

Salivary Alpha-Amylase During Pregnancy: Diurnal Course and Associations With Obstetric History, Maternal Demographics, and Mood

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ABSTRACT

Diurnal patterns of salivary alpha amylase (sAA) in pregnant women have not previously been described. The current study employed ecological momentary assessment to examine the association between the diurnal sAA, obstetric history, maternal demographics, and mood during pregnancy. Saliva was self-collected by 83 pregnant women (89% White, age 25.3–43.0 years; mean gestational age 21.9 weeks, range 6–37 weeks; gravida 1–6) at home over three days. Results indicated that current pregnancy (gestational age and fetal sex) and maternal demographics were not related to diurnal sAA. In contrast, a history of previous miscarriage (Parameter $\frac{1}{4}$ $-.17$; SE $\frac{1}{4}$ $.05$; $p < .05$) was associated with an atypical diurnal pattern. Even after accounting for obstetric history, trait anxiety

(Parameter $\frac{1}{4}$ $.16$; SE $\frac{1}{4}$ $.04$; $p < .001$) was associated with increased sAA over the day while chronic levels of fatigue (Parameter $\frac{1}{4}$ $-.06$; SE $\frac{1}{4}$ $.03$; $p < .05$) were associated with decreased sAA. In a separate model, we also tested the time varying covariation of sAA and mood. The effects of momentary mood were in contrast to those for trait mood. Both momentary depression (Parameter $\frac{1}{4}$ $.22$; SE $\frac{1}{4}$ $.09$; $p < .01$) and vigour/positive mood (Parameter $\frac{1}{4}$ $.12$; SE $\frac{1}{4}$ $.04$; $p < .001$) were associated with momentary increases in sAA while momentary anxiety and fatigue were not related to sAA. The findings suggest that basal sAA during pregnancy is sensitive to emotional arousal. Evaluating diurnal patterns of sAA holds promise for advancing understanding of how emotional arousal during pregnancy may affect fetal development.

Keywords: salivary alpha-amylase; psychological distress; pregnancy; stress; mood; obstetric history