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Letter to the Editor

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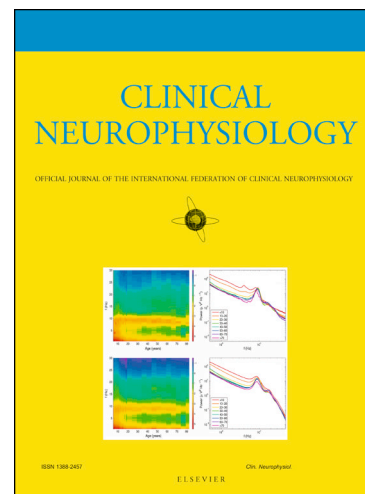
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Reply to “Clinical Practice Guidelines or Clinical Research Guidelines?”

- * Riitta Hari, MD PhD, clinical neurophysiologist, Professor of Systems Neuroscience and Human Brain Imaging (emer.), Aalto University, Helsinki, Finland; riitta.hari@aalto.fi
- Sylvain Baillet, PhD, physicist, Professor of Neurology and Neurosurgery, Biomedical Engineering and Computer Science, Montreal Neurological Institute, McGill University, Montreal, QC, Canada; sylvain.baillet@mcgill.ca
- Gareth Barnes, PhD, engineer, Professor and Head of MEG, Wellcome Centre for Human Neuroimaging, University College of London, London, UK; g.barnes@ucl.ac.uk
- Nina Forss, MD PhD, neurologist, Adjunct Professor and Head of Department of Neurology, Helsinki University Hospital, Helsinki, Finland; nina.forss@hus.fi
- Joachim Gross, PhD, physicist, Professor and Director of Institute for Biomagnetism and Biosignalanalysis, University of Münster, Germany; joachim.gross@uni-muenster.de
- Matti Hämäläinen, PhD, physicist, Professor of Radiology, Harvard Medical School and Massachusetts General Hospital, Boston, MA, USA; msh@nmr.mgh.harvard.edu
- Ole Jensen, PhD, engineer and neuroscientist, Professor in Translational Neuroscience, Centre for Human Brain Health, University of Birmingham, Birmingham, UK; o.jensen@bham.ac.uk
- Ryusuke Kakigi, MD PhD, neurologist and clinical neurophysiologist, Professor of Integrative Physiology, National Institute of Physiological Sciences, Okazaki, Japan; kakigi@nips.ac.jp
- François Mauguière, MD PhD, neurologist, Professor of Neurology (emer.), Neurological Hospital & University of Lyon, Lyon, France; Francois.Mauguiere@univ-lyon1.fr
- Nobukazu Nakasato, MD PhD, neurosurgeon and epileptologist, Professor and Chair, Department of Epileptology, Tohoku University, Sendai, Japan; nkst@med.tohoku.ac.jp
- Aina Puce, PhD, biophysicist and neuroscientist, Eleanor Cox Riggs Professor, Psychological & Brain Sciences, Indiana University, Bloomington, IN, USA; ainapuce@gmail.com
- Gian-Luca Romani, PhD, physicist, Professor and Director of the Institute for Advanced Biomedical Technologies, Università degli Studi G. D'Annunzio, Chieti, Italy; gianluca.romani@unich.it
- Alfons Schnitzler, MD PhD, neurologist, Professor of Clinical Neuroscience and Neurology, Heinrich-Heine-University, Düsseldorf, Germany; SchnitzA@med.uni-duesseldorf.de
- Samu Taulu, PhD, physicist, Research Associate Professor in Physics and Director of the I-LABS MEG Brain Imaging Center, University of Washington, Seattle, WA, USA; staulu@uw.edu

*** Corresponding author:**

Riitta Hari

Department of Art, Aalto University, PO Box 31000, 00076 Aalto Finland

riitta.hari@aalto.fi

We thank our esteemed clinical colleagues Bagić et al. (2018) for their interest in our paper "*IFCN-endorsed practical guidelines for clinical magnetoencephalography (MEG)*" (Hari et al. 2018). We hereby respectfully respond to the criticism that our paper has (1) a confusing title and (2) poorly-weighted contents.

Bagić et al. (2018) feel that our title is easily confused with "legitimate Clinical Practice Guidelines (CPGs)". We specifically did not use the term *clinical practice* in our title. Furthermore, reading the brief abstract should readily rectify any lingering confusion in the mind of a potential reader.

Bagić et al. (2018) also consider that the content of our paper is "inadequate for guidelines in clinical MEG, as practiced". They state—as did we—that MEG currently has only two well-established clinical applications: diagnostics of epilepsy, including identification of epileptic foci, and preoperative evaluation. They argue that we should have described these two existing applications in much more detail, including instructions how to carry out and evaluate recordings in patients suffering from different types of epilepsy, with specific considerations for different age groups. This information certainly is an indispensable part of the eventual CPGs for MEG. Here we explicitly did not want to dictate how expert clinicians employing MEG should make their exams as they, despite standardization, should be allowed to have freedom in carrying out technically sound MEG recordings, analyses, and interpretation.

Importantly, none of the five anonymous reviewers of our paper expressed a concern of lacking emphasis on the established clinical applications. Instead, they demanded us to expand the discussion about the potential clinical applications that may emerge as an outcome of the ongoing MEG research, eventually diversifying the clinical use of MEG.

Naturally, our paper is not the only source of information for clinical MEG applications. Our reference list of 350 items includes several review and guideline papers that we recommended for further reading.

A different group of authors would, of course, write a different paper. Our motivation to emphasize the basic principles is that over the years we have seen too many technically poor MEG recordings and analyses that do not increase the understanding of healthy and diseased brains. Such recordings can be useless, or even misleading, in clinical practice.

It is also our experience that junior clinicians, e.g., neurologists, entering the MEG field typically know much more about the different clinical disorders, including semiology of epilepsy, than they know about the basic principles of MEG and EEG. Such basic information is, however, quintessential for proper interpretation of the MEG results and even for the selection of the right problems and patients to be studied with MEG. Only on the basis of a solid foundation, expert clinicians can carry out sophisticated exams and will arrive at the correct conclusions for the benefit of the patients.

We are pleased that our paper has triggered a strong intent for the community to write internationally agreed CPGs for MEG studies. However, excluding from such an effort people on the basis of their backgrounds (e.g. physics or basic neuroscience), irrespective of their skills, would be shortsighted and a clear step backwards in a field that continues to flourish by virtue of strong interdisciplinary collaboration.

Conflict of Interest

G. Barnes holds a Wellcome collaborative award that includes an intellectual property agreement with QuSpin Inc., a manufacturer of optically-pumped magnetometers. N. Nakasato is Professor and Chair of Donated Fund Laboratory from RICOH Japan Corp. and has received research funds and speaker's fees from Otsuka Pharmaceutical, Daiichi-Sankyo, UCB Japan, Fukuda Denshi, Pfizer Japan, Kyowa-Hakko-Kirin, and Eisai.

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