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RICE: A HIGH OR LOW GLYCEMIC INDEX FOOD?

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Rice has given a wide range of results in glycaemic index (GI) studies around the world, from as low as 38 to as high as 85 (glucose = 100). Much of this variation is due to the genetically determined ratio of amylose to amylopectin. To clarify the position of Australian rices, we determined the glycemic and insulin index values (GI and II) of 12 rice products using eight healthy subjects and standardised methodology.

The products were: brown and white versions of three commercial varieties of rice (Calrose, Pelde and Doongara with 20%, 20% and 28% amylose respectively), a waxy rice with 0-2% amylose, a converted/parboiled rice (Pelde = Sungold™), a quick-cooking brown rice (Sunbrown Quick™), puffed rice cakes, rice pasta and rice bran. Wheat pasta, barley and porridge oats were also studied for comparison. White bread was used as the reference food and the results converted to a glucose standard using the factor 70/100.

Foods	Glycaemic index* mean ± SE	Insulin index* mean ± SE
Calrose white	83 ± 13	67 ± 15
Calrose brown	87 ± 8	51 ± 7
Pelde white	93 ± 11	67 ± 11
Pelde brown	76 ± 6	55 ± 10
Pelde (parboiled)	87 ± 7	57 ± 6
Doongara white (high amylose)	64 ± 9	40 ± 10
Doongara brown (high amylose)	66 ± 7	39 ± 6
Sunbrown Quick™	80 ± 7	54 ± 6
Waxy rice (0-2% amylose)	88 ± 11	89 ± 19
Rice cakes	82 ± 11	73 ± 12
Rice bran	19 ± 3	23 ± 4
Brown rice pasta	92 ± 8	72 ± 18
Wheat pasta	58 ± 7	52 ± 9
Rolled oats	58 ± 4	54 ± 12
Rolled barley	66 ± 5	64 ± 11

*Glucose = 100

The results (see table) indicate that most varieties of Australian rice, whether white, brown or parboiled, should be classified as high GI foods. Only the high amylose rice (Doongara) gave a low GI and II. Apart from Pelde, brown and white versions of rice varieties gave similar results. The parboiled rice and most other rice products gave a high GI. Insulin indices correlated positively with GI ($r = 0.75$, $P < 0.05$), although the II was relatively lower than the GI of the foods.

The findings indicate that among Australian rices, only high amylose varieties such as Doongara and rice bran are potentially useful in low GI diets. The low insulin response *vis a vis* the GI, however, deserves further study.

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