What You Need to Know to Help Your Patients with Diabetes

Teaching Foot Care

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Assessment/screening for complications

- Patient newly diagnosed with T2D & at least annually in all patients:
  - Lipid profile
  - BP /orthostatic BP
  - Comprehensive eye exam with dilated retinal screen
  - eGFR (Cr) and UACR
  - Diabetic foot exam with monofilament
    - **Teach /review foot care (self-care)**

Foot Care

ADA 2023 Standards of Care - Recommendations

- **12.28** Provide general **preventive foot self-care education** to *all people with diabetes*, including those with loss of protective sensation, on appropriate ways to examine their feet (palpation or visual inspection with an unbreakable mirror) for *daily surveillance* of early foot problems. B

ADA 2023 Standards of Care **- Patient Education**

- ***All people with diabetes*** (& their families), particularly those with high-risk conditions, should receive **general foot care education**, including appropriate management strategies.
- This education should be provided to
  - all *newly diagnosed* people with diabetes
  - all people with diabetes as part of an *annual* comprehensive examination
  - individuals with *high-risk* conditions at *every* visit

Evidence suggests that while patient and family education are important, the knowledge is *quickly forgotten* and ***needs to be reinforced regularly***.

ADA 2023 Standards of Care **- Patient Education**

- Patients' understanding of these issues and their physical ability to conduct proper foot surveillance and care should be assessed.
  - Those with
    - visual difficulties,
    - physical constraints preventing movement, or
    - cognitive problems that impair their ability to assess the condition of the foot and to institute appropriate responses

  will need *other people, such as family members, to assist with their care.*

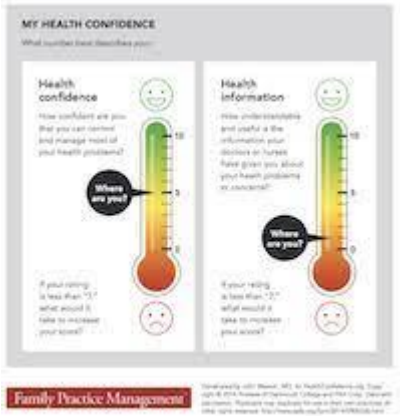
Patient Self Management:
Foot Care Checklist (Dos and Don'ts)

- Wear shoes or slippers at all times (Don't go barefoot)
  - Wear comfortable shoes with socks (not tight; watch seams)
  - Check inside shoe before putting it on
- Keep skin soft, not dry & cracked; use lotion on top & bottom
  - Keep feet dry (not wet), especially between toes, use powder
- Keep feet clean
  - do not soak feet → dry skin & peeling
- Use only lukewarm water (Don't use hot water – test with hand)
  - Do NOT use heating pads or hot water bottles
- Look at feet daily
- Cut toenails straight across
  - Do not use iodine, razors or medicines for corns

Foot Self-Care requires Patient Activation

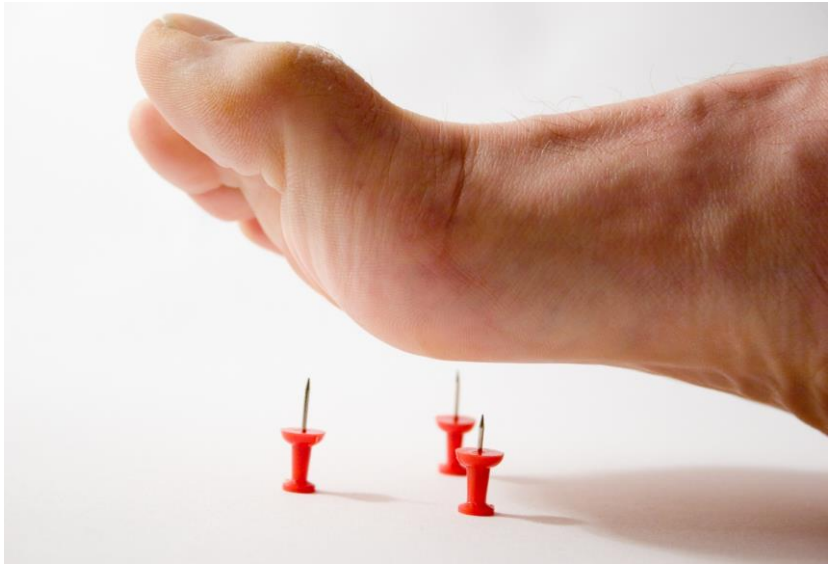
- Help them understand their role in preventing injury/amputations
  - Gain framing vs scare tactics – *"You can help / your role is important"*
  - Consider *Patient Activation* assessment [My Health Confidence (aafp.org)]
- Consider health literacy –
  - use *demonstration* and pictures – explain the "why" for do's & don'ts
    - Use "show me" while instructing & for follow-up visits (review)
  - handing them a typed list for foot care not very effective –
    - can provide illustrated "list"
      - https://diabeteseducation.novocare.com/content/dam/c4c-website/Foot%20Care%20for%20People%20with%20Diabetes.pdf
      - http://main.diabetes.org/dorg/PDFs/foot_care_for_a_lifetime.pdf
      - https://www.worlddiabetesfoundation.org/sites/default/files/Basic%20foot%20care%20guide.pdf

"Who is responsible for your health?"
- You
- Your doctor ("I don't know anything")
- You & your doctor



If you can not feel what you are stepping on

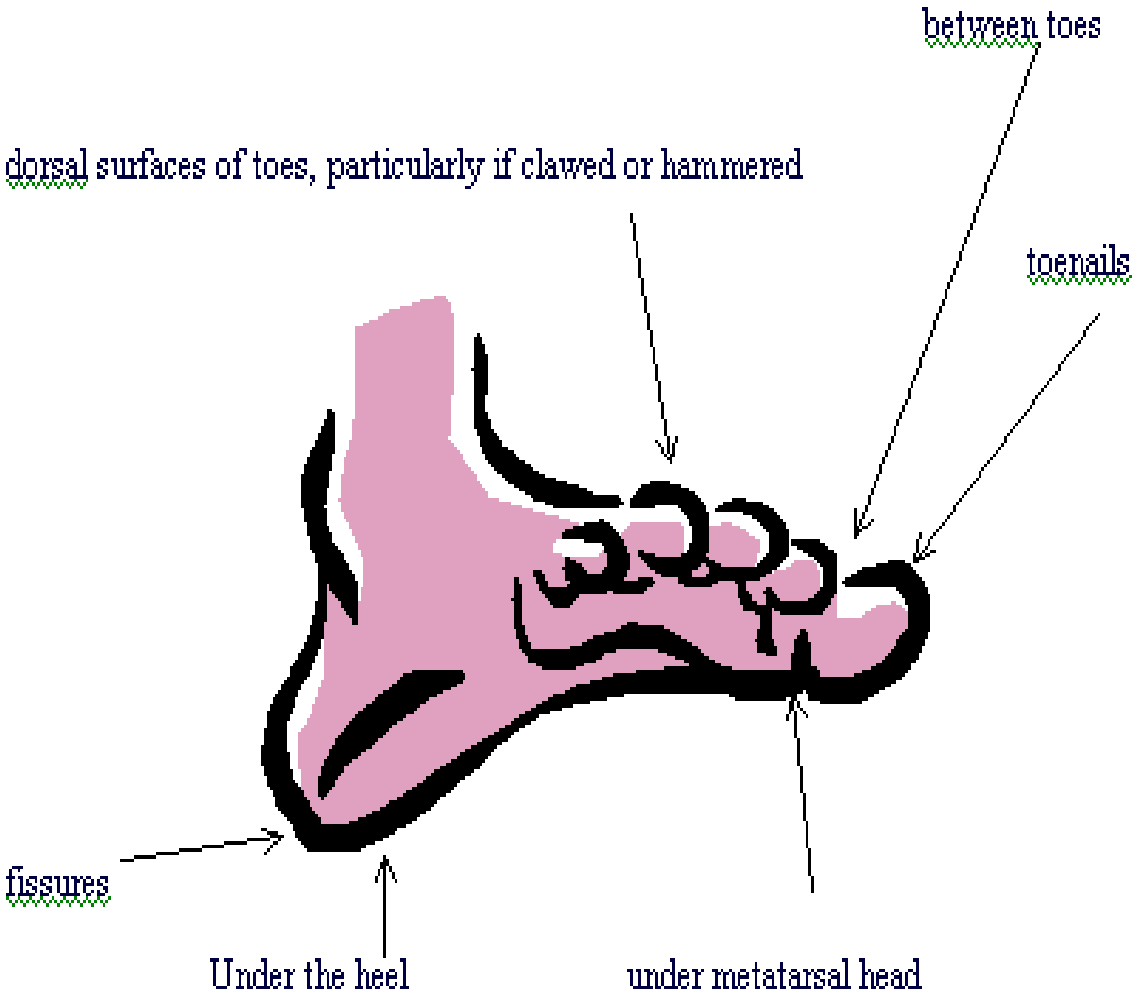
Do NOT go Barefoot



- Do not walk barefooted at home.
- This is to prevent injuring your feet when:
  - An object accidentally drops on your foot, or
  - You accidentally hit your foot against an object, or
  - You accidentally step on a sharp object
- Remember: Always wear protective cushioning slippers at home to protect your feet

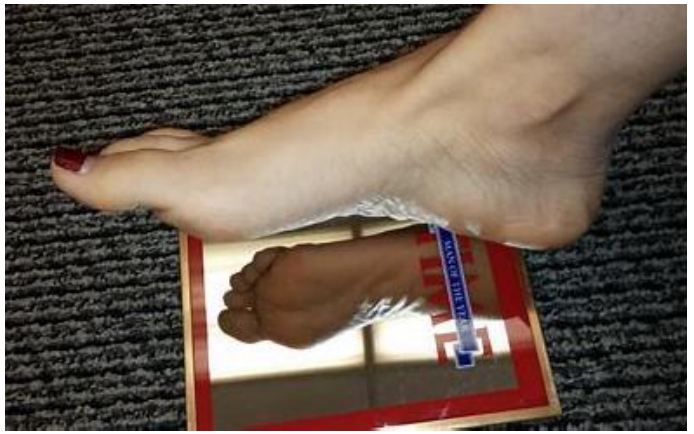
Also, protection from hot surfaces

Look at Your Feet EVERY Day



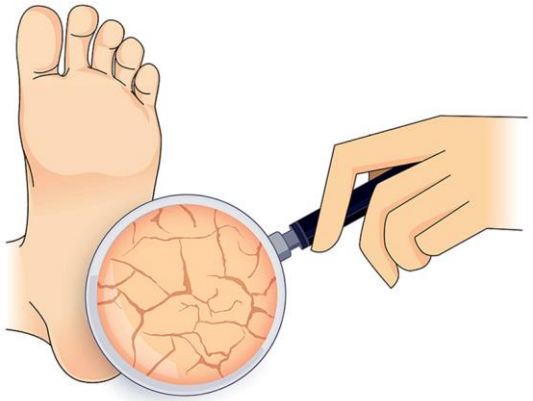
- Check feet daily for
  - Blisters
  - Hard skin
  - Wounds
  - Sudden changes in skin color
  - Cracks in skin
- Look out for signs of infection
  - Redness
  - Pus / Discharge
  - Warmth
  - Fevers / Chills
  - Swelling
  - Foul smell
  - Pain

Use a Mirror if needed to see Bottom of foot



If body build or mobility limitations don’t allow patient to hold the mirror to inspect bottom of foot, can put mirror on floor and hold foot over it or have someone help

Keep Skin Soft – Prevent Dry, Cracked Skin



- Moisturize the skin at the top and bottom of your feet and lower leg
- *Avoid* moisturizing in between the toes as this can lead to fungal infection or wet skin at area.

Cut toenails straight across

smooth nail edges with a nail file

Check that there is nothing in your shoes before wearing them

- Before wearing your shoes, always check to ensure that there is nothing hidden in them (for example, sharp objects or small objects).

- Also, always wear socks or stockings with shoes to prevent blisters from forming on your feet due to skin being continuously rubbed against the shoe.

What about Socks

- Observe that socks are being worn with shoes to reduce friction
- Check that socks meet the following criteria:
  - Socks are ***nonconstricting*** with no tight band around ankle or calf.
  - Socks with prominent ***seams*** are worn turned inside-out.
  - Lighter-colored or white socks are worn when there is an *open wound* to help alert wearers with compromised sensation to a draining wound.
  - Patients with a *partial foot* require a sock that will *conform to the shape* without distal prominent seams or excess material at the distal end.
  - A common *misinformation* recommendation: *"Ensure socks are made of absorbent materials, such as cotton"* –
    - Cotton is a natural fiber that is very absorbent, but it holds on to moisture! It doesn't wick moisture. (Findings show you shouldn't wear cotton socks if you have sweaty feet!)
    - Wool is great for moisture-wicking, but not always best for stretch and durability
    - A *wool and synthetic blend* or *Acrylic blend* often better

A look at research (or lack of) on recommendations regarding socks:

Sockwear Recommendations for People With Diabetes

Carol B. Feldman, MSN, RN, CDE; Ellen D. Davis, MSN, RN, CDE Diabetes Spectr 2001;14(2):59–61

- Several education sources recommend cotton and wool socks for diabetic patients to help keep feet dry - however, this advice may be based on *tradition* rather than on scientific evidence.
- The available evidence suggests that people with diabetes who have *"normal" feet* should be able to wear whatever socks they find to be comfortable.
  - Socks should fit well, without constricting cuffs, lumps, or uncomfortable seams.
    - Fitted socks are preferable to tube socks.
    - Patients can judge for themselves which type of fabric feels the most comfortable.
- Patients who are ***at risk*** for ulcer development because of decreased pressure sensation(LOPS) should be advised to wear ***densely padded*** socks.
  - In the studies cited here, the padded socks used were the ***Thorlo brand***, which are made of 100% **acrylic fiber with nylon and spandex** for elasticity.
    - Padded acrylic socks produce less moisture at the skin surface and less blistering in runners than do cotton socks.

Sockwear Recommendations for People With Diabetes

Carol B. Feldman, MSN, RN, CDE; Ellen D. Davis, MSN, RN, CDE

Diabetes Spectr 2001;14(2):59–61

- *"…socks are like towels. If a cotton towel is used to dry the skin after a bath, the **cotton** does well at absorbing the water from the skin, but the towel is then damp because it **retains the moisture**. A characteristic of **acrylic** is that it does not absorb moisture well. However, it is able to **wick moisture** from the skin…"*

- Additional (besides Thorlo) socks that are recommended: Balega, Bombas, Coolmax , Smart Wool and Drymax socks

Patient Education on Footwear

- The selection of ***appropriate footwear and footwear behaviors*** at home should also be discussed (e.g., no walking barefoot, avoiding open-toed shoes or slippers).

Tight, restrictive shoes can cause long term damage.

Tips for buying shoes for patients with diabetes

1. When buying shoes, make sure they are comfortable from the start and have enough room for your toes.
2. Don't buy shoes with pointed toes or high heels. They put too much pressure on your toes. The heel should be no more than ¾ inch high.
3. Have your foot measured each time you buy shoes. Stand during the measurement.
4. Shop late in the day, when your feet are largest.
5. Know that size varies depending on the manufacturer. Always try more than one size to find the best fit.
6. Try on both shoes and walk around to check comfort. Base fit on the larger foot.
7. Allow at least a thumbnail (about ½ to ¾ inch) of space at the end of your longest toe in the shoes you select. Make sure you can wiggle your toes.
8. Try the shoes on with the type of socks you will wear.
9. Choose leather uppers, a stiff heel, inside cushioning, and flexibility for the ball of the foot.
10. Select the best material. The outer sole should be made of soft material with laces or Velcro tabs.
11. For serious foot problems, buy a shoe that is specially molded to your foot.

It's always a good idea to have a healthcare professional check the fit of your shoes.

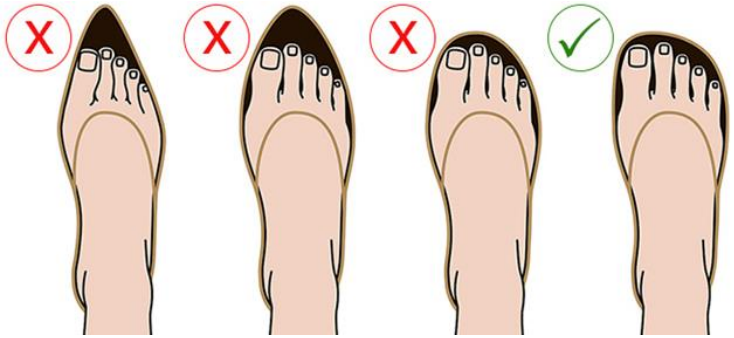
https://www.diabetesselfmanagement.com/managing-diabetes/complications-prevention/how-to-choose-footwear/

Assessing footwear in patients with diabetes - Wound Care Advisor

https://jfootankleres.biomedcentral.com/articles/10.1186/s13047-017-0244-z
Diabetic Foot Australia guideline on footwear for people with diabetes

Inspect shoes to determine if they meet the characteristics for the ideal shoe for diabetic-foot

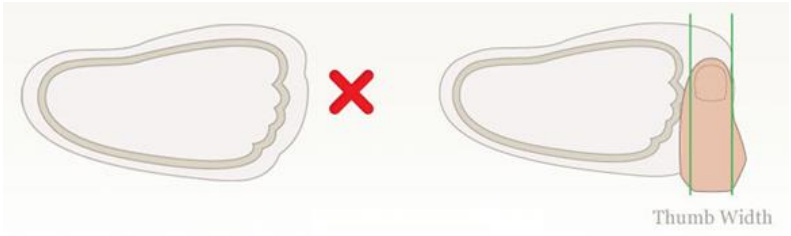
- The shoe should be **foot-shaped**
  - Shoes with pointed toes compress the foot & toes



- The shoe should have a **soft heel counter** that is *firm and rigid enough* to keep the foot in place when walking

Inspect shoes to determine if they meet the characteristics for the ideal shoe for diabetic-foot

- Check **length** (1/2” to ¾” beyond tip of longest toe) to prevent toes bending inside of shoes & trauma to toenails.



- Check **width**. The sides of the shoe should not compress the sides of the foot, should fit snugly but not tightly.
  - The widest part of foot should be in the widest part of shoe.
  - The correct width allows the toes to rest flat on the insole without being compressed.

pull foot pad out, stand on it & check fit

Inspect shoes to determine if they meet the characteristics for the ideal shoe for diabetic-foot

- The **shoe upper** should be made of leather or other breathable material.
  - The leather (or other material) over the forefoot is as soft as possible.
- Check that shoes have **supportive, cushioned soles** that are thick enough to reduce pressure on the foot & prevent puncture wounds.
- The **inside lining** of the shoes is smooth and free from seams and/or wrinkles.
- The shoe has a **heel height** that is not excessive (under 5 cm [2 inch]).
  - High heels cause abnormal pressure on the foot

These kinds of footwear should not be used by people with diabetes especially those with Diabetic Neuropathy.

WOMEN WITH DIABETES MUST AVOID WEARING HIGH-HEELED SHOES

Footwear with Toe grip/ Toe ring not advisable for people with Diabetes

People with Diabetes must avoid wearing Footwear without Heel counter

Note: Several studies have shown that wearing athletic shoes can reduce plantar pressure and lead to fewer calluses.

1. Wide and Deep Toe Box

Allows for sufficient room for toes and prevents skin abrasions from occurring

2. Laces or buckles

Secures feet firmly to shoes and prevents slippage and risk of falling

3. Firm and rigid heel counter

Holds your heel in place when you are walking

4. One thumb's width spacing

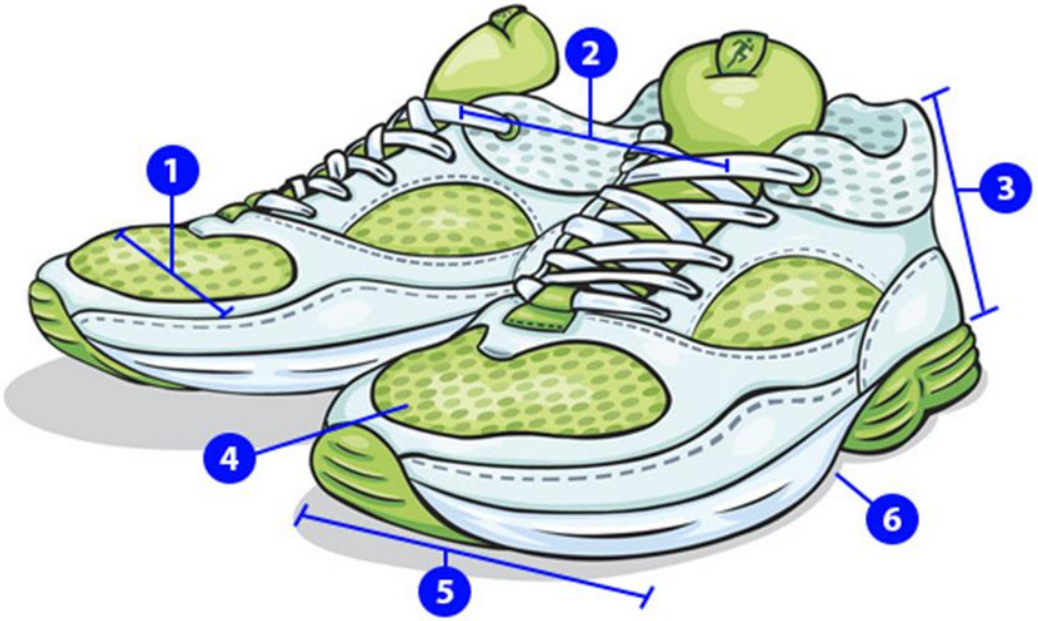
Allows for one thumb's width spacing from the longest toe to the front of the shoe to ensure adequate space for your feet when walking

5. Flexible toe box

Shoe should be flexible only at the balls of the feet so as to encourage efficient toe-off when walking

6. Midsole

Midsole should not be too flexible to maintain stability of the mid-foot



The simplest intervention for a patient who is at risk for ulceration would be a good-fitting, well-cushioned pair of athletic shoes if the patient’s foot fits well in the upper area.

Teach Foot Care

- At time of *annual* foot exam for patients with or without neuropathy
- For patients with neuropathy, look at feet *every visit* (inspect for lesions) & re-enforce foot care
  - Just knowing you will look helps re-enforce
- Provide simple handout with pictures & do teach back (can use “show me”)
  - “I’m not sure if I explained it clearly, in your own words can you tell me what you are supposed to do to take care of your feet”
- Ask patients to call if they note raw spots, red areas, etc.
- Educate on appropriate footwear (socks & shoes)
- New data shows low-cost efforts reduce amputations
  - *“Early recognition of at-risk feet, pre-ulcerative lesions, and prompt treatment of ulcerations and other lower-extremity complications can delay or prevent adverse outcomes.”*

The Foot Exam

1. **Check for symptoms of peripheral neuropathy**
   - ❑ Allodynia: unusual sensitivity or tenderness
   - ❑ Tingling, prickly
   - ❑ Pain: burning, sharp or shooting pain
   - ❑ Numbness

2. **Foot Exam**
   - ❑ **Inspection** (Deformities, lesions, infection)
   - ❑ **Circulation/pulses** (blood flow)
   - ❑ **Vibration sensation**
   - ❑ **Pressure/protective sensation**

3. **Review Footwear**
   - ❑ Appropriate wear
   - ❑ Fit and size

Foot Exam Components
- Musculoskeletal
- Dermatologic
- Vascular
- Neurologic

Start with Inspection

Look for Deformities

Inspect both feet and note

- Post-amputation changes
- Deformities
  - Hammer toes/ claw foot
  - Bunion
- Padding under metatarsals (adequate or decreased)
- Rocker bottom foot
- Other

Look for Lesions

- Red spots
- Raw spots, blisters, cracks, tears in skin
- Maceration between toes
- Callouses
  - Bleeding in callous
- Ulcers
- Bleeding
- Peeling
- Burns
- Black area
- Nail changes

Do shoes fit/accommodate the deformity?
What shape are shoes in (contributing to lesions)?

Footwear & Foot Care videos from Global Health Media

- Choosing well-fitting shoes in the market
- Choosing well-fitting shoes in the shoe store.
- Taking care of your feet