

DIABETES

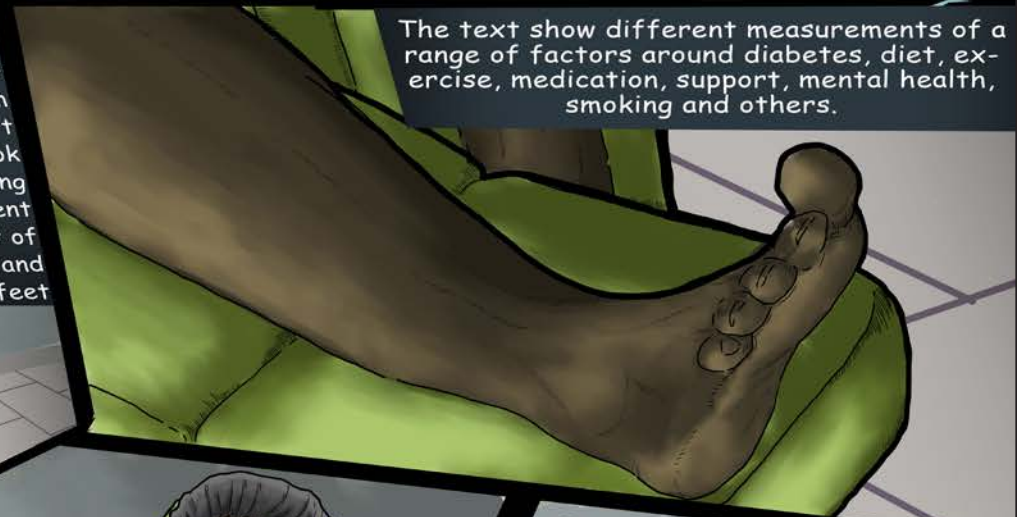
AND
YOUR FEET
BY
THE SUGAR GROUP



While visiting the podiatrist.....



Members of the Sugar group start to get texts tracking their health status from the day they start to write a book covering different aspect of diabetes and their feet

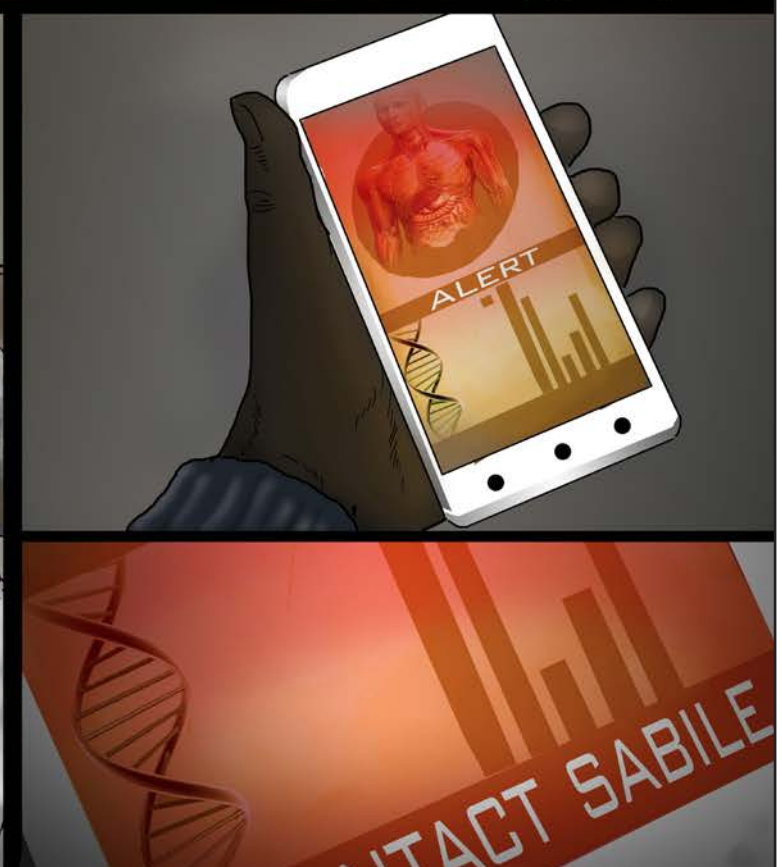
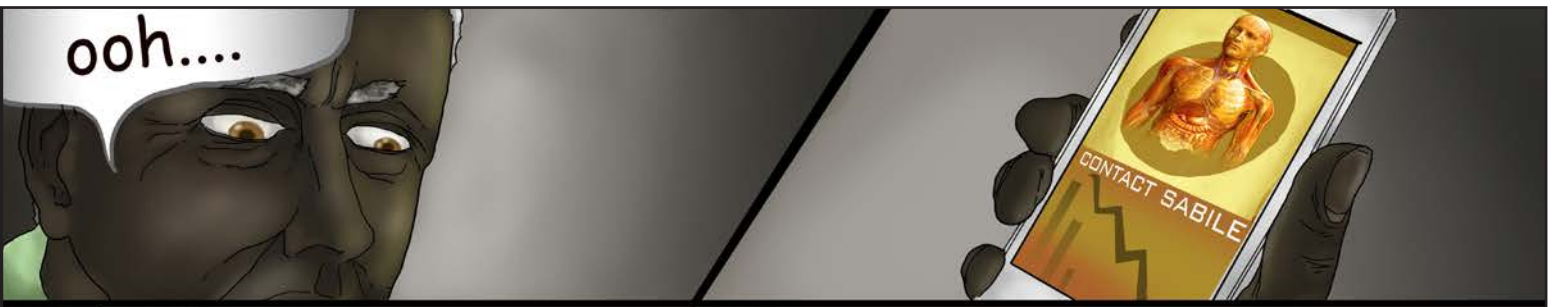


The text show different measurements of a range of factors around diabetes, diet, exercise, medication, support, mental health, smoking and others.



Depending on how they react to the texts, group members show improvement or reduction in aspects of health



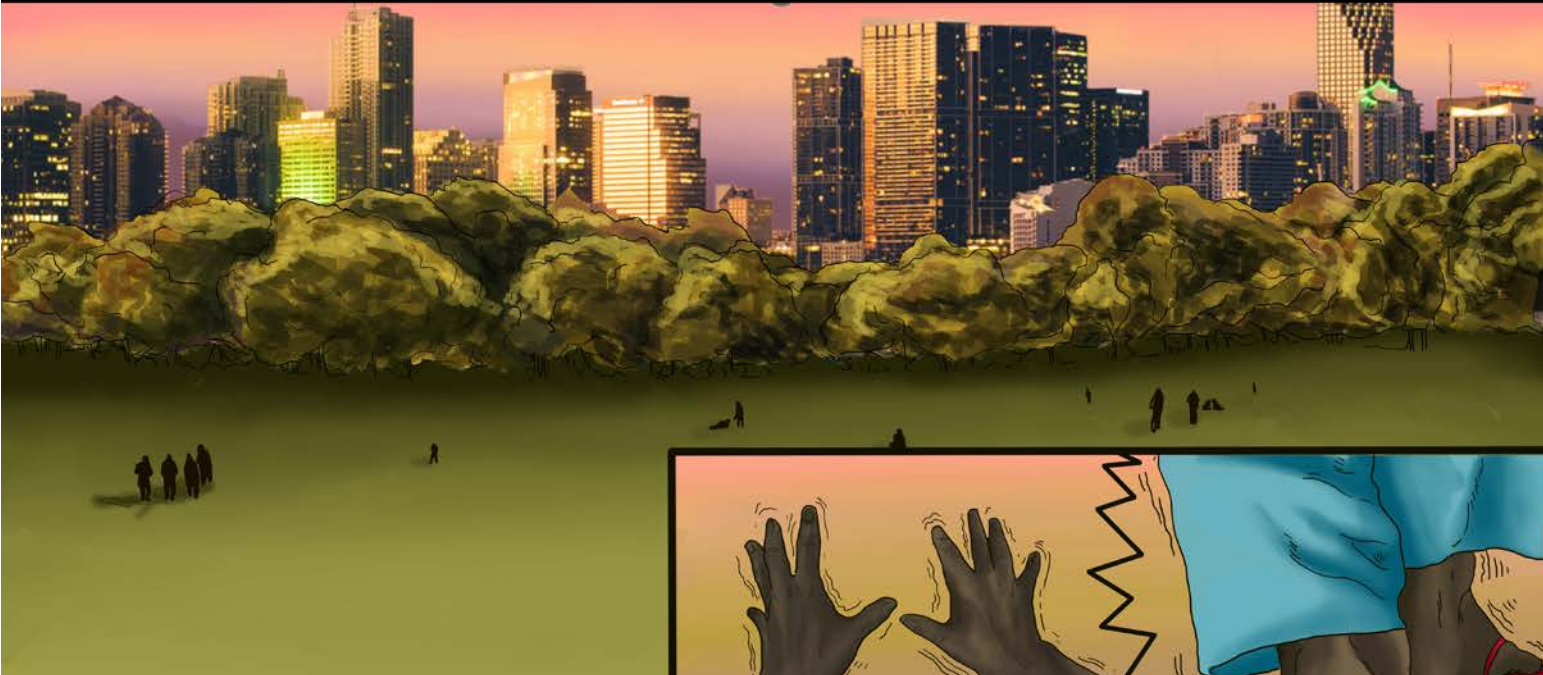


THE MAIN SYMPTOMS

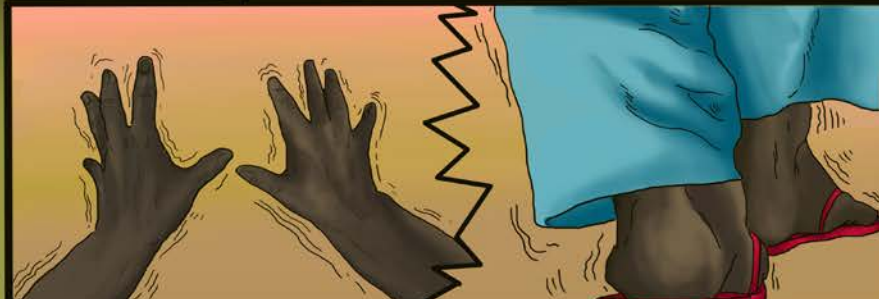


On the way.....

Pain and cramp when walking



Loss of balance and coordination





PERIPHERAL NEUROPATHY, ALSO CALLED NEUROPATHY, IS

PERIPHERAL NEUROPATHY AFFECTS THE NERVES IN YOUR TOES, FEET, LEGS, HANDS, AND ARMS.

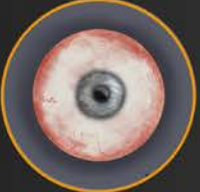


IT MAY ALSO CAUSE MUSCLE WEAKNESS AND LOSS OF REFLEXES, ESPECIALLY AT THE ANKLE, LEADING TO CHANGES IN THE WAY A PERSON WALKS

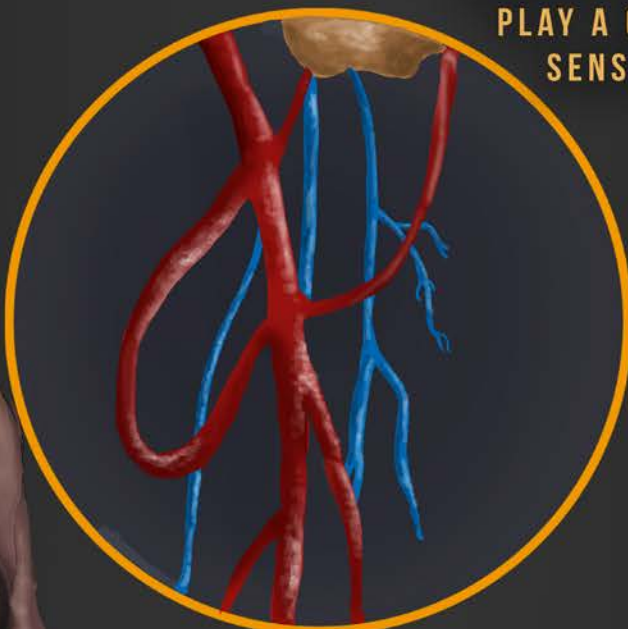
IF AN INFECTION OCCURS AND IS NOT TREATED PROMPTLY, THE INFECTION MAY SPREAD TO THE BONE AND THE FOOT MAY THEN HAVE TO BE AMPUTATED. MANY AMPUTATIONS ARE PREVENTABLE IF MINOR PROBLEMS ARE CAUGHT AND TREATED IN TIME.



DISTAL SYMMETRIC NEUROPATHY OR SENSORIMOTOR NERVE DAMAGE IN THE ARMS AND LEGS



NEUROPATHY REFERS TO ANY CONDITION THAT DAMAGES NERVE CELLS. THESE CELLS PLAY A CRITICAL ROLE IN TOUCH, SENSATION, AND MOVEMENT



BLISTERS AND SORES MAY APPEAR ON NUMB AREAS OF THE FOOT BECAUSE PRESSURE OR INJURY GOES UNNOTICED



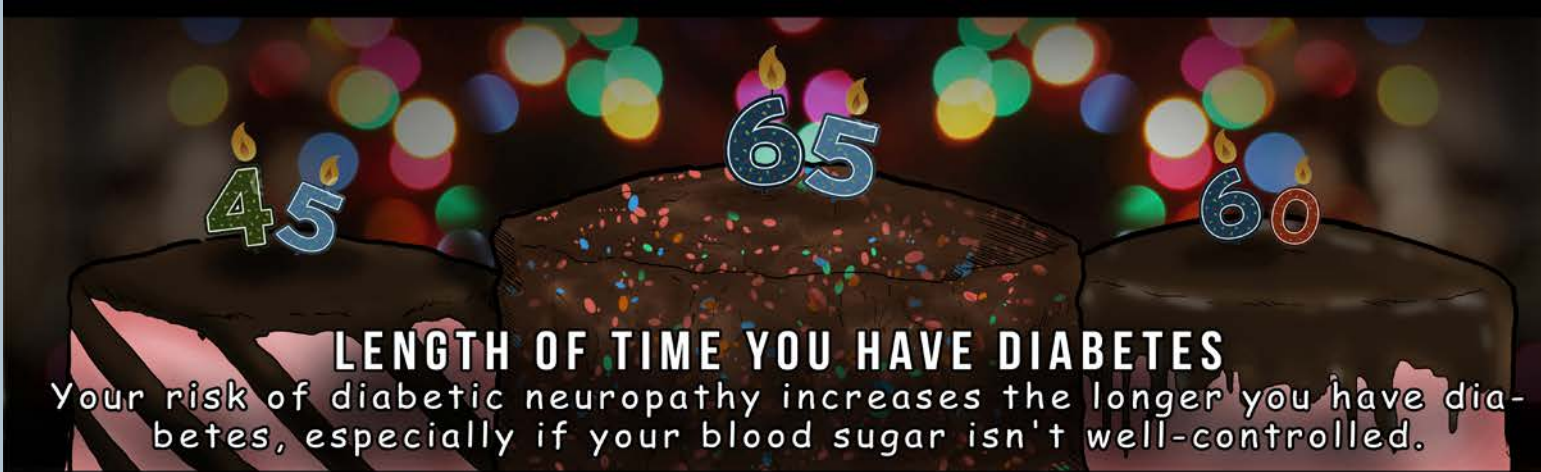
FOOT DEFORMITIES, SUCH AS HAMMERTOES AND THE COLLAPSE OF THE MIDFOOT, MAY OCCUR

RISK FACTORS FOR DIABETES NEUROPATHY



POOR BLOOD SUGAR CONTROL

This is the greatest risk factor for every complication of diabetes, including nerve damage. Keeping blood sugar consistently within your target range is the best way to protect the health of your nerves and blood vessels



LENGTH OF TIME YOU HAVE DIABETES

Your risk of diabetic neuropathy increases the longer you have diabetes, especially if your blood sugar isn't well-controlled.



KIDNEY DISEASE Diabetes can cause damage to the kidneys, which may increase the toxins in the blood and contribute to nerve damage.

BEING OVERWEIGHT

Having a body mass index greater than 24 may increase your risk of developing diabetic neuropathy.



THE COMPLICATIONS OF DIABETES NEUROPATHY

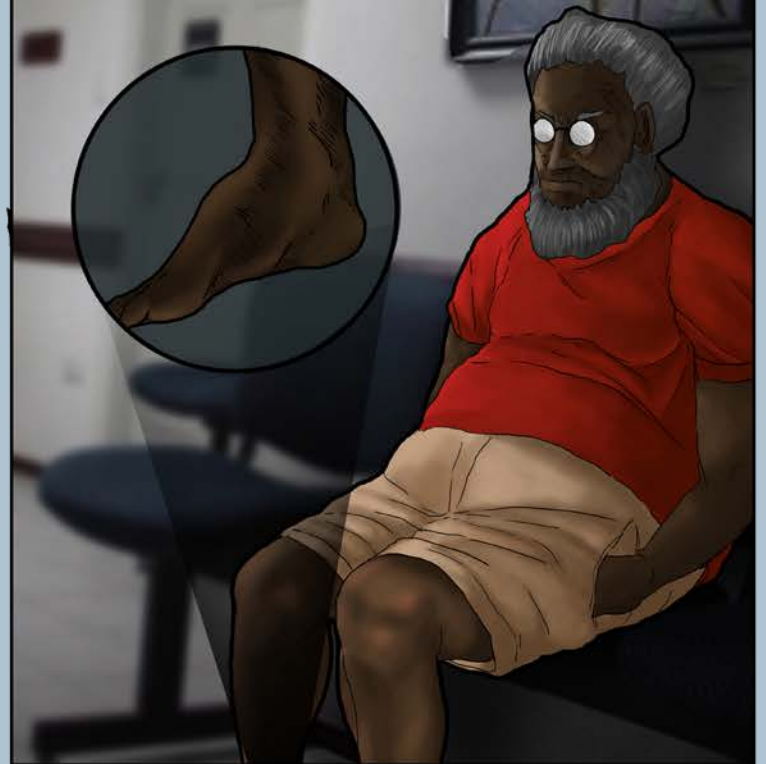
LOSS OF A LIMB

Because nerve damage can cause a lack of feeling in your feet, cuts and sores may go unnoticed and eventually become severely infected or ulcerated — a condition in which the skin and soft tissues break down. The risk of infection is high because diabetes reduces blood flow to your feet. Infections that spread to the bone and cause tissue death (gangrene) may be impossible to treat and require amputation of a toe, foot or even the lower leg.



CHARCOT JOINT

This occurs when a joint, usually in the foot, deteriorates because of nerve damage. Charcot joint is marked by loss of sensation, as well as swelling, instability and sometimes deformity in the joint itself. Early treatment can promote healing and prevent further damage.



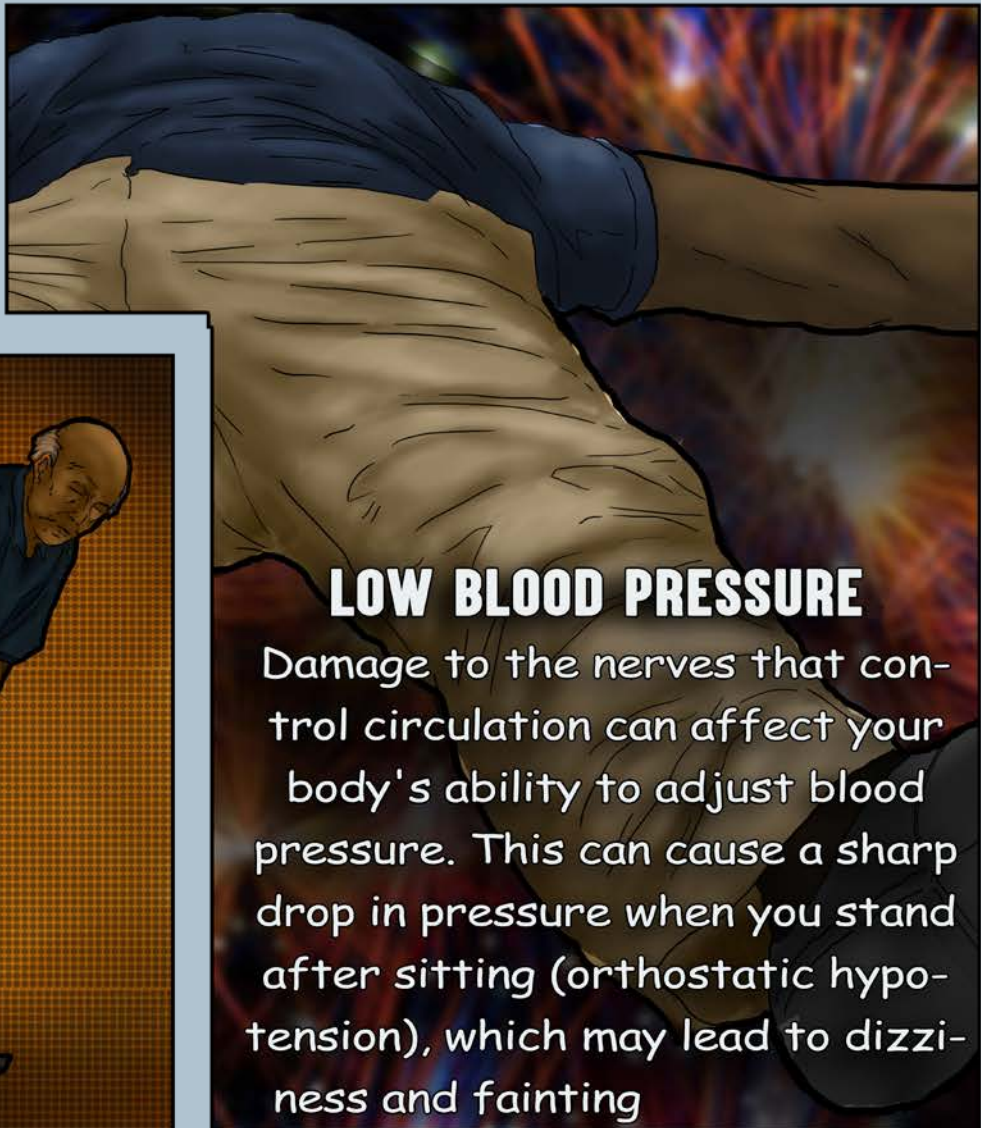
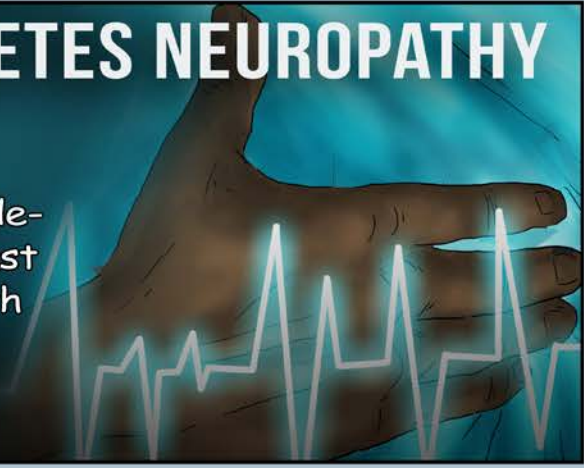
URINARY TRACT INFECTIONS AND URINARY INCONTINENCE Damage to the nerves that control your bladder can prevent it from emptying completely. This allows bacteria to multiply in your bladder and kidneys, leading to urinary tract infections. Nerve damage can also affect your ability to feel when you need to urinate or to control the muscles that release urine.



THE COMPLICATIONS OF DIABETES NEUROPATHY

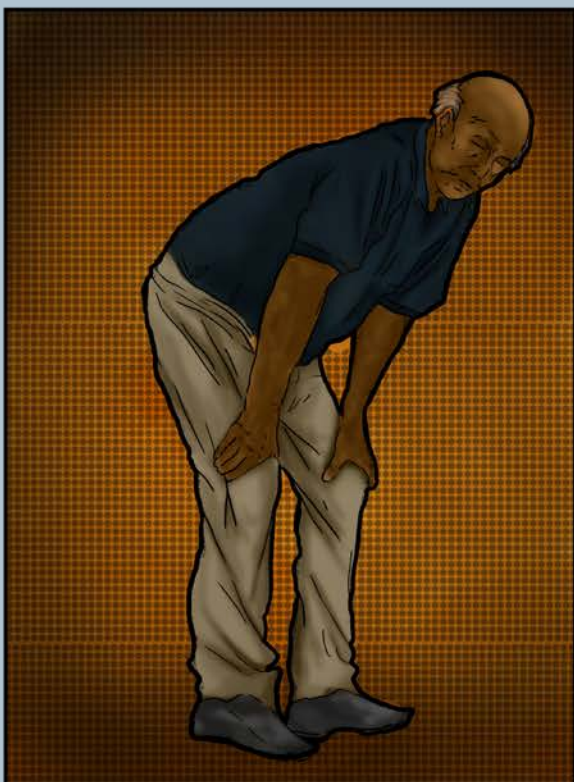
HYPOGLYCEMIA UNAWARENESS

Normally, when your blood sugar drops too low you develop symptoms such as shakiness, sweating and a fast heartbeat. Autonomic neuropathy can interfere with your ability to notice these symptoms.



LOW BLOOD PRESSURE

Damage to the nerves that control circulation can affect your body's ability to adjust blood pressure. This can cause a sharp drop in pressure when you stand after sitting (orthostatic hypotension), which may lead to dizziness and fainting



THE COMPLICATIONS OF DIABETES NEUROPATHY

DIGESTIVE PROBLEMS

Nerve damage in the digestive system can cause constipation or diarrhea — or alternating bouts of constipation and diarrhea — as well as nausea, vomiting, bloating and loss of appetite. It can also cause gastroparesis, a condition in which the stomach empties too slowly or not at all. This can interfere with digestion and cause nausea, vomiting and bloating, and severely affect blood sugar levels and nutrition.



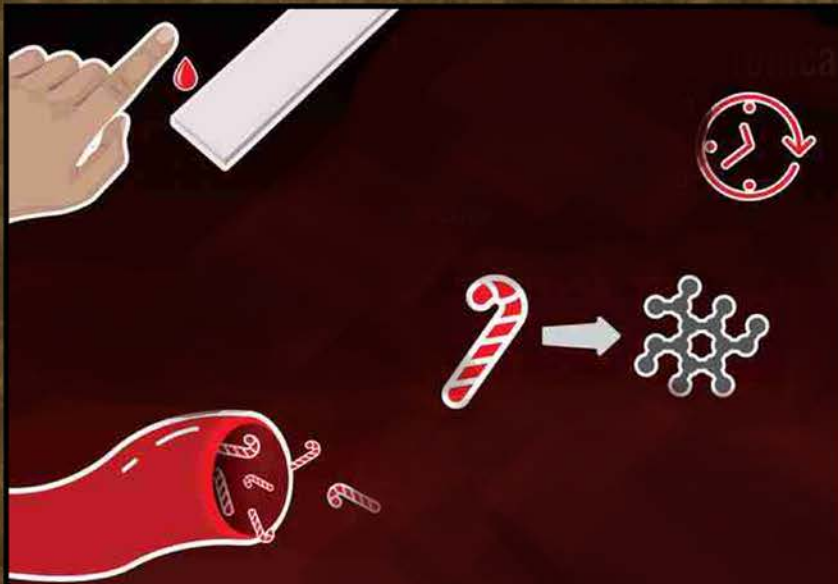
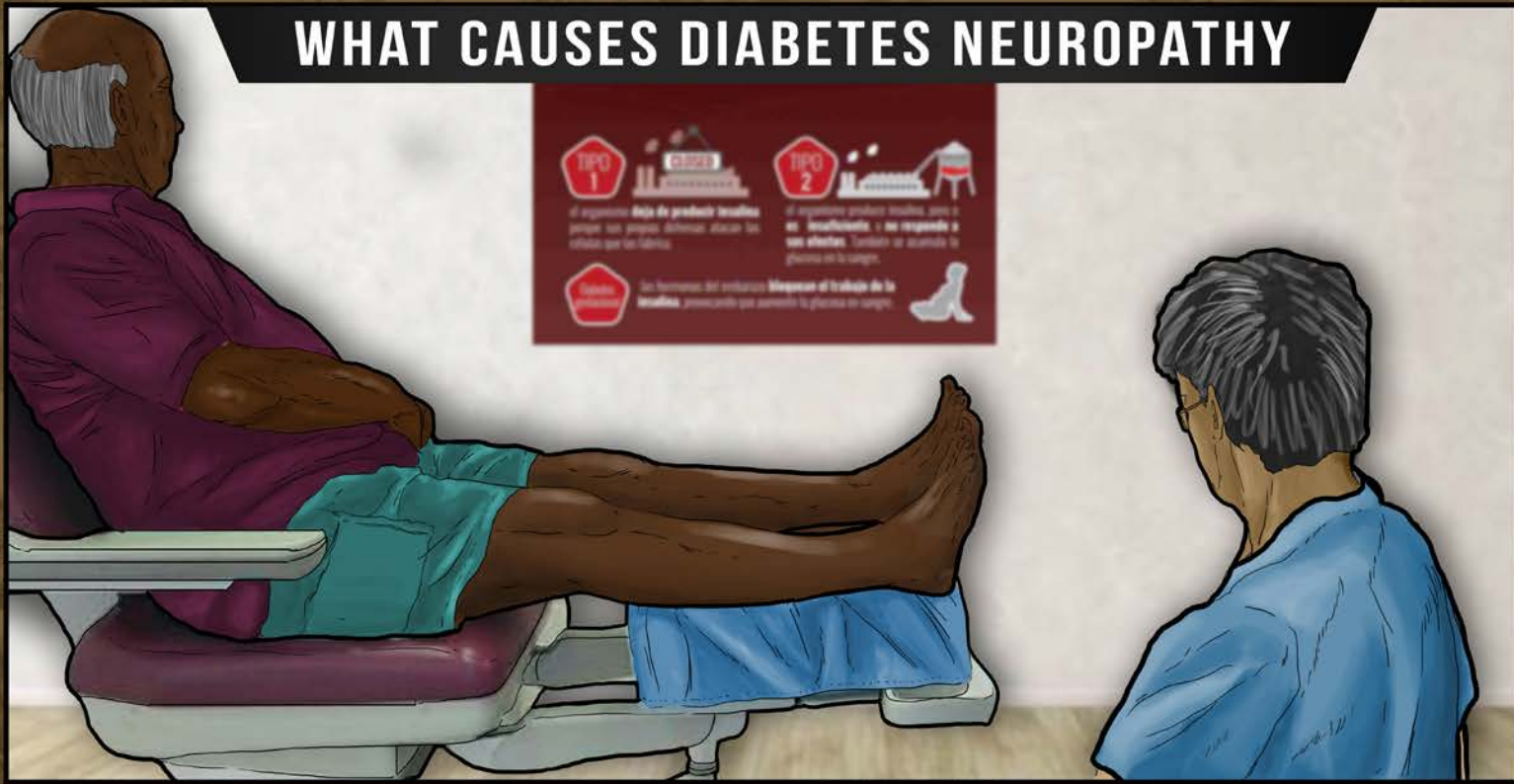
INCREASED OR DECREASED SWEATING When the sweat glands don't function normally, your body isn't able to regulate its temperature properly. A reduced or complete lack of perspiration (anhidrosis) can be life-threatening. Autonomic neuropathy may also cause excessive sweating, particularly at night or while eating.



SEXUAL DYSFUNCTION

Autonomic neuropathy often damages the nerves that affect the sex organs, leading to erectile dysfunction in men and problems with lubrication and arousal in women.

WHAT CAUSES DIABETES NEUROPATHY



Prolonged exposure to high blood sugar can damage delicate nerve fibers, causing diabetic neuropathy. High blood sugar interferes with the ability of the nerves to transmit signals. It also weakens the walls of the small blood vessels (capillaries) that supply the nerves with oxygen and nutrients.

INFLAMMATION IN THE NERVES caused by an autoimmune response. This occurs when your immune system mistakenly attacks part of your body as if it were a foreign organism.

GENETIC FACTORS - unrelated to diabetes that make some people more susceptible to nerve damage.

SMOKING AND ALCOHOL abuse - which damage both nerves and blood vessels and significantly increase the risk of infections.



RESEARCH ON DIABETES NEUROPATHY

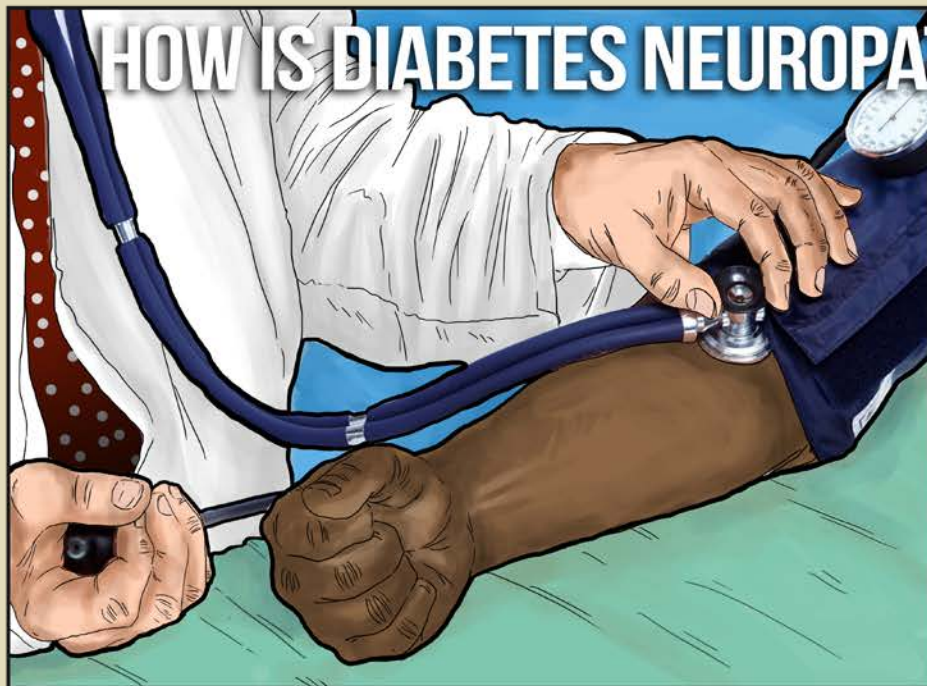
Diabetes causes several complications leading to muscle weakness, limited joint range of motion and damage to peripheral nerves (neuropathy). Persons affected tend to walk more slowly with greater variability of gait (manner of walking) and are at increased risk of falling.



Resistance training can have a positive effect, with the largest effect found on the musculoskeletal system. Benefits were also reported in aspects of the diabetic disease process and to a lesser extent on changes in body composition



HOW IS DIABETES NEUROPATHY DIAGNOSED?



Doctors diagnose neuropathy on the basis of symptoms and a physical exam. During the exam, the doctor may check blood pressure, heart rate, muscle strength, reflexes, and sensitivity to position changes, vibration, temperature, or light touch.

The doctor may assess protective sensation or feeling in the feet by touching them with a nylon monofilament—similar to a bristle on a hairbrush—attached to a wand or by pricking them with a pin. People who cannot sense pressure from a pinprick or monofilament have lost protective sensation and are at risk for developing foot sores that may not heal properly.

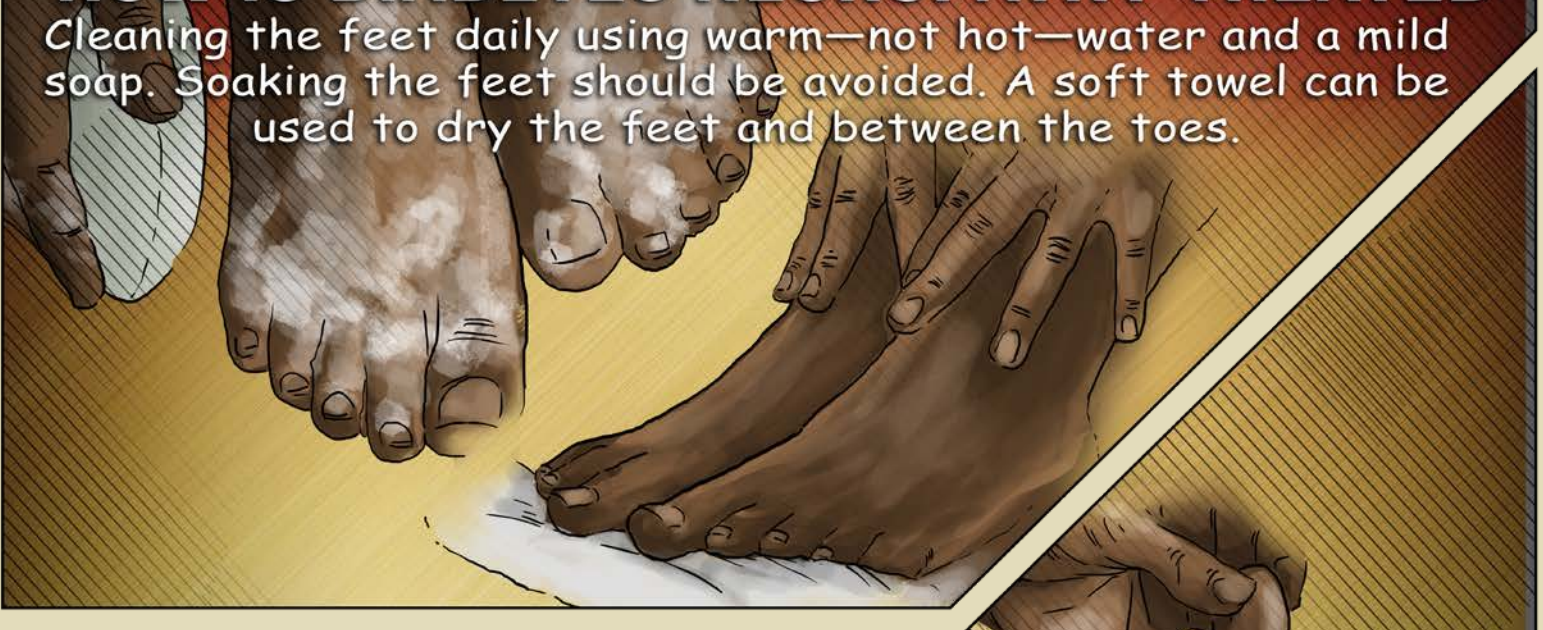


The doctor may also check temperature perception or use a tuning fork, which is more sensitive than touch pressure, to assess vibration perception.

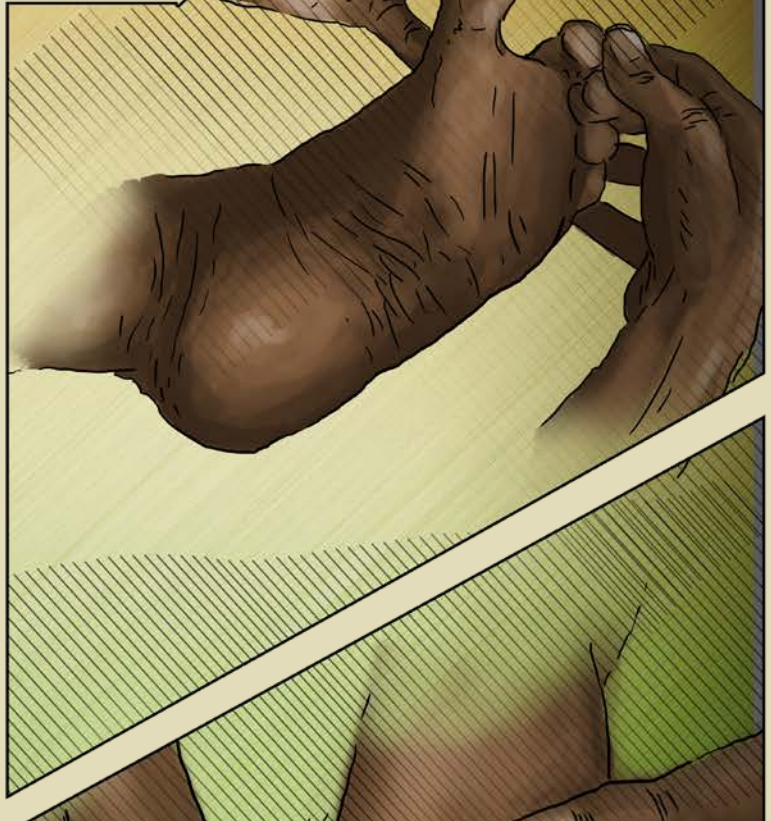
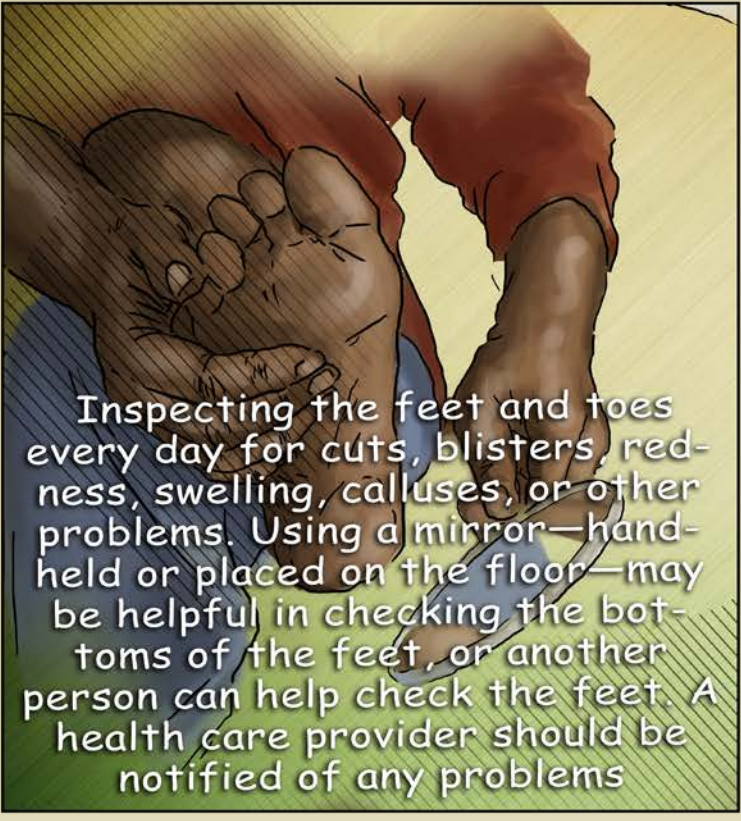


HOW IS DIABETES NEUROPATHY TREATED

Cleaning the feet daily using warm—not hot—water and a mild soap. Soaking the feet should be avoided. A soft towel can be used to dry the feet and between the toes.



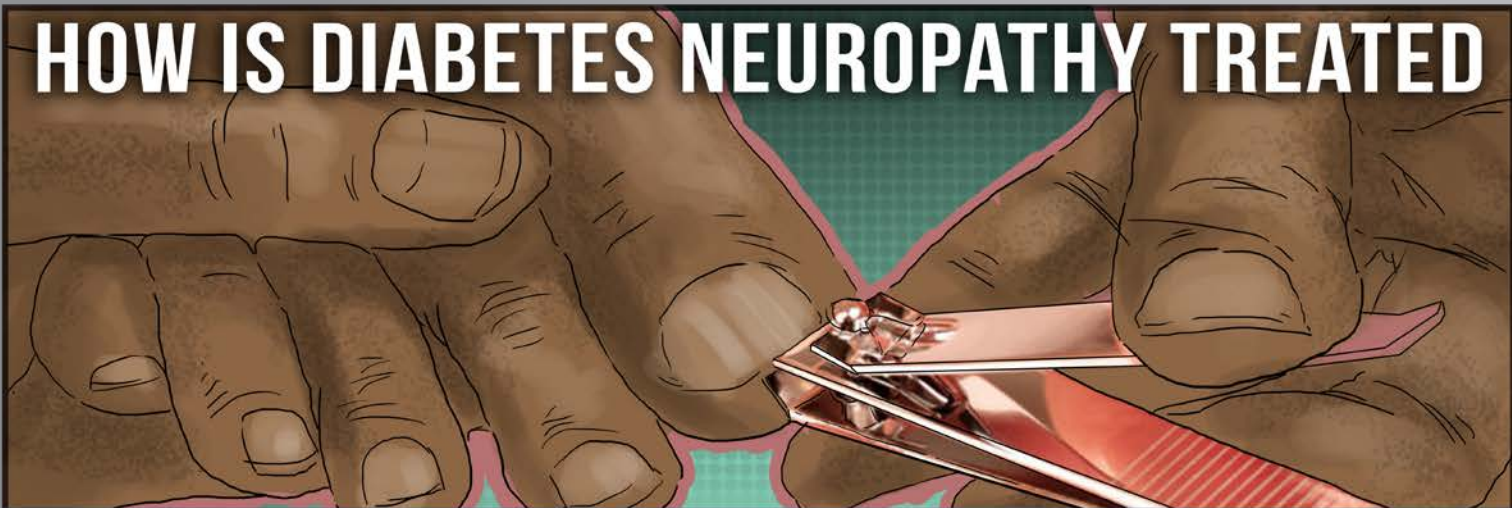
Inspecting the feet and toes every day for cuts, blisters, redness, swelling, calluses, or other problems. Using a mirror—hand-held or placed on the floor—may be helpful in checking the bottoms of the feet, or another person can help check the feet. A health care provider should be notified of any problems



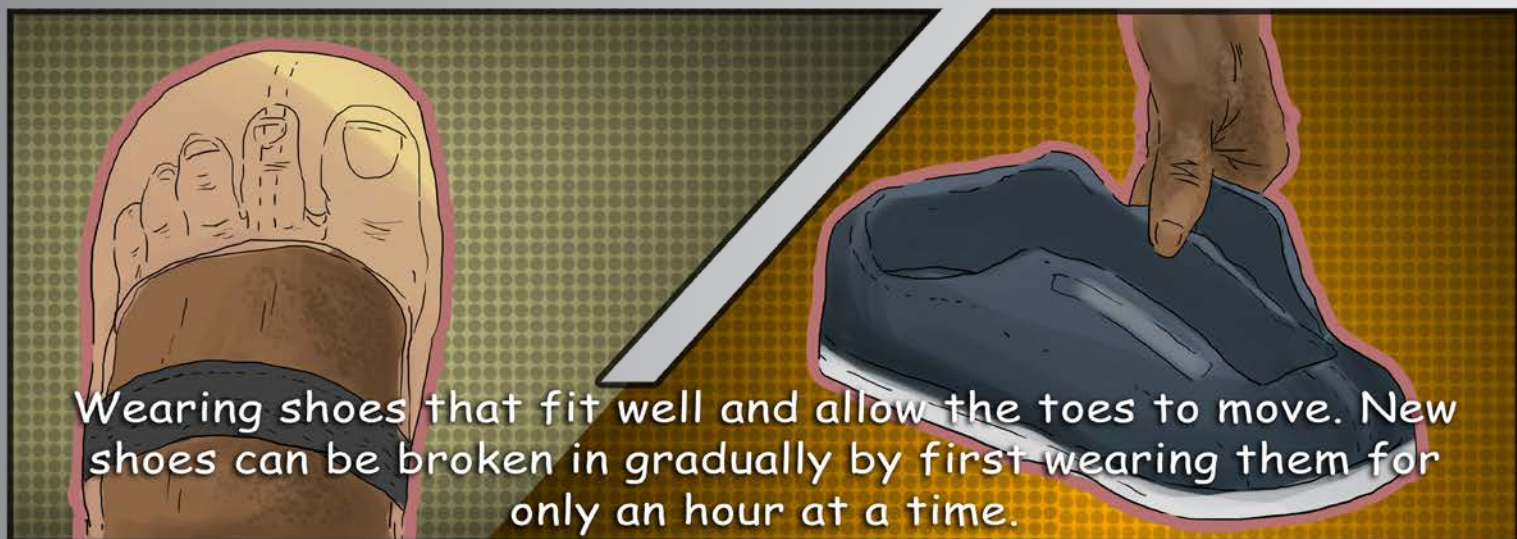
Use lotion to moisturize the feet. Getting lotion between the toes should be avoided. Contact your Doctor and Podiatrist about caring for your feet especially corns and calluses.



HOW IS DIABETES NEUROPATHY TREATED



Contact your Podiatrist about cutting toe nails



Wearing shoes that fit well and allow the toes to move. New shoes can be broken in gradually by first wearing them for only an hour at a time.

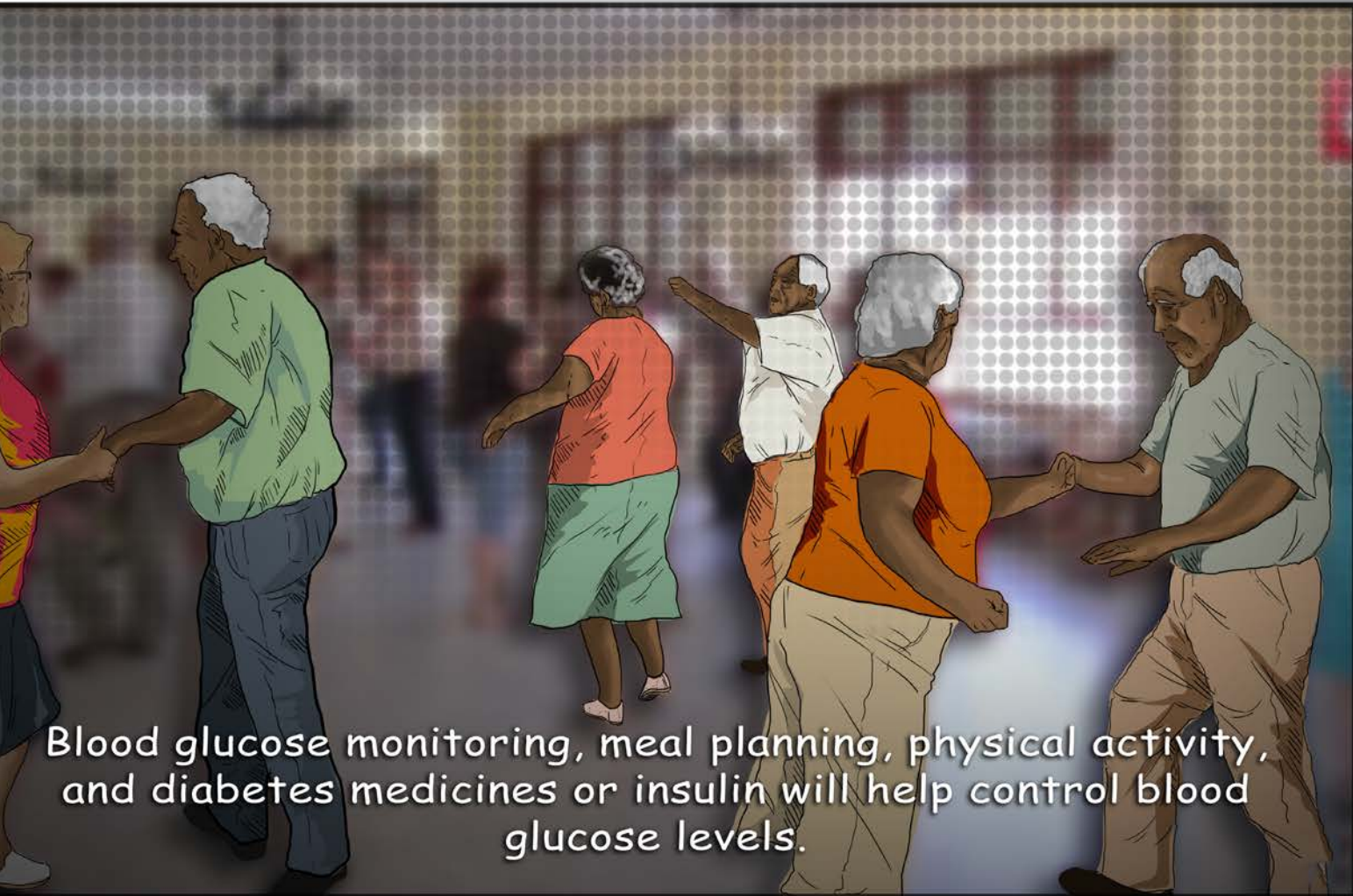


Look shoes over carefully before putting them on and feel the insides to make sure the shoes are free of tears, sharp edges, or objects that might injure the feet.

HOW IS DIABETES NEUROPATHY TREATED



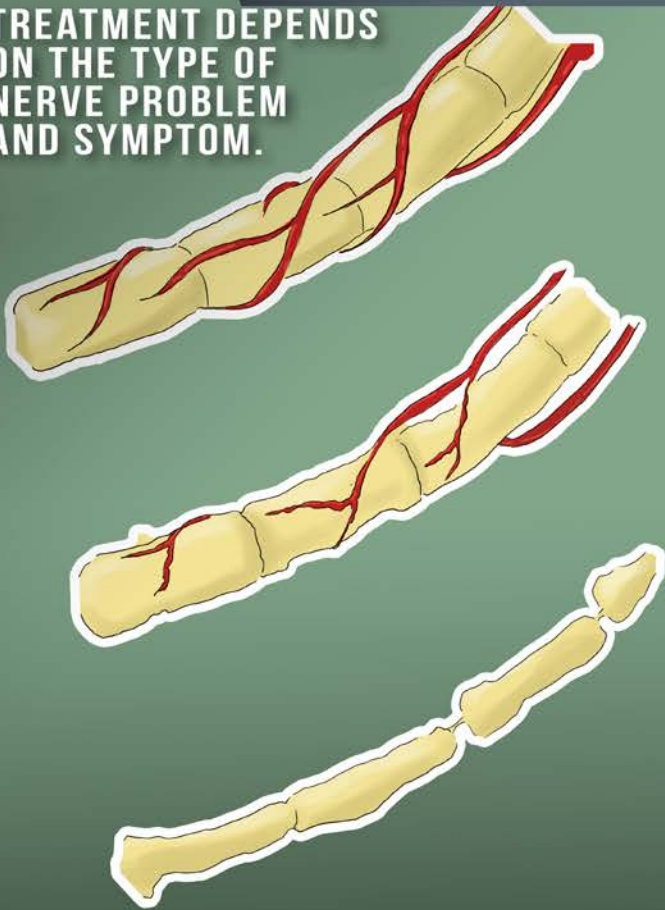
The first treatment step is to bring blood glucose levels within the normal range to help prevent further nerve



Blood glucose monitoring, meal planning, physical activity, and diabetes medicines or insulin will help control blood glucose levels.

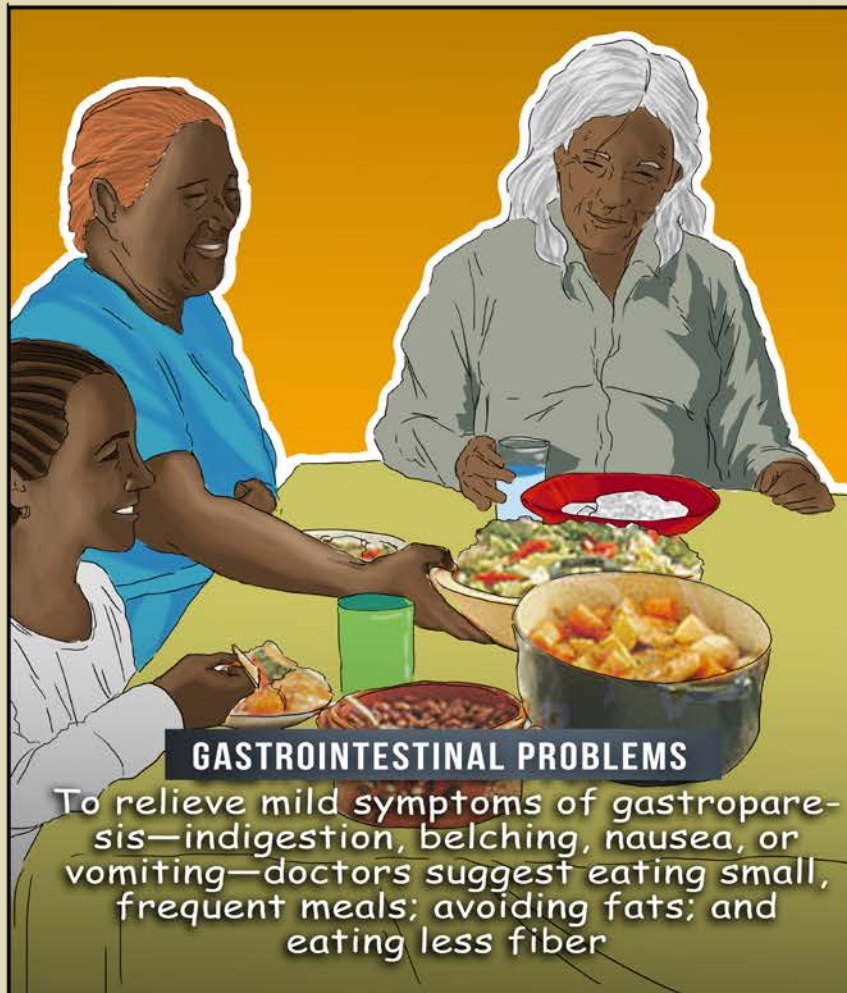
HOW IS DIABETES NEUROPATHY TREATED

TREATMENT DEPENDS ON THE TYPE OF NERVE PROBLEM AND SYMPTOM.



PAIN RELIEF

Doctors usually treat painful diabetic neuropathy with oral medications, although other types of treatments may help some people

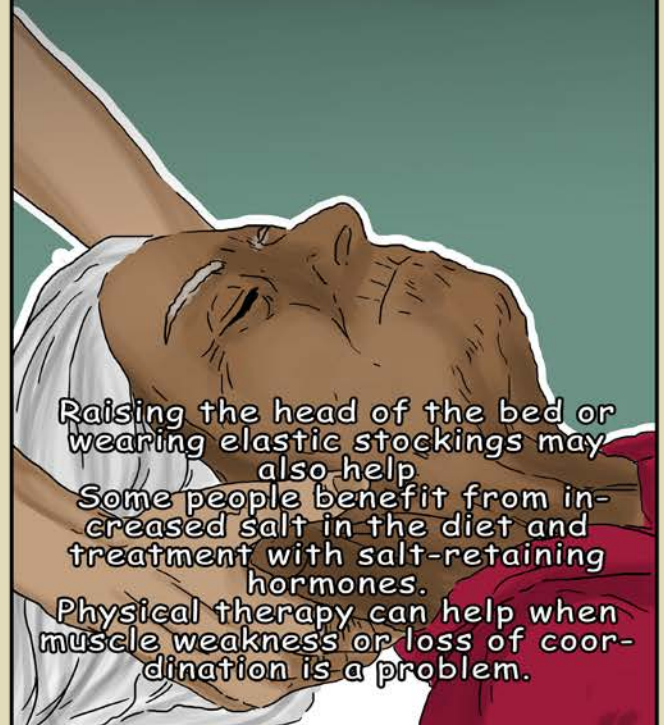


GASTROINTESTINAL PROBLEMS

To relieve mild symptoms of gastroparesis—indigestion, belching, nausea, or vomiting—doctors suggest eating small, frequent meals; avoiding fats; and eating less fiber

DIZZINESS AND WEAKNESS

Sitting or standing slowly may help prevent the light-headedness, dizziness, or fainting associated with blood pressure and circulation problems.



Raising the head of the bed or wearing elastic stockings may also help

Some people benefit from increased salt in the diet and treatment with salt-retaining hormones.

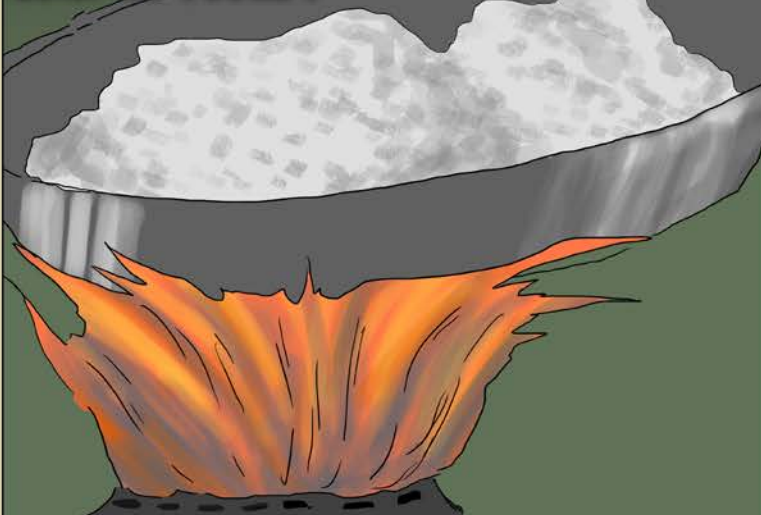
Physical therapy can help when muscle weakness or loss of coordination is a problem.

DIABETES, FOOD AND PROTEIN GLYCATION

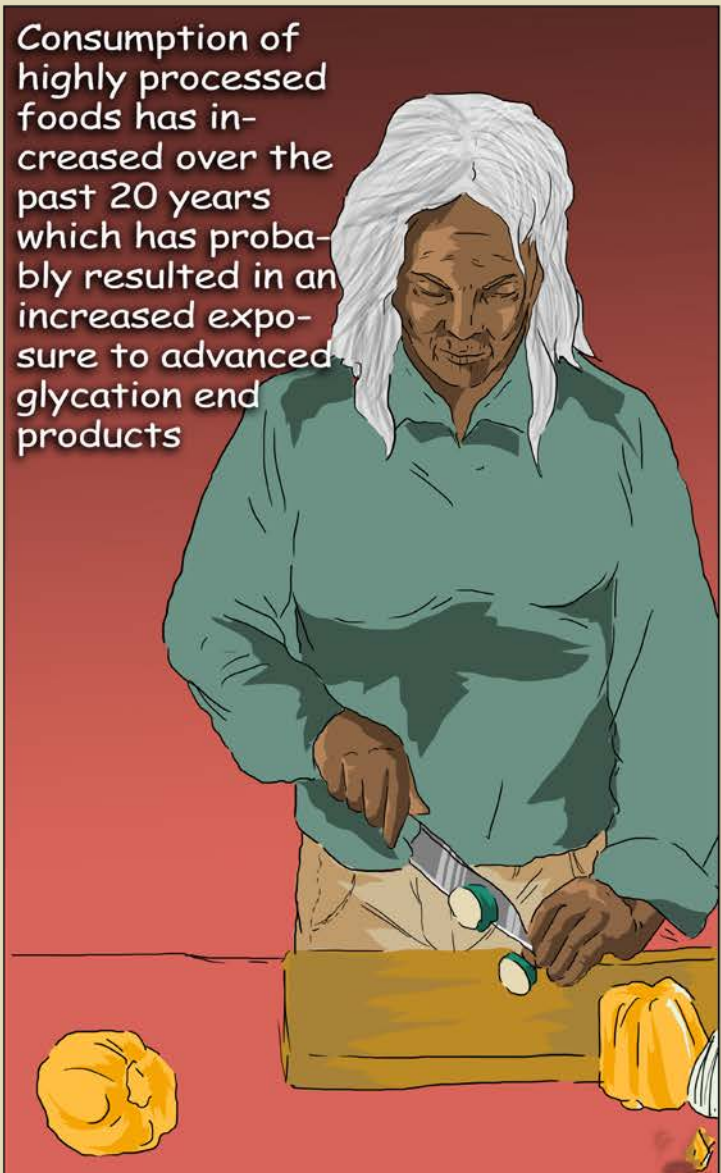


Protein and lipid glycation is partly responsible for the extensive tissue and organ damage that is characteristic of advanced diabetes. Protein glycation, the formation of a chemical bond between a sugar, such as glucose and a protein contributes to the browning that occurs when foods are heated. Glycation also occurs in the human body. Elevated blood glucose levels in people with diabetes increase the rate and amount of glycation in the body

High-heat cooking of food induces the formation of advanced glycation end products (AGEs). AGEs are formed from the Maillard reaction, a process that is important for the formation of aroma, flavor, and the color of foods .



Consumption of highly processed foods has increased over the past 20 years which has probably resulted in an increased exposure to advanced glycation end products



AWARDS FOR ALL PROJECT



THE SUGAR GROUP IS A SUPPORT GROUP FOR OLDER AFRICAN-CARIBBEAN PEOPLE WITH TYPE 2 (T2) DIABETES. WE WISH TO THANK ALL THOSE WHO HELPED US DURING OUR JOURNEY TO LEARN ABOUT HOW DIABETES AFFECTS THE FEET.



- AWARDS FOR ALL FOR FUNDING THIS PROJECT
- SALFORD PODIATRY CLINIC
- DR NEIL REEVES, DR NESSAR AHMED AND DR NATALIE GARDINER
- ALL STAFF AT KATH LOCKE CENTRE WORKING WITH THE SUGAR GROUP



GARLIC



BITTER GOURD



SABILE AND FAMILY ON HOLIDAY

Diabetes is an illness many people live with.

Knowing more about it means that you can continue with many activities

SABILE SELFIE

This novel has been about our friend Sabile. Sabile lives with diabetes and still enjoys life to the full because she has the confidence and freedom of knowing how diabetes affects her feet and wider health.

Our Thanks

Natalie Gardiner – Division of Diabetes, Endocrinology and Gastroenterology at University of Manchester

Dr Neil Reeves - Professor of Musculoskeletal Biomechanics at Manchester Metropolitan University

Dr Nessar Ahmed - Clinical Biochemist at Manchester Metropolitan University

Salford Podiatry Clinic: University of Salford – Podiatry Assessment and Management clinic can be attended by anyone in need of essential foot care – you may have painful pressure lesions or just be unable to care for your feet. **For appointments call 0161 295 2205 between 9.00am - 4.30pm - £10 per session**

Members of Kath Locke Centre, Awards for all, Bassajamba CIC and all Sugar Group members, past and present.

References

<http://www.nhs.uk/>

<https://www.diabetes.org.uk/>

<https://www.niddk.nih.gov/>

<http://www.mayoclinic.org/>

Reeves, N., Najafi, B., Crews, R. and Bowling, F. (2013). Aging and Type 2 Diabetes: Consequences for Motor Control, Musculoskeletal Function, and Whole-Body Movement. *Journal of Aging Research*, [online] 2013, pp.1-2. Available at: <https://www.hindawi.com/journals/jar/2013/508756/>

Mark, A., Poulsen, M., Andersen, S., Andersen, J., Bak, M., Ritz, C., Holst, J., Nielsen, J., de Courten, B., Dragsted, L. and Bulge, S. (2013). Consumption of a Diet Low in Advanced Glycation End Products for 4 Weeks Improves Insulin Sensitivity in Overweight Women. *Diabetes Care*, [online] 37(1), pp.88-95. Available at: <http://care.diabetesjournals.org/content/diacare/37/1/88.full.pdf>.

Kath Locke Centre

The Kath Locke Centre combines the best in conventional NHS healthcare alongside complementary therapies to offer a complete approach to health and well-being. During the week, we offer a wide range of fun, friendly activities, courses and classes to help:

Get more active, Wind down, relax and stay well, Get group support:

Cuban dance, Qigong, Soca, Acupuncture, Homeopathy, Narcotics Anonymous, Sugar Group (diabetic support), Social Phobia

Come and see us at: 123 Moss Lane East, Manchester, M15 5DD **Phone:** 0161 455 0211

Bassajamba CIC

Bassajamba is a social enterprise specialising in the science, tech and health needs of disadvantaged, marginalised, hard to reach and underrepresented communities. We work closely with academia and other partners to build sustainable resources including creative media, new technologies, products and services towards the purpose of reducing social inequalities affecting health, employment, education amongst others.

Find out more at: bassajamba.co.uk **Email:** info@bassajamba.co.uk **Phone:** 0161 738 1512

The Sugar Group is a support group for older African-Caribbean people with Type 2 (T2) diabetes. The Sugar Group has been running since 1999 and is based at The Kath Locke Centre in Moss Side, Manchester. It offers NHS and complementary health services, to improve the health and wellbeing of the local community.

This booklet was created with the Group to help our community and all those who wish to learn more about one of the many complications of diabetes, diabetes neuropathy, and its effect on your feet. It is written in the form of a short graphic story which we hope you enjoy.



GASSAJAMBA