Botswana's Premier Health Journal

DIAGNOSTICS

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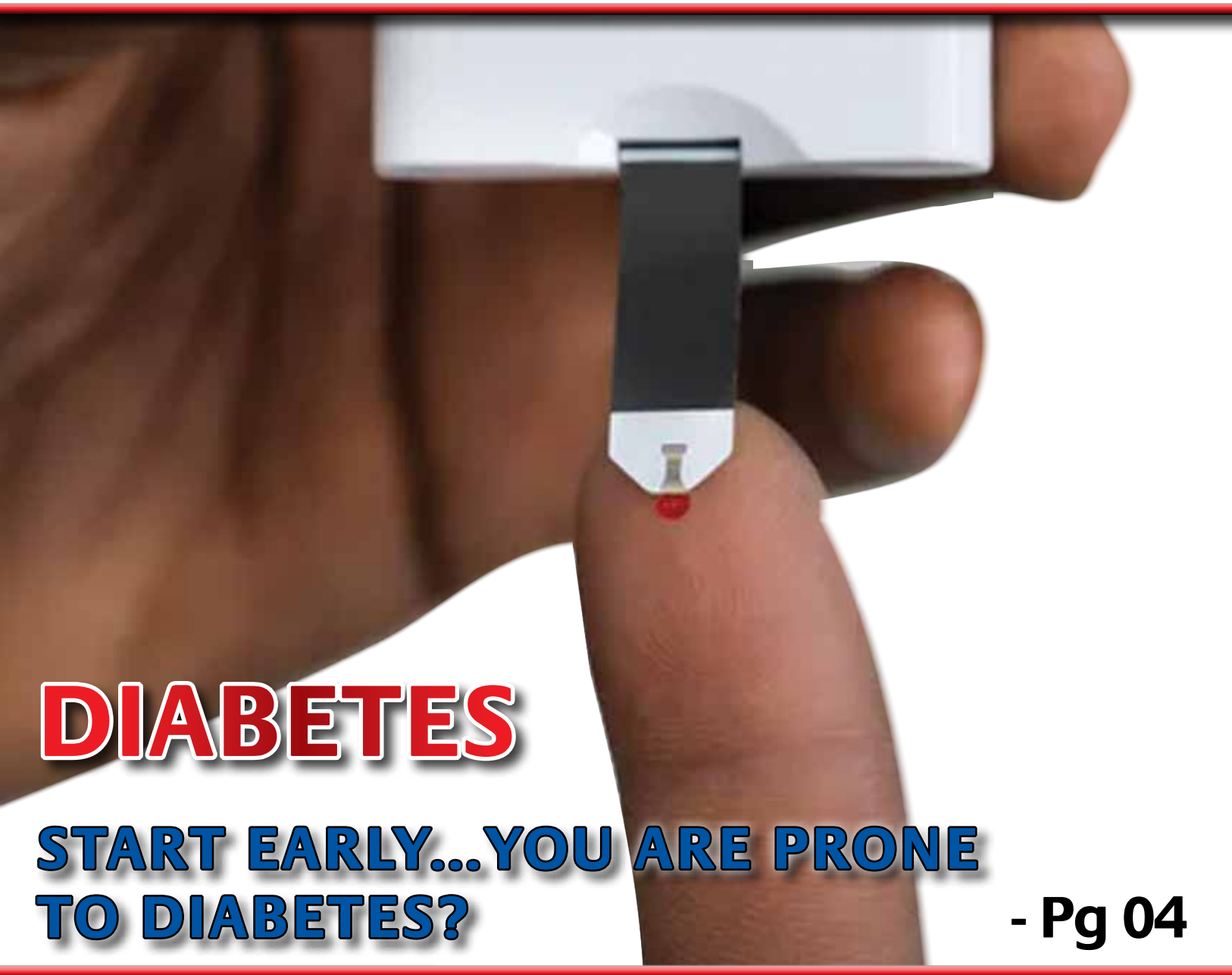

DIABETES

START EARLY...YOU ARE PRONE TO DIABETES?

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Dear Reader

One of the great aspects of this job is having the opportunity to talk with and listen to the many different manufacturers, distributors, and of course the huge network of dealers that is the backbone of our industry.

Years ago I never would have ever imagined I would be in this position, and it is amazing. To say I really enjoy this job is an understatement.

What makes Diagnostics Update.com so unique is their informative and educative ways to the nation.

The staff and management is always looking for ways to inform their readers on how to tackle different medical issues. Basically, you want more people to enjoy reading more and more.

That said, there is still the need to get more readers to embrace healthy routines within and outside the homestead.

CORD BLOOD:

WHAT CORD BLOOD IS AND WHY IT MATTERS

Cord blood and tissue come from the placenta and the baby's umbilical cord. Cord blood is collected after the birth of a baby, once the umbilical cord has been cut. This makes it a safe and painless procedure for both mother and baby. Cord blood banking and storage (via cryopreservation) can help preserve the cord blood cells for potential use in treating a number of medical diseases.

Cord blood is full of immature stem cells that can be used to generate blood cells. This makes cord blood useful in treating more than 80 different diseases such as leukemia, lymphoma, aplastic anemia, sickle cell disease, and many others. In patients with blood cancers, chemotherapy destroys both cancer cells and healthy blood cells. Cord blood stem cell transplants can help these patients regrow blood-forming cells and help them recover and restore healthy blood cells after chemotherapy.

There are three main advantages of using cord blood:

There is less wait time for patients searching for a stem cell donor. Once the cord blood is collected, tested, and stored, it is ready and available for patient use.

There's a higher chance of finding a donor match to patients. Patients must do tissue typing tests to match their blood proteins (HLA markers) to potential donors before getting a transplant. Cord blood matching is more forgiving because the cord blood stem cells are immature compared to adult stem cells, whereas adult donors must be a perfect or near-perfect match for the best outcomes. For this reason, cord blood is easier to match with patients.

Patients are less likely to develop complications from cord blood stem cells compared to adult stem cells because cord blood stem cells are immature.

There is ongoing research focusing on improving the standards and procedures surrounding cord blood collection and storage. The goal is to determine the ideal process transplant centres can follow when preparing cord blood stem cell transplants in patients.

Cord blood donations are becoming increasingly important because of their life-saving potential in treating a variety of diseases and disorders. Cord blood is regulated to ensure the products are safe and effective to use. Since cord blood must be collected at birth, it's important that expectant parents are provided the appropriate information, so they can make an informed decision regarding cord blood donation and banking. Instead of being discarded as medical waste, cord blood can be used to save a life.
Source: www.medicalnewsbulletin.com

Why store cord blood stem cells?

When facing illness of a child or loved one, families want hope and doctors want options. Banked umbilical cord blood stem cells provides both.

Patients who require a haematopoietic stem cell transplant will need to obtain cells from one of three sources: bone marrow, circulating blood or umbilical cord blood.

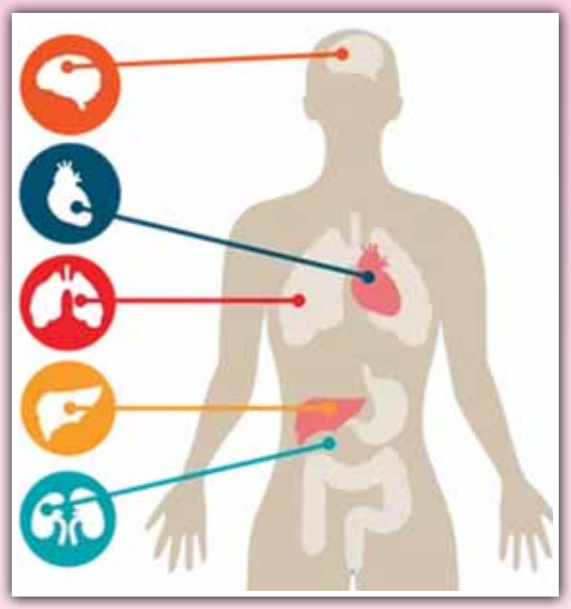
Finding a stem cell donor who is a match (and able to donate stem cells) is often difficult and, in many instances, no suitable donor can be found either within a family or through a National or International Bone Marrow Registry.

Storing your baby's umbilical cord blood at birth provides a source of stem cells, an option for the Transplant Team, should a stem cell transplant be required either for your child or, depending on the degree of matching, for a sibling.

A new-born's stem cells are healthy, young and flexible, which means they have significant regenerative abilities. Umbilical cord stem cells have greater regenerative potential than bone marrow stem cells. They are young and active (a maximum of nine months old), compared to stem cells from other sources. This means that they can differentiate faster, displaying and impressive multiplying potential.

Cord blood is collected in advance, tested, cryopreserved and stored – ready to use when needed.

Because your baby's stem cells were collected at birth, they are ready to use if necessary. Unlike bone marrow, there is no need to take time to locate a possible donor and then determine whether he or she is still willing and able to donate if a transplant is required.



Cord blood transplants do not always require a perfect match.

Studies have shown that cord blood transplants can be performed in cases where the donor and the recipient are only partially matched. In contrast, bone marrow grafts require a perfect degree match in most cases. Because partially matched cord blood transplants can be performed, cord blood potentially increases a patient's chance to find a suitable donor.

Cord blood transplants show low rates of graft vs host disease

Cord blood transplants are associated with a lower incidence of graft-versus-host-disease (GVHD) in allogeneic transplants (e.g. between siblings). The immune cells in cord blood are less likely to attack the recipient's own tissues and cause the transplant-related complication of GVHD.

Viral contamination risk is lower
Cord blood is rarely contaminated with underlying viruses resulting in greater acceptance of cord blood stem cells in comparison to those from bone marrow.

Source: www.cryo-save.co.za/stem-cells-done-far

DIABETES

START EARLY...ARE YOU PRONE TO DIABETES?

Routine blood tests can help predict the risk of diabetes

Diabetes is a global health concern. It can lead to various complications like stroke, heart disease, kidney failure, blindness, and neurological complications. Early diagnosis of diabetes ensures prompt care, thus minimizing the risk of developing these complications. However, many people remain undiagnosed until late. Scientists study demonstrate the importance of random blood glucose levels in predicting the future risk of developing diabetes.

For this study, researchers collected data from the Veterans Health Administration (VHA) facilities. These Veterans had no prior history of diabetes. Their plasma/serum glucose, demographics and risk factors like blood pressure, smoking habits, were assessed every year.

Random blood glucose (RBG) levels of more than 200mg/dl are diagnostic of diabetes. According to this study, people with at least two RBG levels of more than 115 mg/dl within one year, had a higher chance of developing diabetes within five years. A smaller chance of diabetes was noted in patients whose RBG levels were below 110mg/dl.

Thus, the scientists recommend that further investigations for early detection of diabetes, like fasting blood glucose or A1c test, should be performed for patients with RBG levels more than 115mg/dl.

One of the researchers, "These findings have the potential to impact care in the VA and in the general population. As random plasma glucose levels–which are convenient, low-cost, and 'opportunistic'–could appropriately prompt high-yield, focused diagnostic testing and improve recognition and treatment of pre-diabetes and early diabetes."

Early detection of diabetes helps prevent several long-term complications and ensure a better quality of life. Routine use of this simple, outpatient random blood glucose testing, may be beneficial in screening for the diabetic population. Further validation would be necessary to confirm the results hold true across populations.

Understanding Diabetes -- Diagnosis and Treatment

Your doctor may suspect you have diabetes if you have some risk factors for diabetes, or if you have high levels of blood sugar in your urine. Your blood sugar (also called blood glucose) levels may be high if your pancreas is producing little or no insulin (type 1 diabetes), or if the body is not responding normally to insulin (type 2 diabetes).

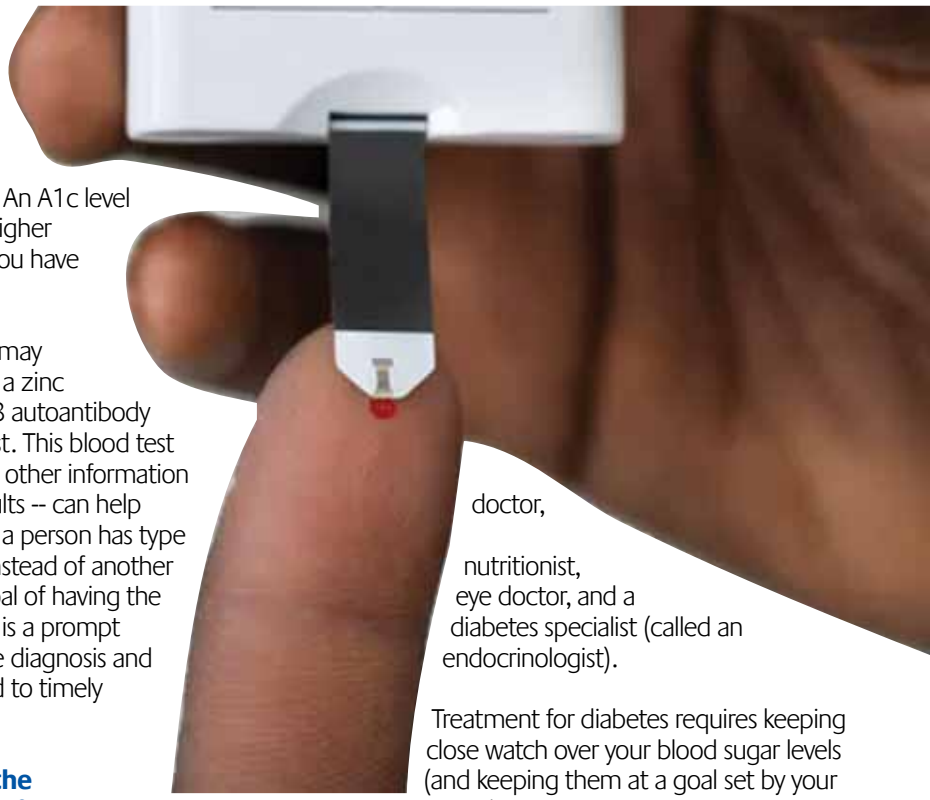
Getting diagnosed begins with one of three tests. in most cases, your doctor will want to repeat a test that is high in order to confirm the diagnosis:

A fasting glucose test is a test of your blood sugar levels taken in the morning before you have eaten. A level of 126 mg/dL or higher may mean that you have diabetes.

An oral glucose tolerance test (OGTT) entails drinking a beverage containing glucose and then having your blood glucose levels checked every 30 to 60 minutes for up to 3 hours. If the glucose level is 200 mg/dL or higher at 2 hours, then you might have diabetes.

The A1c test is a simple blood test that shows your average blood sugar levels for the past 2-3 months. An A1c level of 6.5% or higher may mean you have diabetes.

Your doctor may also suggest a zinc transporter 8 autoantibody (ZnT8Ab) test. This blood test -- along with other information and test results -- can help determine if a person has type 1 diabetes instead of another type. The goal of having the ZnT8Ab test is a prompt and accurate diagnosis and that can lead to timely treatment.



What Are the Treatments for Diabetes?

Diabetes is a serious disease that you cannot treat on your own. Your doctor will help you make a diabetes treatment plan that is right for you -- and that you can understand. You may also need other health care professionals on your diabetes treatment team, including a foot doctor, nutritionist, eye doctor, and a diabetes specialist (called an endocrinologist).

Treatment for diabetes requires keeping close watch over your blood sugar levels (and keeping them at a goal set by your doctor) with a combination of medications, exercise, and diet. By paying close attention to what and when you eat, you can minimize or avoid the "seesaw effect" of rapidly changing blood sugar levels, which can require quick changes in medication dosages, especially insulin.

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DIABETES

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Diabetes Drugs

If you have type 1 diabetes, your pancreas no longer makes the insulin your body needs to use blood sugar for energy. You will need insulin in the form of injections or through use of a continuous pump. Learning to give injections to yourself or to your infant or child may at first seem the most daunting part of managing diabetes, but it is much easier that you think.

Some people with diabetes use a computerized pump -- called an insulin pump -- that gives insulin on a set basis. You and your doctor program the pump to deliver a certain amount of insulin throughout the day (the basal dose). Plus, you program the pump to deliver a certain amount of insulin based on your blood sugar level before you eat (bolus dose).

Injectable insulin comes in five types:

- Rapid-acting (taking effect within a few minutes and lasting 2-4 hours)
- Regular or short-acting (taking effect within 30 minutes and lasting 3-6 hours)
- Intermediate-acting (taking effect in 1-2 hours and lasting up to 18 hours)
- Long-acting (taking effect in 1-2 hours and lasting beyond 24 hours)
- Ultra-long-acting (taking effect in 1-2 hours and lasting 42 hours)

A rapid-acting inhaled insulin (Afrezza) is also FDA-approved for use before meals. It must be used in combination with long-acting insulin in patients with type 1 diabetes and should not be used by those who smoke or have chronic lung disease.

It comes as a single dose cartridge.Premixed insulin is also available for people who need to use more than one type of insulin.

Insulin degludec (Tresiba) is a once-daily, long-acting insulin, providing a basal dose of insulin lasting beyond 42 hours. (It the only basal insulin approved for both type 1 and type 2 diabetes in patients as young as 1 year old.) It is also available in combination with rapid-acting insulin (Ryzodeg 70/30).

Each treatment plan is tailored for the person and can be adjusted based on what you eat and how much you exercise, as well as for times of stress and illness.

By checking your own blood sugar levels, you can track your body's changing needs for insulin and work with your doctor to figure out the best insulin dosage. People with diabetes check their blood sugar up to several times a day with an instrument called a glucometer. The glucometer measures glucose levels in a sample of your blood dabbed on a strip of treated paper.

Also, there are now devices, called continuous glucose monitoring systems (CGMS), that can be attached to your body to measure your blood sugars every few minutes for up to a week at a time. But these machines check glucose levels from skin rather than blood, and they are less accurate than a traditional glucometer.

For some people with type 2 diabetes, diet and exercise are enough to keep the disease under control. Other people need medication, which may include insulin and an oral drug.

Drugs for type 2 diabetes work in different ways to bring blood sugar levels back to normal. They include:

- Drugs that increases insulin production by the pancreas, including chlorpropamide (Diabinese), glimepiride, (Amaryl), glipizide (Glucotrol), glyburide (Diabeta, Glynase), nateglinide (Starlix), and repaglinide (Prandin)
- Drugs that decrease sugar absorption by the intestines, such as acarbose (Precose) and miglitol (Glyset)
- Drugs that improve how the body uses insulin, such as pioglitazone (Actos) and rosiglitazone (Avandia)
- Drugs that decrease sugar production by the liver and improve insulin resistance, like metformin (Glucophage)
- Drugs that increase insulin production by the pancreas or its blood levels and/or reduce sugar production from the liver, includingalogliptin (Nesina), dulaglutide (Trulicity), linagliptin (Tradjenta), exenatide (Byetta, Bydureon), liraglutide (Victoza), lixisenatide (Adlyxin), saxagliptin (Onglyza), sitagliptin (Januvia),and semaglutide (Ozempic)
- Drugs that block the reabsorption of glucose by the kidney and increase glucose excretions in urine, called sodium-glucose co-transporter 2 (SGLT2) inhibitors. They are canaglifozin (Invokana), dapagliflozin (Farxiga), and empagliflozin (Jardiance).
- Pramlinitide (Symlin) is an injectable synthetic hormone. It helps lower blood sugar after meals in people with diabetes who use insulin.

Some pills contain more than one type of diabetes medication. They include the recently approved empagliflozin/linagliptin (Glyxambi). It combines a SGLT2 inhibitor that blocks reabsorption of glucose into the kidneys with a DPP-4 inhibitor which increases hormones to help the pancreas produce more insulin and the liver produce less glucose.

Sorce: www.medicalnewsbulletin.com

DIABETES AND FOOT PROBLEMS

Foot problems are common in people with diabetes. You might be afraid you'll lose a toe, foot, or leg to diabetes, or know someone who has, but you can lower your chances of having diabetes-related foot problems by taking care of your feet every day. Managing your blood glucose levels, also called blood sugar, can also help keep your feet healthy.

How can diabetes affect my feet?

Over time, diabetes may cause nerve damage, also called diabetic neuropathy, that can cause tingling and pain, and can make you lose feeling in your feet. When you lose feeling in your feet, you may not feel a pebble inside your sock or a blister on your foot, which can lead to cuts and sores. Cuts and sores can become infected. Diabetes also can lower the amount of blood flow in your feet. Not having enough blood flowing to your legs and feet can make it hard for a sore or an infection to heal. Sometimes, a bad infection never heals. The infection might lead to gangrene.

Gangrene and foot ulcers that do not get better with treatment can lead to an amputation of your toe, foot, or part of your leg. A surgeon may perform an amputation to prevent a bad infection from spreading to the rest of your body, and to save your life. Good foot care is very important to prevent serious infections and gangrene.

Although rare, nerve damage from diabetes can lead to changes in the shape of your feet, such as Charcot's foot. Charcot's foot may start with redness, warmth, and swelling. Later, bones in your feet and toes can shift or break, which can cause your feet to have an odd shape, such as a "rocker bottom."

What can I do to keep my feet healthy?

Work with your health care team to make a diabetes self-care plan, which is an action plan for how you will manage your diabetes. Your plan should include foot care. A foot doctor, also called a podiatrist, and other specialists may be part of your health care team.

Include these steps in your foot care plan:

- Check your feet every day.
- Wash your feet every day.
- Smooth corns and calluses gently.
- Trim your toenails straight across.
- Wear shoes and socks at all times.
- Protect your feet from hot and cold.
- Keep the blood flowing to your feet.
- Get a foot check at every health care visit.
- Check your feet every day

You may have foot problems, but feel no pain in your feet. Checking your feet each day will help you spot problems early before they get worse. A good way to remember is to check your feet each evening when you take off your shoes. Also check between your toes. If you have trouble bending over to see your feet, try using a mirror to see them, or ask someone else to look at your feet.

Look for problems such as:

- cuts, sores, or red spots
- swelling or fluid-filled blisters
- ingrown toenails, in which the edge of your nail grows into your skin
- corns or calluses, which are spots of rough skin caused by too much rubbing or pressure on the same spot
- plantar warts, which are flesh-colored growths on the bottom of the feet
- athlete's foot
- warm spots

Wash your feet every day

Wash your feet with soap in warm, not hot, water. Test the water to make sure it is not too hot. You can use a thermometer (35° to 40° C is safe) or your elbow to test the warmth of the water. Do not soak your feet because your skin will get too dry.

After washing and drying your feet, put talcum powder or cornstarch between your toes. Skin between the toes tends to stay moist. Powder will keep the skin dry to help prevent an infection.

Smooth corns and calluses gently

Thick patches of skin called corns or calluses can grow on the feet. If you have corns or calluses, talk with your foot doctor about the best way to care for these foot problems. If you have nerve damage, these patches can become ulcers.

Do NOT

- cut corns and calluses
- use corn plasters, which are medicated pads
- use liquid corn and callus removers

Cutting and over-the counter corn removal products can damage your skin and cause an infection.

To keep your skin smooth and soft, rub a thin coat of lotion, cream, or petroleum jelly on the tops and bottoms of your feet. Do not put lotion or cream between your toes because moistness might cause an infection.

Trim your toenails straight across

Trim your toenails, when needed, after you wash and dry your feet. Using toenail clippers, trim your toenails straight across. Do not cut into the corners of your toenail. Gently smooth each nail with an emery board or nonsharp nail file. Trimming this way helps prevent cutting your skin and keeps the nails from growing into your skin.

If you want to get a pedicure at a salon, you should bring your own nail tools to prevent getting an infection. You can ask your health care provider what other steps you can take at the salon to prevent infection.

Wear shoes and socks at all times

Wear shoes and socks at all times. Do not walk barefoot or in just socks – even when you are indoors. You could step on something and hurt your feet. You may not feel any pain and may not know that you hurt yourself.

Check the inside of your shoes before putting them on, to make sure the lining is smooth and free of pebbles or other objects.

Make sure you wear socks, stockings, or nylons with your shoes to keep from getting

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STROKE

A stroke is a serious life-threatening medical condition that occurs when the blood supply to part of the brain is cut off.

Strokes are a medical emergency and urgent treatment is essential. The sooner a person receives treatment for a stroke, the less damage is likely to happen. If you suspect that you or someone else is having a stroke, phone 999 immediately and ask for an ambulance.

Symptoms of a stroke

The main symptoms of stroke can be remembered with the word F.A.S.T.:

Face – the face may have dropped on 1 side, the person may not be able to smile, or their mouth or eye may have dropped.

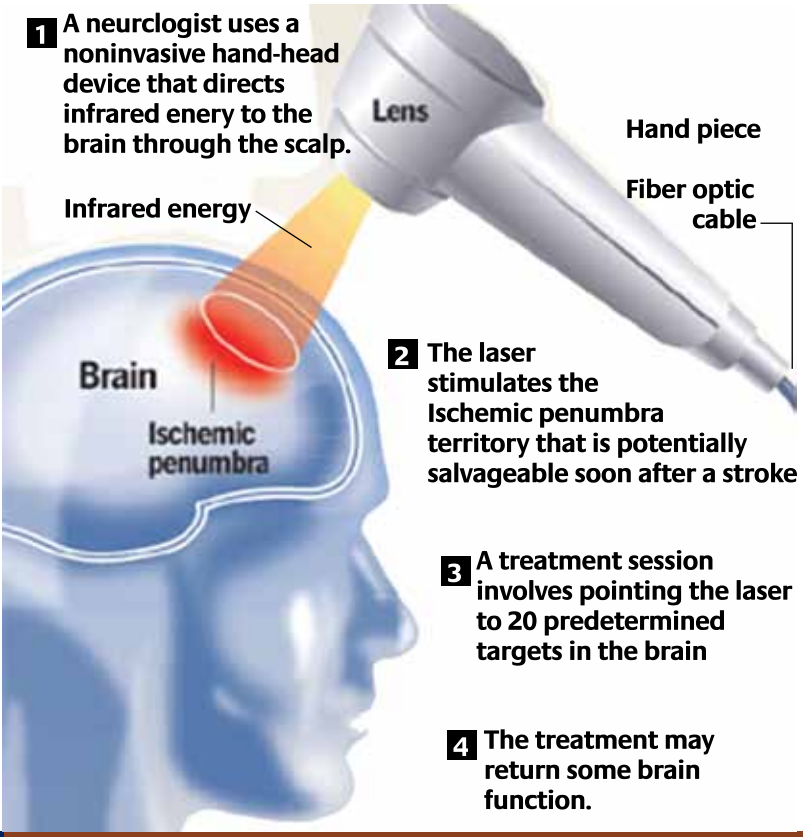
Arms – the person with suspected stroke may not be able to lift both arms and keep them there because of weakness or numbness in 1 arm.

Speech – their speech may be slurred or garbled, or the person may not be able to talk at all despite appearing to be awake; they may also have problems understanding what you're saying to them.

Time – it's time to dial 999 immediately if you see any of these signs or symptoms.

Causes of a stroke

Like all organs, the brain needs the oxygen and nutrients provided by blood to function properly. If the supply of blood is restricted or stopped, brain cells begin to die. This can lead to brain injury, disability and possibly death.



There are 2 main causes of strokes:

Ischaemic – where the blood supply is stopped because of a blood clot, accounting for 85% of all cases

Haemorrhagic – where a weakened blood vessel supplying the brain bursts

There's also a related condition known as a transient ischaemic attack (TIA), where the blood supply to the brain is temporarily interrupted. This causes what's known as a mini-stroke. It can last from just a few minutes or, alternatively, persist up to 24 hours. TIAs should be treated urgently, as they're often a warning sign you're at risk of having a full stroke in the near future. Seek medical advice as soon as possible, even if your symptoms resolve.

Certain conditions increase the risk of having a stroke, including:

- High blood pressure (hypertension)
- High cholesterol
- Atrial fibrillation
- Diabetes

Treating a stroke

Treatment depends on the type of stroke you have, including which part of the brain was affected and what caused it. Strokes are usually treated with medication. This includes medicines to prevent and dissolve blood clots, reduce blood pressure and reduce cholesterol levels.

In some cases, procedures may be required to remove blood clots. Surgery may also be required to treat brain swelling and reduce the risk of further bleeding in cases of haemorrhagic strokes.

Recovering from a stroke

People who survive a stroke are often left with long-term problems caused by injury to their brain. Some people need a long period of rehabilitation before they can recover their former independence, while many never fully recover and need support adjusting to living with the effects of their stroke. Some local organisations offer free reablement services for anyone assessed as needing them. These services help the person recovering from a stroke learn or relearn the skills necessary for independent daily living at home.

Some people will be dependent on some form of care for help with their daily activities. For example, a care worker could come to the person's home to help with washing and dressing, or to provide companionship.

Preventing a stroke

You can significantly reduce your risk of having a stroke through leading a healthy lifestyle by:

- Eating a healthy diet
- Taking regular exercise
- Following the recommended guidelines on alcohol intake (not drinking more than 14 units a week)
- Not smoking

If you have a condition that increases your risk of a stroke, it's important to manage it effectively, such as by lowering high blood pressure or cholesterol levels with medication, for example. If you have had a stroke or TIA in the past, these measures are particularly important because your risk of having another stroke is greatly increased.

Source: www.nhs.uk/conditions/stroke/

A NEW ALZHEIMER'S BLOOD TEST

PROVED 94% ACCURATE IN FINDING BRAIN CHANGES RELATED TO THE DISEASE

A blood test to detect the brain changes of early Alzheimer's disease has moved one step closer to reality. Researchers report that they can measure levels of the Alzheimer's protein amyloid beta in the blood and use such levels to predict whether the protein has accumulated in the brain. The findings represent a key step toward a blood test to diagnose people on track to develop the devastating disease before symptoms arise.

More than a century after Alzheimer's disease was first described, there still isn't a treatment to control the cognitive decline and memory loss that are the hallmarks of the neurodegenerative condition. The drugs that are available can alleviate some of the disease's symptoms, but don't work to address the root cause of the brain disease. And recent studies of promising drug therapies have failed to show much benefit for patients.

One challenge in developing a treatment for Alzheimer's lies in that by the time symptoms occur, brain neurons have already been damaged, perhaps beyond repair. And once neural connections are compromised, they aren't likely to reform or rebuild. Drug treatments that start after people report declines in their thinking skills may simply be too little too late.

That's why there's strong interest in developing a reliable way to identify Alzheimer's patients as early as possible, years or even decades before their memories start to fade. Researchers are investigating a number of promising markers that appear in the blood that could be useful in tracking Alzheimer's. Some of the most encouraging of this work centers on amyloid, the protein that is the hallmark of the disease.

Current methods of testing for amyloid, including taking samples of cerebrospinal fluid and PET imaging of the brain, are expensive, time consuming and, in the case of the spinal fluid samples, invasive. That limits the number of people who get tested; having a blood test would potentially allow more people at risk of developing Alzheimer's to learn of their status.

Researchers at Washington University School of Medicine in St. Louis report in the journal Neurology that they have developed such a blood test that may be up to 94% accurate in finding people with early Alzheimer's brain changes. It's among the most advanced efforts to bring a blood-based test to the clinic.

While everyone makes amyloid, in some, the protein is produced in abnormally copious amounts that clump together and form plaques in the brain, which experts believe start to strangle nerves and sever their critical connections to each other. Having amyloid plaques in the brain is a requirement for an Alzheimer's diagnosis, so the researchers developed a test that could pick up amyloid levels in the blood.

The team, led by senior author Dr. Randall Bateman, professor of neurology, and first author Dr. Suzanne Schindler, associate professor of neurology, documented the ratio of two fragments of amyloid protein, called a-beta 42 and a-beta 40 to each other; the fragments form when

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the parent protein is normally chopped by enzymes. In people who develop Alzheimer's, however, for some reason the resulting fragments start sticking together, and aren't cleared from the brain. As more amyloid aggregates in the brain to form plaques, less of it, particularly a-beta 42, is available to circulate in the blood, so the ratio of the two forms to each other is a proxy for how much is being pulled into clumps in the brain. The lower the ratio, the more plaques are forming in the brain.

To detect the circulating amyloid, researchers used mass spectrometry, a technique that separates out compounds in a sample by vaporizing them and then shooting them with an electron beam to create specific ionic signatures that identify specific molecules or proteins. The technique can record the amount of a-beta 42 and a-beta 40 from a blood sample.

In this study, the team took samples from 158 people over the age of 50, most of whom were cognitively normal at the start of the study, and followed them for about four years to see which participants developed Alzheimer's. To verify the amyloid levels found in the blood test, the volunteers also had a PET scan of their brains and provided samples of cerebrospinal fluid, near the start and then again near the end of the study period.

The blood samples were collected within 18 months of the first amyloid PET scan, and 88% of the time, the blood test matched the scan.

That's not accurate enough to use as a test to identify people at-risk of Alzheimer's, so the team then combined the blood test with other well-known risk factors, such as the presence of a genetic factor called ApoE4, and age. When these additional factors were considered, the combination matched the PET scan 94% of the time.

Previous efforts, including one by a group of Japanese researchers, to develop a blood test have compared the blood results to PET imaging, but for the first time, the Washington University researchers also tracked the blood test and PET scan results over time. They found that people who had negative amyloid PET scans at the start of the study but positive amyloid blood tests had a 15-fold higher risk of having a positive PET scan by the end of the study.

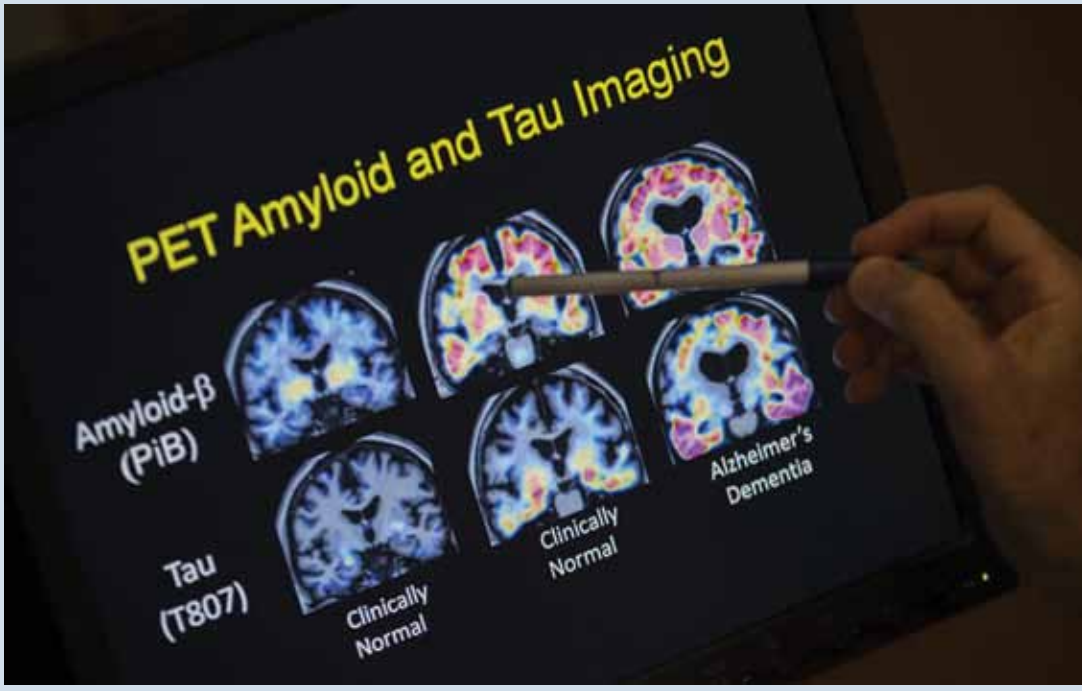
In other words, the blood test may be picking up very early changes in amyloid, that weren't detectable on the brain scans. "Typically, with a one-time reading, we would have called those people false positive on the blood test and said it was a failure of the test," says Schindler. "But the test wasn't a failure, and those weren't false positives but rather the blood test was more sensitive than the amyloid PET in picking up early changes of Alzheimer's."

Schindler says the test is not perfect yet, and needs more refinement and validation in larger groups of patients. But the research team has already worked with other patients in Australia and Europe and found similarly accurate results.

Using the blood test in a doctor's office to identify those at the highest risk of developing brain changes linked to Alzheimer's may still be a few years away. But Maria Carillo, chief science officer at the Alzheimer's Association, says that in the immediate future, the test could be a huge help in ensuring that the right patients—those with higher levels of amyloid—are taking part in trials of new drug treatments for the disease.

Big questions about a blood test for detecting Alzheimer's still remain, including how experts will set the threshold for "normal" and "high" levels of amyloid or other proteins in the blood. Making such a determination will be "complicated," says Schindler, since while the presence of amyloid is necessary for an Alzheimer's diagnosis, not everyone who harbors amyloid plaques necessarily develops the disease. But having a reliable way to track changes in people's amyloid levels would be a start.

Source: www.theguardian.com /society



NUTRITION AND MEAL TIMING FOR DIABETES

Eating a balanced diet is vital for people who have diabetes, so work with your doctor or dietitian to set up a menu plan. If you have type 1 diabetes, the timing of your insulin dosage is determined by activity and diet. When you eat and how much you eat are just as important as what you eat. Usually, doctors recommend three small meals and three to four snacks every day to maintain the proper balance between sugar and insulin in the blood.

A healthy balance of carbohydrates, proteins, and fats in your diet will help keep your blood glucose on target. How much of each will depend on many factors, including your weight and your personal preferences. Watching your carbohydrates -- knowing how much you need and how many you are eating -- is key to blood sugar control. If you are overweight, either a low-carbohydrate, low-fat/low calorie, or Mediterranean diet may help you get your weight to goal. No more than 7% of your diet should come from saturated fat, and you should try to avoid trans fats altogether.

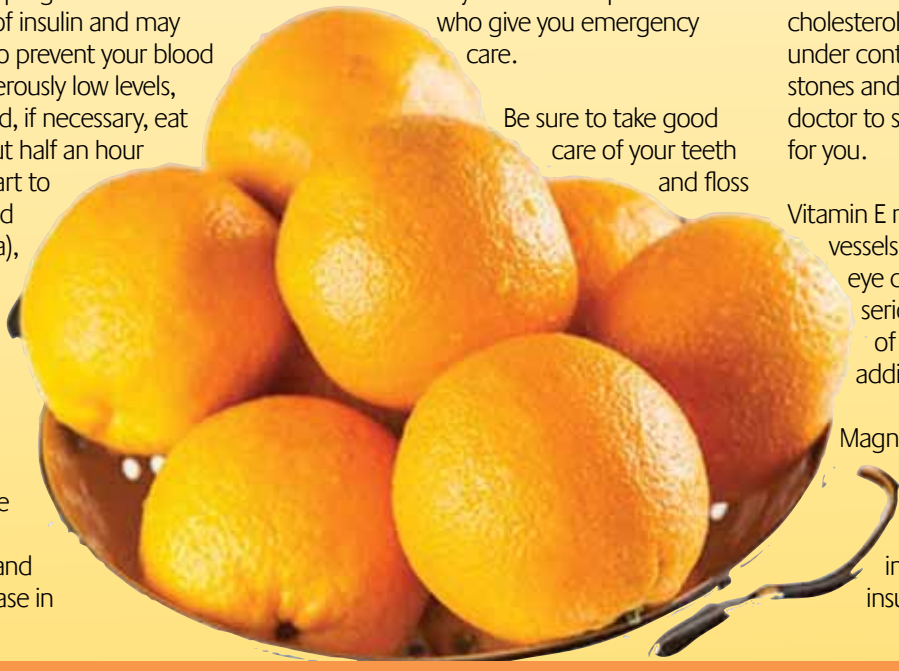
Exercise for Diabetes

Another crucial element in a treatment program for diabetes is exercise. With either type of diabetes, check with your doctor before starting an exercise program. Exercise improves your body's use of insulin and may lower blood sugar levels. To prevent your blood sugar from falling to dangerously low levels, check your blood sugar and, if necessary, eat a carbohydrate snack about half an hour before exercising. If you start to feel symptoms of low blood sugar (called hypoglycemia), stop exercising and have a carbohydrate snack or drink. Wait 15 minutes and check again. Have another snack again if it is still too low.

Exercise helps some people with type 2 diabetes lower their blood glucose levels and may help prevent the disease in those at risk. For people with either type of diabetes, exercise can lower the chance of having a heart attack or stroke and can improve circulation. It may offer stress relief, as well. People with type 2 diabetes who need to lose weight can benefit from moderate exercise. Most people with diabetes are encouraged to get at least 150 minutes each week of moderate-intensity aerobic physical activity, like walking. Strength training is often recommended at least twice a week. Talk to your doctor about what type of exercise is right for you.

Lifestyle Changes for Diabetes

It is a good idea to wear a MedicAlert bracelet or tag that says you have diabetes. This will make others aware of your condition in case you have a severe hypoglycemic attack and are not able to make yourself understood, or if you are in an accident and need emergency medical care. Identifying yourself as having diabetes is important because hypoglycemic attacks can be mistaken for drunkenness, and victims often aren't able to care for themselves. Without prompt treatment, hypoglycemia can result in a coma or seizures. And, because your body is under increased stress when you are ill or injured, your blood sugar levels will need to be checked by the medical personnel who give you emergency care.



Be sure to take good care of your teeth and floss regularly. Diabetes can worsen gum disease.

Alternative medicine should never be used alone to treat diabetes. But there are things you can do -- in addition to medication, proper diet, and exercise -- that may help control your blood sugar and prevent complications of diabetes.

Although chromium does have an effect on insulin and on glucose metabolism, there is no evidence that taking chromium supplements can help in the treatment of diabetes. But chromium is found in many healthy foods, such as green vegetables, nuts, and grains. Studies have suggested that biotin, also called vitamin H, when used with chromium, may improve glucose metabolism in people with diabetes. But no studies have shown that biotin by itself is helpful.

Vitamins B6 and B12 may help treat diabetic nerve pain if you have low levels of these vitamins and that is contributing to the nerve pain. But otherwise, there is no proof that taking these vitamins will help.

Vitamin C may make up for low blood levels of insulin, which normally works to help cells absorb the vitamin. Proper amounts of vitamin C may help the body maintain a good cholesterol level and keep blood sugar levels under control. But too much can cause kidney stones and other problems. Check with your doctor to see if a vitamin C supplement is right for you.

Vitamin E may help limit damage to the blood vessels and help protect against kidney and eye disease. But too much can lead to serious problems, such as a higher risk of stroke. Talk to your doctor before adding this supplement.

Magnesium helps control blood sugar levels. Some people with diabetes have a serious magnesium deficiency. Magnesium supplements, in this case, may improve the action of insulin. Source: www.webmd.com

EATING THE RIGHT FOODS FOR EXERCISE

Nutrition is important for fitness

Eating a well-balanced diet can help you get the calories and nutrients you need to fuel your daily activities, including regular exercise.

When it comes to eating foods to fuel your exercise performance, it's not as simple as choosing vegetables over doughnuts. You need to eat the right types of food at the right times of the day. Learn about the importance of healthy breakfasts, workout snacks, and meal plans.

Get off to a good start

Your first meal of the day is an important one.

Eating breakfast regularly has been linked to a lower risk of obesity, diabetes, and heart disease. Starting your day with a healthy meal can help replenish your blood sugar, which your body needs to power your muscles and brain.

Eating a healthy breakfast is especially important on days when exercise is on your agenda. Skipping breakfast can leave you feeling lightheaded or lethargic while you're working out.

Choosing the right kind of breakfast is crucial. Too many people rely on simple carbohydrates to start their day. A plain white bagel or doughnut won't keep you feeling full for long.

In comparison, a fiber- and protein-rich breakfast may fend off hunger pangs for longer and provide the energy you need to keep your exercise going.

Follow these tips for eating a healthy breakfast:

Instead of eating sugar-laden cereals made from refined grains, try oatmeal, oat bran, or other whole-grain cereals that are high in fiber. Then, throw in some protein, such as milk, yogurt, or chopped nuts.

If you're making pancakes or waffles, replace some of the all-purpose flour with whole-grain options. Then, stir some cottage cheese into the batter.

If you prefer toast, choose whole-grain bread. Then pair it with an egg, peanut butter, or another protein source.

Count on the right carbohydrates

Thanks to low-carb fad diets, carbohydrates have gotten a bad rap. But carbohydrates are your body's main source of energy. According to the Mayo Clinic, about 45 to 65 percent of your total daily calories should come from carbohydrates. This is especially true if you exercise.

Consuming the right kind of carbohydrates is important. Many people rely on the simple carbs found in sweets and processed foods. Instead, you should focus on eating the complex carbs found in whole grains, fruits, vegetables, and beans.

Whole grains have more staying power than refined grains because you digest them more slowly.

They can help you feel full for longer and fuel your body throughout the day. They can also help stabilize your blood sugar levels. Finally, these quality grains have the vitamins and minerals you need to keep your body running at its best.

Pack protein into your snacks and meals

Protein is needed to help keep your body growing, maintained, and repaired. For example, the University of Rochester Medical Center reports that red blood cells die after about 120 days.

Protein is also essential for building and repairing muscles, helping you enjoy the benefits of your workout. It can be a source of energy when carbohydrates are in short supply, but it's not a major source of fuel during exercise.

Adults need to eat about 0.8 grams of protein per day for every kilogram of their body weight, reports Harvard Health Blog. That's equal to about 0.36 grams of protein for every pound of body weight. Exercisers and older adults may need even more.

Protein can come from:

- poultry, such as chicken and turkey
- red meat, such as beef and lamb
- fish, such as salmon and tuna dairy, such as milk and yogurt legumes, such as beans and lentils
- eggs

For the healthiest options, choose lean proteins that are low in saturated and trans fats. Limit the amount of red meat and processed meats that you eat.
Boost your fruit and vegetable intake

Fruits and vegetables are rich sources of natural fiber, vitamins, minerals, and other compounds that your body needs to function properly. They're also low in calories and fat.

Aim to fill half your plate with fruits and veggies at every meal, recommends the United States Department of Agriculture.

Try to "eat the rainbow" by choosing fruits and veggies of different colors. This will help you enjoy the full range of vitamins, minerals, and antioxidants that the produce aisle has to offer.

Every time you go to the grocery store, consider choosing a new fruit or vegetable to try. For snacks, keep dried fruits in your workout bag and raw veggies in the fridge.
Choose healthy fats

Unsaturated fats may help reduce inflammation and provide calories.

While fat is a primary fuel for aerobic exercise, we have plenty stored in the body to fuel even the longest workouts. However, getting healthy unsaturated fats helps to provide essential fatty acids and calories to keep you moving.

Healthy options include:

- nuts
- seeds
- avocados
- olives
- oils, such as olive oil

Fuel up before exercise

When it comes to fueling up before or after a workout, it's important to achieve the right balance of carbs and protein.
Pre-workout snacks that combine carbohydrates with protein can make you feel more energized than junk foods made from simple sugars and lots of fat.

Consider stocking your workout bag and refrigerator with some of these simple snacks:

Bananas

Bananas are full of potassium and magnesium, which are important nutrients to get on a daily basis. Eating a banana can help replenish these minerals while providing natural sugars to fuel your workout. For added protein, enjoy your banana with a serving of peanut butter.

Berries, grapes, and oranges

These fruits are all full of vitamins,

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CELIAC DISEASE:-

Almost all systems and parts of the body may be affected by celiac disease. As a result, it is a bit of a clinical chameleon that wears many disguises. Knowing when to undergo celiac disease testing can be quite difficult largely because thesymptoms often mimic those of other diseases, including irritable bowel syndrome (IBS), Crohn's disease, intestinal infections, lactose intolerance and depression.

Celiac Disease Symptoms

There are more than 300 symptoms of celiac disease, a serious genetic autoimmune disease. Symptoms may vary among different people.

Some of themost common signs and symptoms of celiac disease include:

- Anemia
- Anxiety
- Bloating or gas
- Constipation
- Delayed growth in children
- Depression
- Diarrhea
- Discolored teeth
- Fatigue/tiredness
- Headaches or migraines
- Infertility
- Irritability
- Itchy skin rash (dermatitis herpetiformis)
- Joint pain
- Pale mouth sores
- Poor weight gain
- Thin bones
- Tingling/numbness

Many people with celiac disease do not have any symptoms at all

Classical celiac disease present with signs and symptoms of malabsorption. Diarrhea, steatorrhea, weight loss or growth failure is required. Examples of classical celiac disease are patients with diarrhea and weight loss but also patients with weight loss and anemia.

Those with non-classical celiac disease present without signs and symptoms of malabsorption. In non-classical celiac disease the patient does not suffer from malabsorption (e.g., a patient with constipation and abdominal pain but no malabsorption). Patients with monosymptomatic disease (other than diarrhea or steatorrhea) usually have non-classical celiac disease.

There are also what is known as asymptomatic or silent celiac disease, which is when someone with celiac disease as no outward symptoms. It is unclear why some people have symptoms while others do not. However, people with celiac disease that don't experience symptoms will still have intestinal damage if they ingest gluten, even if they do not feel sick.

Blood Tests

Blood tests are thefirst step in a diagnosis of celiac disease. A doctor will order one or more of a series of blood tests to measure your body's response to gluten.

Currently, recommended tests include:

- Total IgA
- IgA-tTG
- IgA-EMA

If IgA is deficient, it is recommended that the IgG/IgA-DGP also be ordered. At the discretion of the doctor, IgG-AGA can also be ordered.

It is important to remain on a normal, gluten-containing diet prior to testing for celiac disease.Do not change to the gluten-free diet before being tested for celiac disease. If the blood tests and symptoms indicate celiac disease, a physician will likely suggest a biopsy of the lining of the small intestine to confirm the diagnosis. See below for more information on the biopsy.

Keep in mind that going gluten-free before being tested for celiac disease can prevent diagnosis. However, people who have already adopted the gluten-free diet without having been tested for celiac disease can undergo a"gluten challenge" in order to receive accurate test results.

Negative Results

If your blood tests come back negative there is still a small chance you could have celiac disease. If you still suspect celiac disease, or if you are continuing to experience symptoms after a negative blood test, talk to your doctor about performing further tests such as anendoscopy or genetic screenings. Continued testing is encouraged to establish an accurate diagnosis, whether for celiac disease, non-celiac gluten sensitivity, or other diseases with similar symptoms.

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DIABETES AND FOOT PROBLEMS

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blisters and sores. Choose clean, lightly padded socks that fit well. Socks with no seams are best.

Wear shoes that fit well and protect your feet. Here are some tips for finding the right type of shoes:

- Walking shoes and athletic shoes are good for daily wear. They support your feet and allow them to "breathe."
- Do not wear vinyl or plastic shoes, because they do not stretch or "breathe."
- When buying shoes, make sure they feel good and have enough room for your toes.
- Buy shoes at the end of the day, when your feet are the largest, so that you can find the best fit.
- When breaking in new shoes, only wear them for a few hours at first and then check your feet for areas of soreness.

Protect your feet from hot and cold

If you have nerve damage from diabetes, you may burn your feet and not know you did. Take the following steps to protect your feet

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Endoscopy

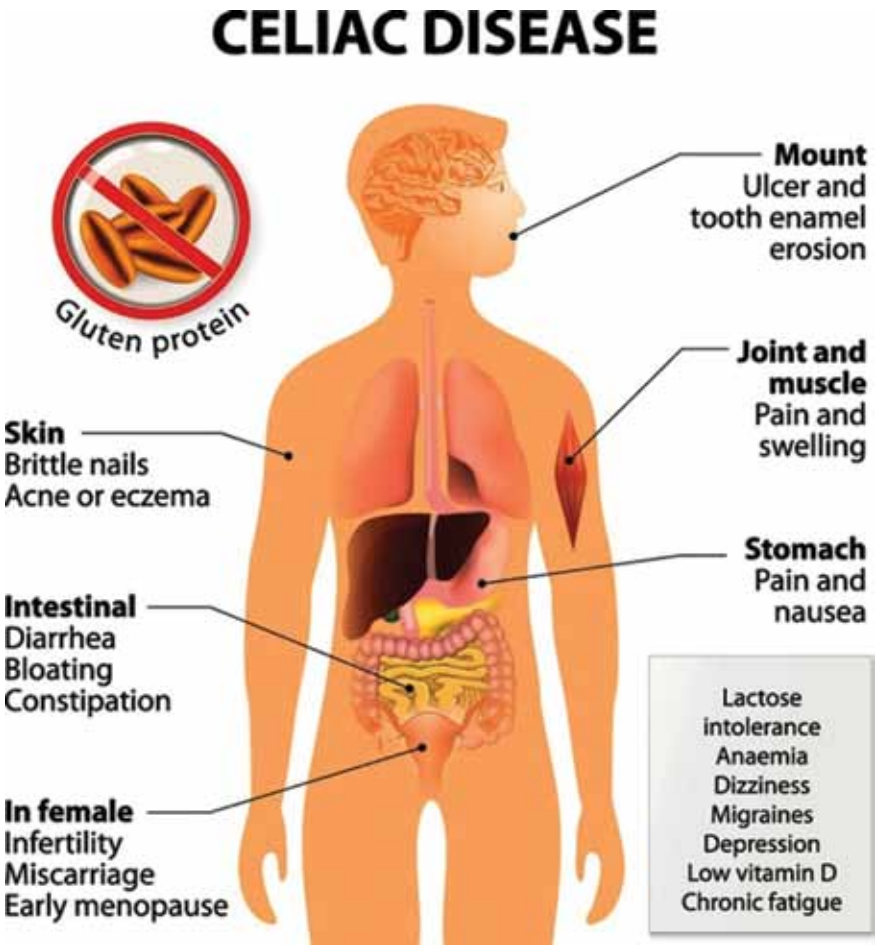
To confirm a celiac disease diagnosis, your doctor may recommend an upper gastrointestinal endoscopy. This procedure will allow your doctor to identify any inflammation or damage in your small intestines, which is a sure sign of celiac disease. Your doctor will take a small biopsy of your intestines during the endoscopy, which will help to confirm your diagnosis. In order for the endoscopy to be accurate, the patient must be on a gluten-containing diet. An endoscopy may sound like a big procedure, but it only takes about 15 minutes and is a low-risk procedure.

Non-Celiac Gluten Sensitivity

If your small intestinal biopsy results indicate that celiac disease is not present, but you and your doctor still suspect gluten is the cause of your symptoms, you may want to explore the possibility of non-celiac gluten sensitivity ('gluten sensitivity'). Currently, there are no accepted methods of testing for gluten sensitivity.

Follow-Up Testing

Celiac disease damages the villi, which are finger-like projections in the small intestine. Villi are responsible for absorbing nutrients from food. Because of this, it is highly likely that people with celiac disease will be deficient in essential vitamins and nutrients when diagnosed. Laboratory tests should be done within three to six months following a diagnosis and annually for the rest of your life.



Genetic Testing

In order to develop celiac disease, you must have either the HLA-DQ2 or HLA-DQ8 genes. Without one of these genes, it is virtually impossible to develop celiac disease.

The celiac disease genes alone are not enough to develop celiac disease. Up to 40 percent of people have these genes, yet only a very small percentage of these people go on to develop it. That's because an environmental trigger is necessary. This trigger can be a stressful event, illness, surgery, pregnancy, etc. Because having the genes does not automatically lead to celiac disease, genetic testing can only rule out celiac disease. It cannot concretely diagnose celiac disease.

Genetic testing is beneficial for relatives of people diagnosed with celiac disease. Since it is a genetic (hereditary) autoimmune disease, family members are also at risk for developing it. It's recommended that relatives are given the blood test to determine if they have celiac disease. If the test is negative, it should be repeated every 2-3 years or sooner if symptoms occur. That's because celiac disease can develop at any time.

Those with negative test results can go on to get the gene test. If the gene test is negative, the relative can stop with regular screening.

Source: www.beyondceliac.org

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from heat:

- Wear shoes at the beach and on hot pavement.
- Put sunscreen on the tops of your feet to prevent sunburn.
- Keep your feet away from heaters and open fires.
- Do not put a hot water bottle or heating pad on your feet.
- Wear socks in bed if your feet get cold.
- In the winter, wear lined, waterproof boots to keep your feet warm and dry.

Keep the blood flowing to your feet

Try the following tips to improve blood flow to your feet:

- Put your feet up when you are sitting.
- Wiggle your toes for a few minutes throughout the day.
- Move your ankles up and down and in and out to help blood flow in your feet and legs.
- Do not wear tight socks or elastic stockings.
- Do not try to hold up loose socks with rubber bands.
- Be more physically active.
- Choose activities that are easy on your feet, such as walking, dancing, yoga or stretching, swimming, or bike riding.
- Stop smoking – Smoking can lower the amount of blood flow to your feet.

References

[1] American Diabetes Association. Microvascular complications and foot care. Diabetes Care. 2016;39(Suppl. 1):S78.

EATING THE RIGHT FOODS FOR EXERCISE

FROM PAGE 11

minerals, and water. They're easy on your intestines, give you a quick boost of energy, and help you stay hydrated. Consider pairing them with a serving of yogurt for protein.

Nuts

Nuts are a great source of heart-healthy fats and also provide protein and essential nutrients. They can give you a source of sustained energy for your workout.

Pair them with fresh or dried fruit for a healthy dose of carbohydrates. However, test these options to see how they settle. High-fat foods can slow digestion, and they may make food sit in your stomach too long if your workout is coming up quickly.

Nut butter

Many grocery stores carry single-serving packets of peanut butter that don't require refrigeration and can be easily stored in a gym bag. For a tasty protein-carbohydrate combo, you can spread peanut butter on:

- an apple
- a banana
- whole-grain crackers
- a slice of whole-grain bread

If you don't like peanut butter, try almond butter, soy butter, or other protein-rich alternatives.

Don't cut too many calories

If you're trying to lose weight or tone your body, you may be tempted to cut a ton of calories from your meals. Cutting calories is a key part of weight loss, but it's possible to go too far.

Weight loss diets should never leave you feeling exhausted or ill. Those are signs that you're not getting the calories you need for good health and fitness.

According to the National Heart, Lung, and Blood InstituteTrusted Source, a diet containing 1,200 to 1,500 daily calories is suitable for most women who are trying to lose weight safely. A diet with 1,500 to 1,800 daily calories is appropriate for most men who are trying to shed excess pounds.

If you're very active or you don't want to lose weight while getting fit, you may need to eat more calories. Talk to your doctor or a dietitian to learn how many calories you need to support your lifestyle and fitness goals.

Balance is key

As you settle into an active lifestyle, you'll probably discover which foods give you the most energy and which have negative effects. The key is learning to listen to your body and balancing what feels right with what's good for you.

Follow these tips:

- Aim to make breakfast a part of your routine.
- Choose complex carbohydrates, lean protein sources, healthy fats, and a wide variety of fruits and veggies
- Stock your fridge and gym bag with healthy workout snacks.

The right balance of carbohydrates, protein, and other nutrients can help fuel your exercise routine.

Source: /www.healthline.com

SAFETY MOMENT!

Is Your Drinking Water Safe?

Take steps to ensure your drinking water is safe

- Avoid handling the rim or mouth of the drinking container.
- Avoid bottled water when you can us glass, ceramic, or metal containers instead for drinking water
- Do not expose water to the open air or heat, which can introduce germs.
- Discard leftover water that has been sitting for two or more days.
- Verify if drinking water has an expiration date.
- Never reuse plastic bottles for drinking water.