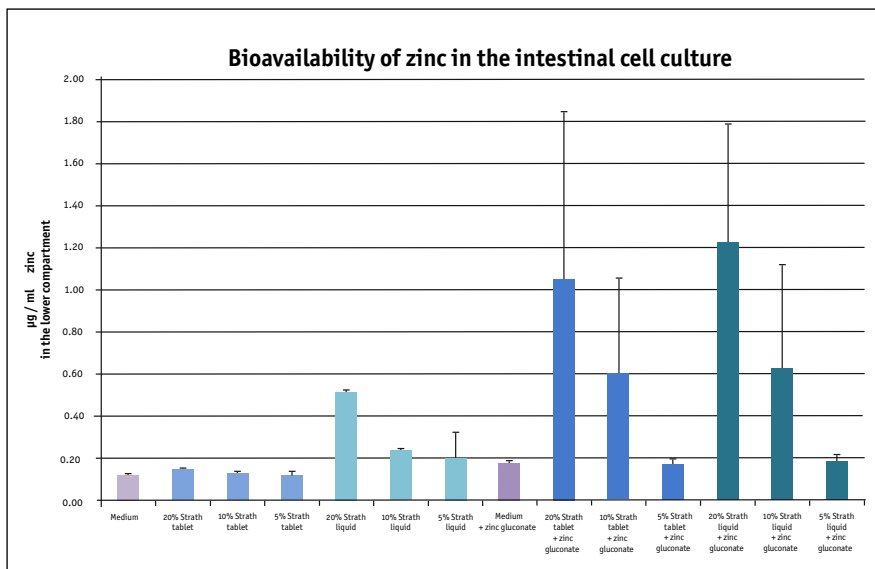


Figure 3.

In a similar fashion to that seen with magnesium, when zinc (zinc gluconate) is added to the culture medium, an active improvement in the uptake of this mineral by the intestinal mucosa with the aid of Strath® Original can be measured. Here, again, dose dependence can be observed. 3.6 µg/ml zinc was added to the relevant batches. Identical for all samples.

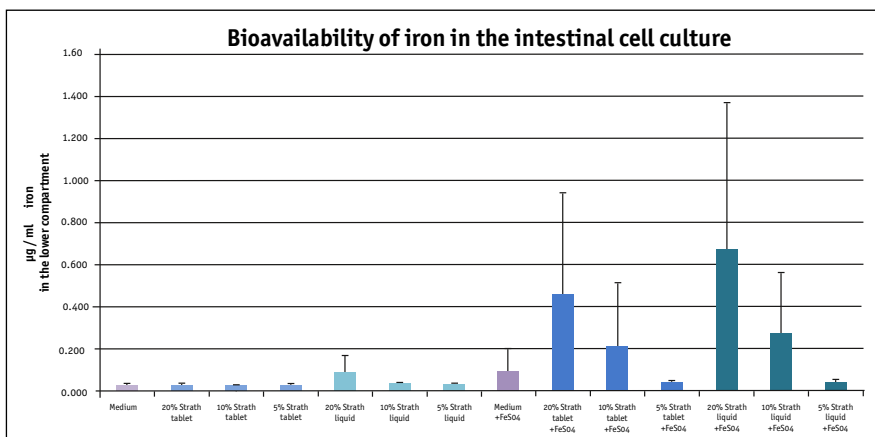


Figure 4.

Measurement of the uptake of iron (FeSO₄ = iron (II)sulfate) reveals that both Strath® Original tablets and Strath® Original liquid result in clearly improved transport of the iron through the intestinal epithelium. There is an obvious dependence on the concentration of Strath® Original. 4.3 µg/ml iron was added to all the samples used for this purpose.

The results

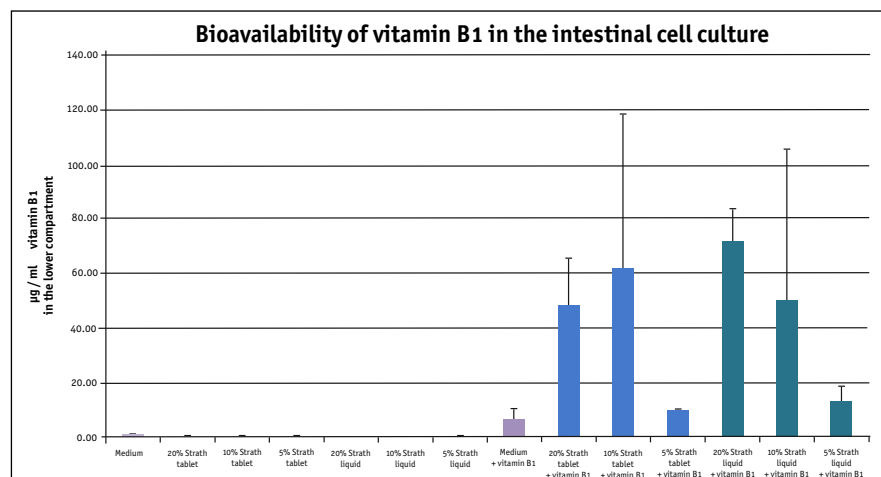


Figure 5.

It is possible to confirm, not only for the minerals but also for vitamin B1 (thiamine), that both Strath® Original tablets and Strath® Original liquid contribute to clearly improved bioavailability. 446 µg/ml vitamin B1 was added to the supplemented samples.

Conclusion

The results of this study of the uptake of micronutrients through the intestinal epithelium show clearly that Strath® Original tablets and Strath® Original liquid improve the active uptake of magnesium, zinc, iron and vitamin B1 through the intestinal epithelium in a concentration-dependent manner. The average values of the Strath® Original test series are 6 (iron) to 10 (vitamin B1) times higher than the average values for the controls with the micronutrients alone. Since all the micronutrients tested confirm the hypothesis, it can be assumed that other vital substances are also taken up to an improved extent.

But it is also important in this context to be aware that sufficient micronutrients must be present in the body from a balanced diet or by means of supplements, so that these can then be taken up by the intestines with the help of Strath® Original.

On the one hand, this confirms the findings of the Leffler study and, on the other, it demonstrates the value of Strath® Original food supplement for human wellbeing.

References

- L. Leffler, T. Leffler, P.W. Joller. Observational study on the effect of Bio-Strath (Strath) Food Supplement on the haemoglobin levels of pregnant women. *Schweiz. Zschr. Ganzheitsmedizin*, 12/2000: 327 – 328.

The production process – with care and experience

All Bio-Strath products are manufactured according to strict pharmaceutical guidelines. Natural primary yeast cells of the strain "Saccharomyces cerevisiae Meyen" are used to produce Strath herbal yeast. The yeast cells are combined with more than 50 selected herbs in the unique Strath process. These herbs are taken up by the yeast cells and metabolised. A natural, gentle fermentation process then opens up the cell walls of the yeast (plasmolysis). The unique, plasmolysed herbal yeast that is the result forms the basis for all Strath products.

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