

AFFECTIVE REACTIVITY DURING SMOKING WITHDRAWAL

Evidence for Sex Differences in Smoking Motivation

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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

Smoking Groups

- 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 - Withdrawn smokers (WDS; 24 hour period)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)

Experimental Procedure

- Instructed fear procedure; Threat of shock paired with colored squares
- Startle probes presented during cue and post-cue recovery period

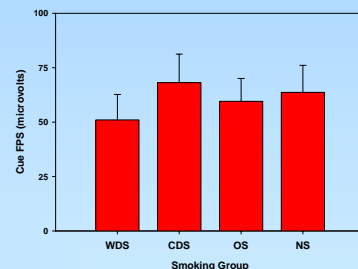


Measures

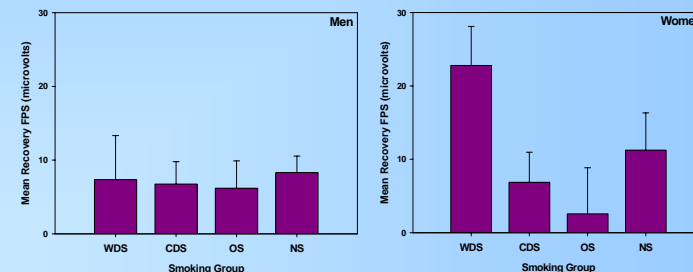
- **Fear Potentiated Startle (FPS)** measured *different components* of the stress response:
 - **Initial Reactivity:** FPS during cue
 - **Emotion Regulation:** FPS Recovery (post-cue)
- **Salivary Cortisol:** Index of neuroendocrine stress response
- **Positive and Negative affect Scale (PANAS-20):** Self reported affective response to procedure

FEAR POTENTIATED STARTLE

Initial Reactivity: FPS during cue
No significant differences in initial reactivity

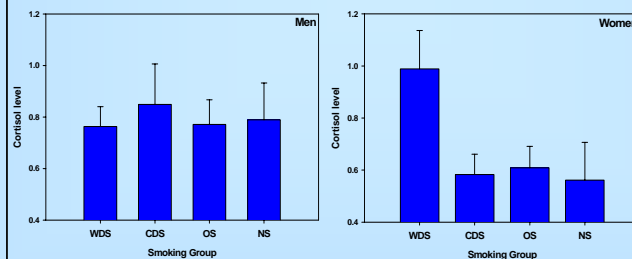


Emotion Regulation: FPS Recovery (post-cue)
Female withdrawn smokers took significantly longer to recover from the stressor



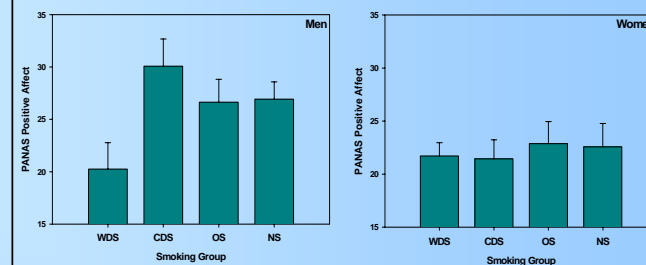
SALIVARY CORTISOL

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