



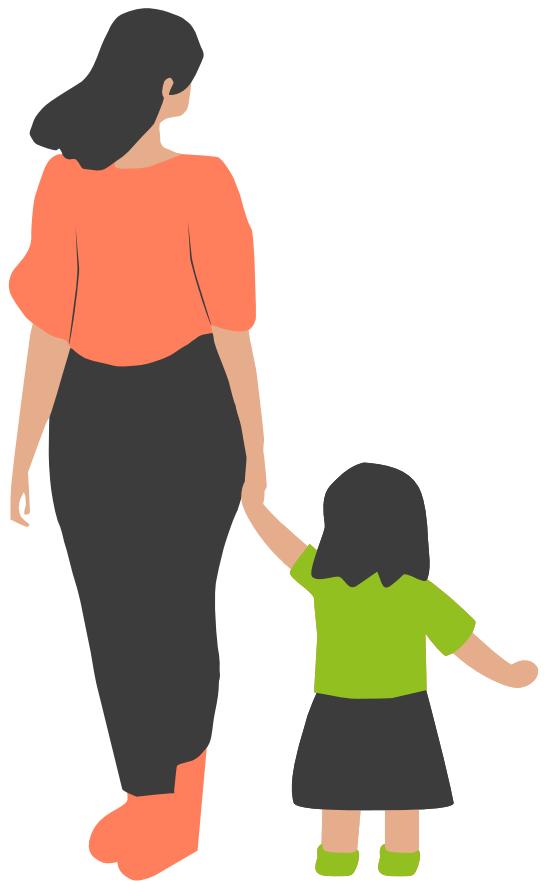
Adversity Moderates the Quadratic Distribution of Gut Microbiome Features Across Age – Implications for Internalizing Symptoms

ISDP 2024

Naomi Gancz



Interpersonal
Adversity



Interpersonal
Adversity

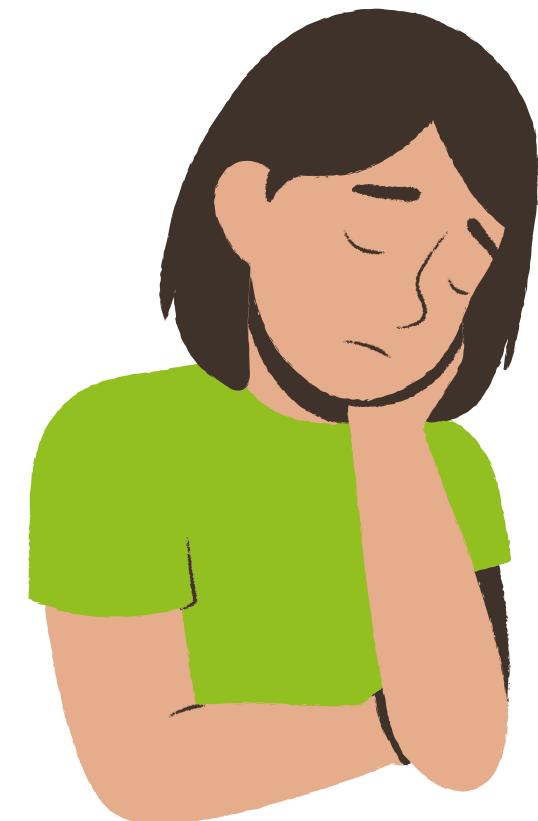


Psychiatric
outcomes

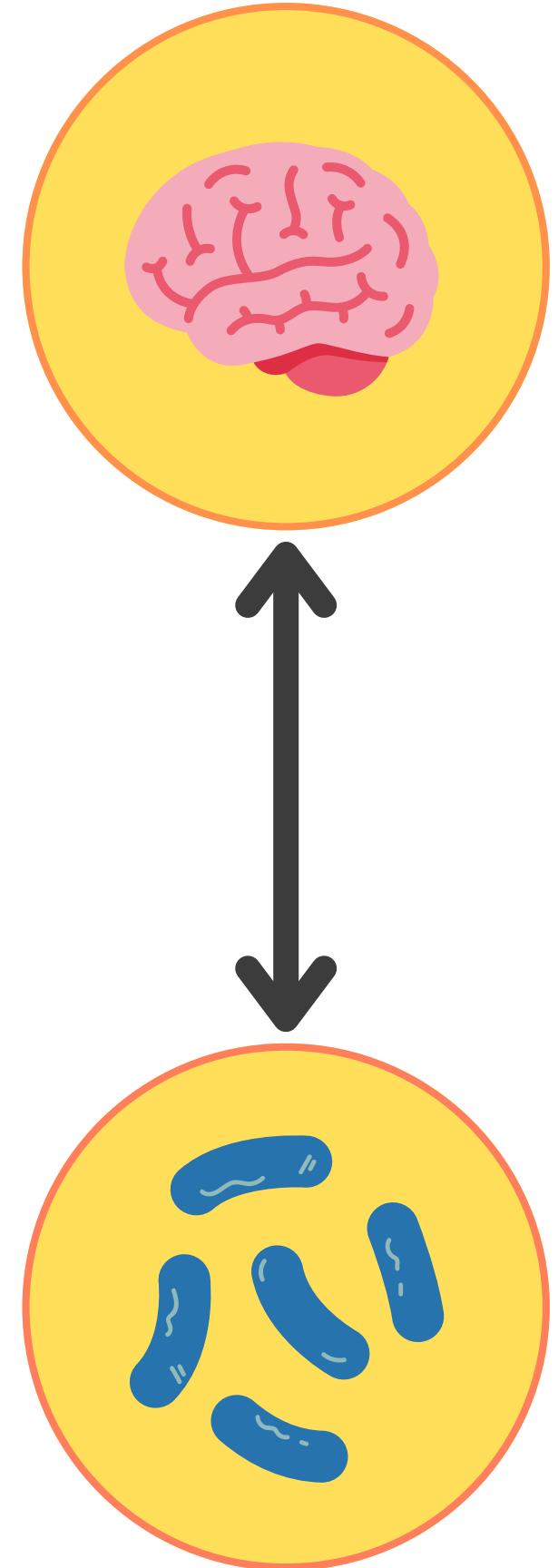
Is the gut-microbiome-brain axis a mechanism?



Interpersonal
Adversity



Psychiatric
outcomes



Cryan & Dinan, 2012; Callaghan et al., 2020

Is the gut-microbiome-brain axis a mechanism?

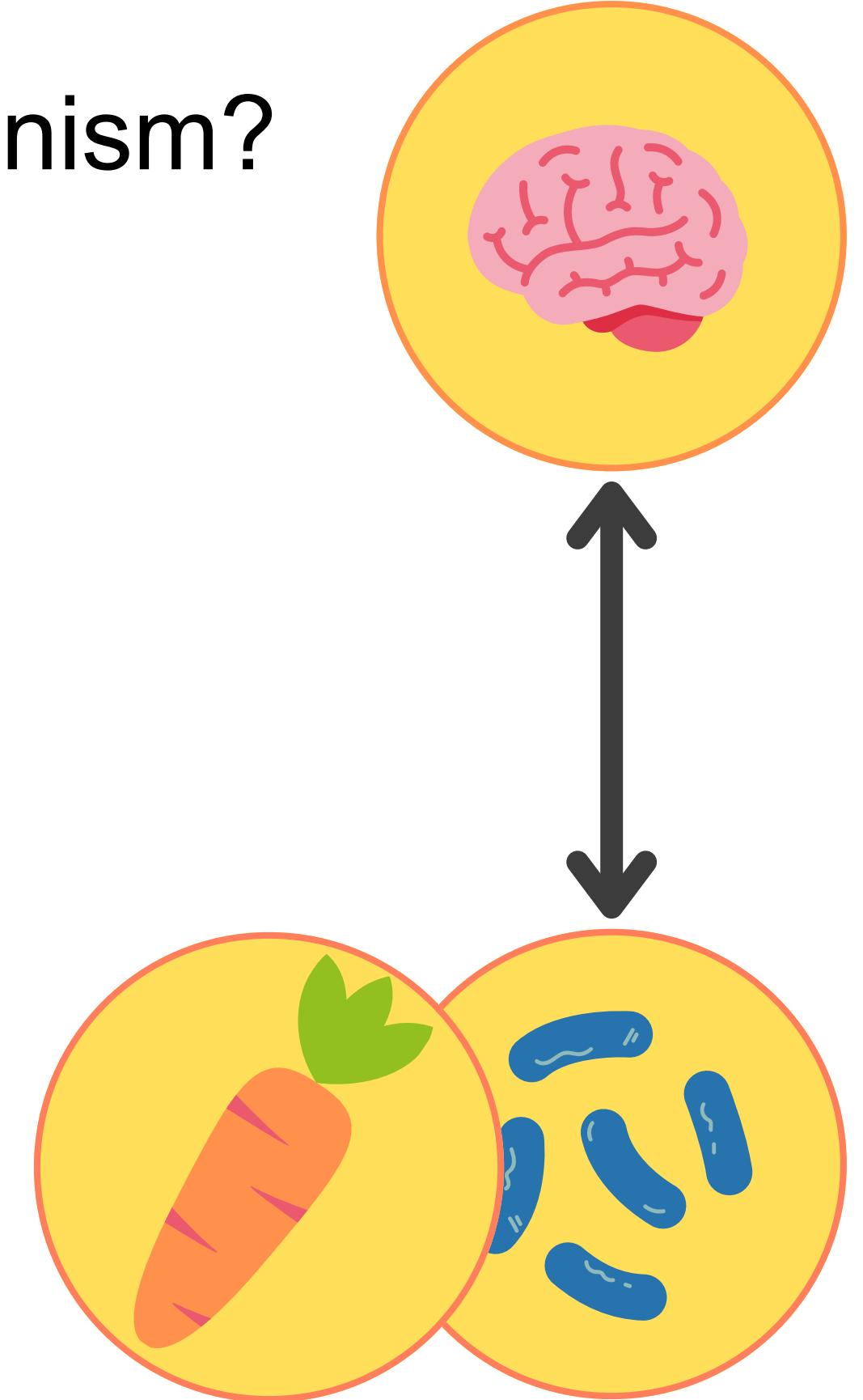


Interpersonal
Adversity



Psychiatric
outcomes

Can diet play a role?



Xu et al., 2020; Morrison et al., 2020

Fiber



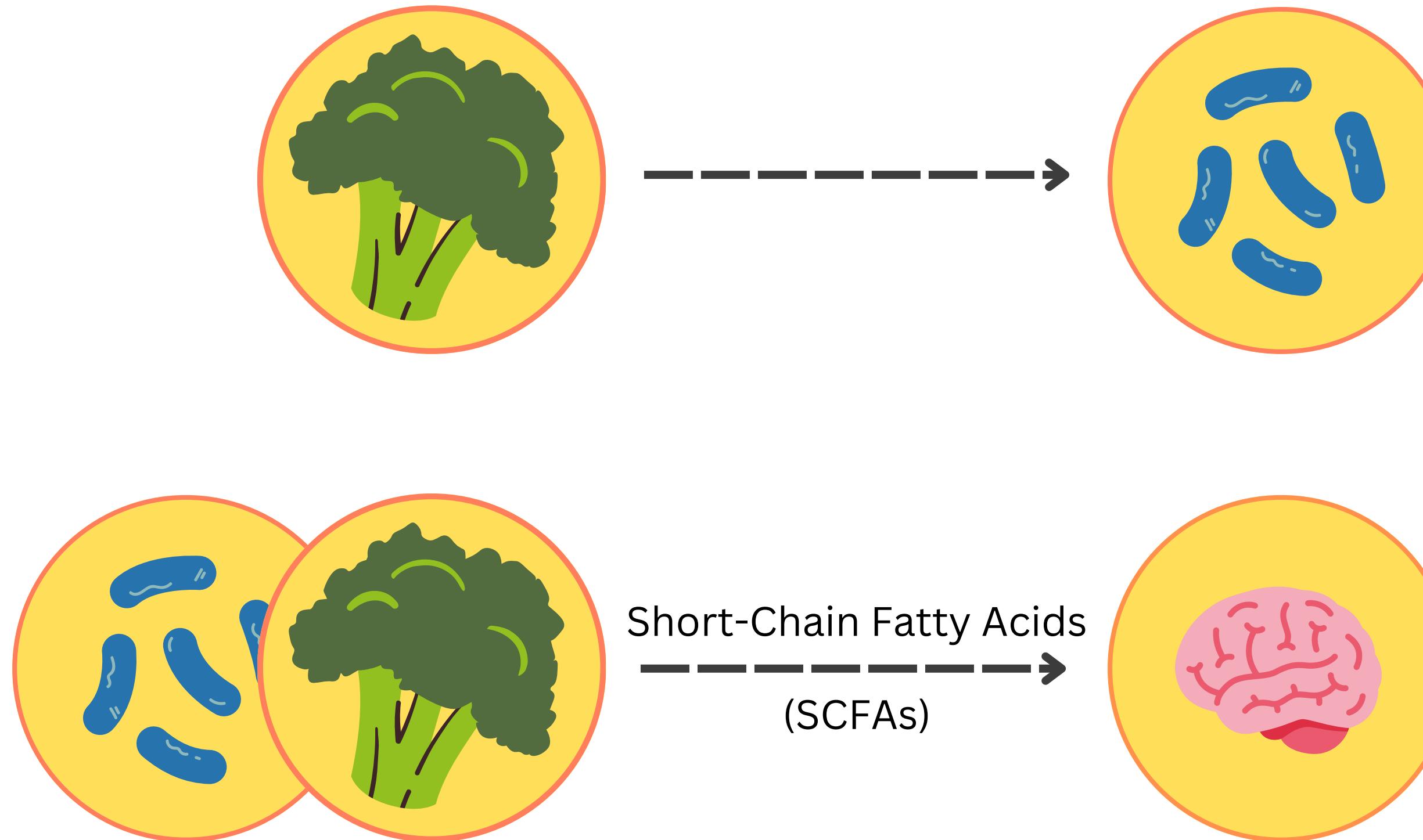
Baxter et al., 2019; Morrison et al., 2020; van de Wouw et al., 2018

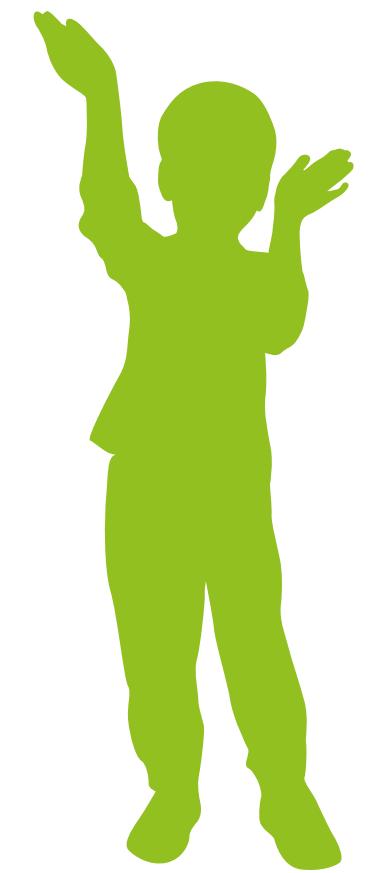
Fiber



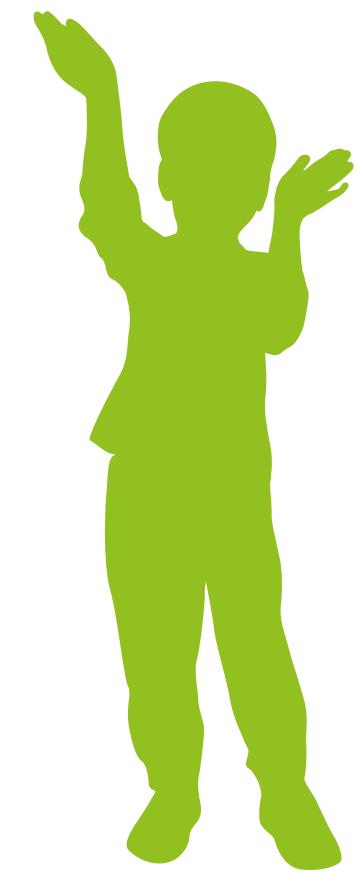
Baxter et al., 2019; Morrison et al., 2020; van de Wouw et al., 2018

Fiber

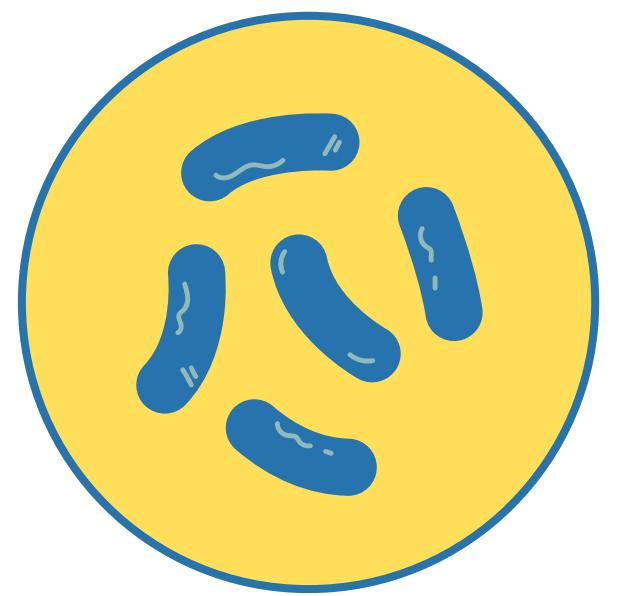




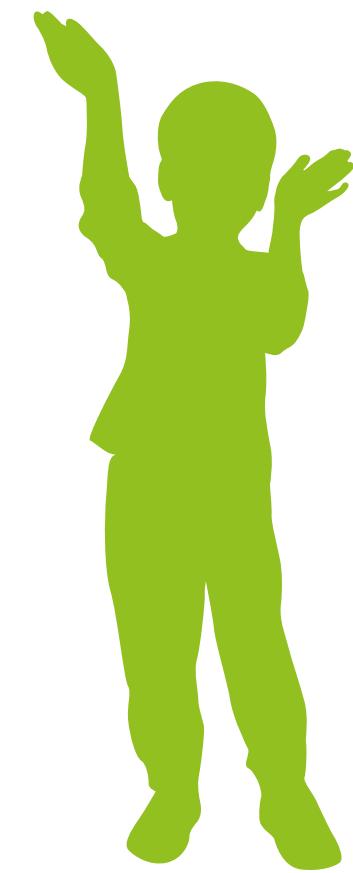
102 Children
Age 1-17



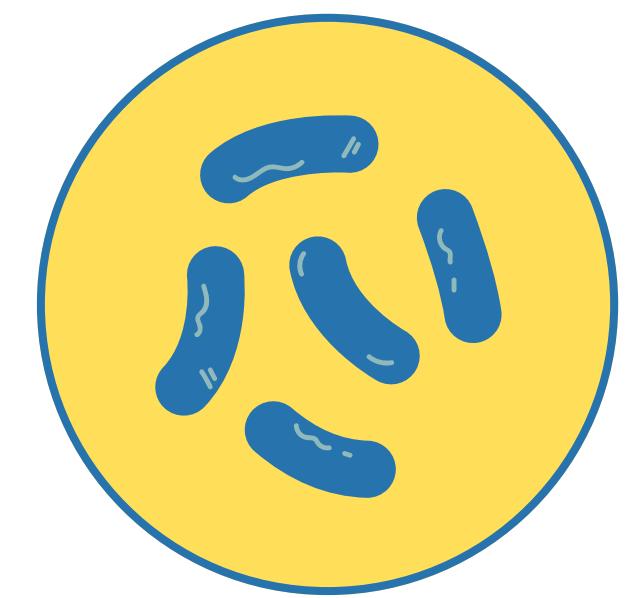
102 Children
Age 1-17



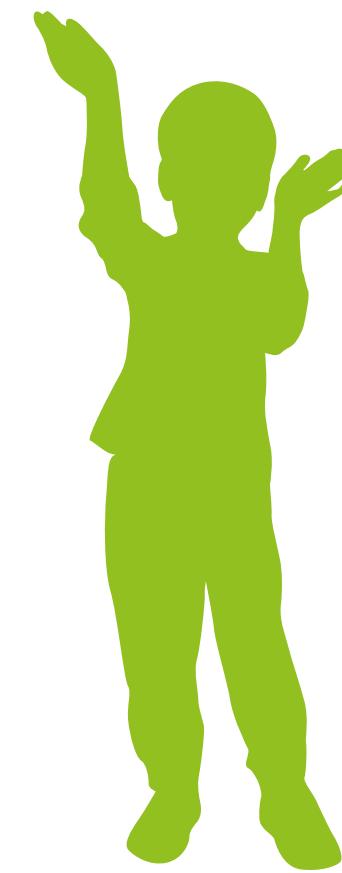
Microbiome



102 Children
Age 1-17

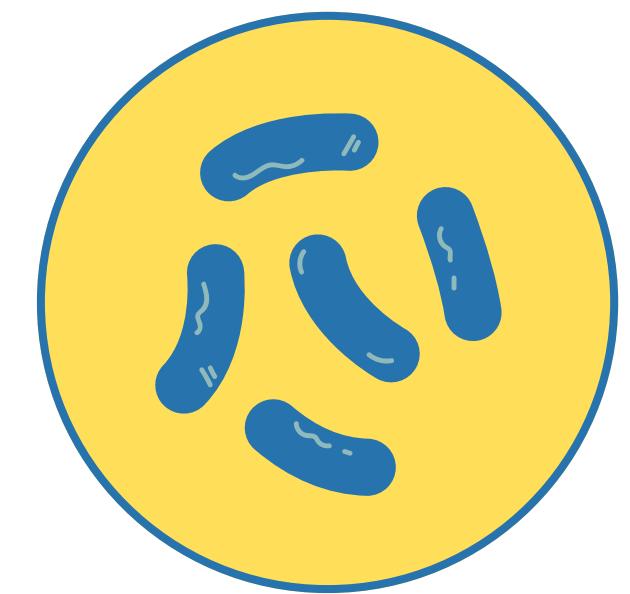


Microbiome
16S
PICRUSt2

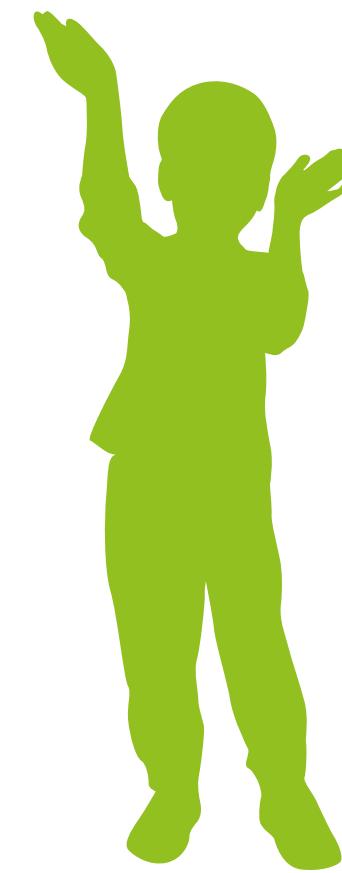


102 Children
Age 1-17

Microbiome
16S
PICRUSt2

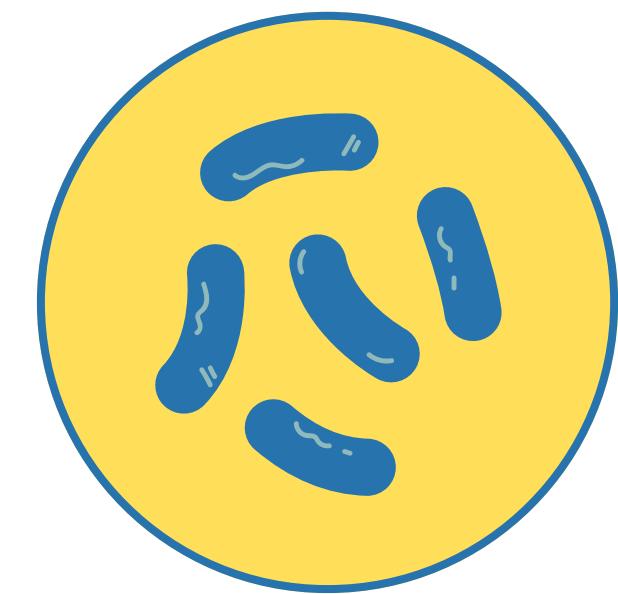


Diet



102 Children
Age 1-17

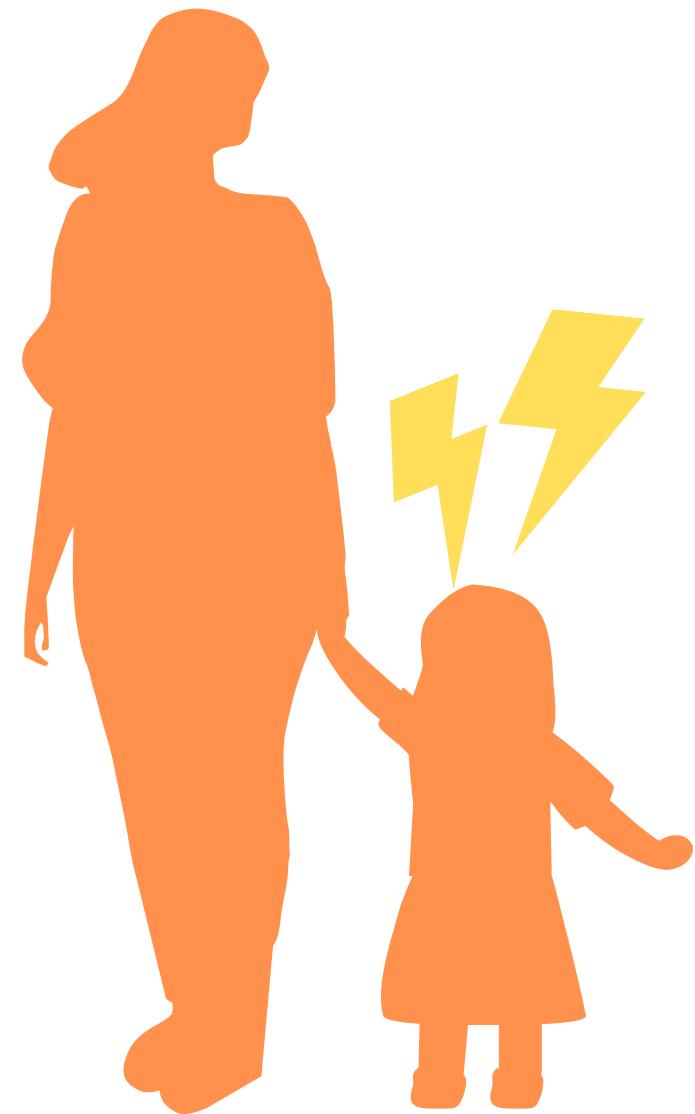
Microbiome
16S
PICRUSt2



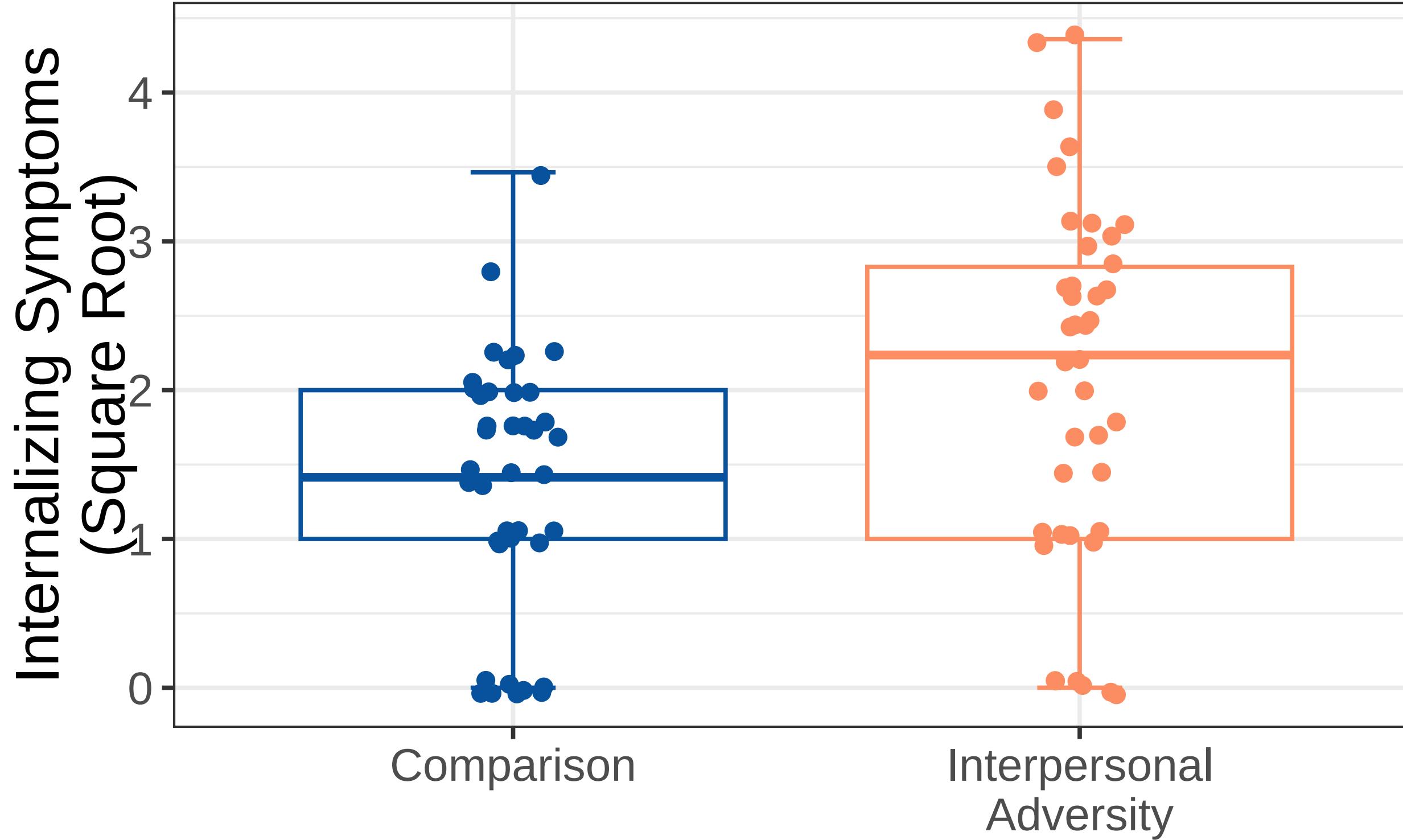
Diet

Internalizing Sx

N = 49

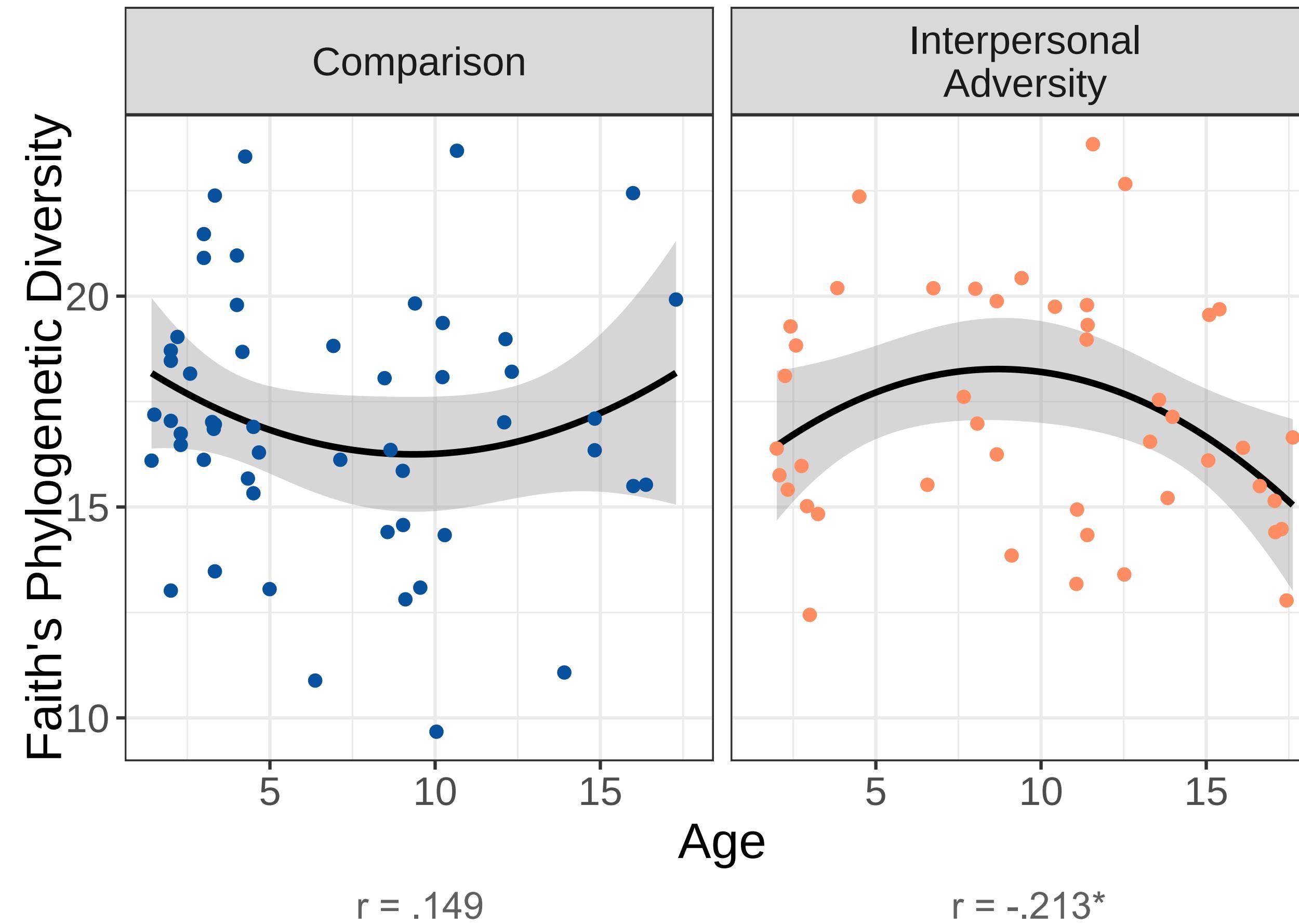


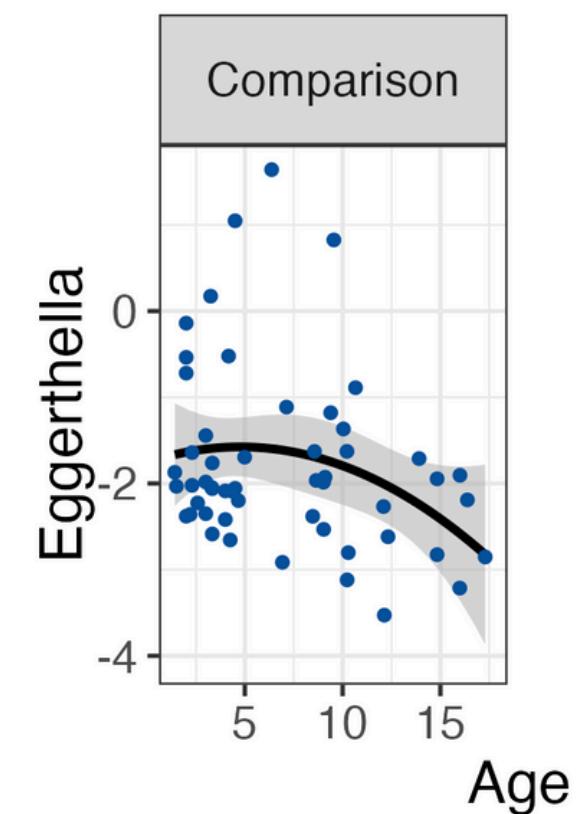
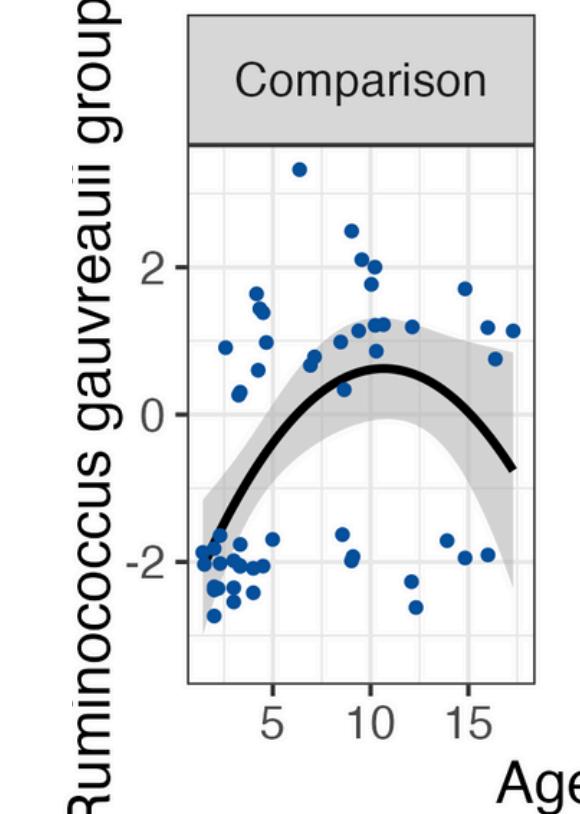
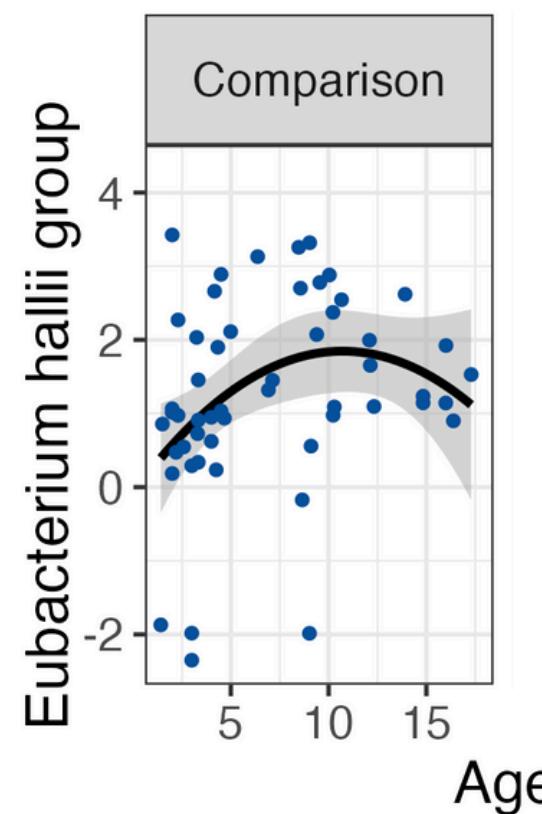
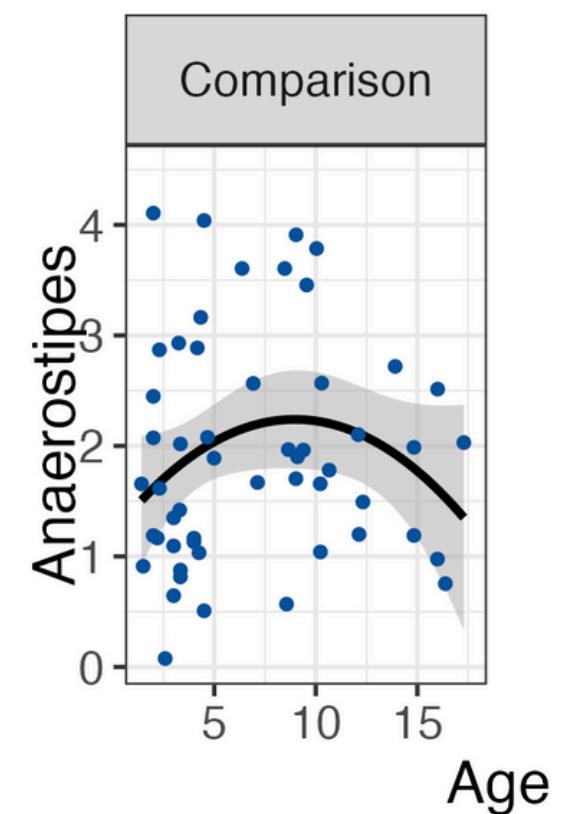
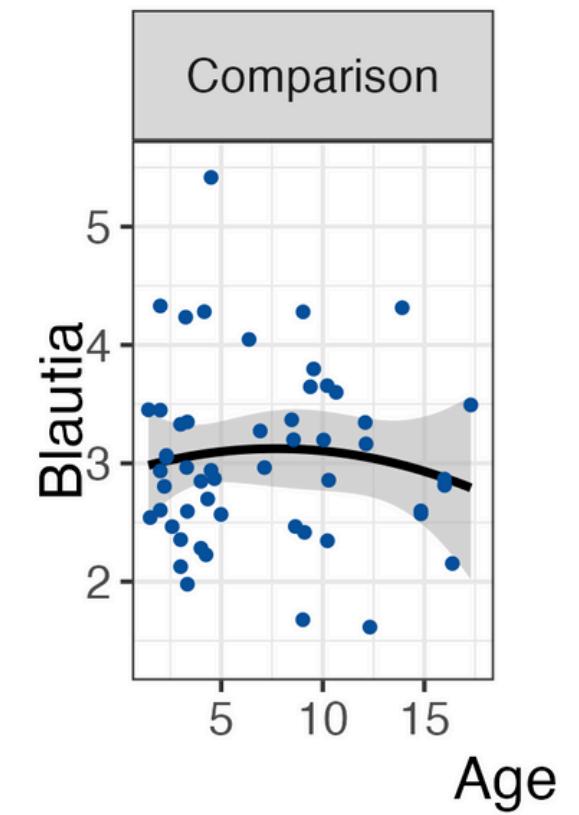
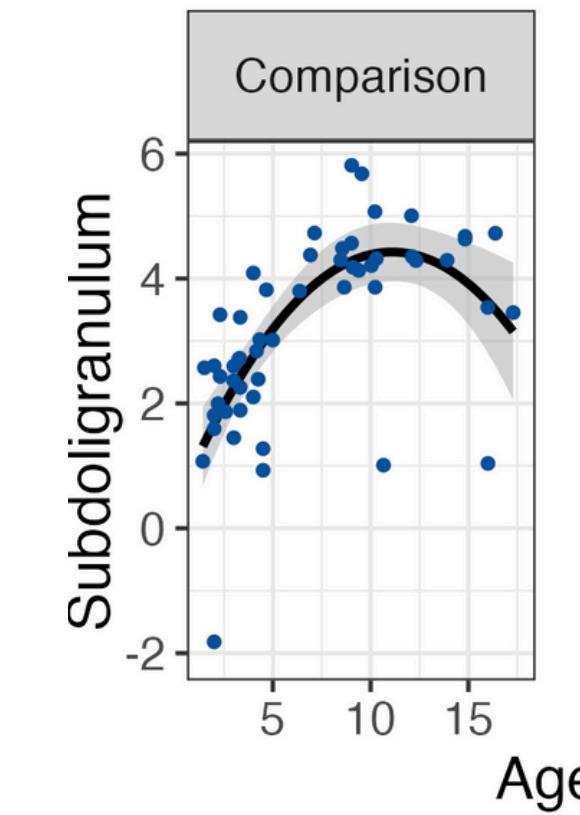
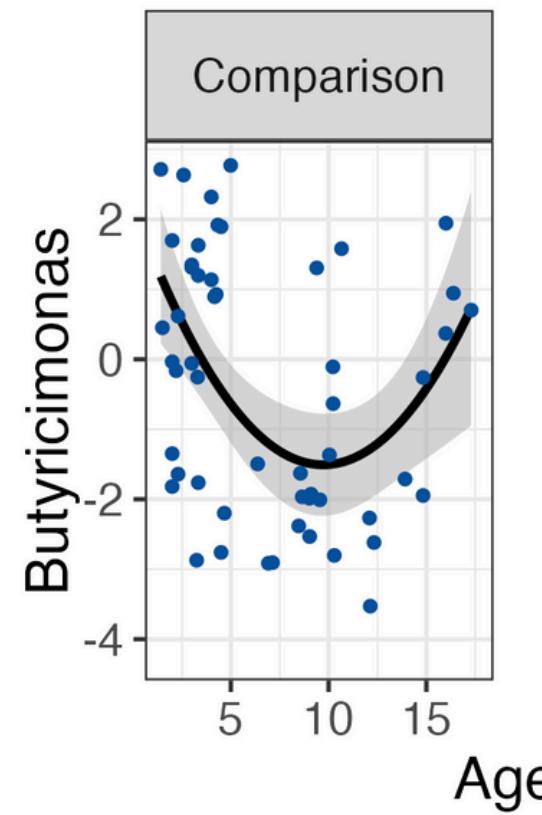
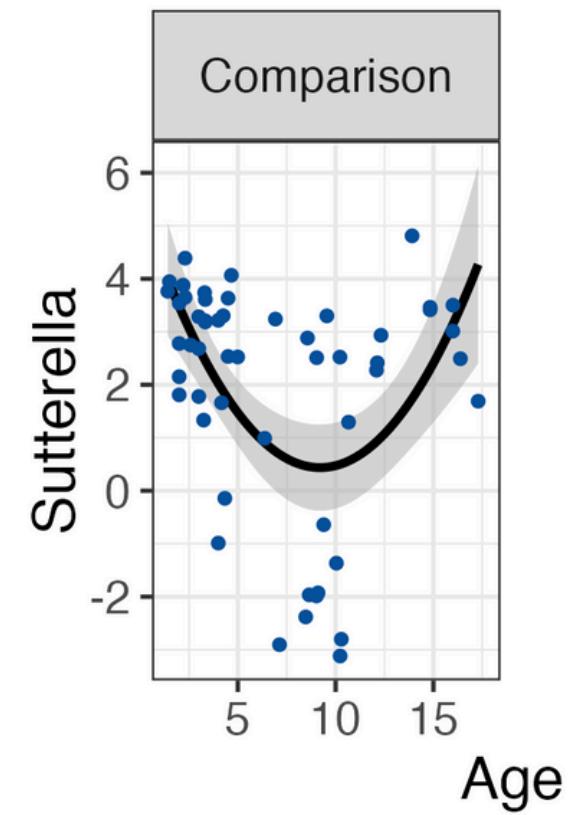
Interpersonal adversity
(Prior but not ongoing)



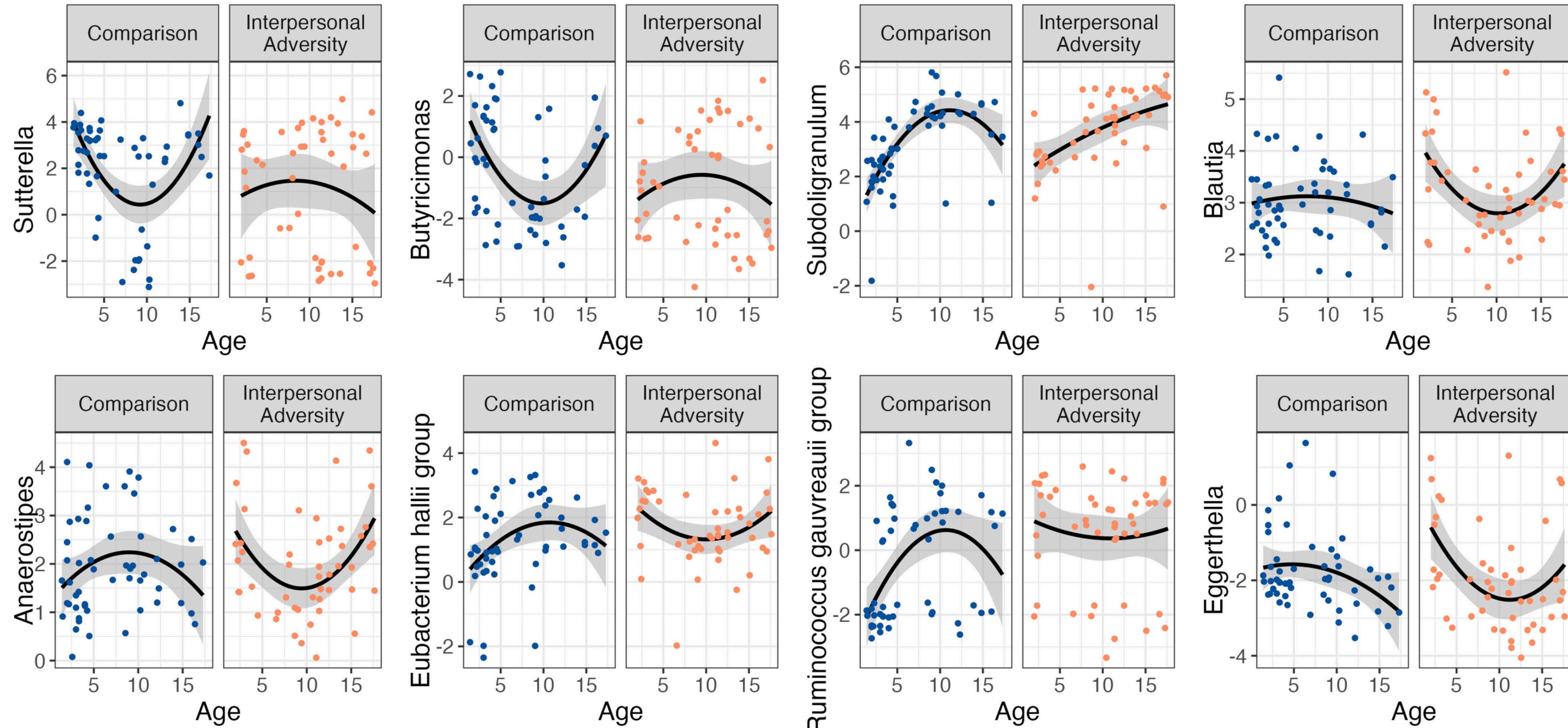
Microbiome differences?





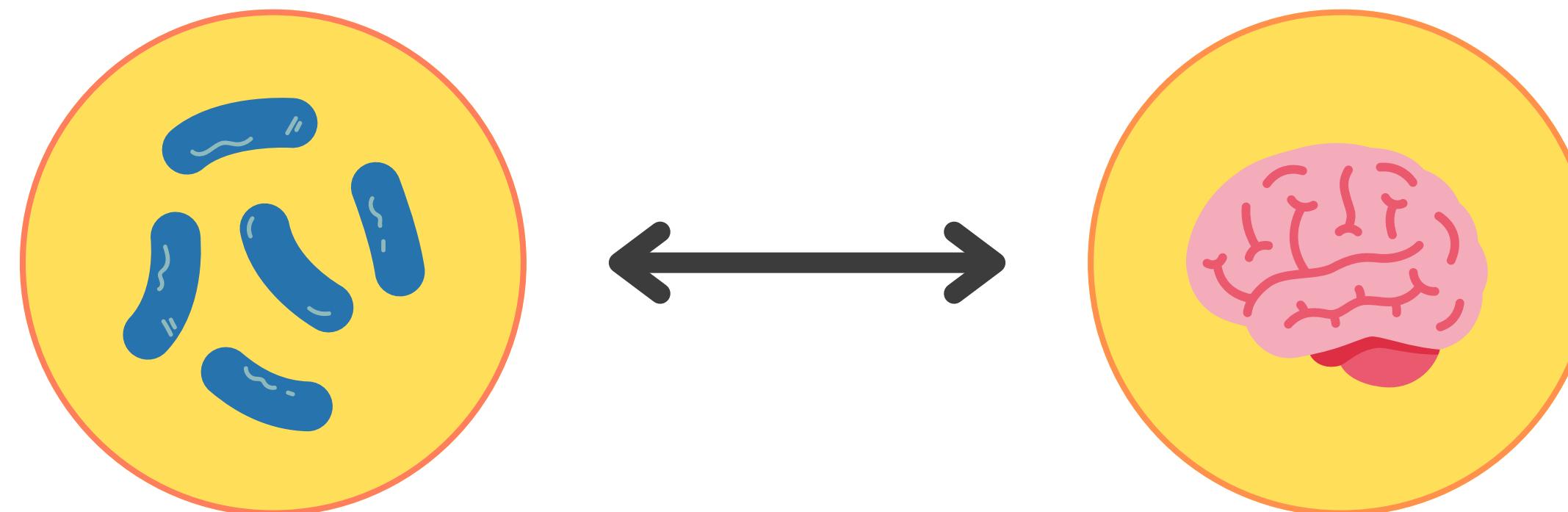


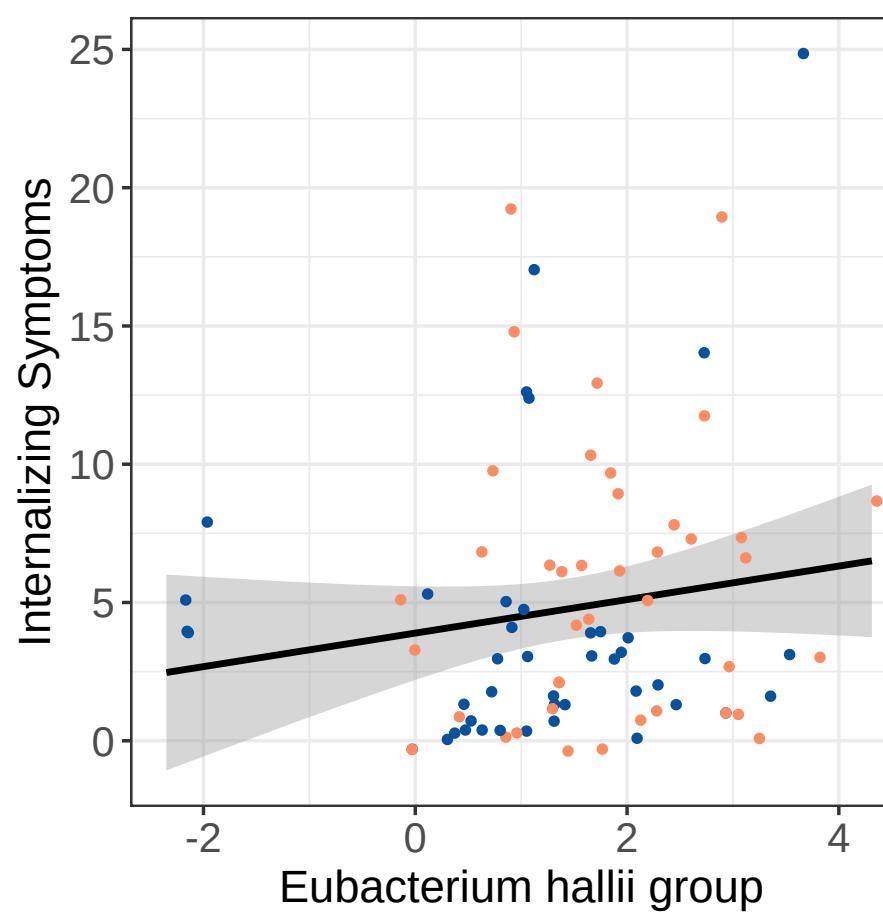
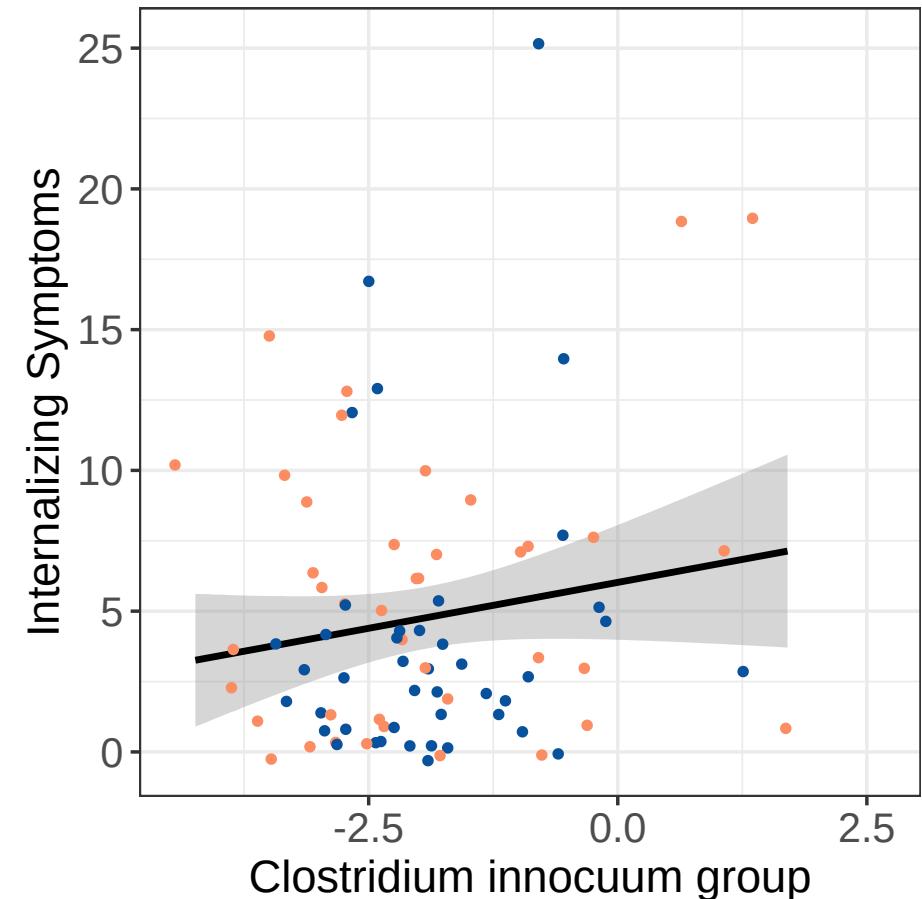
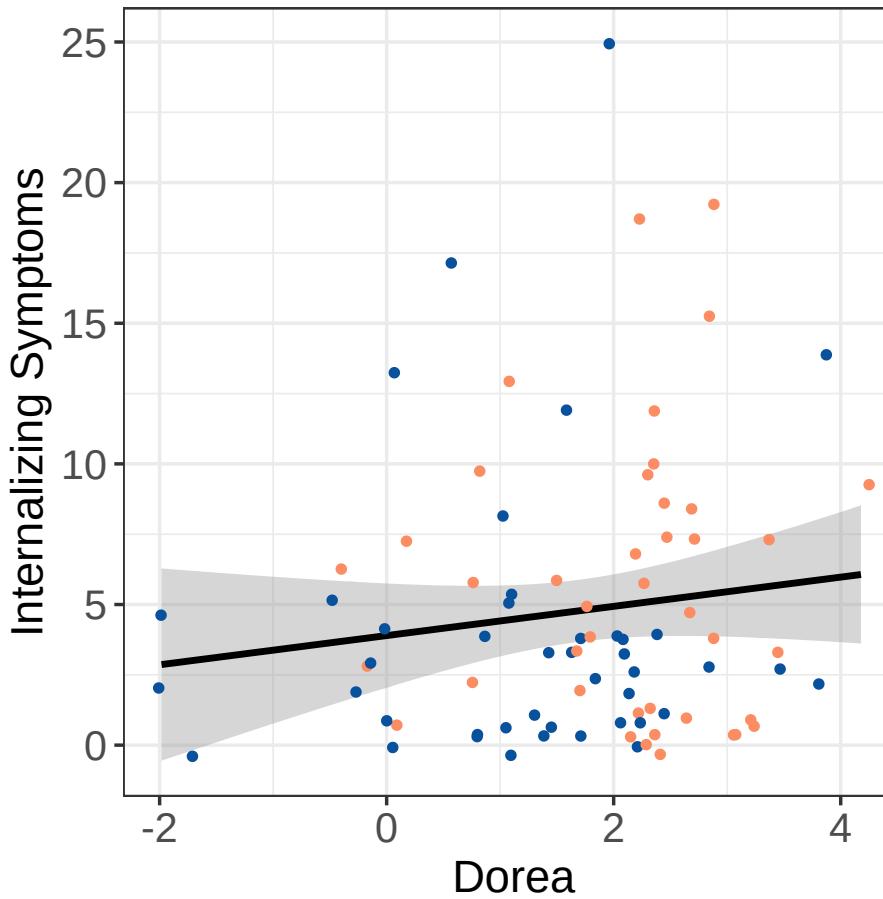
Microbiome remains age-dependent in middle childhood & adolescence

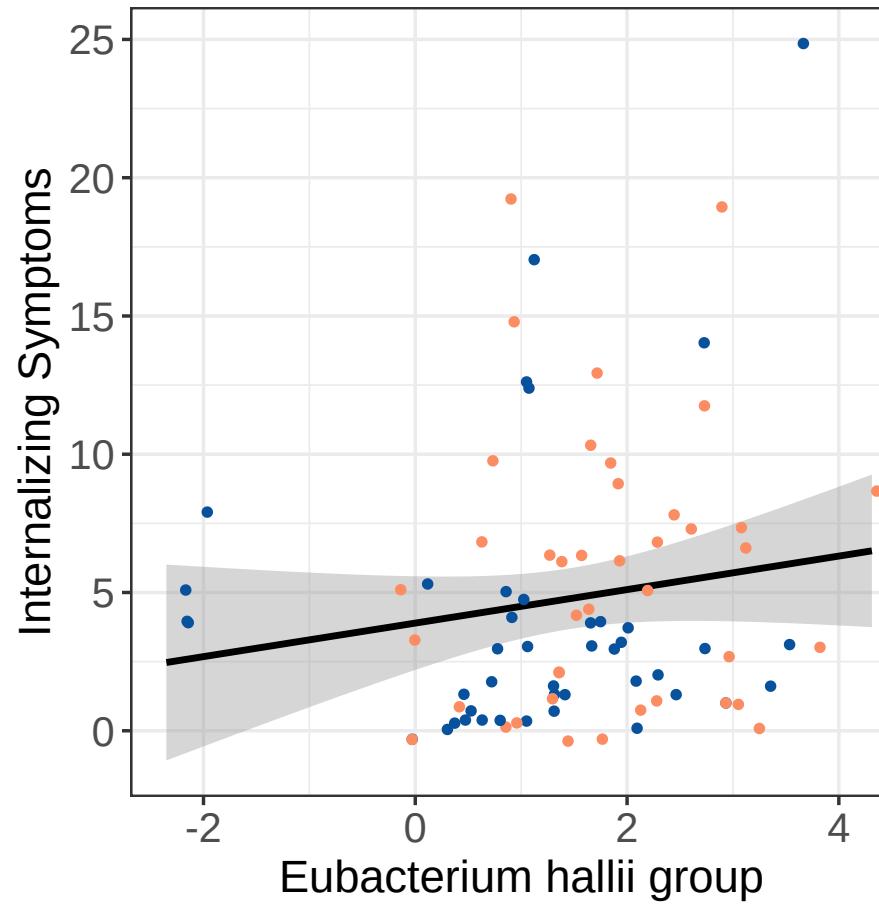
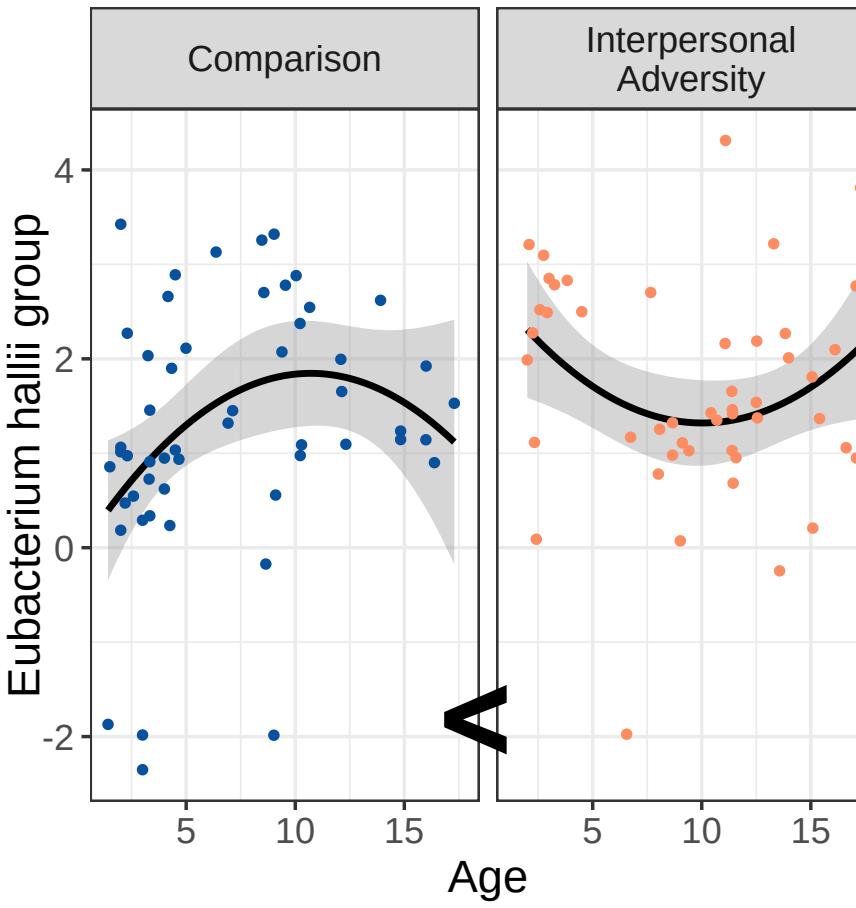
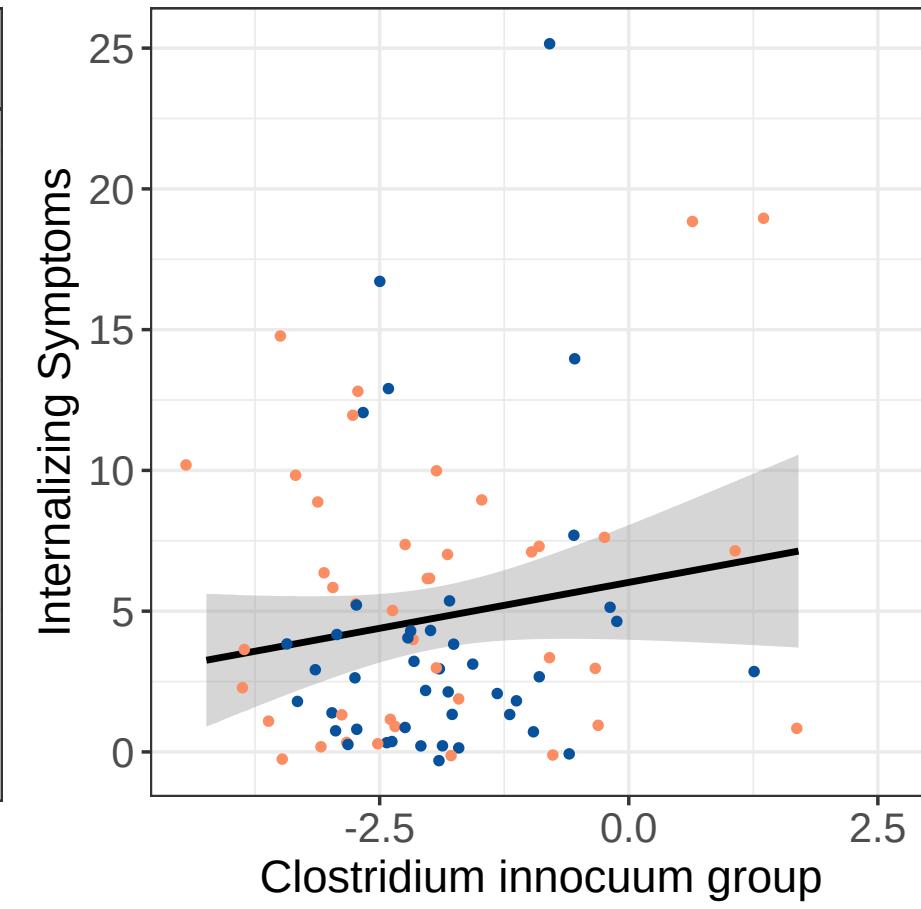
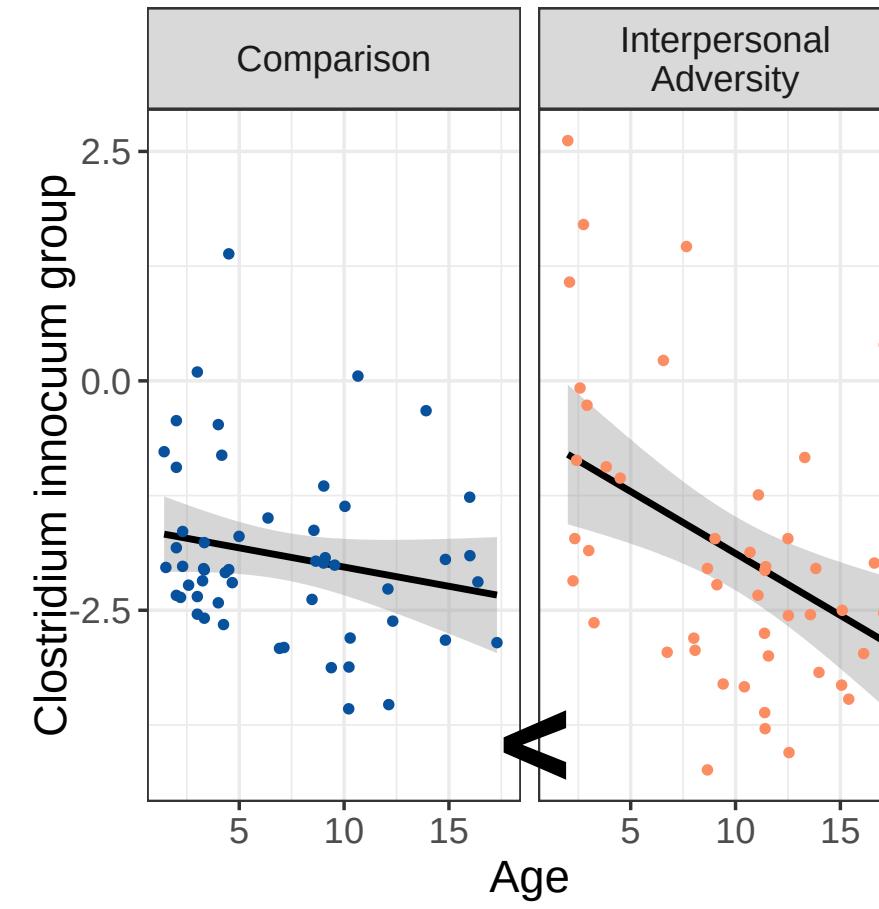
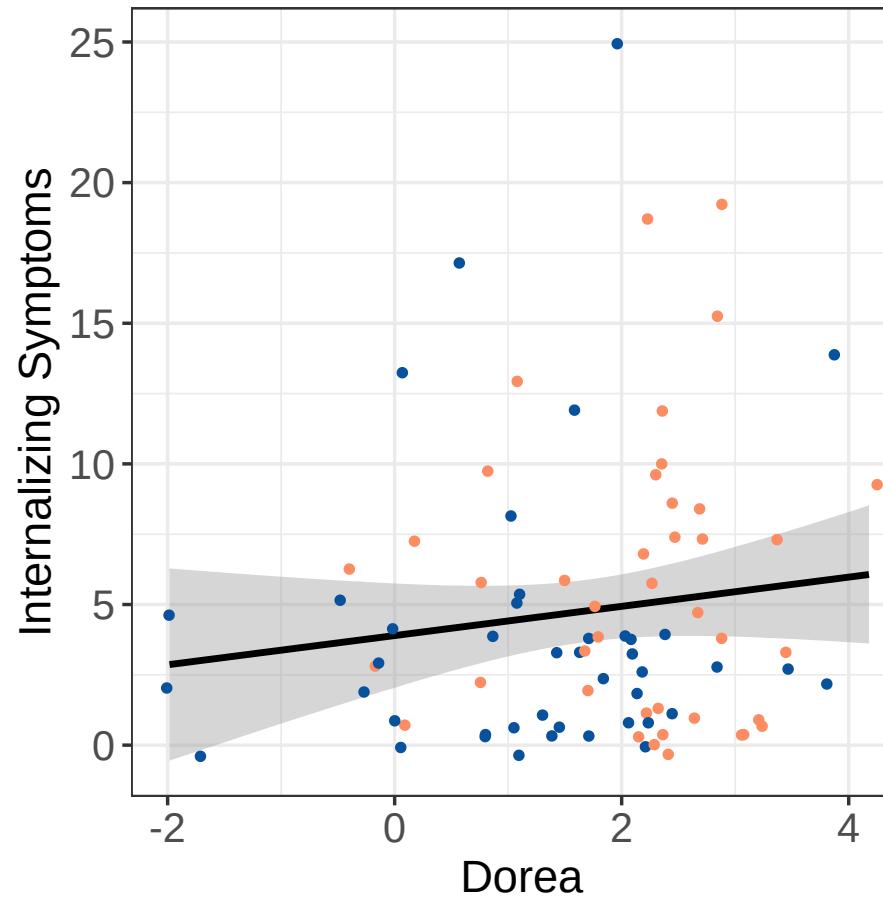
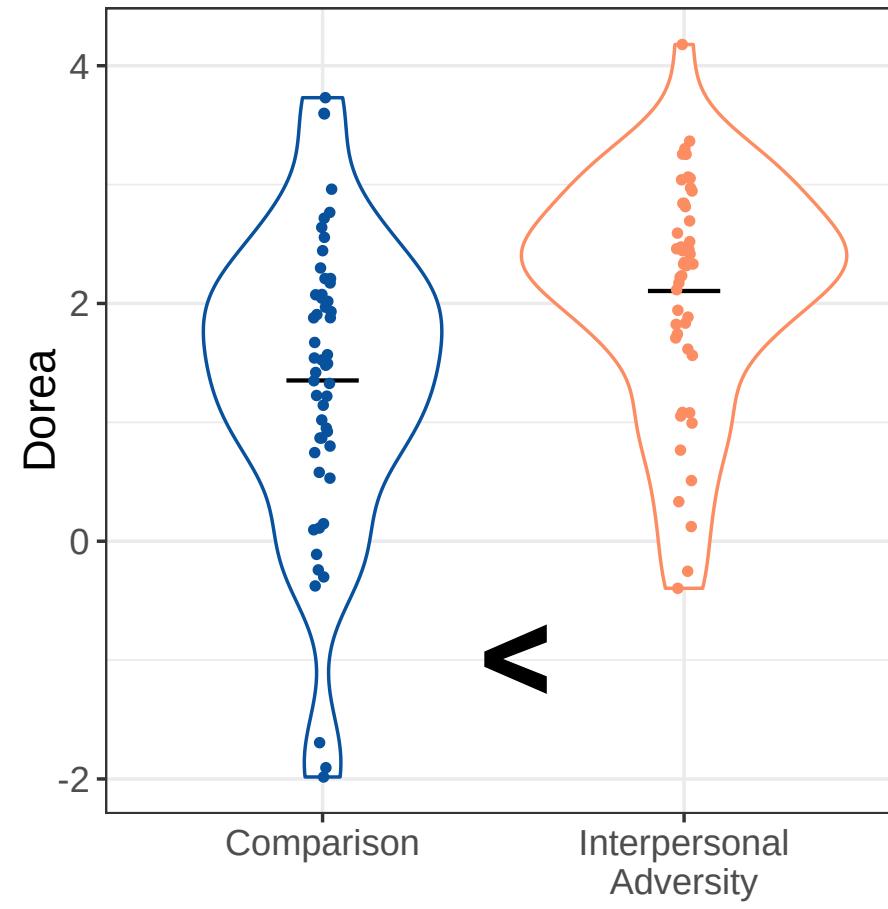


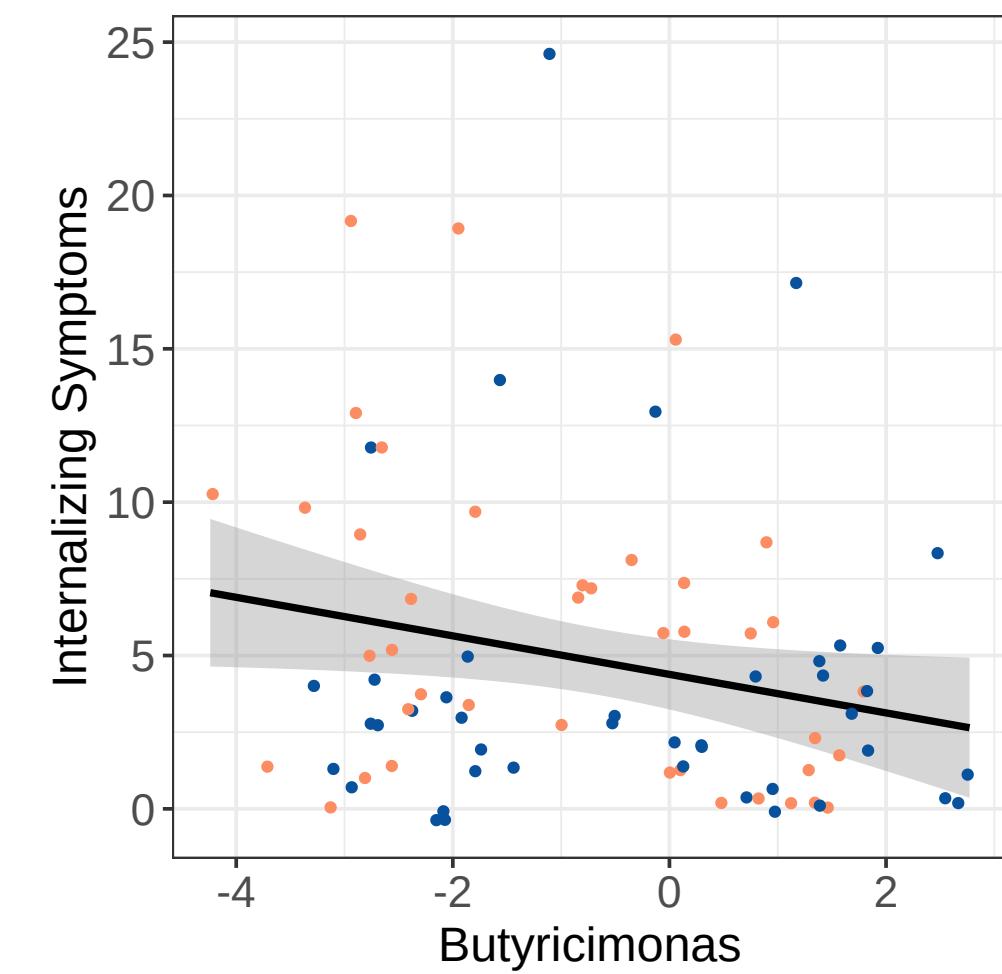
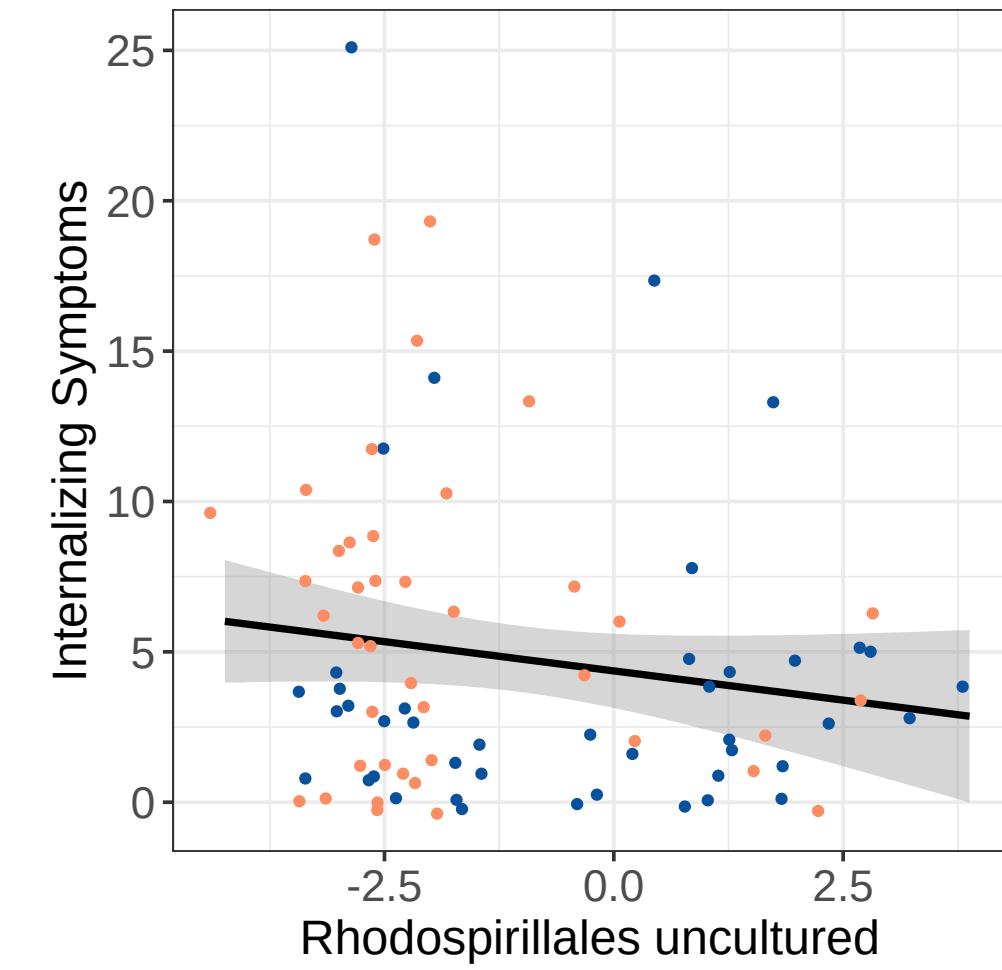
Distribution across age is modified by adversity exposure

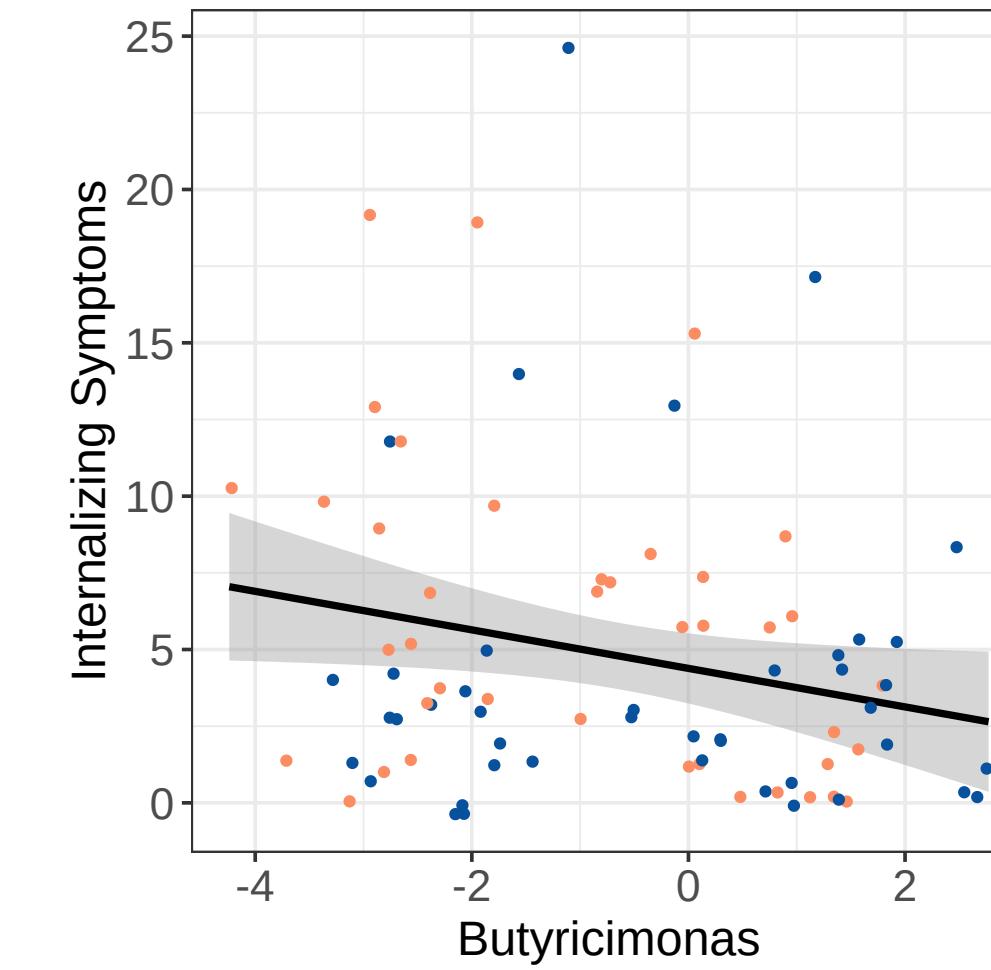
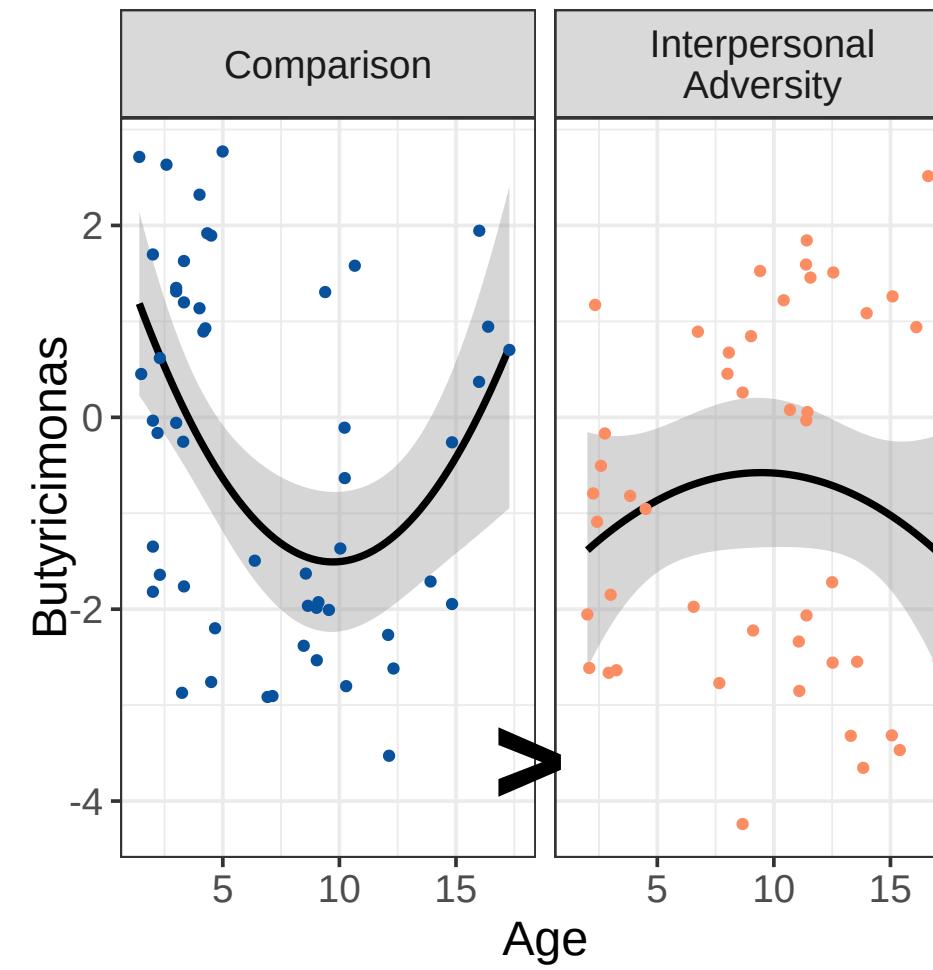
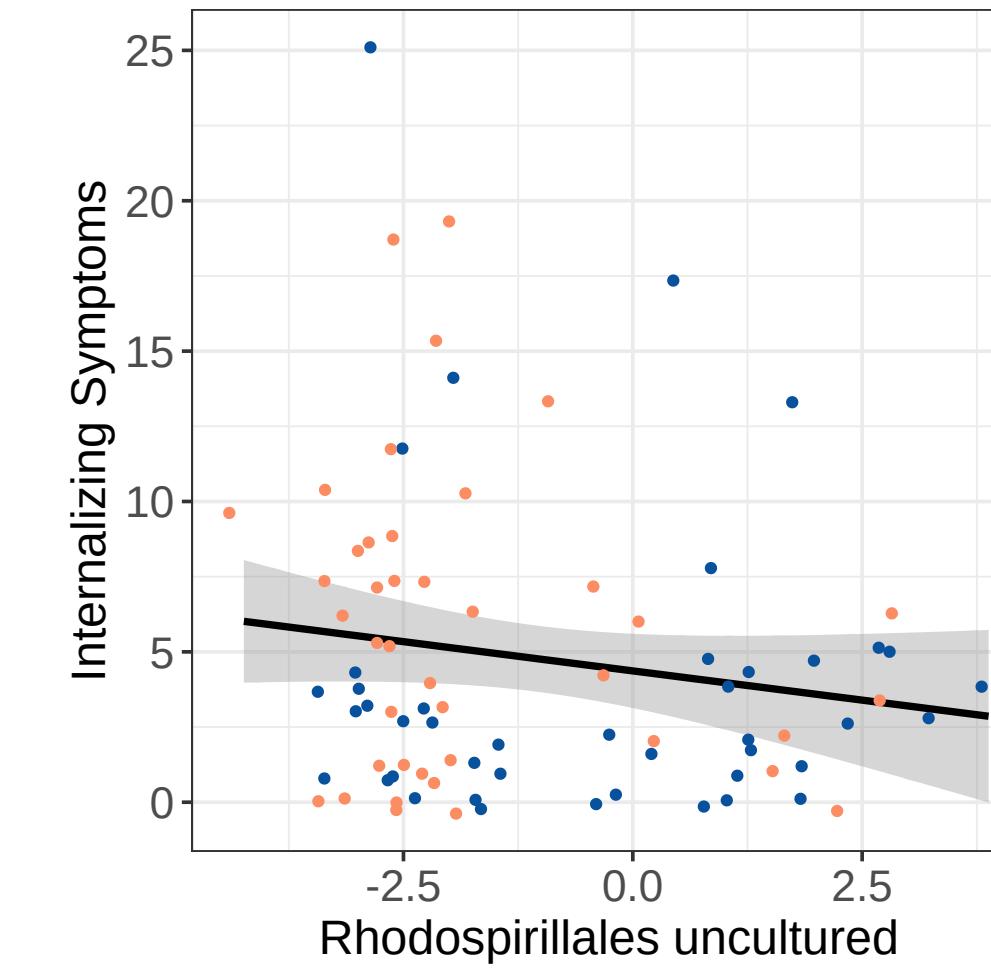
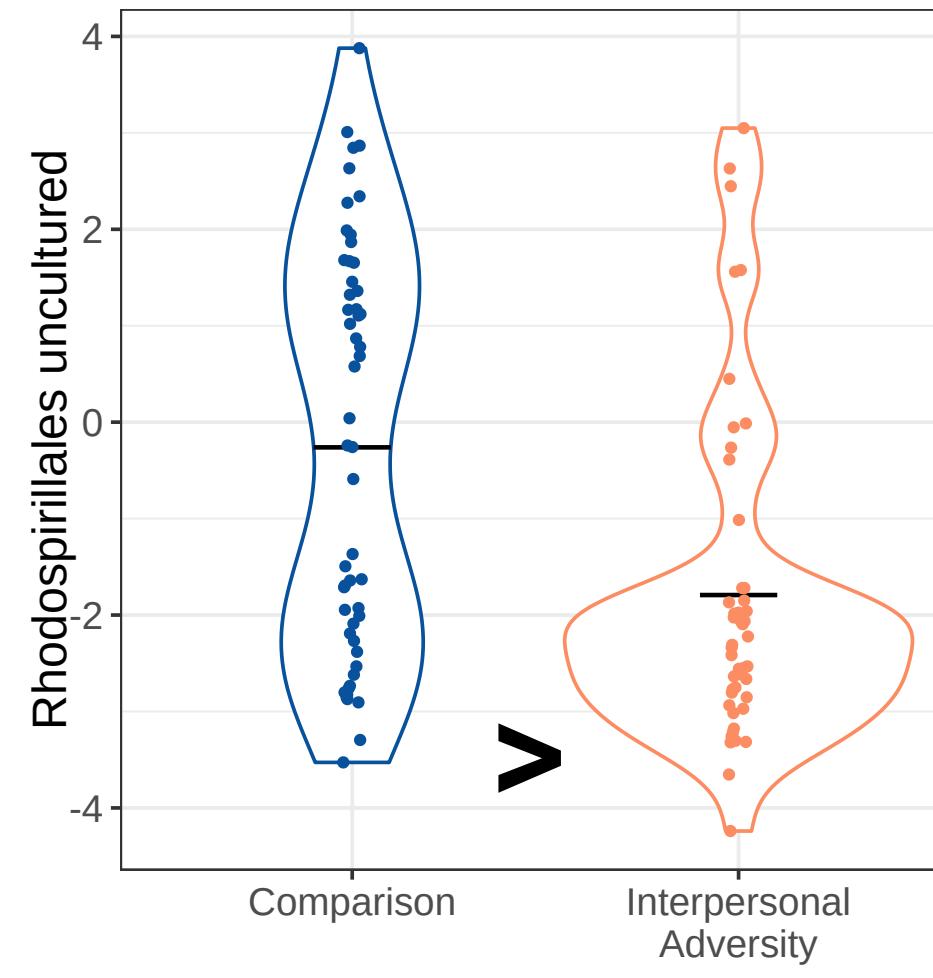
Are these differences related to internalizing symptoms?

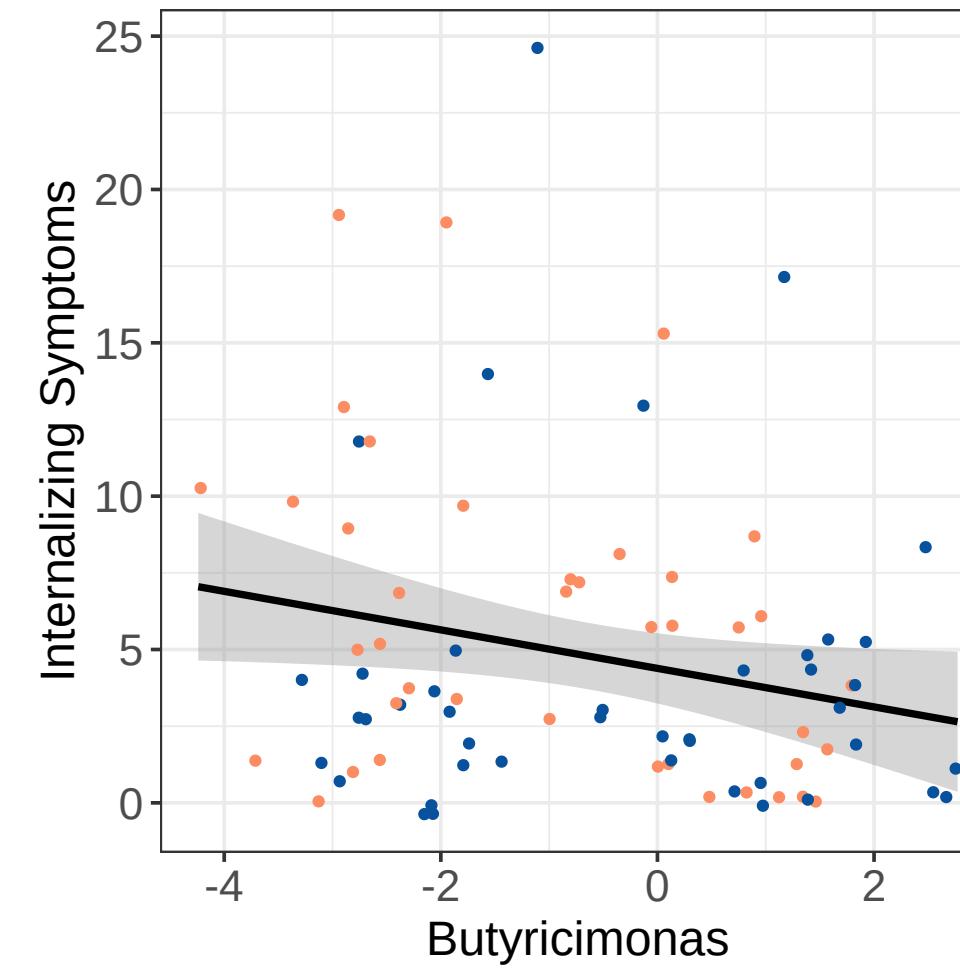
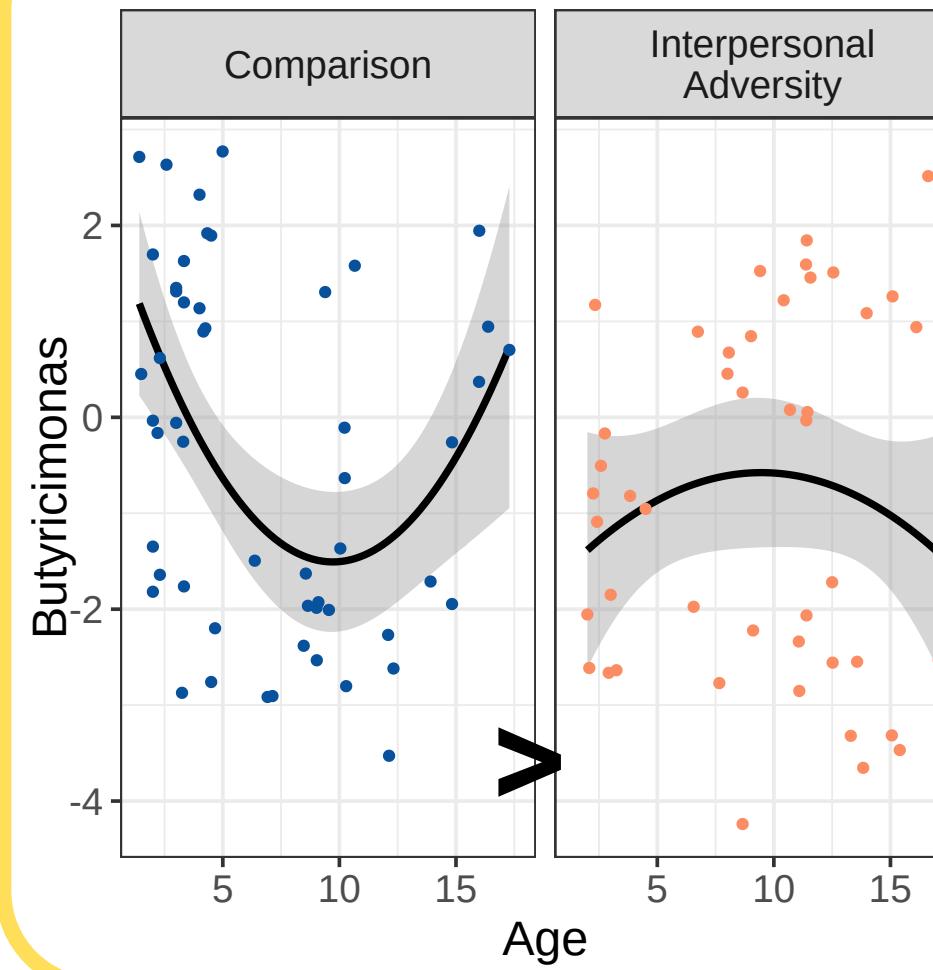
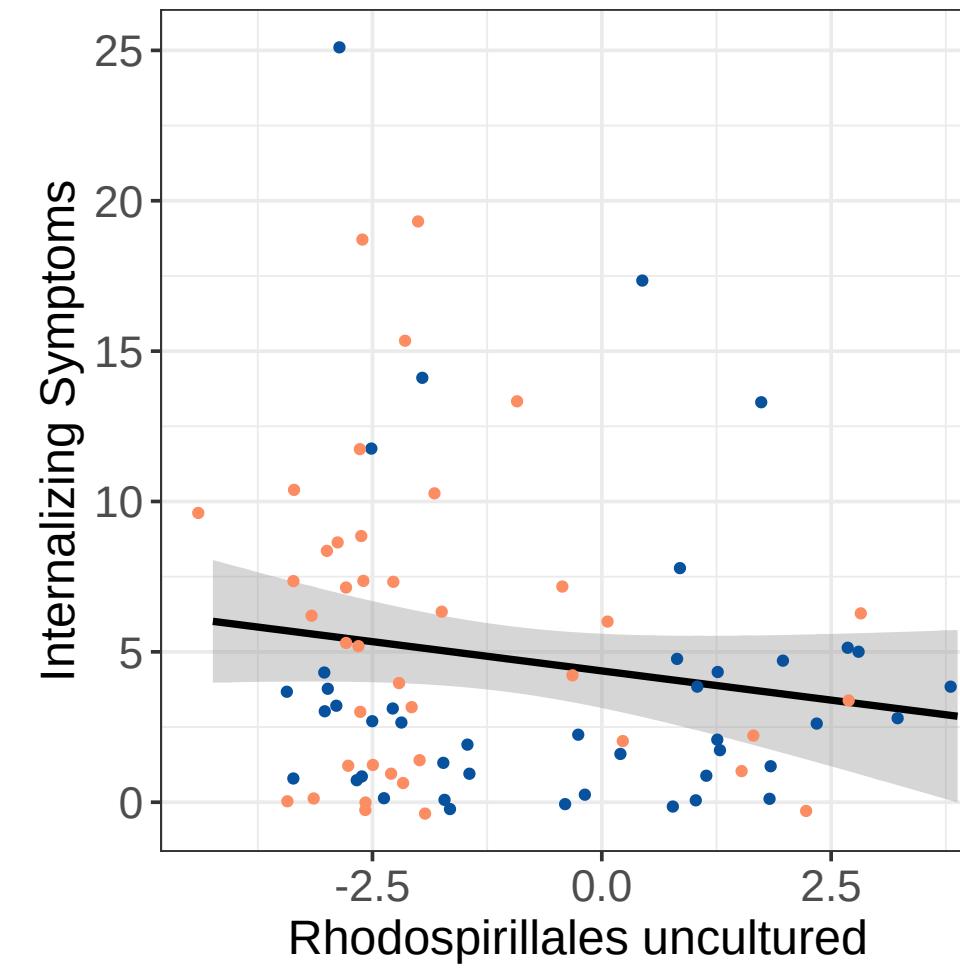
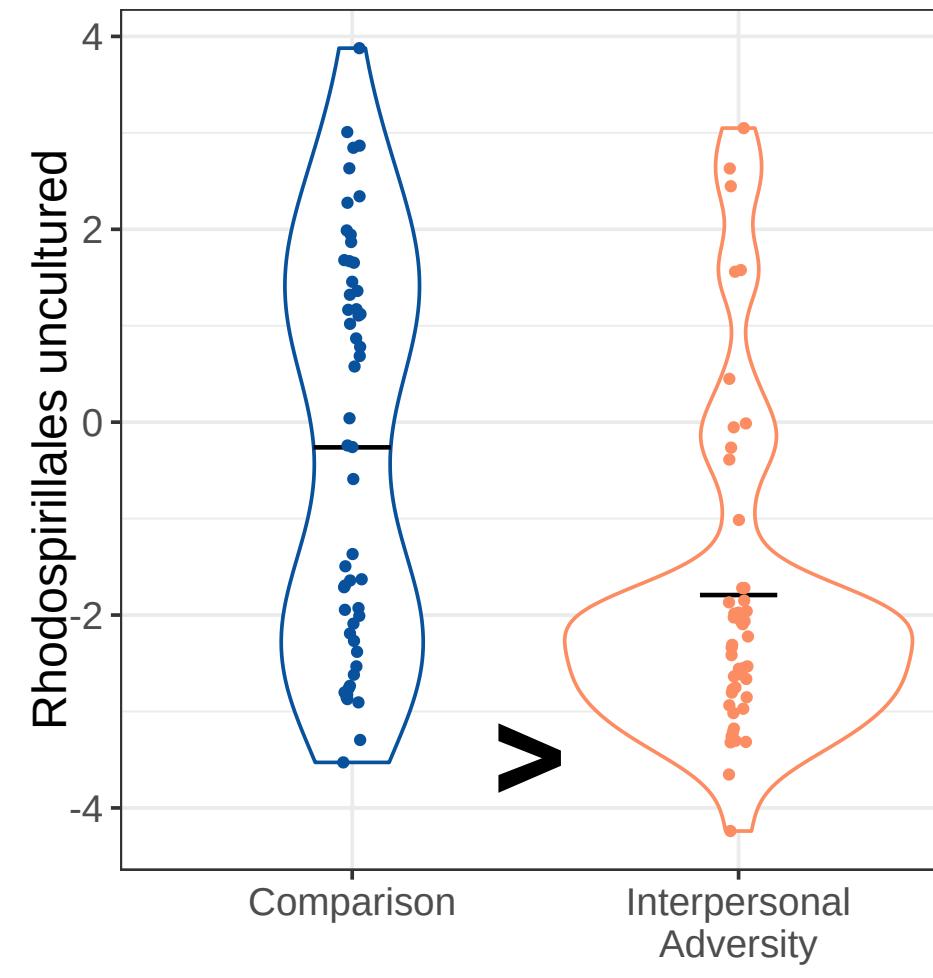




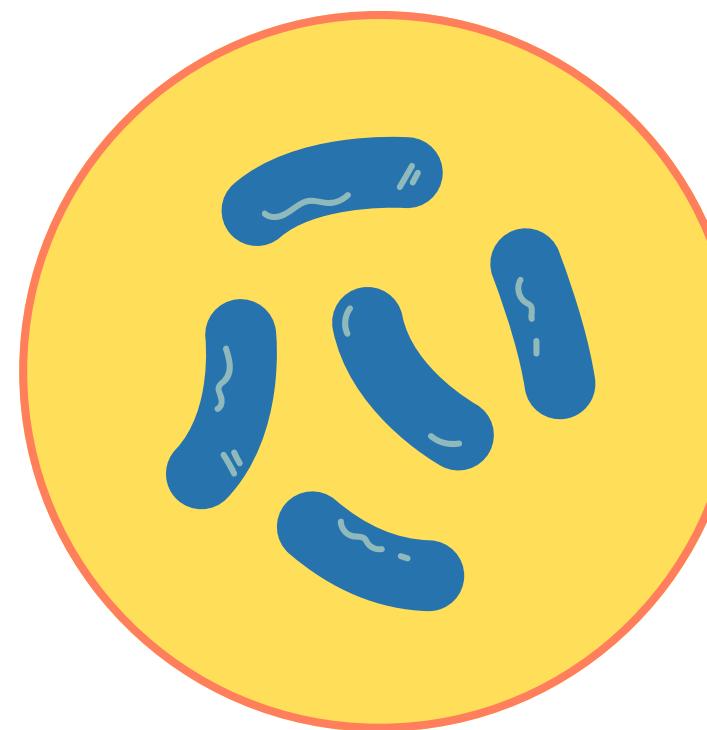


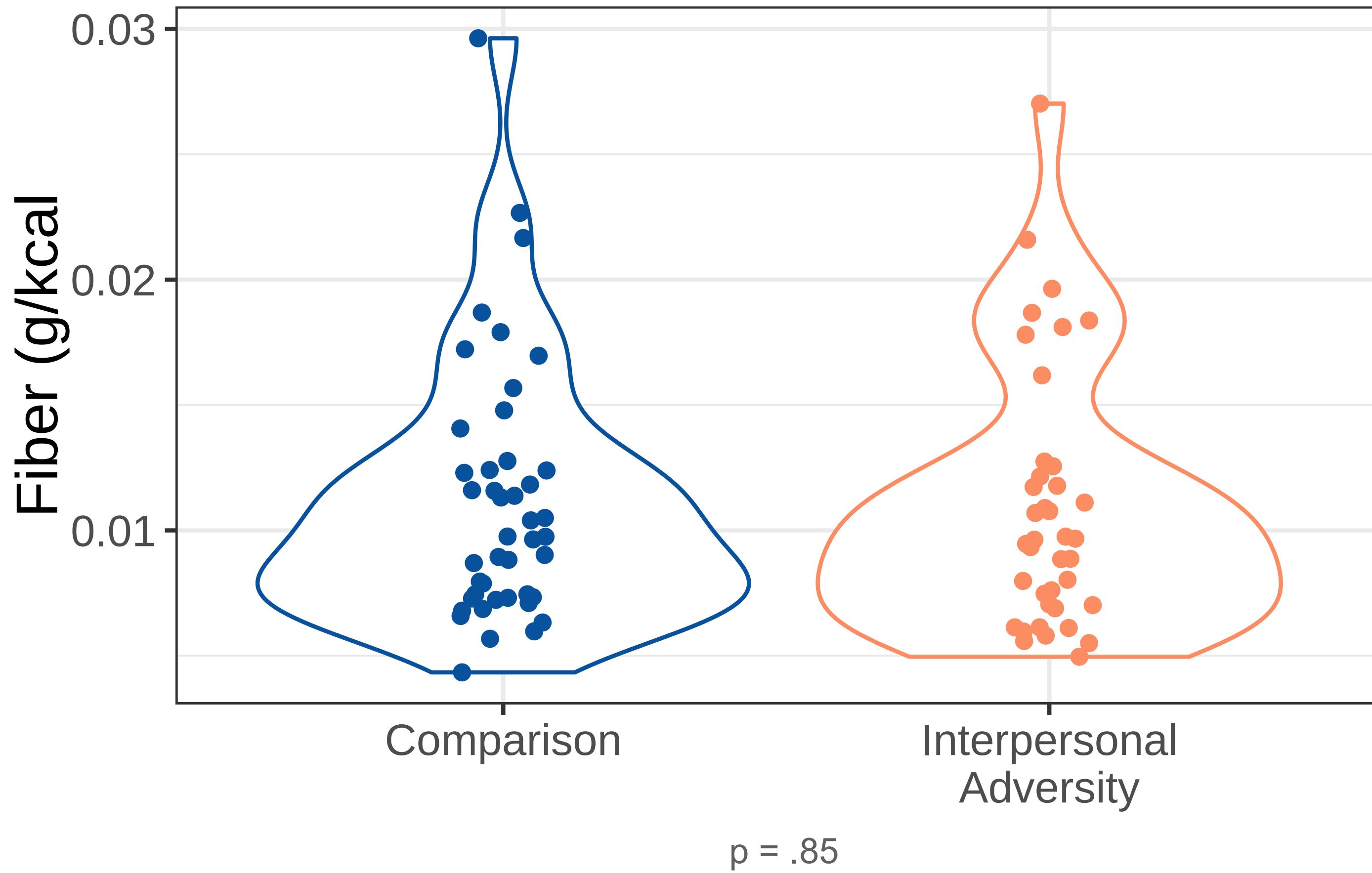


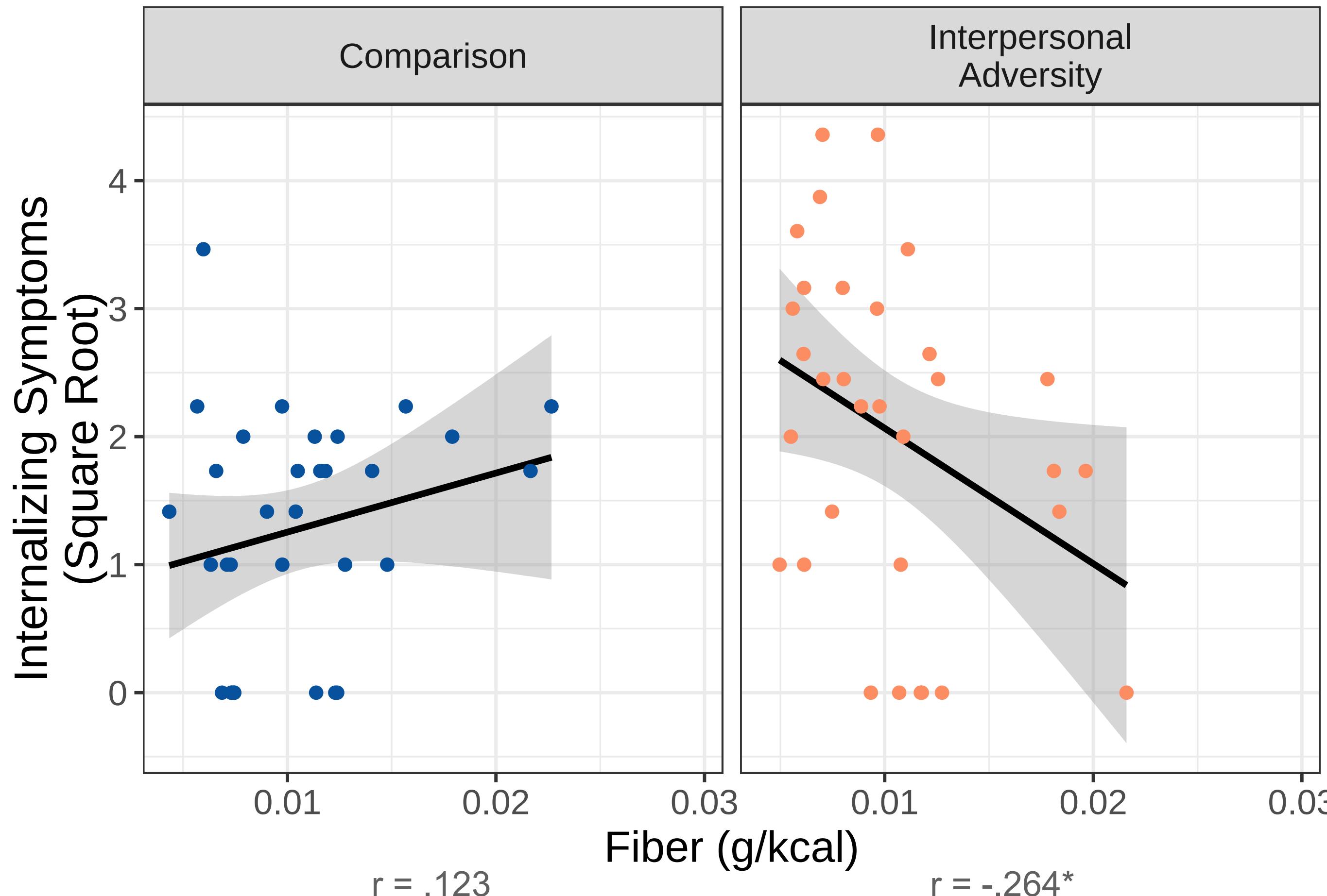


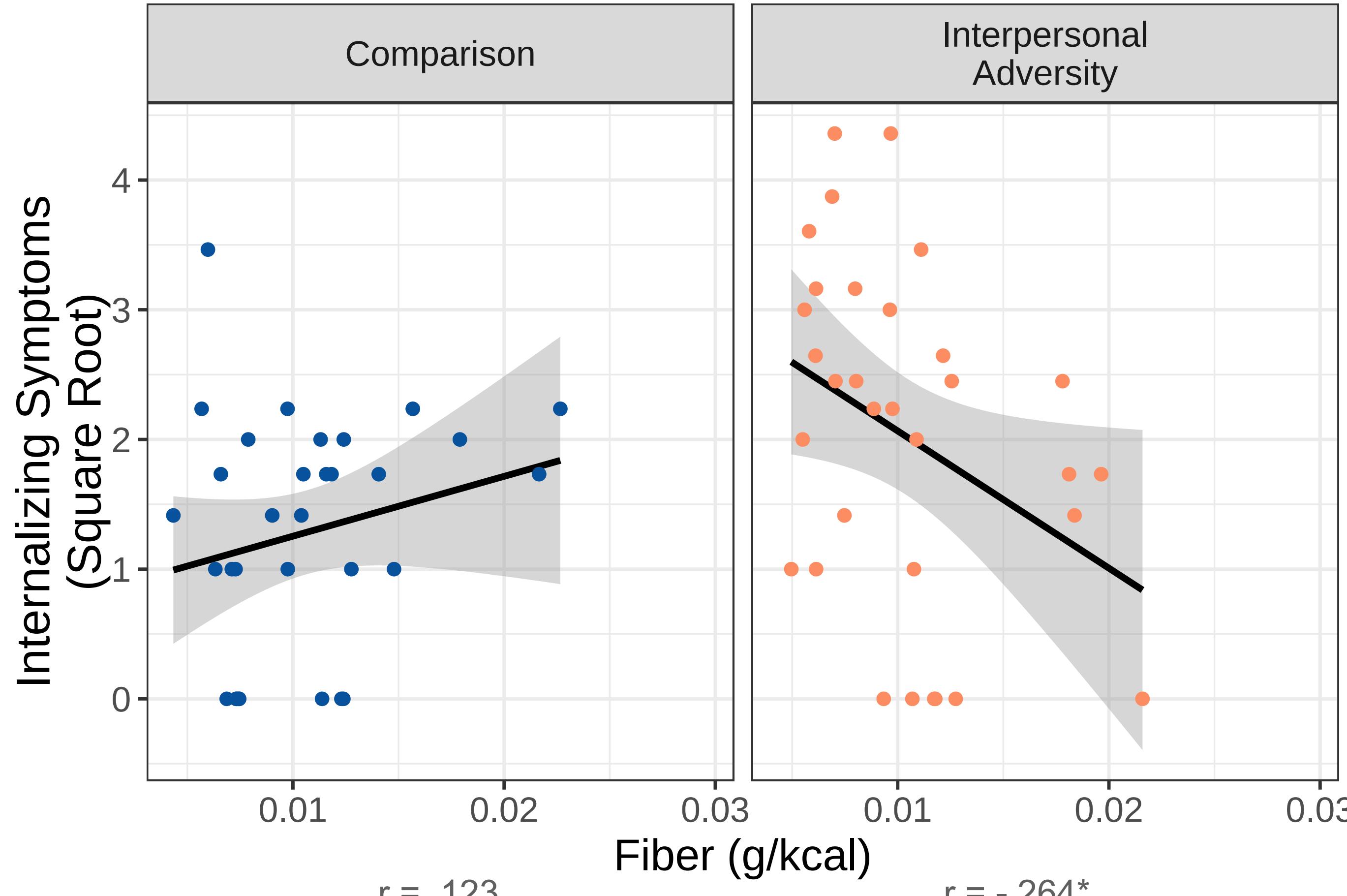


What is the role of diet?



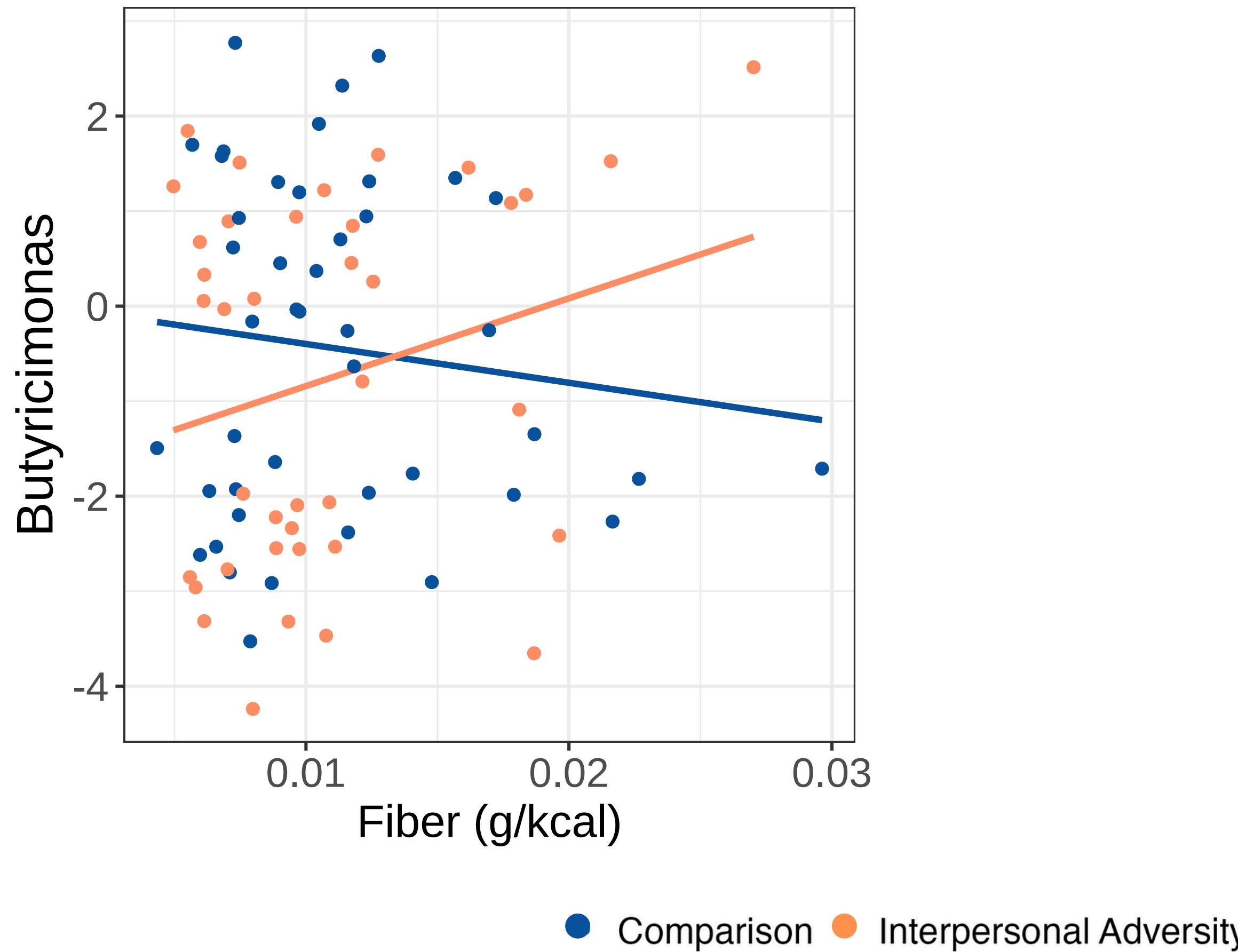


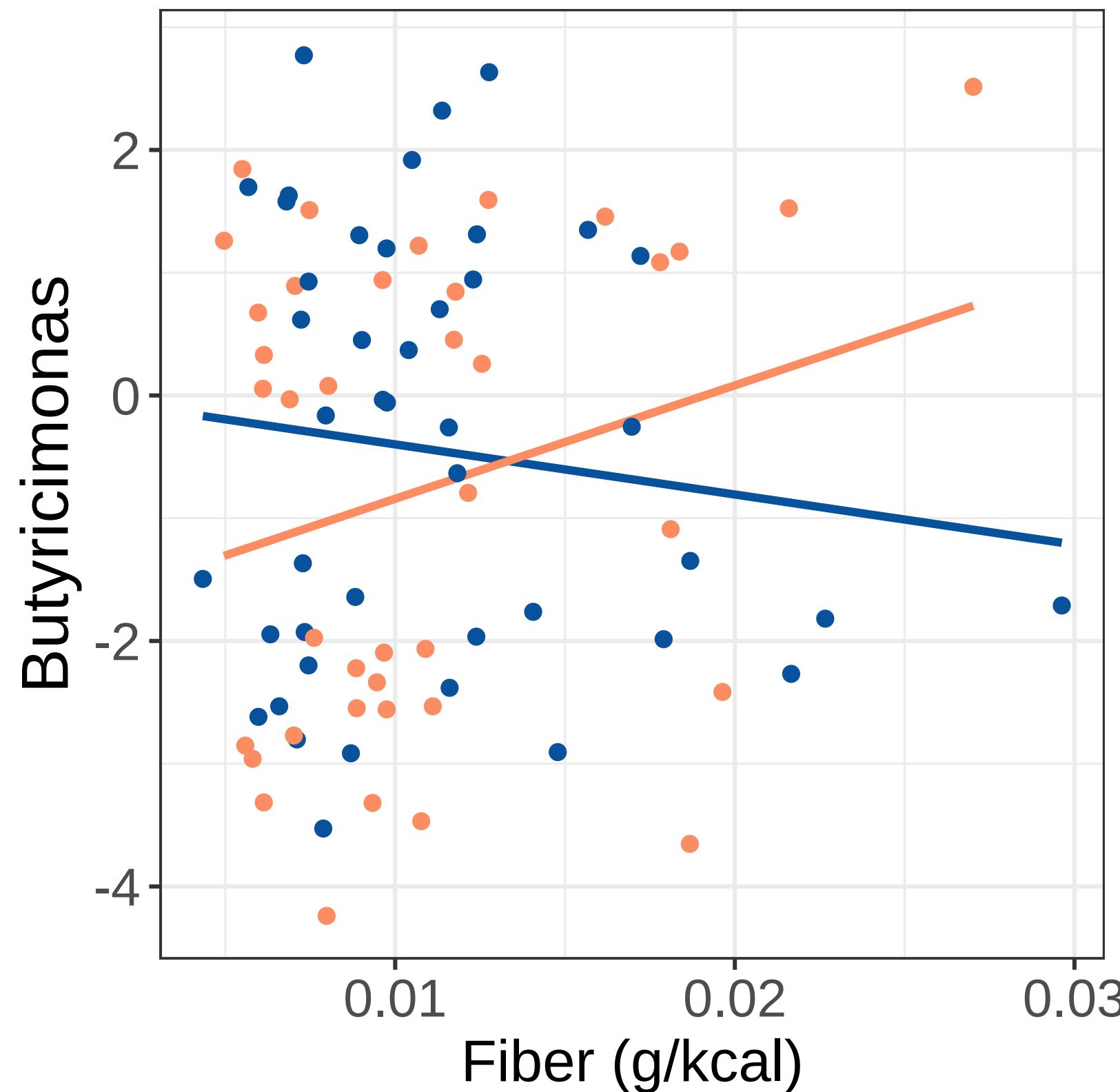




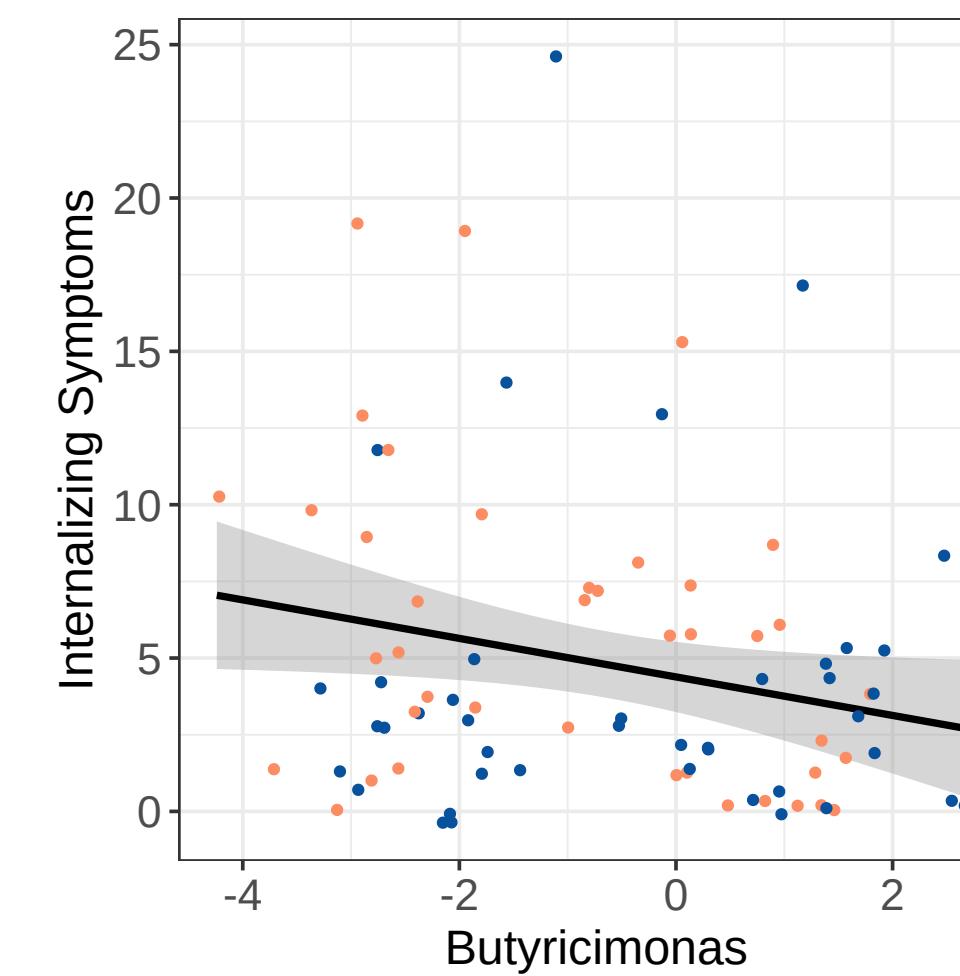
Is the gut microbiome responding differently?

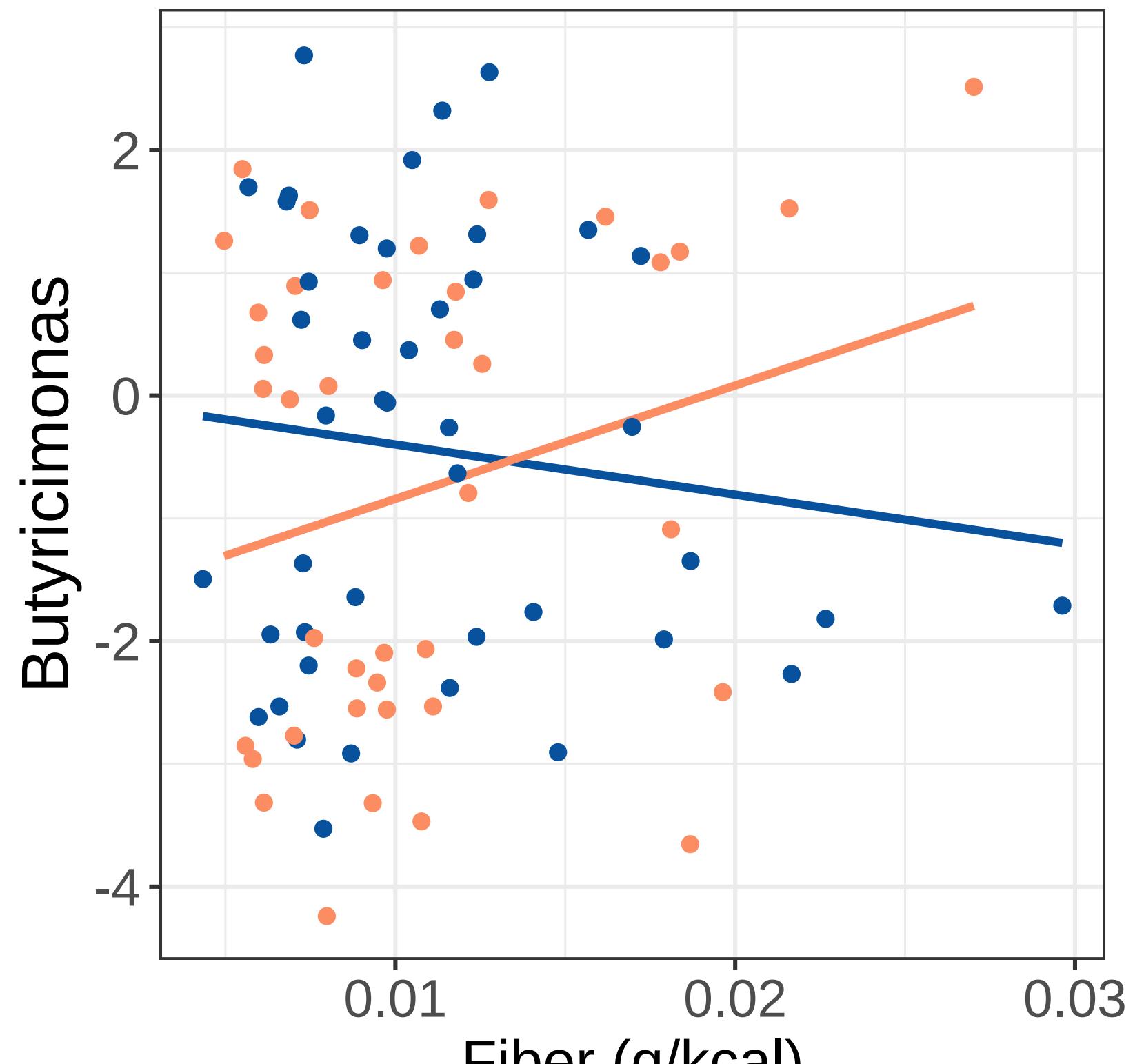
Gancz et al., *In prep*





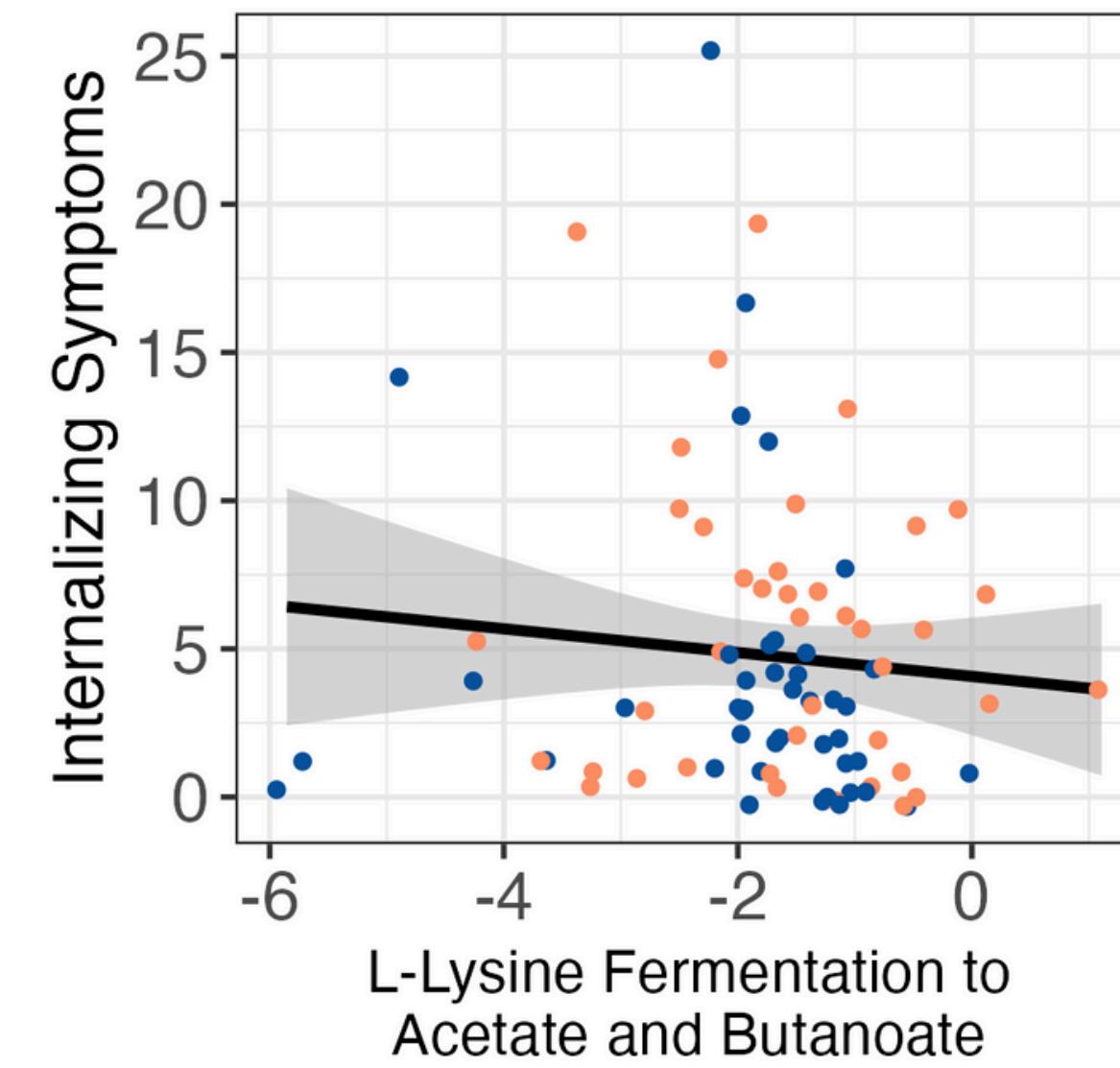
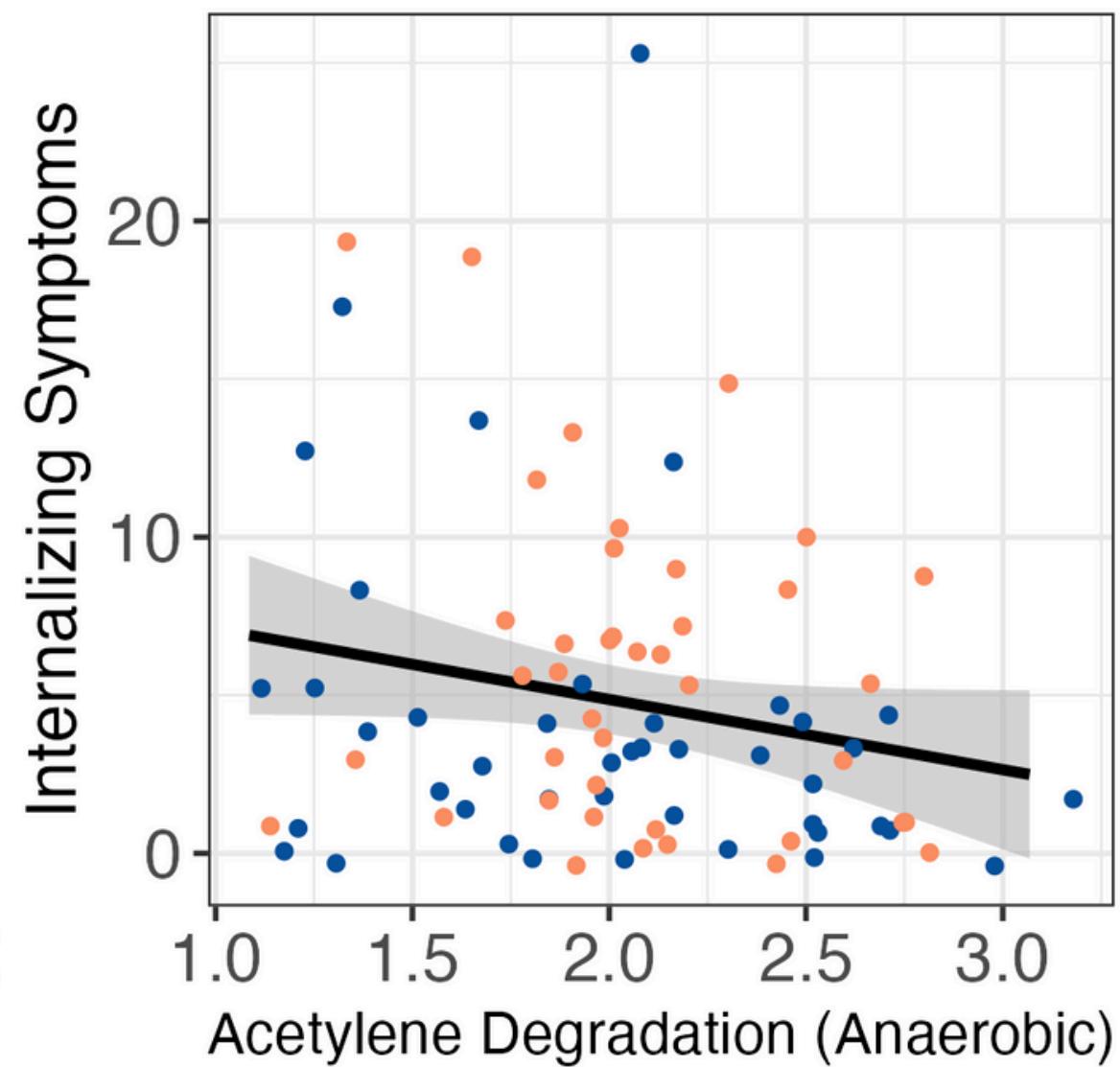
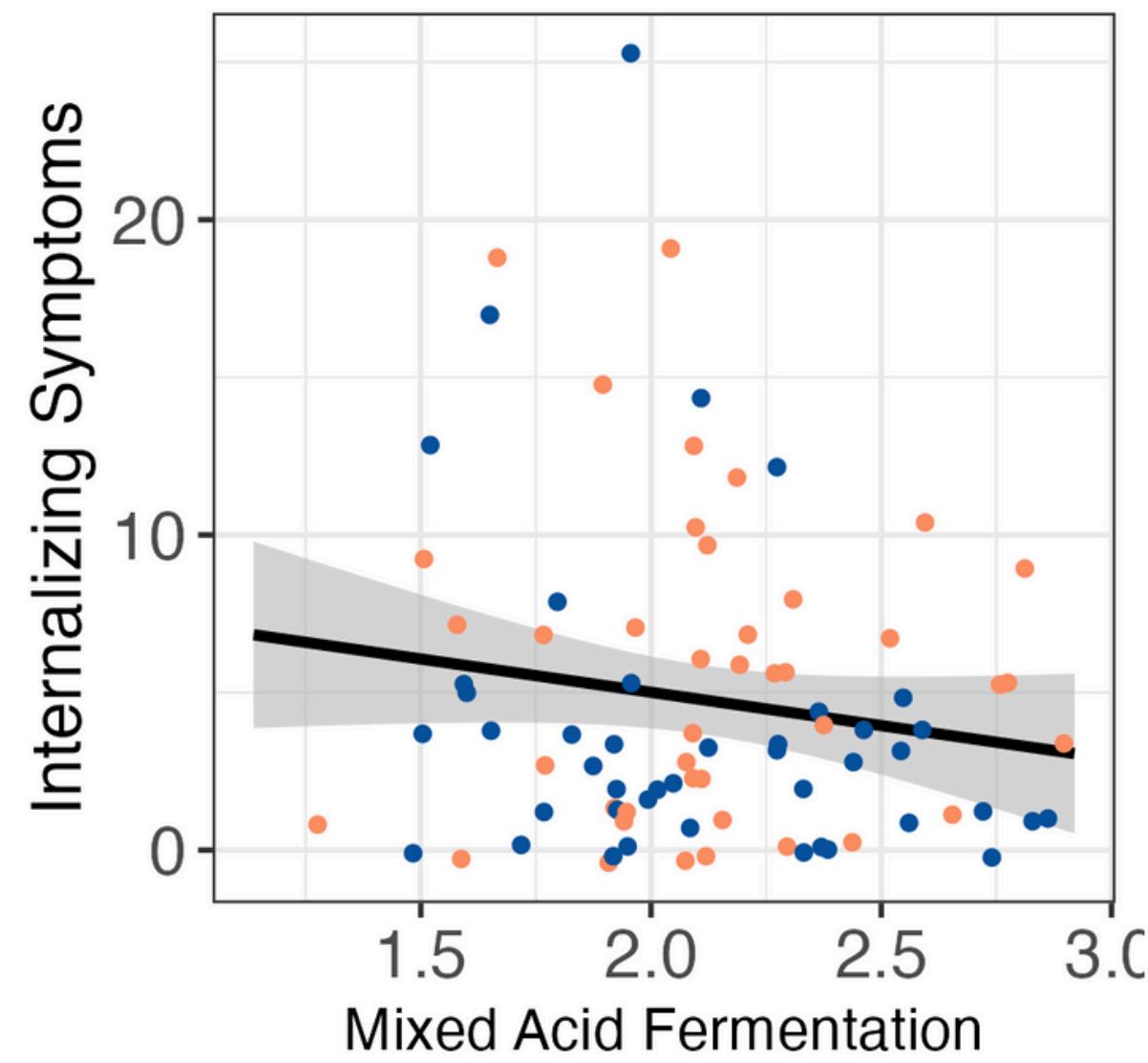
● Comparison ● Interpersonal Adversity



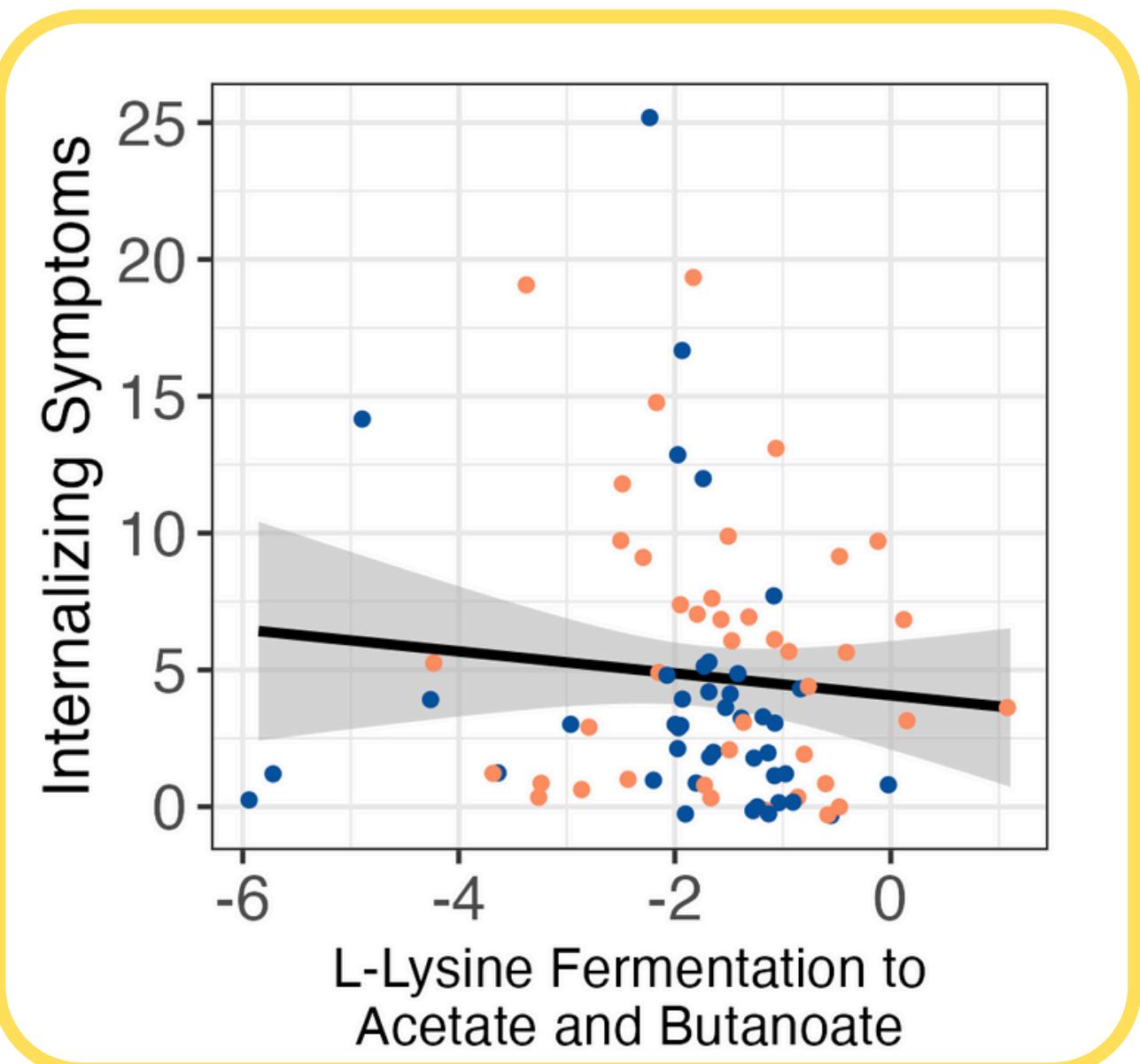
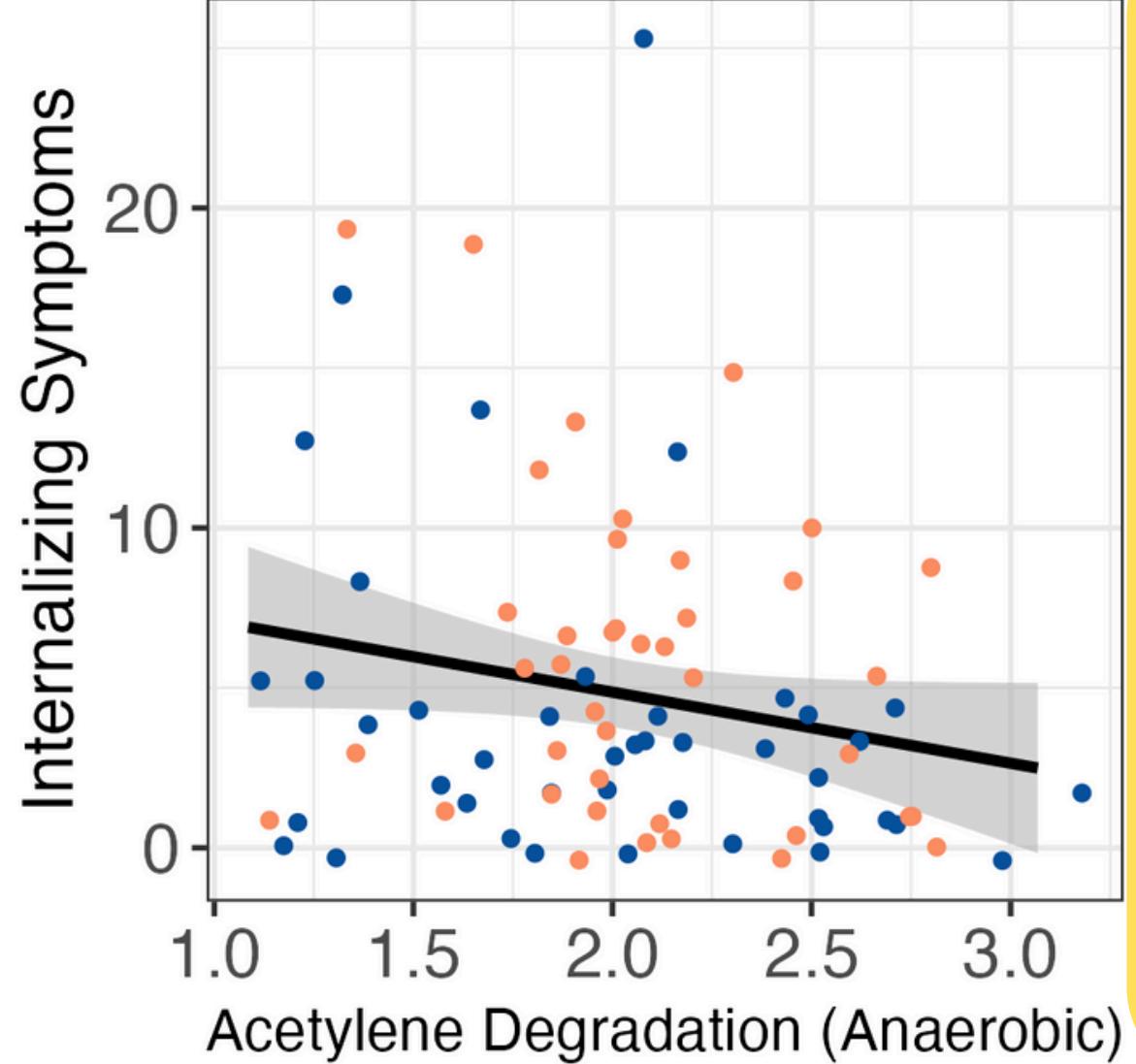
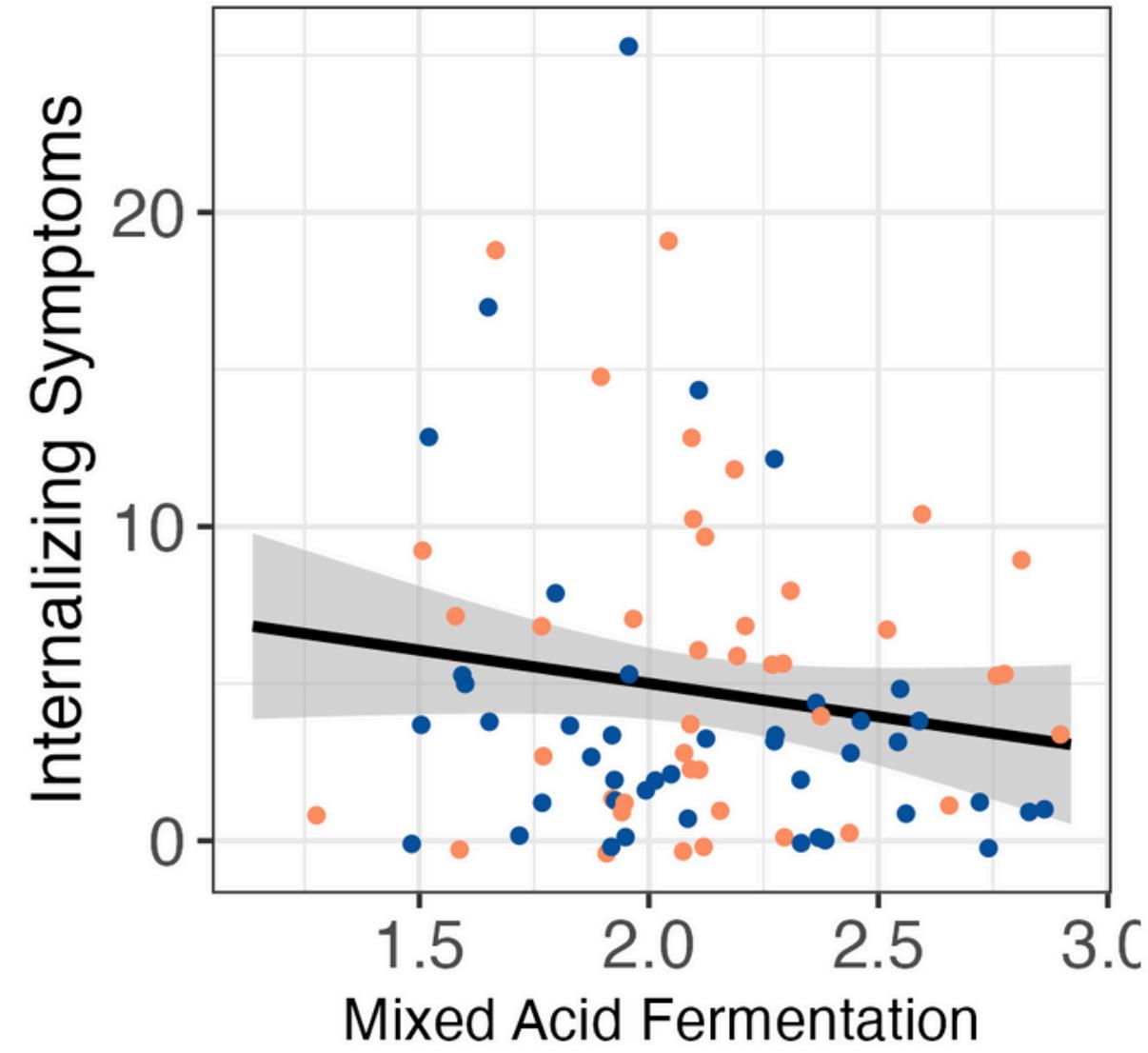


Short-chain fatty acids?

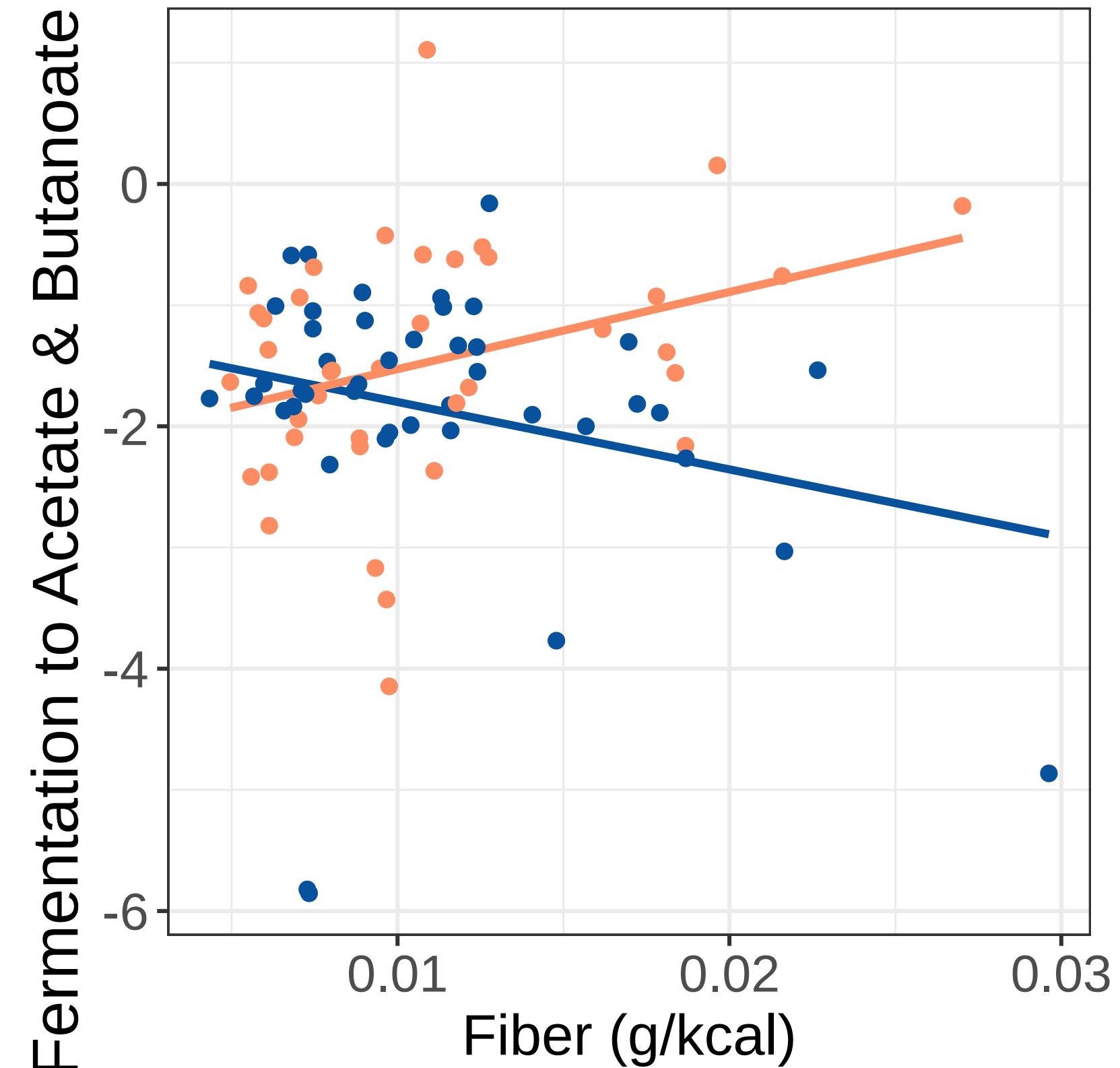
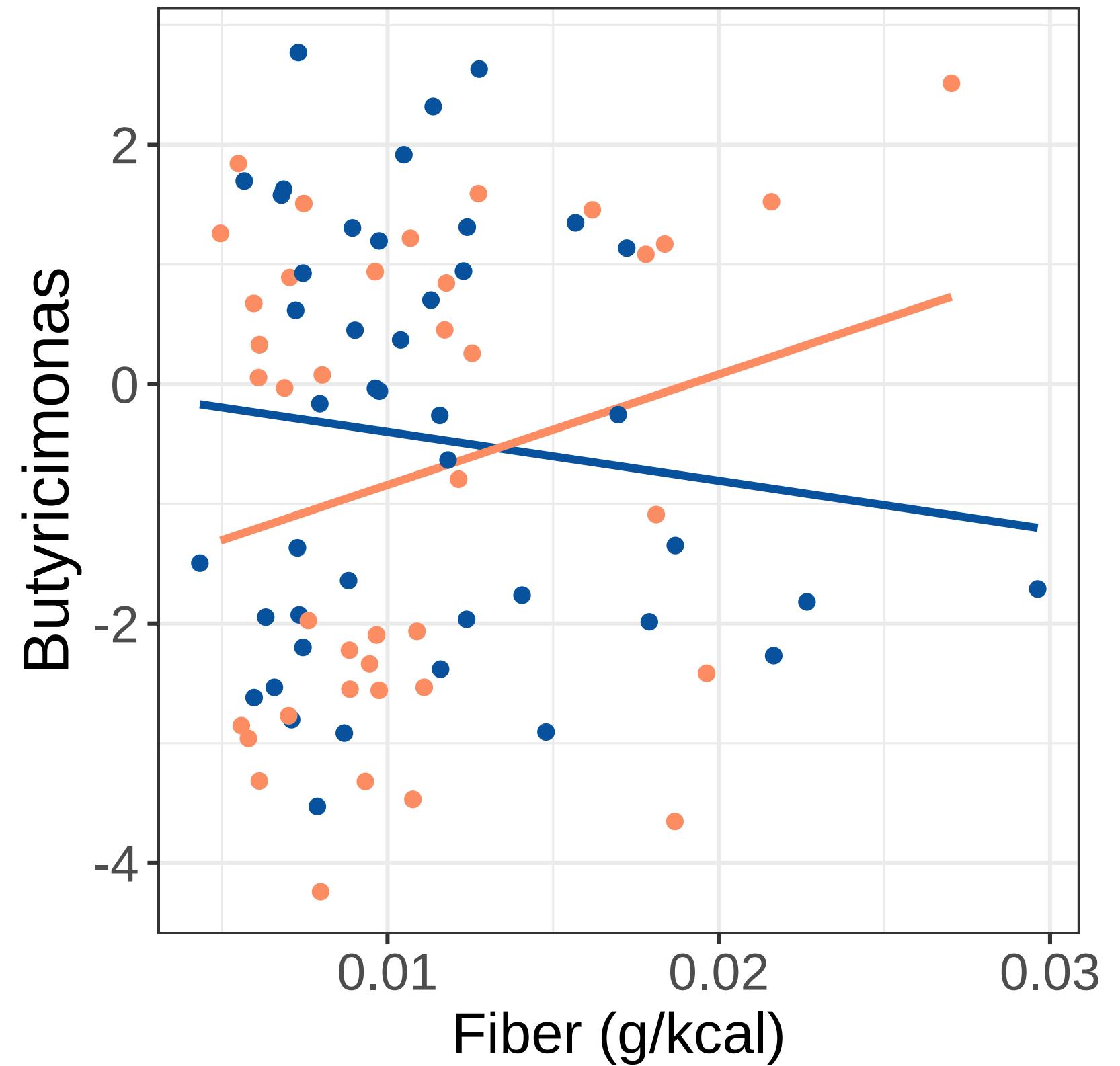
● Comparison ● Interpersonal Adversity



● Comparison ● Interpersonal Adversity



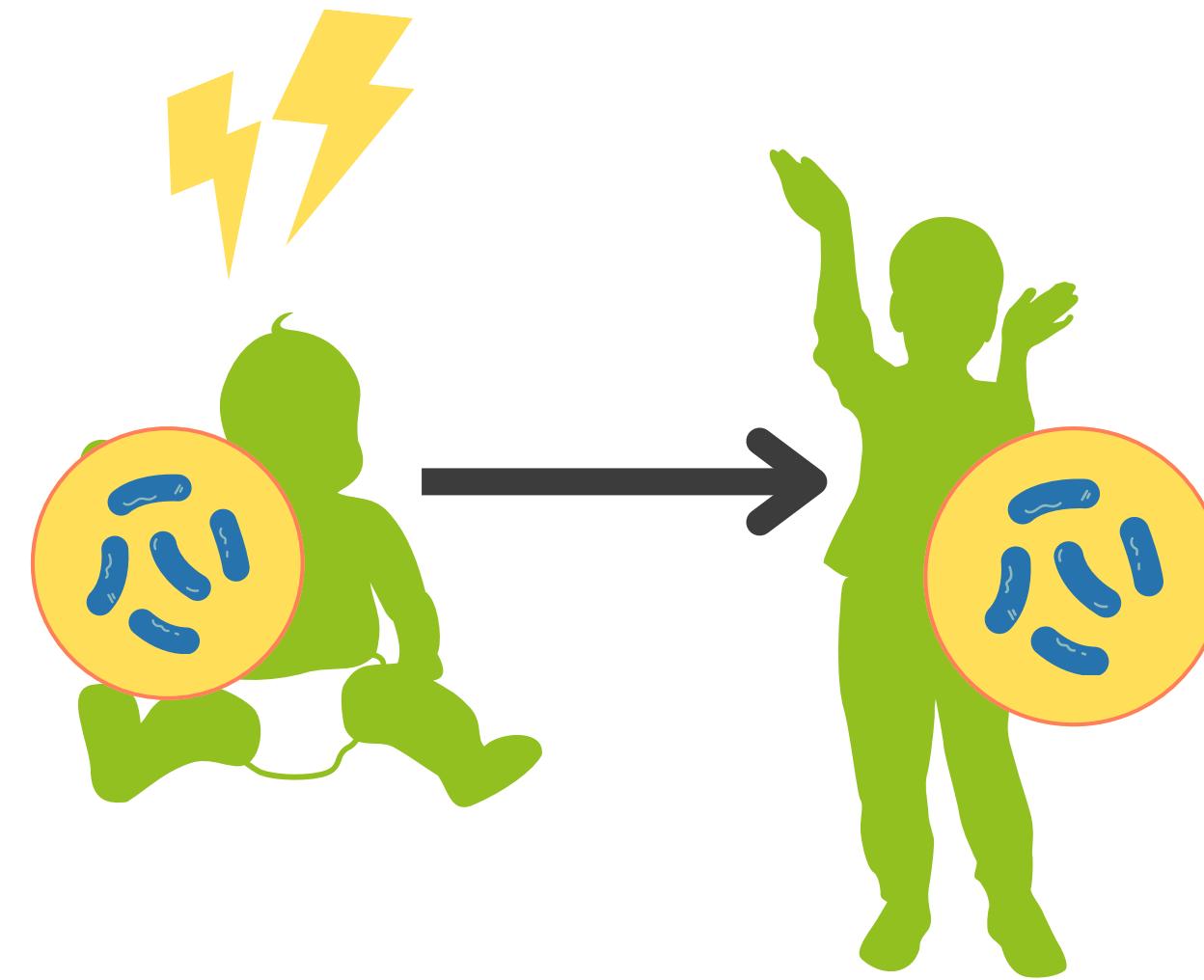
● Comparison ● Interpersonal Adversity



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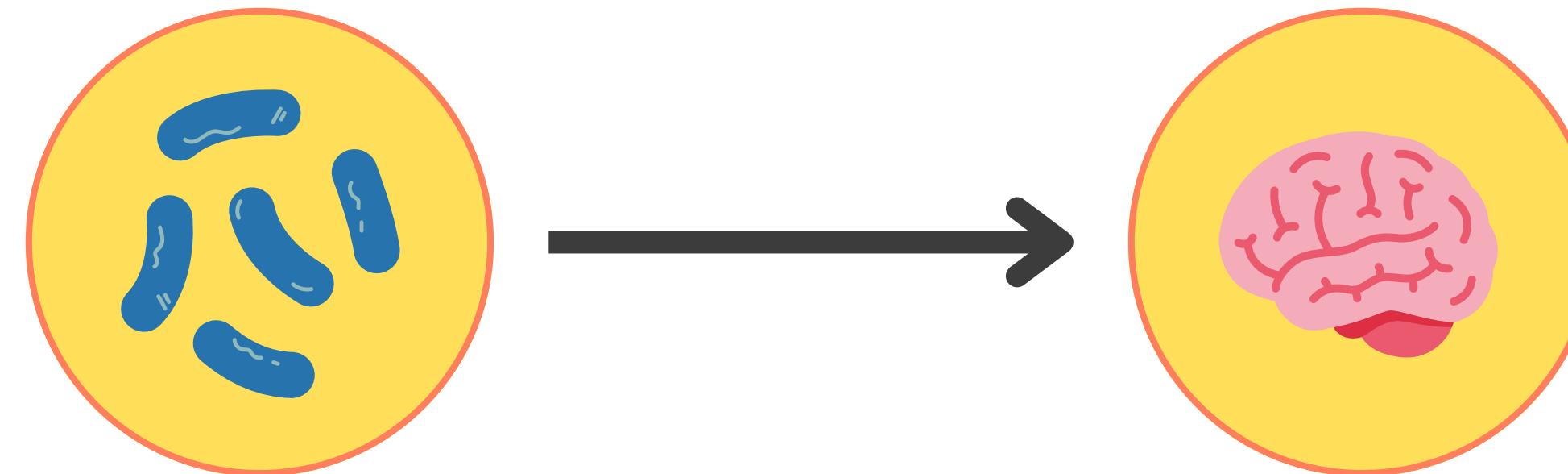
Takeaways:

- Adversity alters dynamic microbiome differences across age



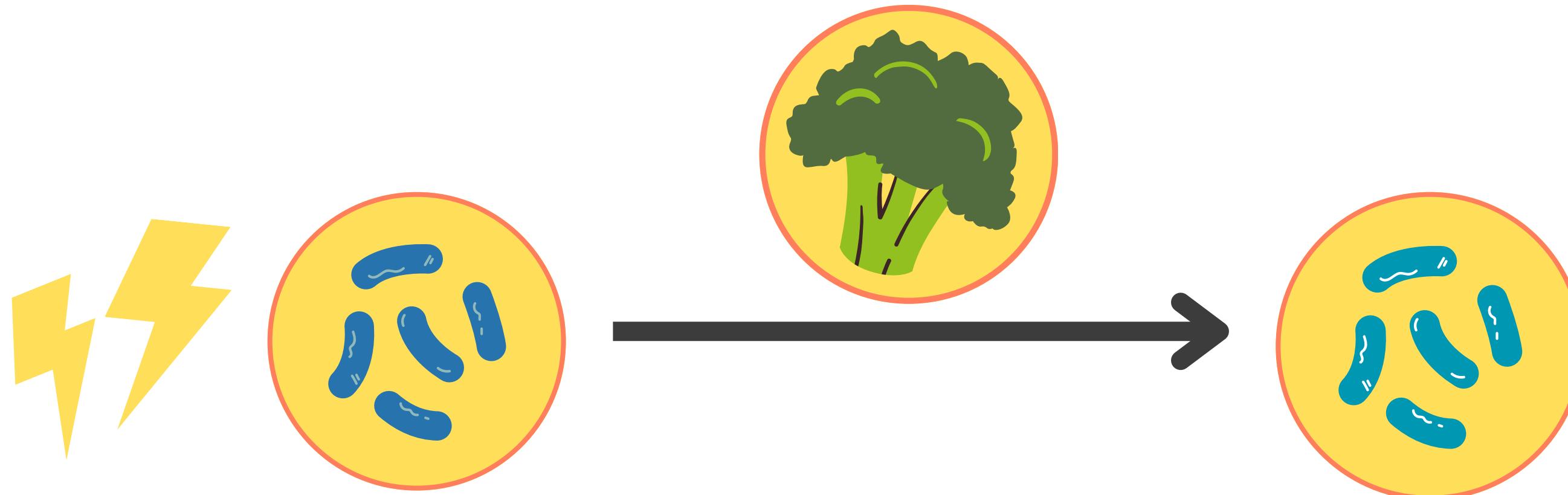
Takeaways:

- Adversity alters dynamic microbiome differences across age
- Gut bacteria and SCFAs are linked to internalizing symptoms



Takeaways:

- Adversity alters dynamic microbiome differences across age
- Gut bacteria and SCFAs are linked to internalizing symptoms
- Microbiomes of adversity-exposed are uniquely linked with diet



Future Directions:

- Longitudinal data



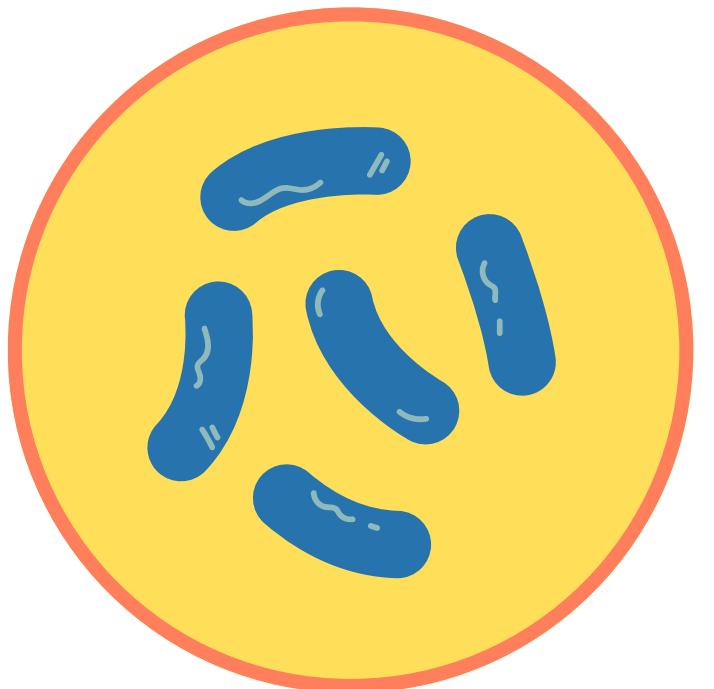
Future Directions:

- Longitudinal data
- Higher-resolution measures



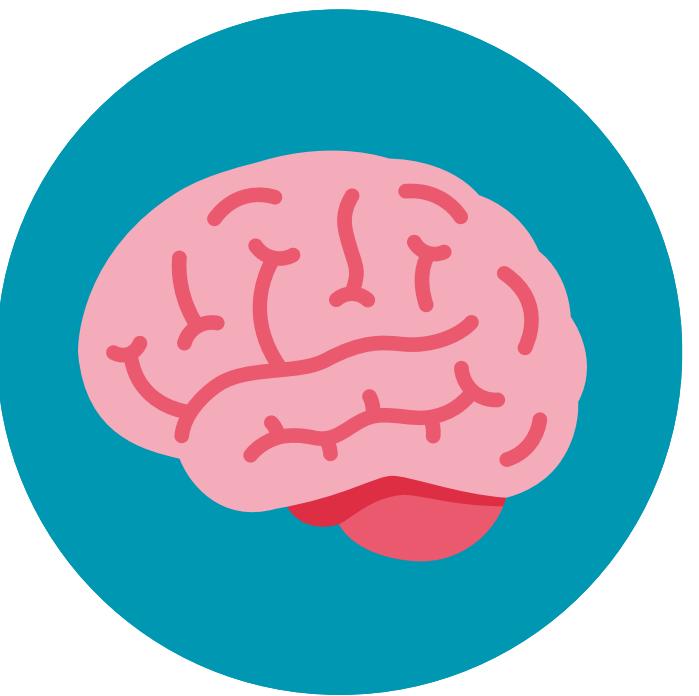
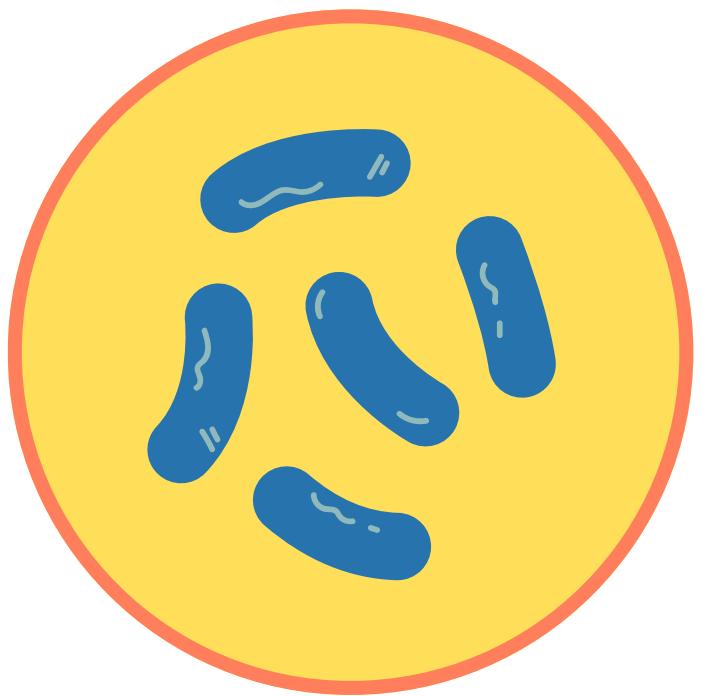
Future Directions:

- Longitudinal data
- Higher-resolution measures
- Multiple data types



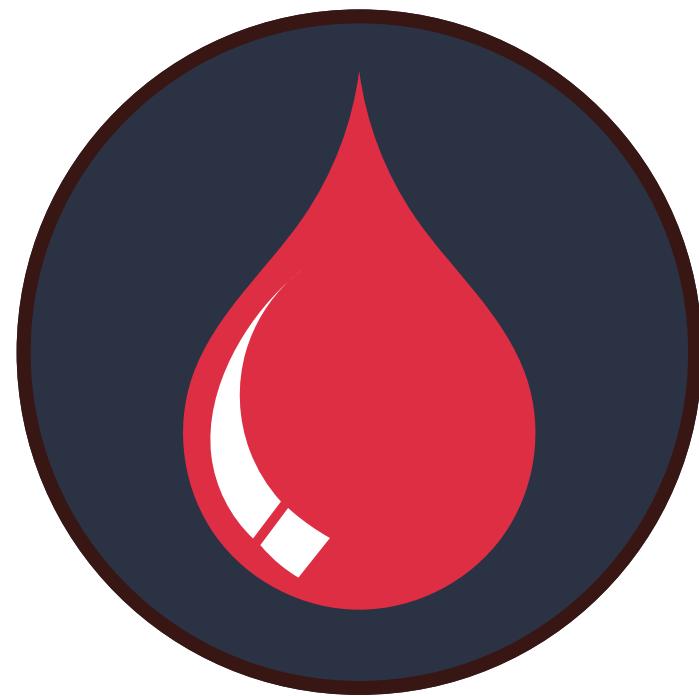
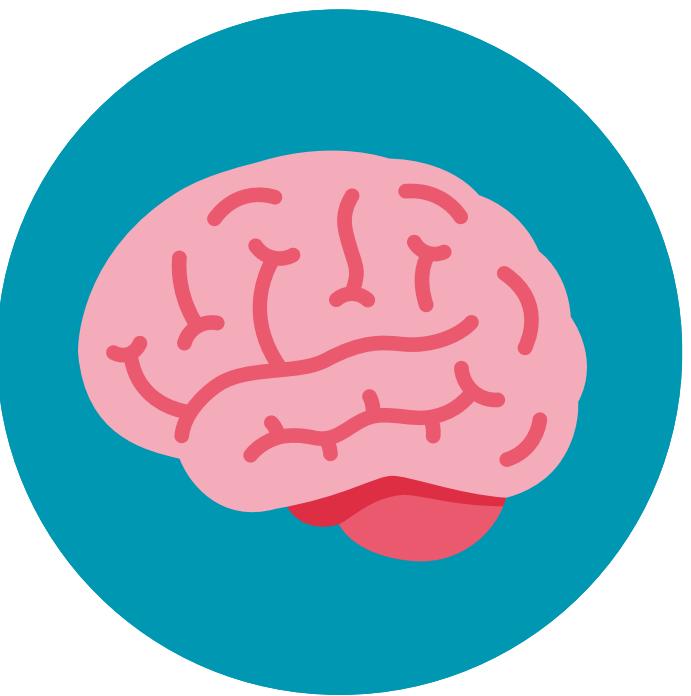
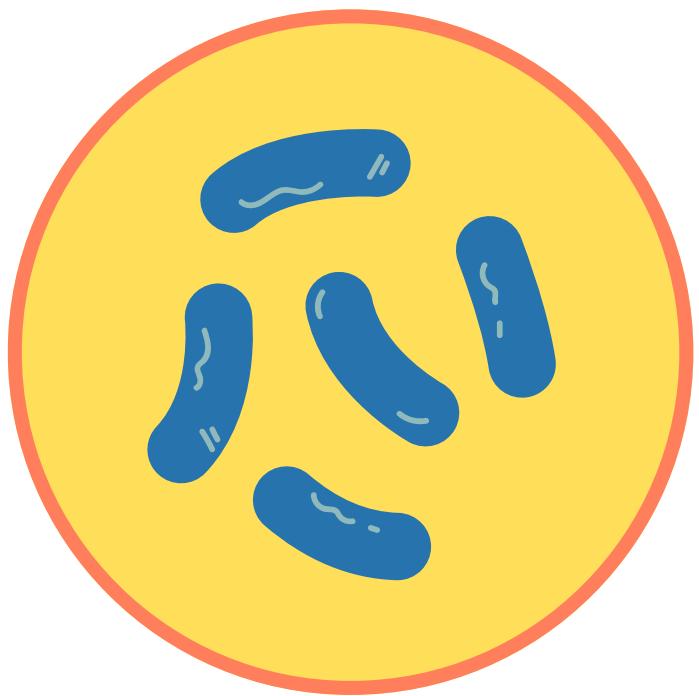
Future Directions:

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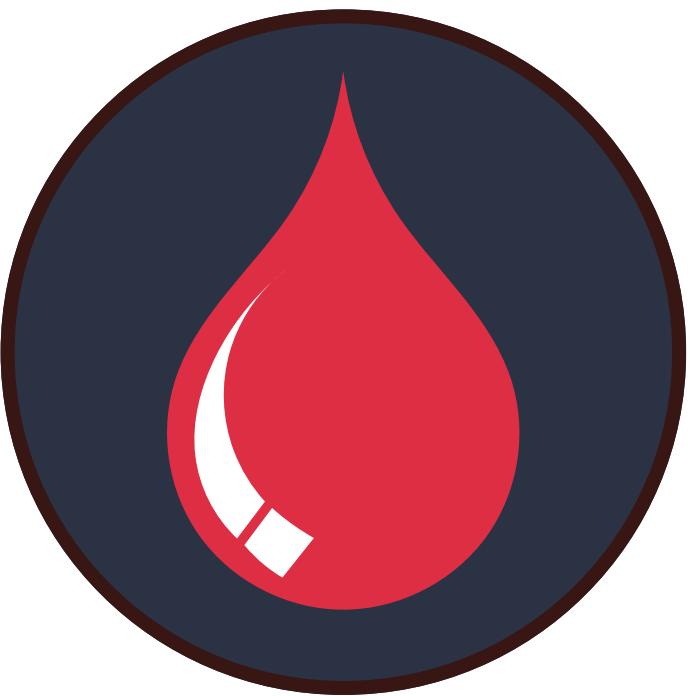
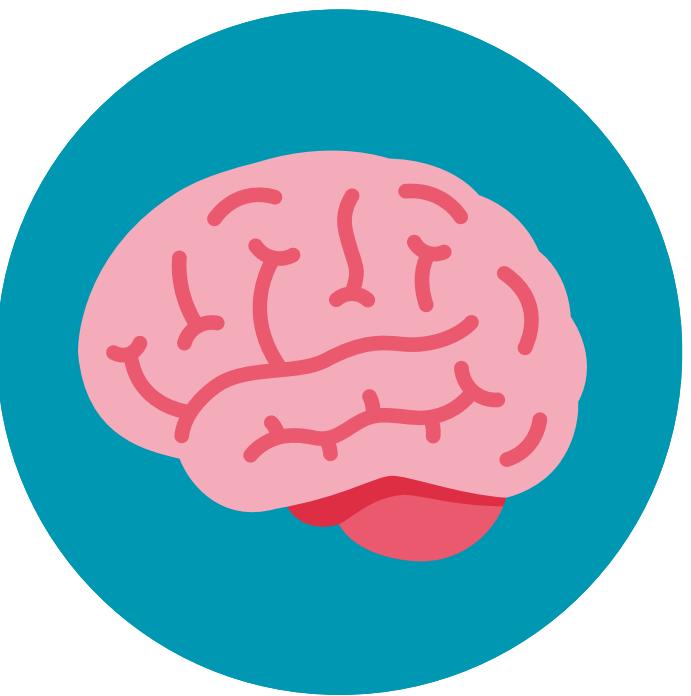
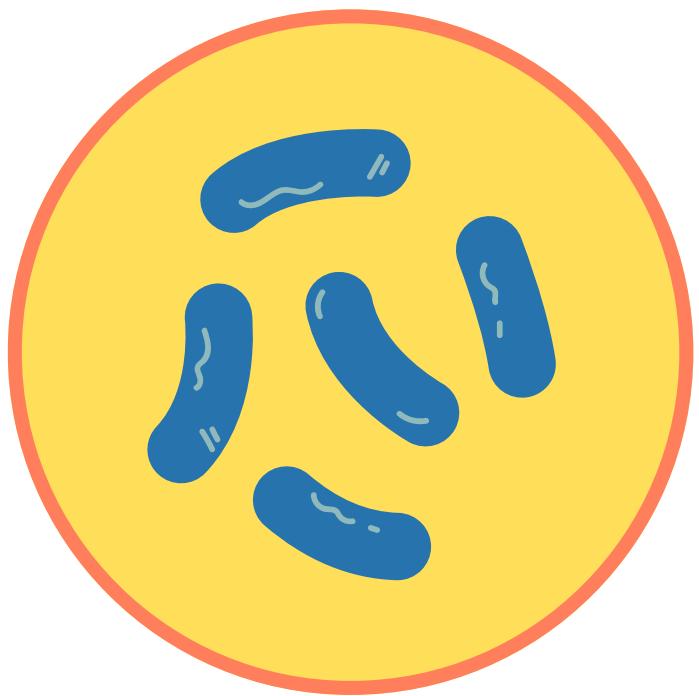
Future Directions:

- Longitudinal data
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Future Directions:

- Longitudinal data
- Higher-resolution measures
- Multiple data types



Future Directions:

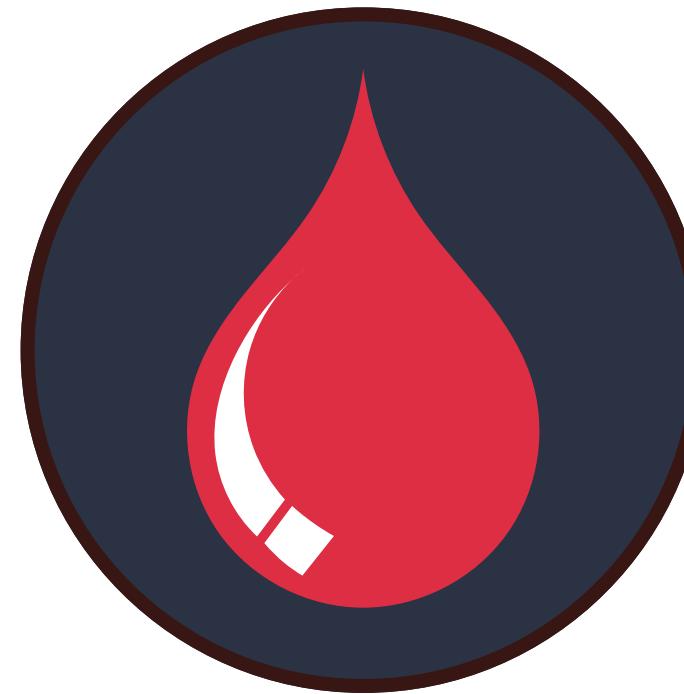
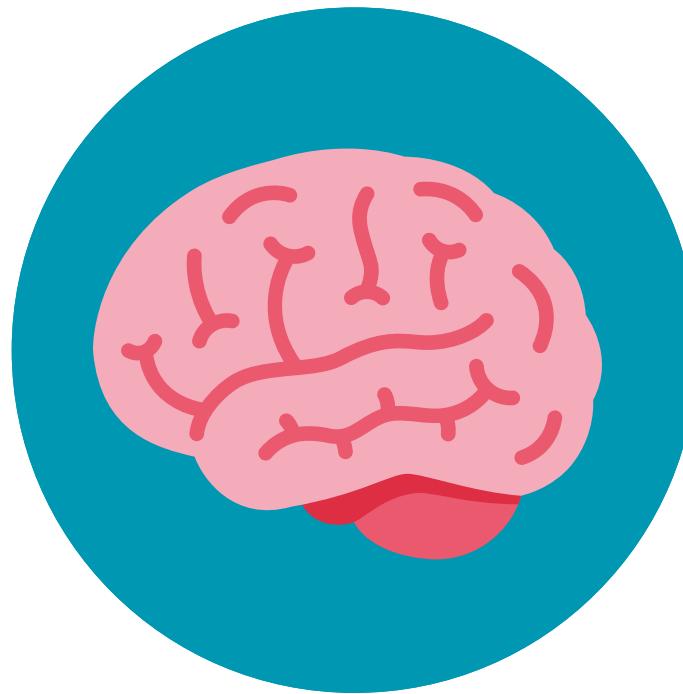
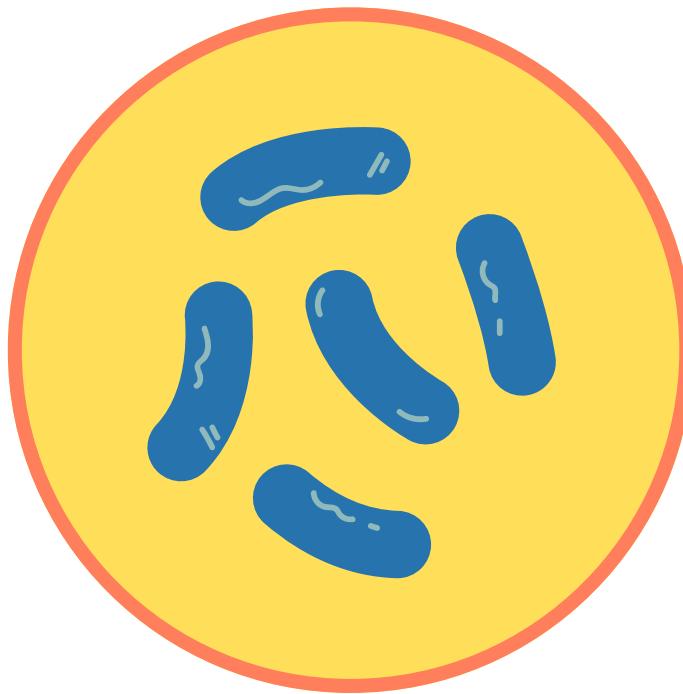
- Longitudinal data
- Higher-resolution measures
- Multiple data types

Characteristics of the oral microbiome in youth exposed to caregiving adversity

Naomi N. Gancz  , Francesca R. Querdasi, Kristen A. Chu, Emily Towner, Eason Taylor,
Bridget L. Callaghan

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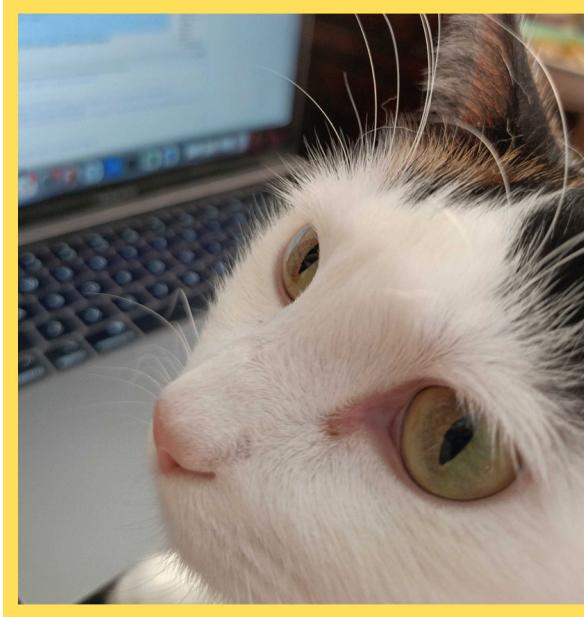


Thank you

Mentors
Bridget Callaghan

Collaborators
BABLab
Nim Tottenham

Funding Sources
NIMH
Goodman-Luskin
Microbiome Center
UCLA Grad Division



Get in touch!

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