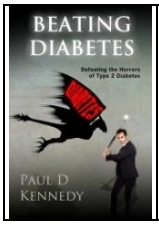

Beating Diabetes

How to defeat the horrors of type 2 diabetes

13 Vital reasons why you must beat your diabetes

Type 2 Diabetes is a silent killer. When you first become diabetic you experience few symptoms and no pain. But this sneaky disease gradually destroys your health ... unless you do something about it. In fact, if you fail to stop the disease getting worse, you will end up with several horrible health problems:

0 – Introduction

The digestion of your food produces glucose which is released into your bloodstream for delivery to your body's cells. ***Glucose*** is a simple sugar, the fuel for your cells. However, in order to gain entry to your cells, the glucose needs the help of insulin.

Insulin is a hormone (a type of chemical) produced by your pancreas, which releases it into your bloodstream where it meets up with glucose. The insulin attaches itself to a receptor in the surface of a cell which causes the cell membrane to allow glucose to enter.

If the insulin cannot attach itself to the receptor, glucose will not be able to enter and the cell will run out of fuel. ***Diabetes*** is a condition in which this glucose-insulin system is not working correctly.

In **type 1 diabetes** your pancreas is not producing the insulin needed. Type 1 diabetics need regular injections of insulin.

In **type 2 diabetes**, the pancreas is producing insulin but the insulin has trouble attaching itself to a receptor, so the membrane doesn't open to allow glucose to enter the cell. This condition is known as *insulin resistance*.

When your glucose-insulin system is not working properly, your cells are being deprived of the glucose they need to function and, at the same time, you've got unused glucose swirling along in your bloodstream ... all of which will have severe effects on your health.

Getting your blood glucose levels under control is vital. If you don't ...

1 – Heart disease

Most diabetics who do not control their blood glucose levels are killed by heart disease, one of the most common complications of diabetes.

The risk of developing heart problems depends on a variety of factors … your age … family history … smoking habits … weight … cholesterol levels … and hypertension (high blood pressure) … as well as diabetes.

Smoking, high cholesterols levels and high blood pressure are probably the three most important factors in the development of heart disease. High cholesterol and blood pressure levels usually go hand-in-hand with diabetes.

By the time they reach young adulthood, most people in America and Europe are already developing blockages of the arteries ... the beginnings of heart disease. So even if the above factors do not seem to apply to you, you should assume that you are at risk of heart disease.

Diabetes increases that risk.

2 – Stroke

A ***stroke*** is a rapid loss of brain function when the blood supply to the brain is interrupted. This interruption can be due to a lack of blood flowing to the brain caused by blockage (ischemia) or to a leakage of blood (haemorrhage).

As a result of the lack of blood, the affected area of the brain is unable to function. If you suffer a stroke, it is likely that you will be unable to move your arm or leg on one side of your body, or to speak or understand what people are saying. Your vision may also be affected.

A stroke can cause permanent disability and death. Indeed, strokes are the leading cause of disability in adults the USA and Europe, and the number two cause of deaths worldwide.

The risk factors for stroke include … advancing age … previous strokes … hypertension (high blood pressure) … diabetes … high cholesterol levels … and smoking.

There's not much you can do about the first two of these. But you can reduce all the other risks.

3 – Kidney disease

Your kidneys are made up of millions of extremely small filtration units that purify your blood and send waste products out into your urine.

These tiny filtration units can be damaged by hypertension (high blood pressure), high blood glucose levels (diabetes), high cholesterol levels, and smoking tobacco. Kidney disease is called ***nephropathy***.

Diabetic nephropathy is kidney disease caused by diabetes and ***hypertensive nephropathy*** is caused by high blood pressure.

Your kidneys are particularly sensitive to high blood pressure. At the same time, they play an important role in the regulation of blood pressure and if they have been damaged, they can lose some of their ability to keep your blood pressure down. The problem is circular ... high blood pressure damages the kidneys and damage to the kidneys can contribute to high blood pressure.

The only fix is to regulate your blood pressure. You also need to beat the effects of diabetes to avoid damaging your kidneys, thereby creating problems with your blood pressure.

If you allow damage to your kidneys to develop, you will end up needing kidney dialysis three times a week ... a very inconvenient, extremely messy and highly uncomfortable procedure.

In the end, you'll probably need a kidney transplant.

4 – Nerve damage

Your nervous system works quietly in the background. It controls things such as your blood pressure, temperature, breathing, pulse rate and digestive system, as well as your ability to move, listen and talk. If you are a man, it also controls your erectile function.

Your nervous system is made up of thousands of fibres that connect your brain and spinal cord to

every part of your body. Long-term diabetes can damage these nerve fibres ... this is called **d*iabetic neuropathy***. It develops when you have had high blood glucose levels for several years.

Unfortunately, this type of nerve damage is permanent. Once it's happened, you cannot improve it by controlling your diabetes better. But you can prevent diabetic neuropathy in the first place ... or stop it from getting worse ... by controlling your blood glucose levels through diet.

Other types of nerve damage from diabetes include the paralysis of single nerves and some painful types of neuralgia (nerve pain). You can improve these nerve conditions by good diabetes control.

There is no cure for nerve damage due to diabetes. However you can allay the symptoms (and prevent the damage getting worse) through a change in diet and exercise.

5 – Damaged feet and hands

An early sign of diabetic neuropathy is being unable to feel vibrations in the feet, for example, from a tuning fork. The same sort of nerve damage can occur in your hands, but this is less common, though it will occur for sure once your feet are affected (unless you do something about it).

This nerve damage is known as ***peripheral neuropathy***. It creates numbness, tingling, pain or weakness in your feet or hands. At times you'll feel as if your feet are on fire; at other times you'll think they have been frozen solid. All this happens because the nerves that allow you to feel things or move your muscles have been damaged.

At first, peripheral neuropathy seems to be just a minor bother. But it can be very dangerous.

The reduced sensation in your feet leaves you vulnerable to injuries you do not feel. You can easily overlook a small cut or scrape. However, because you are diabetic, these small cuts may take a long time to heal ... another consequence of diabetes ... which gives them plenty of time to become infected. And, if these infections fester, your foot may need to be amputated.

Autonomic neuropathy refers to abnormalities in the nerves that control the internal functions. These can cause:

- digestive problems – diarrhoea, constipation, nausea and vomiting
- poor bladder control
- erectile dysfunction (in men)
- dizziness
- faintness
- increased or decreased sweating
- visual difficulties, eg, problems adjusting between light and dark
- lack of awareness of signs that your blood glucose is too low

The key to preventing and treating neuropathy is to get your diabetes under control, especially your blood glucose level, using diet and exercise. You should also consult your doctor for medications that can help.

Diabetes is a common cause of amputations of the feet and lower limbs.

Thus it is vital that you should have your feet examined by your doctor at least once a year. This check-up must include using a thin plastic thread to check for sensations (by trying to tickle you), using a tuning fork to see if you can feel vibrations, and looking for signs of damage to the skin.

As well as having your feet checked regularly by your doctor, you should also:

- Check your feet daily for signs of injury or infection (eg, swelling or redness).
- Treat injuries immediately and appropriately (eg, clean and disinfect cuts, and cover them).
- Avoid walking barefoot (as, having lost some feeling, you may not know if you step on something sharp).
- In the house, use slippers with good strong rims around the sole to avoid stubbing your toe or banging the side of your foot against furniture.
- Avoid blisters by making sure your shoes fit properly (you can buy specially fitted shoes).
- Keep your nails trimmed neatly, but do not shorten them more than the ends of your toes.

And, most importantly, you must keep your blood glucose levels under control.

6 – Digestive problems

Having diabetes increases your risk of getting stomach problems such as gastroparesis.

Normally, the stomach contracts to move food down into the small intestine for digestion. These contractions are controlled by a nerve called the vagus.

With ***gastroparesis***, the vagus nerve is damaged and, as a result, the muscles of the stomach and intestines do not work normally ... food moves slowly through the digestive tract (or may stop moving altogether). The stomach takes too long to empty, so food remains in the stomach for longer than normal.

Chronic gastroparesis is frequently due to ***autonomic neuropathy***, abnormalities in the nerves that control the internal functions (see box above), which can be due to diabetes ... the vagus nerve can become damaged by years of high blood glucose. For some strange reason, the majority of suffers of gastroparesis are women.

If you have gastroparesis, the length of time it takes for you to digest food will be unpredictable, making it very difficult for you to monitor your blood glucose and control the effects diabetes is having on your heart, kidneys, nerves, feet and hands, and eyes.

The treatment for gastroparesis includes low-fibre and low-residue diets (diets that do leave little waste for excretion after digestion). These diets often restrict the fat and the solid food you can eat.

Oral medicines are also used. Some patients end up having stomach pace-makers inserted to help their food move along. Others end up being fed through tubes.

As well as the horrors of the treatments, gastroparesis has extremely unpleasant consequences.

You may suffer from general malnutrition due to the vomiting and reduced appetite brought on by the condition and the dietary changes you have to make. Because your diet will be deficient in calories, you will probably suffer severe fatigue and weight loss.

It can get worse. You could end up with solid masses of undigested food in your stomach which will block your intestines. You also have a pretty good chance of getting a bacterial infection due to the undigested food and high glucose levels.

Years of high blood glucose will eventually lead to gastroparesis. To prevent it, the best thing to do is to gain control over your blood glucose levels before the condition starts developing.

7 – Eye damage

Your eye is a complex optical system which collects light, regulates its intensity through a diaphragm (the pupil), focuses it through an adjustable assembly of lenses to form an image, converts the image into electrical signals (in the retina at the back of the eye), and transmits these signals through neural pathways that connect the eye, via the optic nerves, to the visual cortex and other areas in the brain.

Your eyes also have photosensitive ganglion cells in their retinas. These do not form images. Instead they automatically adjust the size of your pupils to cope with the intensity of the light and regulate your body clock in accordance with the light.

This amazing system allows you to perceive depth and distinguish colours, and to feel sleepy when it gets dark.

Your eyes contain thousands of capillaries, minute hair-like blood vessels with very thin walls. Their tiny size and the thinness of their walls mean that they are very fragile.

These tiny blood vessels are especially sensitive to glucose in the blood. They can be damaged by persistently high blood glucose levels and high blood pressure.

Indeed, if you are diabetic, several parts of the eye are highly susceptible to damage, and you can develop three different diseases: glaucoma, cataracts and retinopathy.

Protecting your eyes means keeping your blood glucose, blood pressure and cholesterol levels under control. Only a diet that reduces your glucose and blood pressure levels, and helps to clean out your arteries, will be kind to the tiny blood vessels in your eyes.

Researchers have discovered the some of the changes in the eyes due to diabetes, such as exudates in the retina, start to improve when a person switches to a plant-focused, minimal-fat diet.

As well as switching to a suitable diet, you should get a full examination and advice from an eye

specialist at least once a year … or whenever you notice any changes in your vision.

8 – Glaucoma

If you have ***glaucoma*** your vision will have deteriorated due to damage to your optic nerve caused by pressure within the eye or a weakness in the optic nerve, or both.

What happens is that pressure builds up in the anterior chamber (the front of the eye) which pinches the tiny blood vessels in the retina. This damages both the retina and the optic nerve.

If glaucoma is discovered early, treatment can be effective. Because it can begin without symptoms, you can only catch it in time if you have your eyes examined by an ophthalmologist (eye doctor) at least once a year. If left untreated, glaucoma can make you blind.

Both high blood pressure and high glucose levels increase the risk of getting glaucoma. The best defence against its development is to keep these under control.

9 – Cataracts

A ***cataract*** is a painless clouding of the lens of the eye. These generally develop over a long period of time, causing eyesight to gradually get worse.

If you are starting to develop cataracts, you may notice … difficulty with your distance vision … blurred or double vision … a halo effect around lights … excessive glare in bright sunlight … or too much glare while driving at night.

If you experience any of these symptoms, you should have your eyes checked promptly.

The older you are, the more likely you are to develop cataracts, and avoiding age-related cataracts is probably impossible. Those with a family history of cataracts are most likely to develop the disease.

However, cataracts can also be caused by … diabetes … high blood pressure … smoking … alcohol … exposure to harsh sunlight … and the long-term use of steroid medicines. Injuries to the eye and other eye problems can also lead to cataracts.

You can retard the development of cataracts by … avoiding tobacco … fatty foods … alcohol … and dairy products … and by protecting your eyes from harsh sunlight.

Research has shown that people who avoid fats have less risk of cataracts. The risk is also reduced by about 10% for non-drinkers ... just two drinks a week is related to increased risk.

Those who avoid dairy products also have a significantly lower risk of developing cataracts. This is because the lactose (sugar) in milk releases galactose, a simple sugar, during digestion. Galactose can enter the lens of your eye and damage its tiny blood vessels.

However, certain foods help you protect your eyes from cataracts:

- Lutein and zeaxanthin, which are antioxidants, protect the lens. These are found in green leafy vegetables such as spinach, broccoli, collard greens, kale, and mustard greens.
- Foods rich in vitamin C ... found in oranges, bell peppers, cantaloupe melons, strawberries and kiwis, in cruciferous vegetables (cauliflower, Brussels sprouts, broccoli and kale) and in tomatoes and sweet potatoes.
- Foods rich in vitamin E ... found in soy milk, mangos, cooked spinach and wheat-germ.

10 – Retinopathy

Your retinas consist of millions of tiny nerves that pick up images, convert them into electrical signals and send them to the brain.

Your tiny nerves can be damaged by high blood glucose, high concentrations of cholesterol and high blood pressure. This damage is known as ***retinopathy***.

Non-proliferative retinopathy occurs when capillaries balloon out and leak into the retina, leading to the formation of fatty deposits. The condition is usually mild and does not require treatment.

Proliferative retinopathy results when the blood vessels are so damaged that they begin to close off. When this happens abnormal vessels start to form in the retina. These new vessels are fragile and prone to bleed, which leads to scarring and sometimes to the detachment of the retina.

Retinopathy does not have any symptoms when it starts. Therefore it is essential to have your eyes checked regularly ... at least once a year.

The changes due to retinopathy cannot be detected by an ordinary eye examination using an ophthalmoscope (which a doctor would ordinarily use) or by a regular sight-test (an optometric exam) by an optician. So, you should be examined by an ophthalmologist, who will dilate your eyes so that he can see into the retina at the back of the eye.

You should also consume a plant-focused diet in order to maintain the correct levels of your blood glucose, cholesterol and blood pressure.

11 – Infections

Diabetes affects your immune system and reduces your body's ability to fight infection. At the same time, high blood glucose leads to high levels of sugar in the tissues of your body.

These conditions ... weaker immunity and the presence of sugar ... enable bacteria and fungi to grow and infections to develop more quickly. These infections can affect your bladder, kidneys, vagina, gums, feet and skin.

About one-third of people who are diabetic will get a skin infection related to their disease at some time in their lives. Fortunately, most of these skin conditions can be treated successfully.

However if you have type 2 diabetes and do not care for your skin properly, a minor skin condition can turn into a serious problem with severe consequences. You should examine your skin, especially

Diabetes and the immune system

- Because you have diabetes, your immune system has lost a lot of its efficacy.
- You are therefore much more prone to infections than non-diabetics.
- High sugar levels in your tissues provide a fertile breeding ground for bacteria and fungi.
- It is therefore vital that you control your blood glucose levels.

your feet and legs, daily for any signs of infection.

For diabetics, the early treatment of all infections is vital to prevent more serious complications.

12 – Erectile dysfunction

The chances that men will develop ***erectile dysfunction*** (the inability to gain or maintain an erection) are increased by diabetes.

Adopting a healthier lifestyle ... such as switching to a plant-focused diet, quitting smoking and exercising regularly and reducing stress ... may be all that is needed to resolve erectile dysfunction in some men.

13 – Dental problems

If you have diabetes, you face a higher risk of serious dental and oral health problems compared to some-one who does not have diabetes.

Uncontrolled diabetes impairs white bloods cells, your main defence against infections that can occur in the mouth. So, the more you fail to control your blood glucose, the more likely it is that these problems will arise.

14 – Outroduction

Worried? Scared? You should be.

The consequences ... if you do not take steps to beat your diabetes ... are extremely grim, ranging from heart attacks through dialysis, transplants, infections, amputation, blindness, to death.

But you can avoid these horrible consequences. I did.

Note that these awful medical problems not just caused by diabetes. Hypertensions (excess blood pressure), high levels of cholesterol, smoking, and being overweight are also causes. In addition, alcohol, fatty foods and dairy products can also contribute to these medical conditions.

Beating diabetes means avoiding the horrendous consequences for your health. To do so, you must get all four (diabetes … blood pressure … cholesterol … and smoking) under control.

To help you make sense of what I found out about the medical problems diabetes causes, below I have summarised these horrible conditions, along with their probable outcomes (if you do nothing about them), the main causes and how you may reduce the effects they are having on your body.

What you have to do is made crystal clear in the 'mitigation' column. You must control, not just your diabetes but also your blood pressure and cholesterol levels, and give up smoking.

But how do you do that?

By nothing more than a change in your diet!

Changing your diet to defeat the horrors of type 2 diabetes is easy. All you need is the knowledge.

Beating Diabetes by Paul D Kennedy describes in simple language exactly what I did and am doing on an ongoing basis to beating this slow-killer disease.

The e-book is available from:

www.amazon.com
www.amazon.co.uk

The print edition is available from:

Create Space (printers)
Amazon (USA)
Amazon (UK)
Amazon (Euro)

Find out more at:

www.beating-diabetes.com

Diabetes related medical conditions			
Medical condition	**Outlook**	**Causes**	**Mitigation**
Heart disease	heart attack death	aging genes smoking over-weight cholesterol diabetes	smoking cessation weight control cholesterol control blood glucose control
Stroke	disability death	aging previous strokes hypertension diabetes high cholesterol smoking	blood pressure control blood glucose control cholesterol control smoking cessation
Kidney disease	dialysis transplant	hypertension diabetes cholesterol smoking	blood pressure control blood glucose control cholesterol control smoking cessation
Neuropathy (nerve damage)	Peripheral neuropathy Internal functions damaged	diabetes	blood glucose control exercise
Peripheral neuropathy (nerve damage to feet and hands)	unnoticed injuries infections amputation	diabetes	blood glucose control exercise
Stomach problems, eg, gastroparesis, due to nerve damage	special diets stomach pace-makers being fed thru' tube vomiting malnutrition severe fatigue severe weight loss blocked intestines stomach infections	diabetes	blood glucose control
Eye problems such as glaucoma cataracts retinopathy	poor vision blindness	diabetes hypertension cholesterol smoking alcohol fatty foods dairy products	blood glucose control blood pressure control cholesterol control smoking cessation alcohol avoidance lutein & zeaxanthin vitamins C & E
Erectile dysfunction	unhappiness	diabetes hypertension cholesterol smoking alcohol	blood pressure control blood glucose control cholesterol control smoking cessation less alcohol exercise less stress
Infections	infected bladder, kidneys, vagina, gums, feet	reduced immunity due to diabetes	blood glucose control
Dental problems	infections in the mouth	diabetes	blood glucose control

Beating Diabetes

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