

Exercise Improves Outcomes in Type 2 Diabetes

BY HANNAH BROWN
Contributing Writer

GLASGOW, SCOTLAND — Regular exercise of moderate to high intensity can improve glycemic control and reduce visceral and adipose fat, Dr. Dinesh Nagi said at the Diabetes U.K. Annual Professional Conference.

Dr. Nagi summarized the evidence supporting use of exercise interventions in type 2 diabetes. Although exercise has long been the cornerstone of management for type 2 diabetes, there is very little robust evidence to prove its beneficial effects or mechanism of action, explained Dr. Nagi, consultant endocrinologist at Pinderfields General Hospital in Wakefield, England.

"There is a limitation of evidence—the pharmaceutical industry is not throwing money at this," he said. And this means few physicians are aware of the impact of exercise on outcomes such as cardiovascular risk factors, mortality, and quality of

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life and, crucially, they may be unaware of the risks. "Health professionals often confuse the issue. The risks and benefits of exercise are very different for type 1 and type 2 diabetes," Dr. Nagi said.

Of the available trials involving type 2 patients, most are small and nonrandomized, involve short-term interventions, and follow-up is for a maximum of 2 years. In addition, there are few data concerning cardiovascular outcomes after exercise. According to Dr. Nagi, this dearth of good data means physicians are reduced to looking at cohort studies for evidence. But in these investigations the case mix is often heterogeneous and patients are on all sorts of different treatments including pills, insulin, and diet, making the results difficult to generalize.

Dr. Nagi discussed a recent Cochrane review of 13 trials involving 377 type 2 diabetes patients and controls (Cochrane Database Syst. Rev. 2006 July 19;3:CD002968). Length of the trials ranged from 8 weeks to 1 year; the exercise interventions varied from a mix of aerobic exercise and resistance training to either resistance training or aerobic exercise alone, all at varying levels of intensity and different time intervals. Dr. Nagi noted that the reviewers found that exercise improved glycemic control with an average statistically significant reduction in glycated hemoglobin (HbA_{1c}) of -0.6%. The glycemic control benefits were independent of weight loss, although exercise also led to average reductions in visceral adipose tissue of -45.5 cm² (95% confidence interval) and in subcutaneous adipose tissue of -104.86 cm² (95% CI).

Data showing improvements in cardiovascular risk factors in patients with type 2 diabetes are scarcer. "There are no long-term studies using exercise that are randomized," explained Dr. Nagi. However, he said, because many of the causes of cardiovascular malfunction in diabetic patients—ventricular and vascular hypertrophy, arterial stiffening, endothelial dysfunction, disturbance of fibrinolysis, systematic inflammation—are improved by exercise in nondiabetic patients, it is rea-

sonable to assume that it could help in type 2 diabetes too. "There's a good cohort of evidence that if you are active you are less likely to die of coronary artery disease," he said.

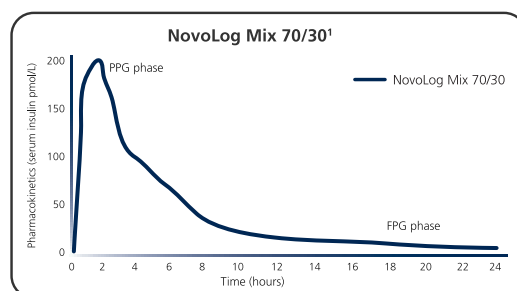
However, Dr. Nagi cautioned that to maintain the benefit, exercise must continue regularly over a long period, raising the question of how to ensure that patients do not decrease their exercise levels over time. Current recommendations for patients with type 2 diabetes to gain the

blood glucose reduction benefits from exercise are 150 minutes per week, done with a break of no more than 48 hours between bouts. And the exercise must be of sufficient intensity for the patient to start perspiring. But when introducing these guidelines to patients, appropriate terminology is key. "Doctors should stop using the word exercise," said Dr. Nagi. "Physical activity is the right term to use because exercise has negative connotations, particularly for women." ■

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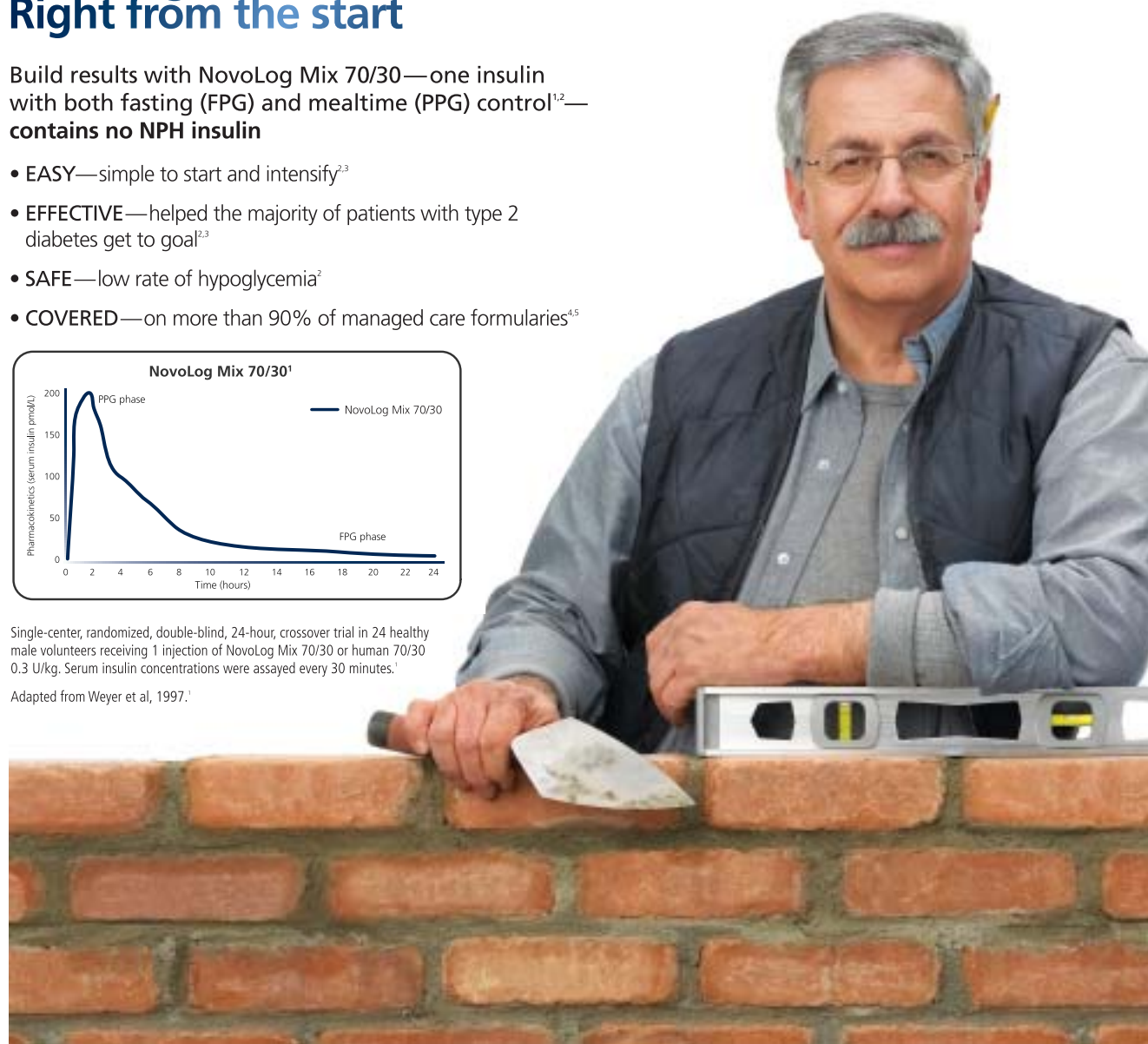
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