

**A study performed in Germany by Arbeitskreis
Umweltanalytik Amalgam Detoxification by the
Fresh Water Algae Bio Reu-Rella Universität Tübingen
– Bereich Schwermetalle in 1998.**

The purpose of this pilot study was to give an answer to the question whether a specific alga product, i.e. BIO REU-RELLA, in cases of mercury strain could contribute to detoxification of the human organism.

Design

The study included 36 patients out of whom 25 were placed in a "product group" taking BIO REU-RELLA and 11 in a "control group". 3 patients dropped out – 2 due to illness and 1 due to side effects.

The product group took BIO REU-RELLA in growing doses from week 4.

Study period: 1st to 3rd week: basis measurement; 4th to 13th week: treatment.

Twice a week fecal samples and urine samples were taken (on the average 22.4 fecal samples and 22.68 urine samples per patient), and also saliva samples in the beginning of the study and in the 6th week.

The patients are randomly distributed in the product group and the control group. It is not a blind experiment and placebo products are not used.

The participants are instructed to avoid food containing mercury, which may have resulted in slight changes in eating habits during the study.

A dentist determines each test person's number of amalgam fillings and other fillings.

Before starting the test the participants fill in a questionnaire which compares socio-demographic characteristics, nutritional habits, somatic and psychological complaints, and subjective well-being with the degree of environmental impact.

In week 6 the participants are questioned about side effects and complaints as a result of taking Bio Reu-Rella (18 out of the 25 taking the product replied).

6 weeks after finishing the 13 weeks of testing, the participants are questioned about how they experienced the study, in order to evaluate factors in connection with the completion of the study. (27 out of the total of 36 replied, i.e. 76% of the product group taking Bio Reu-Rella and 72.7% out of the control group).

The participants

The participants from the two groups are compatible as regards occupation, age, weight, number of children, tooth status, mouth hygiene, nutrition, environmental impact, understanding of ones own physical as well as mental health, and individually experienced sensitivity towards external factors.

There is a larger group of women in the product group (91%) compared with the control group (64%). A few more persons from the product group report about a psycho-social strain. There is a little higher initial strain by Hg in the product group, this especially includes the highest values.

61% are working full time, 22% part-time and 17% are presently unemployed. It is noted that the number of health complaints and their severity is increasing by the increasing number of amalgam fillings. Furthermore, the overweight and underweight participants are reporting more psycho-somatic problems than the standard weight participants. The product group reports more psycho-social strains than the control group.

To sum up the groups are on the whole compatible.

Results

From a statistic point of view the study would have been more ideal with more participants. The examiners make up for this by using non-parametric statistic methods when evaluating the results. As the participants after 8 weeks of treatment begin to weaken their attention as to mercury straining food, and as the spontaneous Hg-liberation rises spontaneously in the control group after this date (and apparently as a consequence of this), the examiners chose to weed out the statistic material by reducing the statistic adaptation of the period of treatment to 4th-11th week.

Mercury segregation in the stools

If the two groups are evaluated from the increasing Hg-segregation through the stools in 1st-3rd week compared to 4th-11th week, you will find a certain increase in the product group, but this increase is not statistically significant. If you regard all outlets >300 micro grams Hg/kg, there is a clear significant increase in the product group of Hg-segregation exceeding this figure.

Mercury segregation in the urine

In the same way as above (segregation in urine >3 micro grams/l) no significant increase is obtained. Actually by one of the methods in the control group there is a tendency to increased Hg-segregation. By the other method there is a tendency to increased Hg-segregation seen in relation to the control group. It must, however be observed that the Hg-segregation in the more tainted urine samples in the control group is dropping.

Mercury in the spit

The mercury concentration in spit is very stable and increasing by the number of amalgam fillings (after chewing). When the participants in the product group started taking Bio Reu-Rella a clear connection was observed between increasing Hg-concentrations in the spit and a increasing Hg-liberation through the stools.

It is not quite clear whether the increase of Hg-segregation in the stools during the period of treatment primarily should be linked together with a high Hg-liberation from amalgam to the spit. This is not proof of a protective efficiency towards the blood-kidney-system, whereby an increased segregation through the intestine will lead to a decreased segregation through the kidneys. However, it seems that there is a coincidental tendency to increased Hg-concentration in the stools and urine.

The well-being of the participants (only the product group)

The majority (61.1%) did not experience any change in the overall well-being. Predominantly a subjective worsening of the symptoms was experienced, although 44.4% reported improvements of certain symptoms.

The larger improvements somatically and psychologically in the product group is due to the larger increase of Hg-concentration in the stools during the period where this group took the product. This cannot be explained statistically by the fact that the participants in the test with a larger number of fillings had greater expectations to the detoxification efficiency of the product. The conclusion,

Side effects (only the product group)

The side effects and their relation to the product are evaluated by the participants themselves. The examiners do not distinguish between symptoms of relevance to the product and irrelevant symptoms, and therefore it is more or less the question of unpleasant (new ?) experienced symptoms over the first 6 weeks of the study. For instance are side effects like broken nails and nausea in connection with meals mentioned. Therefore in the following this is called "unpleasant experienced symptoms".

Along with increasing Hg-segregation through the stools there are reported an increasing number of unpleasant experienced symptoms. There is a tendency, however that the participants more rarely blame the product for the subjectively experienced unpleasant symptoms the larger the Hg-segregation. Therefore this means that a greater improvement in the general condition can be observed, and fewer side effects related to the product with growing increased Hg-concentration, especially in the stools and Hg in the spit, coincident with more amalgam fillings. It does not look as if the participants' expectations to the treatment have any significance, as there is no coherence between the participants' own knowledge as to number of amalgam fillings and their experience of unpleasant symptoms. The unpleasant experienced symptoms are worse in the beginning of the treatment. 5 participants are mentioned with essential unpleasant experiences during the treatment. 67% of the participants report about somatic psychological symptoms, especially in the beginning, 50% report about persistent problems, and 83% have given extra descriptions of primarily unpleasant experienced symptoms (overlapping between the groups must occur, but the degree is not mentioned). In total 74 unpleasant experienced symptoms were reported.

Participants with chemical intolerance have many unpleasant experienced symptoms during the study. Whereas the very ill persons with chemical intolerances reported about the greatest improvements in their general condition during the treatment.

Conclusion

The purpose of this study was to determine whether a specific alga product BIO REU-RELLA can contribute to increased detoxification of mercury (Hg) from the human organism when people had been toxified by mercury, due to among others, amalgam fillings in the teeth.

Certain reservations should be made as to the conclusion of this study, as the number of participants is low and the statistic strength of the calculations is consequently not very powerful. Then it can be concluded that:

The results show a clear detoxifying effect from taking the product (especially measured by the increased Hg-concentration in the stools), and simultaneously also an improved well-being somatically and psychologically is experienced. This applies for persons with large continuously increasing Hg-segregation via the stools as a consequence of impact from amalgam fillings – at the same time lower and only faintly straining experienced side effects are observed.

A stronger detoxifying effect of the product does not appear to result in increased discomfort.

The weaknesses of the study

1. It is not double blinded.
2. There is a tendency of higher outlet values for the Hg-concentration in the stools in the product group; here especially the higher values.
3. This is especially unfortunate, as the product probably is most effective in case of higher outlet values.
4. Not many participants.

Therefore a double blinded, placebo controlled study with more participants is recommended, and ideally the design of the study should be improved. The study could very well be reduced to 6 weeks treatment, as the participants' after 8 weeks of treatment have proved to be less strict as to their consumption of food containing mercury. It is recommended to maintain the same frequency of taking fecal and urine samples, as this will prevent errors due to larger randomly occurred fluctuations. The fecal samples seem to be a better parameter than the urine samples for evaluating the efficiency