Type 1 Diabetes Starter Kit

A Guide for adults with Type 1 Diabetes

Irish Edition

Supported by

Diabetes Ireland

TYPE 1 diabetes network
www.d1.org.au

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A Guide for Adults diagnosed with Type 1 Diabetes
Irish Edition

Written and edited by
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Christine Roche, person with Type 1 Diabetes

For thousands of adults
diagnosed with type 1 diabetes
who have muddled through with
dignity and courage

contents

Introduction

Dear Reader,

Welcome to the diabetes community. I know that right now you don't want to be here but we want you to know you are not alone.

I remember what it felt like in those first few days, weeks and months having diabetes; your head is spinning trying to comprehend what life has in store for you now, no-one can give you a straight answer and you don't know what you should do next to make this huge adjustment in your life.

I hope that this book will help guide you on the right path to managing your diabetes and open a world of support to you. Plus, there is a handy "Cheat Sheet" for your family and friends so that they are not relying completely on you for their Type 1 diabetes information. I recommend printing out these two pages and handing them out.

The "Starter Kit for Adults Diagnosed with Type 1 Diabetes" was first published in 2004. It was written by Kate Gilbert and Rebecca Millard from the Type 1 Diabetes Network in Australia, who then published an online version on a website www.d1.org.au in 2010. This is where I found it.

The Starter Kit is the first book I read that wasn't so big and contained so much information that it's hard for newly diagnosed people to comprehend and grasp or wasn't too small that it didn't have enough information. And so, it should have the perfect information for you, the newly diagnosed adult with Type 1 Diabetes. This is why I decided that we, in Ireland, needed our own version and thanks to the Type 1 Diabetes Network in Australia for allowing us to proceed. It's written by people who have some years of experience in living with diabetes under their belts and in association with lots of Diabetes Healthcare professionals.

I hope that this book provides you with comfort and enables you to adopt a positive attitude to manage your diabetes well and live a long healthy life.

Thank you,
Grainne Flynn
Type 1 Diabetes since 1993.

diabetes. what the...??

So, by now someone's dropped the D word. (****!).

This stuff in this book is produced by us - people who also have Type 1 diabetes - some since we were tiny little ones, and so, we have heaps of wisdom to share. Some of us are just a couple of months ahead of you but wanted to help make life today a little easier for you.

The resource has also been critically reviewed and endorsed for clinical accuracy by 30 diabetes-specialist health care professionals from around Australia and endorsed in Ireland by Diabetes Ireland.

top 10 things we wish someone told us the day we were diagnosed:

1. It's not your fault.

Type 1 diabetes is an autoimmune condition. Something goes whacky and your immune system gets confused. It gets this idea in its head that the very precious islet cells in your pancreas that produce insulin are actually a virus and it turns on them and kills them. We don't know exactly why. But we do know that it has absolutely nothing to do with what you ate, where you live, who you are or whether your mam stood on her head during pregnancy. There is a genetic link but it's only one piece of the puzzle - even if your mam or dad had Type 1 diabetes themselves, there's only about a 5% chance you'd have got it.

2. You're not a freak!

Getting Type 1 diabetes when you're in your 20's, 30's, 40's or even 60's is way more common than most people (including doctors and nurses) realize. Type 1 was called juvenile diabetes for many years which was misleading. So if someone says "ooohhhhh you're old to get Type 1!" You're not alone, and they're wrong! **Half of people with Type 1 diabetes are diagnosed as adults.**

3. You're not alone.

20,000 people in Ireland have Type 1 Diabetes and with the popularity of the internet and social networking sites such as FaceBook and Twitter you should not at all feel isolated. There are support groups for adults with Type 1 Diabetes starting up all over Ireland. Diabetes Ireland would have contact details to find out if there is a group near you, they also offer support and information to people with diabetes through their website <www.diabetes.ie> or their helpline 1850 909 909.

And there's this group of young adults in Australia called Reality Check www.realitycheck.org.au>. Their website has a forum where you can post any question, read other people's experiences and really tap into what it's like to live with diabetes and what real, normal people do.

4. Insulin is not like taking a pill each day.

You'll learn how to change the doses, sometimes every day or every hour, to cater for different things going on. But it's definitely not a case of here's your insulin, take X units, go home and you're on your own. Pretty soon you'll start to get the hang of balancing your insulin dose with how you eat, drink and play - which changes every day, of course.

5. It's bloody hard work at first but not the end of the world.

People with Type 1 diabetes have won gold medals (Gary Hall Jnr in the US and Steve Redgrave in the UK), play professional football (Gary Mabbutt), won Oscars (Halle Berry), sung to thousands of people (Marcia Hines, Nick Jonas) and even won Miss America competitions (Nicole Johnson). We've backpacked the farthest corners of the world, got awesome jobs, become millionaires and politicians. And then there are the rest of us normal people who go about our lives doing what we want and making diabetes fit in there. You'll be grand!

6. It's actually impossible to keep blood sugars between 4 and 8 all the time.

Really truly! Those numbers were given to you as a guide and the aim of the game is to keep them there. However, until you get yourself a new pancreas, it is just impossible to not get the odd high or low (or lots of them on a bad day.) Highs and lows make you feel crappy enough without you feeling guilty that you've stuffed up too. A good tip is to just think of the number that pops up on your blood glucose meter (a.k.a. the blood test lottery) as a Call to Action: if it's high or low, just do what you need to do, to fix it. But don't waste your energy thinking, 'Oh I'm bad, I'm wrong, I'm crap.' Just fix it and get on with life. (Or if you're not sure what to do, phone your diabetes team for some help.)

7. Research is moving ahead at an amazing pace.

You'll hear a lot about 'the cure' for diabetes and while it's still a little way off, the word on the street is that research has made more progress in the last 5 years, than in the 20 before that. We're seeing it with better technology and developments all the time. Chat to someone who had diabetes in the 1950s if you want to feel better about your lot - scary glass syringes etc., not good, not good. The JDRF (Juvenile Diabetes Research Foundation) website is a good source of news on research developments.

8. People say really dumb stuff.

You will find that everyone you meet now has an Aunt who had diabetes and either had some amazing home brewed solution to cure it, or died. Just brace yourself that people get weird when they don't know what to say. We've all had times when we want to punch a person who doesn't have diabetes. It's the kind of thing you really can't totally understand unless you've got it. So start perfecting your ah-huh, patient nodding and fast exit. (We've also included a couple of copies of a one-pager here that you can give to friends and family to save you turning into a broken record.)

9. Diabetic Chocolate is not an alternative for people with diabetes.

I know that's a shocker! People assume that if the label says 'diabetic' that the contents may be beneficial. Since 'diabetic' foods tend to cost more than conventional counterparts or sugar-free and reduced sugar versions this is in effect conning people with diabetes. Diabetic Chocolate – "is sweetened with alcohol sugars, which can cause fluid to build up in your bowels, which can then cause diarrhoea" (Margot Brennan, consultant dietician at the Auburn Medical Centre, Dublin).

Go for normal chocolate in moderation and save yourself the pain!

10. Pepsi MAX is the best sugar-free cola. Diet Coke's pretty good too.

checklist of ‘stuff to do’

WITHIN THE FIRST MONTH AFTER DIAGNOSIS

Find out who you can call in an emergency. Your endocrinologist or diabetes nurse specialist might give you their mobile number. Most major public hospitals will have an endocrinologist on call, so you could call and ask for them to be paged. In a serious emergency, call an ambulance. But whatever it is, make sure you have a number in your wallet or programmed into your mobile phone because you can guarantee it will be 3am on a Sunday when you have an urgent dilemma!

If you have Drivers’ License notify your local Motor taxation office; this is required by law. The Motor Tax Office will ask you to submit an application for another license, with a GP or specialist’s report and two photos. A new license will be issued to you at no extra cost. It will now have a ‘101 restriction’ – all this means is that you will have to submit a medical report when you renew your license on the next occasion – there will be no reference to diabetes on your license.

If you are applying for a drivers’ license for the first time or renewing, your GP or specialist will fill in a medical form which accompanies your application. Essentially what they’re looking for is that you haven’t had a bad hypo (low blood sugar) recently and you get heaps of warning symptoms when one’s coming along - so the doctor basically needs to write ‘no hypoglycaemia unawareness’ in the comments section.

Notify your car insurance company as soon as you can after you have been diagnosed. Don’t worry they cannot increase your insurance premium because of your diabetes unless they can show that you, as an individual, are more at risk than you were prior to your diagnosis, which is virtually impossible. However, if you do not inform them that you have diabetes and you do make a claim the insurer can invalidate your cover.

You can also talk to Diabetes Ireland about this and other insurance cover such as mortgage, mortgage protection and travel insurance.

Get a Long Term Illness (LTI) Book and a GP visit card. Usually, this process has been started for you while you are in hospital but just in case. If you do not have a medical card then you are entitled to a LTI book, which provides all of your diabetes medication and supplies free of charge. You can get an application form from your local health office or your GP, it needs to be completed by you and your doctor and must be returned to your local health office.

During 2012, people who claim free drugs under the Long Term Illness Scheme will have free GP care. The details for this have not been finalized. Diabetes Ireland will make an announcement when this benefit is available. Watch their website <www.diabetes.ie> for details.

If you have medical card you are entitled to free GP visits and hospital care, free medication, pens/syringes, lancets and glucose monitoring strips. Most people have to have income below certain limits but if an individual is near the limit and has on-going medical expenses it may be granted. Apply through your community welfare officer at your local health centre.

Work out what sort of hypo supplies work best for you. Some useful places to have some sort of sugar available:

- Glove box of car;
- In your handbag/backpack, or back pocket if going out;
- Desk drawer or locker at work;
- School locker or pencil case;
- Beside your bed;
- At your boyfriend/girlfriend/best mate’s house.

Don’t worry - You are not going to use all these supplies in the first week, it’s just that you can generally guarantee that a ‘hypo’ (especially your first) will take you by surprise and happen when you least expect it.

Blood Glucose Meter. Find one that works for you! (Note: a search on the Internet is likely to also showcase monitors that are only available in the US and Europe). This thing is going to have to go EVERYWHERE with you so choose one that you reckon is easy to use and not too ugly. They are free and you can usually get them directly from the manufacturer or from your Diabetes Nurse Specialist.

- **Are you going to be sitting exams this year?** If so, make contact with the appropriate person at your education institution and inquire about 'Special Conditions' such as being allowed to take in food, for your exam. You should be entitled to these so organise it now as it's the last thing you want to be worrying about in the lead-up to the exams. If you are a student who is filling out a CAO form you should note that you may be eligibile for the Disability Access Routh to Education (DARE). You will find more information on this on <www.cao.ie> and <www.accesscollege.ie>

- **Get yourself a medical alert ID.** This helps emergency personnel treat you appropriately should the need arise. If this totally freaks you out, there are a couple of other options, (though a well-known bracelet like Medic alert is the most easily recognisable symbol if you get into trouble). Engrave a piece of jewellery you wear all the time with something like 'Diabetes on Insulin'. Carry a card in your wallet (available if you become a member of Diabetes Ireland). At the very least, this is the kind of thing that relaxes our stressed-out mammy's!

head stuff

When talking about 'coping with diabetes' the first stop is what we think of as the "bad" emotions; denial, obsession, anger, depression, and so on. But nothing is all bad.

These feelings may be painful to experience, but like physical pain, they serve a useful purpose. Without physical pain you would hold onto a hot pan until your flesh charred. You would walk around with a rock in your shoe until you ground a hole into your foot.

Without the symptomatic pain of a headache, or stomach ache, you would let a serious but correctable problem go on until it was too late. It has been said that pain is our friend because it alerts us that something is wrong and we can fix it.

The same can be said of emotional pain. The negative emotions are what many psychologists call smoke alarms. They wake you up so you can get yourself out of danger.

Everyone is susceptible to negative emotions. They are part of the condition. **But when you have diabetes and it comes to negative emotions, it seems that you're more human than anybody.** Whether you're newly diagnosed or have had diabetes for a number of years, you find panic, fear, anger, guilt, shame, depression, and grief, raising their ugly heads more often than you remember them doing in your pre-diabetic days and certainly, it seems, more often than with your non-diabetic friends.

You are robably right. After all, you have a built-in reason for feeling bad. You have a chronic illness, one that imposes restrictions and routines on your life, one that, if you don't toe the line of care and control, may lead to complications, and one that in itself can upset your hormonal balance and give you regular rides on the emotional roller coaster.

You are also probably wrong. Many of the negative emotions you might be experiencing have nothing to do with your diabetes, but since your diabetes makes such a handy scapegoat, it's only natural to load all your emotional problems on its head.

Emotions are something like blood sugar. As a person with diabetes your blood sugar levels may be crazy for no reason that you can think of.

You've eaten the right foods, done your normal amount of exercise, haven't been under any unusual stress, and yet you are with a blood sugar of 15mmols or 2mmols. What do you do? Well, what you shouldn't do is anguish, fret, rant and mutter that diabetes is impossible. You should fix it. If your blood sugar is low, take your glucose tablets or Coke or whatever and raise it. If it is high, take a little corrective insulin (as directed by your doctor) or a little less food and a little more exercise (or both) and bring it down.

When you plunge into an emotional Grand Canyon, don't just figure that the Demon Diabetes pushed you and that no matter what you do you're not going to get out, that you are stuck down there until the buzzards come to pick your bones.

Don't just label diabetes hopeless and yourself hopeless. Get rid of the negative emotions!

Now, admittedly, it's harder and takes longer to get rid of powerful negative emotions than to correct a low or high blood sugar, but it can still be done.

There are techniques you can learn and destructive emotional habits you can unlearn. It will take some time and effort on your part, but you'll find its well worth it. Then not only will you have more realistic and optimistic attitude towards your diabetes, but toward your life as well. You won't just climb out of the emotional Grand Canyon onto the flatland; you'll have earned a chance - at least occasionally - to experience the beautiful emotions, to scale an emotional Everest where you will breathe the rarefied atmosphere of exultant joy. So strap on your boots, pick up your climbing rope and ice axe, and let us begin.

Excerpt from Richard Rubin, Psyching Out Diabetes - A Positive Approach to your Negative Emotions, John Hopkins Medical School, Baltimore, USA.

Talk to your endocrinologist or diabetes nurse about finding a counsellor or psychologist to talk to if you feel it would help you at this time or log onto www.diabetes.ie/counsellors

Other Useful Resources

There are 33 Diabetes Counsellors in Ireland and the full list can be found on the Diabetes Ireland's website www.diabetes.ie/counsellors. They offer a private fee paying service.

Jerry Edelwich & Archie Brodsky,
Caring for your emotions as well as your Health,
Perseus Books, Massachusetts

Dr William Polonsky,
Diabetes Burnout,
American Diabetes Association, USA

doctors & nurses

When first diagnosed you're likely to meet quite a few different health professionals and it can sometimes be a little difficult to decipher who does what, so below is a brief introduction to a typical medical team.

Endocrinologist – you'll soon be calling them your 'Endo'. This is a doctor who specializes in the endocrine system and the many hormones it produces, of which insulin is one. Most common disorders of this system are the different types of diabetes, but endocrinology also includes things like thyroid problems and polycystic ovaries. Ideally, you need to find an endocrinologist who at least specializes in diabetes, and preferably one that sees mainly people with Type 1 diabetes. You may be lucky and find one who you get on well with when you're diagnosed, but if not, have a hunt around.

Initially, you will be referred by your GP or the hospital you were diagnosed in. One of the best ways to find out where the good endocrinologists are is to ask other people with diabetes for their opinions about where they go.

If you do want to change where you are receiving your diabetes management care, a GP can write a referral once you find someone you want to try. Generally 2 - 4 visits per year to an Endo are recommended - it coincides with major blood tests.

Diabetes Nurse Specialist – A nurse who has gained quite a bit of experience and has also done a 1-year post graduate course specializing in diabetes. When you are diagnosed, it will most likely be a diabetes nurse specialist who will work with you to give you intensive education about the basics - how to do an injection, how to use your blood glucose monitor. They will then be your font of knowledge for all those niggling questions which come up. Diabetes nurse specialists can be found at major public hospitals.

Endocrinology Registrar – A fully trained doctor who is just finalising his/her specialist training in endocrinology. It might sound like they're not your best choice - but think about it - they just finished med school this century so should be right up to speed with the latest and greatest!

Dietitian – Food is a big part of diabetes so make sure you ask lots of questions and get the answers to questions like "how much insulin do I need to eat pizza and chips?" You may get a funny look but this is not an unreasonable question so make sure you ask it or whatever you need to. Be honest about what your favourite foods are and try to find a way to work your diabetes around them, even if it's not as regularly as before. You may be directed towards a Low GI diet - check out <www.glycemicindex.com> for some background. A lot of the major public hospitals have dietitians in their diabetes clinics, if not your GP should be able to refer you to the community dietitian or you can find one to see privately from the phone book or the Irish Nutrition and Dietetic Institute website <www.indi.ie>.

Ophthalmologist – Later down the track you will need to find one who specialises in eye care for diabetes. You need to go for a check-up every two years or as directed by your diabetes team.

Podiatrist or Chiropodist – – this is a health professional who specialises in the study, diagnosis, and treatment of disorders of the foot, ankle, and lower leg. The podiatrist is important because sometimes uncontrolled diabetes can damage the nerves in our feet; when this happens a minor cut can become a serious infection very quickly.

Head Stuff – unfortunately counsellors and psychologists who specialise in diabetes are thin on the ground. A list of counsellors can be found on <www.diabetes.ie> or by calling the Diabetes Federation of Ireland on 1850 909 909.

Get yourself a great team of health professionals; people that you feel comfortable to ask questions. It might take some time, and even a few tries to find a team that works for you, but persist. It is definitely worth it.

what is diabetes?

Diabetes is a condition in which the body cannot sufficiently convert food into usable energy. The reason for this is a lack of insulin - a hormone produced by a gland called the pancreas, or failure of the body to respond normally to insulin.

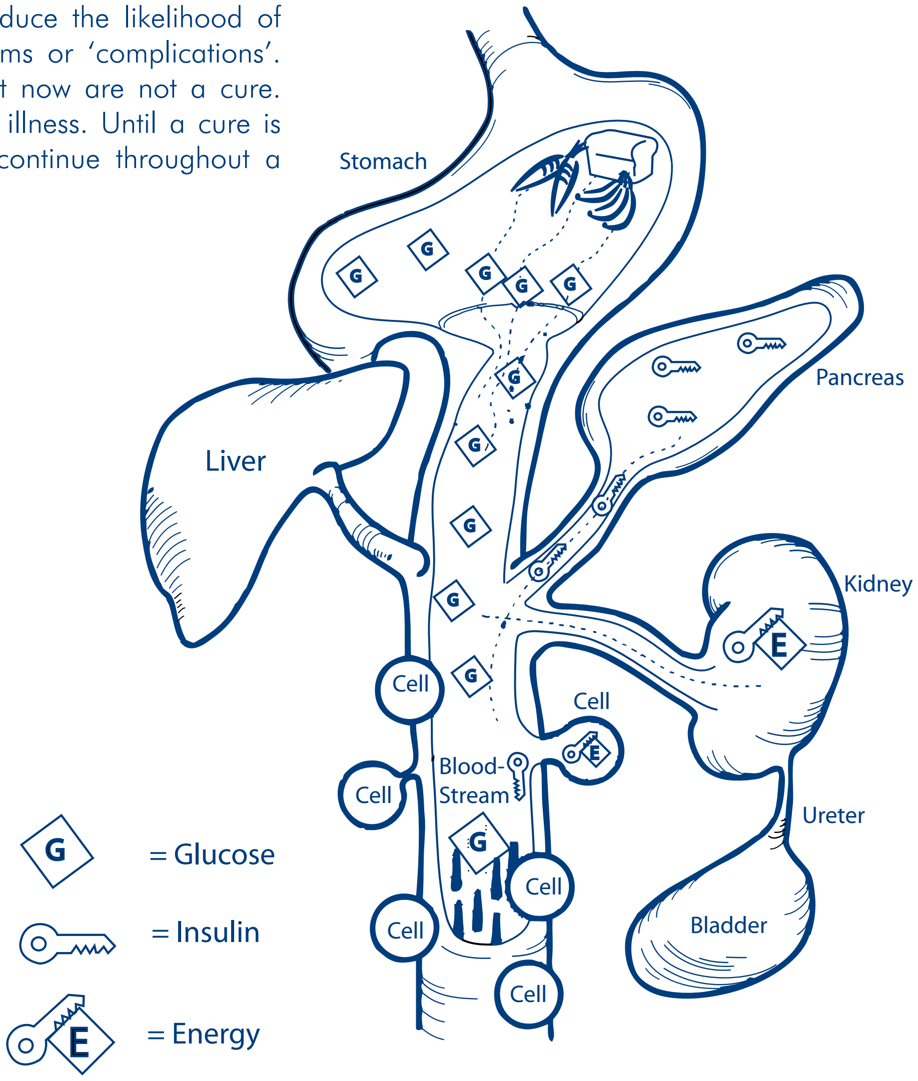
When starchy food is digested, it breaks down into glucose. This builds up in the blood stream. Insulin controls the level of glucose in the blood by helping glucose go from the bloodstream into the body's cells. Once in the cells, glucose can be used for energy or stored for future needs. With some people the above process fails to work properly and this results in the condition known as Diabetes.

The common factor in all types of diabetes is the need to keep blood glucose in the normal range. This will help reduce the likelihood of long-term health problems or 'complications'. The treatments that exist now are not a cure. Diabetes is a long-term illness. Until a cure is found, treatment must continue throughout a person's lifetime.

the types

- **Type 1 (formally known as Insulin-Dependent or Juvenile Diabetes)** - The pancreas ceases producing sufficient insulin. Those affected require daily insulin injections to survive.

- **Type 2 (formally known as Non-Insulin-Dependent or Mature-Onset Diabetes)** - The pancreas fails to produce enough insulin to meet the body's needs or the body is unable to respond normally to insulin (insulin resistance) and the pancreas fails to produce enough insulin to meet the body's increased needs. This most commonly affects older and often overweight people.



- **Reference: "Basic Skills for Living with Diabetes", published by Allina Hospitals & Clinics.**

■ **Gestational Diabetes** – The hormonal changes in a woman's body during pregnancy sometimes cause insulin resistance and the pancreas fails to respond adequately and blood glucose levels rise. All pregnant women should be tested for gestational diabetes. Women who have had Gestational Diabetes have a 50% risk of developing type 2 Diabetes in the near future.

type 1 diabetes

Approximately 20,000 people in Ireland have Type 1 Diabetes. The cause of Type 1 Diabetes is not totally understood. However, it is believed that people have a genetic predisposition to developing diabetes. A trigger factor such as a virus then causes the body's own immune system to incorrectly identify the insulin-producing cells as foreign and destroy them.

Managing Type 1 Diabetes is a complex question of balance. Type 1 Diabetes is treated with multiple daily insulin injections, healthy eating, regular exercise and constant monitoring of blood sugar levels through taking small samples of blood from the fingertips.

A high blood glucose level (hyperglycaemia), generally, causes one to feel fatigued, dehydrated and ill. The kidneys filtering the blood collect more glucose than usual. This glucose must be removed from the body. You pass a lot of urine. You need more water, get thirsty and drink a lot. People with Type 1 diabetes are generally able to treat hyperglycaemia by changing their insulin dose. Symptoms of hyperglycaemia may initially be relatively mild. However, if a person becomes ill or omits their insulin dose, the body is unable to process glucose normally and severe, even life threatening hyperglycaemia can occur.

A low blood sugar level (hypoglycaemia or hypo) also affects the body. Common early symptoms include sweating, shaking, rapid heartbeat and pallor. The brain, which relies heavily on glucose to operate properly, can also be affected, leading to tiredness, trouble concentrating, mood and behaviour changes and eventually possible coma. Treatment of mild hypoglycaemia involves consumption of sugary food or drink followed by something more substantial such as bread. If a mild hypo is left untreated, the blood sugar level will continue to fall, starving the rest of the body of glucose and energy and may lead to serious episodes such as blacking out. In most cases, the early symptoms can be recognised and treated without further problems.

A complex balancing act! There are a large number of factors which influence blood glucose levels. They include the amount and type of food you eat, the amount and type of insulin you inject, all forms of exercise, drinking alcohol, and taking prescribed drugs. Many less tangible factors are also involved, often relating to the interaction of hormones in the body, such as those produced during periods of stress, anxiety and menstruation. A reliable but unpredictable part of everyday life for most people!

Courtesy of Diabetes Australia – Victoria. Authors Kate Gilbert, Dr Alison Nankervis and Diabetes Educator Kerrie-Anne Arnold. And Dr. Anna Clarke, Diabetes Ireland.

LADA – Latent Autoimmune Diabetes of Adulthood

Latent autoimmune diabetes of adulthood (LADA) is also known as slow-onset Type 1 diabetes, late-onset autoimmune diabetes of adulthood, and type 1.5 diabetes. Like Type 1 diabetes, LADA is caused by the immune system's destruction of the insulin- producing pancreatic beta cells. The main difference between Type 1 and LADA is the age of diagnosis - thirty or older, and the beta cell destruction has occurred over years to decades instead of days to months. Like other forms of Type 1 diabetes, people with LADA require insulin injections to normalise their blood glucose levels.

insulin

Knowing an insulin's type will tell you how fast it starts to work and how long it works. This is called action or activity. The chart below shows the time activity of some of the short acting, intermediate acting and long acting human insulin.

Onset – The start of the curve (left side) shows how long it usually takes for the insulin to start working.

Peak – The peak is the highest part of the curve and shows when the insulin usually has its strongest effect.

Duration – The duration of activity is how long insulin continues to work.

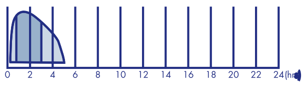
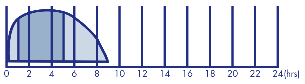
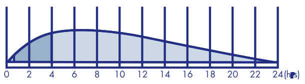
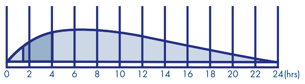
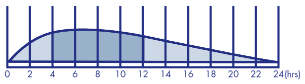
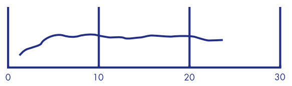
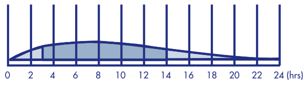
Description	**Brand Names**	**Typical use** (other regimens may also be prescribed)	**Profile**	**Onset** (minutes)	**Peak** (hours)	**Duration** (hours)
Ultra Short acting	Apidra Humalog NovoRapid	At the start of each meal (do not administer until meal is available)		10 – 20	.5 - 3	2 - 5
Short acting	Actrapid Humulin S Insuman Rapid	30 mins before each meal (or as a sliding scale)		30	1 - 5	6 - 9
Intermediate acting	Humalog 25 Humalog 50 Novamix 30	Once or twice daily (background insulin)		10 - 20	.5 - 4	22 - 24
Intermediate acting	Humulin M3 Insuman Comb 15 Insuman Comb 25 Insuman Comb 50	Once or twice daily (background insulin)		30 - 60	1.5 - 4	11 - 24
Intermediate acting	Humulin I Insulatard	Once or twice daily (background insulin)		60 - 90	4 - 12	16 - 24
Long acting analogue	Lantus	Once or twice daily (background insulin)		90	None	Up to 24
Long acting analogue	Levemir	Once or twice daily (background insulin)			3 - 14	Up to 24

Table illustrating the different forms of insulin that are available. Completed on 22nd June 2011 by Department of Pharmacy, St John's Hospital, Limerick from the Summary of Product Characteristics (SPC) for the above products as well as supplementary information received from Eli Lilly, Novo Nordisk and Sanofi Aventis.

insulin delivery options

So once you've been inducted into the insulin-appreciation society, the all-important question is which method of delivery? In order to keep you up-to-date, Reality Check has taken a look at the available options, and some others that are in the pipe works.

Insulin pens

Insulin pens are recommended as a 'more discreet' way to carry and inject insulin. They are devices that look like a cartridge pen, with a needle on the end. Users turn a dial, insert the needle under the skin and then press a plunger that delivers the "dialled-up" dose of insulin. Being able to 'dial-up' a dose is quicker than drawing up a syringe, if you are self-conscious or needle-phobic they look a bit less intimidating than a syringe and you only have to carry one item around (so long as you only need one type of insulin at a time) rather than the syringe and vial.

"Being a fraidy cat when it comes to needles I find the pens great. If I go out for dinner it is easy to slip into your pocket. I think it is fantastic" - Neal, Humapen road-test, on <www.realitycheck.org.au>

The downside is that they can malfunction, they are slightly more expensive than using syringes and they can actually be bulkier than a syringe and vial.

Baz tells us **"They (pens) are much handier than syringes, but the things just won't work all of the time. Have been using Humapens for a while and in the past twelve months have had about 4 or 5 failures..."**

Syringes

Although not widely used today, traditional syringes and vials of insulin was the only method available until the 1980s. The main advantages of sticking with syringes is that very little can go wrong - you can see the insulin you are drawing up and delivering, so you are unlikely to inject Humalin when you meant to inject Humalog and you can verify that you delivered the full dose visually. The syringes are extremely unlikely to malfunction or be damaged by being dropped or hit. In addition, you can 'mix' insulin in a syringe (just don't change the order of the mix) that may mean fewer jabs. Note: Lantus insulin cannot be mixed with anything else.

The downsides of syringes are that it can take longer to draw up the dose and the needle is very visible - which can be scary for people with needle-phobia.

An insulin pen – the most common device for delivering insulin.

Insulin pumps

Insulin pumps deliver insulin constantly (basal rate) and on demand to cover food or correct a high sugar (bolus) through narrow flexible tubing that ends in a cannula just under the skin. The pump is about the size of a deck of cards and resembles a pager; it is clipped onto a belt, waistband or other handy bit of clothing.

An insulin pump.

The main advantages are that it delivers a constant (basal) dose of insulin throughout the day, the rate of delivery can be set to compensate for your needs, e.g.: a lower rate to avoid 1am hypos and a higher rate to overcome the dawn phenomena (see glossary). Only rapid acting insulin is used so it overcomes the peaks and troughs of the long acting insulin. As it constantly delivers a basal rate of insulin, flexibility in meal times, skipping meals, sleeping-in etc. can be achieved without sacrificing control. **"Since being on the pump my blood sugar levels have been the best ever for the past 50 years."** Sue, RC Forum

The downsides are the cost. The pump & the consumables required to run the pump can be covered by the Long Term Illness Scheme, but this is subject to approval. Insulin pumps in Ireland are a relatively new therapy and can be difficult to obtain. However, they are becoming more common and a number of hospitals are setting up pump clinics.

As the pump delivers a constant stream of quick acting insulin, if the pump malfunctions or you pull out the infusion site or run out of insulin, you will very quickly run out of insulin completely and the risk of developing ketoacidosis (see glossary) is high. To avoid this you must be prepared to monitor your Blood Sugar Level frequently (about 6 times a day) and carry insulin with you, so that you can inject some insulin if your pump stops delivering insulin.

Greg sums it up on the PumpOz website

"If considering a pump, be serious about it. It requires more testing. You must learn to carry adequate supplies to do a quick infuse in the field and as now there is no long-term insulin aboard if you have a tube failure or an infusion set tear out, without proper remedy. Blood Sugar Levels will climb quickly and almost uncontrollably."

Also potential pumpers need to be aware that changing over to a pump involves a lot of work as it is quite different to injections and despite the many happy pumpers who wax lyrical about its advantages - it is still a long way from a cure and requires a lot of work and a fairly serious commitment.

Being attached to a pump constantly - having this **"weird shite hanging out of you"** as one of our forum correspondents so eloquently stated is a real downside. You have to carry this thing around with you, sleep with it and be prepared to answer those "what's that?", "is that a pager?" questions.

Carolyn sums up how many pumpers feel about the pros and cons of pumping **"Since getting the pump my control has been so much better, my blood sugar levels more consistent and I love the freedom."**

Insulin pumps currently available in Ireland are:

Accu-Chek
www.accu-chek.co.uk
Customer Service: 1800 882 351

Animas
www.animascorp.co.uk
Customer Service: 1 800 812 715

Medtronic Minimed
www.medtronic-diabetes.co.uk
Customer Service: 01 5111444

hypo fixes

When your blood glucose level starts to drop, here are some handy things to have with you.

- **Glucose Tablets -** main advantage is they taste ordinary so you (and your friends) are unlikely to snack on them! Brands include: Dextrose Tabs & Lucozade Tablets, about 3-5 of them should do the trick.

- **Lucozade** is great. A couple of bottles in the fridge and the glove box. Careful not to have too much though - a couple of sips (about 50 mls) is generally enough. And be careful not to confuse it with some of those other 'sports drinks' which have almost no sugar - Lucozade is the best one.

- **Regular Non-diet Soft drinks** – are a good alternative when you're in a hurry!

- **Jelly beans** are one good way to fix a hypo, but they are also prone to becoming a sticky gooey mess, or worse, furry! 6 should do the trick.

- **Sugar Sachets** can easily be carried in your wallet. 3 sachets will generally treat a hypo.

And to finish it off... Remember that you'll often need some more substantial food after a hypo as well to ensure you don't just drop back down again. Muesli bars, or a glass of milk will do the trick here.

Preventing hypos is the best thing of course! See Managing Blood Glucose Levels in the Real World for more.

food – the carb connection

With all the hype about low carbohydrate diets over the past few years, you could easily be mistaken into thinking that carbs are the enemy and something to be avoided at all cost. But if you have Type 1 Diabetes, carbs are really important - actually the most important part of your diet. You don't actually need to eat more or less carbs than normal if you have diabetes, but you do need to balance your intake of carbs with the amount of insulin you take and the exercise you do. Let me explain...

Food is made up of protein, fat and carbohydrate along with vitamins, minerals, dietary fibre and water. All of these are an important part of a healthy diet but it is the carbs that impact most on blood glucose levels.

When you eat carbs, they break down to glucose which is absorbed into your bloodstream. You then need insulin to get the glucose from the bloodstream into your muscles and cells to use for energy. In someone without diabetes, the body always produces just the right amount of insulin to deal with the carbs that they eat. But when you have Type 1 diabetes, this doesn't happen. Up to recently, most Type 1's injected a similar amount of insulin each day because they were eating a similar amount of carbs each day to avoid your blood glucose levels going up too high or down too low. Today, Type 1 Diabetes is more flexible in that you can eat what you want as long as you know how many grams of carbohydrate it has and how much insulin you require to offset it.

There are other factors, such as exercise and stress, which make this relationship a bit more confusing, but essentially insulin and carbs need to be matched and this is done through carb counting.

So which foods contain carbs?

Carbs are made up of starches and sugars. Starches include breads, cereals, pasta, rice, starchy vegetables such as potato, sweet potato and corn, and legumes (peas, beans and lentils). Sugars include all the familiar sugary food like jams, jellies, cakes, biscuits, etc., plus all the sugar we add to food and drinks ourselves. There are also natural sugars in fruit and fruit juice and in dairy products such as milk, yoghurt and ice-cream.

You will need to learn how much carbohydrate is in the food you eat.

This system is commonly referred to as carbohydrate (carb) counting. A common tool used in carb counting is carbohydrate portions or exchanges. Some centres use 10g exchanges or carb portion while others use 15g exchanges or carb portion.

Examples of a 15g portion/exchange (or 15g) of carbohydrate:

- one slice of bread
- an good sized apple
- a large glass (300 mls) of milk.
- 1 Weetabix.

This means that you could have 3 slices of bread and an apple OR 3 Weetabix with a cup of milk and in both cases you would be having about the same amount (4 portions) of carbs. And for both meals you would need about the same amount of insulin.
A dietitian can help you to work out the amounts of carbs you need to eat from day to day and meal to meal and will work with you and your Diabetes Nurse or Endo to determine the right amount of insulin to take depending on the amount of carbs you eat.

Are all carbs the same?

In the past people with diabetes were told not to eat sugary foods and to consume only carbs from starchy foods. But we now know that foods are more complex than we previously thought. Some sugary foods, particularly the natural sugars in fruit and dairy products, increase blood glucose levels only slowly, while some starchy foods, such as white bread, cornflakes and potato will raise blood glucose levels more quickly. The measure of how quickly or slowly a food raises blood glucose levels is called glycaemic index (GI). The GI factor is not very commonly used in Ireland and is a little more difficult to understand than simple carb counting but if you wanted to take your diabetes management to a more intensive level after you've mastered the basics then this is that.

The Glycaemic Index (GI Factor) tells us that:

- The amount of sugar in a food isn't the only indicator of how likely the food is to raise blood glucose levels
- People with Type 1 diabetes don't need to avoid sugar altogether - the most important thing is eating a similar amount of carbs from day to day, regardless of where the carbs come from.
- Even if you eat the same amount of carbs from day to day you may get a different blood glucose response if the GI of the carbs you eat is different.

In general it is good to eat more low GI carbs, except during episodes of hypoglycaemia when high GI carbs will bring the blood glucose level back to normal much faster.

A dietitian will help you to work out an eating plan to suit your needs, food preferences and lifestyle. They will also be able to explain more about carbs and GI and to help you to work out how different foods affect your blood glucose levels.

To find a dietitian who specialises in diabetes, contact your diabetes clinic. The Diabetes Clinics in large hospitals usually have one in-house. If your Diabetes Clinic does not have a dietitian then you may be able find one through your GP or local health centre.

food and the GI factor

Some people dismiss the GI Factor as the latest fad from those over-enthusiastic, live-by-the-book dietitians. But once you wade through all the tables of figures and bizarre theories, maybe the GI Factor could be useful.

Well, what the hell is it?

The GI Factor is a method of ranking foods in terms of how fast they cause our blood glucose levels to rise and fall. It really shows how fast foods can be digested and converted into energy. It is measured relative to pure glucose, which is given a value of 100. The actual numbers tend to just complicate the whole matter so people generally talk in terms of low GI foods, and high GI foods.

some examples

Low GI foods (less than 55)

- Make blood sugar levels rise slowly and remain in our system for a long period of time.
- Good to have as main meals or before exercise.
- Foods with large particles that our bodies take a long time to digest and hence release their energy slowly: lentils, soy beans, cherries, yoghurt, oats, pasta, grainy breads.
- All dairy products have a low GI.
- A glass of milk before bed, like Nana says, will provide a slow release of energy and might avoid those overnight hypos.

High GI foods (more than 70)

- Make blood sugars rise & fall rapidly.
- Good for hypos!
- Small particles that are digested and start providing energy quickly: coco pops, jelly beans, white breads and potato.
- Baked potatoes have a high GI of 85 - not far off glucose! But this doesn't mean you should stay away from them
- Long grain rice, although a complex carbohydrate actually has a high GI. On the other hand, basmati rice has a much lower GI.

How to switch to a low GI Diet: If you want to get into the GI, it's really about choices like knowing that blood sugars will fluctuate less by having multigrain instead of white bread, having pasta instead of rice, and having oat based cereals like Oatibix or porridge instead of Coco Pops.

The main things to concentrate on if you'd like to go low GI are:

- Use breakfast cereals based on oats, barley and bran;
- Use 'grainy' breads made with whole seeds;
- Make use of pasta and traditional (not easy-cook) basmati rice in your meals;
- Be aware that potatoes have a higher GI and if you include a low GI vegetable like peas or beans with your potatoes this will lower the GI of your entire meal. Or you could substitute sweet potato which has a much lower GI;
- Enjoy all types of fruit and vegetables;
- Include plenty of salads (especially bean-based ones) with vinaigrette dressings;

For more information visit www.glycemicindex.com. Some low GI cookbooks are listed in the books and websites page.

managing blood glucose levels

IN THE REAL WORLD

We'll break it to you now, so you're not too shocked in a few months. Living with diabetes is an art, not a science. Once your honeymoon wears off, and your body's producing almost no insulin at all, you will become abruptly aware that the equation for diabetes can be more complicated than exercise + food + insulin = blood glucose level. There are a lot of other factors which can weigh into the equation.

Reality Check recently asked people for information on what can affect everyone's blood sugar levels, and here are some interesting and varied answers:

the uppers: what makes some people's blood sugars rise?

- Stress
- Corticosteroids (Steroid drugs)
- Crazy days/nights (where you forget or ignore insulin)
- Going to see a band I really love, no matter how much I dance/mosh/skank/act like a tool!
- Anything that gets the adrenalin going – even a tense, scary, exciting movie!
- Cycling – while all other exercise sends me down!
- Caffeine – it's a stimulant
- Exercise – adrenalin!
- Sleep deprivation
- Hot weather
- Colds and 'flus
- Eating pasta
- Special K
- Hormone changes – a week before my period,
  my blood sugars soar, then drop when my period comes.

the downers: things that make some people's blood sugars drop unexpectedly

- Yoga
- Eating pasta
- Cold weather
- Hot weather (sometimes 2 or 3 hypos per day)
- Prolonged physical work causes delayed hypo
- Timing of insulin injection in relation to the GI of associated food
- Eating vegetable stir fry for dinner
- Getting my period.

The conclusion:

Every body's different!

As you'll see, pasta was listed by two different people as having the opposite effect! But we hope this list of things from others with diabetes will help you identify factors in your own case which might be the cause of a mysteriously high or low blood sugar level.

how much will it cost?

This all depends on what health care option you prefer. You will have to choose between public health care and private. If you choose public health care then you may have a choice as to which diabetes clinic you would like to attend. If you choose private health care then how do you find out what your options are.

Public Health Care

Public hospital diabetes clinics are free. The level of service varies from clinic to clinic but most should have a Diabetes Nurse Specialist and an Endocrinologist. They should be able to refer you to other services (such as a dietitian, podiatry, ophthalmology, etc.) which are also free. On the downside, the waiting lists for these services range from 6 months to years and the appointments take up to two hours.

Private Health Care

Endocrinologists charge varying fees but you get some of it back through Private Health Insurance. Private Endo's cost anywhere from €70 to €250. Depending on the level of service the endocrinologist provides determines if you'll be able to see a diabetes nurse specialist.

Your GP would be the best person to provide you with a list of endocrinologists and clinics available to you. You can also seek other health services privately, just be sure they have specialist training in the area of diabetes.

Diabetes medication & supplies.

All persons with diabetes are entitled to receive their diabetes medicines, pens/syringes, lancets and blood glucose monitoring strips free of charge through the HSE. This is done through the Long Term Illness (LTI) Scheme or the Medical Card Scheme.

Long Term Illness Book; you are entitled to this book if you do not have a medical card. This book entitles you to all of your medication and medical supplies related to your diabetes for free. This includes your Insulin, Insulin Pens & Needles, Syringes, Blood Glucose Meter and Strips. It also covers medications for high cholesterol, high blood pressure and erectile dysfunction. Application forms are available from your local community services offices and need to be completed by you and your doctor. You will then be sent a book which you present to your pharmacy.

In December 2011, the goverment announced the extension of free GP care to people who were on the Long Term Illness Scheme. At the time of this book going to print there were no more details of this. Watch out for this announcement on Diabetes Ireland's website <www.diabetes.ie>.

Medical Card Scheme; The Medical Card Scheme entitles a person to free GP visits and hospital care, free medication, pens/syringes, lancets and glucose monitoring strips. To qualify for a Medical Card you need to have an income that is within certain financial guidelines, or if your income is over the financial guidelines, but the HSE decides that the financial burden of medical or other exceptional circumstances would cause undue hardship. If one of your medications or diabetes supplies is allowable on the LTI but not on the Medical Card then a restricted LTI book can be issued to cover that particular item.

Disposal of sharps; Your needles, syringes or lancets should not be disposed of in household waste. Some HSE Health Centres provide portable sharps containers that you can sign for; when they are full you return it to the health centre where they dispose of it properly and give you a new one.

You can also get a needle clipper called the BD Safe Clip, which will remove the used needle from your insulin pen or insulin syringe. The Safe Clip is available either from your diabetes clinic or with a prescription.

** You need a referral from a GP for which ever health care services you opt for.

sick days

A common cold or more serious bug can also play havoc with blood sugar levels.

Senior Pharmacist at The Alfred Hospital, Melbourne and Reality Checker Karen Hirth, provides the following advice for dealing with colds and ‘flu:

- **Give in.** If you need extra insulin for the term of your bug invasion it’s not the end of the world, spite the fact you may be eating very little. Do lots of blood tests. And work with your diabetes team to increase insulin doses to keep your blood sugars under control.
- **Drink Up!** Keep your body hydrated by drinking lots of water, especially with vomiting and diarrhoea.
- **Eat.** I don’t mean to sound like your mother but if you want to get better faster, eat soups with lots of vegies, fruits and custards and throw in some protein too.
- **Try to avoid:** bombarding the body with massive doses of vitamin C. If your body is not used to it, massive doses can cause really bad diarrhoea. Lovely!
- **Pills and potions.** If it makes you feel better go for it, but remember almost all available agents treat the symptoms not the cause, i.e. you will not get better faster. Some medicines contain glucose especially cough mixtures and can add to high blood glucose levels. Ask the pharmacist to recommend a suitable cold and flu medication for people with diabetes!
- **Check Ketones.** Ketones are chemicals in the blood produced when an alternative source of energy to glucose is required and fat is broken down. Combined with high blood glucose levels, this can be dangerous and lead to Ketoacidosis.
- **If you are unable to treat hypos** because of vomiting, seek medical advice.

If you are ill and have blood sugars above 15mmol/l, check ketones either with urine test strips or some blood test machines also allow ketone testing (with different strips). If ketones are present follow your insulin adjustment as laid out on your sick day regime. If this is not reducing the ketone level then call your doctor or diabetes clinic.

See Ketones for more information about ketones.

ketones & ketoacidosis

When you are ill, have an infection or your sugars have been high for any reason for a long period, you need to look out for a very dangerous condition: Ketoacidosis. But what is it?

Let's go back a step. Some things called Ketones are produced when the body is burning fat to get energy. This happens naturally, of course, if we are burning fat through fasting, dieting or exercising to lose weight. However, if it happens too much too fast, it is not natural. Moderate or large amounts of ketones in your body are very dangerous. They upset the chemical balance of the blood.

Ketones in the blood can lead to a condition called Ketoacidosis, also known as DKA, which just stands for diabetic ketoacidosis. DKA involves having to go to hospital to be rehydrated and monitored while the ketones in your body reduce to a safe level. Many people with Type 1 diabetes have never in 20 or more years had an episode of ketoacidosis. But you may already know what it is, as it can happen when people's Type 1 diabetes is undiagnosed and you might have been unlucky enough to have had it already.

Unfortunately, DKA is life threatening, so you need to understand what it is and what to look out for.

What causes ketones and DKA? What should you look out for?

1. **Not getting enough insulin.** Maybe you forgot or made a mistake with your insulin doses. Or your body is fighting an infection, flu or another illness, so needs more insulin than usual. If there is not enough insulin available, your body cannot access sugars in your blood for energy, so your body begins to break down body fat for the energy it needs to function.
2. **Not enough food.** When people are sick, they often do not feel like eating. Again your body needs energy and because there is no other food for it to break down, it starts breaking down body fat. Ketones are produced from this process. The same may happen if a person who is not ill simply does not eat, for example, they simply skip a meal, or if they have an eating disorder.
3. **Hypoglycaemia (low blood glucose)**. When blood glucose levels fall too low, the body must use fat to get energy. If testing shows high ketones in the morning, you may have had a hypo while asleep.
4. **Changes during pregnancy.** Women with Type 1 diabetes who are pregnant are at high risk of producing ketones. The rapid changes in your body during pregnancy and changing insulin needs can mean that your body is not getting enough insulin or food. As explained in Points 1 and 2, both of these scenarios can lead to ketones.

Ketones are NOT an infection. An infection can give you ketones, as explained at point 1 above, but ketones are not a type of infection. Antibiotics will not fix ketones.

Ketones and DKA are NOT related to kidney function. The small particles that blood tests look for when someone's kidneys aren't filtering properly are called microalbiminuria. The presence or absence of ketones in your urine does not indicate anything about your kidney function.

The two things are entirely different.

Do I have ketoacidosis/DKA?

When ketones are moderate or high and the chemical balance of your blood is upset, you will know about it! The symptoms of ketoacidosis include nausea, vomiting and abdominal pain. Some people also experience fast and heavy beating of their heart. It is scary. You are clearly unwell. And you should speak to your doctor or go to hospital immediately.

Catch it early. Stay out of hospital.

Ketones can be tested at home with a simple blood or urine test.

Urine tests are done with testing strips available from your chemist, the same way you get blood testing strips. You pee on the strip, wait as indicated, and check the colour against a chart on the container. This is cheap and easy, but is not very accurate and only shows the ketones that were in your body 2-4 hours earlier.

Blood testing of ketones has recently become available. The Optium and Optium Xceed blood glucose monitors are the only meters which allow this function (as well as doing regular blood glucose testing). You will need different testing strips to your normal ones for blood tests, but otherwise, it is quite simple to use the Optium monitors.

You should test for ketones when:

1. You are ill
2. You are under stress
3. Your blood glucose levels are consistently high e.g. above 16.7 mmol/L.

I have ketones. What do I do now?

KETONE TEST RESULT	ADVICE
Blood test = 0.6 – 1.5 mmol/L Urine test = Moderate	• This indicates the beginning of a problem. • Your endocrinologist or diabetes clinic will have provided you with instructions to follow if you are showing ketones – do this now. • Their instructions may have included regular (half-hourly) monitoring of blood glucose, increasing or adding insulin doses carefully until your blood sugar levels drop. Also drink plenty of water to stay hydrated.
Blood test = 1.5 - 2.5 mmol/L Urine test = High	• You may be at risk of DKA. • Call diabetes team immediately for advice. • If you cannot contact your diabetes team, call your nearest big public hospital and ask to speak to the endocrinologist, diabetes nurse or registrar on call. • **If this still fails, you need to go to the emergency unit of your nearest hospital.**
Blood test = 1.5 - 2.5 mmol/L Urine test = High	• You are at high risk of DKA; seek assistance urgently.

Thanks to Dr Jennifer Conn, endocrinologist, for her assistance with preparing this information.

alcohol

In a person with insulin-dependent diabetes, alcohol has two potentially problematic effects:

1. It impairs the liver's ability to produce (lifesaving) glucose in the event of a severe hypo;
2. Early signs of hypos can be indistinguishable from drunkenness (for you and people around you) and therefore ignored.

When you have a hypo, under normal circumstances, the hormone glucagon is secreted from the alpha cells in your pancreas. Glucagon travels to your liver and stimulates it to release glucose from its stores of glycogen. This occurs well after you have had early signs of the hypo and hopefully been able to treat it. However, if you do not treat a hypo your liver will eventually kick in with the glucose. Yet if you've been drinking a lot of alcohol this life-saving mechanism can be impaired and blood sugar levels will continue to fall indefinitely.

Something else to be aware of when drinking is that it can become very easy to ignore or misinterpret hypo warning symptoms. They can be similar to feeling tipsy, or you can just ignore them altogether as there are so many other things going on.

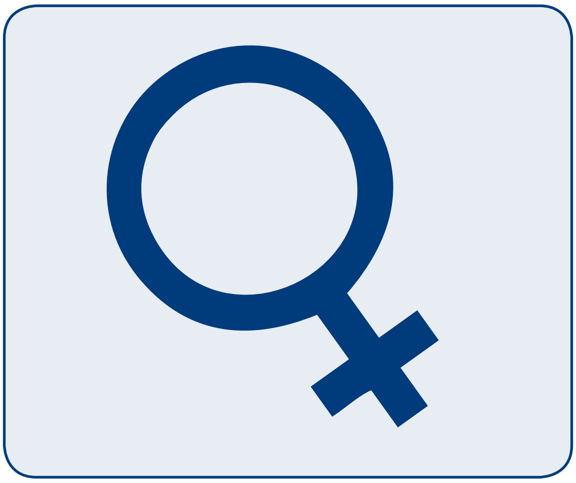
Some people with diabetes have found the following ideas helpful.

- Before a big night out, eat a decent meal.
- If you're planning on being very active while you're drinking you may like to reduce your insulin by 10 - 20%.
- Try to nibble on something with carbs and protein while you drink (e.g. crisps).
- Wear or carry some form of diabetes identification; in case a hypo is mistaken for drunkenness. This can be a lifesaver!
- When you get home after a big night or on the way home, try to do a blood test and eat or drink something like multigrain toast, glass of milk, banana (low GI) or go to the chipper on the way home.
- Make sure someone you are drinking with knows you have diabetes.
- If you get stuck in shouts/rounds and are drinking faster than you would like, on your shout buy yourself a soft drink.
- Carry some hypo food on you.

Other Stuff

- Alcohol is high in calories, so can contribute to weight gain.
- Some types of alcohol (e.g. sweet wines, liquors, juice based drinks and some beers, lagers and stouts) are high in carbohydrates and can raise blood glucose levels. However, within a few hours the alcohol content may cause blood sugar to drop.
- Light or low-carb beers and lagers usually contain less carbohydrate than regular versions (usually about 3-6g of carbohydrate per 330mls) but have similar alcohol content (3.5 – 4.5%).
- Mixing spirits with regular sugary soft drinks, milk or juice is one way to consume carbohydrates while you drink if nothing else is available.

hormones and girl stuff



It's hard work being a woman. But you already knew that. Thanks to our lovely ovaries, we have an extra little gremlin to battle in the diabetes stakes.

Unless you had a very cool, probably female, endocrinologist or diabetes nurse specialist who diagnosed your diabetes, girl stuff and how diabetes affects it probably wasn't mentioned. Starter Kit to the rescue!

What do hormones have to do with diabetes?

Insulin is a hormone! And the clever thing about hormones is that they interact with everything and anything, and each other, going up and down in response to the millions of processes which go on inside our bodies every minute.

There are several hormones that are released at different times through all women's menstrual cycles. For women with diabetes, these hormones will interact with the insulin we are injecting or pumping and therefore might affect our blood glucose levels.

Is there a regular monthly pattern?

Everyone is different but a common pattern is that 3-5 days before our periods start, our body becomes resistant to the insulin that we are injecting or pumping. This is caused by the high oestrogen levels produced at this stage of our menstrual cycle. Many women find that for a few days before their period, blood glucose levels are high; we have what's called "insulin resistance" at this time.

As you start to bleed a few days later, and the oestrogen levels drop away, many women's blood glucose levels will drop, sometimes quite dramatically. Be very careful to look out for hypos on the first day of your period.

How do you deal with it?

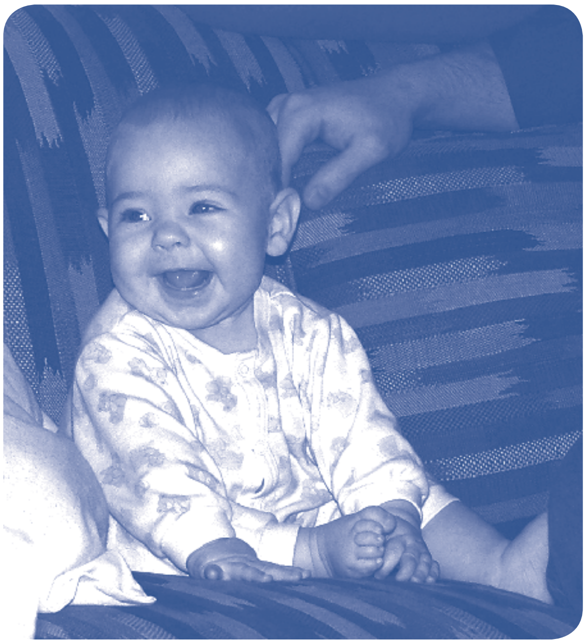
It is a bit tricky to manage at first. Different women can have very different experiences: some hardly notice it at all and others have quite dramatic highs and lows through their cycle. But you will generally find that you have your own pattern that is the same or similar for you each month. By keeping a note of blood glucose levels a week either side of your period for about three months, you can generally identify a pattern and then, if you need to, work with your Endo or diabetes nurse to adjust your insulin doses to work around this pattern. Some women find that hormonal contraception, such as the Pill, can be very helpful to counter the hormones causing rises and falls in blood glucose levels, even if you don't need it for contraception.

What about contraception?

There is no single method of contraception perfect for everyone. The same warnings and conditions apply for contraception as for all women.

If you identify wild swings in blood sugars, or any irregularities with your menstrual cycle, you may wish to see a gynaecologist who specialises in treating women with diabetes.

Some women find that altering the type of contraceptive pill they take, or starting on a pill or one of the newer forms of injected or implanted contraception can provide some hormones that "smooth out" the effect of their menstrual cycle on their blood glucose levels. Even if you're not wanting or needing to take the Pill for contraceptive reasons, the hormones in various types of hormonal contraception can help to moderate other hormones your body releases through your monthly cycle. It's worth investigating. Chat to your Endo or diabetes nurse.



...and Babies?

Women with diabetes can have healthy babies. But you need to know that pregnancy for women with diabetes is considered high risk. You have an equal chance to that of a woman without diabetes, of having a healthy baby if you become pregnant at a time when your diabetes is tightly controlled and general health is good. It is highly recommended that women with diabetes plan their pregnancies.

There are specialist diabetes and pregnancy clinics at some hospitals in Ireland. You should attend these clinics while you are planning a pregnancy, as well as during your pregnancy. You will see both diabetes specialists and obstetricians who specialise in working with mothers who have diabetes.

For more information about diabetes and pregnancy:

Visit www.realitycheck.org.au/babies.htm for a download of the booklet, and many women with diabetes' stories of pregnancy.

For more information on the Guidelines for the management of Diabetes in Pregnancy contact <www.atlanticdipireland.com>

Thanks to Dr Jennifer Conn, consultant endocrinologist at Royal Women's Hospital, Melbourne for her assistance in preparing this information.

exercise

Gary Hall Jnr – Olympic swimmer

We all know that exercise is good for us but diabetes presents some challenges - blood sugar levels can drop low or rise unexpectedly during exercise, but don't be deterred! People with diabetes can achieve amazing things - US Olympic Swimmer Gary Hall Jnr and UK Rower and 5 time Olympic medal winner, Steve Redgrave both have diabetes. Zippora Karz, a member with the New York City Ballet, was diagnosed in the middle of her career at 21 and went on to be appointed soloist at 27. Closer to home, World Champion Kick boxer, Catherine Brady developed Type 1 diabetes at the age of 21 and went on to win a second world title at the age of 27.

Dr. Sheri Colberg-Ochs, an Associate Professor of Exercise Science at Old Dominion University, author of the book The Diabetic Athlete's Handbook, and a diabetes athlete herself, provides some useful information for managing diabetes around whichever exercise you may wish to do or continue doing.

- Regular exercise is the most important activity that you can do to slow the ageing process, manage your blood sugars, and stay healthy.
- The best way to deal with the multitude of variables is to learn your own responses to all of them by checking blood sugar levels before, during, and after exercise.
- Intense exercise can cause a large increase in blood sugars due to the surge in glucose-raising hormones.
- You may find that after training for several weeks, your blood glucose does not drop as significantly as it did when you first started training.
- Regular physical activity improves blood glucose control by increasing the body's sensitivity to insulin.
- It is crucial to know when your insulin's peak in order to determine your blood sugar response to exercise and your need for supplement carbohydrates.

Dr Colberg-Ochs recently answered some questions from people with diabetes in an interview with About.com.

Jennifer asks: "Why does my blood sugar actually rise after my regular morning exercise session?"

Dr. Colberg-Ochs answers: Many things can affect your blood sugar response to exercise, and it is normal for intense exercise to actually cause a rise in blood sugars.

In all likelihood, both the time of day that you are exercising and what you are eating for breakfast are probably having a large effect on your sugars. Morning exercise is notorious for causing less of a drop in blood sugars, even when compared with the exact same type of exercise done later in the day. The reason for this is that after you fast overnight (not eating between dinner and breakfast), your body releases extra hormones to keep your blood sugars normal, particularly high levels of cortisol and growth hormone, and the livers in people with diabetes often overproduce glucose overnight as well. These hormones, while working well to keep your blood sugars normal overnight, also make your insulin less effective, thereby creating an "insulin resistant" state in your body in the early morning.

By eating breakfast, you 'break' your 'fast' and provide alternate fuels that allow the levels of these hormones to then drop. So, breakfast is important, but it is also the meal at which our bodies have the hardest time with carbohydrates causing a bigger increase in our blood sugars. You may want to stick with a lower carb breakfast, saving them for after your workout when your insulin action has improved.

Also, you may want to experiment with exercising at different times of day to see the effect. If you do continue with your morning exercise, though, the temporary elevations in your blood sugar will be just that: temporary. If they begin persisting past an hour or two, though, then you will need to rethink your strategy."

Carl asks: "I want to exercise to decrease weight and become healthier. However, I have found that my sugar level drops quickly when I exercise. This of course leads me to feel as if I need to eat, and in return for eating I feel I defeated the purpose of the exercise which was to burn calories and lose weight. Is this cycle avoidable? Or is the eating actually ok?"

Dr. Colberg-Ochs answers: "If you're using exercise to try to lose weight, then it would definitely be better to minimize the additional eating. However, a few simple changes in your diet and/or medications could easily help you to break this cycle.

If you are able to make changes to your regimen, then you should be able to correct this problem.

If exercise is causing your blood sugar to drop, then you can either lower your insulin dosages (consult with your doctor if you don't know how to do this on your own), or adjust your diet for exercise. When you know that you are going to exercise following a meal or snack, eat foods with more carbohydrates in them (but that have approximately the same calorie content as what you would have eaten otherwise). These carbs will then be available to your body during exercise and should help prevent any drops in blood sugar. If you still have to eat something afterwards to compensate, consume only quick-acting carbs that will quickly correct your 'low' feeling, like a glass of soft drink, or 5-6 dry biscuits, but that will add relatively few calories. Do not eat foods high in fat or protein as they will not quickly correct a low blood sugar!

general exercise guidelines for athletes with type 1 diabetes

From the American Diabetes Association and American College of Sports Medicine.

Metabolic control before exercise:

- Ingest carbohydrates if glucose levels are below 5.5 mmol/L.
- Avoid exercising if fasting glucose levels are more than 14mmol/L and ketosis is present, and use caution if glucose levels are greater than 17 mmol/L and no ketosis is present.

Blood glucose monitoring before and after exercise

- Identify when changes in insulin or food intake are necessary.
- Learn the glycaemic response to different exercise conditions.
- Remember that a hypo can occur hours after you have exercised.

Food intake

- Consume carbohydrate as needed to avoid hypoglycaemia.
- Keep carbohydrate-based foods readily available during and after exercise.

Further reading about Diabetes and Exercise

The Diabetic Athlete's Handbook by Dr Sheri Colberg-Ochs is available on order via your local bookshop or via www.amazon.co.uk

Diabetes Exercise and Sports Association (US-based): <www.diabetes-exercise.org>

Fact sheet from the Australian Institute of Sport: <www.ais.org.au/nutrition/documents/FactDiabetes.pdf>

HypoActive – information about Type 1 diabetes and exercise, plus events that people with diabetes have entered and inspiring individual achievements. <www.hypoactive.org>

travel

Diabetes absolutely does not need to kill the travel bug! Many people with diabetes travel far and wide, in style and on a shoestring, in a hurry for constant business trips and on long extended holidays around the world!

There are some extra things you'll need to do, however, mainly in regards to keeping the security guys off your back for carrying 'sharp objects' and to make sure you always have the wonder drug insulin by your side as you travel.

- **Carry a letter from your doctor.** Ask your doctor to write a letter stating your full name, address and date of birth, that you have diabetes, a list of the medications, insulin delivery devices (syringes, insulin pens or pumps), and blood glucose testing equipment which you use, and stating that you must be allowed to carry these with you at all times. Make several copies of this letter.

- **Customs or Security Gates.** If questioned about syringes or other diabetes equipment which you are carrying, stay calm, simply state that you have diabetes and explain what the devices are. Show the person the letter from your doctor. The Federal Aviation Authority trains all security staff in what people with diabetes must be allowed to carry. There is no need to 'declare' your supplies on domestic or international flights as they are entirely permitted.

- **Take a spare prescription.** Always take prescriptions for all medications which you need, and which you are carrying with you. This will both assist you to get more supplies if needed, and reassure security officers that the medications are your own.

- **Bring plenty if not double the amount of diabetes supplies that you will need.** Sometimes extreme climates can damage test strips and insulin, or if you get delayed at your destination on your way home (remember the ash cloud). It's always wise to have some spares.

- **Carry all your diabetes supplies in your hand luggage.** You should do this for two reasons; it can be difficult, though not impossible, to obtain all your diabetes supplies away from home if they are lost. And secondly, the temperature in the airplane where the checked luggage is kept can reach below zero which will damage the quality of your insulin and your test strips.

- **Replacing lost supplies.** If you do find yourself in this predicament, start with a major hospital's emergency room which should be able to supply enough to get you through. Alternatively, phone the diabetes organisation where you are and ask someone to explain how you obtain diabetes supplies in their state/country.

If heading overseas, you can find out contact details for the local organisation in advance by visiting the International Diabetes Federation's website: www.idf.org

- **Wear ID.** Make sure you have some form of identification which says that you have diabetes such as a Medic alert bracelet, on you, especially if traveling alone.

- **No need to request 'diabetic' meals on planes.** These can be a little unpredictable. Some people even report that their 'diabetic airplane meals' have included not a scrap of carbohydrates. On a related note, for long hauls you can generally find out from the airline which meals will be served on flights - but not exactly what the meals will contain - which may be helpful in planning long trips. Turbulence on a flight may alter meal serving so carry sufficient carbohydrates (crackers, digestives, etc.) in your hand luggage to tide you over.

- **Always pack hypo supplies – especially on long flights.** Also, don't be afraid to ask the flight attendant for a lemonade or extra food if you need it to treat a hypo.

- **Get Travel Insurance!** ! It may seem like just another wad of Euros but if only for your and your family's peace of mind it could be the best investment you ever make. Make sure your insurance policy covers your diabetes. Some policies may exclude cover for long term medical conditions.

There more tips and tricks that you can learn from others with diabetes who have travelled extensively. The Reality Check website contains an easy discussion forum where you can ask more specific questions relating to your own travel plans.

surfing the net

TIPS FOR SUCCESS

Many people race home from a diagnosis with diabetes and jump on the internet.

If you have not previously investigated health conditions on the web, you will probably be surprised at the enormous number (and variety) of sites to be found.

The ABC's health reporter Rae Fry provides the following advice on their website <www.abc.net.au>. A useful page to have beside your keyboard as you go searching.

- Don't rely on just one site.
- Find out who owns or has written the information.
- Sites produced by institutions may be more reliable than those produced by individuals.
- Sites that use an editorial review board may be more reliable.
- Information should be balanced – have the pros and cons been considered?
- If it sounds too good to be true, it probably is.
- Advertising should be clearly identified and commercial sponsorship disclosed up-front.
- Good site presentation doesn't guarantee quality, but nor does it detract from it.
- The information should be up to date.
- Be very wary of sites that offer online consultation and prescriptions.
- Finding good information takes time.

For complete report see ABC Health website: www.abc.net.au/health/cguides/elixir.htm

See "More books and websites" for some popular diabetes websites.

more books and websites

For more info on anything you have read and more you may want to try the following:

Diabetes for Dummies
by Dr. Alan Rubin
About the author Diabetes Specialist
Available from all good bookshops, including online

Caring for Diabetes in Children and Adolescents – a Parent's Manual
by Dr Geoff Ambler
About the author
Paediatric Endocrinologist,
in consultation with others.
Available from Amazon or from www.jdrf.org.au

Type 1 Diabetes in Children, Adolescents and Young Adults
by Dr. Ragnar Hanas
About the author
Consultant in Paediatric Diabetology & Endocrinology, Uddevalla Hospital, Sweden.
Available from www.amazon.co.uk

The Diabetic Athlete
by Dr Sheri Colberg
About the author
A diabetic athlete with a PHD in exercise physiology.
Available from www.amazon.co.uk

Caring for your Diabetes as well as your Health
by Jerry Edelwhich & Archie Brodsky
About the authors
People who have lived with diabetes for many years.
Available from www.amazon.co.uk

The Diabetic Woman
by Dr Lois Jovanovic
About the author
Endocrinologist, researcher and has diabetes herself
Available from www.amazon.co.uk

Guidelines for the Management of Diabetes in Pregnancy
by Prof. Fidelma Dunne
About the author
Consultant endocrinologist and Atlantic Diabetes in Pregnancy Study's principal investigator
Available from Direct from Ms Louise Carmody, ATLANTIC-DIP Project Officer, Tel: 086-249 5880, email: louise.carmody@hse.ie

Diabetes and Pregnancy – Women's Experiences and Medical Guidelines
by Dr Alison Nankervis and
Mrs Josephine Costa,
About the authors
Endocrinologist who consults at Royal Women's Hospital, Melbourne and diabetic mother of four
Available from www.welcome.to/miranova

Diabetes Burnout
by Dr William Polonsky
About the author
American Psychologists who specialises in diabetes
Available from www.amazon.co.uk

The New Glucose Revolution (GI Factor) by Dr Jennie Brand-Miller
About the authors:
Professor of Nutrition at Sydney University
Available from all good bookstores

Psyching out Diabetes – A Positive Approach to your Negative Emotions
by Dr Richard Rubin PHD, CDE
About the author
Has diabetes himself, doctor
Available from www.amazon.co.uk

Insulin Pump Therapy Demystified: An Essential Guide for Everyone Pumping Insulin By Gabrielle Kaplan-Mayer & Gary Scheiner
About the author:
Kaplan-Mayer is a Type 1 pump user and Scheiner is a certified diabetes educator in the United States.
Available from www.amazon.co.uk

Irish Diabetes Organisations

- Diabetes Ireland : www.diabetes.ie
- Diabetes Ireland Research Alliance
  www.diabetesresearch.ie

Australian Diabetes Organisations

- Australian Diabetes Educators Association
  www.adea.com.au
- Diabetes Australia
  www.diabetesaustralia.com.au
- Type 1 Diabetes Network
  www.d1.org.au
- HypoActive - diabetes, sport and exercise
  www.hypoactive.org
- Insulin for Life (helping people in disaster zones) : www.insulinforlife.org

General Diabetes Information

- Children with Diabetes
  www.childrenwithdiabetes.com
- Rick Mendosa's Diabetes Directory :
  www.mendosa.com/diabetes.htm
- Glycaemic Index : www.glycemicindex.com
- Insulin Pumpers : www.insulinpumpers.org
- International Diabetes Federation
  www.idf.org
- Juvenile Diabetes Research Foundation (International) : www.jdrf.org.uk
- Diabetes UK : www.diabetes.co.uk
- American Diabetes Association:
  www.diabetes.org
- Irish Nutrition & Dietetic Institute: www.indi.ie
- www.itsmyinsulin.ie

Real stories of being diagnosed as an adult.

Malta, Iceland

AND TOO MANY BIG NIGHTS

As a 23-year-old Australian living in London, I was living the life that most other Australians did when they are here. I drank too much, went out too much, worked long hours and survived on a staple diet of vodka, coffee and Marlborough lights.

I had just come back from a holiday in Malta, and had planned a trip to Iceland with some friends. We were going to swim in the Blue Lagoon, dance all night and chase Scandinavian totty all over Reykjavik. It was all looking good, except I was feeling crap. I had been feeling crap for weeks. I was knackered for one thing. I had never been an athlete, but now switching my computer on at work seemed to necessitate a lie down. All I wanted to do was sleep. And when I wasn't sleeping I had trouble dragging myself down to the shops to bulk buy Evian and huge amounts of food which I would then eat all myself. At the same time, I was losing weight.

Everyone blamed my tiredness and thirst on too many big nights out. My weight loss was apparently due to the excitement of too many holidays too close together and my hunger was an insufficient diet catching up with me. Therefore, with my friends' and colleagues' diagnosis, and armed with my 3 favourite partners in crime, I flew to Iceland.

But in Iceland, I could barely get out of bed. I had been there before and had always loved the place, but I couldn't be bothered looking out the window to check the weather, let alone take my friends sightseeing. Still I was determined to get over 'my tiredness problem' so I dragged myself out and about with the girls. We did the sightseeing, we danced all night (admittedly I had to fight to keep my eyes open and had to elect not to speak as it made my mouth too dry) and we planned to hire a car and take a road trip along the South Coast to see the Ice lakes and Black sand beaches. On the day of our road trip, I got out of bed and promptly threw up. I blamed the lobster soup at lunch the day before. I refused breakfast, hopped into the hire car and fell asleep.

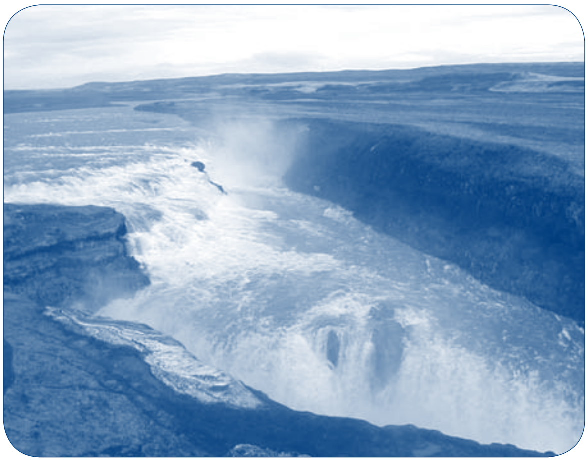
We stopped at a waterfall and as my friends admired its beauty I slumped on the bonnet of the car and announced: "I wish I could drink the waterfall". I then fell asleep.

The rest is kind of a blur. I remember a hospital in the middle of nowhere in the Icelandic countryside. I remember a doctor asking my friends lots of questions. He asked if I had been exposed to SARS …and then I woke up in the back of an ambulance. I was being taken to Reykjavik Hospital. My Icelandic is confined to "please", "thanks" and "2 vodkas with Diet Coke" so I had no idea what was going on.

Two days later, I woke up and a doctor sitting by my bed informed me that I was an 'Insulin Dependent Diabetic". 'Oh is that all,' I remember thinking. "So how long will I have to take tablets to fix that," I asked. "Can I go back to work next week?".

The Doctor looked a little horrified and then proceeded to explain. I had severe ketoacidosis; I had almost died; tablets weren't quite going to cut it; and No! There would be no work next week, or the week after for that matter.

The stay in Reijkavic hospital wasn't as bad as you'd expect. Not too many Australians end up in intensive care in Iceland so I was spoilt by all the nurses and had the benefit of the odd good looking Scandinavian doctor sticking their



Icelandic waterfall

head in to check on my progress (even if I wasn't dressed for the occasion). My friends visited bearing moisturisers and hair products to repair some of the damage dehydration had done to my body. One of the girls stayed on with me and eventually I was cleared to fly back to London. Where I am now.

My mother flew over to be with me. I took 3 weeks off work. I have stopped going out every single night and have given up the ciggies for good. I feel better than I have in years. It's six months on now and I'm still learning. I still slip up and there are still plenty of things that I am trying to understand. But in the end, it's no big imposition on my life.

I do everything I used to do: I still travel and since being diagnosed I've been to Spain, Sweden, Amsterdam and an ill-advised weekend in Blackpool. **I give diabetes the courtesy it is owed.** I do everything in my power not to exacerbate it and in the end I'm left with a better life style because of it and a pretty crazy diagnosis story to tell at dinner parties.

Melanie

I had been feeling terrible for over a week.

Hot flushes, constantly thirsty and getting little sleep due to getting up 3 or 4 times a night to go to the toilet. **In typical male fashion, I chose to ignore the symptoms and avoid seeing a doctor.** The crunch came when I was driving to the local football grand final. Although my vision wasn't that bad, I had trouble reading the number plates on the car in front of me.

At the game, I couldn't read the advertising signs on the opposite side of the ground. It was then that I decided I must see a doctor the next day. I continued to drink can after can of Coke that afternoon, without being able to get rid of that 'about to die of thirst' feeling. I mentioned it to a few people at the game. "You must have diabetes" they all replied jokingly.

The next day I rang the doctor and made an appointment for mid-morning. The doctor informed me that I had diabetes and that I need to report straight to hospital where the local expert GP and diabetes educator would meet me.

The first thing that sprung to mind was the needles. No one likes them, and I am no different. All I could envisage was a lifetime sentence of huge needles at every turn.

I ended up staying in the hospital for a week, and it didn't help ease my concern when a nurse administered my first needle from a classic syringe. She told me that there were "better" needles for people with diabetes, but she wasn't allowed to use them. Still didn't help much.

A couple of days later, I gave myself my first needle. I can still remember my hand shaking so much, that it's a wonder I didn't pierce the skin in about a dozen different places. The first was the hardest.

One of my big concerns was when I learnt that although I had no history of diabetes in my family, it was in fact hereditary. I explained this to my wife, who broke down immediately. She was 4 months pregnant with our first child. There was no real way of comforting her. I didn't know whether our baby would develop diabetes, and no one could tell me for sure either way. I later learned the chance was about 7%.

I had about a day of feeling sorry for myself. I asked the doctor whether the life sentence passed to me would go away, as my eyes were already much better. Once I was told straight down the line that I had to deal with it, I just accepted it and moved on.

A few days after diagnosis, I went for a walk across from the hospital to the beach and out

Barry was diagnosed aged 28, is currently 32, with 2 healthy boys & still playing snr major league football.

to the end of the pier. I was absolutely terrified that my sugar level would drop out and I would collapse. But of course, I survived.

My diabetes educator said I was a star student. She was very supportive to both my wife and I. She even took the time to contact my work colleagues and explain the condition, and what to expect from me, so that when I chose to return to work, I could return as though nothing had happened. That was great for a bloke that doesn't like to talk about such things too much.

I had the opinion that if I was going to 'get something' then it could have been much worse than diabetes. I came from a scientific background at university and work, so grasping the principles of managing diabetes was easy. I could understand the lingo the health professionals used. **But I did vow that this condition wouldn't stop me from continuing to do whatever I wanted. And it hasn't.**

Barry

I didn't ask for it but I got it!

Let me introduce myself to you. My name is Katie, I am 25 years of age and was diagnosed with insulin dependent diabetes on the 3 August 1998 (yep, I remember the exact date – how could I forget). I would like to share my experience with you.

I had hypoglycemic episodes prior to getting diabetes, which apparently is very unusual, but most recently, around the first week of my new job, I began feeling extremely worn out, thirsty, tired and down right exhausted (from doing absolutely nothing!) I had a lot of trouble with blurry vision, looking at the computer screen and blamed this on the lighting, I had no idea that something was actually wrong with me. **I was drinking copious amounts of fluid, anything from water to ice-cream in milk (it had to be oh so cold) and spending way too much time going to the loo (sorry guys!).**

After being bugged by my mum to check it out, I finally went to the doctors and after the 'first of many' blood tests, it was revealed… "yep you've got diabetes", welcome to the club. I didn't quite understand what was happening because I had very little knowledge of diabetes (at the time), anyway, the doctor told me he had made an appointment for me to see a specialist on Monday (my visit with him was on Thursday). Monday! What was I supposed to do in the meantime? This was very frustrating for me, as I had no energy by this stage and was finding it difficult to even put one foot in front of the other, let alone catch a ##@!##! train into the city to see a specialist. Doctors certainly do need some educating! I didn't know how to cope with how I was feeling, yet was expected to go home and just 'be' until I saw the specialist on Monday.

Well mum drove me to the specialists and there I was told what I had, what it meant, and how often I would have to inject myself (that was the worst part). **That's when I realised this was real – you tend to think that nothing will ever go wrong with your body.** Well they showed me what to do and I soon got the hang of the finger pricking and injections (not enjoying it obviously). I have adapted to it all pretty quickly. I guess the reality is that I have diabetes, it's a fact and no amount of whinging or 'what ifs', etc. are going to change that, so I get on and live my life, doing the best I can. I haven't quite figured out where the lines are, but hey I'm learning and basically I'm doing ok.

So that's my experience of diabetes thus far, maybe you can relate to this.

Katie

Katie overseas

and finally...

It is important for both your physical and emotional well being that you receive a comprehensive introduction to diabetes.

The American Diabetes Association (ADA) provides a useful reference in that all of their recognised diabetes education programmes must cover 10 key topics

You may wish to use the ADA's list as a guide for what you work through with your diabetes health professionals.

1. Diabetes disease process;
2. Nutritional management;
3. Physical activity;
4. Medications;
5. Monitoring;
6. Prevent, detect and treat acute complications. The term Acute complications refers to hypoglycaemia, hyperglycaemia, ketoacidosis and infection;
7. Prevent, detect and treat chronic complications through risk reduction. Chronic complications refers to long term conditions such as retinopathy (eye disease), nephropathy (kidney disease);
8. Goal setting and problem solving;
9. Psychological adjustment;
10. Preconception care, management during pregnancy, and gestational management (where appropriate).

This Starter Kit should never replace comprehensive personalised diabetes education delivered to you by an experienced, qualified and caring team of health professionals.

On behalf of the hundreds of people with diabetes and many generous health professionals who have contributed in a variety of ways, and over many years, we wish you well on your journey with diabetes.

glossary

You may have moments of feeling rather dumb as you enter this whole new world of diabetes and heaps of new terminology and big words are thrown at you. Just to make sure you can jargon it with the best of them Reality Check provides explanations of big words you might hear thrown around.

Autoimmune Disease disorder of the body's immune system in which the immune system mistakenly attacks and destroys body tissue that it believes to be foreign. Type 1 diabetes is an autoimmune disease because the immune system attacks and destroys the insulin-producing beta cells.

Basal rate or Background Insulin a steady trickle of low levels of insulin, provided either by long-acting insulin (Proptaphane, Humulin NPH, Lantus, Levemir etc.) or, in a more sophisticated manner by insulin pumps i.e. they can be programmed to change the rate at different times throughout the day when it is known that more or less insulin is generally required. See insulin delivery options for more.

Beta Cells a type of cell in the islets of Langerhans in the pancreas that make and release insulin.

Bolus an amount of insulin taken to cover an expected rise in blood glucose, often related to a meal or snack. Also, a "correctional bolus" is a bolus taken to "correct" a high blood glucose level regardless of whether food is also to be eaten.

Clinic major public hospitals run a clinic which is when a group of doctors come along and a group of patients come too and you wait in line to see a doctor. Sounds dull but it's free, and there's often an opportunity to see a diabetes nurse specialist or dietitian or something at the same time and get it all out of the way.

Complications a simple word which takes on a whole new meaning in diabetes - the term used to group together all the scary stuff that can happen after many years of living with poorly controlled diabetes.

Dawn Phenomenon is the body's response to hormones released in the early morning hours. This occurs for everyone. When we sleep, hormones are released to help maintain and restore cells within our bodies. These counter regulatory hormones (growth hormone, cortisol and catecholamine's) cause the glucose level to rise. For people with diabetes who do not have enough circulating insulin to keep this increase of glucose under control, the end result is a high glucose reading in the morning.

Diabetes Nurse Specialist a nurse who has specialist training and/or experience in diabetes.

DCCT A massive trial done in American in the late 80s to early 90s which proved for the first time conclusively that close monitoring and tight control of blood glucose levels lowers your risk of long term complications.

Endo short for endocrinologist – your diabetes specialist.

Endocrinologist the type of doctor who specialises in diabetes (amongst other things). Also known as an Endo.

GI (Factor) or Glycemic Index is simply a ranking of foods based on their immediate overall effect on blood sugar levels (low G.I means smaller rise of blood sugar).

Glucagon a hormone produced naturally by the human body to release stored glucose from the liver and raise blood glucose levels when needed. This doesn't work so well in diabetes so you can get Glucagon on prescription and it can be injected if you have a really bad hypo and need some glucose quick smart.

Haemoglobin A1c (aka Glycosylated Haemoglobin or HbA1c) A blood test which looks at specific cells in your blood and gives an indicator of how your blood sugars have been going over the previous 2 - 3 months. The result is a % of the glucose that has glycated (or attached) to the haemoglobin of the red blood cells. (Though the numbers seem similar, it is not the same test by any means as your blood glucose tests you do at home.) The target is below 53 mmols (7%). People without diabetes will be below 42 mmols (6%).

Humalog type of insulin - fastest acting version, generally used at meal times (very similar to NovoRapid but made by a different company).

Humulin brand of insulin - several different types with different uses.

Hyperglycaemia HIGH blood glucose levels.

Hypo (short for hypoglycaemia, too low a level of glucose/sugar in the blood). Occurs when a person with diabetes has injected too much insulin, eaten too little food, had too much alcohol, or has exercised without extra food. Someone experiencing a hypo may feel, nervous, shaky, weak, or sweaty, and have a headache, blurred vision and hunger. Taking small amounts of sugar, sweet juice or food with sugar, will usually help the person to feel better within 10-15 minutes.

Hypoglycaemia – see Hypo.

IDDM Insulin-Dependent Diabetes Mellitus – now known as Type 1 and formerly known as Juvenile Diabetes.

Insultatard (Protaphane) type of insulin - long-acting, generally used at bed time.

Insulin a hormone that helps the body use glucose (sugar) for energy. The beta cells of the pancreas (in islets of Langerhans) make the insulin.

Islets/Islet Cells Cells (pronunciation: EYE-let cells). The clumps of cells within the pancreas that include; alpha cells, which make glucagon; beta cells, which make insulin; delta cells, which make somatostatin; and PP cells and D1 cells about which little is known. The islet cells appear under low-power magnification to be islands (islands within the pancreas). First described by Dr. Paul Langerhans in 1869.

Ketoacidosis is when people with diabetes don't have enough insulin in their system, the body starts to break down fat for energy and ketones are produced as a by-product. If this continues, the ketones can cause the pH of the blood to change and a very dangerous condition called Ketoacidosis develops.

Mg/dL milligrams per 100 litres – measurement of blood glucose used in America. Divide by 18 to get Irish measurement (mmol/L).

mmol/L millimol per Litre - measurement of blood glucose in Europe & Australia (for definition of a Mol and millimol see your Chemistry teacher from secondary school!).

Long Term Illness Scheme (LTI) scheme by which we get government subsidised diabetes supplies and medications.

NovoRapid type of insulin – fastest acting version – generally used at meal times (very similar to Humalog but made by a different company).

Pancreas an organ behind the lower part of the stomach that is about 12 - 15 cm long in an adult. It has two major responsibilities. The endocrine pancreas makes insulin so that the body can use glucose (sugar) for energy. The exocrine pancreas makes enzymes that help the body digest food. Throughout the pancreas are clusters of cells called Islets of Langerhans (see Islets/Islet Cells).

Registrar - a person who is fully trained as a doctor but still finalising his/her training in their specialisation such as diabetes or endocrinology. It might sound like they're not your best choice to ask for advice - but think about it - they finished med school this century so should be right up to speed with the latest and greatest! (They're generally also young and, if you're lucky, groovy!).

Subcutaneous - into the fat layer beneath the skin. Subcutaneous injections are the way we take insulin - it means a relatively tiny needle which injects the insulin just under the skin, not into the muscle like some other types of injections.

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cheat sheet for family & friends

So someone you love (or like) has just been diagnosed with Type 1 Diabetes. To save them explaining it again and again here's a quick rundown.

type 1 diabetes is:

- An autoimmune disease
- The type of diabetes that children most commonly get BUT you can get it at any age
- Chronic – it does not go away as you get older
- Treated with multiple daily injections of insulin
- Often a HUGE lifestyle change and a big deal
- 50% genetic and 50% environmental
- Sometimes a very challenging adjustment and hard to cope with emotionally

type 1 diabetes is NOT:

- Caused by anything you ate
- Related in any way to obesity
- Easy to manage – it's very complex
- Cured by taking insulin
- A sentence to stop living, travelling, playing sport, drinking and having fun (you can still do all those things)

Some common questions

Have they got too much sugar or not enough? Both!

A person with Type 1 diabetes produces no insulin. This means they have to inject insulin, and then they have to carefully balance what they eat, how much exercise they do and other factors to keep the amount of sugar in their blood stable. This is very hard. At times, a person will have not enough sugar and URGENTLY need some. At other times they will have too much sugar and not feel too great and need to top up on insulin. It's not easy!

Will they have fits or pass out? What do I do?

If a person's blood sugar drops very low they may lose consciousness. Lay them on their side and call an ambulance. NEVER try to make them drink or eat when unconscious.

In most cases, emergencies can be avoided by treating a hypo quickly BEFORE the blood sugar level drops so low that the person loses consciousness.

Some common early warning signals of a 'hypo' include:

- Sweating
- Trembling
- Hunger
- Headache
- Tiredness or Weakness
- Tingling around the lips and mouth
- Difficulty concentrating
- Paleness

With more severe hypoglycaemia, or without treatment, it is possible that the person may progress to more severe symptoms, such as:

- Confusion
- Behaviour changes
- Slurred speech
- Marked drowsiness
- And eventually unconsciousness

If in doubt whether a person is having a hypo, and they are conscious, give sugar – you can do no harm. Where possible do a blood glucose test. A result BELOW 4.0 indicates a hypo.

Hypos should be treated promptly.

The treatment is to give quick acting sugar of any kind.

If conscious, give any of these:

- glucose tablets (3-5)
- sugar (2-3 teaspoons)
- jelly beans or jelly baby sweets (7)
- sugary soft drink - not diet (1/2 can)

Symptoms should disappear in 10 -15 minutes. If not, give more sugar and check the blood glucose level.

Never try to give food or drink to someone who is unconscious, instead call 999.

A person who has had a hypo should not be left alone. They should NOT be sent alone to a sick bay or sent home from work or school immediately after a hypo. At least 15-30 minutes is required for the blood sugars to return to normal.

What is diabetes?

Diabetes is a condition in which the body cannot sufficiently convert food into usable energy. The reason for this is a lack of insulin - a hormone produced by a gland called the pancreas, or failure of the body to respond normally to insulin.

When starchy food is digested, it breaks down into glucose. This builds up in the blood stream. Insulin controls the level of glucose in the blood by helping glucose go from the bloodstream into the body's cells. Once in the cells, glucose can be used for energy or stored for future needs. With some people the above process fails to work properly and this results in the condition known as Diabetes.

The common factor in all types of diabetes is the need to keep blood glucose in the normal range. This will help reduce the likelihood of long-term health problems or 'complications'. The treatments that exist now are not a cure. Diabetes is a chronic illness. Until a cure is found, treatment must continue throughout a person's lifetime.

The types

Type 1 or IDDM or Juvenile Diabetes

The pancreas ceases producing insulin. Those affected require daily insulin injections to survive.

Type 2 or NIDDM or Mature-Onset Diabetes

The pancreas fails to produce enough insulin to meet the body's needs or the body is unable to respond normally to insulin (insulin resistance) and the pancreas fails to produce enough insulin to meet the body's increased needs.

This most commonly affects older and often overweight people.

Gestational Diabetes

The hormonal changes in a woman's body during pregnancy sometimes cause insulin resistance and again the pancreas fails to respond adequately, blood glucose levels rise. All pregnant women are tested for gestational diabetes.

Type 1 diabetes

Approximately 20,000 Irish people have Type 1 Diabetes. The cause of Type 1 Diabetes is not totally understood. However, it is believed that people have a genetic predisposition to developing diabetes. A trigger factor such as a virus then causes the body's own immune system to incorrectly identify the insulin-producing cells as foreign and destroy them.

Managing Type 1 Diabetes is a complex question of balance. Type 1 Diabetes is treated with multiple daily insulin injections, healthy eating, regular exercise and constant monitoring of blood sugar levels through taking small samples of blood from the fingertips.

High blood glucose level (hyperglycaemia) causes one to feel fatigued, dehydrated and ill. The kidneys filtering the blood collect more glucose than usual. This glucose must be removed from the body. You pass a lot of urine. You need more water, get thirsty and drink a lot. People with Type 1 diabetes are generally able to treat hyperglycaemia by increasing the amount of insulin at their next injection or having an extra insulin injection. Usually, symptoms of hyperglycaemia are initially relatively mild. If a person becomes ill or omits their insulin dose, the body is unable to process glucose normally.

Low blood sugar level (hypoglycaemia or hypo) . Initially the sympathetic nervous system responds, with symptoms such as sweating, shaking, rapid heartbeat and pallor. The brain, which relies heavily on glucose to operate properly, can also be affected, leading to tiredness, trouble concentrating, mood and behaviour changes and eventually possible coma. Treatment of mild hypoglycaemia involves consumption of sugary food or drink followed by something more substantial such as bread. If a mild hypo is left untreated, the blood sugar level will continue to fall, starving the rest of the body of glucose and energy and leading to serious episodes such as blacking out. In most cases, the early symptoms can be recognised and treated without further problems.

A complex balancing act!

There are a large number of factors which influence blood glucose levels. They include the amount and type of food you eat, the amount and type of insulin you inject, all forms of exercise, drinking alcohol, and taking prescribed and recreational drugs. Many less tangible factors are also involved, often relating to the interaction of hormones in the body, such as those produced during periods of stress, anxiety and menstruation. A reliable but unpredictable part of everyday life for most people!

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Diabetes Ireland

TYPE 1
diabetes
network
www.d1.org.au

Who's the most important person
to **Diabetes Ireland**?
YOU ARE.

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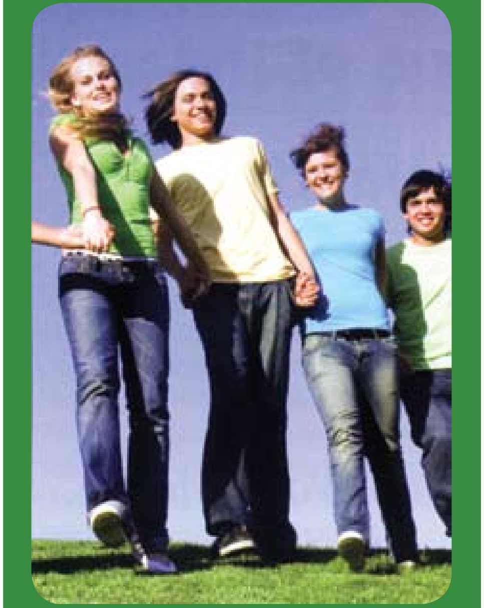

Call us:
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Diabetes Ireland:

- Is the only Irish organisation for people with diabetes.
- Have over 50 local peer to peer support groups nationwide.
- Are dedicated to providing education to all people affected by diabetes.
- Raise awareness of diabetes among the wider community.
- Fund Irish based diabetes research and the international research into finding a cure.
- Fight for a better health service for diabetes.

We fight for better services for you
We want what's best for you
We're here for you!

Join Diabetes Ireland Today

In additon to recieving the support & information outline above, as a Diabetes Ireland member you will also receive:

- Free copies (4 per year) of Diabetes Ireland Magazine which contains real life stories, and news on diabetes research among other things.
- Access to Diabetes Ireland's Group Specified Illness and Life Cover Plan.
- Membership costs €30 per year, or €20 for students.

Diabetes Federation of Ireland (trading as Diabetes Ireland) is a registered charity CHY 6906
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