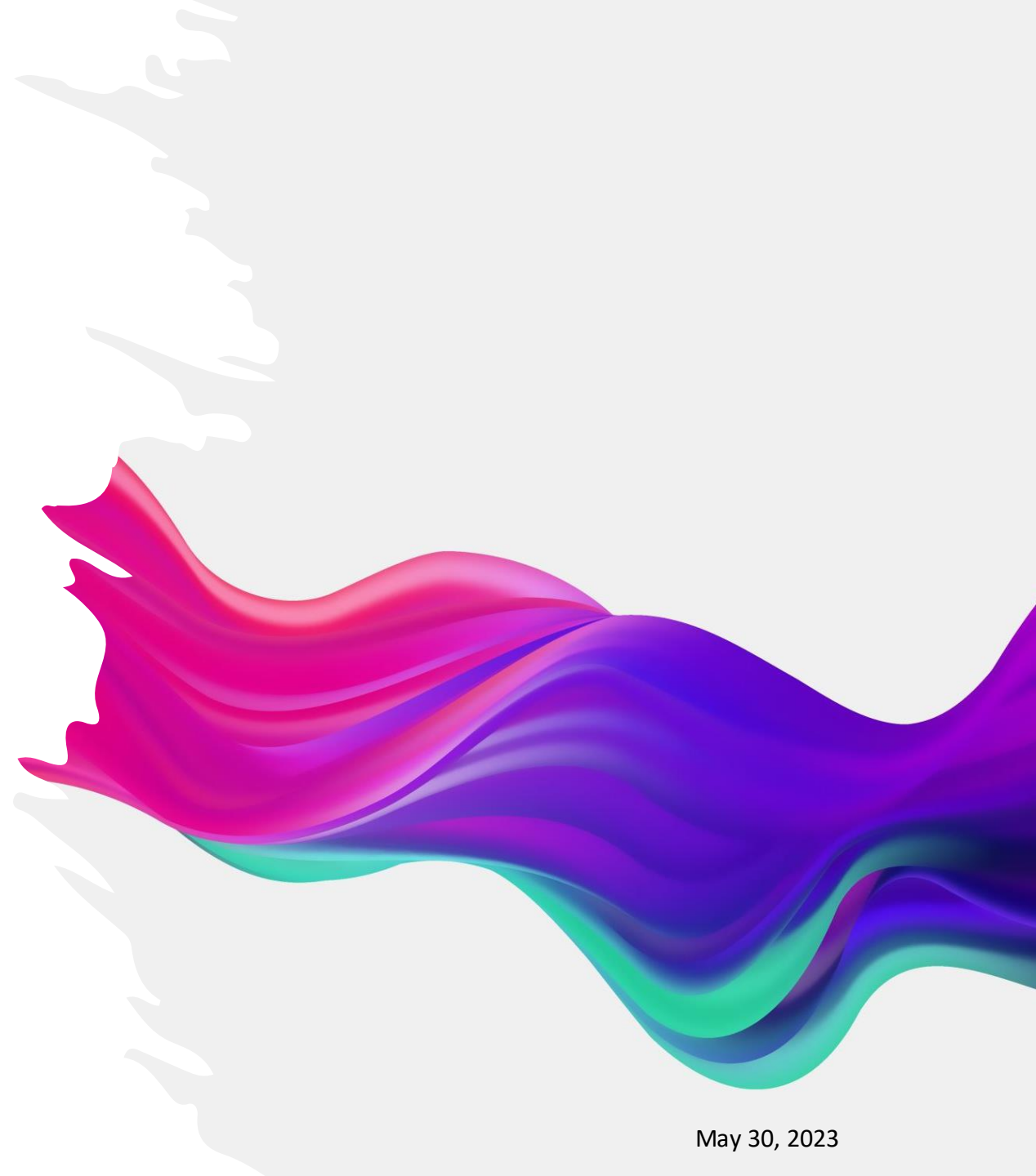


Do not Forget the Feet when Educating Patients about Diabetes Management

National Center for Health in Public Housing



Housekeeping

- All participants muted upon entry
- Engage in chat
- Raise hand if you would like to unmute
- Meeting is being recorded
- Slides and recording link will be sent via email
- Mentimeter case study activities
 - Go to **Menti.com**
 - Enter code **1155 6794**



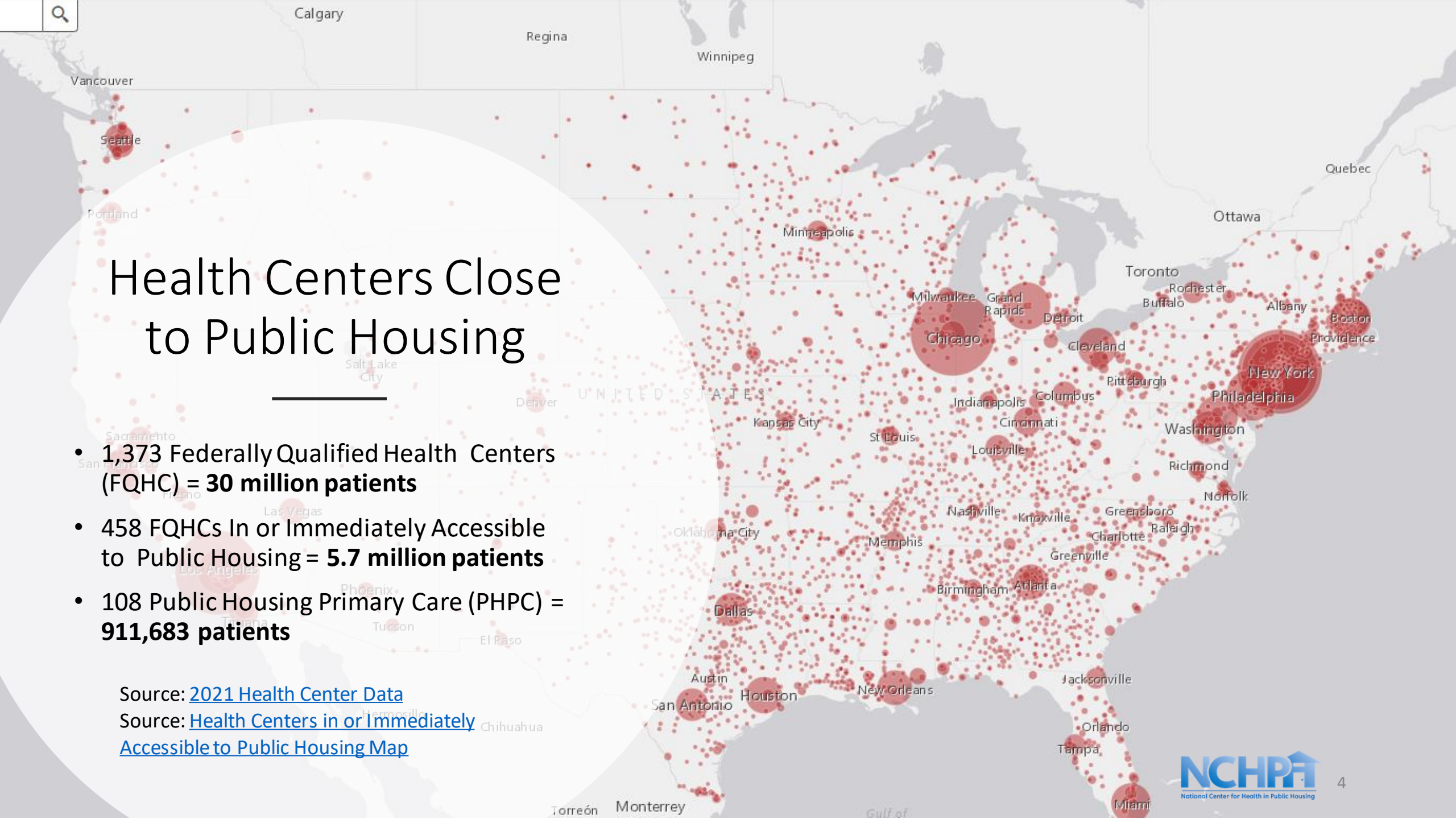
zoom



National Center for Health in Public Housing (NCHPH)

- The mission of the National Center for Health in Public Housing (NCHPH) is to strengthen the capacity of federally funded Public Housing Primary Care (PHPC) health centers and other health center grantees by providing training and a range of technical assistance.
- The National Center for Health in Public Housing (NCHPH) is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number U30CS09734, a National Training and Technical Assistance Partner (NTTAP) for \$2,006,400 and is 100% financed by this grant. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.





Health Centers Close to Public Housing

- 1,373 Federally Qualified Health Centers (FQHC) = **30 million patients**
- 458 FQHCs In or Immediately Accessible to Public Housing = **5.7 million patients**
- 108 Public Housing Primary Care (PHPC) = **911,683 patients**

Source: [2021 Health Center Data](#)

Source: [Health Centers in or Immediately Accessible to Public Housing Map](#)

Public Housing Demographics



1.5 Million
Residents



2 Persons
Per Household



38% Disabled



52% White



91% Low
Income



43% African-
American



26% Latinx



19% Elderly



36% Children



32% Female Headed
Households with
Children

- Source: 2022 HUD Resident Characteristics Report

Learning Objectives

- Discuss why people with diabetes have problems with their feet.
- Summarize tips for foot care.
- Review a checklist for foot examination.



Diabetes Snapshot in Public Housing Primary Care (PHPCs)

Population	Total Patients	# of Patients with Diagnosis	Percentage of Patients with Diabetes
All FQHCs	30,193,278	2,873,252	10%
Public Housing Primary Care	911,683	91,563	10%
In or Immediately Accessible to Public Housing	5,714,900	1,269,671	22%

Source: [National Health Center Program Uniform Data System \(UDS\) Awardee Data 2021](#)



Diabetes Epidemic

Key findings include:

- 37.3 million Americans—about 1 in 10—have diabetes.
 - About 1 in 5 people with diabetes don't know they have it.
- 96 million American adults—more than 1 in 3—have prediabetes.
 - More than 8 in 10 adults with prediabetes don't know they have it.
- In 2019, about 1.4 million new cases of diabetes were diagnosed.
- For people aged 10 to 19 years, new cases of type 2 diabetes increased for all racial and ethnic minority groups, especially Black teens.
- For adults with diagnosed diabetes:
 - 69% had high blood pressure, and 44% had high cholesterol.
 - 39% had chronic kidney disease, and 12% reported having vision impairment or blindness.
 - Diabetes was highest among Black and Hispanic/Latino adults, in both men and women.



*DPN is a leading cause for disability due to foot ulceration and amputation, gait disturbance, and fall-related injury.

SYMPTOM OF DIABETES



UNEXPLAINED WEIGHT LOSS



FREQUENT URINATION



NUMB OR TINGLING
HANDS OR FEET



SKIN PROBLEMS



WOUNDS HEAL SLOWLY



ALWAYS HUNGRY



ALWAYS THIRSTY



DIZZINESS



SEXUAL
PROBLEMS



BLURRY
VISION



EXTREME FATIGUE



PRESSURE



TANTRUM



CANDIDA

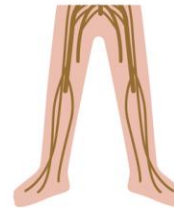


HIGH BLOOD SUGAR



WEIGHT GAIN

COMPLICATIONS



PERIPHERAL
ARTERIAL DISEASE



CEREBROVASCULAR
DISEASE



CORONARY HEART
DISEASE



EYE DAMAGE



DIABETIC
NEPHROPATHY

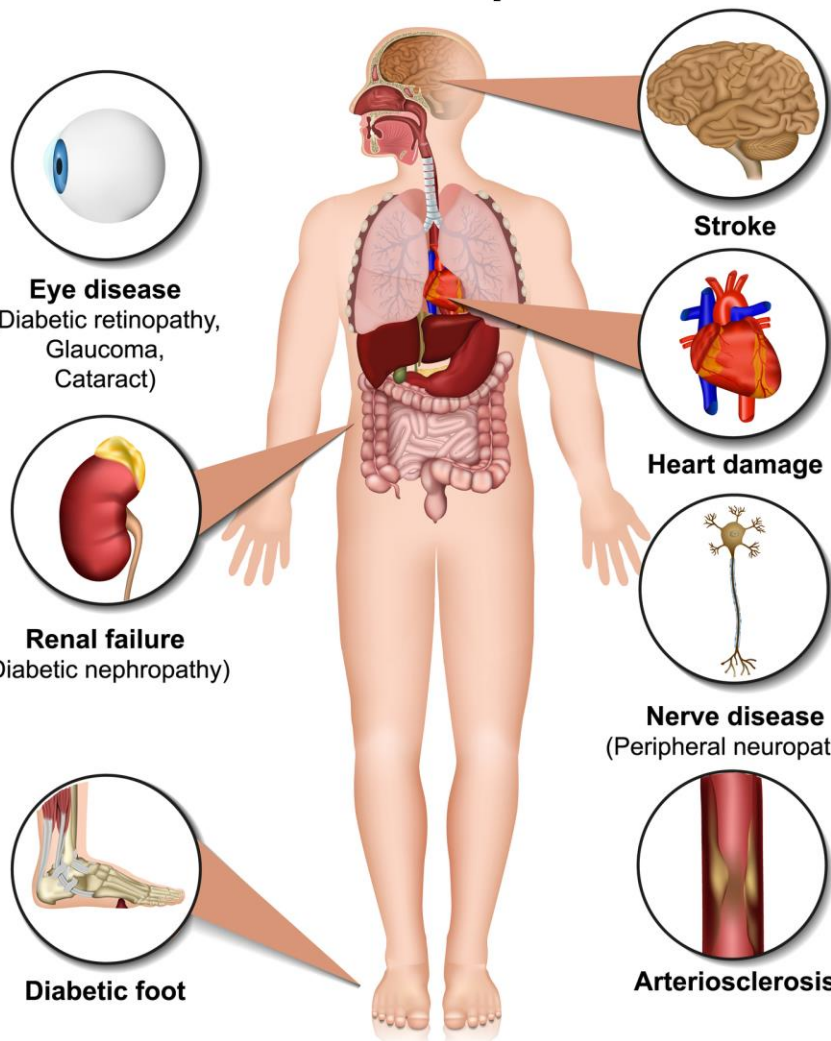


DIABETIC FOOT



PERIPHERAL
NEUROPATHY

Diabetes Complications



Diabetes Epidemic

Key findings include:

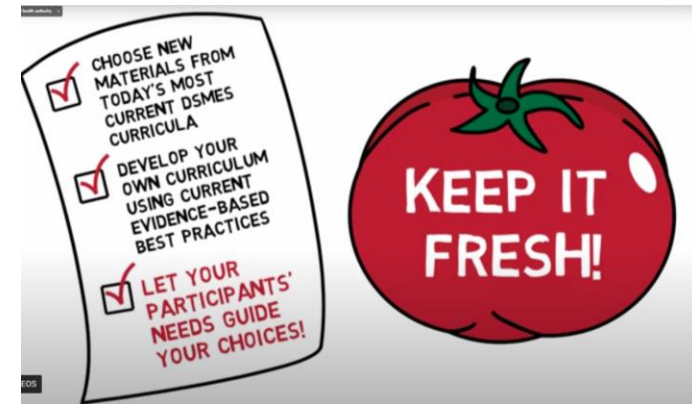
- 37.3 million Americans—about 1 in 10—have diabetes.
 - About 1 in 5 people with diabetes don't know they have it.
- 96 million American adults—more than 1 in 3—have prediabetes.
 - More than 8 in 10 adults with prediabetes don't know they have it.
- In 2019, about 1.4 million new cases of diabetes were diagnosed.
- For people aged 10 to 19 years, new cases of type 2 diabetes increased for all racial and ethnic minority groups, especially Black teens.
- For adults with diagnosed diabetes:
 - 69% had high blood pressure, and 44% had high cholesterol.
 - 39% had chronic kidney disease, and 12% reported having vision impairment or blindness.
 - Diabetes was highest among Black and Hispanic/Latino adults, in both men and women.



*DPN is a leading cause for disability due to foot ulceration and amputation, gait disturbance, and fall-related injury.

DSME Curriculum

- Describing the *diabetes disease process* and *treatment options*
- Incorporating *nutritional management* into lifestyle
- Incorporating *physical activity* into lifestyle
- Using *medication(s)* safely and for maximum therapeutic effectiveness
- *Monitoring blood glucose* and other parameters and interpreting and using the results for self-management decision making
- Preventing, detecting, and treating *acute complications*
- Preventing detecting, and treating *chronic complications*
- Developing personal strategies to address psychosocial issues and concerns
- Developing personal strategies to promote health and behavior change



Epidemiology of Diabetes Foot Ulcers

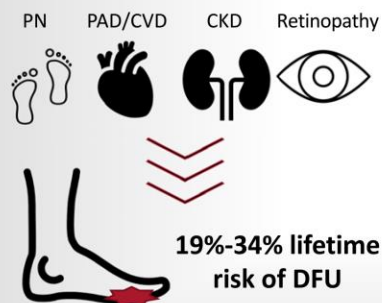


Etiology, Epidemiology, and Disparities in the Burden of Diabetic Foot Ulcers

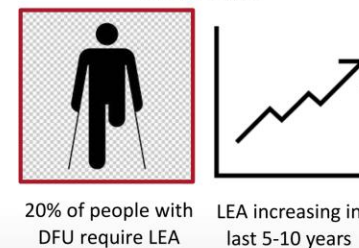
Katherine McDermott, Michael Fang, Andrew J.M. Boulton, Elizabeth Selvin, Caitlin W. Hicks,

Diabetic foot ulcer (DFU) is a common, highly morbid complication of diabetes and a critical step in the pathway to lower-extremity amputation (LEA). LEA rates are increasing after a period of previous decline. Racial and ethnic minorities and people with socioeconomic disadvantage affected by DFU are at a disproportionately high risk of LEA and mortality.

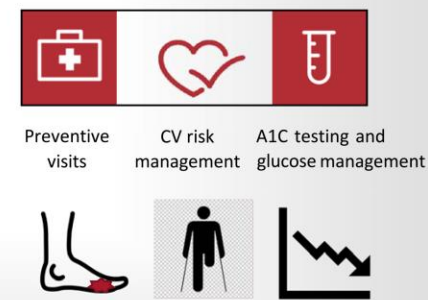
DFU prevalence is increasing as persons with diabetes live longer



People with DFU are at high risk of LEA, especially young, racial/ethnic minority, and low-SES groups



Better diabetes preventive care is necessary to decrease incidence of DFU and LEA



Diabetes Care.

CKD, chronic kidney disease; CV, cardiovascular; CVD, cardiovascular disease; PAD, peripheral artery disease; PN, peripheral neuropathy; SES, socioeconomic status.

American Diabetes Association. Connected for Life.

Risk Factors

- Obesity
- Poor diabetes glycemic control
- Elevated cholesterol levels
- Hypertension
- Tobacco use
- Family history
- Sedentary lifestyle
- Foot deformities

Hallux valgus

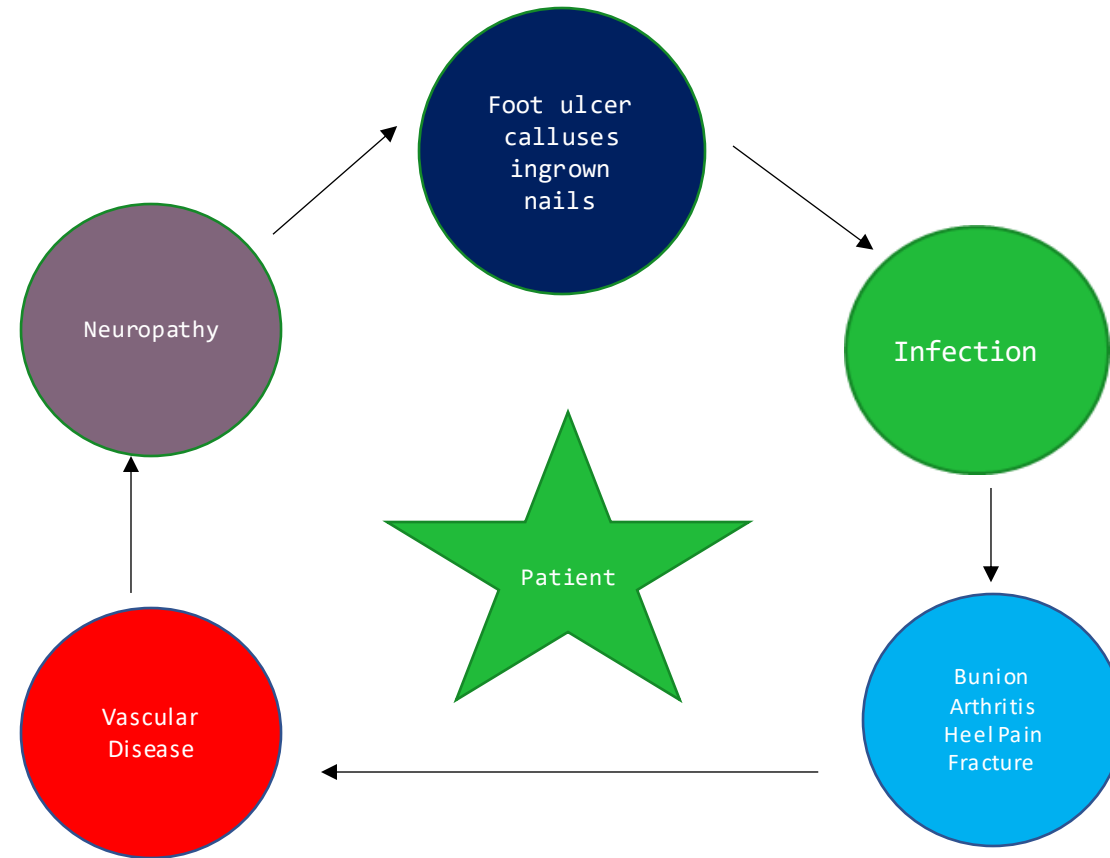


Normal

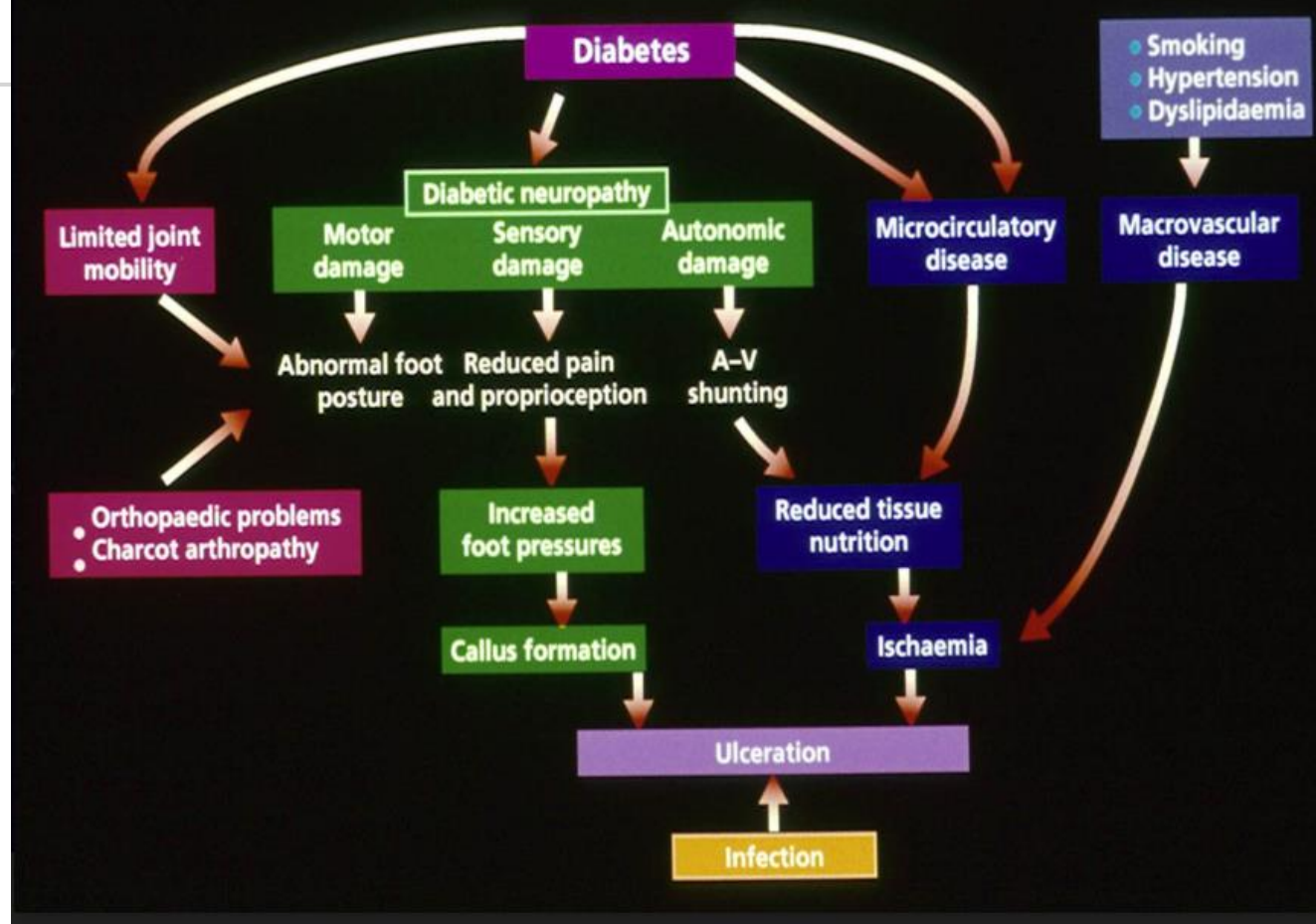


Deformed joint

Why do people experiencing diabetes have problems with their feet

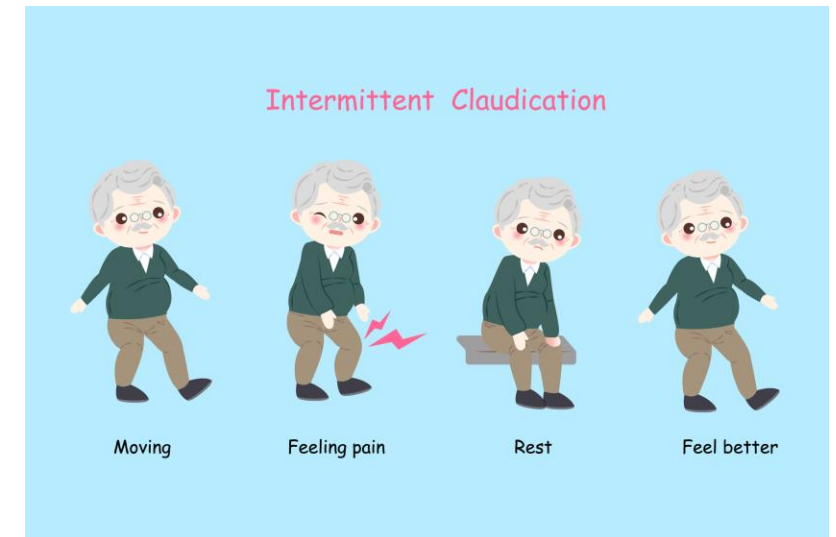


Foot ulceration in diabetes



Diabetes affect circulation in legs and feet

- Arteries undergo acceleration of chronic inflammatory process due to glycooxidation of tissue
- Intermittent claudication
- Patient may report pain in calves or thighs with ambulation
- Increased thrombotic effect
- Venous insufficiency
- Presence of edema (swelling) in the lower extremity
- Discoloration of the skin
- Developments of wounds that are slow to heal

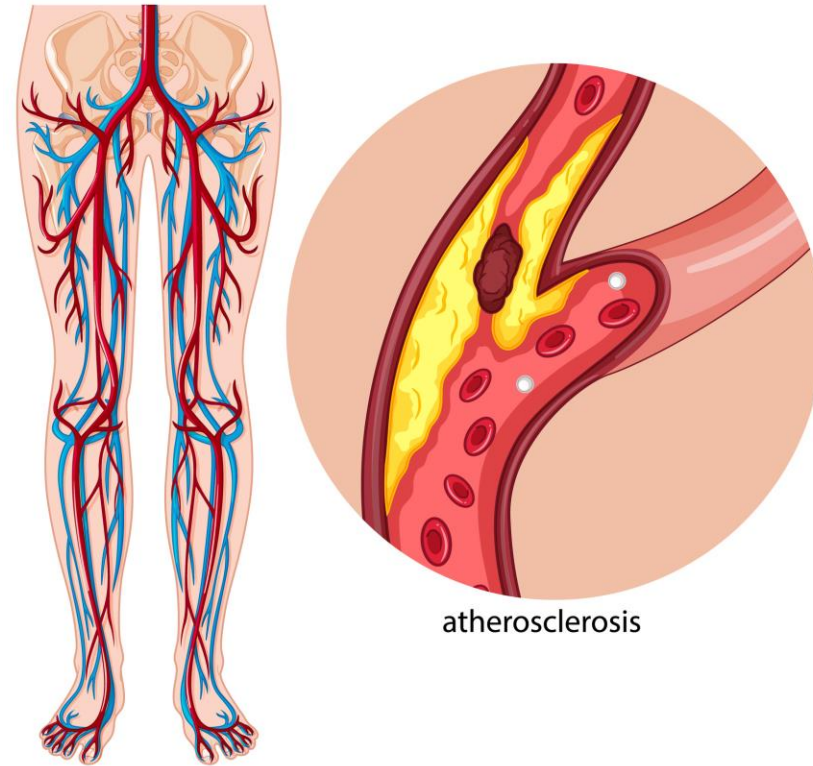


PAD: Peripheral Artery Disease

Patients experiencing diabetes develop calcification in both large and small vessels:

- Vascular testing
- Referral to a vascular specialist
- Walking program

Peripheral Artery Disease



Peripheral Neuropathy

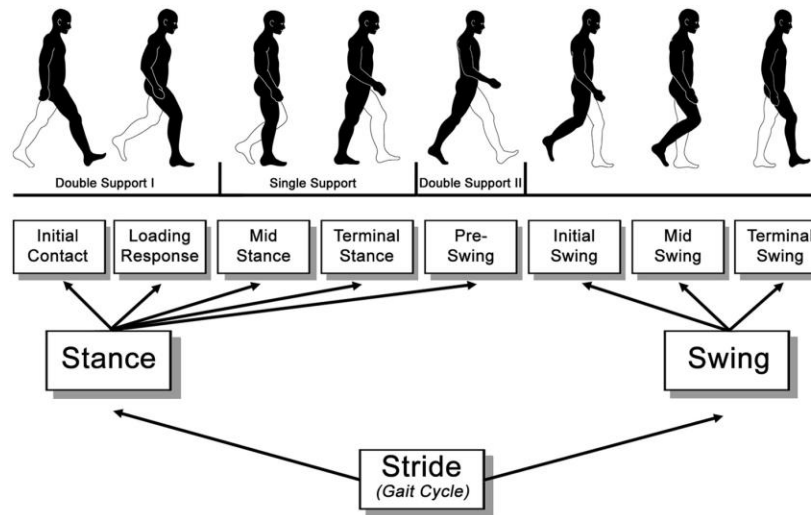
- Between 60-70% have some form of neuropathy
- Nerve damage is the result of high levels of glucose over a period of time
- Symptoms: Numbness, burning, electrical sensation, altered sensation of hot/cold and many more
- This affects ;your ability to walk and your balance



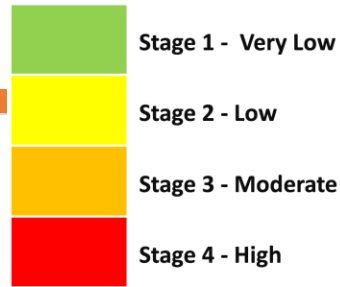
Postural changes
Osteoporosis
Lack of mobility
Diminished sensory function
Proprioceptive deficit
Increased BMI

Loss of flexibility
Decreased ankle
plantarflexion
Decreased knee
extension
Diminished Hip Extension
Spine deformities

Wider base of gait
Slower walking speed
Increase stride length
Prolong double support
Time
Increased vertical forces
Increased plantar pressure

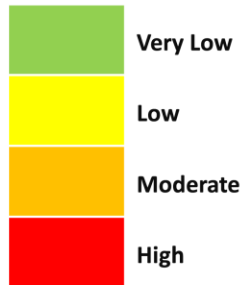


A. One-year risk of minor or major lower-extremity amputation



	ISCHEMIA = 0				ISCHEMIA = 1				ISCHEMIA = 2				ISCHEMIA = 3			
WOUND=0	Green	Green	Yellow	Orange	Green	Yellow	Orange	Red	Yellow	Yellow	Orange	Red	Yellow	Orange	Orange	Red
WOUND=1	Green	Green	Yellow	Orange	Green	Yellow	Orange	Red	Yellow	Yellow	Orange	Red	Orange	Orange	Orange	Red
WOUND=2	Yellow	Yellow	Orange	Red	Orange	Orange	Red	Red	Orange	Red	Red	Red	Red	Red	Red	Red
WOUND=3	Orange	Orange	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
	0	1	2	3	0	1	2	3	0	1	2	3	0	1	2	3
FOOT INFECTION (0-3)																

B. Benefit of (or need for) lower-extremity revascularization



	ISCHEMIA = 0				ISCHEMIA = 1				ISCHEMIA = 2				ISCHEMIA = 3			
WOUND=0	Green	Green	Green	Green	Green	Yellow	Yellow	Orange	Yellow	Yellow	Orange	Red	Orange	Red	Red	Red
WOUND=1	Green	Green	Green	Green	Yellow	Orange	Orange	Red	Orange	Red	Red	Red	Red	Red	Red	Red
WOUND=2	Green	Green	Green	Green	Orange	Orange	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
WOUND=3	Green	Green	Green	Green	Orange	Orange	Orange	Red	Red	Red	Red	Red	Red	Red	Red	Red
	0	1	2	3	0	1	2	3	0	1	2	3	0	1	2	3
FOOT INFECTION (0-3)																

C. Examples: interpreting Wifl to help guide decision-making

- W:3 I:0 fl: 2** Stage 4 = High risk of minor/major amputation
Very low benefit of revascularization > Wound care + treat infection
- W:1 I:2 fl: 1** Stage 3 = Moderate risk of minor/major amputation
High benefit of revascularization > Revascularize + wound care + treat infection

Things to think about

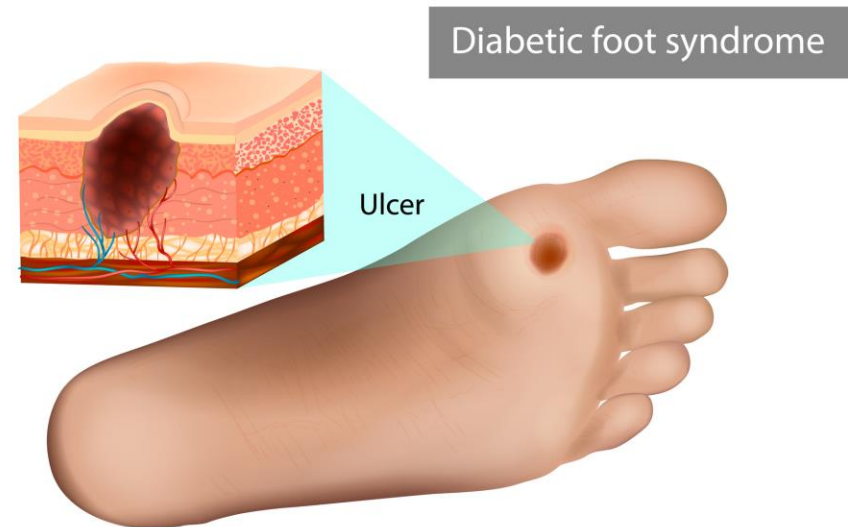
Do you have numbness or loss of sensation in your feet?

Do you have poor circulation in your legs?

Have you had a diabetes foot ulcer in the past?

What kind of shoes do you wear in a regular basis?

Do you have bunions, hammertoes, or other foot problems?

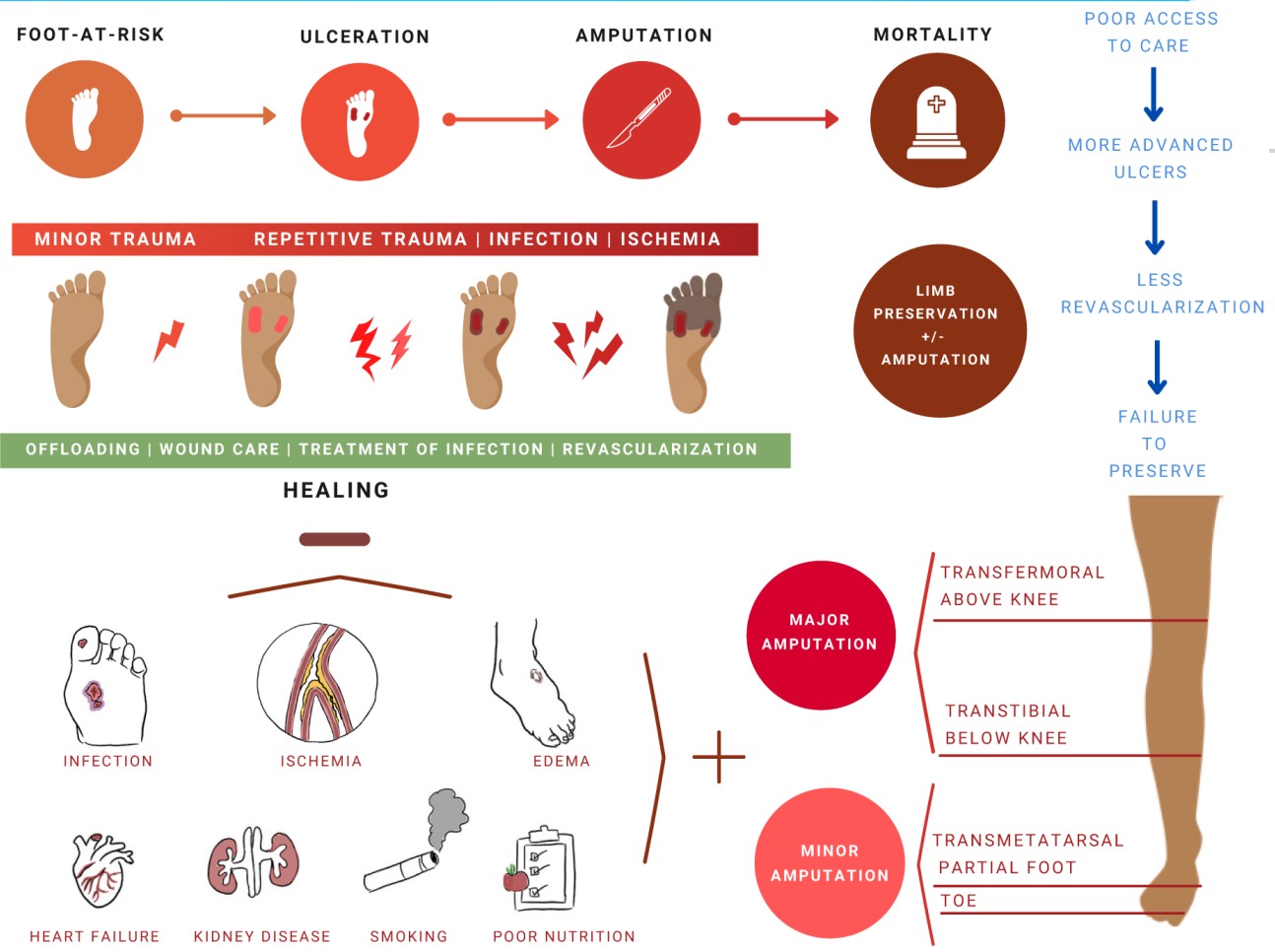


ABC's

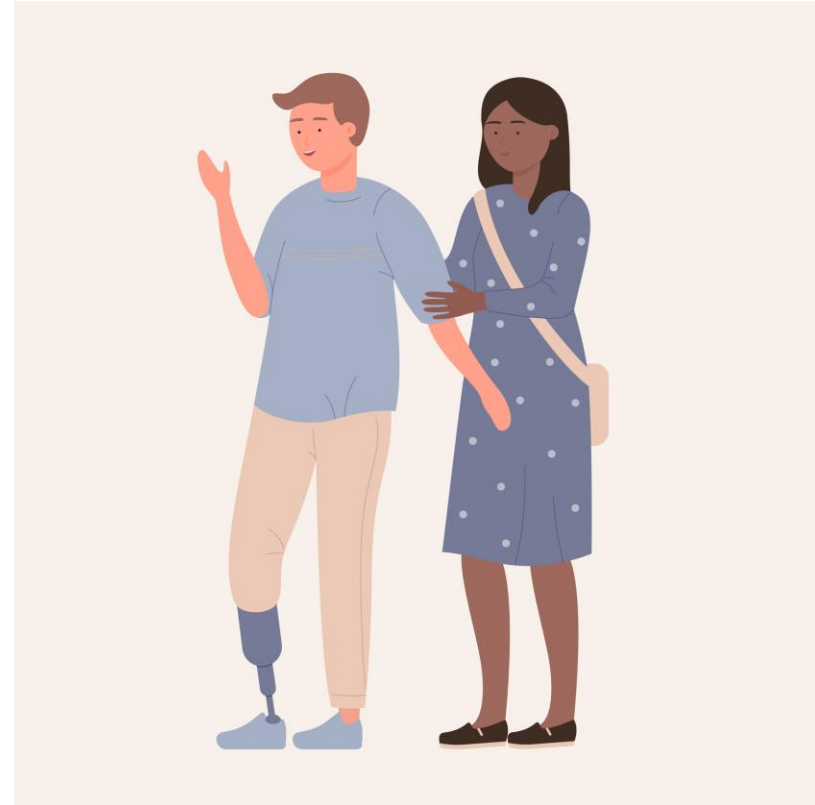
- A1c – Measurement for your diabetes
- B – Blood pressure
- C- Cholesterol



STRUCTURAL RACISM AND SOCIAL DETERMINANTS OF HEALTH



Lower Limb Amputation



Peripheral neuropathy

- Good glucose control
- Management of pain:
 - Topical medications
 - Supplements as vit. B complex and alpha lipoic acid
 - Oral medication
 - Pain management
- Gait safety:
 - Physical and balance therapy
 - Cane, walker, walking sticks
- Daily inspection of your feet



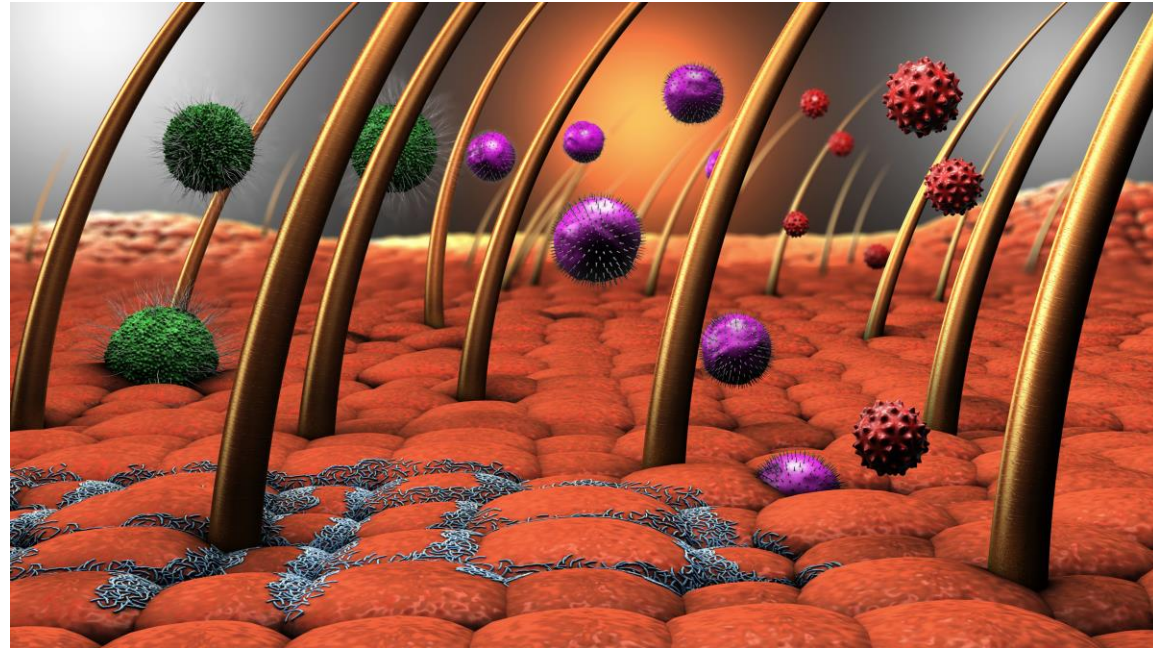
Diabetes affects the structure and function of skin

- Skin becomes dry and thin
 - Calluses on the bottom of the foot or between the toes
 - Lose of fat pad on bottom of feet
- Nails become thick and difficult to care for yourself
- Skin bruises easily
- Recurrent rash on legs
- Venous stasis dermatitis



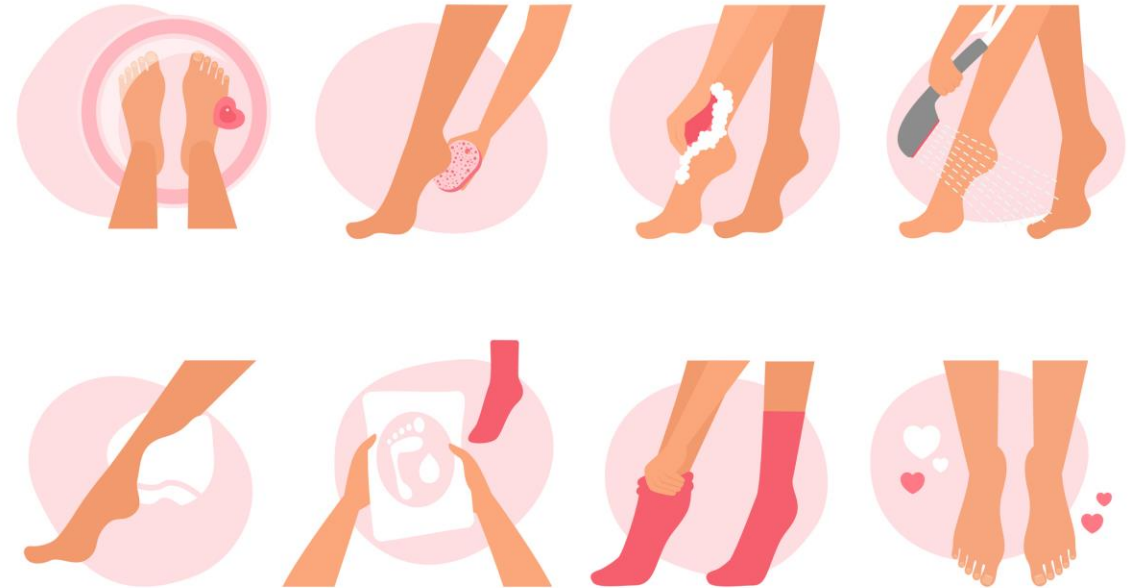
Skin is a protective barrier

- Diabetic dermopathy
- Skin tears
- Pruritus
- Ingrown toenails
- Athlete's foot –tinea
- Fungal nails

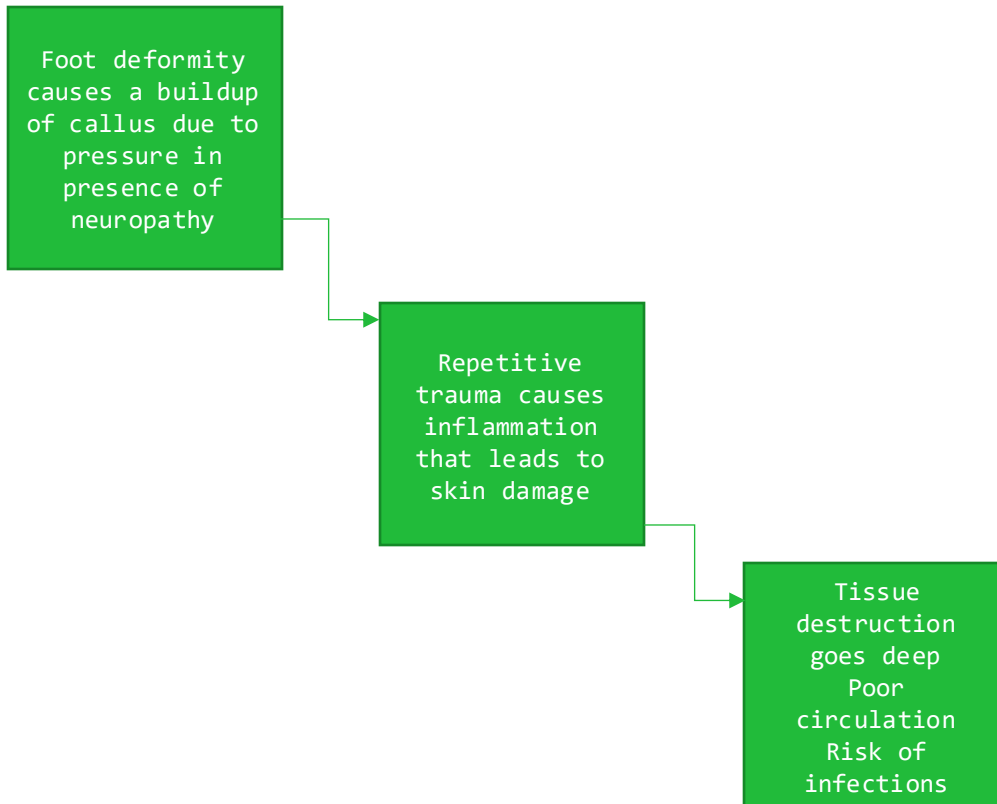


Daily care of your feet

- Daily foot inspection
- Moisturize your skin (not between the toes)
- Antifungal creams and powders
- Never soak your foot if it has an ulcer
- Refrain from barefoot walking
- Callus care



Diabetic foot ulcer



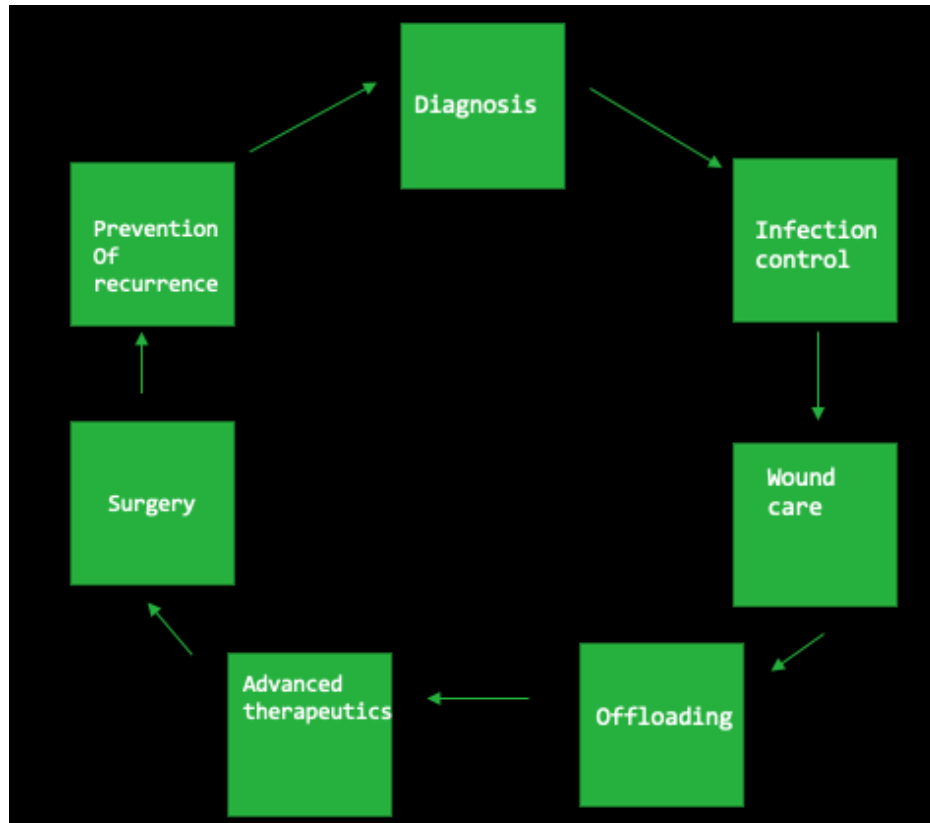
GANGRENE

Treatment of diabetic ulcer

- Wound care and debridement
- Offload the pressure area
- Treating the infection
- Good glycemic control and nutrition
- Having circulation checked



Diabetic comprehensive foot care for a wound care

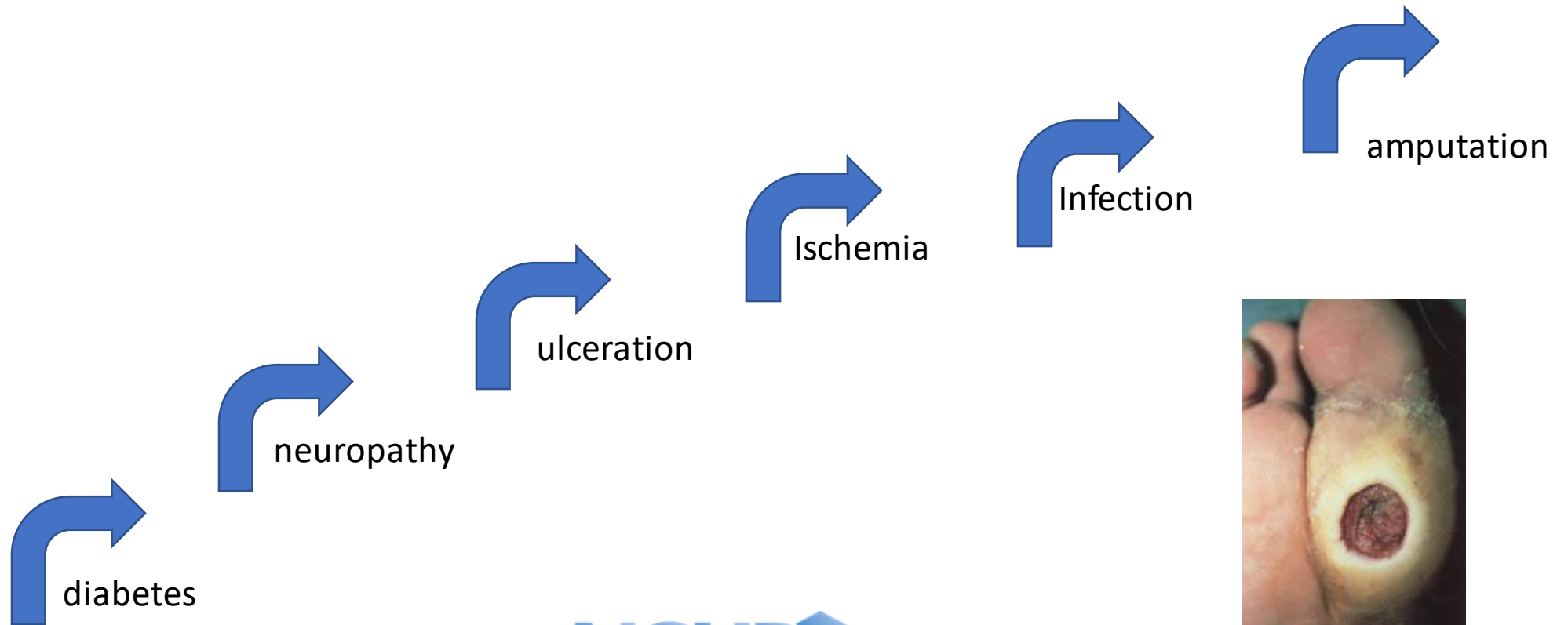


Treatment of diabetic ulcer

- Diabetic foot ulcer
- Cellulitis
- Osteomyelitis
- Gangrene



Stairway to Amputation



Foot screening

FOOT SCREEN		Date:
Patient's Name (Last, First, Middle)		ID No.:

Fill in the following blanks with a "Y" or "N" to indicate findings on the right or left foot.

	R	L
Is there a history of a foot ulcer?	_____	_____
Is there a foot ulcer now?	_____	_____
Is there a claw toe deformity?	_____	_____
Is there swelling or an abnormal shape in the foot?	_____	_____
Is there elevated skin temperature?	_____	_____
Is there limited ankle dorsiflexion?	_____	_____
Are the toenails thick or ingrown?	_____	_____
Is there heavy callus build-up?	_____	_____
Is there foot or ankle muscle weakness?	_____	_____
Is there an absent pedal pulse?	_____	_____
Can the patient see the bottom of their feet?	_____	_____
Are the shoes appropriate in style and fit?	_____	_____

Indicate the level of sensation in circles:

+ = Can feel the 10 gram nylon filament
 - = Can't feel the 10gram nylon filament

RIGHT LEFT

Draw in: ♦ Callus ■ Preulcer ■ Ulcer (note length/width/depth in cm.)

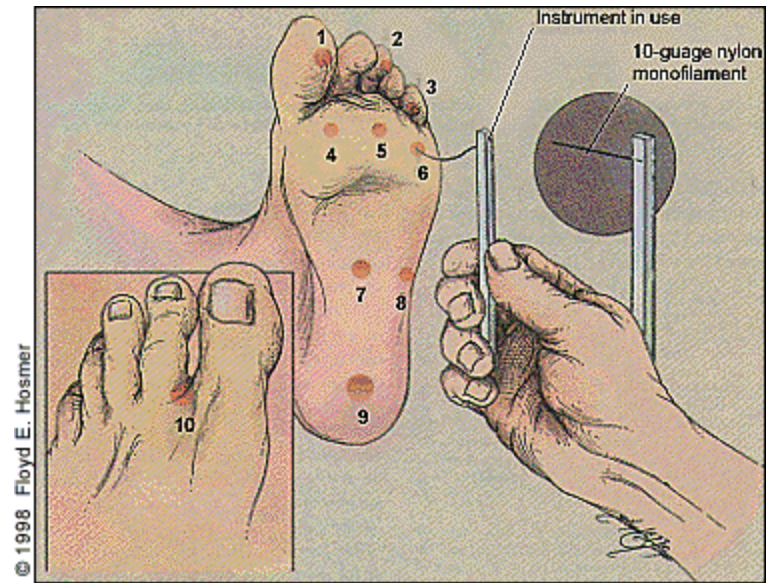
and Label: _____ Skin condition with R - Redness, D - Discoloration, M - Maceration, T - Tinea

RISK CATEGORY:

- 0 No loss of protective sensation.
- 1 Loss of protective sensation.
- 3 History of plantar ulceration, neuropathic fracture (Charcot foot) or amputation.

Performed by: _____

NHPF FORM 202 REGIONAL CENTER FOOT SCREEN



Diabetes foot care tips

- Check your feet everyday
- Wash your feet everyday
- Never go barefoot
- Wear shoes that fit well
- Trim your toenails straight across
- Don't remove corns and calluses yourself
- Get your feet checked at every health visit
- Keep the blood flowing
- Choose feet friendly activities

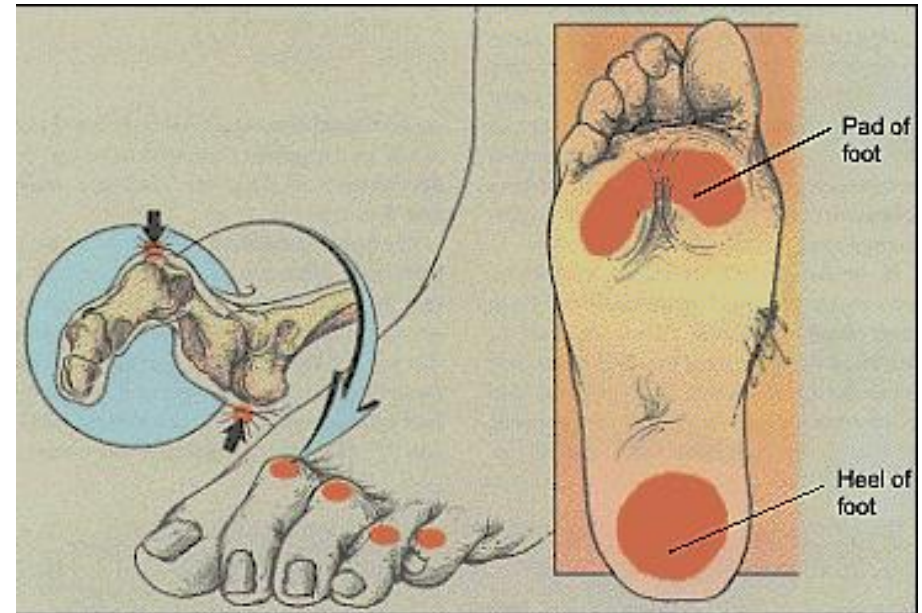


TABLE 1

Guidelines for Proper Shoe Fit to Avoid Foot Problems

Properly fitted shoes do not need to be broken in, and instead should be comfortable to wear right out of the box.

Shoes should be fitted on both feet during weight bearing, preferably at the end of the day when the feet are most swollen.

Allow a space of 1/2 inch between the end of the shoe and the longest toe. For athletic shoes, allow up to 1 inch.

Check the width. Adequate room should be allowed across the ball of the foot. The first metatarsophalangeal joint should be in the widest part of the shoe.

The heel should fit snugly.

Check the fit over the instep. A shoe that laces allows for adjustment of this area.

Orthotics and inserts will change the fit of shoes. Shoes should be fitted while wearing the orthotic.

When to see your doctor

- Pain in your legs or cramping in your buttocks, thighs, or calves during physical activity.
- Tingling, burning, or pain in your feet.
- Loss of sense of touch or ability to feel heat or cold very well.
- A change in the shape of your feet over time.
- Loss of hair on your toes, feet, and lower legs.
- Dry, cracked skin on your feet.
- A change in the color and temperature of your feet.
- Thickened, yellow toenails.
- Fungus infections such as athlete's foot between your toes.
- A blister, sore, ulcer, infected corn, or ingrown toenail.

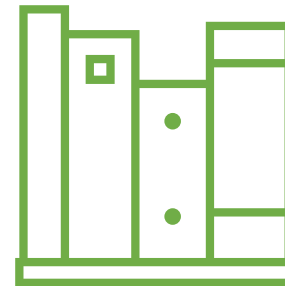


Educational Video



Case Study

- C.T. is a 68-year-old man with a 3-year history of impaired glucose tolerance. His only other medical problem is hypertension treated with a small dose of an angiotensin-converting enzyme (ACE) inhibitor. He quit smoking 20 years ago. He has no dyslipidemia and has had stress electrocardiograms every 2 years with normal results. He uses no alcohol.
- He is retired from an office job with the government and presently teaches part-time at a local college. His glucose intolerance was discovered on routine laboratory testing. He was sent for diabetes education, learned home glucose monitoring, and followed a diet and exercise program suggested by our diabetes educator. He was not obese and led a physically active life, playing golf frequently and taking vigorous walks almost daily. He lost 10 lb and was able to normalize his blood glucose levels with this regimen.
- Approximately 3 months ago, he noticed some burning and tingling in his feet. He admitted that he had not felt as well as usual and that his walking was becoming more of a chore. He denied chest pain or shortness of breath. He denied any other symptoms and had no fever or chills, cough, bloody stools, or hematuria. When seen in the office, he had gained 5 lb. His physical examination was normal except for some hyperesthesia of both feet as well as decrease vibratory sensation



Q&A Session





Complete our Post Evaluation Survey



Contact Us!

Robert Burns

Program Director
Bobburns@namgt.com

Jose Leon, M.D.

Manager of Clinical Quality
jose.leon@namgt.com

Kevin Lombardi, M.D., M.P.H.

Manager of Policy, Research, and
Health Promotion
Kevin.lombardi@namgt.com

Fide Pineda Sandoval, C.H.E.S.

Training & Technical Assistance
Manager
Fide@namgt.com

Chantel Moore, M.A.

Manager of Communications
Cmoore@namgt.com

Please contact our team for Training
and Technical Support
703-812-8822



Thank you!

