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Advances in Neurosciences: stepping into the clinics

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Translating basic advances into clinical practice is one of the major challenges of contemporary biomedical research, and a priority for health authorities. The bench to bedside travel is always problematic, but it appears especially difficult in the neuroscience field when dealing with neuropsychiatric disorders, if we consider the prominent role of the human-specific, psychosocial variables involved[1]. Laboratory modeling then appears extremely complicated and sometimes inconsistent, and this may account for the significant gap that still persists between basic science and medical applications for the patients. New approaches are then needed to overcome this bottleneck and transform the fast progression of the neurosciences in the last 50 years into further therapeutic developments. Translational research in eating disorders is one significant example of this: animal models with convincing face, construct and predictive validity are lacking, since spontaneous anorexia, binge eating or over-evaluation of body shape are difficult or impossible to reproduce in the lab. One possibility to advance in this kind of problematic areas consists in applying the progress achieved in other related pathological conditions, where good experimental models are already available: in our particular case, we can benefit from drug addiction models where brain reward deficits similar to those of eating disorders are known to develop and are more easily studied by combining molecular, cellular and behavioral approaches[2]. When robust, significant advances are finally achieved in basic neuropsychiatry, further stepping into clinical practice is still a long process to face that starts with clinical trials and ends with studies of cost-effectiveness and feasibility of implementation in health care systems. The need for promoting translational research to shorten this process has been highlighted both by psychiatrists and neurologists and it has been even qualified as *urgent* to improve the outcome of highly vulnerable patients[3,4].

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