Associations of depressed mood and lifestyle with brain structure

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Depression & brain

Schmaal et al., 2016, 2017; Webb et al., 2014
Lifestyle & brain

Topiwala et al., 2017, Vňuková et al., 2017; Garcia-Garcia et al., 2018; Scullin, 2017; Erickson et al., 2014; Opel et al., 2020;
Depression & lifestyle

Lifestyle → Depression

- Lifestyle factors (e.g., diet, exercise)
- Depression symptoms and behaviors

Penninx et al., 2017
Depression, lifestyle & brain

Lifestyle + Depression → Brain structure

Factors:
- Exercise
- Sleep
- Weight gain
- Alcohol
- Smoking

Questions:
- What is the relationship between lifestyle and depression?
- How does depression affect brain structure?
Depression, lifestyle & brain change
Netherlands Study of Depression and Anxiety (NESDA)

– People with and without depression and/or anxiety

• 348 participants
• Longitudinal: 2-years (n=177), 9-years (n=84)
• 18-58 years
Results depression

Depression

Brain structure

Lifebrain
Results lifestyle

Moderate alcohol consumption

Lifestyle

Brain structure
Results lifestyle

Lifestyle

Brain structure
Results depression & lifestyle

- Lifestyle
- Depression
- Brain structure
Results lifestyle

Moderate alcohol consumption

Lifestyle + Depression

Brain structure

Lifebrain
Depression, lifestyle & brain change

Lifestyle + Depression = Brain change
Depression, lifestyle & brain change

Lifestyle + Depression → Brain change

Lifebrain
Conclusion & implications

• Depression & BMI impact brain health, independent of each other

• Positive effect of moderate alcohol consumption on brain health?
  – But: non-drinkers might not be the most healthy population (“sick-quitter”)

• Depression and lifestyle not predictive of brain change over time
  – Causality still unclear
    → Effects of depression might happen early in disease?
    → Risk factor for depression?
    → Prevention / early treatment is crucial
  – Trends for effects of physical activity and BMI
    → Healthy lifestyle now = healthy brain later?
    → More research needed
Future directions: Lifebrain

• Depressed mood, lifestyle & brain in all Lifebrain cohorts
  – Total sample size ~ 3300
  – Subclinical depressed mood

• Effect of age on associations
  – Broad age range (0-100)
WEBSITE: lifebrain.uio.no
FACEBOOK: facebook.com/lifebrain.h2020

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