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# EEG and Sedation Response of Dexmedetomidine During Drug Induced Sleep Endoscopy

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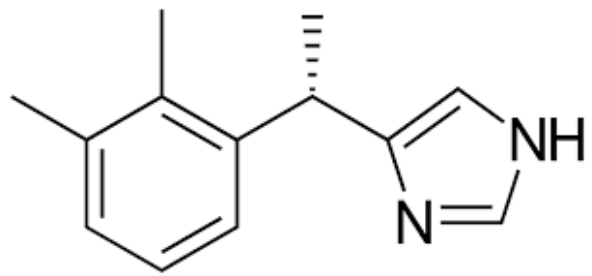
# Dexmedetomidine & Drug Induced Sleep Endoscopy

- Dexmedetomidine has many beneficial effects: limited respiratory depression, analgesia, anxiolysis, and decreased emergence delirium

- Commonly used for drug induced sleep endoscopy (DISE), sometimes as the sole agent

- Ongoing challenges with prolonged recovery and determining sedation level, even with current EEG monitoring

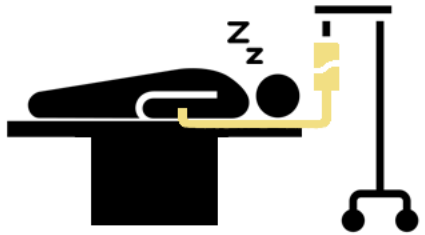



# Study Question

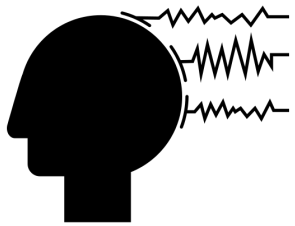
Can spectral and complexity measures of sedation derived from EEG help guide dexmedetomidine usage?

# Study Design

- 51 adult patients, IRB-approved
- Drug induced sleep endoscopy for diagnosis of obstructive sleep apnea
- ASA class 1, 2, or 3

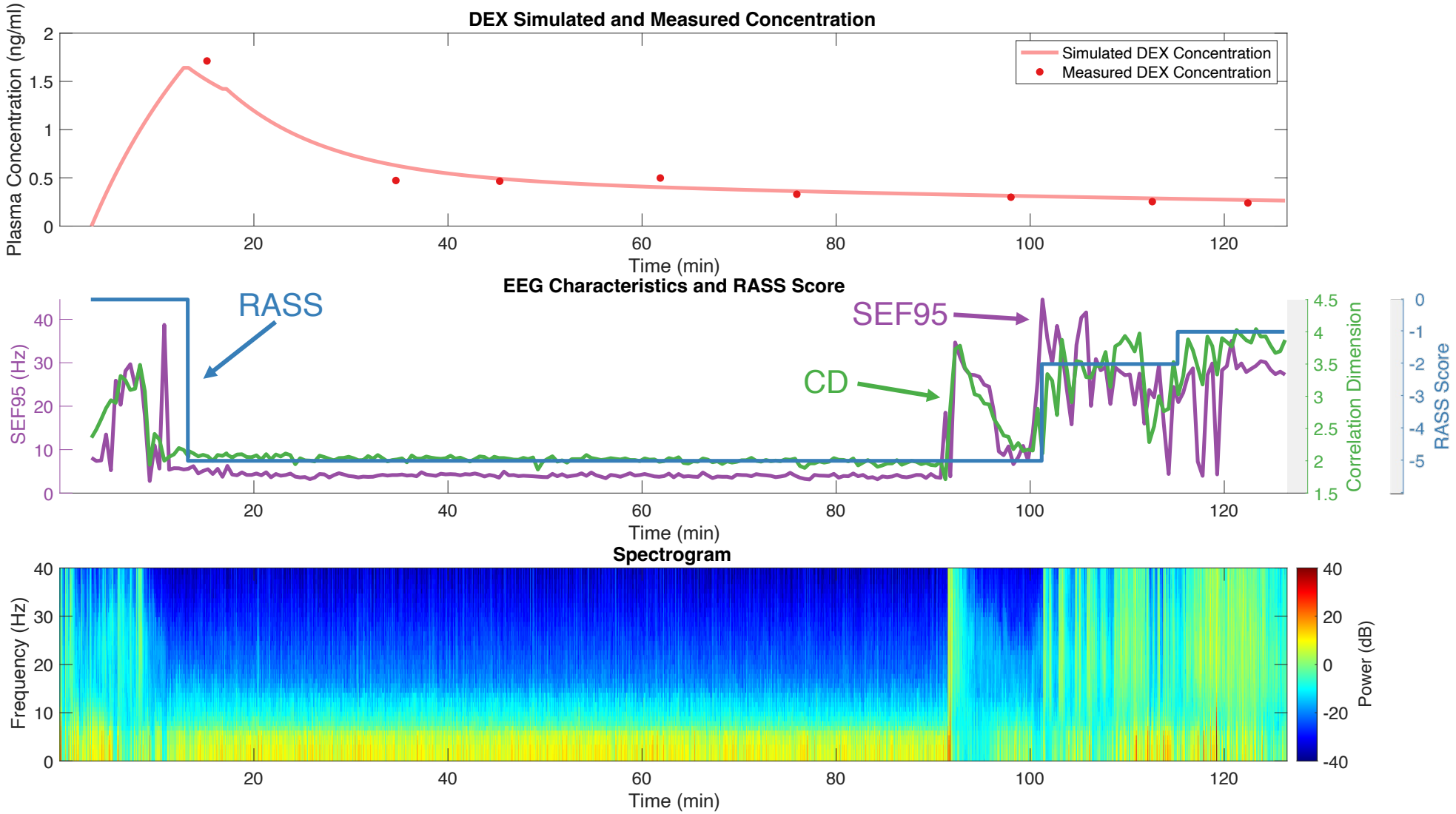


- Dexmedetomidine infusion: 1.5mcg/kg bolus followed by a 1.5mcg/kg/hr infusion
- 2 IVs, one for the infusion and the other for blood draws
- No preprocedural sedation or other sedatives

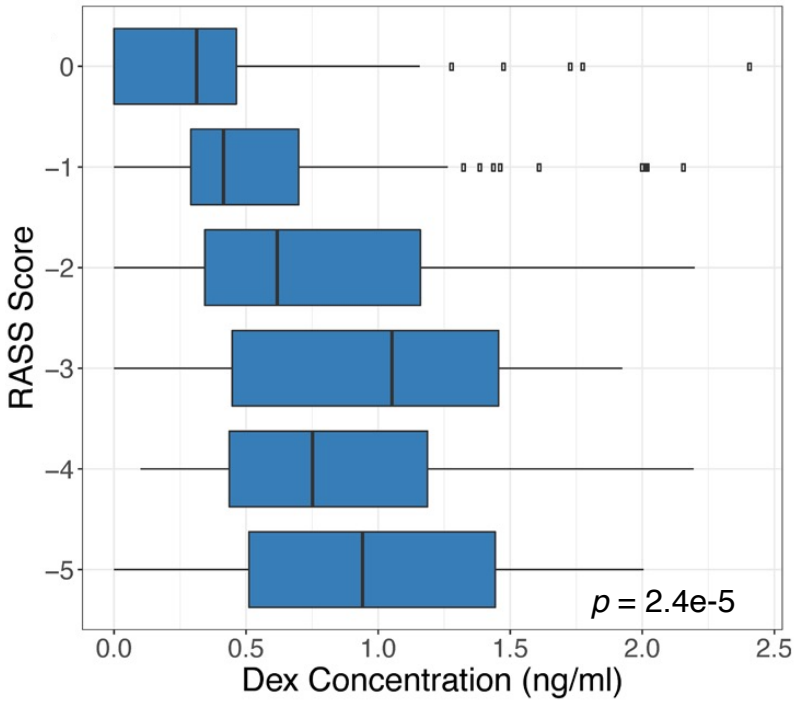


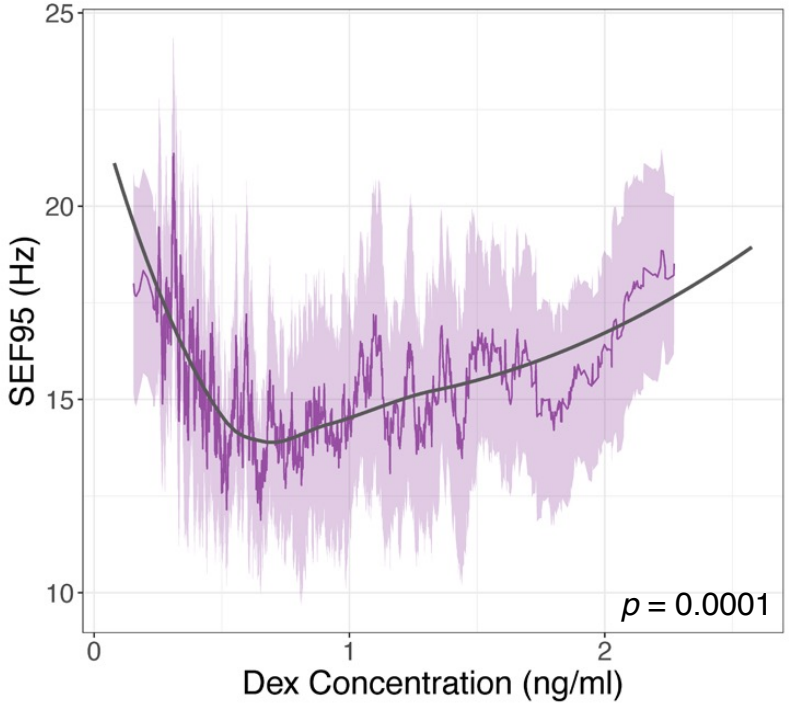
- RASS score recorded every 5 minutes
- Continuous 5-channel EEG recording via SedLine
- Spectral edge frequency 95 & Correlation Dimension calculation

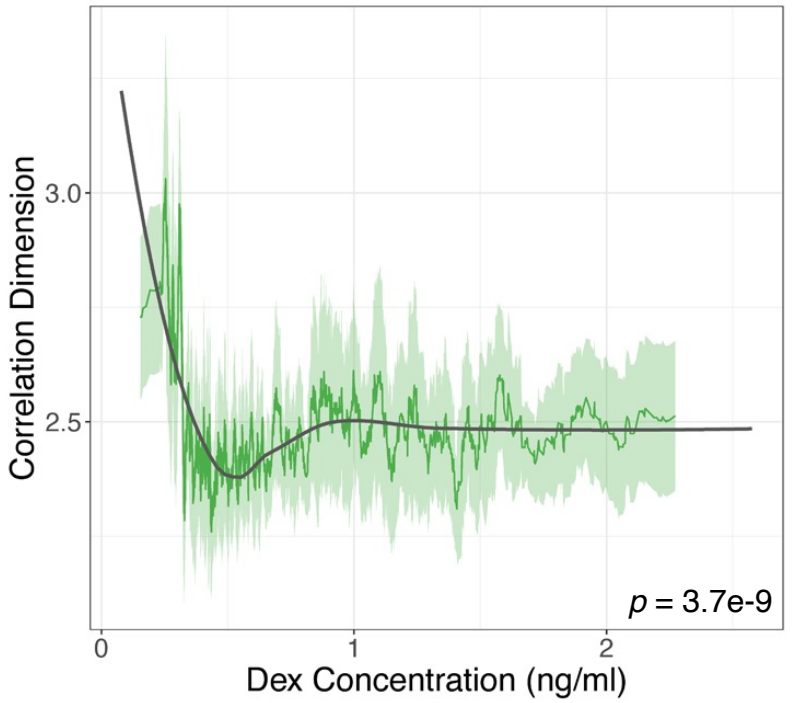
# Patient Data



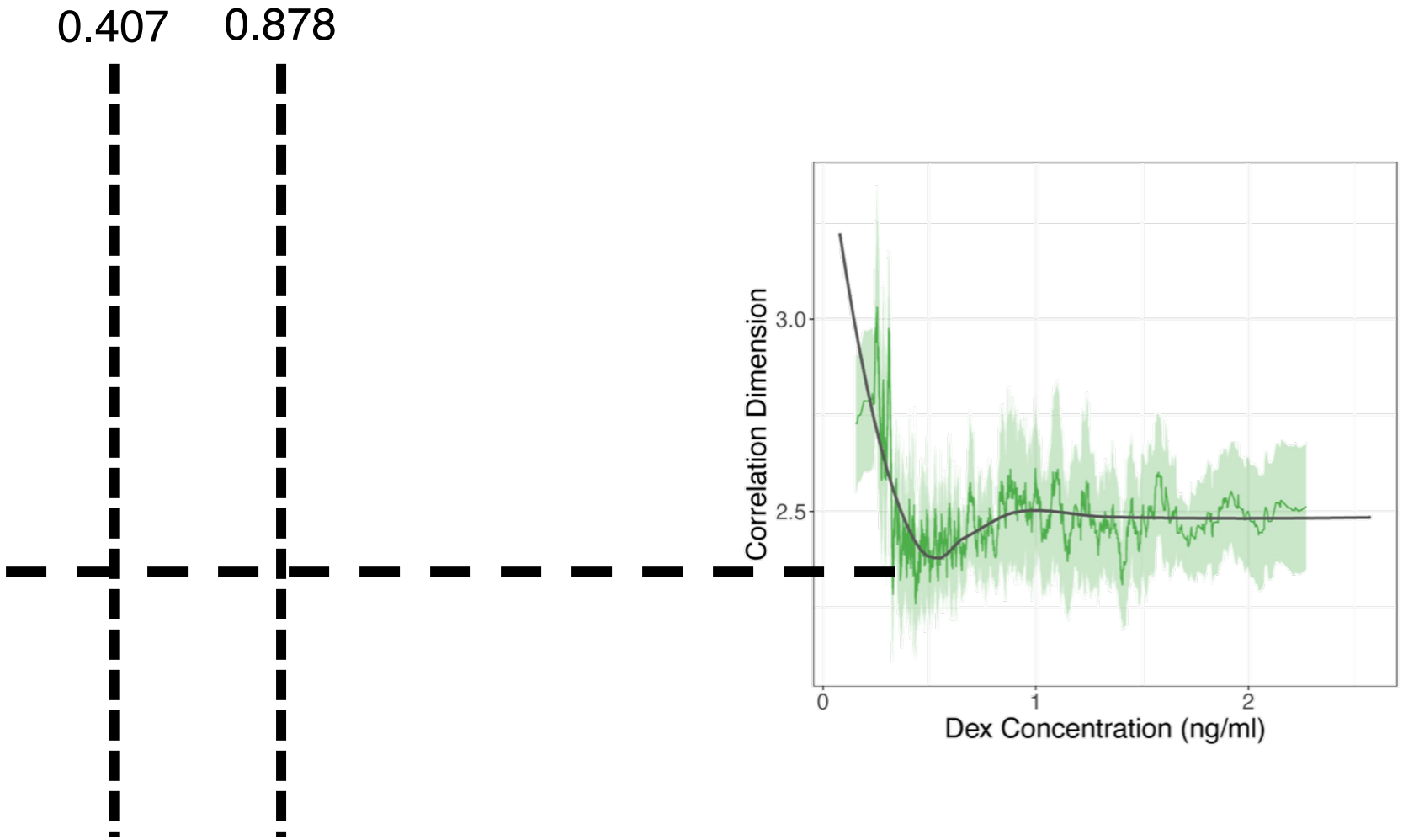
# Increasing Dex leads to Decreasing RASS, SEF95, and CD



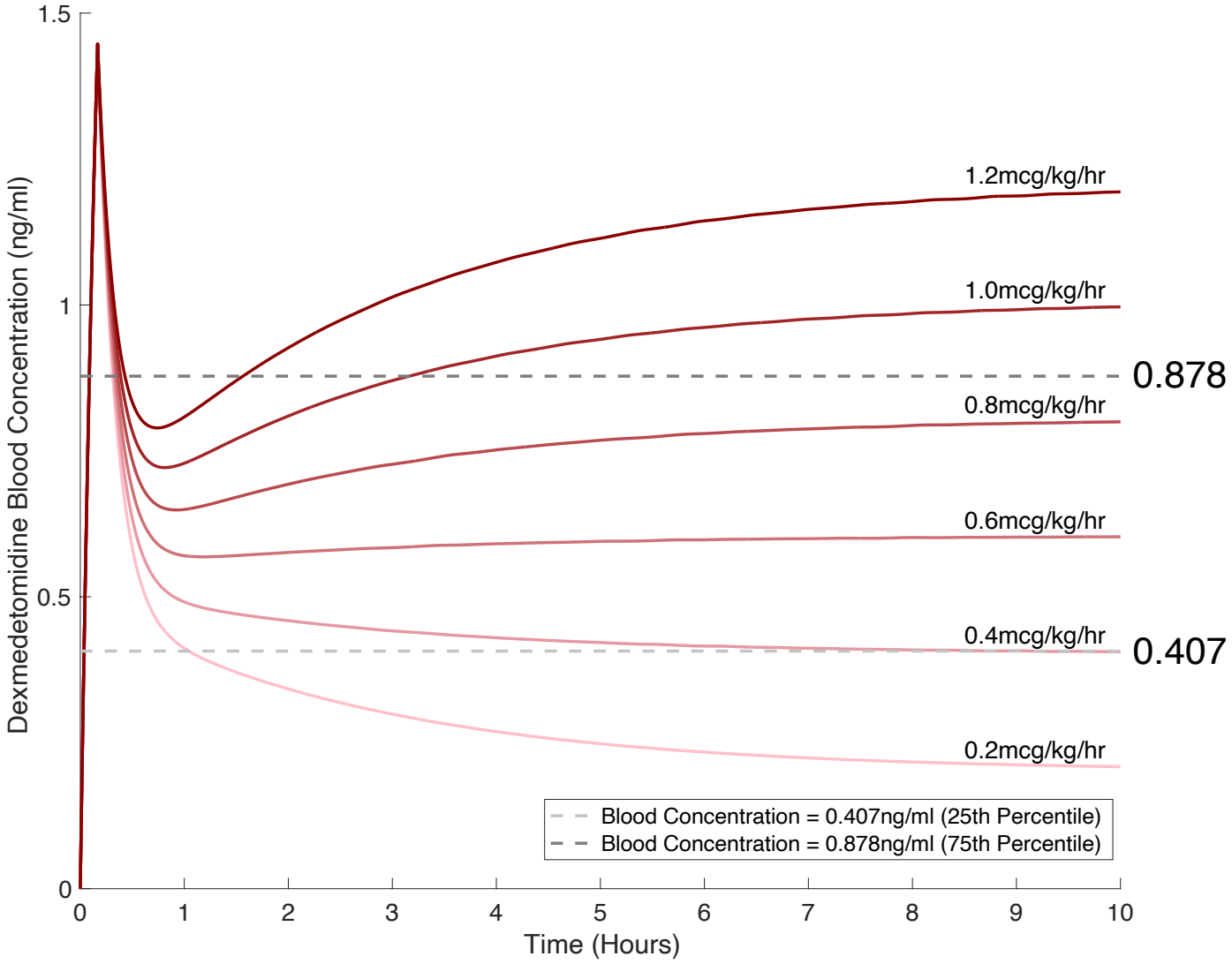



# Targeting Sedation Based on CD



# Dex Infusion Simulations Targeting Correlation Dimension



# Conclusions

- Increasing levels of dexmedetomidine resulted in significant decreases in the RASS score, SEF95, and correlation dimension
- Correlation dimension captured the depth of sedation more robustly than RASS score and SEF95
- Simulations verified proposed correlation dimension target values with currently used dexmedetomidine infusion doses
- Spectral and complexity measures derived from EEG have the potential to aid providers in titrating depth of sedation under dexmedetomidine sedation

# Acknowledgments

David R. Drover

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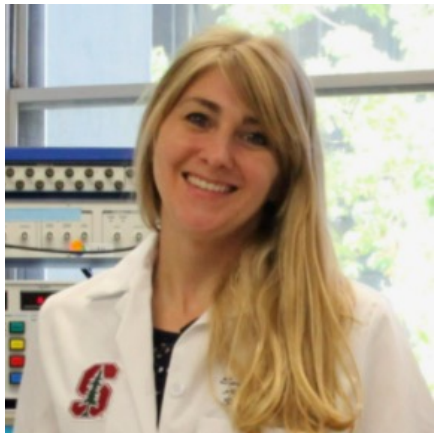

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