

2013

Human neurophysiology and mobile phone-related health

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Recommended Citation

Croft, Rodney J., "Human neurophysiology and mobile phone-related health" (2013). *Faculty of Social Sciences - Papers*. 885.

<https://ro.uow.edu.au/sspapers/885>

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Abstract

Abstract presented at the 23rd Australasian Society for Psychophysiology Conference, 20-22 Nov 2013, Wollongong, Australia

Keywords

neurophysiology, mobile, phone, related, human, health

Disciplines

Education | Social and Behavioral Sciences

Publication Details

Croft, R. J. (2013). Human neurophysiology and mobile phone-related health. 23rd Australasian Society for Psychophysiology Conference (p. 26). Wollongong, Australia: Australian Society for Psychophysiology Inc.

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Mobile telecommunications devices, such as mobile phones, base stations and Wi-Fi, are ever present in the modern age. Underpinning their functionality is electromagnetic radiation (which is the medium for coding, transmitting, receiving and then decoding information), with the frequency of electromagnetic radiation utilised termed 'radiofrequency' (RF). There has been considerable debate concerning the relative harm that may result from this RF, and consequently a considerable body of science exploring the issue. Of particular relevance is EEG research, which has demonstrated that RF emissions impact human brain functioning, both in terms of resting (alpha band) and sleep (sleep spindle frequency range) EEG. This presentation will provide a brief overview of this science more generally (including the epidemiology, in vitro and in vivo research), before focusing on the roles and outcomes of human neurophysiology research in this domain, and ramifications of this for the RF safety standards that we are all governed by.

Keywords: electromagnetic radiation, EEG/ERP, bioelectromagnetics, Health Status, alpha-EEG

doi: 10.3389/conf.fnhum.2013.213.00040

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