

Neural representation of social craving following isolation in the human brain

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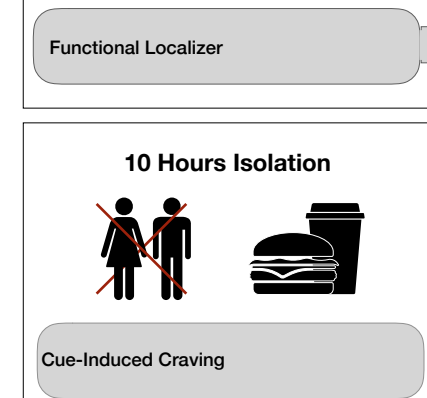
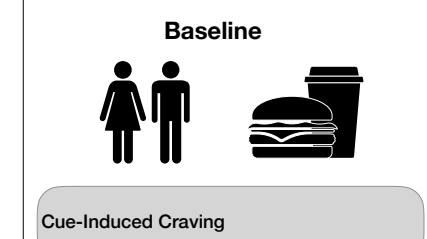
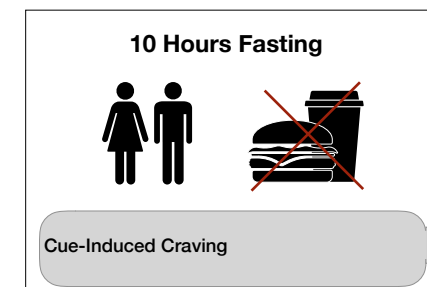


Research Question: After acute social isolation, do people crave social interaction like a hungry person craves food? Does social craving evoke activity in the same midbrain dopaminergic regions as food craving?

Design and Methods

Session

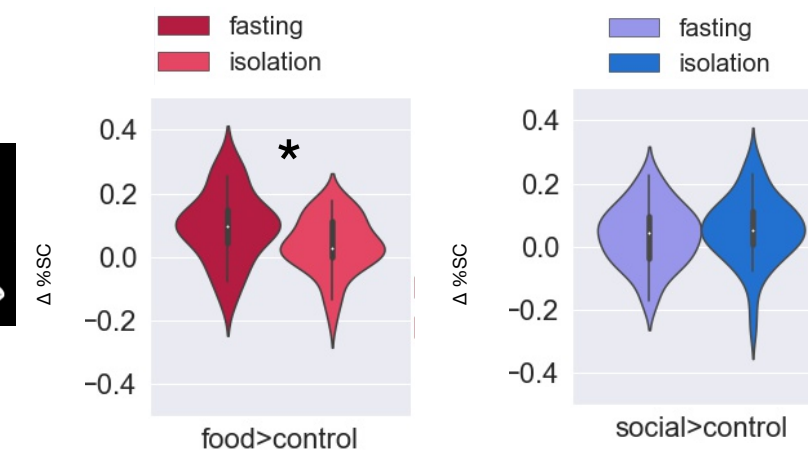
Within-Subject (N=40)
Counterbalanced Order



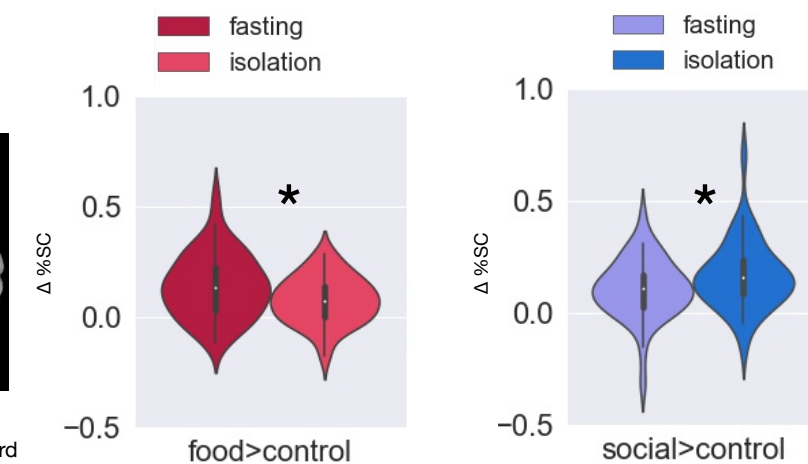
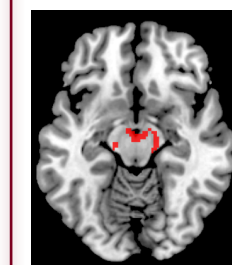
Neuroimaging Results

Primary Hypothesis: Substantia Nigra/Ventral Tegmental Area

Anatomical
SN/VTA

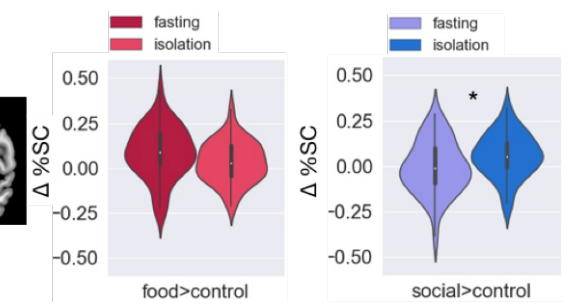
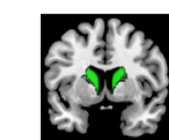


Functional ROI

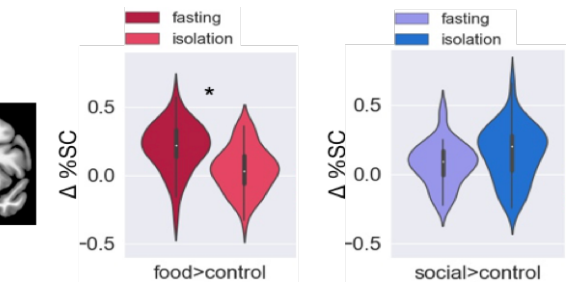
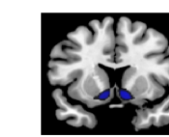


Additional Results: Striatum

Caudate

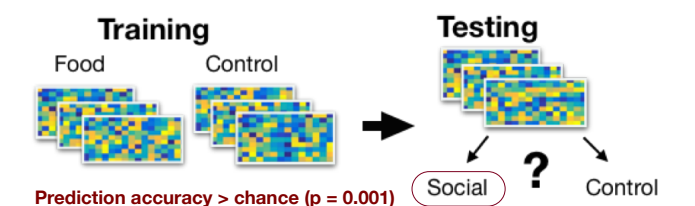


NAcc

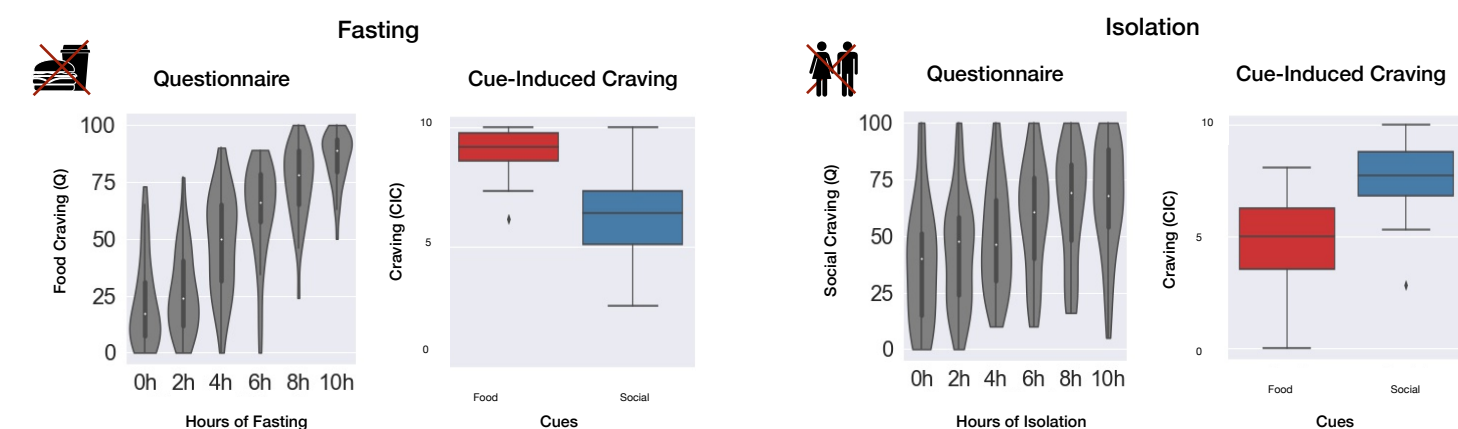


Additional Results: Pattern Analysis

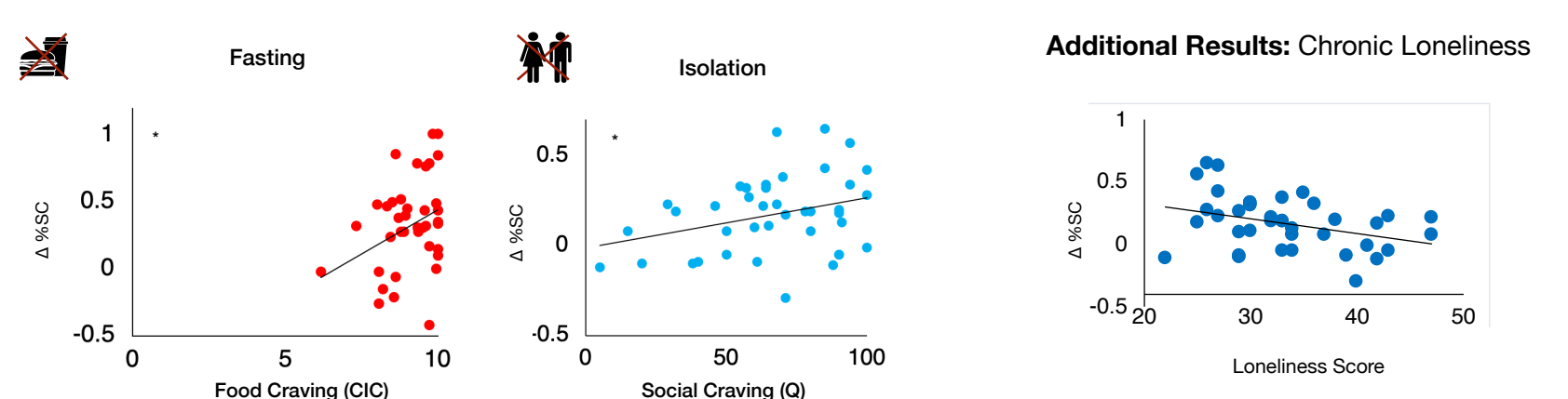
Machine learning: pattern classification



Behavioural Results



Brain-Behaviour Correlations



Conclusion: 10 hours of social isolation can cause self-reported social craving in healthy well-connected adults and evokes a craving-like response in SN/VTA. Social and food craving evoke different responses in striatum.