## **Accepted Manuscript**

Valsalva-induced elevation of intracranial pressure selectively decouples deoxygenated hemoglobin concentration from neuronal activation and functional brain imaging capability

Martin Knauth, Marcus Heldmann, Thomas Münte, Georg Royl

PII: \$1053-8119(17)30718-8

DOI: 10.1016/j.neuroimage.2017.08.062

Reference: YNIMG 14293

To appear in: Neurolmage

Received Date: 27 January 2017
Revised Date: 24 August 2017
Accepted Date: 26 August 2017

Please cite this article as: Knauth, M., Heldmann, M., Münte, T., Royl, G., Valsalva-induced elevation of intracranial pressure selectively decouples deoxygenated hemoglobin concentration from neuronal activation and functional brain imaging capability, *NeuroImage* (2017), doi: 10.1016/j.neuroimage.2017.08.062.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



## Valsalva-induced elevation of intracranial pressure selectively decouples deoxygenated hemoglobin concentration from neuronal activation and functional brain imaging capability

Martin Knauth, Marcus Heldmann, PhD, Thomas Münte, MD, Georg Royl, MD

Department of Neurology, Center of Brain, Behavior and Metabolism, University of Lübeck, Ratzeburger Allee 160, 23538 Lübeck, Germany

Corresponding author: PD Dr. Georg Royl, Department of Neurology, University of Lübeck, Ratzeburger Allee 160, 23538 Lübeck, Germany

phone: +49 451 50043415, fax: +49 451 50043404, e-mail: georg.royl@neuro.uni-luebeck.de

Cover title: Valsalva and motor cortex

Tables and Figures:

Figure 1: Experimental setup

Figure 2: Experimental protocol

Figure 3: Functional activation map across subjects from visual inspection of time courses

Figure 4: Time courses of oxy-Hb, deoxy-Hb and total-Hb in motor cortex

Figure 5: Mean amplitude of oxy-Hb, deoxy-Hb and total-Hb versus Valsalva maneuver

Figure 6: Impact of breathing challenges on functional imaging of motor cortex based on oxy-Hb and deoxy-Hb

Table 1: Wilcoxon signed rank test

Key words: neurovascular coupling, functional neuroimaging, brain mapping, intracerebral pressure, optical imaging, near infrared spectroscopy

## Download English Version:

## https://daneshyari.com/en/article/5630760

Download Persian Version:

https://daneshyari.com/article/5630760

<u>Daneshyari.com</u>