INDEPENDENT DIABETES TRUST

DIABETES CARE

Your 9 key checks

What they are and why we need them

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Contents

Introduction

Many people, whether they have Type 1 or Type 2 diabetes, do not realise that there are 9 key health checks/tests which they are entitled to at least each year or why these are necessary.

These are laid down in three documents:

- The NHS Constitution.
- The NICE Quality Standards for Adults with Diabetes.
- The Equality Act 2010.

What is the NHS Constitution?

The Constitution brings together in one place, the details of what staff, patients and the public can expect from the NHS. It sets out your rights as an NHS patient and also your responsibilities. The rights cover how patients access health services, the quality of care you should receive, information about the treatments and programmes available to you, confidentiality and your right to complain if thingsgo wrong. The NHS also makes certain pledges to you, which it is committed to achieving. These go above and beyond your legal rights and are a commitment to provide high-quality services.The whole of the NHS Constitution is available online: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_113613

These are your rights:

- **You have the right to be involved in discussions and decisions about your healthcare, and to be given information to enable you to do this.** Your doctor should listen to you and respond to your concerns and preferences about your healthcare. That way, you can find out what is the best treatment for you. NHS staff will give you the information that you need to support these discussions and decisions.

- **You have the right to accept or refuse treatment that is offered to you**, and not to be given any physical examination or treatment unless you have given valid consent. If you do not have the capacity to do so, consent must be obtained from a person legally able to act on your behalf, or the treatment must be in your best interests.
- **You should always be treated with dignity and respect.**

The NICE Quality Standards for Adults with Diabetes.

A key element of ensuring that you receive good care and get the most out of an appointment is to know your rights. You should know what standards of care you are entitled to, what to do if you feel you are not getting them and the support on offer to you if this is the case. The National Institute for Health and Clinical Excellence (NICE) is an independent organisation responsible for providing national guidance on promoting good health and preventing and treating ill health. It has issued a set of quality standards for adults with Type 1 and Type 2 diabetes. These quality standards lay down what level of care you should receive in relation to the management of your diabetes.

The aim is that the Quality Standards will help the NHS to deliver the best outcomes from treatments for patients by:

- Helping patients to understand what service they can expect from their health and social care providers, eg GPs, consultants, nurses.
- Helping health and social care providers to make decisions about your care based on the latest evidence and best practice.
- Enabling NHS Trusts to examine the standards of care they provide against the Quality Standards they should provide and to enable commissioners of services to be sure they are providing high quality and cost-effective services.

The full details can be found at: http://www.nice.org.uk/aboutnice/qualitystandards/qualitystandards.jsp

The Equality Act 2010

On October 1st 2010 the Equality Act 2010 came into force in England, Scotland and Wales. The aim of the new Act is to simplify and draw together various parts of the previous legislation, including the Disability Discrimination Act. The areas covered include employment, education and access to goods and services. In terms of employment, employers are obliged to make 'reasonable adjustments' to enable people with disabilities to work and prevent them from being disadvantaged.

Who does the Act cover?

A person is classed as having a disability if physical or mental impairment has a substantial, long-term effect on their abilities to carry out normal day to day activities. Whether a condition can be classed as disabling is decided on the effects on the person of not taking medication or not following a required diet.

So, people with diabetes are covered by the Equality Act 2010 as they have to take their medication at appropriate times and may have to eat at set times to control their blood sugars. For instance, people with diabetes may have to take their breaks at different times from other employees and employers making this possible would be seen as making a reasonable adjustment. These same principles would apply to children with diabetes in education. Further details of the Equality Act 2010 can be found at

www.equalityhumanrights.com for England, Scotland and Wales and www.nihrc.org for Northern Ireland.

The 9 key checks

While the above three documents in themselves do not specify which tests/checks people with diabetes should have, they lay down the basis for a person's right to have them. The actual tests themselves are decided by a panel of health professionals with a specific interest in diabetes. As such, they may recommend changes to these key tests, for example, in line with new research.

At present, there are nine key checks measuring your health in relation to your diabetes and we hope this booklet helps to explain what the checks are, what they are for and how they are carried out.

1. Weight

Being overweight is often a contributory factor to developing Type 2 diabetes, particularly where weight is carried around the middle but how many of us actually know what our healthy weight should be? If your health professional advises you to lose weight because of your diabetes, then you should heed this advice as weight loss can reduce the amount of medication you may need to take and may mean that you can manage your Type 2 diabetes by diet and exercise alone.

Most of us know what our weight is in kilos or stones and pounds but health professionals prefer to use the Body Mass Index (BMI). In short, the BMI provides a standard, numeric measure of what your height to weight ratio is taking into account your weight, height and gender. Your health professional will describe you as being underweight, of normal

weight, overweight or obese according to this score and give you advice accordingly. The advantage of using the BMI is that it is easily transferable between different professional groups and will help with how your condition is managed. Typically, the BMI scores are as follows:

Underweight	16 – 18.5
Normal Weight	18.5 - 25
Overweight	25 – 30
Obese	30 - 40

Your weight/BMI should be checked at least annually by your practice nurse or health professional and is non-invasive, only needing measurements of your weight and height.

2. Blood Pressure

People with either type of diabetes can often have high blood pressure which can cause a variety of related complications. This is, again, usually checked by the practice nurse or at your local clinic. It is tested by having a cuff placed around your upper arm, which is then inflated and a reading taken. Sometimes you may be asked to have a 24hour cuff fitted which will give a reading over a longer period and may well give a more accurate reading, particularly for those of us that have what is commonly known as "White Coat Syndrome". This is a condition where blood pressure rises due to the stress of a medical appointment whereas on a daily basis blood pressure would be within a normal range.

Blood pressure readings are typically expressed as two figures, one over

the other, such as 120/80. The top figure is called the systolic pressure and measures the maximum blood pressure during one heartbeat. The lower figure is called the diastolic pressure and measures the minimum pressure between two heartbeats. It is measured in millimetres of mercury above the surrounding atmospheric pressure (mmHg).

- The normal blood pressure range for adults comes in between 90/60mmHg and 120/80mmHg.
- Readings below 90/60mmHg constitutes **low blood pressure** (hypotension).
- Readings above 140/90mmHg indicates **high blood pressure** (hypertension) and this is the threshold where a medical professional would actively monitor your blood pressure.

These are figures for the general population but your health professional may advise that you to try and achieve lower levels.

High Blood Pressure

High blood pressure is also known as hypertension, and at its worst, could put strain on your blood vessels, heart, brain and kidneys. Persistently high blood pressure may, in the worst-case scenario, lead to serious health problems, including heart disease, kidney disease and strokes.

However, high blood pressure can be a largely symptomless problem, with the occasional exception of frequent headaches. This means that prevention could be better than cure: proactively avoiding some of the main causes of high blood pressure.

Factors that can raise your risk of developing high blood pressure include:

- age – the risk of developing high blood pressure increases as you get older
- a family history of high blood pressure
- being of African or Caribbean origin

- a high amount of salt in your food
- lack of exercise
- being overweight
- regularly drinking large amounts of alcohol
- smoking
- long-term sleep deprivation
- making healthy lifestyle changes can help keep your blood pressure at a normal level
- an additional treatment can be through medication and you should discuss this option with your healthcare professional.

Low Blood Pressure

While it may sound scary, low blood pressure (also known as hypotension) may not always be a cause for concern. If you're suffering from low blood pressure you may experience a few mildly unpleasant symptoms, including dizziness, light-headedness and nausea. However, you can help these pass by doing things like standing up slowly, factoring more salt into your diet and staying hydrated.

If diagnosed, your health professional may also recommend changing medicines or altering your current dose, if this is the cause. Medicine to increase blood pressure is rarely needed because simple lifestyle measures or treating the underlying cause is usually effective.

3. Smoking Status

One of the things you will almost be certainly asked at your annual review is whether or not you smoke tobacco. The important key to this question is to give an honest answer. Almost everyone knows these days that smoking has a negative impact on their health in one way or another. If you smoke or have given up and relapsed then you should let your health professional know so that they can give you the necessary advice and support to try to help you quit. If you don't smoke or have given up then well done!

In this section we will at the risks of smoking and the benefits of stopping smoking. Smoking is highly addictive and is associated with a huge range of health conditions, far too many to list here, so we will focus on how to try to stop smoking and the support that is on offer to you.

The benefits of stopping smoking are many and include improved blood circulation, as well as improved heart and lung function, leading to a reduction in the likelihood of further diabetes related complications. On average non-smokers have a life expectancy that is ten years longer than a smoker. If you smoke, then the sooner you give up, then the greater your life expectancy becomes. There is one immediate benefit of stopping – the financial saving. By putting away the money you would normally spend on tobacco each day provides a huge incentive to stay smoke free, especially as you see the money mount up!

On a more practical level there are a range of NHS services designed to support you if you want to give up smoking and these can be accessed through your local GP surgery or pharmacy. Local stop smoking services are free, friendly and can massively boost your chances of quitting for good. The services are staffed by expert advisors who can provide you with a range of methods to try and help you to quit.

Broadly speaking, there are two routes to stopping smoking. The first is a pharmaceutical route and your health professional (GP or Pharmacist) may

suggest this to you to help you through the physical and psychological effects of giving up.

Here is a list of medications that may be suggested for you……

- Varenicline (Champix)
- Bupropion (Zyban)
- nicotine replacement therapy, such as patches and gum.

There are also self-help programmes that can be based on a one-to one basis or a group therapy basis. This sounds a bit daunting but is actually very effective. If you think this could be of use then ask at your next consultation.

The second route is to try to adopt some self-help techniques. Examples can include:

- **Think positive**
  You might have tried to quit smoking before and not managed it, but don't let that put you off. Look back at the things your experience has taught you and think about how you're really going to do it this time.
- **Make a plan to quit smoking**
  Make a promise, set a date and stick to it. Sticking to the "not a drag" rule can really help. If you find yourself in difficulty, say to yourself, "I won't even have a single drag", and stick with this until the cravings pass. Think ahead to times where it might be difficult (a party, for instance), and plan your actions and escape routes in advance.
- **Consider your diet**
  Is your after-dinner cigarette your favourite? A US study revealed that some foods, including meat, make cigarettes more satisfying. Others, including cheese, fruit and vegetables, make cigarettes taste terrible. Try swapping your usual steak or burger for a veggie pizza instead. You may also want to change your routine at or after mealtimes. Getting up and doing the dishes straight away or settling down in a room where you don't smoke may help.

- **Change your drink**
  The same US study as above also looked at drinks. Fizzy drinks, alcohol, cola, tea and coffee all make cigarettes taste better. So, when you're out, drink more water and juice. Some people find simply changing their drink (for example, switching from wine to a vodka and tomato juice) affects their need to reach for a cigarette.
- **Identify when you crave cigarettes**
  A craving can last for just 5 minutes. Before you give up, make a list of 5-minute strategies. For example, if you are out, you could leave a party for a minute, dance or go to the bar.
- **Get some stop smoking support**
  If friends or family members want to give up too, suggest to them that you give up together.
- **Make non-smoking friends**
  When you're at a party, stick with the non-smokers. "When you look at the smokers, don't envy them," says Louise, 52, an ex-smoker. "Think of what they're doing as a bit strange – lighting a small white tube and breathing in smoke."
- **Get moving**
  A review of scientific studies has proved exercise, even a 5-minute walk or stretch, cuts cravings and may help your brain produce anti-craving chemicals.
- **Keep your hands and mouth busy**
  When you're out, try putting your drink in the hand that usually holds a cigarette, or drink from a straw to keep your mouth busy.
- **Make a list of reasons to quit**
  Keep reminding yourself why you made the decision to give up. Make a list of the reasons and read it when you need support.

Other issues

There are other issues that may give you cause for concern when stopping smoking and the NHS website gives lots of very valuable advice. These can include:

- Managing cravings.
- Weight Management.
- Dealing with a relapse.

You can also call the NHS Smokefree helpline on 0300 123 1044, open Monday to Friday, 9am to 8pm and Saturday to Sunday, 11am to 4pm. Alternatively you can go on-line:

https://www.nhs.uk/live-well/quit-smoking/nhs-stop-smoking-services-help-you-quit/?tabname=advice-and-support

4. HbA1c

HbA1c is the abbreviation for the level of your Glycated Haemoglobin and is a test to see how well your blood glucose levels have been managed over the last six to eight weeks. To cut a long story short, the red blood cells in your blood stream will find themselves being attached with glucose molecules and this is called glycated haemoglobin. The higher your HbA1c levels are then the higher your average blood glucose levels will have been.

Because red blood cells have a life span of around three months, the test can measure your average blood glucose levels over a much longer period than your own regular blood glucose tests. The test can be carried out at your local surgery or clinic and is done by taking a blood sample from your arm. You should get results in 7 to 10 days.

HbA1c levels were traditional given in mmol/mol but are now presented as a percentage. To clarify this change we have provided a conversion chart on the next page.

DCCT (Diabetes Control and Complications Trial) units measured in %

IFCC (International Federation of Clinical Chemistry) units measured in mmol/mol

HbA1c (DCCT) Current measurement (%)	HbA1c (IFCC) Measurement from June 2011 (mmol/mol)	Average blood glucose level for this HbA1c, mmol/L
6	42	7.0 (range 5.5-8.5)
7	53	8.6 (range 6.8-10.3)
8	64	10.2 (range 8.1-12.1)
9	75	11.8 (range 9.4-13.9)
10	86	13.4 (range 10.7-15.7)
11	97	14.9 (range 12.0-17.5)
12	108	16.5 (range 13.3-19.3)
13	119	18.6 (range 14.6-21.1)

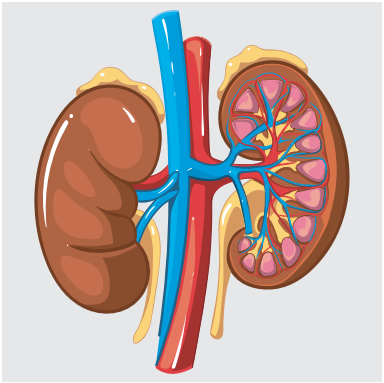
Your target HbA1c should be 42% or 6.5mmol/mol. If it runs higher than this then you are at increased risk of developing complications, such as problems with your eyes or kidneys. If your levels are high then your health professional will advise you how to lower them and this may involve changes in how your diabetes is managed, for example, to medication or lifestyle.

There are situations where your health professional may recommend raising your target HbA1c levels:

- if people are older and/or frail and at risk of falls,
- if people have impaired awareness of hypoglycaemia,
- in people who drive or operate machinery as part of their job,
- in people who have other illnesses in addition to diabetes.

5. Urinary Albumin

What is urinary albumin?



Albumin is a protein that is in most animal tissues. In healthy people, urine contains very little protein and an excess is a sign of kidney or bladder infection or the first sign of kidney damage which is one of the complications of Type 1 or Type 2 diabetes. Healthy kidneys do not let albumin pass from the blood into the urine but if kidneys are damaged, they do let some albumin through. The two most common causes of this are diabetes and high blood pressure, or both. As we know, long-term diabetes can be the cause of diabetes complications, such as kidney damage, but it is important to remember that when people are diagnosed with Type 2 diabetes, they can have had the condition for some years before diagnosis, so albumin can be present at diagnosis and is a sign of early kidney damage.

What do normal kidneys do and how do they do it?

- Inside each kidney there are about a million tiny units, called glomulera, that filter and remove excess fluid and waste products from the blood.
- The entire body's blood supply circulates through the kidneys.
- The kidneys get rid of the body's waste products and excess water as urine. The waste products are formed from the breakdown of the protein we eat and from normal muscle activity.
- The kidneys also produce hormones that help in the production of red blood cells, build strong bones and help to keep blood pressure (hypertension) under control.

- One of the most important functions of the kidneys is the control of blood pressure. High blood pressure is very common in people with kidney failure and can occur from the early stages of kidney damage but it is a 'chicken and egg' situation - high blood pressure can cause kidney damage and kidney damage can cause high blood pressure.

Kidney disease and diabetes

One of the long-term complications of diabetes can be kidney disease (nephrology) and most of us are aware that one of the reasons that we need to keep good blood glucose control is to try to prevent the development of complications such as kidney damage. Aggressive treatment of blood pressure and stopping smoking are important ways to prevent or treat kidney disease.

Diabetes can affect the kidneys in the following ways:

- If there is a lot of sugar in the urine, because you are running high blood sugars (for whatever reasons), then this can lead to infection that can spread from the bladder to the kidneys. Chronic kidney infections do not always produce symptoms and may only show up on routine clinic tests.
- In both longstanding and poorly controlled diabetes, the kidneys have to work hard to get rid of the excess sugar and the small blood vessels in the kidneys can be damaged.
- If both diabetes and high blood pressure are present, the risk to the kidneys is greater.

Does kidney damage produce symptoms?

In the early stages there are no symptoms and any kidney damage should be picked up in the urine tests carried out at your normal clinic visit when albumin levels are measured. Passing foaming urine can occur from time to time but if this persistent or more noticeable over time, then you should see your doctor.

Some of the signs and symptoms of kidney failure are:

- Extreme tiredness
- Swelling of hands, feet and face (oedema)
- Nausea and vomiting
- High blood pressure
- Shortness of breath
- Itchiness
- Difficulty sleeping
- Loss of appetite
- Difficulties concentrating and confusion

Microalbinurea is the name for the condition described above where abnormal amounts of protein (albumin) leak from the kidneys into the urine and is the early sign that kidney damage may be developing. If kidney damage progresses so that increased amounts of protein are excreted in the urine, then this is called macroalbuminuria.

The presence of microalbuminuria is tested for as one of the 9 key checks that people with diabetes should receive, at least annually. If microalbuminuria is present, then further tests will be necessary which involve testing in the laboratory all the urine collected during a 24hour period. This test checks the ratio of albumin to creatinine, another substance that if higher than normal is a good predictor of kidney damage. We will also look at about serum creatinine tests in this booklet.

Glomerular filtration rate (GFR, also named eGFR) is a test used to check how well the kidneys are working. It estimates how much blood passes through the glomeruli each minute. Your GFR tells your doctor your stage of kidney damage and helps him/her plan your treatment. The earlier kidney damage is detected, the better the chance of slowing or stopping its progression.

If your GFR number is low, your kidneys are not working as well as they should, but what do the numbers mean?

In adults, the normal eGFR number is more than 90. eGFR declines with age, even in people without kidney disease. The chart below gives the average estimated eGFR based on age.

Age (years)	Average estimated eGFR
20–29	116
30–39	107
40–49	99
50–59	93
60–69	85
70+	75

Don't panic at one result! In general, a GFR below 60 for three months or more may mean kidney disease. Your doctor will want to investigate the cause and continue to check your kidney function to help plan your treatment.

Protection of the kidneys

Ace inhibitors

ACE inhibitors, are drugs normally used for the treatment of high blood pressure, such as enalapril or captopril. However, there is evidence that the use of ACE inhibitors in people who start to show small amounts of protein in the urine, helps to reduce the progression to macroalbinuria. In other words, the use of ACE inhibitors has a protective effect on the kidneys, even in people whose blood pressure is normal.

SGLT2 inhibitors

These are relatively new drugs which by blocking reabsorption of glucose in the kidneys, lower blood glucose levels. There is research which shows

that they can have a protective effect on the kidneys in people with Type 2 diabetes by slowing down the progression to more serious kidney damage. The following SGLT2s are available: Invokana, Forxiga, Jardiance and Steglatro.

IDDT has a leaflet on Kidneys and Diabetes, so if you would like a copy, contact IDDT using the details at the end of this booklet.

6. Serum Creatinine

What is creatinine?

Creatinine is a chemical compound left over from energy-producing processes in your muscles. Healthy kidneys filter creatinine out of the blood. Creatinine exits your body as a waste product in urine and is transported round the body in the blood.

Why test for creatinine?

A test for the amount of creatinine in your blood provides clues to help your doctor determine how well your kidneys are working. The test is carried out by your doctor or health professional, ideally every twelve months and involves a blood test. The test can be used to highlight such issues as:

- Making a diagnosis if you have signs or symptoms of kidney disease.
- Screening for kidney disease if you have diabetes and/or high blood pressure that increase the risk of kidney disease.
- Monitoring kidney disease, treatment or progression.
- Monitoring for side effects of drugs that may cause kidney damage or altered kidney function.
- Monitoring the function of a transplanted kidney.

Test results

The results are expressed as a numerical figure. Serum creatinine is reported as micromoles of creatinine to a litre of blood (micromoles/L). The typical range for serum creatinine is:

- For adult men, 65.4 to 119.3 micromoles/L.
- For adult women, 52.2 to 91.9 micromoles/L.`

Creatinine clearance

Creatinine clearance is a measure of how well the kidneys filter creatinine out of the bloodstream for excretion in urine. It is usually determined from a measurement of creatinine in a 24-hour urine sample and from a serum sample taken during the same time period. However, shorter time periods for urine samples may be used but accurate timing and collection of the urine sample is important.

Creatinine clearance is reported as millilitres of creatinine per minute per body surface area (mL/min/BSA).

- The typical range for men, 19 to 75 years old, is 77 to 160 mL/min/BSA.
- The typical range, by age, for creatinine clearance in women is as follows:
  18 to 29 years: 78 to 161 mL/min/BSA
  30 to 39 years: 72 to 154 mL/min/BSA
  40 to 49 years: 67 to 146 mL/min/BSA
  50 to 59 years: 62 to 139 mL/min/BSA
  60 to 72 years: 56- to 131 mL/min/BSA

Results lower than the typical range for your age group may be a sign of poor kidney function or conditions that affect blood flow to your kidneys. Your doctor or other healthcare provider will discuss the results of a creatinine test with you and help you understand what the information means for a diagnosis or treatment plan.

Treatments for kidney failure

There are several treatment options available to those with reduced kidney function. It needs to be remembered that impaired kidney function, caused by conditions such as microalbinuria, do not necessarily mean inevitable kidney failure.

Early treatments tend to be aimed at reducing blood pressure, thereby limiting the progression of kidney damage. The use of ACE inhibitors (angio-converting enzyme inhibitors) is common under these circumstances. As we have said, kidney damage can be caused by high blood pressure damaging the blood vessels. ACE is an enzyme that activates a hormone called angiotensin which causes blood vessels to constrict, raising blood pressure. ACE inhibitors prevent the action of angiotensin, thus resulting in the lowering of blood pressure.

Each kidney contains about one million nephrons to carry out the filtration of waste products. While the kidneys can compensate for the loss of some of these cells, once a certain amount of tissue is lost, the remaining nephrons can no longer cope and kidney function declines. Under these conditions the kidneys can be classed as failing and more intense treatments may be necessary:

- Dialysis. There are two forms of dialysis which remove excess water and can keep you fit and well while you are waiting for a transplant. The most suitable type of dialysis for you will depend on medical factors.
- Transplantation. Kidney transplants are a treatment option with both positive and negative outcomes. Transplants can reduce the constraints of daily dialysis and restores a 'normal' lifestyle. However, there is a shortage of donor organs and the possibility of post-operative rejection are frequent problems.
- Kidney and pancreas joint transplantation may also be considered as an option.
- Dietetic advice on what foods to eat may help you feel better.
- Medication. Medications from your doctor to help with other problems, such as blood pressure and fluid retention may help.

7. Cholesterol

This section looks at cholesterol, not just the actual test itself but we also look at what cholesterol is, the role it plays in the body and what we can do to manage our cholesterol levels.

The Test.

The test itself is a blood test carried out by your nurse or doctor either using a needle and syringe or a finger prick test. You may be asked to fast for 10 to 12 hours before the test (usually overnight). They will give you the results when they become available along with any advice to address the issues the results may raise.

What is cholesterol?

Cholesterol is a fatty substance produced naturally by the body, primarily by the liver. However, some foods also contain cholesterol. Cholesterol has several functions essential to the normal functioning of the body, including being an important building block for cell walls as well as functioning in the production of steroid hormones and vitamin D.

Cholesterol in your body comes from two main sources: your liver and your diet. Your liver, other organs, and other cells in your body produce about 75-80 percent of the cholesterol in your blood. The other 25 percent of cholesterol in your body is affected by the foods you eat.

Cholesterol is carried around the body in the bloodstream by combining with proteins. These cholesterol/protein combinations are called lipoproteins. There are two different types of lipoproteins and these are often referred to as "good" and "bad" cholesterol.

- **High-density lipoprotein (HDL):** HDL carries cholesterol away from the cell and back to the liver, where it is broken down and passed out of the body as a waste product. It is referred to as "good cholesterol" and higher levels are better.

- **Low-density lipoprotein (LDL):** LDL carries cholesterol from your liver to the cells that need it. If there is too much cholesterol for the cells to use, it can build up in the artery walls. For this reason, it is referred to as "bad cholesterol" and lower levels are better.

While having high levels of bad cholesterol does not in itself cause any symptoms, it increases the risk of other health conditions, including narrowing of the arteries, heart attack and stroke. People with diabetes are already pre-disposed to these conditions so it is especially important that they get their cholesterol levels checked and take action if needed.

- The Government recommends that healthy people should not have a total cholesterol level of more than 5mmol/L with LDL levels of not more than 3mmol/L. At present the UK average levels are 5.5mmol/L and 5.6mmol/L in men and women respectively.
- Those at high risk, such as people with diabetes, should have a total cholesterol level of 4mmol/L or less, with levels of LDL being 2mmol/L or less.

What causes high cholesterol?

Lots of different factors or combinations of factors can contribute to having high levels of bad cholesterol, including lifestyle, family history and ethnic group. In addition, lifestyle factors such as an unhealthy diet, being overweight, smoking and lack of exercise can all contribute to having high levels of bad cholesterol.

Having diabetes itself increases the risk of having high cholesterol levels, as do other conditions including high blood pressure, kidney disease, liver disease and underactive thyroid. Treating these underlying conditions can help to reduce cholesterol levels.

There are also several "fixed" factors that can contribute to having high cholesterol and unfortunately these cannot be changed. These include having a family history of early heart disease, stroke or cholesterol related conditions. Age is a factor; the older you are the more likely you are to

have narrowing of the arteries due to high cholesterol levels. Ethnicity also plays a part and people of Indian, Pakistani, Bangladeshi or Sri Lankan descent have an increased risk of high blood cholesterol. There is also a genetic condition, called familial hypercholesterolaemia, which causes high blood cholesterol and about 1 in 500 people inherit the condition from a parent.

How is high cholesterol treated?

Your state of general health, associated risk factors and cholesterol levels will determine what steps your health professionals will advise you to take to reduce your cholesterol levels. The first things most people will be advised to do is to make some lifestyle changes, eating a healthier diet, stopping smoking and taking more exercise. The key to eating a diet that will help you to reduce your bad cholesterol levels is to try and avoid foods that are high in saturated fats, such as fatty cuts of meat, dairy products, cakes, biscuits and chocolate.

- The Food Standards Agency recommends that the average man consumes no more than 30g of saturated fat per day. This figure is reduced to 20g for women. The amount of saturated fat in any food product will be given on the nutritional information label, so remember to check those labels!

If your cholesterol levels have not dropped after a few months then you may be advised to start taking medication to lower your cholesterol. The most commonly prescribed cholesterol reducing medications come from a group of drugs called statins, which work by blocking the enzyme in the liver that is used to make cholesterol. Some people can suffer side effects from taking statins and these include muscle pain and stomach problems. If you do suffer from side effects, then there are alternatives and your doctor will discuss these with you.

Taking plant sterols is a third, homeopathic route to lower cholesterol but their effectiveness has yet to be scientifically proven.

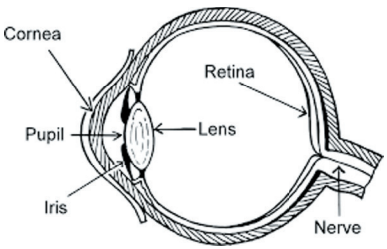
Prevention

The rules for preventing high cholesterol levels are pretty much the same as those for reducing cholesterol levels. You should try to avoid foods that have a high saturated fat content, such as dairy products, as these will increase your levels of bad cholesterol, whereas eating foods that contain even a small amount of unsaturated fat or those fortified with plant sterols and/or stanols will have the effect of raising your good cholesterol levels.

Cigarette smoke contains a chemical that prevents the bad cholesterol from being transported back to the liver, so smoking should be avoided. It is also recommended that you take 150 minutes exercise a week. This does not need to be high intensity exercise but can simply be going for a brisk walk. Exercise stimulates your body to transport bad cholesterol back to the liver, where it is broken down, thus preventing high levels developing.

8. Eye Health

This is the eighth key test and concerns at eye health. The eye is a complex sensory organ and there are quite a range of potential problems that can occur so it is useful to start by looking at the basic structure and functioning of the eye.



- The cornea is the clear front window of the eye that transmits and focuses light into the eye.
- The pupil is the dark aperture in the iris that determines how much light is let into the eye.

- The iris is the coloured part of the eye that helps regulate the amount of light that enters the eye.
- The lens is the transparent structure inside the eye that focuses light rays onto the retina.
- The retina is the nerve layer that lines the back of the eye, senses light, and creates electrical impulses that travel through the optic nerve to the brain.
- The optic nerve connects the eye to the brain and carries the electrical impulses formed by the retina to the visual cortex of the brain.

Not displayed in this diagram is the macula. This is a small central area in the retina that contains special light-sensitive cells and allows us to see fine details clearly.

So how does this all work to allow us to see?

For us to see, the first thing we need is light (no brainer!). This light then passes through the cornea and enters the eye through the pupil. It then passes through the lens and is focussed on the retina. The focussed light or images of what we have been looking at are turned into electrical impulses by the retina and passed down the optic nerve to the brain.

Maintaining healthy eyes

There are several relatively simple things to try and maintain your eye health.

Make sure you have regular eye tests, at least every two years, usually carried out by an optician/optometrist. These tests will not just tell you if you need new glasses, they can also identify underlying problems. The tests are important as many eye problems do not hurt. And can be treated if caught early enough.

Give up smoking - if you smoke, you're much more likely to develop age-related macular degeneration, which is the most common cause of sight

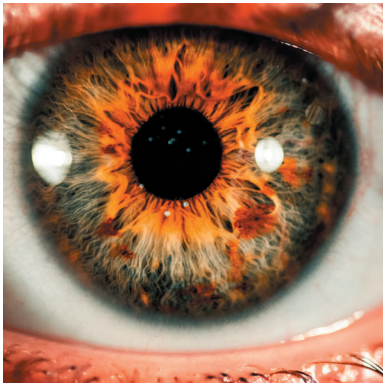
loss in the UK, and cataracts, than people who do not smoke.

Protect your eyes from the sun - sun protection is important for your general health, but you also need to protect your eyes. Never look at the sun directly as doing so can cause damage to your eyesight. Wearing sunglasses can help protect your eyes from UV rays.

Health complications affecting the eyes

There are several types of complications of eye health and people with diabetes are more likely to develop these when compared to someone without diabetes. These are referred to as diabetic eye disease. These conditions include diabetic retinopathy, macular degeneration, cataracts, and glaucoma. Over time, diabetes can cause damage to your eyes that can lead to poor vision or even blindness.

Macular degeneration



Macular degeneration accounts for around 50% of all visual impairment in developed countries and usually affects people over 50 years old. That said, macular degeneration may have something to do with your genes. If someone in your family has it, your risk might be higher.

Smoking, having high blood pressure or high cholesterol, obesity, eating lots of saturated fat, being light-skinned, being female, and having a light eye colour are also risk factors.

There are two forms of macular degeneration:

- Dry – this is caused by deposits, called drusen, forming in the macula. Initially a few will not affect vision but as their numbers and size increase vision can become dim or distorted. It develops over a number of years.

- Wet - this form develops more rapidly. Blood vessels grow from underneath your macula. These blood vessels leak blood and fluid into your retina. Your vision is distorted so that straight lines look wavy. You may also have blind spots and loss of central vision.

Symptoms of macular degeneration

- Early on, you might not have any noticeable signs and it might not be diagnosed until it gets worse or affects both eyes.
- Worse or less clear vision. Your vision might be blurry, and it may be hard to read fine print or drive.
- Dark, blurry areas in the centre of your vision.
- Rarely, worse or different colour perception.

If you have any of these symptoms, seek professional help as soon as possible.

How is macular degeneration diagnosed?

If your optician or GP suspects that you have macular degeneration then they will refer you to the hospital where one or more of the following tests will be carried out:

- Looking at a grid test page to check for blind spots.
- A colour vision test.
- Photographs of the back of the eye to provide a record for future reference.
- Fluorescein angiogram where a dye is injected into a vein in the arm. This then circulates in the body, allowing the blood vessels at the back of the eye to be seen to show if there is any damage or if new vessels have developed.

How is macular degeneration treated?

Drugs – drugs such as Lucentis and Eylea are injected directly into the eye and prevent the growth of new blood vessels. As such, they are used to treat wet macular degeneration. They are available on the NHS under specific circumstances and, as with all medicines, have side effects. They are not suitable for everyone and you should discuss their possible use with your health professional.

Laser treatment – this is also used occasionally to treat wet macular degeneration and works by destroying abnormal vessels. It is used in the early stages of the disease and only if the new vessels are not too near the centre of the macula.

Diet – this is a prevention rather than a cure. Research has shown that people who have a low glycaemic diet (containing slowly absorbed carbohydrates) have a lower risk of developing the condition when compared to those with a high glycaemic diet.

Nutritional supplements – there have been some reports that some nutritional supplements may help to treat macular degeneration but cannot restore vision and as such no firm recommendations can be made.

Diabetic retinopathy

Diabetic retinopathy is a complication of diabetes, caused by high blood sugar levels damaging the blood vessels at the back of the eye (retina). It can cause blindness if left undiagnosed and untreated. It usually takes several years for diabetic retinopathy to reach a stage where it could threaten your sight. To minimise the risk of this happening, people with diabetes should:

- ensure they control their blood sugar levels, blood pressure and cholesterol
- attend diabetic eye screening appointments – The National Service Framework for Diabetes recommends screening for retinopathy once a year for everyone with diabetes over the age of 12 years.

You're at a greater risk of developing diabetic retinopathy if you:

- Have any type of diabetes, particularly if you have had it for a long time.
- Have a persistently high blood sugar (blood glucose) levels.
- Have high blood pressure.
- Have high cholesterol.
- Are pregnant.
- Are of Asian or Afro-Caribbean background.

Screening is carried out by your ophthalmologist who will place drops in your eyes to widen, or dilate, your pupils. This will help the ophthalmologist to see inside your eyes more easily to check for retinopathy and to take photographs if necessary.

Stages

The retina needs a constant supply of blood, which it receives through a network of tiny blood vessels. Over time, a persistently high blood sugar level can damage these blood vessels in 3 main stages:

- Background retinopathy – tiny bulges develop in the blood vessels, which may bleed slightly but don't usually affect your vision.
- Pre-proliferative retinopathy – more severe and widespread changes affect the blood vessels, including more significant bleeding into the eye.
- Proliferative retinopathy – scar tissue and new blood vessels, which are weak and bleed easily, develop on the retina, this can result in some loss of vision.

Treatment

If caught early enough, diabetic retinopathy is readily treatable, hence the importance and need for regular screening. The usual treatment for diabetic retinopathy is laser treatment but more recently some drugs have become available for use under certain circumstances.

Laser treatment:

This involves shining a laser into your eyes – you'll be given local anaesthetic drops to numb your eyes; eye drops are used to widen your pupils and special contact lenses are used to hold your eyelids open and focus the laser onto your retina. It normally takes around 20-40 minutes and is usually carried out on an outpatient basis, which means you won't need to stay in hospital overnight. However, it may require more than one visit to a laser treatment clinic. It isn't usually painful, although you may feel a sharp pricking sensation when certain areas of your eye are being treated. Side effects may include blurred vision, increased sensitivity to light and aching or discomfort.

Other treatments may include:

Eye injections – to treat severe maculopathy that's threatening your sight.

Eye surgery – to remove blood or scar tissue from the eye if laser treatment isn't possible because retinopathy is too advanced.

Reducing risk

You can reduce your risk of developing diabetic retinopathy, or help prevent it getting worse by:

- Controlling your blood sugar, blood pressure and cholesterol levels.
- Taking your diabetes medication as prescribed.
- Attending all your screening appointments.
- Getting medical advice quickly if you notice any changes to your vision.
- Maintaining a healthy weight, eating a healthy, balanced diet, exercising regularly and stopping smoking.

Cataracts

What are cataracts?

In a normal eye the lens, behind the iris and pupil is clear and transparent. When a cataract forms the lens becomes cloudy or opaque, so preventing the light passing through the pupil reaching the retina. When this happens the image or picture on the retina is fuzzy or blurred.

As cataracts develop, they can cause more symptoms. As well as dim or blurred vision, you may also have double vision when you look at things through the eye with the cataract. These problems can make it hard to read, work on a computer, and do anything else that calls for clear eyesight. You may have poor night vision and find it harder to drive when it's dark, finding you may be sensitive to glare from headlights.

- Cataracts are part of the normal aging process (but can occur as a result of injury) during which the lens hardens and becomes cloudy. Initially, stronger glasses may be needed but, as the cataract develops, stronger glasses will not improve vision.
- Cataracts develop slowly over time, usually affecting the older population but rarely can be present at birth. In the diabetic population cataracts are more common and develop at an earlier age than members of the general population. Statistics have shown that people with diabetes statistically face a 60% greater risk of developing cataracts.

How are they detected?

Attending regular eye checks as part of your annual diabetic review will help your health team to identify any signs of cataracts at an early stage and advise on treatment.

How are they treated?

Cataracts are nearly always treated surgically, replacing the lens in the affected eye with a permanent, clear plastic lens.

Sometimes you might need to get surgery even if your cataract doesn't bother you. Your doctor may suggest it if the cataract is large enough to crowd the inside of the eye, which can lead to increasing pressure in the eye.

A week or two before your procedure your doctor will do some tests to measure the size and shape of your eye. This way, they can choose the best artificial lens for you.

They'll probably tell you not to eat or drink anything for 12 hours before the surgery.

You'll be awake for the procedure, but your doctor will numb your eye with medicine, so you won't feel pain. They may also give you medication to help you relax. The surgery usually takes well under an hour. Your surgeon will make a tiny cut in the front of your eye, sometimes with the help of a laser. Through this, they'll put in a small tool to break up the cataract and gently suction it out.

Next, they'll put in the new lens, which is made of plastic, silicone, or acrylic, and close the cut. Sometimes, very fine stitches are used to close the wound and these can be removed painlessly later.

You won't need to stay overnight at the hospital, but you'll need someone to drive you home. You will need to wear a patch over the operated eye for 24 hours then at night for about a month after that.

There are other post-operative issues you should note:

- Eyelids must be cleaned regularly and eye drops taken as instructed.
- Rubbing or touching the eye should be avoided.
- There may be some sensitivity to light and sunglasses may be helpful. You will be advised when it is time to have an eye test for new glasses.
- You may be able to return to work after a couple of weeks but strenuous or heavy work should be avoided.
- If you have cataracts in both eyes, you'll probably get two separate surgeries, with the worst eye being treated first. This gives the first eye a chance to heal.

Can cataracts be prevented?

There's no known way to prevent cataracts, but making some lifestyle changes might slow their development.

- Eat healthily with plenty of fruit and vegetables.
- Quit smoking. Smoking is bad for your lungs and your heart, but it's also really bad for your eyes. When it comes to cataracts, smoking is a risk factor you can control.
- Wear sunglasses. Research shows that ultraviolet (UV) light can cause damage to the proteins in the lens. Your optician will advise on what is best for you.
- Limit alcohol. You don't have to give up that glass of wine with dinner but there is some evidence that drinking too much alcohol can increase your risk for cataracts, so stay within advised levels.
- Keep blood sugar in check and try to avoid high blood sugar levels. Your lens swells if your blood sugar stays too high for too long. Your lens also changes blood sugar into sorbitol. When this substance collects in the lens of your eye, you see less clearly, and a cataract may form.
- Get regular eye exams. Your doctor can spot problems early on. If you have diabetes your eyes should be checked for cataracts every 12 months.

Glaucoma

What is glaucoma?

Glaucoma is a condition where there is a loss of vision due to damage to the optic nerve. Usually, glaucoma is accompanied by an increased pressure in the eye, but not always. This pressure is called intra-ocular pressure (IOP) and it is this pressure that causes damage to the optic nerve. If the optician suspects you have glaucoma they will refer you to the hospital.

There are several different types of glaucoma:

- **Chronic open-angle glaucoma.** This is the commonest form of glaucoma and produces no symptoms. It usually affects both eyes and develops slowly so that the loss of vision is gradual.
- **Acute angle glaucoma.** This is where there is a sudden increase in IOP in one eye. The eye becomes red and painful, often accompanied by misty vision and haloes around lights.
- **Secondary glaucoma.** This is a group of conditions where IOP is raised due to other conditions affecting the eye.
- **Congenital glaucoma.** This is glaucoma that is present at birth.

Some other facts about glaucoma:

- Glaucoma is the leading cause of blindness in the UK.
- Blindness can be prevented if glaucoma is detected and treatment started early.
- Glaucoma is not catching and is not caused by work, diet or other lifestyle factors.

Tests for glaucoma

Glaucoma can usually be detected during a routine eye test by an optician, often before it causes any noticeable symptoms

At the opticians, ideally the optician will carry out three tests:

- A check of the back of the eye and optic nerve with a bright light (opthalmoscope).
- A measurement of the IOP, using what is commonly called the puffer test.
- A field of vision test where you are asked to look at a screen displaying a series of dots of light. You will be asked which ones you can see.

At the hospital the doctor will ask you to undertake a range of tests to give the doctor more information about your condition.

Who is at risk?

There are several facts that affect the likelihood of developing glaucoma:

- Your age – glaucoma becomes more common as you get older especially over 40.
- Your ethnicity – people of African, Caribbean or Asian origin are at a higher risk.
- Your family history – you're more likely to develop glaucoma if you have a parent or sibling with the condition.
- Other medical conditions – such as short-sightedness, long-sightedness and diabetes.
- Some studies have estimated that people with diabetes are twice as likely to develop glaucoma compared to those who do not have diabetes. However, this may be a significant over-estimate as people with diabetes are much more likely to have the condition diagnosed because of higher levels of screening.

Treatment for glaucoma

It's not clear whether you can do anything to prevent glaucoma, but having annual eye tests should pick it up as early as possible. It's not possible to reverse any loss of vision that occurred before glaucoma was diagnosed, but treatment can help stop your vision getting worse.

There are several different treatment routes available and your doctor will discuss with you which will suit you best:

Eyedrops – the aim of this treatment is to reduce IOP and prevent further vision loss. While this is effective, life-long treatment with drops is usually needed.

Surgery – in some cases the IOP can be reduced by using laser treatment or surgery to make a small drainage hole in the top of the eyeball. However, this route is not suitable for everyone and life-long treatment with eyedrops may still be required.

Tablets – in some cases tablets may be given to reduce the amount of fluid produced in the eye. Initially, these tablets may cause you to urinate more frequently.

Exercise – some research has suggested that frequent activity, such as swimming or brisk walking may lower IOP, but warn against activities that involve turning upside down, such as some yoga positions or scuba diving.

Other conditions that can affect your eyes

Dry Eyes

Although not strictly a disease, dry eyes are a condition that is uncomfortable at best. Dry eye syndrome is a common condition that occurs when the eyes do not make enough tears, or the tears evaporate too quickly. Symptoms include a gritty, sandy feeling in the eyes, burning, itching, blurred vision and light sensitivity. Oddly enough, increased watering of the eyes is also a symptom. It usually affects both eyes.

Initially, tight blood glucose control is the first step in both prevention and treatment. There are various medical treatments available, for example some may increase tear production, others may block the tear ducts to prevent the tears draining away through the nose.

Floaters

Eye floaters appear as small spots that drift through your field of vision. They may stand out when you look at something bright, like white paper or a blue sky. They might annoy you, but they shouldn't interfere with your sight.

Most floaters are small flecks of a protein called collagen. They're part of a gel-like substance in the back of your eye called the vitreous.

You can learn to live with floaters and ignore them. You may notice them less as time passes to the point where people think their floaters have disappeared. Only rarely do they get bad enough to require treatment.

9. Foot Health

Reasons to look after your feet

If you have diabetes, keeping your feet healthy is very important. Allowing problems to develop can lead to a range of complications, some comparatively minor, others very serious.

- Around 10% of people will develop a diabetic foot ulcer at some point in their lives. Currently, 300 new ulcers are diagnosed every week. Around 130 amputations take place each week and it is estimated that 80% of these are preventable.
- Amputations and ulcers have a huge detrimental effect on quality of life with up to 70% of people dying within 5 years of an amputation and 50% of people dying within the same period after developing a foot ulcer.
- People with diabetic foot ulcers may have some degree of cognitive impairment and so may find it more difficult to manage their foot care themselves.

Neuropathy

Neuropathy is damage to the nerves in the feet. It is just one form of diabetic neuropathy but is probably the most common and well-known. It is caused by long-term diabetes or poorly controlled diabetes.

Neuropathy means damage to the nerves and can affect any part of the body. It is usually divided into two categories:

- Peripheral neuropathy affects the nerves supplying the skin and muscles.

- Autonomic neuropathy affects the nerves supplying the organs of the body, such as the bladder, bowel or heart. It can also affect the nerves controlling blood pressure, sexual function etc.

It can also fall into two broad groups:

- Diffuse neuropathy affects many nerves. It is the most common and is the one that can affect the feet.
- Focal neuropathy affects individual or small groups of nerves and are confined to, for example, a single limb, area of the head or torso.

Symptoms of neuropathy affecting the feet or hands

There are several different symptoms of neuropathy and those with the condition may experience one or more of these symptoms:

- Unusual sensations (paresthesia) such as tingling, burning or prickling.
- Numbness and pain in the hands, legs and feet.
- Weakness of the muscles in the feet and hands.
- Sharp pains or cramps.
- Extreme sensitivity to touch.
- Insensitivity to pain or temperature changes.
- Loss of balance or coordination, and difficulty walking on uneven surfaces.

Treatment options for neuropathy

The main treatments for neuropathy are drug-based therapies. Your doctor will discuss with you the suitability of treatment for you:

- Pain relievers.
- Medications containing opioids (these can be addictive so are only prescribed when other treatments have failed).
- Anti-seizure medications.

- Topical treatments.
- Lidocaine patches.
- Antidepressants.

All medications cause side effects and what may suit one person may not suit another. Again, take advice from your doctor.

Damage to blood vessels

In addition to neuropathy, people with diabetes can also develop foot problems due to damage to the blood vessels in the feet and legs. This may mean that less blood flows to the skin, muscles and tissues. In turn, this means that any injuries will not heal as quickly as would normally be expected.

Symptoms of changes to blood flow can include:

- Cramp in the calves.
- Shiny, smooth skin.
- Loss of hair on the feet.
- Thickened toenails.
- Cold, pale feet.
- Changes in the colour of the skin on the feet.
- Wounds or sores.
- Pain in your feet, especially when raised.

If any of these symptoms affect you then seek advice from a health professional.

Other conditions affecting the feet

Diabetic foot calluses – calluses are a build-up of thickened, hard skin designed to protect the foot. However, for a person with diabetes, calluses can hide a deeper wound or ulcer. It is important that calluses should only

be treated/removed by a podiatrist to avoid the risk of infection.

Heel fissures – heel fissures are common in the general population but for someone with diabetes they can cause serious problems if not dealt with effectively. Heel fissures are deep cracks in the skin and are often painful. They are caused by dry skin and can largely be avoided by the daily application of moisturiser. If you discover a heel fissure then increase moisturiser to two to three times a day. If the fissure has not improved in a week, seek an assessment and advice from your podiatrist.

Charcot foot – charcot foot is a non-ulcerative condition caused by loss of pain in the feet. The loss of pain warning signs can cause the foot to change shape due to the destruction of bones and joints. Diagnosis is notoriously difficult and, it is essential that the affected foot is put out of action. Treatment is with continuous foot care education, protective footwear and routine foot care to prevent the formation of ulcers.

Diabetic holiday foot syndrome – research has shown that there is a greater risk of foot ulceration and complications while on holiday, especially holidays that are taken in hot countries. This is called Diabetic holiday foot syndrome and the causes are:

- Direct injury.
- Unaccustomed exercise.
- Walking barefoot on the beach or in the sea.
- Burns from walking barefoot on hot pavements.
- Wearing inappropriate bathing shoes.

It is also important to remember to put sun cream on the top of your feet!

How often should foot checks happen?

Adults with diabetes should have a foot check:

- When diabetes is diagnosed and at least once a year after that.
- If they think they have a problem with their feet.

- If they have to go into hospital for any reason, and if they have any foot problems during the hospital stay.

Young people with diabetes who are aged 12–17 years will be looked after by the hospital paediatric team (which looks after children and young people) or the hospital transitional care team (which looks after young adults who are preparing to move to adult services). They should have a foot check once a year as part of their diabetes annual review, and be given information about foot care. If they have any problems with their feet, they should be referred to a specialist.

What does the foot check involve?

The foot checks will usually be done by the foot protection service. You'll need to take off your shoes and socks, and any bandages or dressings will be removed. Then, both your feet should be carefully examined. This will involve:

- Finding out whether you have any foot problems at present.
- Examining your foot shape and footwear to see whether you may be at risk of rubbing or pressure.
- Checking your skin for changes in colour and looking for ulcers, sores, areas of hard skin and any signs of inflammation or infection.
- Testing the feeling in your feet to see how well the nerves are working.
- Taking the pulse in each of your feet to check the blood flow.
- Working out your risk (low, moderate or high) of developing a diabetic foot problem.

If you do have a foot problem or if the foot check shows that you have a moderate or high risk of a problem developing, you may be referred to see another healthcare professional and seen more frequently. Definitions of risk are:

Low Risk

- No risk factors present except calluses

Medium Risk

- Deformity
- Neuropathy
- Non-critical limb ischaemia (reduced blood flow)

High Risk

- Previous ulceration
- Previous amputation
- Being on renal therapy
- Neuropathy and non-critical limb ischaemia together
- Neuropathy in combination with callus and/or deformity
- Non-critical limb ischaemia in combination with callus and/or deformity

Frequency of checks according to risk:

- If the foot check shows that you don't have any foot problems (low risk), you will still need to have a foot check every year. Your healthcare professional should talk with you about your risk of developing foot problems in the future and explain how to look after your feet.
- Frequently (every 3 to 6 months) for people at moderate risk.
- More frequently (every 1 to 2 months) for those with a moderate risk or high risk where there is no immediate cause for concern.
- Very frequently (every 1 to 2 weeks) for those at high risk where there is immediate cause for concern.
- More frequent assessments may be necessary for those at moderate or high risk who are unable to check their own feet.

How can I look after my feet?

There are 10 Golden Rules to follow to look after your feet:

1. Never go bare foot.
2. Wear good fitting shoes – not tight or worn.
3. Break in new shoes gradually and make sure they don't rub.
4. Wash your feet daily using lukewarm water.
5. Keep your feet dry, especially between the toes.
6. If you use talc then use it sparingly.
7. Moisturise your feet to make sure they do not get dry or cracked.
8. Cut your toenails straight across, not deep into the corners.
9. Do not use heating pads, hot water bottles, iodine, Epsom salts or alcohol.
10. Check your feet daily and if there are any problems see your doctor or podiatrist.

The 9 Key Tests

The chart on the next page is to remind you of the 9 tests which should be carried out at your annual review. You can keep a record of which tests were carried out by completing the date and ticking the box for each test. At your review, ask if all 9 tests have not been carried out, if not ask why not and if necessary, ask for the tests to be carried out.

Date	Weight	Blood pressure	Smoking status	HbA1c	Urinary albumin	Serum creatinine	Cholesterol	Eyes	Feet

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For further information about
all our FREE leaflets contact us:

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