

How to Motivate Your Diabetes Patients to be Physically Active

Providing education and motivation encouraging patients to make lifestyle changes is not as straightforward as it should be, and attempts often result in failure.

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Becoming physically active on a regular basis is one of the most important lifestyle changes that an individual with diabetes can make for control of the condition as well as long-term health. For health care providers, providing education and motivation to encourage patients to make this change is not as straightforward as it should be, and attempts to implement such changes often result in failure. Both practitioner time constraints and patient motivation play a role in these negative outcomes. Problems associated with making these lifestyle changes are not limited to only patients with diabetes, however.

In the population as a whole, dropout rates from structured exercise programs are typically 50% in the first 6 months, but rates are likely higher among diabetic participants, regardless of the type of program.¹ By way of example, in a recent study by Praet and colleagues,¹ diabetic participants undertook either 12 months of group-based brisk walking three times a week or a supervised, combined resistance and aerobic exercise program in a fitness facility. The dropout rate at the end of a year was similar between groups (63% and 56%, respectively), with half of dropouts attributable to overuse injuries and another quarter to lack of motivation to continue.

PROPER EXERCISE RECOMMENDATIONS

Diabetes self-management interventions facilitated by practitioners that include recommendations to increase exercise can result in enhanced metabolic control in individuals with type 2 diabetes.² Lifestyle recommendations that emphasize exercise may be particularly effective for improving glycemic control and long-term compliance. Due to time constraints during office visits, however, practitioners

often have only enough time to recommend that their diabetic patients “be regularly physically active” to achieve better control of their diabetes, despite the fact that positive changes in physical fitness levels are generally greater for those who are given an actual exercise prescription with a detailed regimen.³

Fortunately, there may be alternate, time-saving ways to give greater details to patients. Researchers recently demonstrated that a brief intervention to increase the dialogue between patients and health care providers about behavioral goals can lead to increased physical activity and weight loss.⁴ In that study, patients were able to set their own self-management goals for nutrition and physical activity in 10 minutes using a tailored computer program, and then their goals were briefly reviewed with them by their physicians during each office visit to provide reinforcement and continued motivation for participation.

If a practitioner has time to make more specific exercise recommendations, which ones are best to follow? The American Heart Association and American College of Sports Medicine jointly published updated guidelines in 2007 that recommend participation in at least 30 minutes of moderate exercise 5 days a week or 20 minutes of more vigorous activity at least 3 days a week for healthy adults.⁵ Even 10 minutes of daily physical activity can improve fitness levels in overweight, postmenopausal women, although longer exercise durations generally result in larger improvements.⁶

The latest guidelines also recommend participation in moderate resistance training 2 to 3 nonconsecutive days per week. Practitioners can encourage sedentary patients to do activity of any length, however, even if they fail to meet the recommended guidelines, and the exercisers will gain some

benefits. Generally, doing more intense activities, such as heavy resistance training, bestows greater health and glycemic benefits and may be a viable alternative to longer-duration ones.⁷ A viable alternative is the inclusion of interspersed, faster-paced intervals (eg, “pick up the pace” training) during any exercise session that can potentially enhance fitness gains and further improve insulin action in diabetic patients.⁸

Although moderate walking and other weight- and non-weight-bearing aerobic exercises have traditionally been recommended for individuals with diabetes, resistance training may be as important, if not more so, than aerobic workouts for improving insulin action and should be recommended.⁹ Resistance work may result in greater and more lasting improvements in glucose tolerance without changes in body weight,¹⁰ and adding such training to ongoing aerobic exercise participation results in greater metabolic improvements.⁹ Thus, diabetic individuals will benefit from either mode of exercise or, most likely, the combination of both.

GETTING PATIENTS INVOLVED

Regular exercise of any type is the key to effective blood glucose control because the heightened insulin action found in exercised muscle persists for only 1 to 2 days. Given that most diabetic individuals are sedentary, practitioners should recommend that their patients begin a more active lifestyle by including low-intensity, unstructured exercise that includes taking more daily steps and standing more. Patients are often less resistant to moving more when they do not perceive it as planned exercise. All physical activity accumulated during the day counts; golfing, gardening, mowing the lawn, and mild walking done 30 to 45 minutes per day are beneficial to the health of participants, even if the participant’s fitness level is not increased much or at all. Many studies have suggested that use of a pedometer to count steps increases daily totals.¹¹ Practitioners can additionally encourage patients to limit their sedentary TV watching. Table 1 lists some additional suggestions to easily get patients more physically active in unstructured ways throughout the day.

Getting patients engaged in more structured physical activities, such as planned aerobic exercise programs or classes and resistance training requires a greater commitment from patients and sustained motivation. While counseling patients to work up to doing the recommended amounts of structured exercise, practitioners should additionally advise them to start out with less intense exercise to avoid burnout and overuse injuries. Patients can use the talk test as a simple way to monitor exercise intensity: If they cannot comfortably carry on a conversation with someone while exercising, they are working out harder than needed and increasing

TABLE 1. BEHAVIORS THAT INCREASE UNSTRUCTURED PHYSICAL ACTIVITY

- Buy an inexpensive pedometer and add at least 2,000 steps a day.
- Get up to change the channel on the TV.
- Stand up and walk in place while watching TV.
- Invest in a rebounder (mini-trampoline) and jump or bounce while watching TV.
- Ride a stationary bike while you are watching TV, reading a book, or talking to someone.
- Limit TV and computer use to 2 hours per day or reduce total use by 30 minutes daily.
- Emphasize unstructured walking by taking more steps throughout the day.
- Try taking the stairs instead of the elevator or an escalator whenever possible.
- If going up steps is too hard, start by only walking down.
- Walk up or down the escalator instead of standing still.
- Walk instead of standing on moving walkways in airports and other places.
- Park at the farthest end of the lot.
- Get up and move for 3 to 5 minutes after every 30 minutes straight of a sedentary activity.
- Stand up or take a short walk during work breaks instead of sitting down.
- Walk the dog once or twice a day.

their risk for nonadherence to regular physical activity.

Another practice to enhance patients’ overall fitness and insulin action is incorporation of workouts of varying intensities into their weekly routine.¹² It is beneficial for a number of physiological reasons to alternate easier and harder workout days. Patients’ bodies get both the enhanced fitness attributable to working out at a higher level, combined with the healing effects of greater recuperative time before undergoing another such workout.¹³ More challenging workouts also tend to enhance insulin action (and, therefore, diabetes control) for a longer period following the activity. Varying the types of activities themselves (eg, walking 3 days and cycling 2 other days) additionally helps prevent overuse syndrome and injuries. Having a routine of varying intensities and activities also assists in preventing loss of motivation and exercise burnout.

SUSTAINING EXERCISE BEHAVIORS

Assisting patients in maintaining the motivation to continue their participation in physical activities is challenging. Clinical interventions designed to implement dietary and

TABLE 2. BEHAVIORS THAT SUSTAIN EXERCISE PARTICIPATION

- Set realistic exercise goals or milestones to keep track of activities.
- Use a sticker chart to keep a visible account of all physical activities during the day.
- Set up noncaloric rewards for reaching short- and long-term exercise goals.
- Schedule activities into a daily calendar and keep these exercise “appointments.”
- Make exercise a priority, along with taking prescribed medications, getting adequate sleep, and eating a healthy diet.
- Find an exercise buddy to increase motivation for doing scheduled activities.
- Set up a good social network involving significant others, family members, friends, and coworkers in exercise.
- Vary daily activities and occasionally substitute in more fun ones like social dance or golf (without a cart) to keep interest higher.
- Incorporate exercise into outings by going to a museum, zoo, or sporting event.
- Increase unstructured activities to accumulate a greater total exercise time.
- For structured activities, increase exercise duration and intensity slowly to prevent overuse injuries and higher burnout rates.

exercise changes in nondiabetic individuals suggest that participation is higher when they are made aware of what exactly constitutes an unhealthy lifestyle and when they perceive themselves as being more susceptible to diseases that can result from inactivity, such as diabetes.¹⁴ Participation in supervised exercise programs and group exercise sessions also increases adherence in many, but not all, patients.^{3,15} Practitioners will likely need to employ new motivational approaches to encourage positive physical activity behaviors in patients with diabetes to circumvent potential barriers to exercise adherence, which include lack of motivation, preexisting health complications, and cultural differences, among others.

Patients with a greater number of health complications may be less motivated to continue and may need to be advised differently. For example, although center-based fitness programs are better adhered to in the short run, home-based ones have a higher long-term adherence, particularly in patients with comorbidities like peripheral vascular disease.¹⁵ Thus, taking each patient’s unique health issues into account may be imperative for sustained motivation to exercise (Table 2).

An examination of exercise-referral schemes (ie, physicians referring patients to programs that encourage physical activity and exercise) additionally revealed that although such referrals result in an increased number of patient participants in moderate-intensity exercise, on average 17 referrals result in increased participation by only one of the referred adults.¹⁶ An alternate approach to straight referrals, Internet-based, and print material interventions for counseling patients on exercise and dietary changes are both effective and are better for promoting healthy lifestyle changes like increased physical activity than usual-care interventions,¹⁷ as do 1-day, outpatient motivational workshops.¹⁸ Even asking patients to complete and mail in monthly physical activity surveys and giving them feedback via regular mail or a phone call from a health care provider promotes greater exercise adherence.¹⁹

In conclusion, patients generally benefit from receiving more detailed exercise recommendations from their health care providers, and practitioners now have various options for delivering exercise prescriptions and education that may serve to motivate sustained exercise participation and be more time-effective. Practitioners can quickly advise their patients to adopt simple behaviors that will increase and sustain their exercise participation. Educational physical activity interventions like Internet-based interactions, single-day patient workshops, and monthly print feedback via mail are other examples of relatively cost-effective and easily implemented practices. Overcoming motivational issues is an important area for additional research, particularly with regard to maintenance of positive physical activity behaviors in diabetic individuals. Undoubtedly, practitioners and patients will both benefit as new and enhanced venues for the exchange of such educational and motivational interactions continue to evolve and even more effectively promote regular physical activity participation. ■

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1. Praet SF, van Rooij ES, Wijtvliet A, et al. Brisk walking compared with an individualised medical fitness programme for patients with type 2 diabetes: a randomised controlled trial. *Diabetologia*. 2008;51:736-746.
 2. Conn VS, Hafidahl AR, Mehr DR, et al. Metabolic effects of interventions to increase exercise in adults with type 2 diabetes. *Diabetologia*. 2007;50:913-921.
 3. Nielsen PJ, Hafidahl AR, Conn VS, et al. Meta-analysis of the effect of exercise interventions on

fitness outcomes among adults with type 1 and type 2 diabetes. *Diab Res Clin Pract.* 2006;74:111-120.

4. Christian JG, Bessesen DH, Byers TE, et al. Clinic-based support to help overweight patients with type 2 diabetes increase physical activity and lose weight. *Arch Intern Med.* 2008;168:141-146.
5. Haskell WL, Lee I-M, Pate RR, et al. Physical Activity and Public Health: Updated Recommendation for Adults from the American College of Sports Medicine and the American Heart Association. *Med Sci Sports Exerc.* 2007;39:1423-1434.
6. Church TS, Earnest CP, Skinner JS, Blair SN. Effects of different doses of physical activity on cardiorespiratory fitness among sedentary, overweight or obese postmenopausal women with elevated blood pressure: a randomized controlled trial. *JAMA.* 2007;297:2081-2091.
7. Dunstan DW, Daly RM, Owen N, et al. High-intensity resistance training improves glycemic control in older patients with type 2 diabetes. *Diabetes Care.* 2002;25:1729-1736.
8. Johnson ST, McCargar LJ, Bell GJ, et al. Walking faster: distilling a complex prescription for type 2 diabetes management through pedometry. *Diabetes Care.* 2006;29:1654-1655.
9. Snowling NJ, Hopkins WG. Effects of different modes of exercise training on glucose control and risk factors for complications in type 2 diabetic patients: a meta-analysis. *Diabetes Care.* 2006;29:2518-2527.
10. Iglay HB, Thyfault JP, Apolzan JW, Campbell WW. Resistance training and dietary protein: effects on glucose tolerance and contents of skeletal muscle insulin signaling proteins in older persons. *Am J Clin Nutr.* 2007;85:1005-1013.
11. Bravata DM, Smith-Spangler C, Sundaram V, et al. Using pedometers to increase physical activity and improve health: a systematic review. *JAMA.* 2007;298:2296-2304.
12. Colberg SR. Physical activity, insulin action, and diabetes prevention and control. *Curr Diabetes Rev.* 2007;3:176-184.
13. Cosca DD, Navazio F. Common problems in endurance athletes. *Am Fam Physician.* 2007;76:237-244.
14. Toft UN, Kristoffersen LH, Aadahl M, et al. Diet and exercise intervention in a general population—mediators of participation and adherence: the Inter99 study. *Eur J Public Health.* 2007;17:455-463.
15. Ashworth NL, Chad KE, Harrison EL, et al. Home versus center based physical activity programs in older adults. *Cochrane Database Syst Rev.* 2005;(1):CD004017.
16. Williams NH, Hendry M, France B, et al. Effectiveness of exercise-referral schemes to promote physical activity in adults: systematic review. *Br J Gen Pract.* 2007;57:979-986.
17. Kim CJ, Kang DH. Utility of a Web-based intervention for individuals with type 2 diabetes: the impact on physical activity levels and glycemic control. *Comput Inform Nurs.* 2006;24:337-345.
18. Amati F, Barthassat V, Miganne G, et al. Enhancing regular physical activity and relapse prevention through a 1-day therapeutic patient education workshop: A pilot study. *Patient Educ Couns.* 2007;68:70-78.
19. Sevick MA, Napolitano MA, Papandonatos GD, et al. Cost-effectiveness of alternative approaches for motivating activity in sedentary adults: results of Project STRIDE. *Prev Med.* 2007;45:54-61.