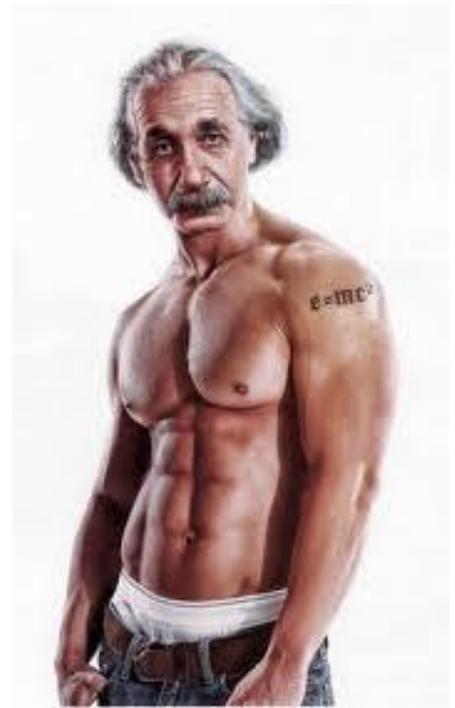


HEG Training the Brain

Haemoencephalography (HEG) is a specialised form of training for the executive (thinking/decision) making part of the brain – the prefrontal cortex (PFC). It works by training you to increase blood flow into this part of the brain. Blood supplies energy, repairs and growth. The process is exactly the same as exercising your body in the gym. You exert the body – blood supply rushes in to sustain the effort. It repairs and builds the working tissue – by repeating this the body gets stronger.



How do you do it?

HEG is completely non-invasive and drugless. It involves placing a surface sensor on the forehead. This sensor will read the blood flow to the PFC and display that signal on the computer screen. You quickly learn to increase your capacity to both increase and maintain your score.

What does it do?

The PFC plays a central role in making decisions, formulating and carrying out plans and intentions and sticking to those plans in the face of distraction. For example, suppose it is time for your evening meal. Your PFC will formulate a plan for meeting that need. Your PFC accesses the knowledge you need such as your memory of where you keep your pots and pans as well as the ingredients for the meal. Suppose the phone rings while you are cooking – you decide to answer it, your PFC will hold your intentions to finish cooking the meal so that you can come back to cooking when you are finished.



The PFC also has the ability to inhibit other areas of the brain connected to emotions, enabling you to, for example, override a fear of heights when you need to climb a ladder. In summary, the PFC controls attention, blocks distractions in the environment, controls physical and emotional impulses and supports focussed attention.

How does it do it?

The goal of HEG is to increase blood flow to the PFC. Increasing the amount of blood to the PFC will result in increased metabolism thereby allowing this area of the brain to function optimally. The software provides feedback to the patient in the form of a video which moves forward and backwards as bloodflow increases

or decrease. The brain learns from this feedback how to increase and sustain blood supply to this critical part of the brain.

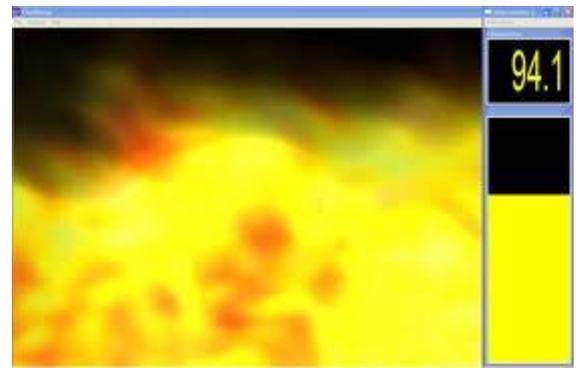
HEG and Migraine Headaches

Dr. Jeffery Carmen developed HEG specifically to treat migraine headaches. He treated 100 migraineurs with HEG over a four year period. Over 90% of the subjects that completed at least 6 sessions reported

Migraine Photo Courtesy of: Jeff Carmen, Ph.D.



significant improvement including substantially reduced pain levels. Typically both pain levels and frequency of migraine improved. Dr. Carmen's theory for the efficacy of HEG for migraines is that HEG training strengthens the PFC's inhibitory control over some part of the brain that is thought to generate migraines.



HEG and ADD/ADHD

ADD/ADHD is a real neurological disorder and typically results in dysregulation of the PFC. Brain scanning studies have shown different activity in the PFC of children and adults suffering with ADD/ADHD. These scans have demonstrated a deactivation of the PFC during tasks requiring concentrated attention, for which you would normally see an increase in PFC activity. This deactivation results in the symptoms commonly seen with this condition.



HEG and Peak Performance

HEG is also used to support peak performance in the brain. As we age our brain naturally tends to diminish unused neural connections leading to small issues like not being able to remember that word at the tip of your tongue, forgetfulness or larger issues like dementia or the loss of motor control. HEG actively exercises the brain exactly like going to the gym.

For more information on research, sales or rental equipment contact

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