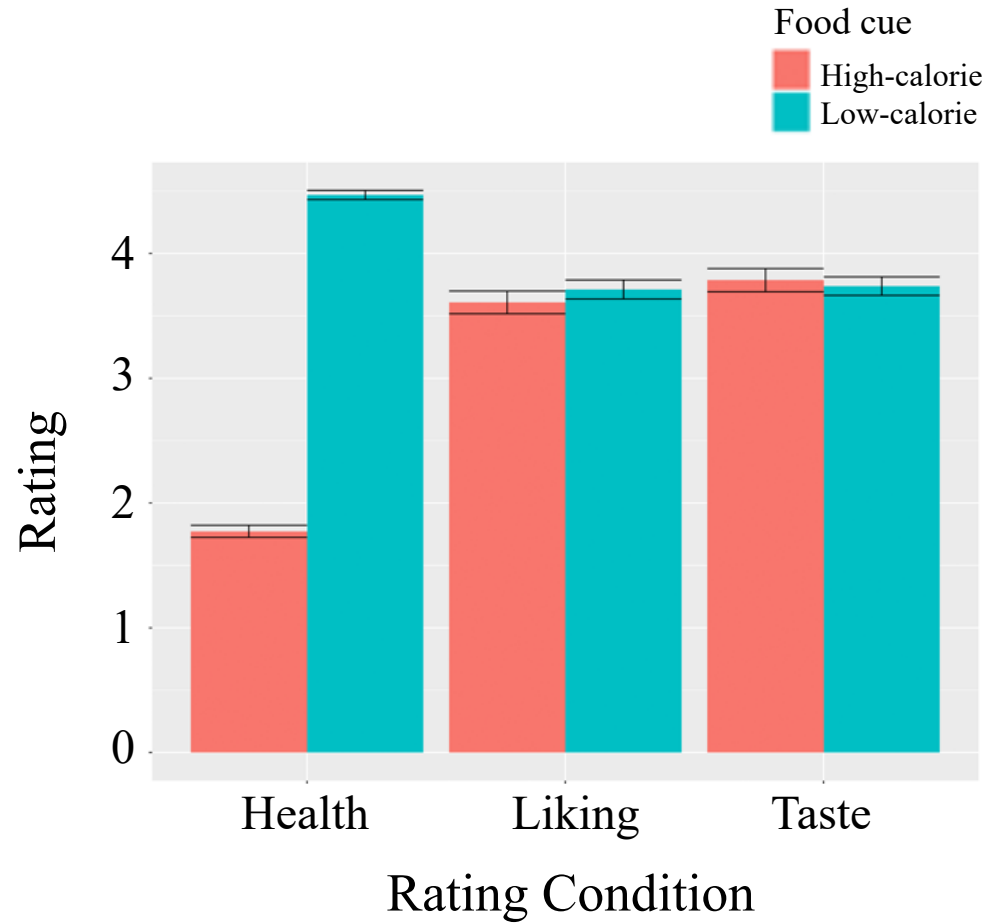
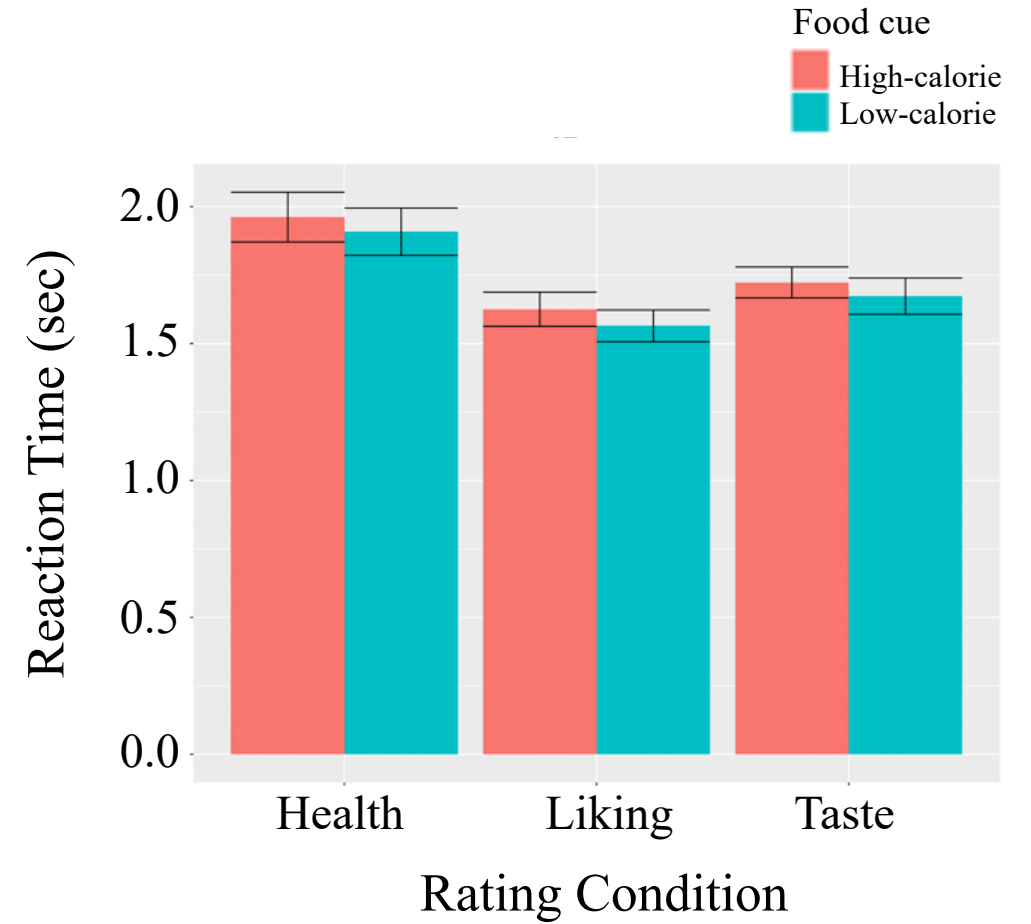


(A)

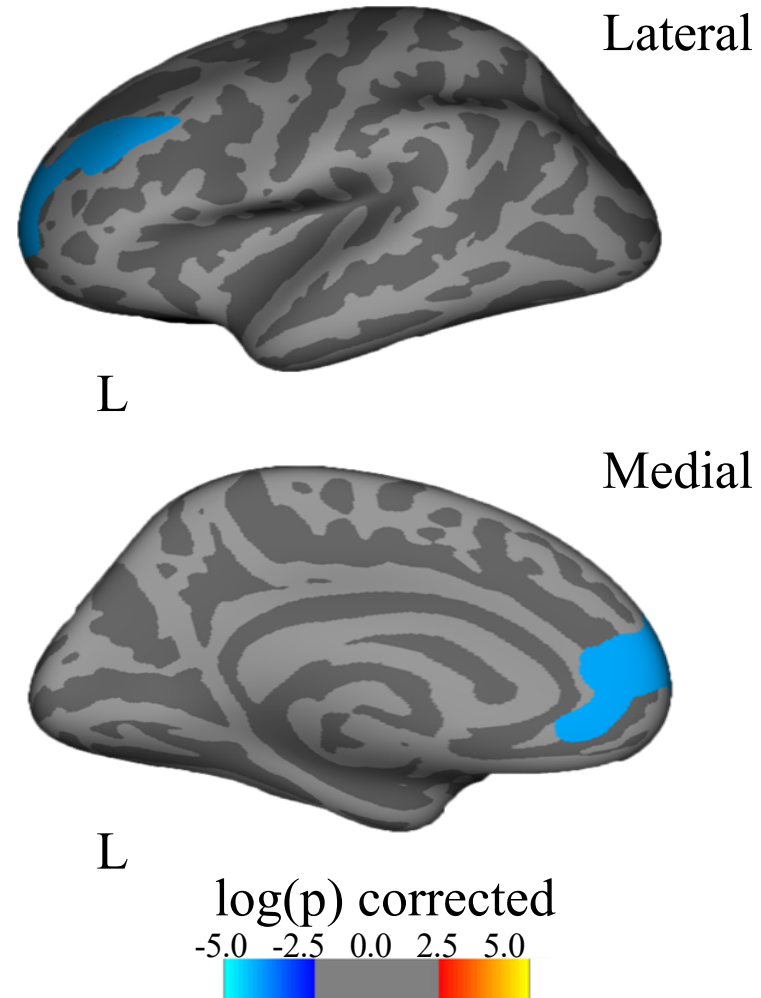


(B)

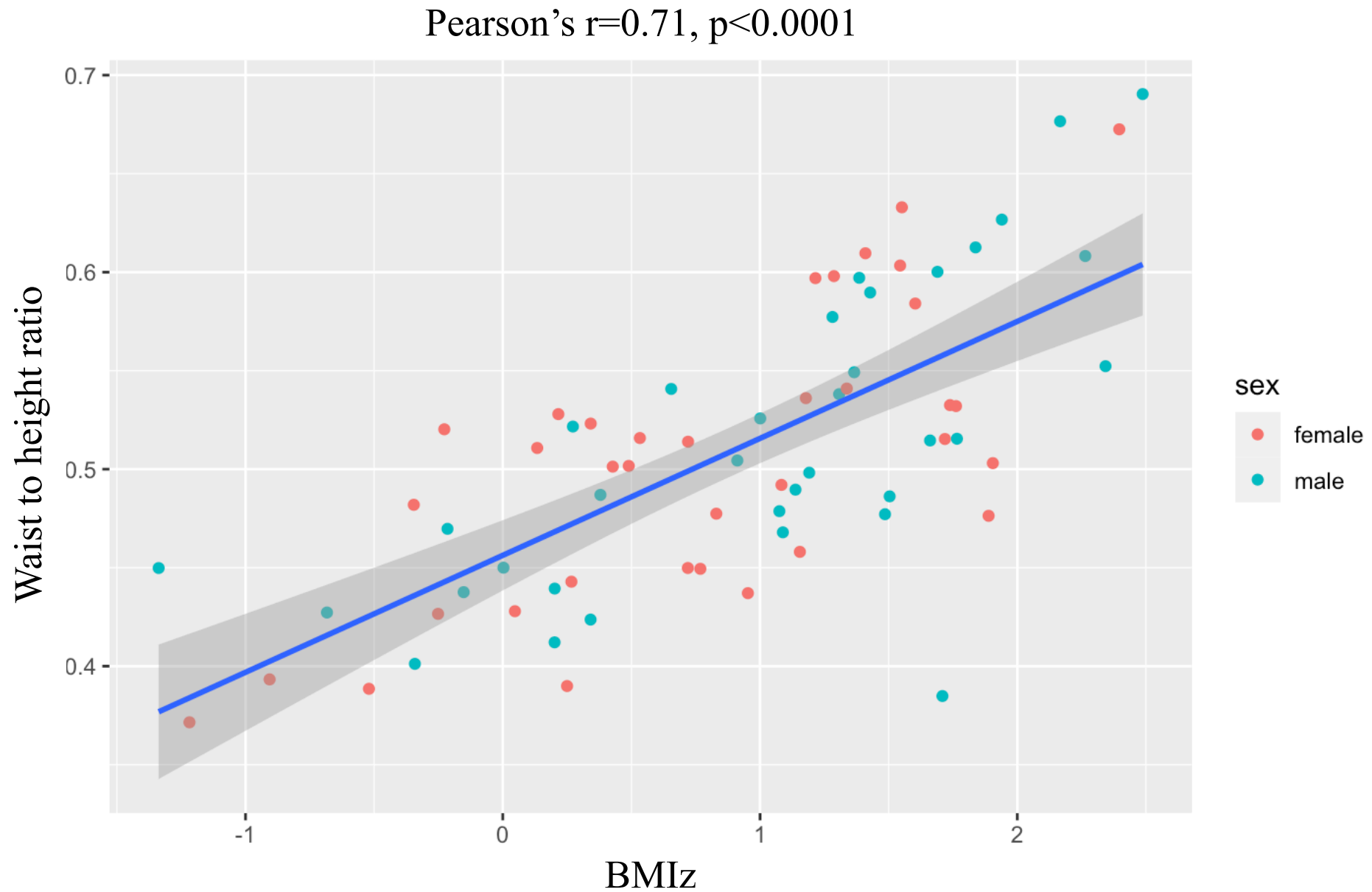


**Figure 1.** Ratings and reaction times for three rating conditions (health, liking, and taste) of 60 food cue stimuli (30 high-calorie, 30 low-calorie).

## Body Mass Index z-score in Relation to Cortical Thickness



**Figure 2.** Negative associations between BMIz and cortical thickness adjusting for age and sex (multiple comparisons corrected at  $p < 0.05$ )



**Figure 3.** Associations between BMIz and Waist-to-Height Ratio

**STable 1.** Ratings of Taste and Health**Marginal Effects of the LME Model of Ratings for Health & Taste**

|   | <b>numDF</b> | <b>denDF</b> | <b>F-value</b> | <b><i>p</i></b> |
|---|--------------|--------------|----------------|-----------------|
| Rating condition (health, taste)                      | 1            | 207          | 95.229         | < <b>0.0001</b> |
| Food cue (high-calorie, low-calorie)                  | 1            | 207          | 405.704        | < <b>0.0001</b> |
| Waist-to-height ratio                                 | 1            | 67           | 1.195          | 0.278           |
| Age at study visit                                    | 1            | 67           | 1.552          | 0.217           |
| Sex   | 1            | 67           | 0.002          | 0.963           |
| Rating condition by Food cue                          | 1            | 207          | 435.509        | < <b>0.0001</b> |
| Rating condition by Waist-to-height ratio             | 1            | 207          | 3.475          | 0.064           |
| Food cue by Waist-to-height ratio                     | 1            | 207          | 0.713          | 0.399           |
| Rating condition by Food cue by Waist-to-height ratio | 1            | 207          | 1.359          | 0.245           |

**Marginal Effects of the LME Model of RT for Health & Taste Ratings**

|   | <b>numDF</b> | <b>denDF</b> | <b>F-value</b> | <b><i>p</i></b> |
|---|--------------|--------------|----------------|-----------------|
| Rating condition                                      | 1            | 207          | 24.252         | < <b>0.0001</b> |
| Food cue  | 1            | 207          | 1.164          | 0.282           |
| Waist-to-height ratio                                 | 1            | 67           | 3.902          | 0.052           |
| Age at study visit                                    | 1            | 67           | 3.627          | 0.061           |
| Sex   | 1            | 67           | 1.157          | 0.286           |
| Rating condition by Food cue                          | 1            | 207          | 0.002          | 0.969           |
| Rating condition by Waist-to-height ratio             | 1            | 207          | 0.004          | 0.949           |
| Food cue by Waist-to-height ratio                     | 1            | 207          | 1.619          | 0.205           |
| Rating condition by Food cue by Waist-to-height ratio | 1            | 207          | 0.146          | 0.703           |

**STable 2.** Ratings of “Like to Eat”

**Marginal Effects of the LME model of Liking Ratings**

|                                      | <b>numDF</b> | <b>denDF</b> | <b>F-value</b> | <b><i>p</i></b> |
|--------------------------------------|--------------|--------------|----------------|-----------------|
| Food cue (high-calorie, low-calorie) | 1            | 69           | 0.737          | 0.394           |
| Waist-to-height ratio                | 1            | 67           | 0.046          | 0.831           |
| Age at study visit                   | 1            | 67           | 0.063          | 0.803           |
| Sex                                  | 1            | 67           | 0.129          | 0.720           |
| Food cue by Waist-to-height ratio    | 1            | 69           | 0.066          | 0.798           |

**Marginal Effects of the LME model of Reaction Time for Liking Ratings**

|                                      | <b>numDF</b> | <b>denDF</b> | <b>F-value</b> | <b><i>p</i></b> |
|--------------------------------------|--------------|--------------|----------------|-----------------|
| Food cue (high-calorie, low-calorie) | 1            | 69           | 2.034          | 0.158           |
| Waist-to-height ratio                | 1            | 67           | 3.764          | 0.057           |
| Age at study visit                   | 1            | 67           | 4.684          | <b>0.034</b>    |
| Sex                                  | 1            | 67           | 0.331          | 0.567           |
| Food cue by Waist-to-height ratio    | 1            | 69           | 4.613          | <b>0.035</b>    |

**STable 3.** Negative Associations between BMI z-score and Cortical Thickness

| Cluster Location        | Hemisphere | Cluster size<br>(mm <sup>2</sup> ) | MNI Coordinates |      |      |
|-------------------------|------------|------------------------------------|-----------------|------|------|
|                         |            |                                    | X               | Y    | Z    |
| Superior Frontal Cortex | L          | 1369.15                            | -14.6           | 59.4 | 13.8 |

**STable 4.** Associations Between BMIz and Amygdala Volumes

| <b>Amygdala Volumes (mm<sup>3</sup>)</b>   | <b>Estimates</b> | <b>95% CI</b> | <b><i>p</i></b> |
|--|------------------|---------------|-----------------|
| Main Effect of BMIz                        |                  |               |                 |
| Total Amygdala                             | 29.68            | -5.86 – 65.23 | 0.10            |
| Dorsal and intermediate basolateral (BLDI) | 3.28             | -1.06 – 7.62  | 0.13            |
| Cortical and Medial Nuclei (CMN)           | 0.71             | -3.16 – 4.58  | 0.72            |
| Lateral Nucleus (LA)                       | 5.80             | -2.88 – 14.48 | 0.19            |
| BMIz-by-age Interaction                    |                  |               |                 |
| Central Nucleus (CEN)                      | 0.24             | 0.02 – 0.47   | 0.03            |

**STable 5.** BMIz Related Cortical Thickness and Brain Volume Effects on SCSR Controlling for BMIz

| <b>Predictors for models</b>                                    | <b>Estimates</b> | <b>95% CI</b>  | <b><i>p</i></b> | <b>R<sup>2</sup></b> |
|---|------------------|----------------|-----------------|----------------------|
| Left Superior Frontal thickness                                 | 0.053            | -0.417 – 0.523 | 0.823           | 0.022                |
| Right Central Nucleus Volume                                    | 0.005            | -0.007 – 0.018 | 0.404           | 0.036                |
| Left Central Nucleus Volume                                     | -0.001           | -0.016 – 0.013 | 0.863           | 0.026                |
| Right Central Nucleus Volume-by-Left Superior Frontal thickness | 0.036            | -0.015 – 0.086 | 0.161           | 0.058                |
| Left Central Nucleus Volume-by-Left Superior Frontal thickness  | 0.050            | 0.007 – 0.094  | <b>0.024</b>    | 0.114                |