

26. Postprandial hyperglycemia on a complete liquid formula diet, its carbohydrate fraction and glucose.

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A complete formula diet (FD), its carbohydrate portion composed of fructose, lactose and corn syrup oligosaccharides (FDS), and glucose (GLU) were fed in the same amount of water to 13 healthy, fasted adults. Each diet was fed to each subject allowing at least two weeks between tests. All diets supplied 60 g carbohydrate. Serum glucose (SG) was determined at fasting and after 15, 30, 60 and 120 minutes. Values were calculated as percent mean rise or fall of fasting glucose levels \pm standard error.

Serum glucose	15 min mg/dl	30 min mg/dl	60 min mg/dl	120 min mg/dl
FD	13.7 \pm 3.2	+ 3.6 \pm 3.8	-16.2 \pm 3.7	- 5.9 \pm 3.7
FDS	+49.6 \pm 3.5	+30.8 \pm 6.2	+ 6.8 \pm 4.7	-11.1 \pm 3.9
GLU	+34.2 \pm 3.9	+35.1 \pm 5.0	+11.8 \pm 5.5	-16.3 \pm 4.0

The GLU and FDS induced a significantly greater hyperglycaemia ($p < 0.05$) than FD after 15 and 30 minutes. For both GLU and FDS, the hyperglycemia was more prolonged than for FD. FD subjects returned to fasting levels or below fasting earlier than GLU or FDS subjects. It appears that the presence of protein (26%) and/or fiber (5.5%) are responsible for the lower glycemic index of the FD as compared to the pure carbohydrates, rather than the type of sugar. This effect may be hormone mediated or related to stomach emptying time. In formula diets, it appears important to have sufficient protein and perhaps dietary fiber present whenever a low glycemic index is desired.