AFFECTIVE REACTIVITY DURING SMOKING WITHDRAWAL
Evidence for Sex Differences in Smoking Motivation
Joanne M. Hogle, M.A. & John J. Curtin, Ph.D., University of Wisconsin, Madison

Introduction
- Withdrawal from cigarettes reliably leads to increases in self-reported negative affect, and negative affect is motivationally prepotent element of withdrawal.
- Chronic nicotine use results in long-lasting neuroplastic changes in stress and reward systems.
- Call for research on smoking withdrawal using psychophysiological techniques from emotions research to make the distinction between:
  - Different components: Initial reactivity, emotion regulation
  - Different systems: CNS stress system, neuroendocrine system

Research Questions
- How does affective response change when a smoker is in withdrawal?
- What systems and dimensions of emotion are affected by smoking withdrawal?
- Are there sex differences in the affective experience of withdrawal?

Method
- Eighty participant across 4 smoking groups (n=20 per group)
  - Dependent smokers:
    - Continuing smokers (CDS)
    - Withdrawn smokers (WDS; 24 hour period)
  - Occasional smokers (OS)
  - Non-smokers (NS)
- Instructed fear procedure; Threat of shock paired with colored squares
- Startle probes presented during cue and post-cue recovery period

FEAR POTENTIATED STARTLE
- Initial Reactivity: FPS during cue
  - No significant differences in initial reactivity
- Emotion Regulation: FPS Recovery (post-cue)
  - Female withdrawn smokers took significantly longer to recover from the stressor

SALIVARY CORTISOL
- Female withdrawn smokers released more cortisol during procedure

PANAS SELF-REPORT POSITIVE AFFECT
- Male withdrawn smokers reported less positive affect during procedure

Conclusions
- Initial emotional response is not affected by smoking withdrawal for men or women.
- Withdrawal influences emotion regulation for women (FPS recovery and cortisol).
- Female withdrawn smokers exhibited dysregulation in negative affect systems as measured by FPS recovery and salivary cortisol.
- Preliminary evidence of decrement in positive affect for male smokers in withdrawal (PANAS Positive scale).

Implications
- Possible sex differences in smoking motivation?
  - Women smoke to avoid negative affect
  - Men smoke to increase positive affect
- Important to consider different components involved in emotional response, particularly during smoking withdrawal.