A HIGH CONTENT OF SLOWLY DIGESTIBLE STARCH DECREASES GLYCEMIC AND INSULINEMIC RESPONSES SIMILARLY IN ASIANS AND CAUCASIANS

Glucose intolerance and type 2 diabetes are increasing worldwide
- People with an Asian phenotype tend to have a lower glucose tolerance compared to people with Caucasian phenotype
- In Caucasian population, consumption of products with a high Slowly Digestible Starch (SDS) content significantly decreases postprandial glycaemic and insulinemic responses compared to low-SDS products

**RESULTS**

Five products with varying starch digestibility profiles (determined by SDS in-vitro method (Englyst et al., 1999)) and glucose solution as control were tested. A randomized cross-over controlled study was set up to study the products’ Glycaemic and Insulinemic Indexes (GI and II, norm ISO-26642(2010)) and the postprandial responses over 2 hours. 12 Caucasian and 12 Asian participants were recruited (26.0 ± 1.1 yo vs. 28.0 ± 2.6 yo; body mass index of 22.4 ± 0.5 kg/m² vs. 21.4 ± 0.3 kg/m² respectively, no significant difference between groups).

High-SDS products:
- are low GI
- decrease glycaemic peak value by about 1mM in both ethnic groups

**CONCLUSIONS**

- Our study demonstrates that consumption of products with a high-SDS content similarly decreases the glycaemic and insulinemic responses in both Asian and Caucasian participants.
- This decrease may be beneficial in the long term to prevent metabolic diseases.

**BACKGROUND**

Aim: evaluate the effect of consuming products with varying levels of SDS on postprandial glycaemic and insulinemic responses, both in Asian and Caucasian populations.

**METHODS**

- Ethnicity does not explain postprandial glycemic & insulin responses (models on GI, II, iAUC, peak value)
- Product effect, due to SDS content, is the only significant parameter to differentiate the groups of products

**TABLE**

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Starch Digestibility (g/100g)</th>
<th>Glycemic Index</th>
<th>Insulin Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RDS</td>
<td>SDS</td>
<td>Asian</td>
</tr>
<tr>
<td>High SDS biscuit 1</td>
<td>27</td>
<td>28</td>
<td>54 ± 5</td>
</tr>
<tr>
<td>High SDS biscuit 2</td>
<td>23</td>
<td>26</td>
<td>44 ± 3</td>
</tr>
<tr>
<td>High SDS biscuit 3</td>
<td>24</td>
<td>28</td>
<td>51 ± 4</td>
</tr>
<tr>
<td>Extruded cereals</td>
<td>77</td>
<td>2</td>
<td>90 ± 6</td>
</tr>
<tr>
<td>Extruded cereals with fat filling</td>
<td>39</td>
<td>0.1</td>
<td>64 ± 4</td>
</tr>
<tr>
<td>Glucose solution</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

**Graphs**

- Glycaemic and insulinemic responses for Asian and Caucasian populations
- High-SDS products lower mean insulin demand compared to Low-SDS products:
  - by 29% in Asians
  - by 32% in Caucasians

**Footnotes**

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