

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

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BACKGROUND

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

→ 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

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).

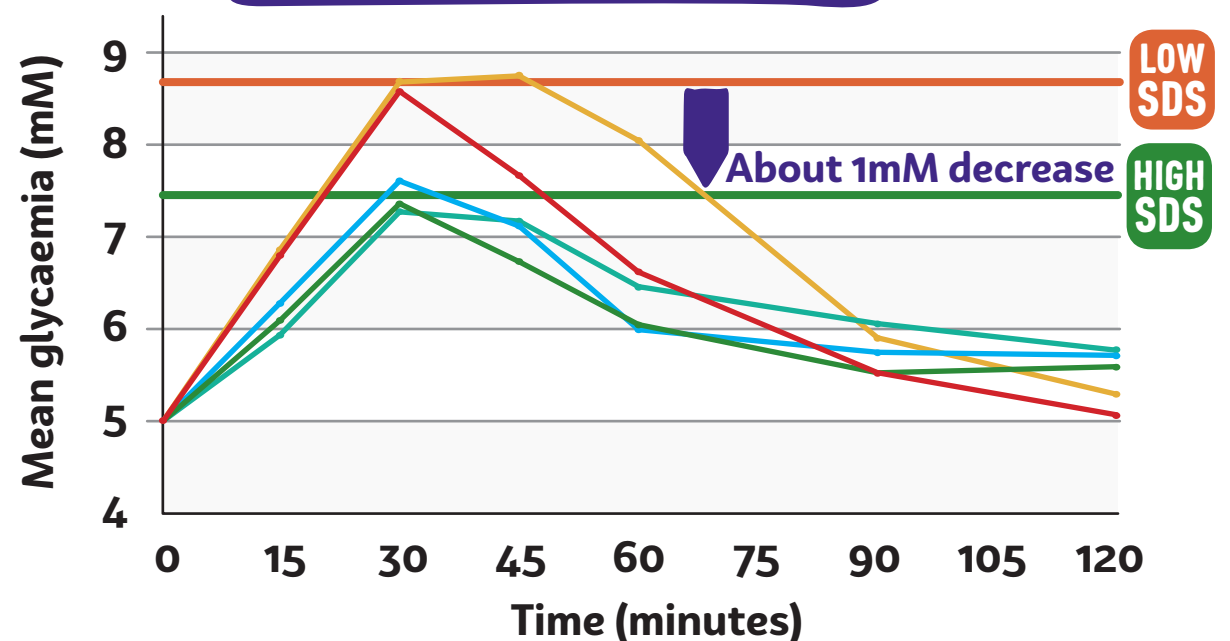
RESULTS

Products	Starch digestibility (g/100g)		Glycemic Index		Insulin Index	
	RDS	SDS	Asian	Caucasian	Asian	Caucasian
High SDS biscuit 1	27	28	54 ± 5 C	48 ± 4	59 ± 7 B	54 ± 4
High SDS biscuit 2	23	26	44 ± 3 C	40 ± 4	58 ± 3 B	56 ± 4
High SDS biscuit 3	24	28	51 ± 4 C	46 ± 5	56 ± 3 B	58 ± 4
Extruded cereals	77	2	90 ± 6 A	79 ± 6	84 ± 4 A	80 ± 5
Extruded cereals with fat filling	39	0,1	64 ± 4 B	60 ± 4	80 ± 6 A	79 ± 5
Glucose solution	0	0	100	100	100	100

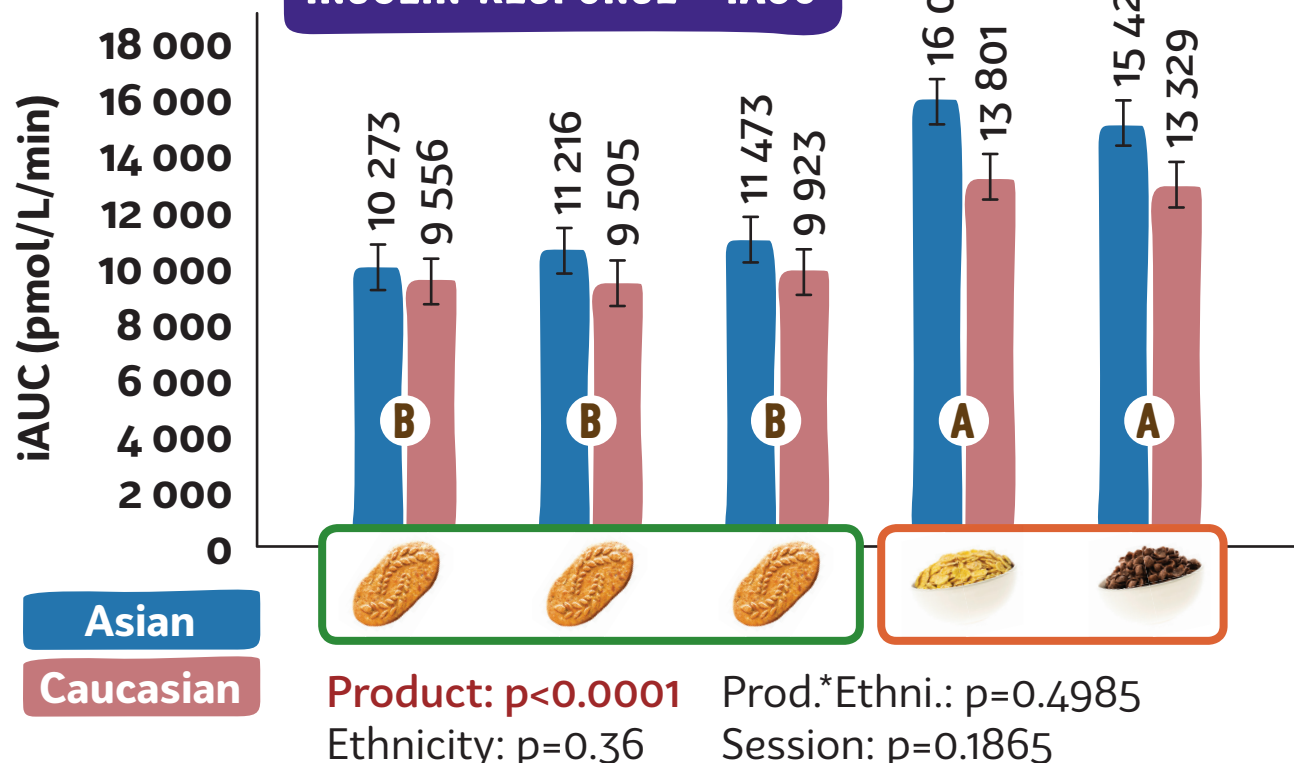
High SDS products:

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

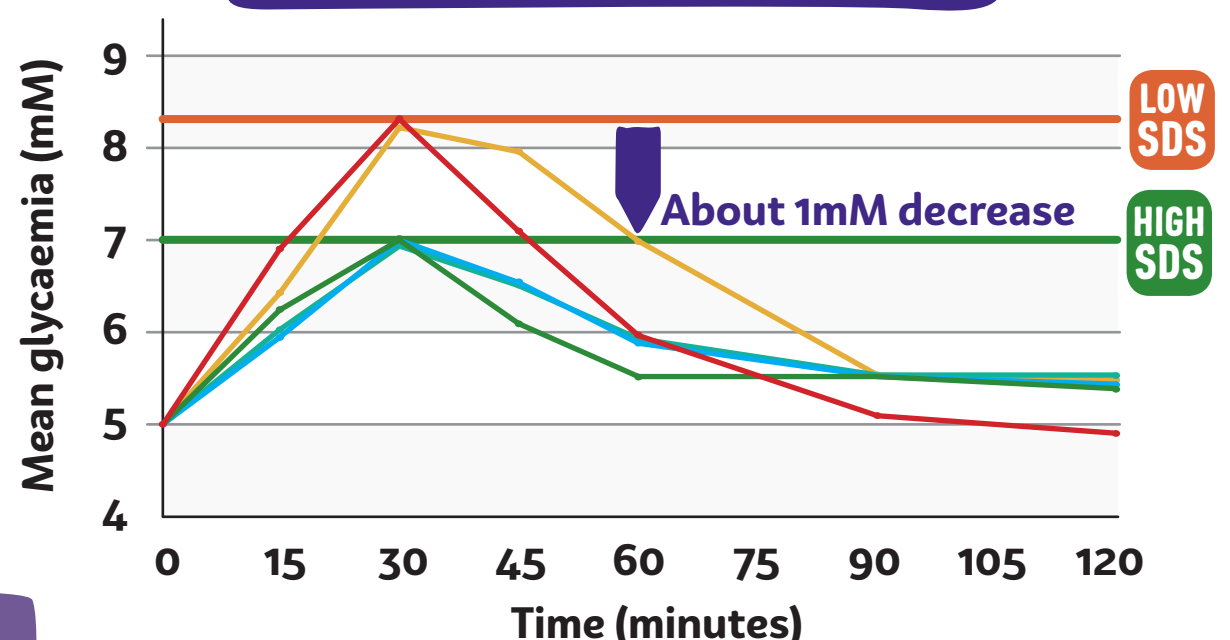
GLYCAEMIC RESPONSE - ASIAN



INSULIN RESPONSE - iAUC



GLYCAEMIC RESPONSE - CAUCASIAN



High-SDS products lower mean insulin demand compared to Low-SDS products:

- by 29% in Asians
- by 32% in Caucasians

- **Ethnicity** does not explain postprandial glycaemic & 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

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.