

# Glycaemic and insulinaemic indexes of NUTRIOSE®FB in healthy subjects

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## INTRODUCTION

NUTRIOSE®FB is a weakly digested food dextrin produced from starch. Unlike standard maltodextrin, this food ingredient contains glucidic linkages different from the  $\alpha$ -1,4 and the  $\alpha$ -1,6 “digestible” linkages present in starch. This is the reason why only 15% of NUTRIOSE®FB are digested in the small intestine. This weak digestibility may have an impact on post-prandial glycaemia after ingestion of NUTRIOSE®FB. The aim of this study was to assess the glycaemic and insulinaemic indexes after ingestion of NUTRIOSE®FB in healthy subjects.

## MATERIALS AND METHODS

### Subjects

- ➔ 6 healthy men
- ➔ Age: 18-40 years
- ➔ BMI: 19-25 kg/m<sup>2</sup>

### Design

- ➔ Randomized cross-over study
- ➔ 3 test periods

### Methodology

- ➔ After overnight fasting, subjects ingested either 50g dextrose or 50g NUTRIOSE®FB in 250 mL potable water.
- ➔ The glycaemia and insulinaemia were observed for 4 hours.
- ➔ Blood was sampled at -15, -10, 0 (time of ingestion of the product), 15, 30, 45, 60, 90, 120, 150, 180 and 240 min.
- ➔ Minimal wash-out of 3 days.
- ➔ Recording of gastro-intestinal events.

## RESULTS AND DISCUSSION

### Compliance

- ➔ The compliance was very good. No subject left the study.
- ➔ No adverse clinical event such as gastro-intestinal complaints occurred with either product.

### Glycaemic index (Fig. 1)

- ➔ Results are presented in Table I.
- ➔ The glycaemic response following NUTRIOSE®FB ingestion is weak. The maximal glycaemia is 5.9 mmol/L versus 8.8 mmol/L after dextrose ingestion ( $p < 0.05$ ).
- ➔ The glycaemic index calculated for NUTRIOSE®FB is 25%.

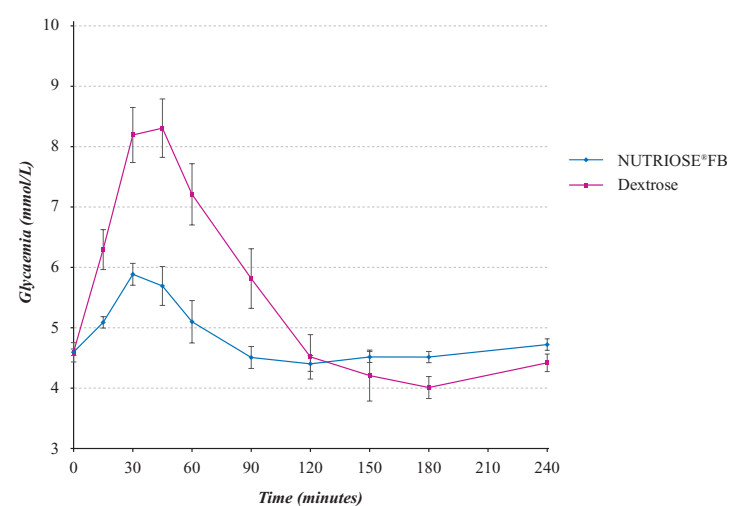
### Insulinaemic index (Fig. 2)

- ➔ The insulinaemic response following NUTRIOSE®FB ingestion is very weak. The insulinaemic peak is 12.3 mIU/L versus 47.8 mIU/L after dextrose ingestion ( $p < 0.05$ ).
- ➔ The insulinaemic index calculated for NUTRIOSE®FB is 13%.

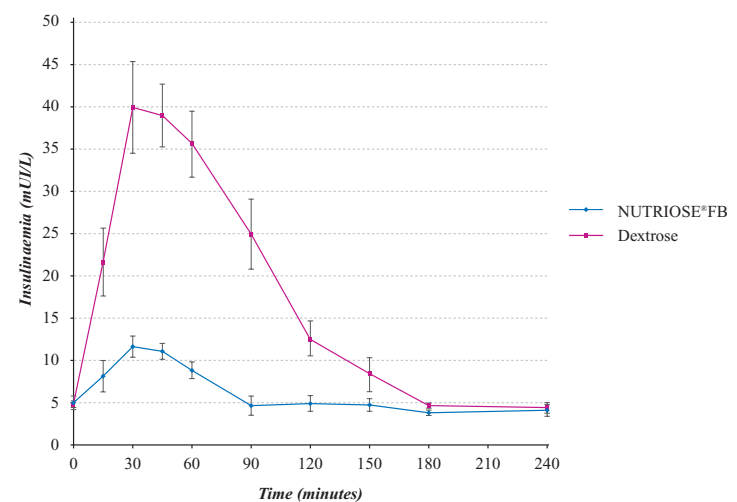
**Table I: Summary of results**

	Glucose	NUTRIOSE®FB	p
Peak glucose (mmol/L)	8.8 ± 0.4	5.9 ± 0.2	0.03
Peak insulin (mIU/L)	47.8 ± 4.2	12.3 ± 0.9	0.03
Incremental glucose area	228.7 ± 31.1	56.8 ± 11.5	0.03
Incremental insulin area	2587.8 ± 271.7	304.2 ± 39.4	0.03

**Fig. 1: Evolution of glycaemia after ingestion of NUTRIOSE®FB or dextrose**



**Fig. 2: Evolution of insulinaemia after ingestion of NUTRIOSE®FB or dextrose**



## CONCLUSION

**NUTRIOSE®FB is a fermentable carbohydrate with very low glycaemic and insulinaemic indexes compared to dextrose, cooked starch or standard maltodextrins (whose indexes are close to 100%).**

These results indicate that the dietary fibre NUTRIOSE®FB, which is a food ingredient usable in large amounts due to its very good digestive tolerance, may be of potential interest in diabetes prevention.