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The mode of preparation of white yam (dioscorea rotunda) affects the glycaemic response in type II diabetic Nigerian subjects

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In Nigeria, white yam (Dioscorea rotunda) is a staple food even in diabetics. Monotonous consumption of certain foods (unripe plantain, beans and beans recipes) among diabetics leads to poor compliance and glycemic control. The importance of food forms on glycaemic index has been demonstrated in a number of studies[(1)]. This study evaluated the effect of varied yam preparations on glycemic response in healthy and diabetic subjects.

Forty-eight (48) non-obese subjects were recruited [24 health controls (12 males, 12 females) and 24 type-2 diabetics (12 males, 12 females]. Different preparations of yam (boiled, pounded or converted to 'Amala'), were given to the subjects. Amala is made from locally prepared yam flour[(2)]. On different days, the controls ate different yam preparations, after an initial 50 gram oral glucose tolerance test to determine glycaemic index (GI). The GI of the yam recipes is the incremental area under the glucose curve (IAUGC) of each recipe consumed by the control subjects and then expressed as percentage of the IAUGC of 50 gram glucose test. The diabetics only consumed the yam preparations. Maximum increase in plasma glucose (MIPG), peak plasma glucose (PPG), and 2-hour post-prandial plasma glucose (2HPPG) were determined for each food preparation. Mean 2-hour PPG and MIPG were significantly higher in the diabetic group ($p<0.05$) for all recipes. The mean IAUGC was higher in the diabetic group but only achieved statistical significance with boiled yam (276 ± 21 *vs* 128 ± 19.3; $p<0.05$). Of all, Amala had a significantly lower glycaemic index (Amala; 36.8% *vs* Boiled yam (52.9%), pounded yam 82.6%). Physical modifications of yam meals have significant effects on plasma glucose response. Amala (browned yam flour) meal is preferable to other yam meals for diabetics considering its low glycaemic response indices. In advising diabetics on diets, attention should also be paid to the mode of preparation of meals of interest.

1. Crapo PA & Henry RR (1988) *Am J Clin Nutr* **48**, 560–564.
2. Akingbala JO, Oguntimein GB & Sobande AO (1995) *Plant Food for Hum Nutr* **48**, 73–80.