
Chapter 5

Psychological Barriers to Insulin Use



Key Messages

- Psychological barriers to insulin use are the negative thoughts or feelings that people with diabetes may have about starting, using, or intensifying insulin.^a
- Of those people with type 2 diabetes for whom insulin is clinically indicated, around one in four report being “not at all willing” to start insulin.
- People already using insulin are sometimes reluctant to optimize or intensify insulin (but no prevalence data are available). One in 10 people with type 2 diabetes using insulin are dissatisfied with it.
- Psychological barriers can be associated with the delay, reduction, or discontinuation of insulin use, which can lead to suboptimal blood glucose levels and increased risk of diabetes complications.
- A brief questionnaire, such as the Insulin Treatment Appraisal Scale (ITAS), is useful for identifying psychological barriers to insulin use.
- There is little empirical evidence about the best ways to minimize psychological barriers to insulin. Recommendations based on clinical experience emphasize anticipating and acknowledging psychological barriers, and then working together with the individual to develop strategies to overcome them.



Practice Points

- Help people to understand the natural course and progressive nature of type 2 diabetes, and the likelihood that their treatment will change over time. Emphasize that needing insulin does not indicate that they have “failed,” and that insulin is simply the best treatment to meet their body’s needs right now.
- Be aware that people using insulin, as well as those not yet using insulin, experience psychological barriers to insulin. Every person will have different concerns; ask them what their concerns are, rather than making assumptions.
- Monitor for signs of psychological barriers to insulin, particularly when a person’s A1C has been above target for some time, and there is no sign that they are ready to transition to or intensify insulin.

^a The main focus of this chapter is on the concerns of people with type 2 diabetes. The concerns of people with type 1 diabetes are covered in Chapter 4: Fear of Hypoglycemia (and Other Diabetes-Specific Fears).

How Common Are Psychological Barriers to Insulin Use?



Type 2 diabetes (no insulin)^{b,1}



Type 2 diabetes (insulin)^{c,2}

WHAT ARE Psychological Barriers to Insulin Use?

People with type 2 diabetes often have negative thoughts or feelings about starting, using, or intensifying insulin.³ This is also known as “psychological insulin resistance” or “negative appraisals of insulin.”

Concerns about insulin among people with type 2 diabetes can be grouped into five main themes:⁴⁻⁹

- › concerns about medications (e.g., doubts about effectiveness or dependence on insulin) and possible side effects (e.g., weight gain or hypoglycemia)
- › anxieties about injections (e.g., fear of injections, needles, or pain; experiences of pain, bruising, scarring, or sensitivity from injections)
- › lack of confidence/skills (e.g., in their ability to use insulin; coping with a complex regimen, or injecting in public)
- › impact on self-perception and life (e.g., feelings of personal failure or self-blame for needing insulin, injections interfering with daily activities; or social stigma)
- › and fears about diabetes progression (e.g., insulin as a sign that diabetes is “getting worse,” insulin as the “last resort,” or mistaken beliefs that insulin leads to diabetes complications).



A person with diabetes may be aware of the benefits of insulin but still have worries or concerns about using insulin.

Concerns about insulin use can delay the transition from oral medication to insulin and result in missing injections

or stopping insulin.⁵ This has consequences for medical and psychological outcomes, including:¹⁰⁻¹⁴

- › glucose levels (including A1C) above recommended targets for prolonged periods, leading to increased risk of developing long-term complications
- › reduced satisfaction with treatment
- › impaired quality of life
- › or increased burden/costs to the individual and the healthcare system.



For some people, an alternative option to insulin may be a non-insulin injectable (see Box 5.1).

BOX 5.1 What about Other Injectable Therapies?

Typically, people with type 2 diabetes prefer oral medications to insulin.¹⁵ In recent years, new non-insulin injectable agents have become available. Like insulin, incretin-based agents (i.e., GLP-1) reduce blood glucose and require injections but have the advantage of a lower risk of hypoglycemia and weight gain. In clinical trials, people with type 2 diabetes report greater treatment satisfaction and quality of life using GLP-1s compared to insulin.¹⁶ It is possible that the perceived benefits of GLP-1s outweigh the perceived shortcomings of injections.¹⁶ Further research is required to evaluate this in clinical practice. Note that GLP-1 agents may be contra-indicated for some people.

b 30% of people with type 2 diabetes for whom insulin was clinically indicated “declined” to commence insulin.

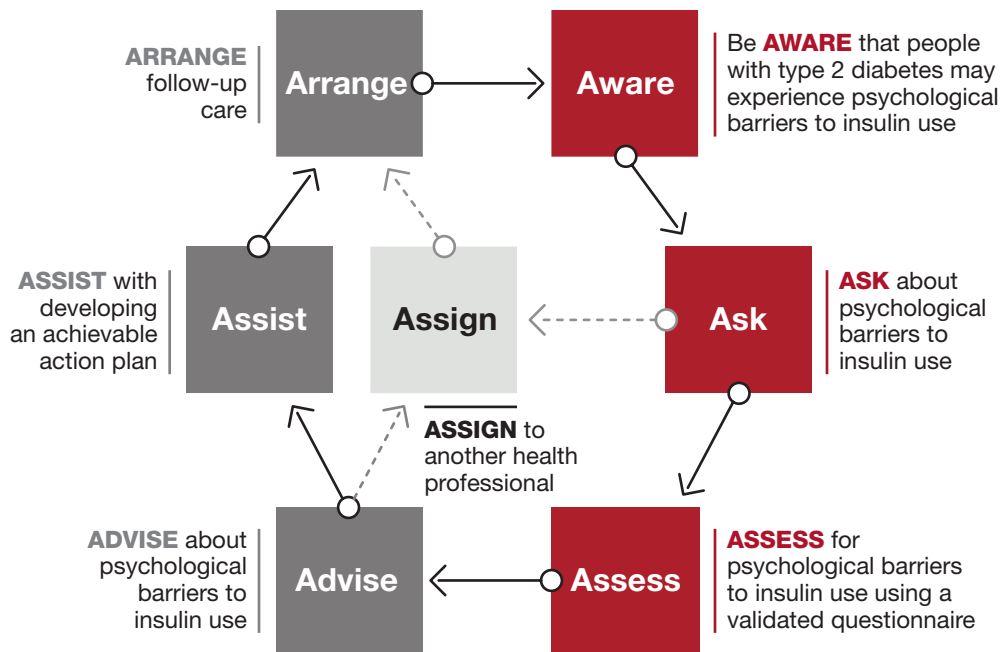
c 10% of people with diabetes expressed dissatisfaction with insulin. Note: the sample combined people with type 1 (n=180) and type 2 (n=1350) diabetes, but there were no significant differences between the groups for dissatisfaction with insulin.

7 A's Model: Psychological Barriers to Insulin Use

This dynamic model describes a seven-step process that can be applied in clinical practice. The model consists of two phases:

- How can I identify psychological barriers to insulin use?
- How can I support a person with psychological barriers to insulin use?

Apply the model flexibly as part of a person-centered approach to care.



HOW CAN I IDENTIFY Psychological Barriers to Insulin Use?

■ Be **AWARE**

Individuals with psychological barriers to insulin may show this by:^{3,17,18}

- › avoiding or being reluctant to talk about, begin, or intensify insulin use
- › expressing concerns or becoming upset at the suggestion of beginning or intensifying insulin
- › expressing concerns about injecting or possible side effects of insulin (e.g., complexity of injection technique, effect on lifestyle, perceptions of self and others, or weight gain)
- › “negotiating” to “do better” with their current management plan to improve diabetes outcomes

- › “dropping out” (e.g., missing appointments or filling fewer insulin prescriptions)
- › appearing not to care about, or seeming uninterested in, managing their diabetes
- › talking about discontinuing insulin use (now or in the future)
- › or misusing insulin (e.g., missing doses or taking smaller doses than recommended) or stopping insulin altogether.

Some people may be embarrassed to raise concerns about insulin. Common remarks are shown in **Box 5.2**.

BOX 5.2 Remarks Indicating Possible Psychological Barriers to Insulin Use

"I worry I'll never be able to get off insulin"

"Insulin means you run the risk of hypos"

"No more spontaneity"

"It's not fair; I've tried so hard with diet, exercise, and medication"

"Needing insulin means I haven't done well managing my diabetes—I have failed, this is the end of the road"

"Others will worry a lot about me"

"I don't like needles"

"Insulin means my diabetes is worse"

"Insulin is too complicated and overwhelming—I will never be able to learn how to inject and get the right dose"

"I can improve my blood glucose/A1C numbers without insulin—just give me some more time to improve my numbers/lose weight/exercise more, etc."

"Insulin won't help my diabetes—nothing good will come of insulin"

"Since starting insulin my diabetes has not improved, but I have gained all this weight"

ASK

Ask open-ended questions during the consultation to explore the individual's beliefs and concerns about insulin. Have this conversation:

- shortly after the diagnosis of type 2 diabetes
- when you notice signs of concerns or worries about insulin (see **AWARE**)
- or if the person has suboptimal A1C despite being on (near) maximal oral agents.



Before asking the following questions for the first time, make sure the person realizes that diabetes is a progressive condition and that they are likely to need insulin in the future. Raise the use of insulin as a potential treatment option early (soon after diagnosis). Continue to have the conversation when you notice signs of psychological barriers to insulin, or when the person expresses concerns about insulin.

For example, for people who are not yet using insulin, you could ask:

- "How do you feel about going on insulin [now or in the future]? Can you tell me more about that?"
- "What questions do you have about insulin?"
- "How do you think insulin might affect your health and lifestyle?"
- "What do you think might be the benefits of using insulin for you?"
- "What do you think might be the disadvantages of using insulin for you?"
- "Some people have concerns about insulin. What concerns do you have? What is your main concern?"
- "What have you heard from other people with diabetes who use insulin?"

Or, for people who currently use insulin, you could ask:

- "Tell me about your experiences using insulin. How is that going?"
- "How do you feel about using insulin?"
- "What concerns do you have about insulin? Which is your main concern?"
- "What questions do you have about insulin?"

- › “How does insulin make your [life/diabetes] easier?”
- › “How does insulin make your [life/diabetes] more difficult?”
- › “What advantages have you noticed when using insulin?”
- › “What disadvantages have you noticed when using insulin?”



It is important to establish whether the person’s concerns are only related to insulin or related to their diabetes more broadly (see Chapter 3). To explore their broader concerns about diabetes, you might like to ask a question such as, “What is the most difficult part of having diabetes for you? Can you tell me more about that?”¹⁹

If the person indicates that they have concerns about using insulin, you may want to explore this further (see **ASSESS**). Using a validated questionnaire will help you both to identify additional barriers that were not raised through conversation. Importantly, it will also give you a benchmark for tracking an individual’s barriers to insulin use over time.

However, only use a questionnaire if there is time during the consultation to talk about the scores and discuss with the person what is needed to address the identified concerns about insulin. For information about using questionnaires in clinical practice, see pages 10 and 11.

■ ASSESS

Validated Questionnaire

The Insulin Treatment Appraisal Scale (ITAS; 20 items) is the most widely used measure of psychological barriers to insulin use.²⁰ A copy is included on page 87.

Each item is scored on a five-point rating scale from 1 (strongly disagree) to 5 (strongly agree). The items form two subscales:

- › **positive appraisal of insulin** (items 3, 8, 17, and 19): higher scores indicate more positive attitudes to insulin
- › and **negative appraisal of insulin** (all remaining items): higher scores indicate more negative attitudes to insulin.

There is no recommended cut-off value to indicate the presence or absence of psychological barriers to insulin use.

Subscale total scores may be valuable for assessing change over time. Responses to individual items will be helpful in guiding the conversation about insulin use and for understanding and addressing concerns.

Invite the person to explore their concerns (negative attitudes) about insulin in a conversation about their responses, for example, “I note here that you are concerned about [issue]. Can you tell me more about that?” If the person has several concerns, ask which are their priority issues, for example, “You seem to have a few worries about insulin. Which of these would you find most helpful to talk about today?”

Additional Considerations

Be aware of and explore other factors that may contribute to a person’s concerns about using insulin, such as:^{21–26}

- › the complexity of their current medication regimen in addition to insulin (e.g., other medications or the number of daily doses)
- › cultural factors (e.g., health beliefs, language barriers, or their level of trust in the healthcare system and treatments)
- › health literacy (see **Chapter 1**)
- › any physical and mental impairment or disability (e.g., vision or hearing loss, dexterity, memory, or cognitive function)
- › costs and access (e.g., insulin and related supplies, or medical appointments)
- › practical skills (e.g., planning and problem solving)
- › and the beliefs and attitudes of their partner, family members, and wider social network.



HOW CAN I SUPPORT A PERSON with Psychological Barriers to Insulin Use?

The decision to begin, intensify, and continue insulin use is the choice of the person with diabetes. Your role is to help them make an informed choice by providing open communication, information, and support. It is your duty-of-care to make sure they are informed about the consequences of their decision. Keep in mind that even if they are not open to the idea initially, they may become more open over time (e.g., through discussion and education).

■ ADVISE

Talk with the person about insulin and its role in diabetes management (relating it back to their ITAS responses, when assessed):

- acknowledge the specific barriers the person has raised (see **ASK** and **ASSESS**)
- acknowledge that it is common to have questions and concerns
- reassure them that needing insulin does not indicate they have “failed”
- advise that many people need insulin as a part of the natural progression of diabetes
- tell them that people who use insulin find it beneficial because it:
 - is a powerful way to keep blood glucose within an optimal range to prevent long-term complications
 - allows for more flexibility with food and planning of meals
 - improves their energy levels
- advise that insulin use may begin with just one or two injections per day
- make it clear that it is the individual’s decision whether or not to use insulin and you would like to assist them in making an informed choice
- offer the person opportunities to ask questions
- and make a joint plan about the “next steps” (e.g., what needs to be achieved and who will help).

NEXT STEPS: ASSIST OR ASSIGN?

- As psychological barriers to insulin use are intertwined with diabetes management, they are best addressed by a diabetes health professional or PCP (if they are the main health professional). If you have the skills and confidence, support the person yourself, as they have confided in you for a reason. A collaborative relationship with a trusted health professional and continuity of care are important in this process.
- In most cases, you will be able to address psychological barriers to insulin use without referral, through education and counselling. The following factors will inform your decision:
 - your scope of practice, and whether you have the time and resources to offer an appropriate level of support
 - your knowledge, skills, and confidence to address the identified barriers
 - the needs and preferences of the person with diabetes
 - the severity of the psychological barriers (e.g., worries about injections versus injection phobia)
 - and whether other psychological problems are also present, such as depression (see **Chapter 6**) or an anxiety disorder (see **Chapter 7**).
- If you believe referral to another health professional is needed:
 - explain your reasons (e.g., what the other health professional can offer that you cannot)
 - ask the person how they feel about your suggestion
 - and discuss what they would like to gain from the referral, as this will influence to whom the referral will be made.



Choose your words carefully. If the person views insulin as a veiled threat or associates insulin with a sense of “failure,” they may want to continue negotiating to delay insulin. They may feel that if they can just “do a bit better” with their current management plan they will not need insulin—and this is unlikely to be the case. For more information about the impact of language, see Chapter 1.

■ ASSIST

Recent studies have investigated strategies to overcome psychological insulin resistance.²⁷ Demonstrating the injection process, explaining benefits of insulin, and a collaborative style were the three most helpful actions of health professionals in facilitating insulin initiation. Recommended strategies are based on recent research, clinical experience, and expertise. For most people, an initial reluctance to use insulin can usually be overcome.

Common barriers and practical strategies for minimizing these barriers are listed in Appendix D. Not all strategies will suit everyone, so you will need to work with the person to tailor appropriate solutions to their specific barriers, needs, and preferences.²⁸ Discussing the individual’s responses to the ITAS items (see **ASSESS**) is useful for this purpose.

For people who are new to insulin use, it will often be most appropriate to begin by exploring their thoughts and feelings about insulin. Postponing other changes to their treatment regimen will help to prevent additional disruptions to their routine.^{10,28}

Three key strategies that may be particularly useful are: demonstrating the insulin injection process, “decisional balancing,” and offering a time-bound “insulin trial.”

Demonstrate the Insulin Injection Process

People who were initially unwilling but then initiated insulin have said that the most helpful action of their health professional was to demonstrate the injection process.^{28,29} People who had experienced a demonstration of the process were less likely to delay insulin initiation.²⁸ This can be done in three easy steps.

First, show the person an insulin pen, and the size of the needle—many people are surprised by how small the needle is. The next step is to demonstrate the process of taking an injection, to show how simple it is. Finally, invite the person to try an injection for themselves, during the consultation with you. Invariably, this process helps a person to realize that injecting insulin is not as difficult or as painful as they imagined it would be.²⁹

Decisional Balancing

“Decisional balancing”³⁰ is a technique used in motivational interviewing.^{31,32} It enables the person to explore the relative merits of each treatment option (and how they feel about this). This tool (see **Box 5.3**) helps to build rapport and helps you assess their readiness for change. It is a way of supporting the person to work through the ambivalence in their thoughts and to make an informed decision.

Invite the person to list the three most relevant pros and cons per treatment (preferably in writing). If the person lists only one, encourage them to list one or two more (e.g., “Any other pros/cons to add?”).

After they complete the tool, you can use their responses as the basis for a conversation. Rather than starting with problems or concerns about insulin, begin with the positives of their current treatment, and then discuss the perceived disadvantages. This may help the person realize for themselves that remaining on the current treatment is not ideal. The next step is to explore the extent to which switching to insulin would be a way to overcome these disadvantages. This elicits the advantages of using insulin. Finally, ask which of the disadvantages of using insulin would be easiest for the person to overcome and brainstorm strategies.

Note that the “pros” and “cons” of each treatment may not be of equal importance to the individual.



The “Diabetes Medication Choice” decision aid³³ may be a helpful tool for comparing treatment options in terms of various concerns (e.g., side effects or regimen). See “Resources” page 89.

BOX 5.3 Decisional Balancing Tool

	Pros	Cons
Continue with current diabetes treatment (e.g., oral meds)	1.	1.
	2.	2.
	3.	3.
Start insulin	1.	1.
	2.	2.
	3.	3.

An “Insulin Trial”

A time-bound “insulin trial” is a way to encourage the person to “experiment” with insulin for a period of time that you both agree on. The length of the experiment should depend on the intended outcomes. For example, a one-month “trial” may be long enough for a person to experience how they can fit an insulin regimen into their lifestyle. If they are comfortable with that, extending the “trial” to three months will enable them to notice improvements in glycemic outcomes (A1C).

Make sure the person feels confident that they have the option of reverting back to their previous treatment if this experiment has not worked out for them. At the end of the experiment, review their experience together: reflect on the perceived advantages and disadvantages and whether or not these were expected.

■ ASSIGN

If a decision is made to refer, consider:

- **a certified diabetes educator or other diabetes health professional** (e.g., an endocrinologist or a dietitian) for self-management training (e.g., injection technique and carbohydrate counting) and support
- **a mental health professional** (preferably with an understanding of diabetes and insulin) if the problem is ongoing, or if it is evident that there is an underlying personal or psychological problem (e.g., needle phobia or an anxiety disorder), or the person with diabetes feels that it could benefit them
- **or a structured diabetes education group**, because insulin initiation in a group setting is as effective as an individual session and takes half the time;³⁴ it also offers important opportunities for people to share their concerns and ideas about insulin.

Most of these health professionals may be covered through insurance or through Medicare. A PCP can assist with the referral process.

See **Chapter 9** for guidance about preparing mental health referrals and what to say to the person with diabetes about why you are making the referral.



If you refer the person to another health professional, it is important:

- that you continue to see them after they have been referred so they are assured that you remain interested in their ongoing care
- and to maintain ongoing communication with the health professional to ensure a coordinated approach.

■ ARRANGE

Make any necessary arrangements for the person to receive the care you have agreed on:

- arrange a follow-up appointment; if the person is happy to do so, book a follow-up appointment while they are at your clinic
- and use the follow-up appointment to oversee their progress, and to monitor and address any ongoing obstacles.

Be prepared to support the person more than usual during this time. For example, more frequent or extended appointments may be necessary. Telephone/video conferencing may be a practical and useful way to provide support in addition to face-to-face appointments.



CASE STUDY

Bruce

72-year-old man, living with wife Martha

Type 2 diabetes, managed with oral medications; overweight

Health professional: Dr. Amy Saunders (PCP)

■ Be AWARE

Dr. Saunders is concerned because, after some high blood glucose readings, Bruce has stopped bringing his blood glucose diary to his appointments. She has raised the idea of transitioning to insulin with Bruce, but he has insisted that, *“I’m sure I can get my blood sugar back down with some hard work and persistence.”* Dr. Saunders knows that it is common for people with diabetes to have concerns about starting insulin and suspects that Bruce may feel this way. She has, therefore, made a note in Bruce’s file to follow it up next time she sees him.

■ ASK

At the next appointment, she asks him how he is feeling generally and how he is feeling about his diabetes. Bruce says, *“I’m okay, but I have been finding things a bit tough because I just can’t keep my numbers down, even though I exercise daily and take my pills.”* Dr. Saunders reminds Bruce that they have spoken previously about insulin. Remembering that it can be helpful to anticipate and normalize diabetes-related concerns, she invites Bruce to share his feelings. *“Some people do have concerns about insulin. How do you feel about it?”* Bruce tells Dr. Saunders that his neighbor, Eloise, has diabetes, and since she started insulin a year ago she has gained weight and developed vision problems. He says, *“I’m not going to let that happen to me—I won’t start using insulin.”*

■ ASSESS

Dr. Saunders says, *“It sounds like you do have some concerns about using insulin. Would you like to complete a questionnaire so we can better understand how you feel about it?”* Bruce agrees, so she gives him a copy of the ITAS.

Bruce’s responses show he has four main psychological barriers to insulin:

- “taking insulin means I have failed to manage my diabetes with diet and tablets” (agree)
- “insulin causes weight gain” (agree)
- “taking insulin means my health will deteriorate” (strongly agree)
- and “taking insulin helps to prevent complications of diabetes” (strongly disagree).

■ ADVISE

Dr. Saunders suspects that many of Bruce’s concerns can be resolved with discussion and education. She tells Bruce that she:

- would like to talk to him about his responses to the questionnaire
- would like to help him to better understand insulin treatment
- is not trying to pressure him into starting insulin
- and just wants to make sure he is well-informed about his treatment options.

Bruce agrees to have the conversation.

■ ASSIST

Dr. Saunders begins by asking Bruce if he would like to say a bit more about his feeling of failure. She listens to his reply, then explains that many people need to use insulin for their diabetes, not because they have failed, but because it is the best way to manage their diabetes at that point. She explains that type 2 diabetes is a progressive condition, and after some time many people need the treatment to be intensified to manage it effectively. Often, this means transitioning to insulin.

She also talks with Bruce about the benefits of insulin, relating it back to his specific example of Eloise. She explains, *“Diabetes-related complications, like Eloise’s vision problems, are caused by the sugar in your blood remaining too high for too long. Insulin helps to lower the sugar in your blood and is the best method we have to do that effectively. I’ve suggested that you begin using insulin so we can prevent those kinds of health problems.”* Dr. Saunders also:

- Suggests that a short “trial” of insulin (for about four weeks) might give him some experience and alleviate some of his concerns. She says, *“Many of the people with diabetes I see have some concerns about insulin at first, just like you do. But I usually find that once they try it, it really helps them to feel better. If you don’t find it useful after a few weeks then we’ve learned that it’s not the right diabetes treatment for you at this time. I am wondering whether you will consider trying this, Bruce?”*
- Explains the potential benefits of insulin in addition to better glucose levels—feeling less tired, fewer medications (he may be able to reduce the number of oral hypoglycemic agents), and possibly having fewer side effects than the medications he is currently taking.
- Talks about the possibility of weight gain with insulin use and offers to write a referral to a local dietitian who could help him to prevent weight gain.
- Reassures him that he does not need to decide about the “insulin trial” today.
- Recommends that he talk with his wife, Martha, and then come back to see her in a week.
- Suggests that he make an appointment with the receptionist before he leaves.

At the next appointment, Bruce tells Dr. Saunders that he will give insulin “a try.” Dr. Saunders draws up a diabetes care plan and writes a prescription for long-acting insulin, which he will need to inject once a day. She explains that Bruce will need to see the certified diabetes educator to learn about insulin (e.g., how it works, dosage, timing of injections, how long it will take to notice an effect, and the effects of food and exercise), injection technique, and hypoglycemia (prevention, recognition, and treatment), and to have the dose adjusted. This will involve a couple of appointments and telephone calls. She gives him plenty of opportunities to ask questions.

■ ARRANGE

Dr. Saunders writes a referral letter to the diabetes nurse educator with instructions about the starting dose and regular dose titration until Bruce’s next review. She suggests that Bruce sees her again in four weeks so they can discuss how he is doing, but he can visit her sooner or speak to the diabetes educator if he has any problems or questions. At the next appointment, Bruce can decide whether he will continue to use insulin, and Dr. Saunders will prescribe the most appropriate type and dose of insulin for him. Bruce agrees with this plan.



CASE STUDY

Riana

54-year-old woman

Type 2 diabetes, managed with one daily basal insulin injection

Health professional: Angela Smith (certified diabetes educator), following a referral

■ Be AWARE

Angela has received a referral letter from Riana's PCP, who explains Riana has had *"suboptimal A1C over the past year"* and has *"recommended increasing her insulin dose from one basal injection to basal plus rapid-acting at her largest meal (at least), but Riana disagrees."* Angela is aware that many people experience psychological barriers to intensifying an insulin regimen and wants to explore Riana's reluctance to increasing her insulin dose.

■ ASK

At their first appointment, Angela thanks Riana for coming and asks how she can help. Riana says, *"I'm here because my doctor sent me."* Angela replies, *"I understand that he has suggested some changes to your treatment plan, can you tell me more about that?"* Riana tells Angela about the plan to increase her insulin injections to multiple times daily. Angela asks Riana how she feels about that plan and Riana responds that she is *"not happy."*

Angela asks about Riana's experiences using insulin and how she feels about it. Riana responds that she is generally doing okay with her current insulin injections.

Angela also explores whether there have been changes in Riana's life in the past year that could explain her increasing blood glucose levels. Riana describes nothing that would contribute significantly to her elevated blood glucose levels or to her reluctance to increase the frequency of her insulin injections.

■ ASSESS

Angela asks Riana whether she would like to complete a brief questionnaire so they can both better understand her concerns about insulin. Riana agrees and completes the copy of the ITAS that Angela gives her.

Riana's responses indicate four key psychological barriers to insulin:

- › "managing insulin injections takes a lot of time and energy" (agree)
- › "injecting insulin is painful" (agree)
- › "taking insulin helps to maintain good control of blood glucose" (disagree)
- › and "taking insulin helps to improve my energy level" (disagree).

■ ADVISE

Before discussing Riana's responses, Angela asks Riana what she thought of the questionnaire. Riana replies, *"It was alright, good really—no-one has ever asked me these sorts of questions before."* She tells Angela that when she first began using insulin she had struggled with the injections. At the time, her PCP had demonstrated the insulin injection technique and he'd been "encouraging." But months later, *"I still hadn't got the hang of it and I felt silly asking questions all the time. My numbers went up, and I felt less supported as time passed. I already struggle with one injection; how can he expect me to do more? I just want to go back to pills."* Angela responds that:

- › it is common to feel distressed about diabetes from time to time

- › Riana should not feel embarrassed about asking questions
- › and she has noticed a pattern in Riana’s ITAS responses—she feels pain while injecting and is not experiencing the expected benefits of insulin (for her blood glucose and energy levels).

■ ASSIST

Angela asks Riana to demonstrate her injecting technique using saline solution. Riana agrees and she injects the saline slowly and directly into her abdomen, then quickly withdraws the pen. Some of the saline dribbles down Riana’s abdomen as the pen is withdrawn. Angela asks whether Riana has noticed it leaking out before, and Riana replies, “Yes, but that’s normal isn’t it?” Angela explains that it is not normal, and she may not be getting all the insulin she needs, which might explain her high glucose readings. Angela also checks that Riana is rotating her injection sites regularly. Then Angela:

- › demonstrates how to improve injection technique so that it will be less painful and Riana will receive the full dose of insulin
- › asks Riana to practice a few times until they both feel comfortable with Riana’s injection technique
- › and suggests that Riana continue with her current daily injection for a few more weeks using the new technique, and Riana agrees with this plan.

■ ARRANGE

Before the consultation ends, Angela:

- › checks whether Riana has any more questions or concerns
- › encourages her to keep a record of her injections and blood glucose readings, so they can monitor her progress and devise a plan of action together if the numbers have not improved
- › encourages Riana to also record her injection sites and level of pain while injecting, from 1 (no pain) to 5 (extreme pain), so they can check whether the new technique is helping to reduce her pain, and whether her pain is related to specific injection sites
- › suggests that Riana visit Angela again in two weeks
- › and asks Riana when she will next see her PCP, which is three months from now. Angela confirms that this will allow enough time to see an improvement in Riana’s blood glucose levels as a result of the new technique.

Questionnaire: Insulin Treatment Appraisal Scale (ITAS)

Instructions: The following questions are about your perception of taking insulin for your diabetes. If you do not use insulin therapy, please answer each question from your current knowledge and thoughts about what insulin therapy would be like. Tick the box that indicates to what extent you agree or disagree with each of the following statements (select one option on each line).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
1 Taking insulin means I have failed to manage my diabetes with diet and pills	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2 Taking insulin means my diabetes has become much worse	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3 Taking insulin helps to prevent complications of diabetes	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4 Taking insulin means other people see me as a sicker person	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
5 Taking insulin makes life less flexible	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
6 I'm afraid of injecting myself with a needle	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
7 Taking insulin increases the risk of low blood glucose levels (hypoglycemia)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
8* Taking insulin helps to improve my health	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
9 Insulin causes weight gain	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
10 Managing insulin injections takes a lot of time and energy	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
11 Taking insulin means I have to give up activities I enjoy	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
12 Taking insulin means my health will deteriorate	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
13 Injecting insulin is embarrassing	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
14 Injecting insulin is painful	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
15 It is difficult to inject the right amount of insulin correctly at the right time every day	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
16 Taking insulin makes it more difficult to fulfill my responsibilities (at work, at home)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
17* Taking insulin helps to maintain good control of blood glucose	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
18 Being on insulin causes family and friends to be more concerned about me	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
19* Taking insulin helps to improve my energy level	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
20 Taking insulin makes me more dependent on my doctor	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

* Positive appraisal subscale.

© Novo Nordisk and Frank Snoek 2007. The copyright holder/developer has given permission for the questionnaire to be reproduced in this guide. Readers of the guide are permitted to reproduce the questionnaire for clinical use and non-commercial research purposes. Readers of the guide are not permitted to use the questionnaire for commercial research purposes and must seek permission from the copyright holder/developer to do so.

Background

The Insulin Treatment Appraisal Scale (ITAS) is a 20-item questionnaire for measuring a person's perceptions of insulin use.²⁰ The ITAS comprises two subscales:

- › positive appraisal (four positive statements about insulin, such as “*Taking insulin helps to improve my health*”)
- › and negative appraisal (16 negative statements about insulin, such as “*Taking insulin is embarrassing*”).

How to Use the ITAS in Clinical Practice

Respondents are asked to indicate their level of agreement with each statement. Items are scored from 1 (strongly disagree) to 5 (strongly agree). The most useful way to use this questionnaire clinically is to “eyeball” the responses to individual items. Positive appraisal subscale items that scored two or lower, and negative appraisal subscale items that scored four or higher indicate likely barriers to insulin use and require further discussion.



For tips about using questionnaires, see “Using Questionnaires to Inform Appointments” (pages 10 and 11).

Interpretation of Scores

Positive appraisal subscale: items 3, 8, 17, and 19 are summed to produce a score between 4 and 20, with higher scores indicating more positive attitudes towards insulin.

- › Positive appraisal subscale items have been marked with an asterisk on the previous page.

Negative appraisal subscale: all 16 remaining items are summed to produce a score between 16 and 80, with higher scores indicating more negative attitudes to insulin.

Total score: a score ranging from 20 to 100 is produced by reverse-scoring the positive items, then adding together all 20 items, with higher scores indicating more negative attitudes towards insulin.

- › Although it is possible to calculate a total score on the ITAS, there are no ITAS cut-off values to indicate a presence or severity of psychological barriers. For this reason, calculating a total score is mostly useful only for research purposes or to measure changes over time.
- › Research has demonstrated that it is preferable to use the positive and negative appraisal subscale scores separately, rather than the total score.³⁵



Many people endorse the benefits of insulin despite having reservations about its use. So, endorsement of positive appraisals of insulin does not suggest an absence of psychological barriers.

Resources

For Health Professionals

Peer-Reviewed Literature

> Psychological insulin resistance: a critical review of the literature

Description: A systematic review of common causes of psychological insulin resistance and available strategies to reduce it.

Source: Gherman A, Veresiu IA, et al. Practical Diabetes International. 2011;28(3):125-128d.

> Identifying solutions to psychological insulin resistance: An international study

Description: Practical tips for recognizing and addressing psychological insulin resistance in clinical practice.

Source: Polonsky WH, Fisher L, et al. Clinical Diabetes. 2019;33(4) 307-314.

Tools

> The diabetes mellitus medication choice decision aid: a randomized trial

Description: A tool that can be used in consultations to facilitate decision-making regarding diabetes treatment.

Source: Mullan JR, Montori VM, et al. Archives of Internal Medicine. 2009;169(17):1560-1568.

URL: diabetesdecisionaid.mayoclinic.org

For People with Diabetes



Select **one or two** resources that are most relevant and appropriate for the person. Providing the full list is more likely to overwhelm than to help.

Support

> American Diabetes Association (ADA)

Description: ADA offers resources through which people with diabetes and their family/friends can access diabetes information, education programs, and other events.

Phone: (877) 964-0916

URL: www.diabetes.org

> Peer Support for Diabetes

Description: An information sheet for people with diabetes about peer support opportunities.

Source: Association of Diabetes Care & Education Specialists, 2020.

URL: <https://www.diabeteseducator.org/living-with-diabetes/Tools-and-Resources/peer-support>

Information

> Concerns About Starting Insulin (for People with Type 2 Diabetes)

Description: A handout for people with type 2 diabetes who have concerns about commencing or intensifying insulin therapy.

Source: Australia National Diabetes Services Scheme and the American Diabetes Association, 2021.

URL: <https://professional.diabetes.org/meetings/mentalhealthworkbook>

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