

project:

## **Treatment-relevant research in ADHS**

Implementation of application-oriented research in ADHD in children as well as in adolescents and adults.

**Prehistory:** In a comprehensive long-term project in several centers in Switzerland, the Brain and Trauma Foundation Grisons/Switzerland has collected a uniquely large dataset, which has an enormous potential with regard to precise medicine: 500 patients with significant attention deficit disorders aged 6-60 years and 250 healthy control patients were examined several times during 2 years (ADHD patients 5 examinations, healthy control patients 3 examinations). Discussions with the test subjects involved took place every 6 months regarding their development and the influence of treatment on their lives. These interviews resulted in many different scientifically significant studies, some of which have already been published. The main publication is certainly the World Journal of Biological Psychiatry 2019, in which the development of biomarkers in the context of artificial intelligence, a method with which the Brain and Trauma Foundation has a longstanding experience, was highlighted. The method has already been successfully applied for a long time.

The purpose of biological markers is to improve the diagnosis and treatment of people with mental disorders. It has been shown that with the inclusion of biological markers the understanding of the specific deficits of people can be significantly improved. On the other hand, the patients or their relatives also feel better understood and often have aha experiences in the evaluation discussions when the connections between behaviour, thinking and feeling as well as the biological preconditions are shown to them. This alone creates an awareness of one's own being and the necessities associated with it. From the results, however, precise statements can also be made regarding the treatment (Precise Medicin)

The many conversations with patients have also led to completely new insights. Thus, the conversations led to the insight into the increased inner excitement, which is reflected in the brain through regularities. The GTSG researchers were able to transform the previously hidden regularities into a formula, so that all patients now benefit from the discovery after only a short time. The benefit consists in clear instructions for coping with everyday life (everyday strategies), in significantly improved medication, and in clear instructions on how to proceed in non-drug

treatment. The formula is currently being scientifically investigated by the University of Zurich with the support of various foundations.

According to the credo of the Brain and Trauma Foundation Graubünden/Switzerland, all investigations must directly serve to improve the situation of the ADHD population. Otherwise, no research may be conducted within the framework of the Brain and Trauma Foundation.

### **Future research and above all implementation of the results**

According to this implementation strategy, future research should address further topics:

Practice-oriented application research:

- Development of treatment-relevant biological markers to improve diagnostics and treatment (better, deeper, more precise)
- Development of functional cortical networks, which can make essential predictions about medication, choice of further everyday strategies and therapy.
- Analysis of developmental trajectories as a function of the success of treatment from child to adolescent and into adulthood.

Implementation strategies:

- Implementation of the findings in schools through further training of teachers: This is a particular concern of the GTSG, which has been intensively engaged in the question of what really helps children at school since its inception.
- Support of the parents in the context of their educational mission: Since parents with ADHS children often also have corresponding experiences, their support is of special importance. It is important that the special characteristics of the children receive the meaning for the parents and that they are loved by the parents in their special way.

- To improve the translation of research into practice by new medical users in all parts of Switzerland through courses and workshops and through appropriate contributions in social media or newsletters. This will make it possible to identify the problems on a broader basis.
- Improvement of the training of relevant professions through increased inclusion of neurological and neuropsychological functions.
- Providing better knowledge for teachers and social workers concerning ADHD.