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# Psychogenic insulin resistance

Insulin should be considered an expected step in the treatment of type 2 diabetes.

Overcoming the patient's (and perhaps your) resistance to starting insulin is a major step in initiating insulin therapy.

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Starting insulin can be perceived by both doctor and patient as indicating failure. Both can feel ashamed and/or blame the other for not controlling the diabetes. This is often a new experience for both and they may not feel up to the challenge. Insulin marks a transition from 'a touch of sugar' to something serious. 'Bad things happen to patients on insulin.' The doctor and the patient may feel that they are on their own and that they can't get practical support or advice.

No wonder there is 'therapeutic inertia' and patients and doctors delay starting insulin.<sup>1</sup>

*Patient: 'No, no not yet.'*

*Doctor: 'Okay, we will give it one more try but then you will have to start.'*

This article reviews some of the psychogenic

barriers to progressing to insulin therapy in type 2 diabetes and briefly discusses a safe, simple and effective approach to initiating insulin therapy.

## Failure

*Patient: 'I had hoped that the new tablets would work but...'*

*Doctor: 'Now his tablets have failed...'*

Diabetes can be seen as a whole series of failures.

First can be the sense of failure of getting type 2 diabetes. Everyone 'knows' that people get diabetes because they are 'fat, lazy, eat too much and don't look after themselves'. And people who get diabetes 'should know better' – after all their fathers (and/or mothers, brothers or sisters) got it so they 'should have tried harder'.

## IN SUMMARY

- Having to start insulin therapy in type 2 diabetes can be perceived by both doctor and patient as indicating failure in controlling the condition.
- Along with the failure may come shame and blame, a sense of inadequacy in dealing with the new challenge of starting insulin, and fear of perceived bad outcomes associated with insulin (weight gain, highs and lows causing comas, complications of sight and/or limb loss, loss of independence) and the pain of injections.
- The doctor and the patient both need a lot of help to start insulin therapy. They may have to work through their sense of failure and inadequacy and to face their fear of what starting insulin may be associated with.
- Once the doctor and the patient have accepted that insulin is an expected step in the treatment of type 2 diabetes, the KISS approach ('keep insulin safe and simple') is a simple and practical way of initiating insulin therapy.
- The essentials of the KISS approach are to start with one insulin preparation, one dose per day and one titration schedule and to initially target just one blood glucose level a day (usually the fasting level).

continued

**Doctors and patients both have reservations about starting insulin**

**Failure**

*Patient: 'I had hoped that the new tablets would work but...'*

*Doctor: 'Now his tablets have failed...'*

**Shame/blame**

*Patient: 'I'm hardly eating anything, I'm walking 30 minutes every day and I still can't control it.'*

*Doctor: 'Mmm. His weight is up again, and so is his A<sub>1c</sub>.'*

**Inadequacy**

*Patient: 'I don't like the idea of insulin. I'm not sure I can manage it all.'*

*Doctor: 'It's all getting so complicated these days.'*

**Fear**

*Patient: 'My father went on to insulin and was dead six months later.'*

*Doctor: 'What happens if he has a hypo while he is driving?'*

**Lack of support**

*Patient: 'They don't understand why I don't want to start insulin – they don't even try to.'*

*Doctor: 'Who can I ask who knows how to get started?'*



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Next can be the failure of lifestyle. The 'party line' is that 50% of people can control their diabetes by lifestyle change alone. Healthy eating and healthy activity make you and keep you healthy. When you don't succeed at all or when your blood glucose level increases again later you have 'obviously' not tried hard enough.

The Diabetes Attitudes Wishes and Needs (DAWN) Study showed that about half (55%) of people with diabetes feel that starting insulin means that they have

not followed their treatment recommendations properly, and about one-third (36%) of their primary care physicians have been reported to agree with them.<sup>2</sup>

So far it is the patient who is doing the failing. However, doctors can feel that they have failed as well. The prescribed tablets are expected to work. Medications have been evaluated in scientific trials and Big Pharma promotes them by showing smiling, attractive people who are controlling their diabetes. The tablets don't always work: maybe they weren't the

right ones, maybe they weren't started early enough, maybe the doses weren't increased quickly enough. The 'powerful' doctor has failed (and the patient shares some of the failure by still not trying hard enough to stick to healthy lifestyle habits or not reliably taking the pills).

Having to start insulin can be seen as the final failure and the biggest one. Now both the doctor and the patient feel they have failed each other badly. They have reached the end of the road. Now they can't go back, and thinking 'if only I had...' just makes it worse.

Of course, not all of the above is true. The points below, however, are true.

- Lifestyle change often does control newly diagnosed diabetes but only for a limited time. As a patient's insulin resistance progressively increases and insulin secretion progressively decreases, his or her blood glucose level progressively rises (Figure 1).
- Similarly, medications that reduce insulin resistance and increase insulin secretion will work initially, but as diabetes progresses so treatment will need to progress.
- Insulin therapy is not the end of the road. It is another step on the road. Insulin therapy is expected in type 2 diabetes. The United Kingdom Prospective Diabetes Study (UKPDS) showed that 50% of patients who start a sulfonylurea would require insulin within six years to keep blood glucose under control and A<sub>1c</sub> below 7%.<sup>3</sup> With time, more and more people need insulin (Figure 2).<sup>3</sup> Although some studies suggest that newer oral hypoglycaemic agents may control blood glucose levels for longer, insulin will still be needed in a substantial number of patients with type 2 diabetes.<sup>4</sup>

Nonetheless, patients and doctors can feel as though they have failed when, despite their best efforts, a healthy lifestyle and oral hypoglycaemics no longer control the diabetes.



Figure 1. With increasing age, insulin resistance increases and pancreatic capacity to secrete insulin decreases. Initially, insulin secretion exceeds insulin resistance and the blood glucose level remains normal. However, after insulin resistance exceeds insulin secretion, the blood glucose level progressively rises with time.

### Shame and blame

*Patient: 'I'm hardly eating anything, I'm walking 30 minutes every day and I still can't control my weight.'*

*Doctor: 'Mmm. His weight is up again, and so is his A<sub>1c</sub>.'*

Along with the failure can come shame and blame. Diabetes itself is seen as a weakness, and in the past people hid their diabetes from others (even their family). Diabetes still hasn't fully 'come out of the cupboard'. Not being able to control the condition is perceived as showing a lack of willpower and commitment on the part of the patient, and inappropriate management on the part of the doctor – both are ashamed of the failure. Patients feel weaker still, and others blame them. Patients are told 'you are in control, you are responsible for your future health' and then they feel they aren't capable enough or strong enough to live up to these expectations.

As well as feeling ashamed and blamed for failure, both patients and doctors can often find someone else to blame – each other. Patients can also blame family, friends and work for not giving them a real chance. Australians are into 'naming and shaming' and the 'blame game' – diabetes gives us plenty of opportunities.

### Inadequacy

*Patient: 'I don't like the idea of insulin. I'm not sure I can manage it all.'*

*Doctor: 'It's all getting so complicated these days.'*

So far patients and doctors may be feeling that they failed, will be ashamed that they have not been able to control the diabetes and possibly may blame themselves, each other and other people.

These are big barriers, but there are

**Table 1. Numbers of medications taken by people with type 2 diabetes**

Numbers of medications taken	Percentage of patients
0	18%
1	16%
2	14%
3	11%
4 to 6	24%
7 to 10	13%
More than 10	4%

more. Both patients and doctors see starting insulin as something complicated where they will need a lot of help and where the devil is in the detail. At the time of writing there were 20 different preparations of insulin and six injection devices.<sup>5</sup> There were also at least five different schedules for giving insulin through the day, pages and pages of instructions on how, when and where to give the injection, lots of 'rules' on adjusting the doses of insulin, more 'rules' on

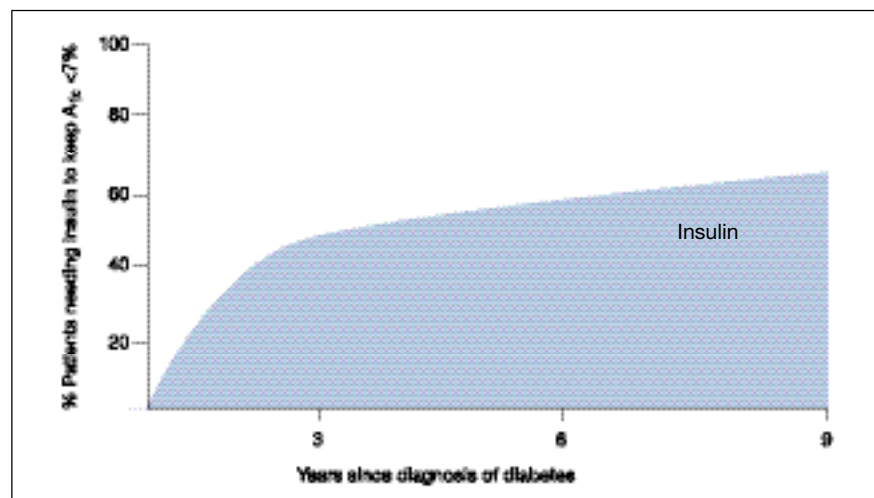


Figure 2. Treatment progression. With time, more and more people with diabetes need insulin to keep their A<sub>1c</sub> below 7%.

continued

what food to eat and not to eat and how much at what time, as well as the need to test blood glucose up to seven times a day.<sup>5</sup>

To cope with all this, the doctor may need to contact a specialist colleague and see the patient frequently or refer the patient to the diabetes specialist. The patient, apart from seeing the doctor and specialist, may need to see a diabetes nurse educator, a dietitian and perhaps an exercise physiologist to sort out the techniques and lifestyles skills needed to deal with the daily routines of living with insulin.

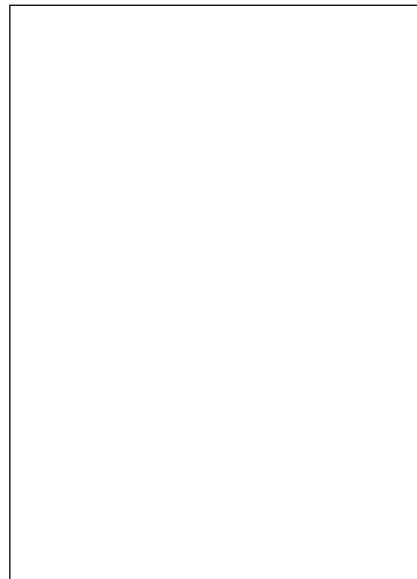
It can all seem too much. The doctor doesn't have time to sort it all out and the patient has enough on his or her plate already. Most patients are already taking many medications (Table 1),<sup>6</sup> seeing several health professionals, making many changes because of health problems, and spending large amounts of money. And they have the rest of their lives to get on with – job, family, friends, recreation, the footy, and so on.

Both patients and doctors may feel inadequate to deal with the new challenge of starting insulin therapy and this inadequacy may add to their sense of failure, shame and/or blame.

**Fear**

*Patient: 'My father went on to insulin and was dead six months later.'*

*Doctor: 'What happens if he has a hypo while he is driving?'*



Insulin therapy marks a major transition from what most people see as a small problem – a 'touch' of sugar 'only' requiring tablets – to a big problem that is so serious that it needs injections – several of them every day – to control it. Insulin can also be associated with all sorts of bad

outcomes, such as getting fatter, large swings in blood glucose with 'highs' causing one form of coma and 'lows' causing another, and the complications that cause people to lose their sight, their limbs, their independence and their lives (Table 2). Insulin may also limit the user's driving, employment or recreation.

Doctors remember their student and junior doctor days, when the people with diabetes they saw in hospital were mostly on insulin, mostly end-stage and mostly way out of control. Patients remember and are reminded by 'helpful' friends and relatives that 'so and so' started insulin and shortly after had a heart attack, stroke or amputation, or needed dialysis or laser therapy. There are also stories about people losing consciousness or having fits or accidents because of hypos.

Moving from taking tablets, which most people in the general population do, to having daily injections, which very few do, forces patients and doctors to look more closely at the diabetes. They notice all sorts of things they have not seen, or chosen not to see, over the years. Now that 'touch' of sugar looks more like a disaster about to happen.

Then there are the fears that injections will be painful, that insulin will lead to addiction and that human insulin will cause AIDS, as well as various other problems that people generally associate with injections (Table 2).

Patients know they sometimes miss or double-dose their tablets – but what will happen if they miss their injection, the insulin doesn't work or they take too much. Many people with type 2 diabetes (48%) worry about insulin therapy well before they need to start.<sup>2</sup>

It helps for the doctor to be proactive. When the patient progresses to the maximum dose of oral hypoglycaemic agents, introduce the probable need to add insulin as the next step. Discuss the common fears patients have (Table 2). In particular, give the patient a 'dry' injection by inserting the needle of a syringe or pen injector through

**Table 2. Dealing with patient fears about insulin**

Fear about insulin therapy	Explanation or action
Insulin will cause complications	Explain that insulin will improve diabetes control and thus reduce the risk of complications
Insulin will cause coma or loss of control	Explain that blood glucose control in type 2 diabetes is more stable than in type 1 diabetes and big swings are uncommon
Injection will be painful	Demonstrate that today's fine needles do not hurt
Human insulin will cause AIDS	'Human' insulin is manufactured and not derived from human tissue
Insulin treatment will lead to an 'addiction'	People with diabetes use syringes to inject the insulin because it cannot be taken by mouth as it is destroyed in the gut. There are millions of people taking insulin but they are not addicted to it

the patient's skin. Encourage the patient to repeat the procedure him or herself. Patients are invariably surprised that the injection is virtually painless, with nothing like the pain associated with finger-stick blood glucose testing.

**Lack of support**

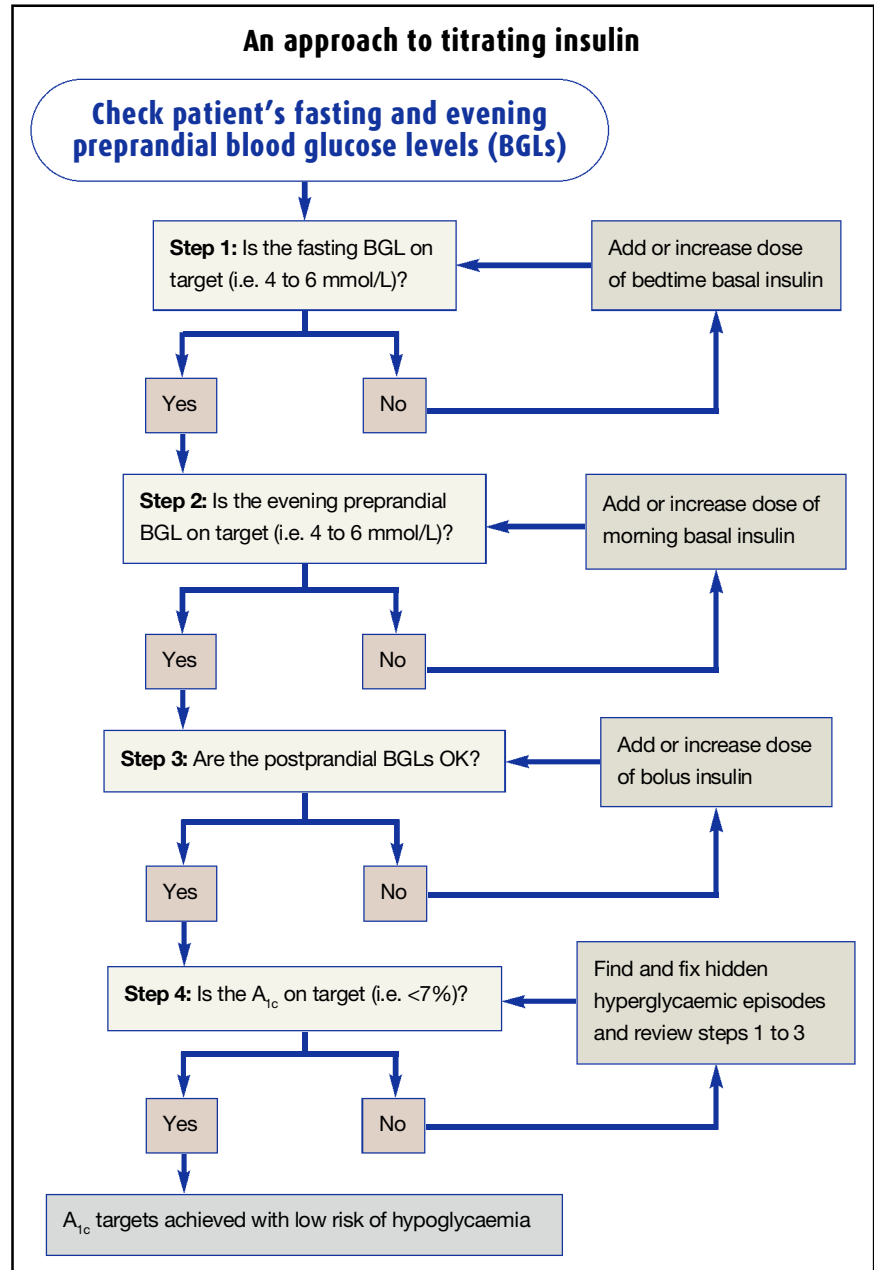
*Patient: 'They don't understand why I don't want to start insulin – they don't even try to.'*  
*Doctor: 'Who can I ask who knows how to get started?'*

The doctor and the patient both need a lot of help to start insulin therapy. The doctor has to decide what insulin schedule to prescribe, what to tell the patient and who to refer the patient to should this be necessary. The patient has to incorporate insulin and the changes it requires into his or her lifestyle and learn the required technical and other skills. They both have to work through their sense of failure and inadequacy and face their fear of what starting insulin may be associated with.

The doctor has less to cope with than the patient and is likely to have access to support from fellow medical and allied health professionals. Nonetheless, doctors may still feel the need for support but not be able to get it. The patient may have a partner who may share the burden. However, often the partner brings another set of problems, including fears about living with someone on insulin.

The Australian myth is of coping and getting on with it – giving it a go and knowing that 'she'll be right'. Real patients may feel overwhelmed by the prospect of insulin therapy and not have anyone to whom they can talk about their feelings, or know anyone they feel they could approach about this. Real doctors may feel overwhelmed by the challenge of persuading the patient to move on to insulin therapy and finding the necessary information and resources.

When faced with the prospect of starting insulin, both the patient and doctor may feel that they are on their own and can't get practical support or advice.



**The KISS approach to starting insulin**

The KISS approach ('keep insulin safe and simple') of initiating insulin starts with one insulin preparation, one dose per day and one titration schedule, and targets blood glucose level at just one time of the day.<sup>7-10</sup>

Once the first glucose level is 'fixed', the

second is assessed and, if necessary, tackled. The long-term target is the A<sub>1c</sub> (see the flow-chart on this page). Starting is very easy:

- pick a basal insulin that has convenient injection devices
- decide which preprandial blood glucose level needs fixing (usually the fasting level but sometimes the evening preprandial level)

continued

### Basal insulin titration<sup>7\*</sup>

Start with 10 units of basal insulin. Adjust the dose twice weekly, to reach the target blood glucose level of 4 to 6 mmol/L, using the guidelines below:

Mean fasting glucose over preceding two days (mmol/L)	Insulin increase (U/day)
>10	8
8 to 10.0	6
7 to 7.9	4
6 to 6.9	2

- Do not increase the insulin dose if the fasting blood glucose level is <4 mmol/L at any time in the preceding week.
- The insulin dose may be decreased (small decreases of 2 to 4 units) if there is severe hypoglycaemia (requiring assistance) or the blood glucose level is <3.0 mmol/L in the preceding week.

\* Adapted from *Diabetes Care* 2003; 26: 3080-3086.

- start with 10 units of basal insulin and titrate according to the table in the box on this page.<sup>7,11</sup>  
The following jingle may make the KISS approach easy to remember:  
*'First fix the fasting  
Then tackle tea  
Find the hidden hypers  
And check the A<sub>1c</sub>.'*

### Conclusion

The hardest task and the biggest step is deciding to start – overcoming the patient's (and perhaps your) psychogenic insulin resistance. Then it is a matter of a GP Management Plan (with or without a Team Care Arrangement) and accessing a nurse who can teach and support the patient. The nurse can follow up the patient and titrate the insulin according to the schedule you have set, and refer back to you once the targets are reached.

Once you have accepted that insulin is an expected step in the treatment of type 2 diabetes and put the KISS principle into your practice, you and your patients will feel much better.

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### References

1. Okonofua EC, Simpson KN, Jesri A, Rehman SU, Durkalski VL, Egan BM. Therapeutic inertia is an impediment to achieving the Healthy People 2010 blood pressure control goals. *Hypertension* 2006; 47: 345-351.
2. Peyrot M, Rubin RR, Lauritzen T, et al. Resistance to insulin therapy among patients and providers: results of the cross-national Diabetes Attitudes, Wishes, and Needs (DAWN) study. *Diabetes Care* 2005; 28: 2673-2679.
3. Wright A, Burden AC, Paisley RB, Cull CA, Holman RR. Sulfonylurea inadequacy: efficacy of addition of insulin over 6 years in patients with type 2 diabetes in the UK Prospective Diabetes Study (UKPDS 57). *Diabetes Care* 2002; 25: 330-336.
4. Viberti G, Lachin J, Holman R, et al; for the ADOPT Study Group. A Diabetes Outcome Progression Trial (ADOPT): baseline characteristics of type 2 diabetic patients in North America and Europe. *Diabet Med* 2006; 23: 1289-1294.
5. Harris P, Mann L, Phillips P, Snowdon T, Webster C. *Diabetes management in general practice* 2007/8. 13th ed. Canberra: Diabetes Australia; 2007. Available online at [www.racgp.org.au](http://www.racgp.org.au) (accessed June 2008).

6. Grant J, Chittleborough C, Dal Grande E, et al. The North West Adelaide Health Study: detailed methods and baseline segmentation of a cohort along a chronic disease continuum. *Epid Persp Innovations* 2006; 3: 4.
7. Phillips P. KISS: 'keep insulin safe and simple'. Part 1: initiating insulin in type 2 diabetes. *Medicine Today* 2007; 8(3): 23-34.
8. Phillips P. KISS: 'keep insulin safe and simple'. Part 2: living with insulin and type 2 diabetes. *Medicine Today* 2007; 8(4): 43-54.
9. Phillips P. KISS: 'keep insulin safe and simple'. Part 3: troubleshooting insulin problems in type 2 diabetes. *Medicine Today* 2007; 8(5): 47-55.
10. Phillips P. KISS: 'keep insulin safe and simple'. Part 4: titrating insulin in type 2 diabetes. *Medicine Today* 2007; 8(6): 43-52.
11. Riddle MC, Rosenstock J, Gerich J; Insulin Glargine 4002 Study Investigators. The treat-to-target trial: randomized addition of glargine or human NPH insulin to oral therapy of type 2 diabetic patients. *Diabetes Care* 2003; 26: 3080-3086.

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