



Insulin Dependent Diabetes Trust

Stress and Diabetes

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This is a very frequently used word and tends to cover a multitude of sins but while it may seem an over-used word, stress can nevertheless be a very real problem and one that needs recognising. Most of us probably know that there is a 'top ten' list of things that are stressful – the death of someone close, moving house, divorce, etc. People with diabetes are just as likely to suffer these stressful situations as other people. In addition diabetes, its diagnosis or the diagnosis of complications are stressful for many people. We also have to remember that it may be stressful for close relatives – spouses, partners, parents and siblings.

For people with diabetes, stress can affect blood sugars and although much of the medical literature says that stress makes the blood glucose levels rise, in some stress appears to make blood sugars fall and there are more hypos. May be stress affects people in different ways or may be blood sugars just fluctuate more, whatever is the

case, the message has to be learn to know how stress affects you and your blood glucose levels.

How the body handles stress

The body handles stress in much the same way as it handles danger and there are three stages to this:

Fight or flight stage

Any danger or stress triggers the release of adrenaline and other hormones into the blood stream and it is these hormones that enable the body to defend itself. Breathing and the heart rate increase and blood pressure rises pumping more blood to the muscles so that they are ready for action. This is when the blood sugars rise. If the stress is eliminated at this stage, then the body relaxes and goes back to normal.

Resistance stage

Some stressful situations cannot be eliminated at the fight and flight, for example a job you hate or deteriorating health. At this stage the stress becomes chronic. The body continues to fight the stress by releasing high levels of the stress hormones even though the fight and flight responses have worn off and breathing and the heart rate may be normal. This is when symptoms appear such as anxiety attacks and/or mood swings – feeling of being ‘stressed out’.

Exhaustion stage

This stage occurs with the effects of chronic stress affect health. The immune system does not work as efficiently so that people are vulnerable to infections. The continual long-term fight against stress reduces the body’s energy stores so that there is fatigue that may be followed by depression, sleeplessness and poor appetite. This is when blood sugars, blood pressure and cholesterol levels may become more difficult to control and there is a risk of heart attack.

Stress and blood glucose levels

Under stress the body produces hormones, adrenaline being the one we have all heard of and often called the fight and flight hormone. These hormones cause the body to release stored glucose and fat for the extra energy that is required to deal with the stress but they can only be used providing the body has enough insulin. It is this sudden extra production of glucose in people with diabetes that causes the blood sugars to rise. This can be made worse by the way many people react to stress – by overeating or taking less exercise because of the lack of energy. It may be necessary to increase your insulin dose or the other alternative of course, is to take more exercise. Exercise will not only help to reduce your blood sugars but is also recommended as a method to help people cope with the stress itself.

Personality, stress and blood glucose levels

In a study, published in The Journal of Health and Social Behaviour, researchers examined the behaviour, personalities and blood sugar levels of 57 people with Type 1 diabetes and 61 with Type 2 diabetes. The participants were divided into two groups according to personality types – self-controlled types and reactive emotional types. The results showed:

- People with Type 1 diabetes appear to be more susceptible to physical harm from stress.
- Among the Type 1 group the self-controlling types had better blood glucose control under stress and the emotional, reactive types had worse control.
- In Type 2 diabetes where some insulin is still being produced, the body’s ability to automatically manage its own affairs is impaired but remains in tact.

There may be little that we can do about our personality but understanding ourselves and what is happening to us can help to reduce the effects of stress.

But what is stress and how does it affect us?

An article by Dr David Lowenstern in 'Reading Out', the journal of the GBS Support Group explains this very well:

- Stress is something that interrupts our routines and causes us to change. It is disquieting and distressing.
- We develop routines and habits of doing things and anything unexpected or unfamiliar is a stressor.
- A stressor can be useful up to a point as it increases our performance and encourages us to strive and cope with difficult things. There may come a point when it becomes difficult and we can cope no longer. This happens with long standing conditions or illnesses [like diabetes].

What happens when we get very stressed?

We have a stress reaction which may be an automatic nervous system response affecting our blood pressure and heart rate causing sweating. But there may be other psychological effects that are not so easy to deal with, such as depression and frustration [diabetes can be very frustrating, as can be many long-term conditions!]

Depression and frustration are expressed in many different ways:

- We embellish things, fantasies run wild and we start feeling things that aren't actually there [eg imagining the whole world is against us or that people are talking about us].
- We get anxious and worried about things that might happen.
- We get angry and very, very angry.

“How often are we encouraged to be angry?”

Dr Lowenstern points out that this is very rare because we become seen as rude and impolite and are avoided by other people. But every time we feel anger and we don't express it, we are being rude and impolite to ourselves.

The stiff upper lip, keeping things bottled up and doing the right and proper thing, is not necessarily the best thing to do because stress comes out in other ways. It builds up like steam in a pressure cooker with the vent closed and then it blows. This is what happens to us if we keep the stiff upper lip at a time of stress – our feelings and frustrations spill over and our families tell us we are very difficult to live with. This is something we cannot always see for ourselves.

How do we cope with stress?

This depends on several factors:

- our own particular style of coping
- what kind of stress we are under
- the time scale
- our inherited ability to cope
- the availability of support
- how much control we can retain.

There are 4 main coping styles with stress or a crisis:

1. **Denial** – when we don't want to know about it, we are told but we shut our ears. This can be helpful because it gets us through the day and protects us but it can be obstructive and self-defeating. For example, the diagnosis of diabetes is stressful and can cause denial but if the denial extends to actually not taking the prescribed insulin then there is a very real problem.
2. **Regression** – this is when we use what is tried and tested from the past. We become younger and tend to be child-like. Very competent people when faced with what, to them, is an awful situation can be reduced to crying like a baby – even though this doesn't sort out the problem.

3. **Inertia** – this is just giving up thinking, with statements like “What’s the point?” or “It’s all too hard”. Inertia does not get us very far, it’s infectious and may cause our family to give up too.
4. **Mature problem-solving** – this is a mixture of expressing our feelings about what is going on, trying to realistically weigh up what is happening and finding some sort of acceptance of it within ourselves. It is not giving up, not losing all the fight within us but accepting the situation.

For many of us being able to talk and share our experiences or our worries is the way we deal with stress. Women are often far better at this than men because men tend to believe that they are strong or are expected to be strong. So men are much more likely to be the pressure cooker with the vent closed.

The clear message from Dr Lowenstern is:

“Keep talking, don’t be silent. If you feel like crying, cry and if you feel angry, be angry.

Don’t keep quiet as far as doctors are concerned – keep sticking up for yourselves and remind yourself that it is your body and your life and you have a say in it. Retain some sense of control of what is yours but at the same time recognise that there are some limitations, especially as you get older.”

Ten general tips for coping with stress

1. Avoid self medication with nicotine, too much coffee, alcohol or tranquillisers.
2. Work off stress – physical activity is a terrific outlet.
3. Don’t put off relaxing.
4. Get enough sleep to recharge your batteries.
5. If you become sick, don’t try to carry on as if you are not.
6. Agree with somebody – life should not be a constant battle ground.
7. Learn to accept what you cannot change.

8. Manage your time better and learn to delegate.
9. Know when you are tired and do something about it.
10. Plan ahead by saying ‘no’ now. You may prevent too much pressure piling up in the future.

In Diabetes Interview, the US Newspaper for people with diabetes, Nurse Janice Betz makes the following recommendations for ways of handling stress and perhaps the last recommendation is the one we should try to remember, even when times are hard:

1. Exercise
2. Adequate sleep
3. Relaxation techniques
4. Getting a massage
5. Maintaining a sense of humour!

Anger - worth a thought

The Observer magazine published 21 May 2000 had an interesting snippet that those of us who tend to get angry perhaps should remember. Apparently the University of North Carolina has released a report detailing links between heart attacks and anger. This is something that has been said for years but this study has been rigorous in trying to find out if this is historical folklore or fact.

13,000 people with normal blood pressure were looked at over a 6year period, 256 of whom had heart attacks. People with diabetes, high cholesterol and excess weight were looked at separately. The study concludes that a person that is prone to anger is three times more likely to have a heart attack or sudden cardiac death than those who are less prone to anger and this is especially true in middle aged men and women. It also showed that anger, anxiety and depression are likely to have a detrimental effect on health.

The article also quotes an American psychologist Leonard Ingram as identifying four main keys to managing anger:

- Not misinterpreting other people's behaviour to you as hostile.
- Identifying factors in your upbringing that predispose you to anger.
- Learning ways to express legitimate anger.
- Forgiving those that hurt you.

Research

Stress can delay healing

The Ohio State University team focused on 42 married couples and found wounds on hostile couples healed at 60% of the healing rate for non-hostile couples. Levels of interleukin-6 (IL-6), a key immune system chemical that controls wound healing, were found to be particularly elevated in the hostile couples. Published in the Archives of General Psychiatry the findings showed that hospitals should try to minimise stress for patients ahead of surgery, as this could lead to shorter hospital stays and save money. Professor Steve Bloom, an expert in stress at Imperial College London, said "these findings are interesting, and illustrate yet again the control that the mind has over the body." As wound healing can be a problem for people with diabetes, this research may be of interest!

Aggressive diabetes treatment can be stressful

Research carried out in the Netherlands [Diabetes Care, Oct 2006] has shown that when people are identified as having Type 2 diabetes as a result of screening, they usually experience little anxiety in the first years after the diagnosis. However, the research shows that early

and intensive treatment appears to lead to higher anxiety and less ability to cope.

The article states that there is an ongoing debate on screening for type 2 diabetes with one side emphasising the advantages of detecting diabetes at an early stage of the disease because early and intensive management may reduce diabetes-related illness and death. But opponents to this view say while the psychological consequences of early detection and treatment are unclear that this approach is not certain.

The researchers studied 196 patients diagnosed with diabetes 3 to 33 months previously who were receiving usual care or intensive treatment. The majority of patients reported little distress and low levels of perceived seriousness and vulnerability, and felt confident coping with the disease but those who received intensive treatment reported more distress and less self-confidence in the first year.

The authors conclude that the study:

- emphasises the importance of taking variations between patients into account in the development and implementation of self care programmes for patients with a recent diagnosis of type 2 diabetes during a screening trial.
- that doctors should be more attuned to patients' psychological needs when they first prescribe intensive treatments.

Should we ask similar questions about the treatment for Type 1 diabetes?

Let's just take a look back to only a few years ago. Originally 'intensive treatment' meant multi-daily doses of insulin with the aim of achieving normal blood sugars and 'usual care' often meant twice daily injections with people doing their best to achieve blood sugars as near normal as possible. It was recognised that 'intensive treatment' involved more daily injections, more daily blood glucose testing, better education and of course, a greater risk of more episodes of severe hypoglycaemia and weight increase. Most importantly, it was recognised that this regime was not suitable for everyone, not everyone wanted or could

manage such a complex regime.

But what have we got now? An increasing use of insulin analogues and a likelihood that in future there will only be insulins analogues. And this means that people with Type 1 diabetes and many with Type 2, will HAVE to use a regime of at least 4 injections a day - in other words, intensive treatment! Yet the above research showed that people on intensive treatment reported more distress and less self-confidence! So the increasing use of analogues requires a more complex way of managing blood sugars which could well increase number of people with low self-esteem, anxiety and stress. Even if doctors are attuned to patients' psychological needs, the reduction in types of insulin reduces their options to help patients.

Yes, there are pre-mixed analogue insulins that may be OK given twice daily, but we all know that they remove flexibility of dose and injection timing. Twice daily injections of separate short- and longer-acting animal or human insulins can still be geared to suit the activities and meals and for some people are a much easier to manage blood sugars. Do we really want to be left with little choice of insulin and the resulting effect of complicated regimes that could increase stress and reduce the quality of life of some people?

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