

GLYCAEMIC INDEX OF TROPICAL FRUIT AND AUSTRALIAN BISCUITS

J.C. BRAND, E. PANG and A.S. TRUSWELL

As part of a study of the glycaemic index (GI) of foods containing sugar we determined the glycaemic and insulin responses to six tropical fruits (mango, pawpaw, rockmelon, watermelon, kiwi fruit and pineapple) and six Australian-made biscuits: Saos™ (Arnotts), Jatz™ (Arnotts), Arrowroot™ (Arnotts), Shredded Wheatmeal™ (Arnotts), Morning Coffee™ (Arnotts) and Highland Oatmeal™ (Westons)

Eight healthy volunteers took 25g carbohydrate portions of the fruits and 50g carbohydrate portions of the biscuits in random order on separate mornings after an overnight fast. Each food was given with tea made with 30mL milk and water to bring the total volume of the meal to 700mL for the fruits and 600mL for the biscuits. Capillary blood was drawn by finger prick at timed intervals for 2h after the start of the meal. Plasma glucose was analysed by a hexokinase method and insulin by radioimmunoassay. The glycaemic index was calculated using the incremental area under the curve with the response to 50g white bread as the reference food. The reference area for the fruits was taken as half that produced by 50g bread. All values were then multiplied by 70/100 in order to express the results against glucose as the standard (ie GI of glucose = 100). In some cases a subject gave responses >2SD from the mean and were excluded.

The calculated GIs of the foods are shown in table. Values represent the mean \pm SE with number of subjects in brackets. Insulin indices fell within a similar range.

Fruits	GI Glucose=100	Biscuits	GI Glucose=100
Mango	51 \pm 3 (n=7)	Saos	70 \pm 9 (n=8)
Pawpaw	56 \pm 6 (n=7)	Jatz	55 \pm 5 (n=8)
Rockmelon	65 \pm 9 (n=8)	Arrowroot	69 \pm 7 (n=8)
Watermelon	72 \pm 13 (n=8)	Shredded Wheatmeal	62 \pm 4 (n=7)
Kiwifruit	58 \pm 7 (n=7)	Morning Coffee	79 \pm 6 (n=8)
Pineapple	66 \pm 7 (n=8)	Highland Oatmeal	55 \pm 8 (n=7)

These results suggest that tropical fruits may have a higher GI (range 51 to 72) than temperate fruits (range 25 to 45). The difference may be related to the ratio of glucose to fructose, temperate fruits having a higher average fructose content. Alternatively, the type of fibre may be different in tropical and temperate fruits. Bananas the only tropical fruit determined by Jenkin's group was found to have a GI of 60 (Jenkins et al. 1981) midway between the range of tropical fruits shown above.

The findings for the biscuits indicate that many compare favourably with bread (GI=70) in terms of glycaemic response. Those containing sugar gave similar responses to those without sugar. Oatmeal biscuits and Jatz™ may be more suitable than others as mid-meals snacks for individuals with diabetes.

JENKINS, D.J.A., WOLEVER, T.M.S. and TAYLOR, R.H. (1981). *Am. J. Clin. Nutr.* 34: 362.