

Promoting exercise in type 2 diabetic patients: how to achieve it

Sue Smith

Introduction

The benefits of regular exercise are widely promoted by health professionals and the media. It is becoming clear that regular exercise is even more beneficial to people with diabetes, especially those with type 2 diabetes, and that diabetes care teams should be assessing and promoting exercise as part of their structured delivery of care. This article outlines the benefits of exercise and explores the concepts of exercise, looking at what prevents people from doing it and how we can influence people's attitudes.

It is hardly possible to read a newspaper or magazine without coming across information promoting the benefits of exercise and exercise equipment. Increasing sales of football kits, training shoes and so on suggests that we are an active population. However, a study by Allied Dunbar (1992) found that only 49 per cent of men and 41 per cent of women exercise regularly.

The benefits of exercise are shown in Table 1. These benefits are for the population in general, but there is evidence that regular exercise is especially beneficial to people with type 2 diabetes, who have a three- to fourfold increased risk of cardiovascular disease (Bouchard and Despres, 1995). Evidence also suggests that the onset of type 2 diabetes can be delayed in at-risk individuals who exercise regularly (Manson et al, 1991).

Studies by Manson et al (1991), Helmrich et al (1991) and Perry et al (1995) conclude that physical inactivity is associated with increased risk of developing type 2 diabetes. Eriksson and Lindgarde (1991) studied 181 patients with impaired glucose tolerance and found that, after 5 years of increasing physical activity, glucose tolerance was normalised in more than 50 per cent.

Lynch et al (1996) found that men who took more than 40 minutes of moderate exercise a week were at less risk of developing type 2 diabetes than men who did not. The protective effect was more pronounced in

those at high risk of type 2 diabetes, due to family history, obesity and hypertension.

Promoting exercise

When we first learn about diabetes, we are introduced to the triad of management — remember? (*Figure 1*). In trying to enlighten our patients, we spend hours talking about food and diabetes — what patients should eat, when they should eat, how much, how often, how many grapes, what size banana, and so on. Weight and body mass index are recorded and often discussed. We teach patients how to monitor urine or blood glucose, and scrutinise diaries at clinic visits. We juggle tablet combinations and insulin doses. Yet we pay little attention to monitoring the exercise levels of this group. Why?

I suspect we may feel daunted and ill

Table 1. Benefits of exercise

- More energy
- Improved sleep at night
- Stronger musculature
- Greater stamina
- Lower risk of cardiovascular disease
- Lower risk of osteoporosis
- Enhanced feeling of well-being
- Helps in weight control

ARTICLE POINTS

- 1 There is a low level of regular exercise in the adult population.
- 2 People with type 2 diabetes benefit from regular exercise.
- 3 We are all subject to barriers when it comes to exercising.
- 4 Activity programmes need to be individually tailored, with achievable goals.
- 5 Diabetes teams need to adopt a structured approach to encouraging activity.

KEY WORDS

- Type 2 diabetes
- Overcoming barriers
- Regular exercise

Sue Smith is Diabetes Specialist Nurse at The Friarage Hospital, Northallerton, North Yorkshire

PAGE POINTS

1 It is not enough to control blood glucose levels alone.

2 Regular exercise may decrease the risk of cardiovascular disease.

3 Diabetic patients are subject to the same barriers that prevent the rest of the population from being regular exercisers.

equipped to deal with the prospect. A large proportion of people with type 2 diabetes are middle-aged, overweight and inactive. If they are not already taking regular exercise, their initial reaction is that they cannot. We often have little success in encouraging weight loss and smoking cessation; by seeking to achieve a further lifestyle change may seem to be asking too much, or to be a waste of time. However, as there are known benefits of exercising, it is not enough to control blood glucose levels alone. The additional benefits of regular exercise for patients with type 2 diabetes have been documented by Bouchard and Despres (1995) (Table 2).

With regular exercise, it is thought that blood glucose levels are improved by increasing the sensitivity of liver, skeletal muscle and adipose tissue to insulin action,

and less medication may be required. Regular exercise may also increase the concentration of high-density lipids and lower that of low-density lipids, thus decreasing the risk of cardiovascular disease. Blood pressure may not be reduced to normal levels, but may be sufficient to lower the risk of developing cardiovascular disease.

Barriers to exercise

Given that exercise is known to be beneficial, and that we, in theory, encourage our patients to take regular exercise, why does it seem that so many people with diabetes are overweight and inactive? What is preventing them from exercising?

Such patients are subject to the same barriers that prevent the rest of the population from being regular exercisers, such as:

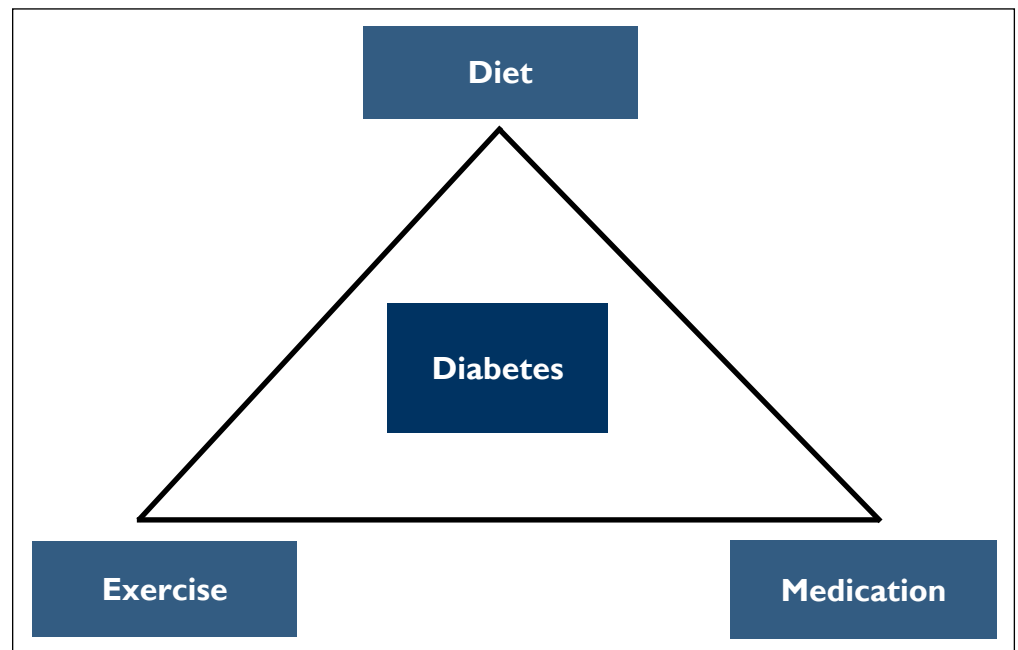


Figure 1. The triad of management relating to diabetes.

Table 2. Additional benefits of regular exercise in type 2 diabetes

- Improves blood glucose control
- Reduces cardiovascular disease (risk of myocardial infarction reduced by 35–50 per cent)
- Improves lipid profile
- Reduces blood pressure
- May help weight control

- Lack of support — most people would like a friend to join them at exercise class, and family ridicule can be discouraging
- Lack of time, due to work or family commitments
- Not the sporty type
- Discomfort — fear of shortage of breath, aching muscles or the sheer difficulty of moving about at first, due to size or tight-fitting clothing
- Perception of appearance — embarrassment at appearing in a swimsuit or clinging 'Lycra'
- Media image of fitness — adverts for sports shoes and clothes feature young, fit, toned bodies. Television programmes, such as 'Gladiators', also promote the image of the 'super-fit' person
- Increasingly affluent lifestyle — car travel, remote-controlled televisions and automatic car washes require no effort and encourage inactivity
- Personal rewards — after a hard day at work or a trying day with children, we promise ourselves an evening 'with our feet up'
- Long-term results — it can take up to a year to see the results from regular exercise.

Overcoming the barriers

When we meet a patient who is reluctant to exercise, we should explore why he or she is reluctant, so as to discover which barriers are present. First, what do we mean by 'exercise' when we discuss it with our patients, and what do they think we mean?

We may use the term 'exercise' to mean taking a short walk a couple of times a week — the patient may think we want him or her to take up squash. Perhaps the very word 'exercise' is the wrong one to use — 'activity' might be more appropriate.

With an active person who already takes some exercise our job is easy and practical: the patient needs advice on managing diet and medication around exercise, on the best times to exercise and the effects on blood glucose levels. Written guidelines are easily available. We run into difficulty with the person who is overweight and largely inactive. We all tend to overestimate our activity levels, with statements such as 'I'm always on the go' or 'I never sit down' often used defensively.

We need to explore what the patient understands by exercise, and determine which barriers are up. Enlisting the help of a friend or family member to exercise with the

PAGE POINTS

1 It is important to determine why a patient is reluctant to exercise.

2 'Activity' might be a better word to use than 'exercise'.

3 Enlisting the help of a friend or family member to exercise with the patient will help motivate the inactive.

Publisher's note: This image is not available in the online version.

Figure 2. One of the activities to promote is dancing, which is often not perceived as being 'sporty'.

PAGE POINTS

1 For each patient, we must clearly define what we mean by regular exercise.

2 The frequency of exercise is most important, not the intensity.

3 Activities to promote include walking, swimming, cycling and dancing.

4 Setting a realistic time limit to reach each goal maximises the patient's feelings of success.

5 The ideal diabetes care team might include a physiotherapist and a sports psychologist.

patient, and choosing an activity that would be enjoyable rather than an endurance, which does not require a high level of fitness to start or the wearing of revealing clothes, will help motivate the inactive patient. One of the theories for the popularity of line-dancing is that no figure-hugging 'Lycra' is required to join in a fairly energetic activity, and it is not seen as 'sporty'.

We also need to clearly define what we mean by regular exercise for each patient, and define achievable goals, so the patient is positive — 'I could do that'.

How much? How often?

When encouraging a person with type 2 diabetes to be more physically active, the frequency of exercise is most important, not the intensity (Yamanouchi et al 1995; Lynch et al, 1996). A walk every day has more benefit than an hour of aerobics each week. The aim is to achieve activity initially three to four times a week, increasing to five to six times, with sessions lasting 20–30 minutes.

Some activity guides include questions about people's present activity levels, depending on their starting fitness level, and advise a check-up with a doctor for those with diabetes, hypertension, arthritis or heart problems (*Getting Active, Feeling Fit*, Health Education Authority; *It Doesn't Have to Hurt*, B.B.C. Education; *The Reluctant Exerciser's Guide*, The Stroke Association).

Take it easy

Activities to promote include walking, swimming, cycling and dancing, and any or all of these can be started very gently (Figure 2). For example, a walking exercise programme for someone unfit might be to walk from a starting point at a normal pace for 5 minutes, and return slightly more quickly, aiming to achieve the return walk in 4 minutes. This gradually increases to an outward journey of 15 minutes and a return journey of 13 minutes over a period of seven to eight weeks.

To the patient this should not sound too daunting; by breaking down the activity into small goals, it can be perceived as achievable. Setting a realistic time limit to reach each goal maximises the feelings of success and encourages progress.

Conclusion

To promote more activity in our patients, we can adapt our approach and enquire more about present activity levels. Knowing is not doing, and the exhortation of a certain sportswear manufacturer to 'Just do it' will not often work. However, by raising the issue of exercise, encouraging the assessment of activity levels and exploring how an increase in activity can be achieved with the appropriate exercise, we raise our patients' awareness of its importance.

The very word 'exercise' can scare some patients; by referring instead to 'being active' and relating its benefits to those with type 2 diabetes, we can encourage change, but always be careful and realistic. As with all change, planning is important; early overactivity may produce injury or exhaustion and discouragement, resulting in failure. Setting achievable goals to maximise the chance of success and sense of achievement can only help people with type 2 diabetes to feel more in control of their condition.

Perhaps the ideal diabetes care team would include a physiotherapist and a sports psychologist. ■

Allied Dunbar (1992) *Allied Dunbar National Fitness Survey*. Allied Dunbar/Health Education Authority, London

Bouchard C, Despres JP (1995) Physical activity and health: atherosclerotic, metabolic and hypertensive diseases. *Research Quarterly for Exercise and Sport* **66**(4): 268-75

Eriksson KF, Lindgarde F (1991) Prevention of type 2 diabetes mellitus by diet and physical exercise. *Diabetologia* **34**: 891-8

Helmrich SP, Raglund DR et al (1991) Physical activity and reduced occurrence of non-insulin dependent diabetes mellitus. *New England Journal of Medicine* **352**: 147-52

Lynch J, Helmrich SP et al (1996) Moderately intense physical activities and high levels of cardiorespiratory fitness reduce the risk of non-insulin dependent diabetes mellitus in middle aged men. *Archives of Internal Medicine* **156**: 1307-14

Manson JE, Rimm EB et al (1991) Physical activity and incidence of non-insulin dependent diabetes mellitus in women. *Lancet* **338**: 774-8

Perry IJ, Wannamethee SG et al (1995) Prospective study of risk factors for development of non-insulin dependent diabetes in middle-aged British men. *British Medical Journal* **310**: 560-4

Yamanouchi K, Shinozaki T et al (1995) Daily walking combined with diet therapy is a useful means for obese NIDDM patients not only to reduce body weight but also improve insulin sensitivity. *Diabetes Care* **18**(6): 775-8