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Starting the New Year and Getting Rid of Type 2 Diabetes?

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I recently was asked about the latest research on the reversal of type 2 diabetes—both bariatric and non-bariatric solutions—and it made me wonder about the mechanisms of this possibility and what role being active may play in it. Each new year always brings a whole host of resolutions that people make focused on losing weight, getting more fit, and becoming healthier. Especially with all the COVID-related pounds I have heard about people gaining (1), I expect these resolutions to be out in full force at the start of 2022. But how effective will they be long-term, and is the reversal of type 2 diabetes a realistic resolution to make?

Getting blood glucose levels back to normal (to the point where it appears you no longer have type 2 diabetes) may be possible for many. Still, we also know that hyperglycemia can return if this “reversal” is accomplished through lifestyle improvements when people backslide into less favorable lifestyle habits. Complete remission may be harder to accomplish in people who have had type 2 diabetes for longer as they can permanently lose some of the insulin-making capacity of their pancreatic beta cells (2).

Research on diabetes reversal relying on bariatric surgery has been somewhat more optimistic, and bariatric surgery is now considered the most effective way to improve glycemic management and achieve diabetes remission long-term (3, 4). That said, pre-and post-operative lifestyle changes, including regular physical activity, are always recommended. For example, aerobic exercise training following surgery may further enhance weight maintenance, glycemic management, and insulin sensitivity (5-7), and resistance exercise done post-surgery may reverse muscle strength deficits frequently observed after bariatric surgery (8) and help prevent some bone loss (9, 10). As for the reversal of type 2 diabetes without surgery, interventions focus on weight loss. In a recent study on remission of type 2 diabetes (the DiRECT study), adults ages 20 to 65 who had been diagnosed within the prior six years and not taking insulin followed a 12-month intervention that involved extensive dietary changes but not physical activity (11). In that trial, almost half of participants achieved remission (normal blood glucose and not taking any diabetes medications), with no remission among those who gained weight and the greatest success rate among those who

lost the most (86% remission in the participants who lost 15 kg or more). In a two-year follow-up, remission was sustained for more than a third of them, with a remission rate of 64% among those who maintained at least a 10-kg weight loss (12). In my opinion, that is still not that great, especially since most of the success appeared to rely on keeping the lost weight off (and we all know how hard that is).

That brings me back to physical activity and its potential role. It appears that remission of type 2 diabetes—at least in those with a more recent onset—is most closely tied to abnormal fat deposits in the pancreas and the liver (13). Here is where physical activity can play a dramatic role. Exercise training improves whole-body insulin sensitivity. Even more importantly, even just two weeks of exercise training improves beta-cell function in adults with prediabetes and type 2 diabetes and decreases pancreatic fat (14). Substantial weight loss at the time of diabetes diagnosis may work best to prevent loss of pancreatic beta-cell capacity (2), but staying in remission also likely requires maintenance of that lost weight, which we know is more readily accomplished by becoming and remaining physically active (15, 16).

Moreover, aerobic and resistance training has been shown to reduce ectopic abdominal fat (i.e., visceral, liver, pancreatic, and other abnormal fat deposits) best (14, 17, 18), so why not get and stay more physically active this year? It is the best chance you have to accomplish your 2022 resolution to get rid of your type 2 diabetes. If getting regularly active is not entirely successful in normalizing your blood glucose levels, at least it will get you closer, and you will have a healthier and happier year and life ahead. Just get up and get moving for the best results.

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