Amygdala volume and emotion regulation in aging

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Introduction

• General cognitive ability declines in older adulthood1. However, older adults show higher levels of emotional well-being2.
• Emotional regulation is one determining factor for understanding affective change with age3.
• The Amygadla plays a key role in emotion and its volume decreases with age4,5.

Do emotional reactivity and regulation change over adulthood and do such change relate to amygdala volume?

Hypotheses

• Older adults regulate negative emotion more effectively.
• Older adults are less sensitive to negative emotional content and more sensitive to positive emotions.
• Amygdala volume is associated with emotional sensitivity and regulation.

Methods

• Resting state & anatomy from Cam-CAN repository6: 3T Siemens TIM Trio, 32 channel head coil.
• Age 18-88. Young group: 18-30 (N = 31); middle group: 31-59 (N = 116); older group: 60-88 (N = 112).

Results: Emotion Reactivity

Emotion Reactivity decreased with Age and increased with Amygdala Volume

Results: Subjective Emotion Regulation

Subjective Emotion Regulation decreased with Age and increased with Amygdala Volume

Summary

• Subjective emotion regulation declined with age, but this effect was not explained by decline in amygdala volume.
• Emotional reactivity also declined with age.
• The relation between negative emotional reactivity and amygdala volume differed among age groups.
• Young adults: negative reactivity decreased with increased amygdala volume, suggesting better regulation.
• Older adults: negative reactivity increased with increased amygdala volume, suggesting preserved function.

References