Walking and Type 2 Diabetes

If you need another reason to prioritize physical activity for your patients with type 2 diabetes, it is provided in the study by Di Loreto et al. (1) published in this issue of Diabetes Care. Results from the study show that you can get impressive improvements in health and reductions in health care costs just by getting your patients with type 2 diabetes to make modest increases in physical activity. A second message is that you can produce these increases in physical activity in a large proportion of your patients with a simple counseling program that requires only a modest commitment of time and effort.

A unique aspect of the study is that the results were analyzed in a way to provide some guidance on how much physical activity is required for health and financial benefits in this population. Keep in mind that these analyses were obtained from a post hoc analysis of the data and must be treated with caution until confirmed by other prospective studies. Nonetheless, the results strongly suggest that small, achievable increases in physical activity can have a big impact on health in this population. In this study, all patients were given a counseling program designed to increase physical activity by at least 10 MET h/week. After 2 years, the results were analyzed based on how much physical activity was actually performed. The authors found significant health benefits with increases in physical activity of >10 MET h/week, and they suggest that this is the minimum increase in physical activity required to achieve health and financial benefits in sedentary patients with type 2 diabetes. Further, they found that the health benefits of physical activity continued to increase as physical activity increased up to a maximum of 21–30 MET h/week. Thus, they recommend 27 MET h/week as a good target for sedentary patients with type 2 diabetes.

In this study, ~69% of participants achieved an increase of at least 11 MET h/week. Sixteen percent did not achieve any increase in physical activity with the counseling program. Another 15% increased physical activity but not enough to reach 11 MET h/week. In examining the data, even these participants showed some minor improvements in health, although they were not statistically significant. The best way to interpret the data seems to be that there is a dose-response relationship between physical activity increase and health with clear benefits becoming obvious at ≥11 MET h/week and optimum benefits occurring at ~27 MET h/week. Results of this study are consistent with results of other studies in non-type 2 diabetes that suggest that small increases in physical activity can be important for health.

Hopefully you are now considering not whether but how to devote more effort into getting your patients with type 2 diabetes to increase physical activity. How much physical activity to recommend

It is likely that your patients do not understand what METs are, how to measure them, or how to calculate MET h/week. METs are metabolic equivalents and measure physical activity in multiples of resting energy expenditure. For example, an activity that is 2 MET has an energy expenditure of two times resting metabolic rate. Calculating physical activity in MET hours per week is a conversion that attempts to account for both duration and intensity of the physical activity. This is probably not the best way to provide actual physical activity recommendations to your patients. Let’s consider how much physical activity is required to achieve the MET hour per week values reported in this study. The easiest way to start is to understand how much walking it would take to achieve these values. Walking was the activity of choice for most of the subjects in the study by Di Loreto et al. (1), and it will be the activity of choice for most of your patients as well. Certainly you will have some patients who cannot walk and you can suggest other activities such as swimming or cycling. Table 1 below provides a rough estimate of how much additional walking would be required to achieve either 11 or 27 MET h/week. If patients engage in more intense physical activity (such as jogging) they will require less time or distance to achieve health improvements.

A good starting target for your patients is to increase walking by at least 1.2 miles/day or 30 min or 2,400 steps/day. Keep in mind that these recommendations are increases over the present level of walking and are a very achievable increase for most people. Greater health benefits will accrue with more physical activity, and ideally you can help your patients continue to increase to toward a more optimal goal of 3.2 miles or 77 min or 6,400 steps or even more. It makes sense to start with small changes. It might be hard to get an initial increase of 3.2 miles/day in many of your patients, but most could add an extra 1.2 miles, especially considering they do not have to do it all at once and can accumulate this over the day.

Using step counters to get your patients walking

If your goal is to get your patients walking, a great way to do this is to provide goals for them in steps per day. Electronic step counters (pedometers) are being increasingly used for promoting walking (2). These inexpensive devices ($10–$20) are worn on the waist and simply count the number of steps taken each day. Step counters allow the patients to continuously monitor their progress in achieving their physical activity goal during the day. You as the health care provider can establish individual daily step goals for your patients. A typical adult takes ~2,000 steps for each mile walked (more for shorter people and less for taller people), so start by suggesting an addi-

### Table 1—Amount of walking to achieve MET levels

<table>
<thead>
<tr>
<th>Min/day walking</th>
<th>Miles/day walking</th>
<th>Steps/day walking</th>
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</thead>
<tbody>
<tr>
<td>11 MET h/week</td>
<td>30</td>
<td>1.2</td>
</tr>
<tr>
<td>27 MET h/week</td>
<td>77</td>
<td>3.2</td>
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tional 2,400 steps/day, and once this goal is attained, increase it by 500–1,000 steps/day. Keep going until the patient reaches the maximum level that can be sustained. Keep in mind that these goals are for additional steps, above the present level. Even though someone is very sedentary, they are still getting some steps/day, and it is the increase that is important. This means that you have to have patients wear a step counter for 3–5 days to see how many steps they typically get before you give them their individualized step goal. Over time, some of your patients may be able to achieve increases of 6,400 steps/day or more, and others will never reach this goal. Just remember that when it comes to physical activity, every little bit helps and even an extra 2,000–2,500 steps/day will bring measurable improvements in health for most of your patients. If you start slow, increase gradually, and celebrate the success of your patients achieving each goal, many of them can reach optimal levels of an additional 6,400 or more steps/day.

We have used this small changes strategy with our national weight gain prevention program called America on the Move (http://www.americanonthemove.org). We ask people to start by adding 2,000 steps each day, since we have calculated that this amount of change will prevent the gradual weight gain seen in most of the population (3). We have found that most people can succeed in increasing physical activity by 2,000 steps/day and most then want to continue to gradually increase their daily step goal. Your patients can get free tips for increasing steps and can track their step progress online at the America on the Move website (http://www.americanonthemove.org).

If you have patients that cannot walk or who don't want to use step counters, you can provide physical activity goals in minutes per day. A good starting point would be to increase by 30 min/day and work toward 60–80 min/day. Also keep in mind that if patients begin to do more intense physical activity, they get the same effects with fewer steps or with less time.

The results of the study by Di Loreto et al. (1) provide an optimistic message about physical activity and type 2 diabetes. It isn’t necessary for your patients to do a lot of strenuous exercise to reap health benefits. Even small increases in physical activity can help, and it seems possible to produce these changes in the majority of your patients. Encourage your diabetic patients to walk, it is probably one of the best things you can do for their health.

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References