



## Common Barriers to Insulin Therapy

Insulin is necessary for the body to use glucose for energy. Unfortunately, in people with type 2 diabetes, either the body does not produce enough insulin or the insulin is not used properly, a condition called insulin resistance. Over time, people with type 2 diabetes face a progressive decline in insulin production, which leads to insulin deficiency.<sup>1</sup> As a result, many people with diabetes will eventually require insulin therapy to maintain adequate blood sugar control and help prevent diabetes-related complications. Yet, despite the proven clinical benefits of early initiation of insulin therapy, many people with type 2 diabetes are reluctant to begin insulin treatment; such reluctance is often called “psychological insulin resistance.”<sup>2</sup> This fear is associated with poor glycemic control, clinical complications, psychological comorbidities, poor general well-being, poor health status and increased mortality.<sup>3</sup>

In describing the reasons for psychological insulin resistance, researchers have identified a number of issues that serve as barriers to insulin therapy:

### **Perceived loss of control over one’s life**

In the 2005 *Taking Control of Your Diabetes* (TCOYD) survey, which included 708 people with type 2 diabetes who were not taking insulin, nearly half (44.8 percent) of the participants expressed the belief that insulin therapy would restrict their lives. Many voiced concerns about loss of spontaneity, having to eat at specific times, making it harder to travel or eat out, and not being able to be left alone.<sup>4</sup>

### **Managing the demands of insulin therapy**

A similar percentage (43.9 percent) of TCOYD survey respondents did not feel confident they could manage the daily demands of an insulin regimen.<sup>3</sup> Such a lack of confidence may stem from concerns about the prospect of determining dosages, handling self-injection, administering insulin at specific times, and managing the demands of blood glucose monitoring.<sup>2</sup>

### **Personal failure to manage disease**

Many people with diabetes believe that having to start an insulin regimen signals a personal failure related to poor self-control in terms of diet, exercise, or use of oral medications, as well as a sense that their diabetes is “getting worse.” Such a belief was expressed by half of the patients in the *Diabetes Attitudes, Wishes and Needs* (DAWN) study, an international study involving more than 5,000 people with type 2 diabetes.<sup>5</sup> Similarly, 38.4 percent of participants in the TCOYD survey equated starting insulin therapy with personal failure.<sup>3</sup>

### **Pain and discomfort**

Of the 28 percent of participants in the TCOYD survey who said they were unwilling to begin insulin therapy, half (50.8 percent) cited anticipated pain as a reason for their unwillingness. Of the total patient population, 35 percent expressed concern about the anticipated pain of injections.<sup>3</sup>

### **Anxiety about daily injections**

Issues such as pain, discomfort, and the complexity of insulin therapy can make people with diabetes anxious. Indeed, anxiety about needles is a commonly expressed concern by individuals with diabetes who are about to begin insulin therapy.<sup>6</sup> More than half of the patients in the DAWN study said they were worried about starting insulin.<sup>4</sup>

### **Perceived lack of positive gain**

Few people with diabetes believe that insulin can positively affect their overall health.<sup>7</sup> Only 20 percent of patients in the DAWN study expressed the belief that insulin would help them manage their disease better.<sup>4</sup> Patients may also perceive that insulin is for more severe diseases and/or that insulin initiation means that they are becoming “more ill,” their disease has dramatically progressed and become more serious, or that they are at the “end of the road.”<sup>8</sup>

### **Clinician-related factors**

Patients’ feelings of failure to manage their diabetes may be perpetuated by healthcare providers who send subtle messages that insulin will be initiated if the patient doesn’t make lifestyle changes that will result in weight loss and daily exercise.<sup>9</sup> Many physicians are themselves reluctant to start patients on insulin even though they recognize that relatively few individuals achieve glycemic control with oral therapy alone. Clinicians’ reluctance may be due to the perceived complexity of insulin regimens; a belief that insulin is not effective in patients with type 2 diabetes; and a fear of hypoglycemic episodes (abnormally low blood sugar), weight gain, and associated cardiovascular risks. Clinicians may also fear that insulin therapy will require careful monitoring and more demands on their time and other practice resources.<sup>2</sup>

### **Social Stigma**

Social stigma can be a significant component of insulin therapy resistance as vials and syringes carry a strong negative connotation and are usually identified with either intravenous drug addicts or severe illness. Using syringes to inject insulin in a public place may result in feelings of embarrassment. Further, patients may fear that the use of syringes will damage their relationships with significant others, or that friends and family members will treat them differently.<sup>8</sup>

## **Overcoming barriers to insulin therapy**

### **Education**

Physicians, nurses, diabetes educators, and other health care professionals can play a key role in helping people with diabetes identify the sources of concerns about insulin therapy, thereby smoothing the transition to an insulin regimen.<sup>10</sup> Perhaps most importantly, healthcare professionals can help people with diabetes understand that the failure of diet, exercise, and oral medication to control diabetes does not represent an increase in the severity of the disease or a personal failure to manage it, but a result of the natural progression of the disease.<sup>7</sup> Patients should be educated on the benefits of insulin therapy, which can include improved energy level and a greater sense of well-being; these benefits are not always understood before insulin is started. Diabetes educators, in particular, are in an excellent position to advise people with diabetes on the use of simple, straightforward insulin regimens that may help them gain confidence in their ability to manage their disease.

When consulting their patients, clinicians should also emphasize the simplicity of the treatment in order to decrease patients’ concerns of dependency on insulin and its potential disruption of their way of life. By tailoring treatment plans to individual patients’ concerns, clinicians may be better able to help their patients begin insulin treatment sooner and improve compliance, thus facilitating target glycemic control.<sup>8</sup> It is also important for educators to discuss fear of hypoglycemia, educating patients that hypoglycemic

episodes can often be avoided through adjustment of insulin and careful vigilance in self-monitoring of blood glucose.<sup>11</sup>

### **Improvements in insulin and insulin delivery devices**

Newer once-daily insulin formulations can be administered at nighttime, thereby minimizing the impact of insulin therapy on daily activities.<sup>2</sup> Additionally, modern insulin delivery devices such as insulin pens, which carry rapid-acting insulin in an injection device only slightly larger than an ink pen, offer the benefits of a discreet appearance, easy operation, and greater user confidence.<sup>8</sup> Insulin pens allow people with diabetes to self-inject discreetly at the dinner table, at sporting events, or wherever they happen to be.<sup>12</sup>

### **Improvements in needle technology**

People with diabetes can be confident that the needles used today for insulin injections are shorter and thinner than those used in the past. Today's needles are coated with silicone to make it easier to inject into the skin, making the injection process virtually painless.<sup>9</sup> Pen needles are available as short as 4mm, which are found to enter subcutaneous tissue with minimal risk of intramuscular injection and no additional leakage, even in obese patients.<sup>13</sup> Needles as short as 4mm also make it possible for patients to use only one hand when injecting – as no “pinch up” of the skin is required – making it easier and more discreet for patients to self-administer insulin injections.

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<sup>1</sup> American Diabetes Association. Diabetes Basics: Type 2. <http://www.diabetes.org/diabetes-basics/type-2/>. Accessed May 10, 2010.

<sup>2</sup> Davis SN, Renda SM. Psychological insulin resistance: overcoming barriers to starting insulin therapy. *Diabetes Educ* 2006;32 (Suppl 4):146S-152S.

<sup>3</sup> Fu AZ, Qiu Y, Radican L. Impact of fear of insulin or fear of injection on treatment outcomes of patients with diabetes. *Current Medical Research & Opinion*. 2009;25(6): 1413-1420

<sup>4</sup> Polonsky WH, Fisher L, Guzman S, Villa-Cabellero L, Edelman SV. Psychological insulin resistance in patients with type 2 diabetes: the scope of the problem. *Diabetes Care* 2005;28(10):2543-2545.

<sup>5</sup> Diabetes Attitudes, Wishes, and Needs (DAWN) Study. Barriers to treatment. <http://www.dawnstudy.com>. Accessed May 6, 2010.

<sup>6</sup> Zambanini A, Newson RB, Maisey M, Feher MD. Injection related anxiety in insulin-treated diabetes. *Diabetes Res Clin Pract* 1999;46:239-246.

<sup>7</sup> Polonsky WH, Jackson RA. What's so tough about taking insulin? Addressing the problem of psychological insulin resistance in type 2 diabetes. *Clin Diabetes* 2004;22(3):147-150.

<sup>8</sup> Brod M, Harald Kongso J, Lessard S, Christensen T. Psychological insulin resistance: patient beliefs and implications for diabetes management. *Qual Life Res* 2009;18:23-32.

<sup>9</sup> Wallace TM, Matthews DR. Poor glycaemic control in type 2 diabetes: a conspiracy of disease, suboptimal therapy and attitude. *Q J Med* 2000;93:369-374.

<sup>10</sup> Peyrot M, Rubin R, Khunti K. Addressing barriers to initiation of insulin in patients with type 2 diabetes. *Primary Care Diabetes Europe* 2010: S13-S15.

<sup>11</sup> Nam S, Chesla C, Stotts N, Kroon L, Janson S. Factors associated with psychological insulin resistance in individuals with type 2 diabetes. *Diabetes Care* 2010;33(8): 1747-1749.

<sup>12</sup> Meece J. Dispelling myths and removing barriers about insulin in type 2 diabetes. *Diabetes Educ* 2006;32:9S-18S.

<sup>13</sup> American Association of Diabetes Educators. Strategies for Insulin Therapy in Diabetes Self-Management. 2011.