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### **A Biopsychosocial Stress Medicine Model for ADHD: Observe, Identify and Change Stress**

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**Background/problem:** Hyperactive behaviors are not well understood - their origin, prevention and health promoting ways to restoration – although they constitute an increasing problem in our societies. As school medicine seems to be satisfied prescribing pharmacological substances, which new findings are questioning, extensive knowledge development is needed. Many behavioral approaches are also not-well understood.

Overactivity in the limbic system is assumed to contribute to hyperactivity in (at least some) ADHDs. It is assumed to be caused by decreased noradrenalin (including second messenger's functionality, e.g. Magnesium and Protein G, see von Scheele & von Scheele, 1999 <http://www.springerlink.com/content/h473417043281002/>). Recent knowledge/studies relate this to destructive diets and biopsychosocial stress, where autonomic nervous system influences on glucose metabolism via glucagon seems to be crucial. Biofeedback, together with diet intervention, appears to be beneficial for most (well diagnosed) ADHDs. In our approach we refer not only to glucose destructive substances but also a more complete, complex picture of nutrition (Stig Bergmark <http://www.docstoc.com/docs/69276864/NUTRITION-AND-RESISTANCE-TO-DISEASE-STIG-BENGMARK-Lund-University>)

**Solution:** We propose a biopsychosocial stress medicine model for analysis and intervention of hyperactive behaviors, where specially educated teachers educate, train and supervise students.

The cornerstones of the intervention are:

Observation and Identification of biopsychosocial stress (psychophysiological stress profiling (PSP) designed for ADHD)

Interventions: Special diet, biofeedback and cognitive spatial-sequential training supervised by special educated teachers

Individual Biological Evidence Designed Documentation (a priori predicted) for continuous validation of processes.

The use of PSP is decisive while only those subjects identified as classified as “stress-ADHDs” join the intervention program. Individuals are trained over time in intervention strategies to ensure that enduring habits are established.

Preliminary data: A picture is beginning to emerge showing that biofeedback assisted breathing training influences hyperactive children's subjectively reported state, increases Respiratory Sinus Arrhythmia, and normalizes EEG patterns. The possible link from sympathetic activity to glucose metabolism via influence on glucagon might partly explain effects of biofeedback assisted relaxation training on hyperactivity and limbic system activity. If this is the case in substantially larger in well-diagnosed subgroup of individuals with ADHD, we might even generalize and suggest that integrated biofeedback and proper food should be considered when ADHD is suspected.