

LEARN: Diabetic Foot Ulcer Slide Presentation

20 minutes

Purpose:

Participants will learn about contributing factors, location and assessment of Diabetic Foot Ulcers

Materials:

- *Diabetic Foot Ulcer* slide presentation

Facilitation Steps:

1. Tell students to keep their handouts from the *Focus* part of the lesson as reference for use during the slide presentation.
2. Share the following information with students as you complete the slide presentation:

Slide 2: The International Working Group on the Diabetic Foot defines Diabetic Foot as “infection, ulceration or destruction of tissues of the foot associated with neuropathy and/or peripheral artery disease in the lower extremity of people with diabetes.” It is also known as Diabetic Foot Syndrome.

Slide 3: Foot ulceration is the most common lower-extremity complication in patients with diabetes mellitus. It is complex and costly to treat. Foot ulcers develop in 9.1 million to 26.1 million people with diabetes worldwide. The highest rates are in North America and, in the United States, the total medical cost for treating diabetic foot ranges from \$9 to \$13 billion dollars. Higher rates are seen in males than females and in those with type 2 diabetes compared to type 1.

Slide 4: Peripheral Neuropathy results from damage to nerves which causes weakness, numbness and pain in the hands and feet. It is a condition common to diabetes. Sensory Neuropathy leads to loss of sensation while motor neuropathy causes an imbalance in muscles leading to foot deformities that create abnormal bony prominences and pressure points. Autonomic neuropathy occurs when

nerves that help involuntary body functions are damaged. This affects blood flow as well as sweat and oil gland function. With peripheral neuropathy, it is difficult for the patient to sense an ulceration occurring.

Peripheral vascular disease creates poor circulation leading to inadequate blood supply to the tissues. This causes the tissues to be prone to breakdown.

Repetitive mechanical stress or excessive pressure is less noticed or not noticed because of the sensory neuropathy and poorly controlled blood glucose levels increases the development of vascular disease.

Slide 5: Diabetic foot ulcers usually occur on the bottom of the foot; however, they can also appear along the top and bottom of each toe. The most common locations are the great toe interphalangeal joint, metatarsal head, plantar surface of the foot and under the heel.

Slide 6: Infection is the most common complication of diabetic foot ulcerations. Amputation of toes or foot is a complication as well. Of all amputations in diabetic patients, 85% are preceded by a foot ulceration. These ulcers are also a predictor of mortality. The risk of death at 5 years for a patient with a diabetic foot ulcer is 2.5 times higher compared to a patient with diabetes who does not have a foot ulcer.

Slide 7: Not all diabetics have foot ulcers. The following factors increase the risk of an ulcer to develop and remain unnoticed. Risk factors are:

- Visual impairment
- Peripheral arterial disease
- Neuropathy
- Foot deformity
- Limited range of motion

- High plantar foot pressures
- Minor trauma
- Previous ulceration or amputation

Slide 8: If the patient has an ulcer, it is important to document the following:

- Anatomic location
- Size (length, width and depth in centimeters) – Length is head to toe direction, width is side to side direction, there can be multiple depths depending on the wound. When measuring a wound, always wear gloves and do not place measurement device directly onto the wound as this can increase chance of infection. You may use a clock method to define location. 12 o'clock is the heel and 6 o'clock is the toes. (*May demo this*)
- Tracts or tunneling – these are channels from the wound bed into surrounding tissue. It is important to measure the depth of these using a sterile cotton tip applicator (similar to a Q-tip). (*May demo this*)
- Necrotic tissue – This tissue is black in color and is dead tissue. Necrotic tissue is removed prior to placing a dressing on the wound.
- Wound bed (granulation tissue present?) – The bed of the wound should be a beefy red color. This is called granulation tissue and is required for the healing process.
- Odor – Noticeable odor can indicate infection.
- Ulcer edges and surrounding skin (redness, warmth, induration (hardness), swelling and signs of infection) – Most diabetic ulcers are preceded by a hard callus.

Slide 9:

Serous – this is usually found during the healing process

Sanguineous – this indicates fresh bleeding and the amount should be monitored

Serosanguineous – this indicates that the fresh bleeding is stopping, and the serous drainage is beginning

Purulent – this indicates infection and should be reported to the health care provider

Slide 10: Accuracy in pressure ulcer staging is important for prompt and appropriate care. There are two main classification systems: Meggitt-Wagner (MW) and the University of Texas (UT). The Meggitt-Wagner classifies ulcers by grade while the University of Texas uses stages and grades. There is no evidence that one classification system is better than the other.

Slide 11: Most skin lesions are treatable and/or preventable, so education is important. Assess all diabetic patients for risk factors. If there are any foot conditions, treat early. Also educate all diabetic patients on how to protect their feet such as not going barefoot or in socks. They also should be taught to inspect their feet daily for any skin breakdown.

Slide 12: This is sample documentation of a diabetic foot ulcer.