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# Effects of Early Life and Adolescence Stress on Depressive-like Behavior during Adulthood

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## Abstract

High levels of environmental and psychological stressors have been associated with the onset of different disorders including major depressive disorder. Early life stress (ELS), modeled by maternal separation, can cause plasticity in the brain leading to behavioral changes. These effects may increase with multiple exposures to stress during development which could have long term consequences. Although many studies suggest that maternal separation impairs adult behavior, other research suggests that ELS does not lead to negative behavioral outcomes. The purpose is to examine the effects of ELS combined with chronic stress during adolescence on depressive-like behavior in male and female rats during adulthood. Sprague-Dawley pups were separated from the dam for three hours each day for 14 days. During adolescence, the rats were exposed to repeated restraint stress for two hours per day for 14 days. Later, in adulthood (PND60), we measured the depressive-like behavior using the forced swim test (FST) for 10 minutes. Our preliminary results suggest that the combined stress during infancy and adolescence increases depressive-like behavior only in male rats compared to non-stress rats. Also, non-stressed female rats tend to show more depressive-like behavior than non-stressed male rats. Females might be more sensitive to the acute stress of the FST, which obscures any effects of the ELS and adolescent stress. To test this possibility, we will test the effects of ELS and adolescent stress on a non-stressful measure of depressive-like behaviors, sucrose grooming.