

## **Spontaneous change of brain blood flow while guessing - Research with near infrared spectroscopy**

### **Results:**

The present study deals with brain activities using fNIRS (functional near-infrared spectroscopy).

First, brain blood flow was measured while guessing a hidden figure (Zenar symbols) in a forced-choice test. Subjects were 14 healthy adult volunteers (8 males, 6 females): average age was 46.6 ( $SD = 15.2$ ). 1 trial was 3 min. Subjects scored degree of formulation of visual images. Results of 69 trials, spontaneous blood flow change (SBFC) often occurred at the temporal lobe, and at that time the images were formulated clearly. In other words, awareness was more activated. We named it as instantaneous highly activated state of awareness. However, SBFC did not relate to successful clairvoyant task.

Second, brain blood flow of various experts was measured in a free-response test to guess for the invalid parts of the inside of human body or for a small thing hidden in a dark box. Subjects were 11 healthy volunteers (5 males, 6 females): average age was 39.7 ( $SD = 12.1$ ). Two of them were famous star psychics of Russia and China. Brain activities of star psychics during clairvoyance were not similar to activities of other subjects. The characteristic activated area of star psychics was the prefrontal area although many subjects showed activation of the right temporal lobe. Star psychics seemed to think, not only formulate visual images. In addition, photons were measured around the target thing during the clairvoyant task. However there was no appearance of anomalous photon.

### **Published Work:**

1. Kokubo, H., Yamamoto, M., & Watanabe, T. (2005). Impression and spontaneous blood flow change at the temporal lobe while guessing for a hidden figure. *Journal of International Society of Life Information Science*, 23(2), 306-313.
2. Kokubo, H., Yamamoto, M., & Kawano, K. (2005). Research on brain activities by functional near infrared spectroscopy while guessing for hidden figures. *Japanese Journal of Parapsychology*, 10(1&2), 33-36. [in Japanese]
3. Kokubo, H., Yamamoto, M., Watanabe, T., Kawano, K., & Sakamoto, K. (2006). Brain blood flow change with functional near infrared spectroscopy while guessing. *Journal of International Society of Life Information Science*, 24(1), 224-230.
4. Kokubo, H., & Yamamoto, M. (2006). Brain activity while guessing: Research by functional near-infrared spectroscopy (fNIRS). In F. E. Silva, C. F. Grubbifer, E. Brito, S. Pilato, S. Muniz, & N. M. Ganz (Eds.), *Proceedings of Presented Papers of 3rd Psi Meeting: Implications and Applications of PSI* (pp. 133-139). Curitiba, Brazil: Faculdades Integradas "Espírita".

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