**Chapter 4 Learning App: video outline – screening for diabetic foot disease**

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| Chapter: Preventing and managing complications of diabetes | Presenter: HCP with strong knowledge of managing diabetic foot disease |
| Lesson: Diabetic foot ulcers are a serious complication of diabetes | Video type: Expert commentary |
| Video title: Screening for diabetic foot disease | Video shot: faculty straight to camera, positioned right or left. Animations to appear over shoulder and/or as full screen overlay where appropriate. |
| Video objective: To provide practical guidance on foot screening in people with T2D | Video setting: Self-filming in clinic or office |
| Video length: Approx 8 minutes | |

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| **Topic 1: Why screen feet in people with diabetes?**  **Duration of topic: 1 minute** | | | |
| **Talking points/script** | **Animation (if applicable)** | **Timings** | **References** |
| * People with diabetes are at risk of developing foot problems such as ulceration, amputation and Charcot neuroarthropathy, or Charcot foot, which occurs in people with peripheral neuropathy and results in multiple bone fractures and dislocations, pain and the development of foot deformities as a result of repetitive microtrauma to the foot and ankle. * These conditions are responsible for more hospital admissions in patients with diabetes than any other long-term complication. * Peripheral neuropathy is a common microvascular complication of diabetes that plays a central role in the development of foot complications. * Foot ulceration (and subsequent amputation) commonly occurs because of trauma, such as a small cut which the individual may not feel if they have reduced sensation due to diabetic neuropathy. * It has been estimated that the **lifetime risk of a person with type 1 or type 2 diabetes developing a foot ulcer is approximately 25%,** with men aged ≥60 years being at greatest risk. * Due to the high incidence of foot problems in people with diabetes, regular screening to identify people at risk of these conditions is important to prevent, identify and promptly treat, where necessary. * Everyone with diabetes should have their feet screened at least once a year. Individuals who are at high risk of foot problems should be screened more regularly, with individuals at the highest risk screened every 1–3 months. Indications of high risk include persistent high blood sugar levels, previous foot complications, and neuropathy. | The video will be a combination of full screen talking head, talking head with on screen animations and full-screen animations  Keywording: text screens depicting keywords highlighted in blue on the left | TBC in post-production | <https://pubmed.ncbi.nlm.nih.gov/28121117/>  <https://pubmed.ncbi.nlm.nih.gov/15644549/> |
| **Topic 2: Risk factors for foot ulceration**  **Duration of topic: 1 minute** | | | |
| **Talking points/script** | **Animation (if applicable)** | **Timings** | **References** |
| * Risk factors for foot ulcers include:   + **poor glycaemic management**   + **diabetic neuropathy with loss of protective sensation**   + **peripheral vascular disease**   + **history of foot ulcers/previous ulceration**   + **previous amputation**   + **foot deformities** (e.g. claw toes, Charcot changes)   + **Cigarette smoking**   + **visual impairment** (may contribute to injury risk and not identifying injuries to feet)   + **diabetic nephropathy** * There are two key pathways that lead to ulceration in people with diabetes:   + **neuropathy**, which often results in reduced sensation in extremities   + **peripheral vascular disease** which results in reduced circulation of blood to body parts other than the brain and heart | Keywording: text screens depicting keywords highlighted in blue on the left |  |  |
| **Topic 3: Taking a detailed patient history**  **Duration of topic: 2 minutes** | | | |
| * The first part of the screening process is taking a patient history. This can help to guide the physical exam. * When taking a patient’s history ask the following questions: * Does this individual have a history of:   + **leg or foot ulceration**?   + **lower limb amputation or surgery**?   + **a foot wound requiring ≥3 weeks to heal**?   + **smoking or nicotine use**?   + **uncontrolled hyperglycaemia**? * Additionally, ask if the individual experiences:   + **burning, tingling or pain in the legs or feet**?   + **loss of sense of touch or ability to feel heat or cold**?   + **a change in the colour or temperature of the feet**? * After taking a verbal history, it’s time to start the physical examination. * Ask the individual to remove any socks and shoes. If there are any plasters/Band-Aids or bandages, these should also be removed. * First carry out a visual inspection of the feet. Here we are looking for:   + any **discolouration of skin**   + presence of scarring from **abnormal wound healing, calluses or corns**   + presence of **foot deformities** that may lead to ulceration (e.g. claw toes, bunion, overlapping toes, rocker-bottom deformity due to Charcot neuroarthropathy)   + **discoloured, ingrown or elongated nails**   + signs of **fungal infection**   + **wounds, fissures or ulceration** * When screening an individual with diabetes, it’s important to remember that the absence of visible symptoms does not necessarily mean the individual is at low risk. Screening tests should still be carried out in the absence of visible symptoms. |  |  |  |
| **Topic 4: Loss of protective function testing**  **Duration of topic: 3 minutes** | | | |
| * After the visual examination, check for **loss of protective sensation**. There are multiple tests that can be used to assess loss of protective sensation. Ideally, two tests will be carried out to reduce the likelihood of a false positive or negative result. * The preferred test is the **10 g monofilament test**. In this test, the device is placed perpendicular to the skin, with pressure applied until the monofilament buckles. This is repeated at several sites on the foot. The patient is asked to recognize the perception of pressure and identify the correct site. * To carry out this test, first ask the patient to **close their eyes** then apply the monofilament on the patient’s hands (or elbow or forehead) so that they know what to expect. The patient must not be able to see whether or where the examiner applies the filament. * Then conduct the test on **three sites on both feet** in the highlighted locations. The total duration, including skin contact and removal of the filament, should be approximately 2 seconds. The patient should have their eyes closed for the entirety of the test. * When pressing the filament to the skin, **ask the patient if they can feel the pressure**. * If present, apply the filament at the perimeter of, not on, an ulcer site, callus or necrotic tissue. * Include at least one **“mock” application** where no filament is actually applied to the foot. * If a 10g monofilament is not available to you, another option is the **Ipswich Touch Test**. Similar to the 10 g monofilament test, the patient closes their eyes while you **lightly rest your finger on the tip of each of their first, third and fifth toes** for 1–2 seconds. Ask the patient whether they feel the touch. * The third potential test is a **vibration test**, which requires a 128 Hz tuning fork. If you have one available, perform the test by hitting the fork against the palm of your hand so it begins to vibrate. Only hit it hard enough that it vibrates for 20-30 seconds. Once vibrating, place it on the patient's arm so they can become familiar with the sensation. * Strike the fork onto your hand again and then place it onto the **bone at the base of the patient's big toe**. Ask the patient whether they can feel the vibration. Stop the vibration by holding onto the top of the fork. Ask the patient if they feel the vibration. Repeat on the other foot. |  |  |  |
| **Topic 5: Assessing for peripheral vascular disease**  **Duration of topic: 1 minute** | | | |
| * After determining whether an individual has any loss of protective sensation, the final part of the screening is to **check the foot pulse** so see if there is a sufficient blood supply. * This is because individuals with poor pulse are at increased risk for ulceration. If there is a good foot pulse, there indicates good blood supply to the patient's feet and the absence of peripheral vascular disease. * First, put your hands on the dorsal side of the foot and check for a regular foot pulse in the **dorsalis pedis artery**. You should be able to feel the pulse in the centre on the top of the foot. * Then check for a regular pulse in the **posterior tibial artery**. You can find this pulse point just below the ankle on the inside of the foot. |  |  |  |
| **Topic 4: Summary**  **Duration of topic: <1 minute** | | | |
| * People with diabetes are at increased risk of developing problems with their feet such as ulceration. Ulceration is a major health problem and often leads to lower limb amputation. * People with diabetes should have their feet screened regularly. Individuals at low risk for foot problems should be screened annually. Individuals at moderate risk should be screened every 3–6 months, and individuals at high risk should be screened every 1–3 months. We will cover how to determine an individual’s risk later in this chapter. |  |  |  |