# Chapter 22 The Behavioral, Cognitive, and Neural Correlates of Deficient Biological Reactions to Acute Psychological Stress

D. Carroll , A.T. Ginty and A.C. Phillips

2 University of Pittsburgh, Pittsburgh, PA, USA

1 University of Birmingham, Birmingham, UK

# Abstract

Blunted or deficient cardiovascular and cortisol reactions to acute psychological stress are associated with a range of adverse behavioral and health outcomes: depression, obesity, bulimia, substance, and nonsubstance addictions. What links these diverse outcomes is that they all reflect suboptimal functioning in the face of challenge to the fronto-limbic systems in the brain that regulate motivated behavior. Available brain imaging data support this. Deficient stress reactivity is also associated with other manifestations of impaired motivation, including lower cognitive ability and poorer performance on motivation-dependent tests of lung function. In addition, deficient stress responding is typical of stable behavioral characteristics, such as neuroticism, impulsivity, and lack of perseverance, and is common in various behavioral disorders. We amend the reactivity hypothesis to include deficient stress reactivity, as well as sketching out research priorities for the future.