

Glucoregulation During Exercise in NIDDM

A recent review in *Diabetes Care* of the role of exercise in non-insulin-dependent diabetes mellitus (NIDDM) therapy highlighted the possible benefits of targeting specific groups and, conversely, the possible risks of regular exercise in other groups with NIDDM (1). Increased risk of atherosclerosis was suggested as one reasonable factor for evaluation in trials. An additional factor that merits further consideration is the individual acute glycemic response to exercise. Although the two references quoted by the review relating to the acute glycemic response show a mean fall in blood glucose, the individual responses are not reported, and the mean results are consistent with several subjects having a mild elevation of blood glucose (2,3). We have reported on the effects of 60 min of moderate (50% $\text{VO}_{2\text{max}}$) exercise in seven fasting nonobese patients with mild NIDDM (4). The individual data showed that three individuals had significant blood glucose elevations (0.5–1.0 mM), and one other showed no fall. Although it is unlikely that such a transient elevation in glycemia is important in itself, our experience is that patients who have been advised that exercise will lower their blood glucose level commonly measure it before and after exercise and are disturbed if they find an elevation or no fall without having been warned to expect this possibility. It may well be that these subjects still benefit from repeated exercise in terms of improved insulin sensitivity. However, the long-term effects of exercise on glycemic control in NIDDM are not uniform; e.g., the mean fasting blood glucose and HbA_{1c} data of Schneider et al. (3) are consistent with some individuals showing adverse effects of exercise training on glycemic control. It would therefore be interesting to determine whether there is any relationship between the acute and chronic effects

of exercise on glycemia in NIDDM. To that end, an assessment of the acute glycemic response to exercise would be a useful addition to the recommended preexercise evaluation of patients with NIDDM (1,5).

ARTHUR B. JENKINS, PhD
DONALD J. CHISHOLM, FRACP

From the Garvan Institute of Medical Research, St. Vincent's Hospital, Darlinghurst, Australia.

Address correspondence and reprint requests to Arthur B. Jenkins, PhD, Garvan Institute of Medical Research, St. Vincent's Hospital, Darlinghurst, NSW, Australia 2010.

REFERENCES

1. American Diabetes Association: Technical review: exercise and NIDDM. *Diabetes Care* 13:785–89, 1990
2. Minuk HL, Vranic M, Marliss EB, Hanna AK, Albisser AM, Zinman B: Glucoregulatory and metabolic response to exercise in obese noninsulin dependent diabetes. *Am J Physiol* 240:E458–64, 1981
3. Schneider SH, Khachaturian AK, Amoroso LF, Gavras H, Fineberg SE, Ruderman NB: Abnormal glucoregulation during exercise in type II (non-insulin dependent) diabetes. *Metabolism* 36:1161–66, 1987
4. Jenkins AB, Furler SM, Bruce DG, Chisholm DJ: Regulation of hepatic glucose output during moderate exercise in non-insulin dependent diabetes. *Metabolism* 37:966–72, 1988
5. American Diabetes Association: Position statement: diabetes mellitus and exercise. *Diabetes Care* 13:804–805, 1990

Warnings on Insulin Syringes

The recently introduced 30-U insulin syringe was designed to facilitate accuracy of small doses in diabetic patients who use U-100 insulins. However, a patient recently experienced multiple life-threatening hypoglycemic events after switching to the new syringes.

A 21-yr-old white woman with 17 yr of "brittle" in-