

POSTER

USING FUNCTIONAL NEAR-INFRARED SPECTROSCOPY (fNIRS) TO BETTER UNDERSTAND THE EVOLVED HUMAN BRAIN

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ABSTRACT

Functional Near-infrared Spectroscopy (fNIRS) is a developing technology that tracks hemodynamic responses in the brain (changes in oxygenated and deoxygenated hemoglobin levels). While this technology is finding its way into a few mainstream areas of psychology, it has been largely underutilized in the field of evolutionary psychology. In other words, there is a large gap in existing literature regarding the application of fNIRS to better understand the evolved human brain and its impact on behavior. fNIRS is an ideal method to infer brain activity, particularly due to its mobility, which allows for more ecologically valid ways to track brain responses in real-time while humans engage in various cognitive and/or behavioral tasks. This poster will first present how fNIRS works, including its strengths and weaknesses in the ability to track hemodynamic brain responses. Then, several projects from my lab will be discussed that will incorporate fNIRS technology into existing protocols. One example is to understand sex differences in the brains of males and females when presented with baby-related stimuli under emotionally laden situations (e.g., asked to care for a happy / crying baby). Another example is to test the cortical hypermetabolism hypothesis when viewing uncomfortable images, specifically if tryphobic imagery is a function of cortical excitability. Last, we outline how the field of evolutionary psychology could benefit from incorporating fNIRS technology into its protocols, which will continue to develop a standard for fNIRS research as well as the field of evolutionary psychology.