Transgenerational effects of elevated corticosterone on offspring phenotype and fitness in the painted turtle (*Chrysemys picta*)

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A major challenge facing conservation biologists is understanding whether organisms will be able to endure anthropogenic stressors such as habitat loss and global climate change. To understand the effect of anthropogenic stressors on population viability, we simulated the effect of heightened maternal stress on offspring development in painted turtles. Exposure to the maternal stress hormone corticosterone (CORT) during embryonic development has the potential to influence developmental, morphological, and behavioral traits in offspring. We collected 20 clutches of painted turtle eggs and subjected them to five treatment groups: (1) frozen, (2) control group, (3) low CORT treatment group (0.05ng/0.5µL), (4) medium CORT treatment group (0.25ng/0.5µL), and (5) high CORT treatment group (0.50ng/0.5µL). CORT treated eggs were incubated in the field in a randomized block design. For each individual, we recorded key traits such as body size and ability to right. Preliminary analyses indicate that treatment by CORT seems to affect embryos and hatchlings in several ways. Embryos in eggs treated with high levels of CORT tended to incubate for a shorter period of time (P = 0.077), produce hatchlings with shorter plastrons (P = 0.069), or die prior to hatching (P = 0.058). All these traits can critically affect offspring fitness.