Enhancing Positive Emotions to Prevent Depression in Youth
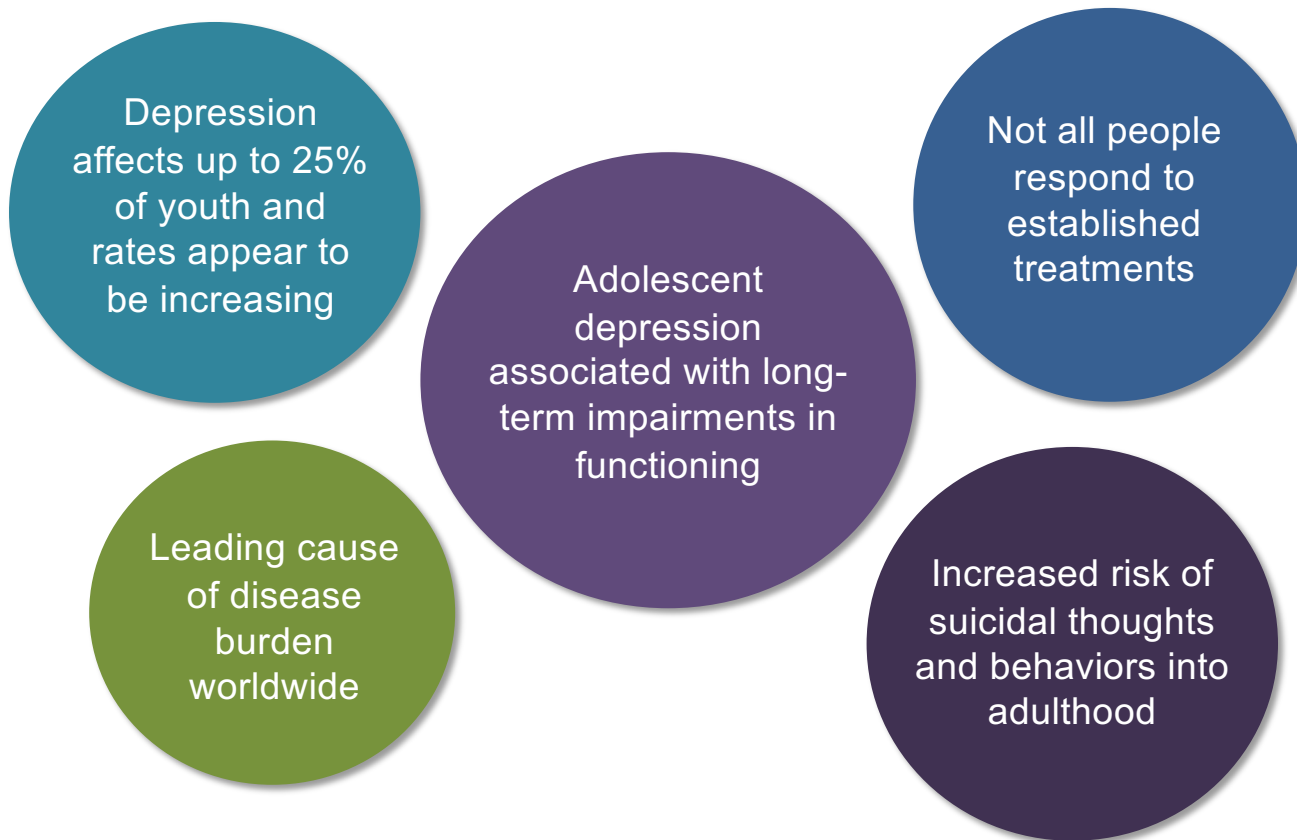
Autumn Kujawa, Ph.D.
Department of Psychology and Human Development
Vanderbilt University
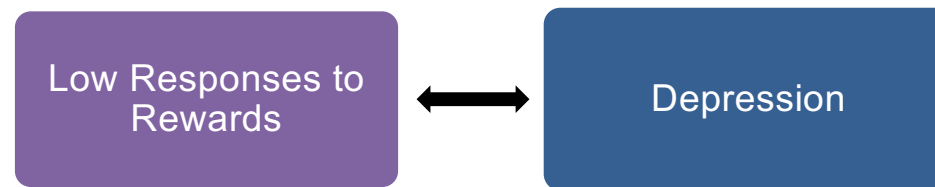
The Burden of Depression

Depression affects up to 25% of youth and rates appear to be increasing

Adolescent depression associated with long-term impairments in functioning

Not all people respond to established treatments

Leading cause of disease burden worldwide

Increased risk of suicidal thoughts and behaviors into adulthood

Clarke et al., 1999; Copeland et al., 2020; Ferrari et al., 2013; Kessler et al., 2001; Pickles et al., 2010; Twenge et al., 2018

The role of emotion in the development of depression

Reward responses in depression

Low Responses to Rewards ⟷ Depression

for reviews, Forbes et al., 2012; Keren et al., 2018; Nusslock & Alloy, 2017; Pizzagalli, 2013
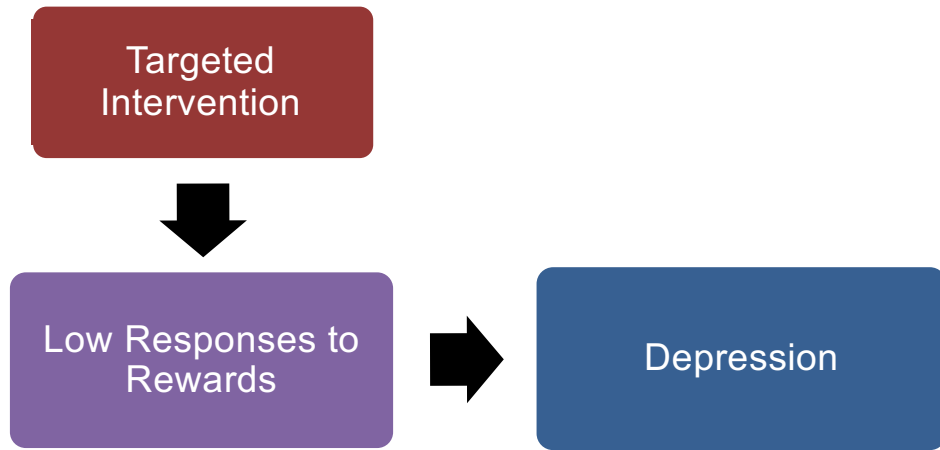
| Early childhood | Mid- to late- childhood | Adolescence | Young adulthood |

| Low Responses to Rewards | → | Depression |

for reviews, Burkhouse & Kujawa, 2023 *Journal of Child Psychology & Psychiatry;* Kujawa & Burkhouse, 2017 *Biological Psychiatry: CNNI*; Kujawa et al., 2020 *Developmental Cognitive Neuroscience*

| Early childhood | Mid- to late- childhood | Adolescence | Young adulthood |

Targeted Intervention

↓

Low Responses to Rewards → Depression

Burkhouse et al. under review, Dickey et al., invited resubmission *Research in Child and Adolescent Psychopathology*, Kujawa et al., 2019 *Journal of Child and Adolescent Psychopharmacology*
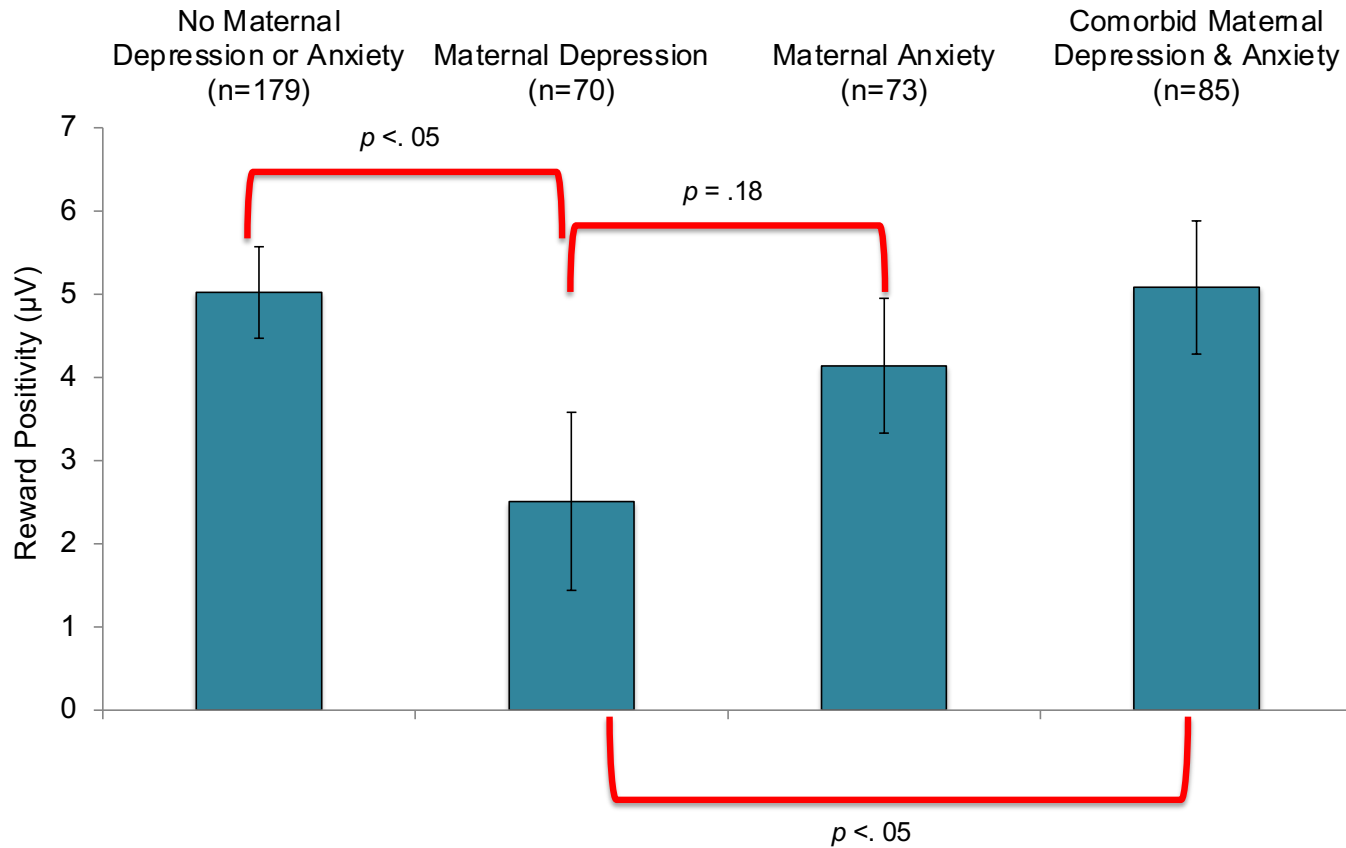
Measuring reward responses in the brain

Measuring reward responses in the brain

Pegg et al., 2020 *Depression & Anxiety*
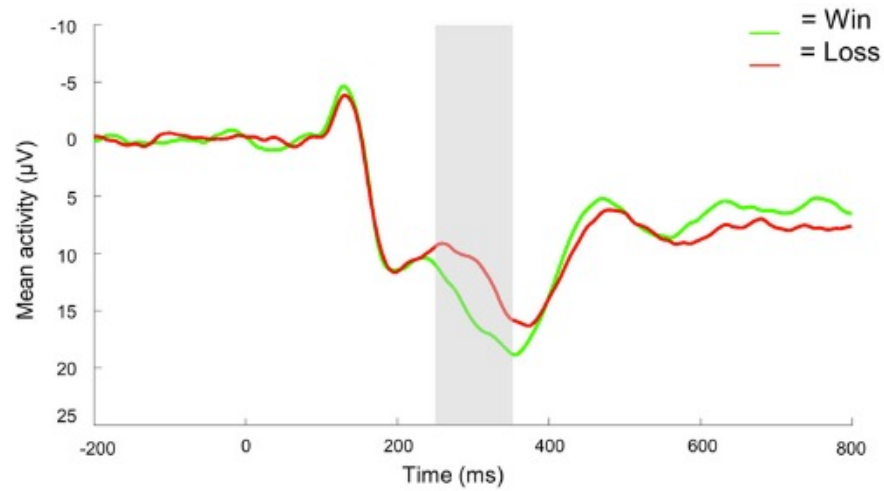
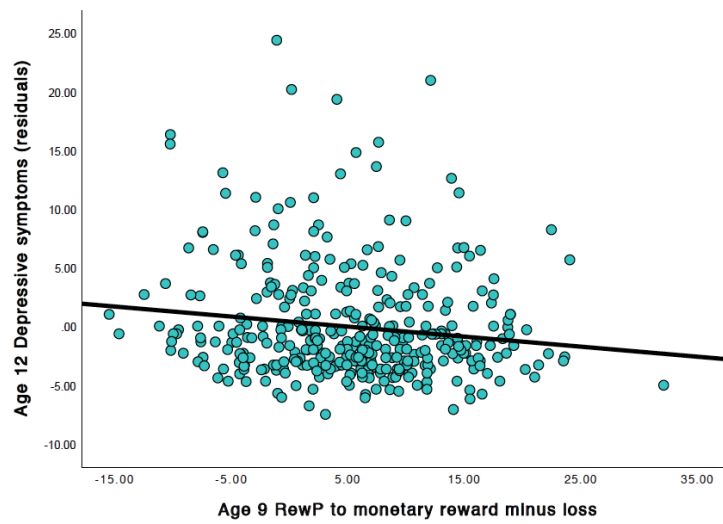# Children of mothers with histories of depression show relatively low reward responses
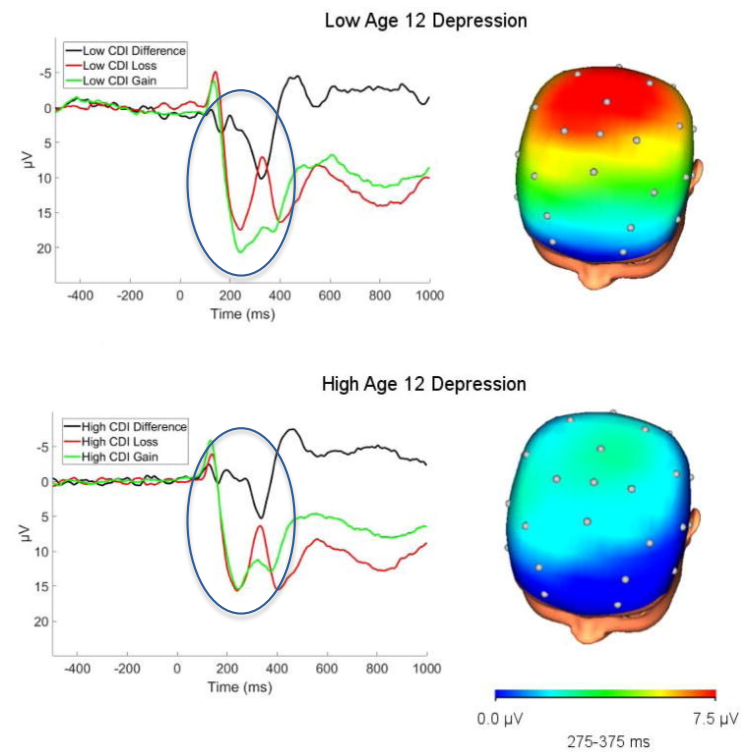

Maternal depression X maternal anxiety; β = .18, $t(405)$ = 2.14, p = .03

Kujawa, Proudfit, & Klein (2014), *Journal of Abnormal Psychology*

Low reward response in childhood predicts greater depressive symptoms in early adolescence


$r(368) = -.13$, $p < .05$

Kujawa et al, 2019 *Journal of Child Psychology and Psychiatry*

Measuring brain responses to pleasant interpersonal images

1000 ms

150 ms

400 ms

Dickey et al., 2021 *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging,* Dickey et al. 2021 *Cognitive Affective and Behavioral Neuroscience*
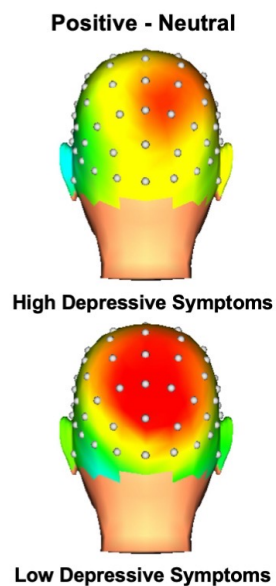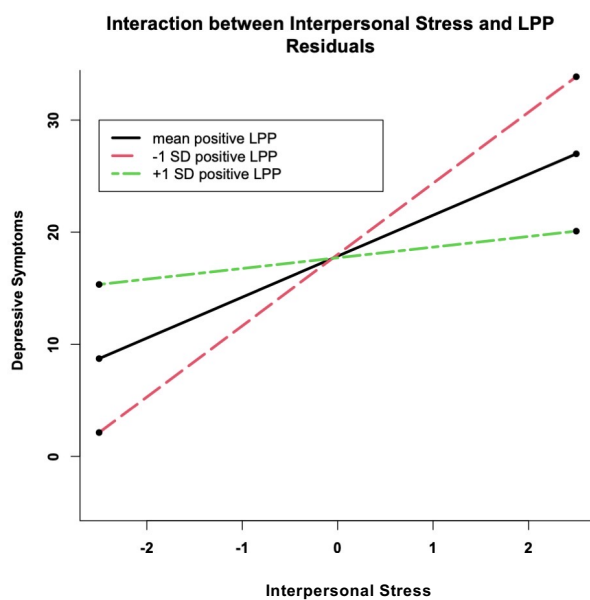
Measuring brain responses to pleasant interpersonal images
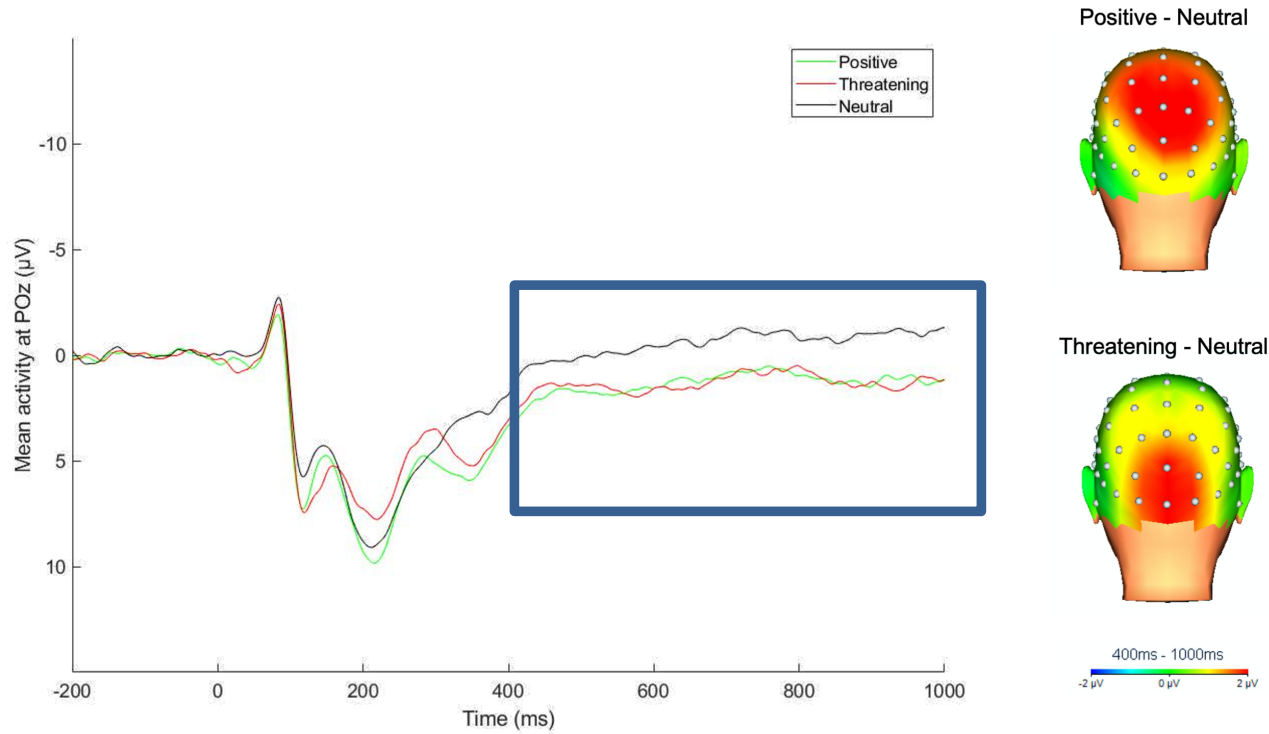
N = 77 college students assessed
before and during the pandemic

Dickey et al., 2021 *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*

Low responses to pleasant images + greater COVID-related stress predicts increases in depression in emerging adults
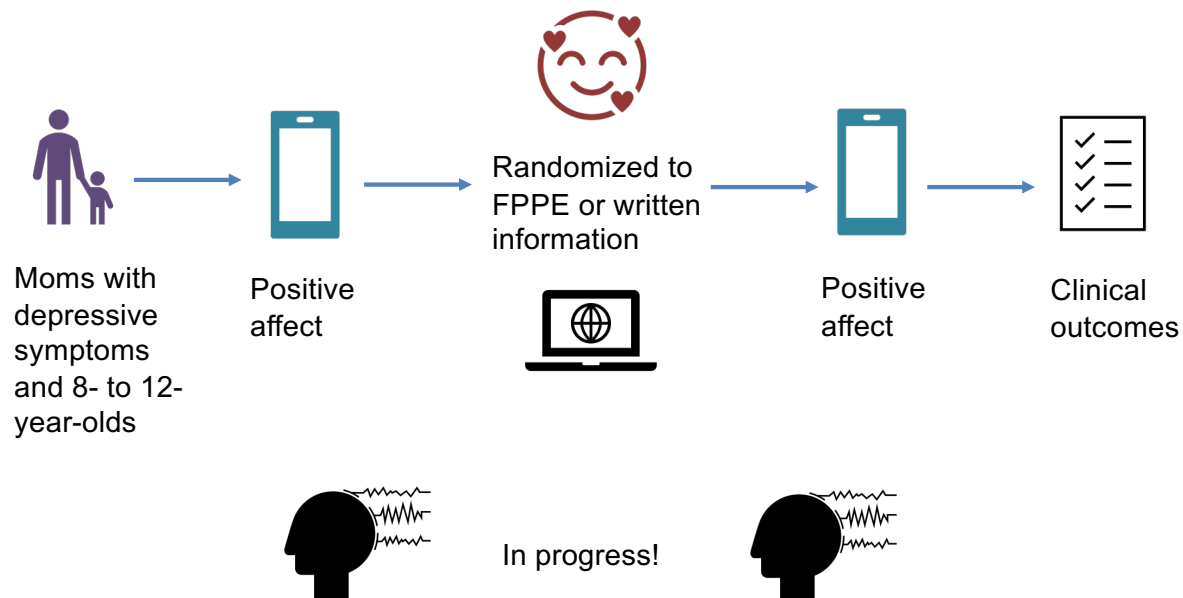

LPP x Interpersonal Stress Interaction b = -.82$, SE$ = .40, p < .05

Dickey et al., 2021 *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*
Kujawa et al., 2020 *Depression and Anxiety* (COVID-19 stress measure)

Treatment of depression often focuses on negative emotions
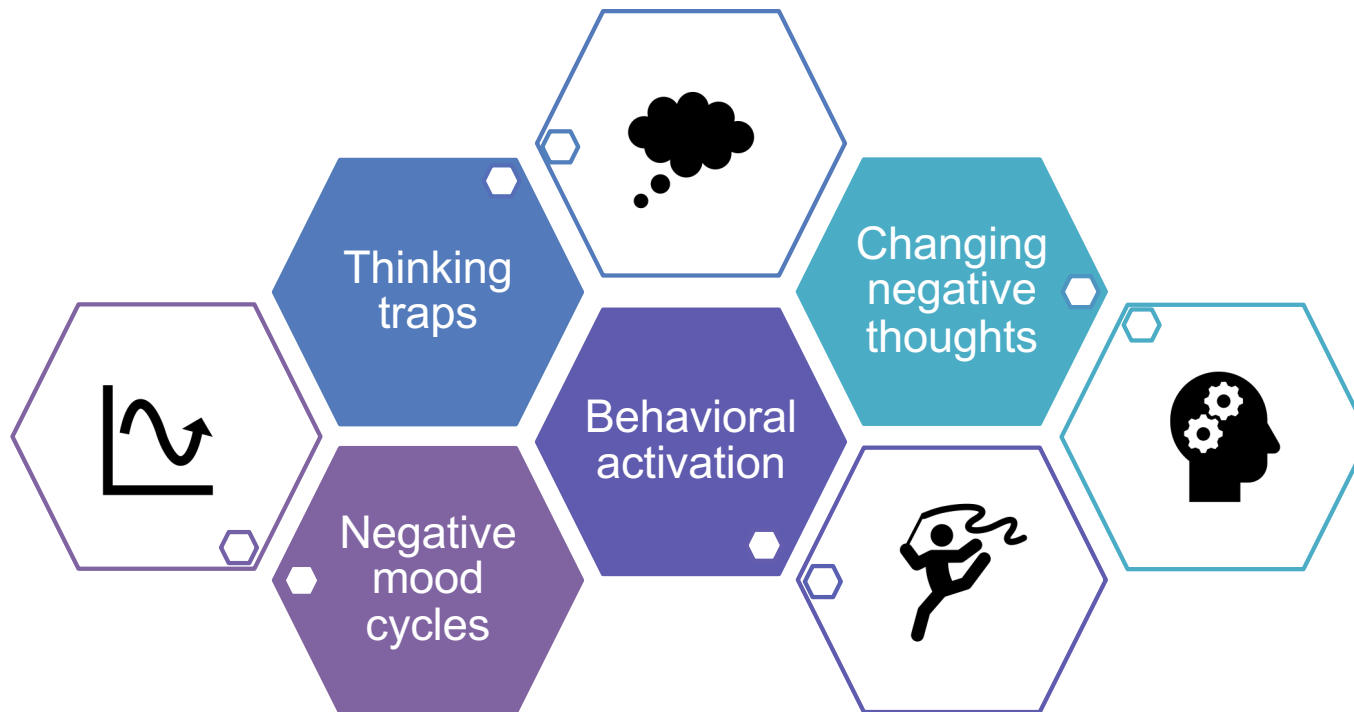
A new neuroscience-informed intervention for children at risk for depression
(Family Promoting Positive Emotions; FPPE)

Moms with depressive symptoms and 8- to 12-year-olds

Positive affect

Randomized to FPPE or written information

Positive affect

Clinical outcomes

In progress!

Burkhouse et al., 2023 *Behavioural Research & Therapy*

SUMMARY
Of Happy Skills

Have Fun

Plan plenty of positive activities and take time to enjoy them!

Positive ACTIVITIES
Session 2 & 3

Anticipate Future Positive Events

Think about and look forward to a future event and what you expect to feel (check in with your 5 senses)!

ANTICIPATE The Positive
Session 5

EXPERIENCE The Positive
Session 1

ATTEND To The Positive
Session 4

You Did it!

Recognize the work you have done and reward yourself!

Pay Attention to the Positive

Think about the good things that happened today! Look for the silver linings.

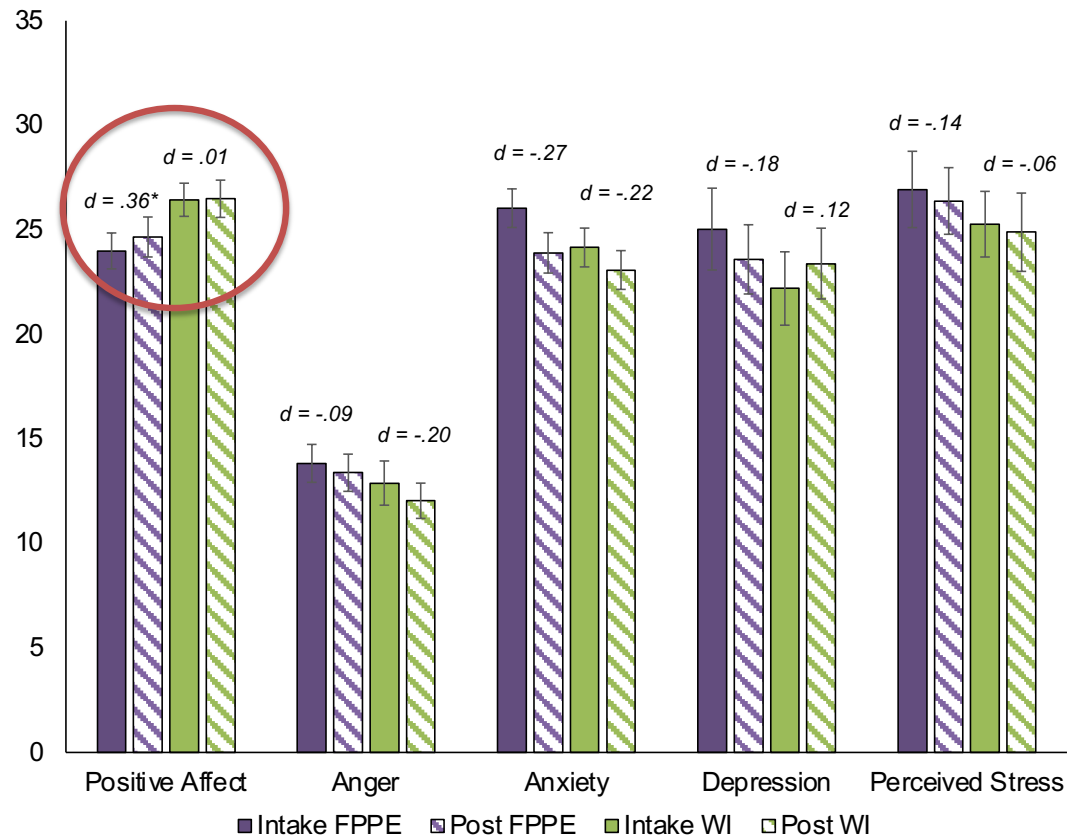**TAKE CREDIT For the Positive**
Session 5

GRATITUDE
Session 6

LOVE & KINDNESS
Session 7

Praise and Appreciate Yourself and Others

Remember what you like about yourself, your mom, and other loved ones!

Pay Attention to the Positive

Think about what you are grateful for (even the little things).
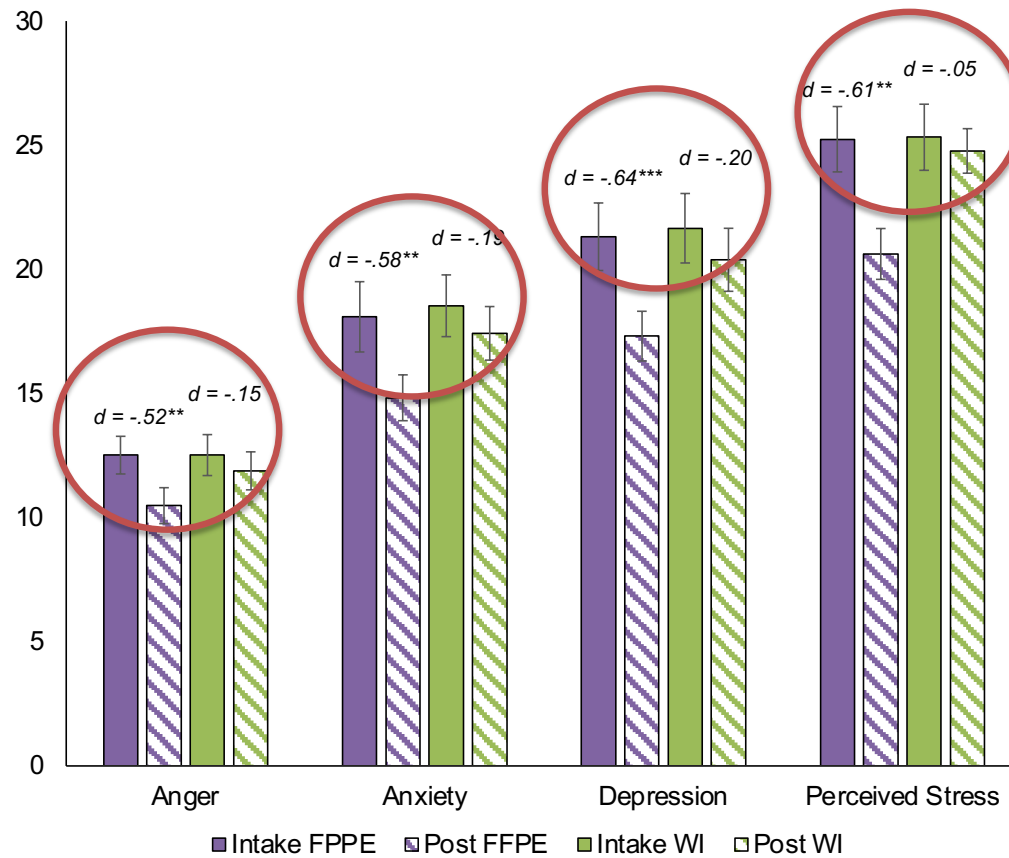
happy
families

Results: Child report

N = 55 intervention completers
Burkhouse et al., 2023 *Behavioural Research & Therapy*

Results: Parent report

N = 55 intervention completers
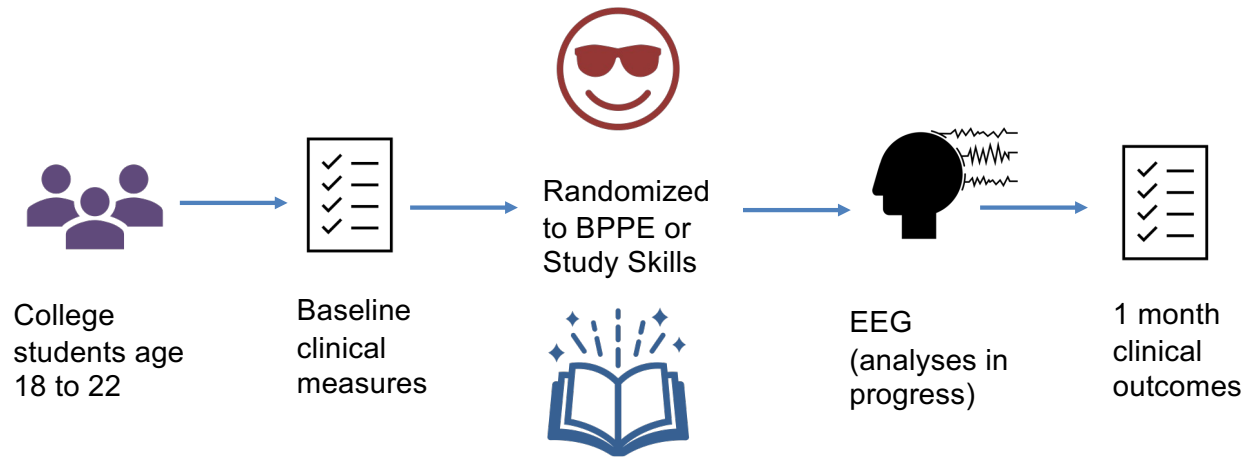Burkhouse et al., 2023 *Behavioural Research & Therapy*

Mother–Child Feedback

"I liked working on this together with my son and seeing his progress in recognizing positivity"

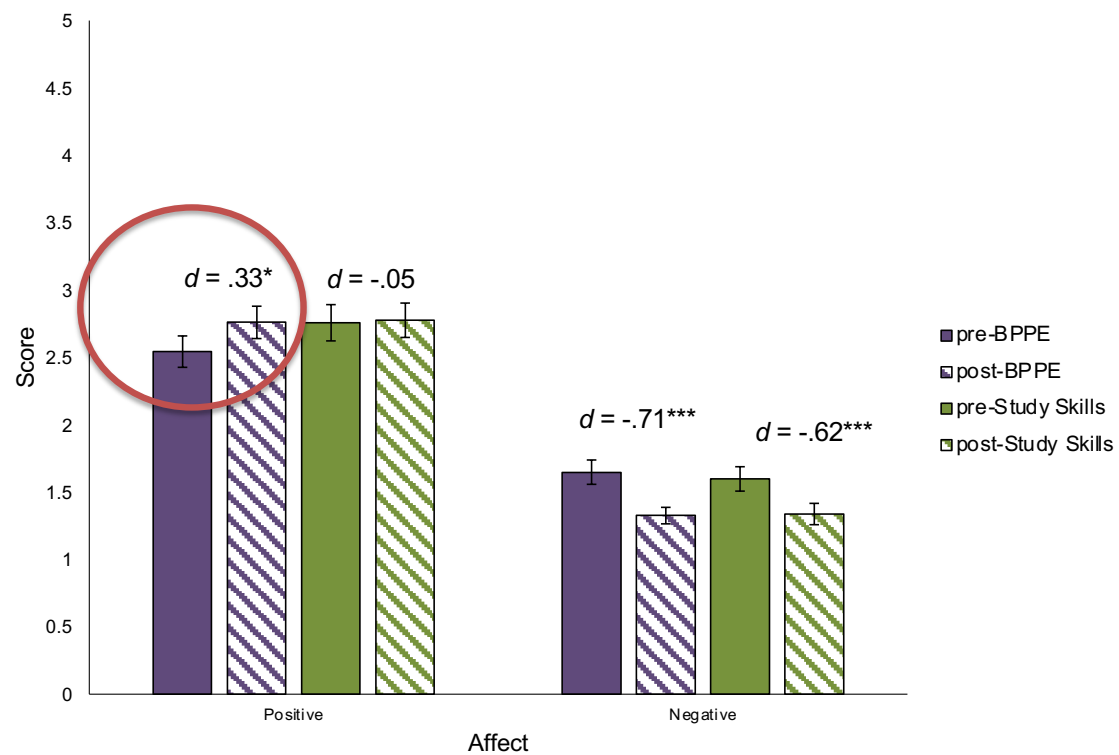"It focused on positive things, and always left me feeling more optimistic"

"I liked that I got to spend time with mommy"

What about briefer and more accessible approaches to enhancing positive emotions?

PROMOTING POSITIVE EMOTIONS

College students age 18 to 22 → Baseline clinical measures → Randomized to BPPE or Study Skills → EEG (analyses in progress) → 1 month clinical outcomes
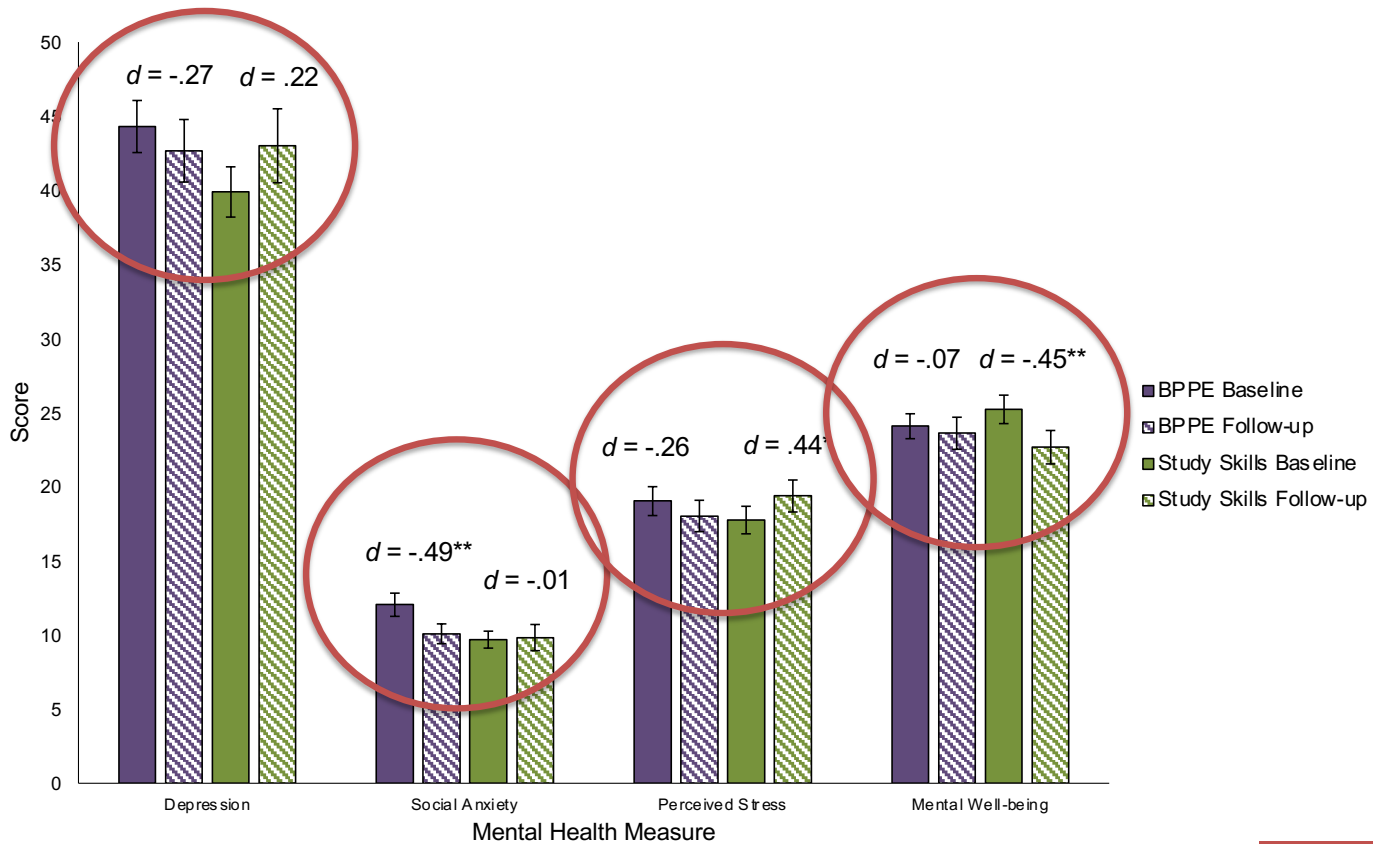
Unpublished data

Long et al., under review

Preliminary results of a single session positive emotion focused intervention for emerging adults

N = 92 college students age 18-22 years old
Long et al., under review

Unpublished data

Preliminary results of a single session positive emotion focused intervention for emerging adults

N = 92 college students age 18-22 years old
Long et al., under review

Unpublished data

Summary & Conclusions

Reduced responses to rewards and positive images predict later risk for depression

Future directions: Charting trajectories of reward responses across development to inform early intervention and prevention

| Gestation to birth | Infancy to toddler stage | Preschool to early school age | Middle to late childhood | Early adolescence | Middle to late adolescence |

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For more on our work, follow us at @MEDVanderbilt

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