Within-Subject Variability and the Influence of Exercise Training History on the Resting Plasma Metabolome in Men
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Methods

Participants

<table>
<thead>
<tr>
<th>Group</th>
<th>Time since last meal (mean±SD)</th>
<th>Time since most recent exercise bout [median (IQR)]</th>
<th>Days between visits [days, mean (SD)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>12.0 ±1.2h (37.3 to 63.0)</td>
<td>48.0h</td>
<td>9 ±4</td>
</tr>
<tr>
<td>Endurance</td>
<td>12.4 ±1.3h (36.4 to 48.0)</td>
<td>38.8h</td>
<td>11 ±10</td>
</tr>
<tr>
<td>Strength</td>
<td>11.7 ±1.5h (37.5 to 45.4)</td>
<td>41.2h</td>
<td>9 ±5</td>
</tr>
</tbody>
</table>

Participants arrived to the lab (between 6 and 10AM) on two separate occasions to provide blood samples.

Participants abstained from exercise (>24h) and were overnight fasted for each visit.

Participants were provided standardized meals to consume the day before each visit.

200µL aliquots of plasma analysed via targeted LC/MS/MS assays.

166 distinct features identified.

The reliability of metabolite concentrations was estimated using intraclass correlation coefficients and metabolites were analysed between and within groups.

Results

• The relative reliability of resting plasma metabolite concentrations assessed by intraclass correlation coefficient (ICC) had a median of 0.49

• ~48% of metabolites displaying good-to-excellent reliability

• 44 metabolites were significantly different between groups
  • END vs. CON, 42 metabolites
  • STR vs. CON, 10 metabolites
  • END vs. STR, 5 metabolites