The Role of BMI on Cognition Following Acute Physical Activity in Preadolescent Children

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Aim: Examine the relationship between BMI and single bouts of exercise on acute changes in inhibitory control aspects of cognition.

Approach

Reanalysis of data from 4 studies featuring:
- flanker tasks
- walking vs. resting interventions
- 116 participants total

Repeated measures:
- Intervention (2:PA, Rest) x Congruency (2: congruent, incongruent)

Correlations and regressions:
- BMI x Flanker after rest
- BMI x Flanker after exercise

Results

As BMI increases, the beneficial effect of exercise is less pronounced.

Impact

This addresses the problem that:
- There has been an increase in obesity rates and sedentary lifestyles in the United States
- This can bear harmful physical implications and negatively impact cognitive health
- Inhibition underlies successful scholastic performance
- Exercise may have beneficial effects on educational attainment

DEMOGRAPHICS

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Projected Obesity Rates in United States