

## **Tooth brushing - but how?**

### **Medical Psychology examines together with dentistry and movement sciences ways to optimize oral hygiene skills.**

Daily oral hygiene is a health behavior shown with considerable consistency in Germany. Nearly 70% of the Germans report to brush their teeth twice a day. At the same time more than 90% suffer from diseases related to poor oral hygiene. Many Germans are at a loss when they are asked how to brush one's teeth best. This mirrors the state of the art with respect to this important research question. Even though several tooth brushing techniques are described in dentistry scientific evidence is missing to prove which one is best suited for oral hygiene at home.

To follow this question a multidisciplinary team lead-managed by the local Institute of Medical Psychology (head: Professor Renate Deinzer) has formed at the Justus-Liebig-University of Giessen, Germany. In cooperation between dentistry, medical psychology and movement sciences computer presentations were developed to impart one of two often recommended brushing techniques (Fones vs. modified Bass technique). The presentations not only consider dental knowledge (e.g., what exactly the brushing technique looks like). They also include insights from medical psychology, e.g., how to improve understanding, remembering and implementing of what has been learnt, as they follow findings from movement sciences regarding how movements can be learned and trained best.

In a first study just published in the notable scientific Journal PLoS ONE the authors could show that such a computer presentation can improve oral hygiene skills of students. The Fones technique was most successful. The head of the study, Professor Renate Deinzer, comments: "The Fones techniques reminded many of our participants to what they had learned in kindergarden. Perhaps this explains its success. Still, we would have expected the Bass technique to show better results. This technique is often considered in dentistry to be the best to antagonize gingivitis and periodontitis. However this technique was difficult to learn for our students and did not bring any success. In further studies we will prove whether this result is confirmed in other samples. Irrespectively, we were alarmed by the poor oral hygiene skills of our students at the beginning of the study. Perhaps, poor oral hygiene is often not a matter of poor hygiene motivation but of poor hygiene skills. It thus would be important to examine these skills in dental practices and to improve them where necessary. Our research aim is to find ways how this can be achieved best."

The German Society of Medical Psychology (DGMP) addresses research at the psycho-dental junction for decades. Professor Renate Deinzer, the current president of this scientific society, manages together with Dr. Jutta Margraf-Stiksrud a working group on this topic.

#### Reference:

Harnacke D, Mitter S, Lehner M, Munzert J, Deinzer R (2012) Improving Oral Hygiene Skills by Computer-Based Training: A Randomized Controlled Comparison of the Modified Bass and the Fones Techniques. PLoS ONE 7(5): e37072. doi:10.1371/journal.pone.0037072; URL: <<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0037072>>

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