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Preclinical Neuroscience

Visual phenotype in Williams-Beuren syndrome challenges magnocellular theories explaining human neurodevelopmental visual cortical disorders

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Miguel Castelo-Branco

Assistant Professor of Biophysics, Faculty of Medicine, University of Coimbra, Portugal
Director of IBILI, Faculty of Medicine, Coimbra, Portugal.

Visual Neuroscience Laboratory
IBILI, Institute for Biomedical Research on Light and Image
Faculty of Medicine, University of Coimbra, Azinhaga de Sta Comba, 3000-548 Coimbra, Portugal
Tel: + 351. 239 - 480261
Fax: + 351. 239 – 480280
Mobile + 351 936350050
e-mail: mcbranco@ibili.uc.pt

MCB is now Assistant Professor at the University of Coimbra, Portugal, and has held a similar position in 2000 at the University of Maastricht, the Netherlands. Before (1998-1999), he was a Postdoctoral fellow at the Max-Planck-Institut für Hirnforschung, Germany where he had also performed his PhD work (1994-1998).

MCB has made contributions in the fields of Ophthalmology, Neurology, Visual Neuroscience, Human Psychophysics, Functional Brain Imaging and Human and Animal Neurophysiology. His lab is now accomplishing tasks also in the context of a European Network (Evi-Genoret), and has succeed in collaborating with labs working in other fields of knowledge such as Human Genetics and Clinical Neuroscience. He is the scientific coordinator of the National Functional Brain Imaging Network. In his work he could isolate specific magnocelullar/visual motion dysfunction in a genetic neurodevelopmental model, Williams Syndrome. He has further studied parallel pathways to quantitatively analyze visual aging in neurodegenerative disorders of the retina and the brain (Glaucoma and Parkinson Disease). The lab is thereby very experienced in Visual Impairment questions, and the multiple causes of amblyopia and its functional characterization in centre and peripheral visual field. In recent work, the lab has characterized genetic and acquired photoreceptor retinal degenerations. The idea is to provide models of visual impairment based on new structure-function and genotype-phenotype correlations (that may help define new biomarkers for retinal degenerations). He has also published work on neuropsychology and psychophysics in patient populations. His achievements are well reflected in publications in top General Journals, such as Nature and PNAS and Top Translational research journals such as Journal of Clinical Investigation (impact factor(IF): 15,8), Brain (IF 8) as well as others in the field of Basic and Clinical Visual Sciences.