

DIABETIC FOOT CARE AND THE CHR



RIVERSIDE SAN BERNARDINO COUNTY
INDIAN HEALTH

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Clinic Map for the RSBCIHI *Diabetes Program*



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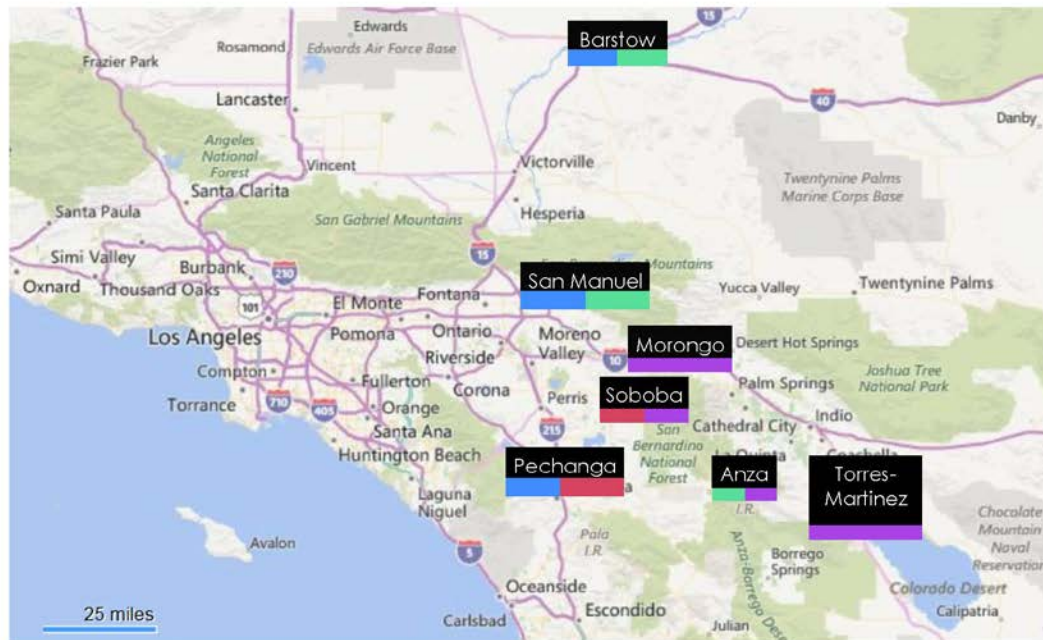
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Fitness for Barstow, San
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Case Manager for
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Fitness for Soboba,
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OBJECTIVES

- ✗ Recognize Normal Foot Anatomy and be Alerted to Common Problems
- ✗ Understand the Importance of Patient Safety and when to Refer to the Clinic.
- ✗ Perform a Basic Visual, Nerve and Circulation Exam, and Recognize the Beginnings of Wounds.
- ✗ Communicate Findings in a SOAP Format

RATES OF DIABETES

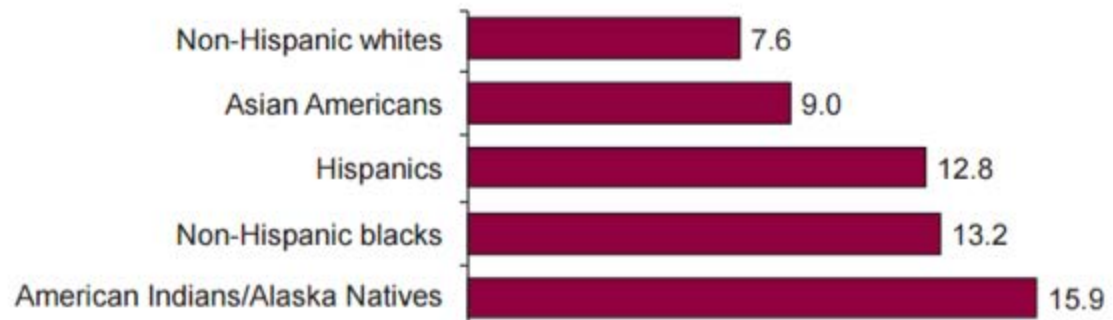
2X

Native Americans
are twice as
likely as whites to
have diabetes.



Racial and ethnic differences in diagnosed diabetes among people aged 20 years or older, United States, 2010–2012

Age-adjusted* percentage of people aged 20 years or older with diagnosed diabetes, by race/ethnicity, United States, 2010–2012

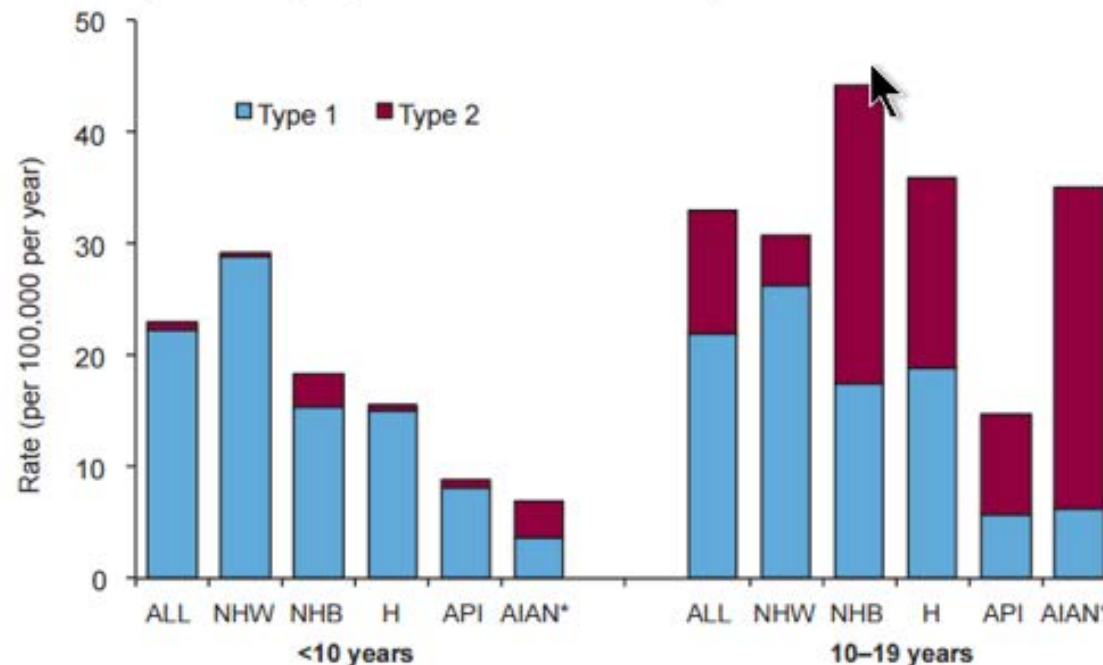


*Based on the 2000 U.S. standard population.

Source: 2010–2012 National Health Interview Survey and 2012 Indian Health Service's National Patient Information Reporting System.

RATE OF NEW CASES OF TYPE 1 AND TYPE 2 DIABETES AMONG YOUTH AGED <20 YEARS, BY RACE/ETHNICITY, 2014

Rate of new cases of type 1 and type 2 diabetes among people younger than 20 years, by age and race/ethnicity, 2008–2009



* The American Indian/Alaska Native (AI/AN) youth who participated in the SEARCH study are not representative of all AI/AN youth in the United States. Thus, these rates cannot be generalized to all AI/AN youth nationwide.

Source: SEARCH for Diabetes in Youth Study

NHW=non-Hispanic whites; NHB=non-Hispanic blacks; H=Hispanics; API=Asians/Pacific Islanders; AI=American Indians

CDC. National Diabetes Fact Sheet, 2014.

Source: SEARCH for Diabetes in Youth Study

NHW=Non-Hispanic whites; AA=African Americans; H=Hispanics; API=Asians/Pacific Islanders; AI=American Indians

DIABETES ULCERS AND AMPUTATIONS

- ✘ 29.1 Million Diabetics in the US but 1 in 4 don't know it.
- ✘ 6% will have an ulcer in any given year.
- ✘ In 2013 about 73,000 diabetics in the US needed an amputation at a cost of \$70,000 each. Rates of amputation among Native Americans is 3-4 times higher than the general population
- ✘ One half of all lower extremity amputations occur in 5% of the Population- those with diabetes

HOW SERIOUS IS A DIABETIC ULCER?

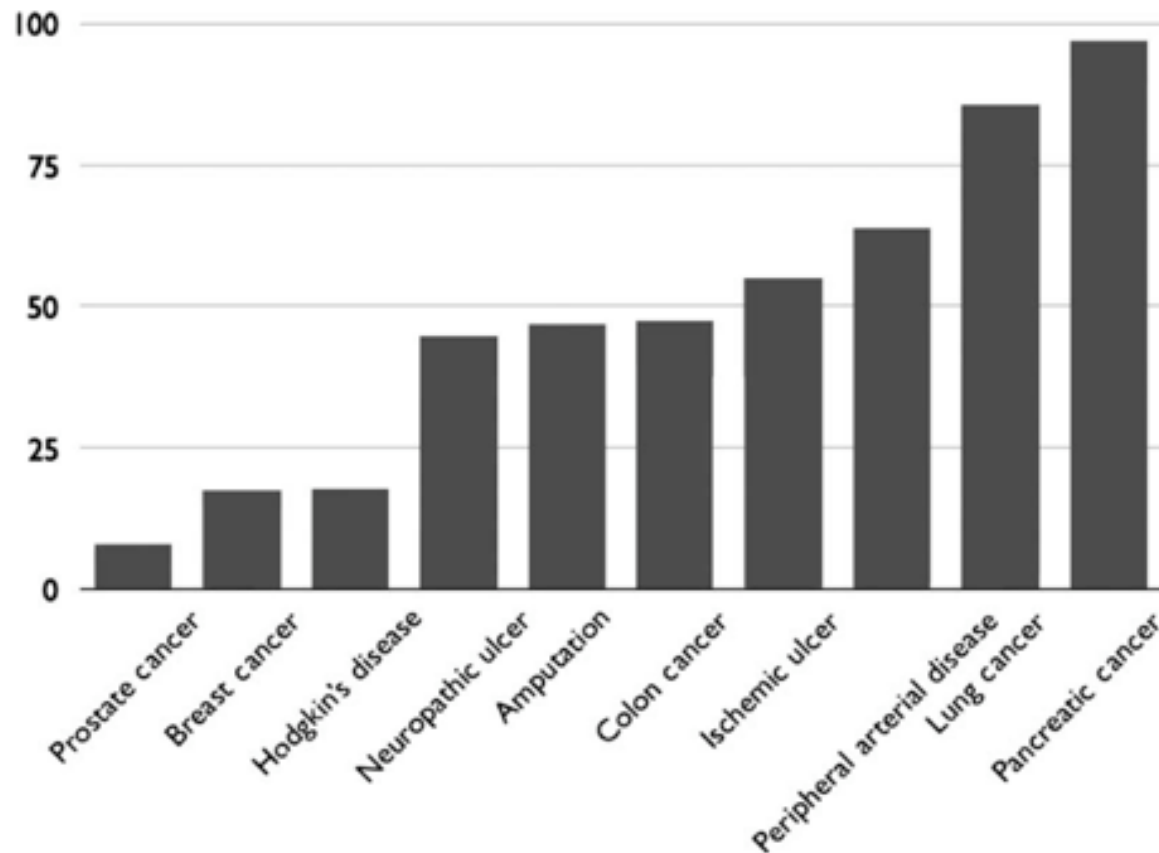
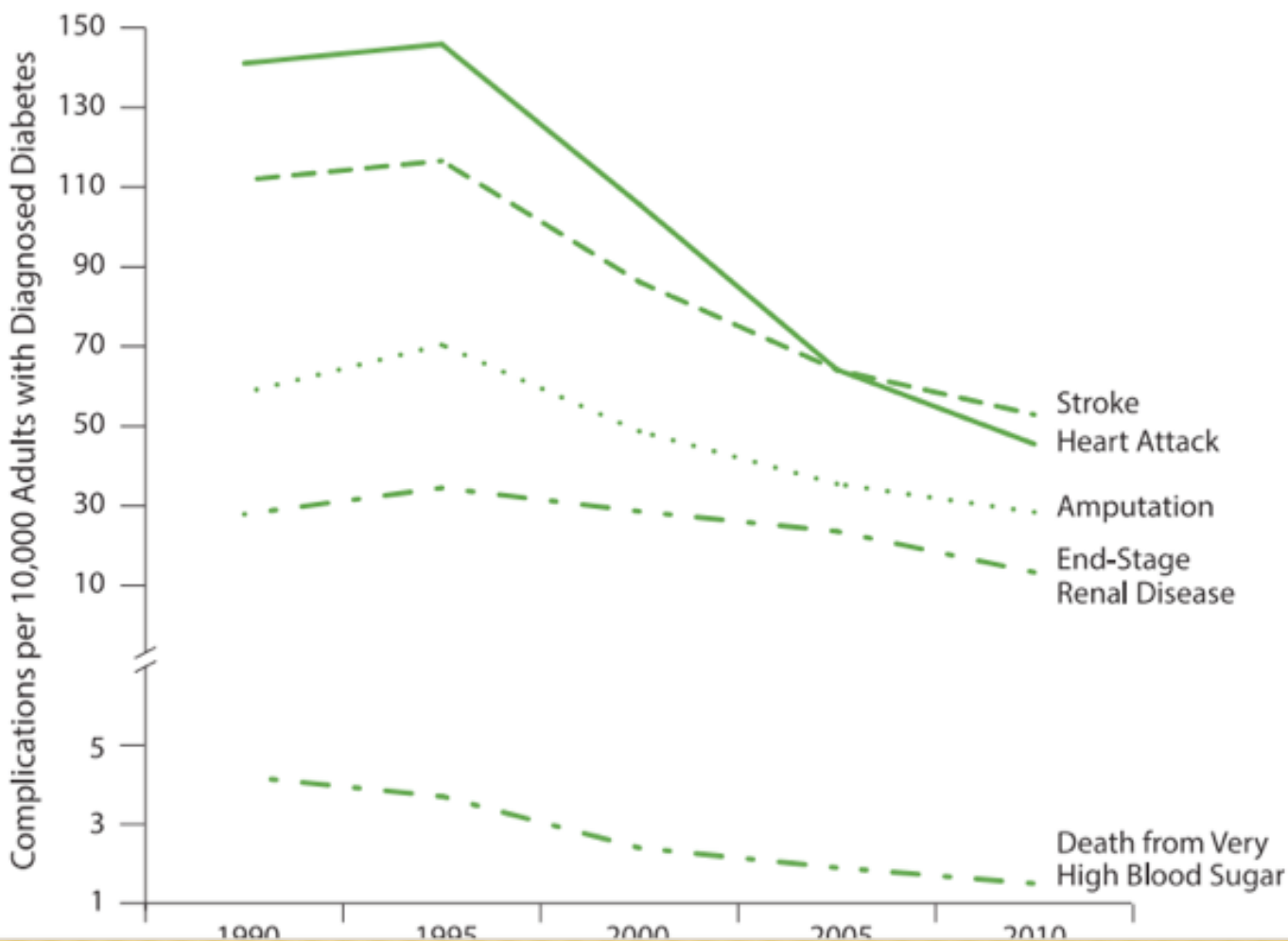


Figure 1. Five-year mortality (%). Perhaps now is the time to change our discussion with health-care administrators, policy makers and especially ourselves. The disease state that many of us treat routinely is, quite literally, killing our patients at a rate comparable to cancer. Addressing this issue aggressively may alter this and make a difference for millions of people worldwide.

BUT WE CAN HELP!

Figure 7. Trends in Rates of Diabetes Complications Among US Adults with Diagnosed Diabetes, 1990-2010



WHAT IS A NORMAL FOOT?



NORMAL FOOT:

A normal foot is one which allows us to function in the daily activities that we need to do without pain or disability.



WHAT MAKES FEET ABNORMAL?

- ✗ Changes in the Nerves
- ✗ Changes in the Circulation
- ✗ Deformities: a change in the shape of the muscles or bones of the foot.

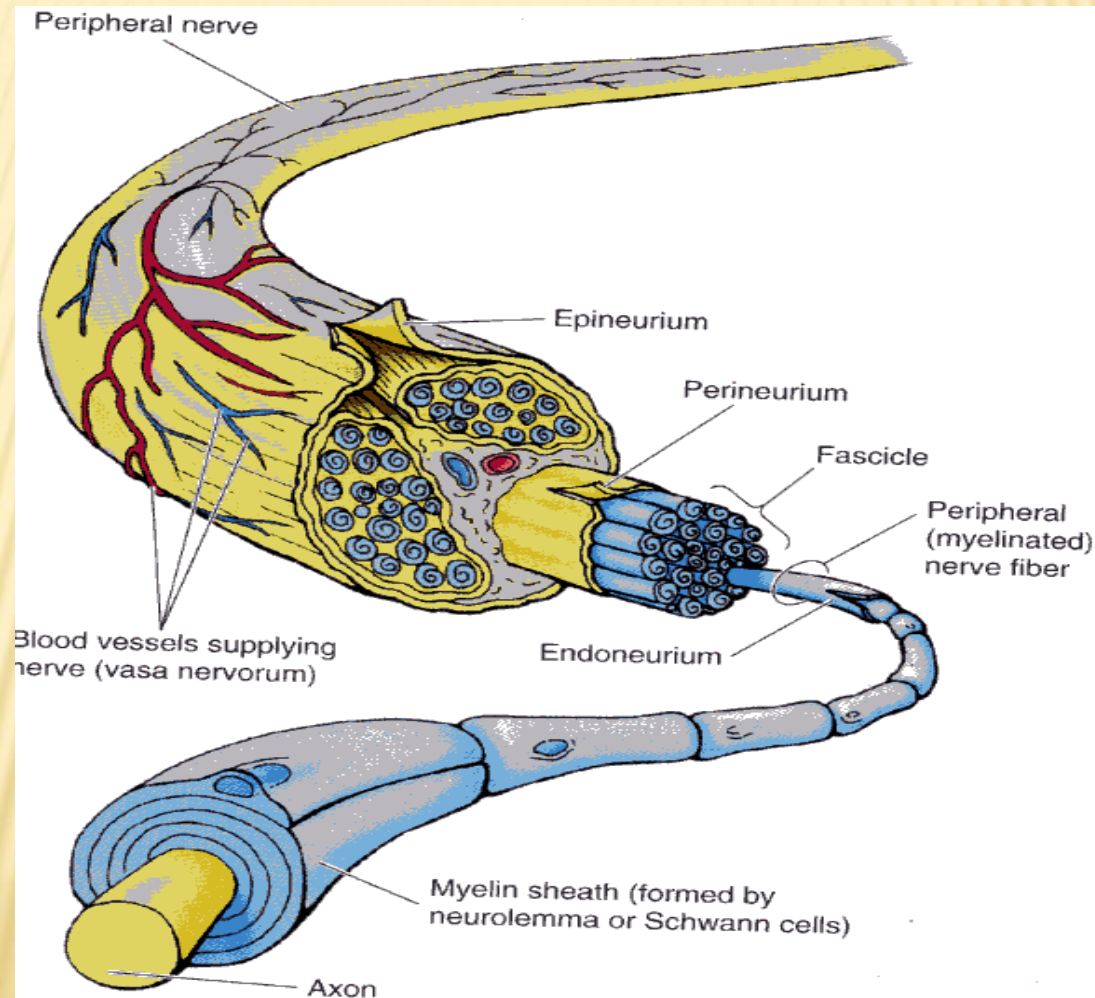
NEUROPATHY

- ✗ What is meant by protective sensation?
 - + Protective sensation means that a person has enough normal nerve function in the feet that they can feel pain normally.
 - + One way to screen is by using a 5.07 (10 gram) monofilament.

SYMPTOMS OF NEUROPATHY

- ✗ Burning
- ✗ Numbness
- ✗ Tingling
- ✗ Pins and Needle Sensation
- ✗ “feels like the bottom of my foot is cardboard”,
“feels like a wadded up sock in my shoe”,
“my big toe feels different”

PERIPHERAL NERVOUS SYSTEM



SEMMES WEINSTEIN MONOFILAMENT



SENSORY NERVE DAMAGE



CHARCOT ARTHROPATHY



AUTONOMIC NERVE DAMAGE

- ✗ Dry Skin
- ✗ Forms callus easier
- ✗ Fungus starts easier
- ✗ Crack more easily
- ✗ *Easier to Break open and Allow infection*



HOW DO YOU PREVENT NEUROPATHY

- ✗ Glucose Control
- ✗ Glucose Control
- ✗ Glucose Control

PERIPHERAL ARTERIAL DISEASE (PAD) (POOR CIRCULATION)

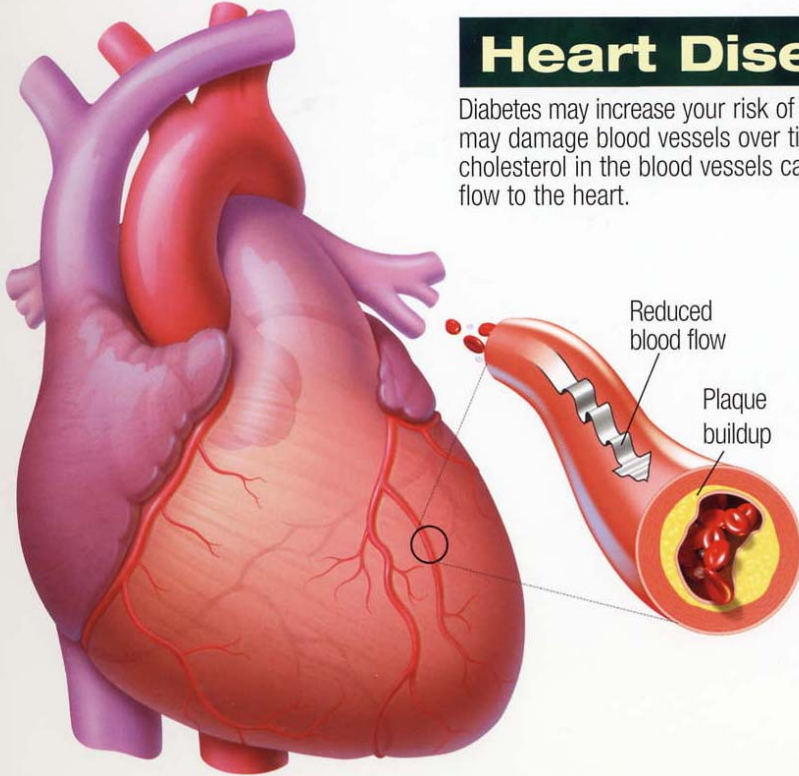


PERIPHERAL ARTERIAL DISEASE



Heart Disease

Diabetes may increase your risk of heart disease. High glucose levels may damage blood vessels over time. High levels of fat and cholesterol in the blood vessels can gradually reduce or block blood flow to the heart.

A diagram of a human heart. A callout shows a cross-section of a coronary artery. Inside the artery, there is a large, irregular mass of red and yellow material labeled 'Plaque buildup'. This buildup is narrowing the artery's lumen. An arrow points from the narrowed area to the text 'Reduced blood flow'.

People with diabetes are 2-4 times more likely to die from heart disease.

Your physician should check your blood pressure every visit (at least every 3 months), and check your cholesterol at least once a year.



FOREST FIRES





HOW DO YOU PREVENT ARTERIAL DISEASE?

- ✗ Exercise
- ✗ Control Cholesterol
- ✗ Don't smoke
- ✗ Control Blood Pressure
- ✗ (Sounds Like Preventing Heart Disease doesn't it?)

HOW DO AMPUTATIONS HAPPEN?

- ✗ Usually caused by a skin injury.
- ✗ The injury becomes infected.
- ✗ Infection spreads.
- ✗ Gangrene may set in.
- ✗ Amputation stops the infection from spreading to the rest of the body.

Establishing Risk

THE FOOT EXAM

EXAM

- Take diabetic foot care history
- Examine the feet
- Inspect shoes
- Demonstrate use of monofilaments
- Assign a foot care risk level

DIABETIC FOOT CARE HISTORY

- ✖ Gives you information about person's feet
- ✖ Find out how the person cares for his feet
- ✖ Ask about any foot problems

**ASK THE
FOLLOWING
QUESTIONS:**

-
- ✖ Tell me how you care for your feet?
 - ✖ How often do you wash your feet?
 - ✖ How often do you apply lotion to your feet?
 - ✖ Have you ever had sores on your ankles or feet? When and Where?
 - ✖ Has your Dr. ever told you to wear a special shoe or special insole in your shoes?
 - ✖ Do you smoke? For how long?

Systematic

- Visual Inspection
- Vascular
- Neurologic
- Dermatologic
- Musculoskeletal (Deformity)

HOW TO EXAMINE THE FOOT

VISUAL INSPECTION- LOOK AT:

- ✗ Lower Leg
- ✗ Ankle
- ✗ Heel
- ✗ Top and bottom of the Foot
- ✗ In between the toes



FOOT PULSES (VASCULAR)

- ✖ Evaluate circulation in the feet by feeling for pulses
- ✖ Dorsalis Pedis pulse
- ✖ Posterior Tibial pulse

DORSALIS PEDIS PULSE

- ✗ Top of the foot
- ✗ Use three fingers
- ✗ Feel just lateral to the extensor tendon of the big toe
- ✗ Sometimes absent (congenitally)

3. *The Dorsalis Pedis Pulse.* Use three fingers on the dorsum of the foot (not the ankle) usually just lateral to the extensor tendon of the great toe. (This pulse is sometimes congenitally absent.)



POSTERIOR TIBIAL PULSE

4. *The Posterior Tibial Pulse.*

Curve your fingers behind and slightly below the medial malleolus of the ankle. (This pulse may also be congenitally absent.)



- ✗ Inside of the ankle
- ✗ Use three fingers
- ✗ Curve the fingers just behind the medial (inside) ankle bone
- ✗ May also be absent (congenitally)

MONOFILAMENT TESTING (NEUROLOGIC)

- ✖ Important test to determine if *protective sensation intact*, or *insensitive feet*
- ✖ 5.07 (10 gm) monofilament used
- ✖ Touch foot lightly with the monofilament causing it to just bend—if felt by patient then *protective sensation is intact*

SKIN COLOR

- ✗ Pink – normal
- ✗ Dusty red-bluish – poor circulation
Pale-bluish
- ✗ Reddened – infection or irritation
- ✗ Brown patches – common in older patients
(usually not harmful)
- ✗ Coarse black spots – skin may have died
because of poor circulation or
infection (may be emergency)

SKIN TEXTURE

- ✗ Rough, reddened – may be going barefoot
- ✗ Rash – eczema, or contact dermatitis
- ✗ Dry, flaky – athlete's foot or damage to
nerves that control sweating
- ✗ Scaly, cracks – nerves that control sweating
may be damaged
- ✗ Smooth, shiny – poor circulation
- ✗ No hair growth – poor circulation

SKIN TEMPERATURE

- ✖ Test skin temperature by placing back of hand on person's skin
- ✖ Compare one side to the other, and one area to another

SIGNS OF INFECTION

- ✖ Redness or a black spot
- ✖ Swelling
- ✖ Warm or hot to the touch
- ✖ Pus or drainage
- ✖ Pain

LOOK FOR SWELLING

Two types of swelling

- ✗ Generalized swelling in both legs and feet—edema (generally not an emergency).
- ✗ Localized swelling in foot or ankle may mean a new injury such as a fracture or sprain.



LOOK FOR CALLUSES AND CORNS

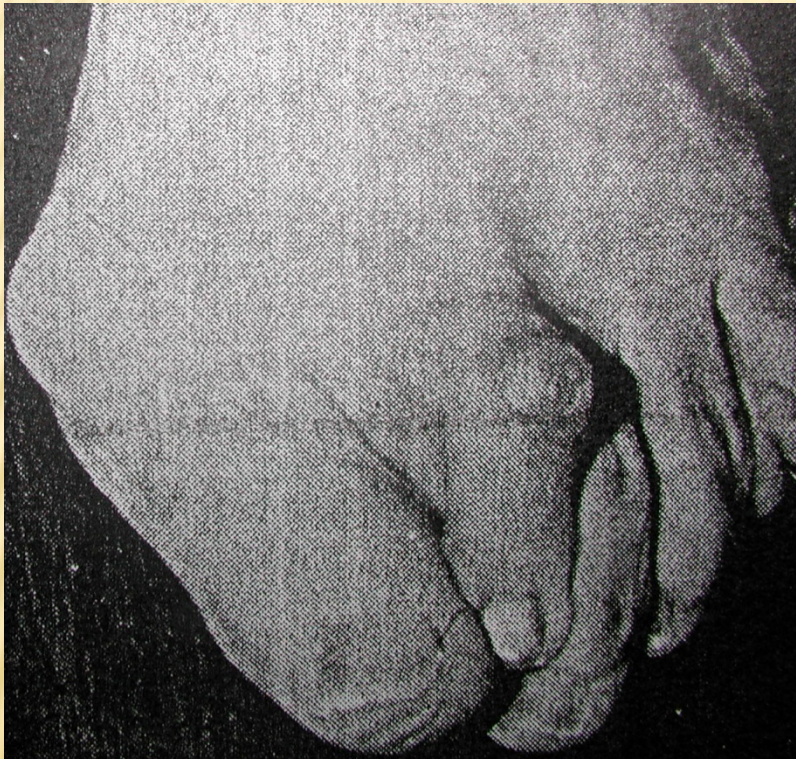
- ✘ What is a callus – callus (or corn) happens when the skin tries to protect itself for constant pressure – the skin grows thicker and thicker and becomes hard
- ✘ Think – why did this callus develop – what is causing the pressure: deformed bones, toenail, tight shoes, problem inside shoes



DANGER SIGN OF CALLUSES

- ✗ Dark brown or red spots or discoloration in callus – callus is starting to break down
- ✗ Blister next to callus
- ✗ Fluid leaking around callus
- ✗ Pus or blood coming from callus
- ✗ If any of above, an ulcer may be developing beneath the callus. Patient should be taken to clinic immediately.

CORN



- ✗ A callus that forms on the top, end or between toes of a toe
- ✗ Result of a bony prominence on the toe or toes



LOOK AT TOES AND TOENAILS

- ✘ Thickened nails – fungal infections, trauma often the cause – can easily catch and be pulled off – pressure from shoes can cause an ulcer beneath nail
- ✘ Ingrown nails – edges of nails may become infected – red, hot, and very painful
- ✘ Infected toe webs – fungal infection, poor foot care and hygiene, moisture between toes, skin cracks and bacteria can get into the skin

NAIL FUNGUS (ONYCHOMYCOSIS)

- ✖ Makes Nails Thick and Hard and more likely to become ingrown



LOOK FOR DEFORMITIES

- ✗ Deformity – a change in the shape of the muscles or bones of the foot – may cause stress and pressure leading to callus and/or ulcers
- ✗ Common deformities seen:
 - Hammertoes
 - Bunion
 - Claw toes
 - Amputation

LOOK AT PRESSURE POINTS

- ✘ Pressure points occur whenever something rubs against the same spot on the skin over and over
- ✘ Repeated pressure causes damage to the skin
- ✘ Damage to skin can lead to blisters, calluses, and ulcers

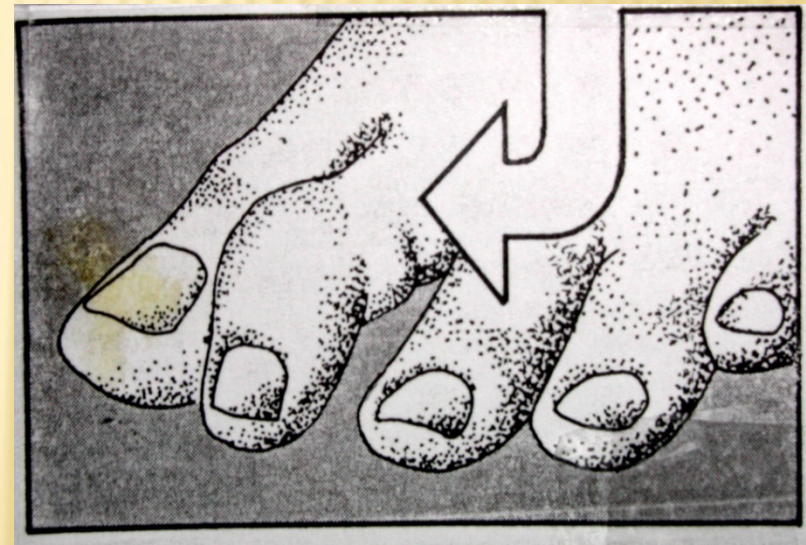
BUNION

- ✗ A bony prominence of the big toe joint or the 5th toe joint



HAMMERTOES

- ✗ A buckling of a toe producing a bony prominence on the top of the toe



LOOK AT SHOES AND SOCKS

- ✗ Check shoes worn most of the time
- ✗ Check for objects in shoe
- ✗ Check the lining of the shoe: smooth, rough, uneven, lining worn out
- ✗ What type of shoe
- ✗ What is shoe made of – leather/canvas or plastic/rubber

MEDICARE SHOE BENEFIT



WOUND CARE

✗ Which one is a Diabetic Wound?



WHAT IS AN ULCER?



- ✗ An open wound of the feet
- ✗ Germs can enter the foot through this wound
- ✗ Infection can develop
- ✗ If not healed, infection can spread and lead to gangrene or dead tissue

FOOT CARE FOR ALL PEOPLE WITH DIABETES

- ✗ Foot check every visit
- ✗ Annual diabetic foot exam – in clinic
- ✗ Referral when new serious foot problem discovered
- ✗ Patient Education

PATIENT EDUCATION—DIABETES

- ✗ Stop smoking
- ✗ Check feet daily
- ✗ Wash feet daily
- ✗ Do not soak feet except to soften nails for trimming
- ✗ Do not go barefoot
- ✗ Never use hot water bottles, heating pads, or hot water
- ✗ Do not use chemicals to remove corns/warts
- ✗ Pick proper shoes and socks

HOME CARE

- ✕ Toenail Care
- ✕ Callus Care
- ✕ Using oil, lotions and creams

TOENAIL CARE

- ✗ Only for “Normal Feet”. If patient has neuropathy or PAD should not do self care
- ✗ You may soak feet for a few minutes to soften nails
- ✗ Trim toenails straight across
- ✗ Leave toenail about $\frac{1}{8}$ – $\frac{1}{4}$ in. long
- ✗ Use emery board to file thick nail or rough edges

CALLUS CARE

- ✗ Use pumice stone while washing feet.
- ✗ Rub pumice gently in one direction across the callus.
- ✗ Do not cut callus with scissors, clippers, knives, or razors.
- ✗ Do not use store medicines for corn/callus removal.
- ✗ If too thick, refer patient to clinic to have Podiatrist trim the callus.

LOTIONS AND CREAMS

- ✖ Avoid putting lotion, creams and oils between toes
- ✖ Apply lotion after bathing
- ✖ Avoid lotions with alcohol—will cause drying of skin
- ✖ May use mineral oil, baby oil, or hand creams and lotions (many brands)

SPECIAL FOOT CARE FOR PEOPLE WITH DIABETES WHO HAVE INSENSITIVE FEET

- ✘ Check the feet twice a day.
- ✘ Check temperature of water before putting feet in.
- ✘ Dry feet very well especially between toes.
- ✘ Apply lotion, cream, or oil, twice a day as needed.
- ✘ For cold/numb feet, wear extra socks-avoid heating pads, hot water bottles, and stoves.
- ✘ Encourage patient to wear proper shoes/socks.

SPECIAL HIGH-RISK FEET

- ✗ Insensitive feet only – complete foot exam every 3-6 months
- ✗ Insensitive feet *and* foot deformity – complete foot exam every 3 months
May need extra depth shoes with special insole.

SPECIAL HIGH-RISK FEET

- ✖ Insensitive feet *and* a foot ulcer or amputation in the past – complete foot exam every 1-3 months.

Have special extra depth or custom made shoes as well as custom insole called an orthotic.

DOCUMENTATION

✕ SOAP Format