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Human ventromedial prefrontal cortex and the positive affective processing of safety signals

Ben J. Harrison^{1*}, Miquel Angel Fullana^{2,3,4}, Esther Via^{5,6}, Carles Soriano-Mas^{6,7}, Bram Vervliet⁸, Ignacio Martínez-Zalacaín⁶, Jesus Pujol⁹, Christopher G. Davey^{1,10}, Tilo Kircher¹¹, Benjamin Straube¹¹, Narcís Cardoner^{5,3}.

¹Melbourne Neuropsychiatry Centre, Department of Psychiatry, The University of Melbourne, Victoria, Australia, 3053.

²Anxiety Unit, Institute of Neuropsychiatry and Addictions, Hospital del Mar, CIBERSAM G21, Barcelona, Spain, 08003.

³Department of Psychiatry, Autonomous University of Barcelona, Barcelona, Spain, 08193.

⁴Hospital del Mar Medical Research Unit (IMIM), Barcelona, Spain, 08003.

⁵Department of Mental Health, Corporació Sanitària Parc Taulí, Sabadell, Spain, 08208.

⁶Department of Psychiatry, Bellvitge University Hospital-IDIBELL, CIBERSAM G17, Barcelona, Spain, 08907.

⁷Department of Psychobiology and Methodology in Health Sciences, Universitat Autònoma de Barcelona, Spain, 08193.

⁸Center for Excellence on Generalization, Department of Psychology, University of Leuven, Tiensestraat 102, Leuven, Belgium, 3000.

⁹MRI Research Unit, Department of Radiology, Hospital del Mar, CIBERSAM G21, Barcelona, Spain, 08003.

¹⁰Orygen, The National Centre of Excellence in Youth Mental Health, Parkville, Australia, 3052.

¹¹Department of Psychiatry and Psychotherapy, Philipps-University Marburg, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany.

***Correspondence to:** Associate Professor Ben J. Harrison. Melbourne Neuropsychiatry Centre, Department of Psychiatry, The University of Melbourne. Level 3, 161 Barry St. Carlton, VIC 3053. Phone: (+613) 8344 1959. habj@unimelb.edu.au

Abstract

Human functional magnetic resonance imaging (fMRI) studies suggest that the ventromedial prefrontal cortex (vmPFC) contributes to the learned discrimination of threat and safety signals, although its precise contribution to these processes remains unclear. One hypothesis is that the vmPFC supports the positive affective processing of safety signals linked to their implicit stress-relieving properties. We set out to test this hypothesis and to examine the specificity of vmPFC responses to safety signal processing versus its high level of ‘default mode’ activity. Sixty participants completed an fMRI conditioning task that involved the generation of a conditioned threat (CS+) and safety (CS-) signal following the completion of a pre-conditioning

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