American Limb Preservation Society

Guide for Patients to Act Against Preventable Lower Extremity Amputation

Overview

This resource guide provides facts about foot and leg wounds and important elements of wound care that help to prevent complications, including amputation. The information provided in this guide has been developed by doctors with expertise in wound care and by patients that have experienced feet and leg wounds.

This guide tells you about:

- Causes of feet and leg wounds
- Complications or consequences of wounds on the feet and legs
- Nutrition and how a healthy diet can help heal your wounds
- What to look for when seeking care for wounds
- Commonly used tests you may need
- Medical and surgical treatments you may need
- Commonly used **medical terms** are highlighted on first mention, with definitions that can be found at the end of this resource guide.

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Section 1: Summary

Every 20 seconds around the world, someone loses their leg to **amputation** due to underlying health problems and a non-healing **wound**. Those affected by **limb loss** are faced with an increased risk of death, among other challenges to their physical and emotional health. While leg amputation can be the most appropriate treatment for some, many patients at risk for amputation can avoid limb loss.

ALPS Vision and Mission

The American Limb Preservation Society (ALPS) has a vision to eliminate preventable leg amputations over the next generation. ALPS intends to fulfill that objective with a mission to promote interdisciplinary teams to advance the science, clinical care, advocacy, awareness, and education of limb preservation through increased access to resources and specialized care that improves patient-centered outcomes.

Patient engagement and education are central to the ALPS mission. The presence of a wound in the feet or legs can contribute to uncertainty and anxiety for the patient. Even more, many patients with lower extremity wounds are not adequately informed about treatment options, experience uncertainty on where to seek care, and may receive poorly coordinated care even after wound treatment is initiated.

Document Purpose

This document addresses key aspects of wound treatment to equip patients with knowledge to promote patient confidence when seeking care. The goal of this document is to guide patients and their advocates in understanding the causes and potential consequences of lower extremity wounds, key elements to consider when seeking care, where to seek care in the community, and what to expect during treatment. Importantly, these resources have been co-developed with patients' experience in these challenges that adds first-hand experience and wisdom to inform and inspire this work. We hope these resources provide patients and their advocates an opportunity to understand the circumstances of their condition and receive care that promptly heals the wound. In this way, patients, their advocates, and their aligned health care and social providers can work together to maximize the opportunity to preserve the leg and avoid unnecessary amputations.

Section 2: Patient Experience with Wounds

Living with a foot or leg wound can be stressful and scary. It is common to feel uncertain about where to start with your wound care, who you can trust, and generally feel overwhelmed by treatment decisions. This situation can quickly become complex when trying to manage several other chronic health problems.

Gaining knowledge about the causes of your wound, potential complications and consequences, and ways to improve your health can reduce the risk of your wounds getting worse, allow them to heal more quickly, improve your **quality of life**, and prevent wounds from recurring.

This section reviews the causes and potential consequences of wounds affecting the feet and legs, including a reduced quality of life, physical and emotional stress, amputation, and a higher risk of death. Understanding and addressing the causes of wounds can reduce their severity, allow them to heal more quickly, improve quality of life, potentially help avoid amputation, and prevent wounds from recurring.

What causes foot wounds?

Foot and leg wounds develop due to skin injury most of the time. Sometimes, wounds can occur spontaneously from underlying health conditions, and are referred to as **ulcers**. **You may hear your wound care team use the terms "wounds" or "ulcers" interchangeably. Both terms indicate a non-healing skin injury that signals a risk for limb loss.** In nearly all cases, non-healing wounds are caused by underlying health factors that cause the wound not to heal.

Diabetes mellitus, also known simply as diabetes, is among the most common health factors contributing to foot wounds and the risk of amputation. An estimated 18.6 million people worldwide are affected by a **diabetic**

Factors That Commonly Contribute to Leg or Foot Wounds
Skin injury or after surgery
Diabetes mellitus
Pressure injury or trauma to the skin
Underlying bone infections from chronic open wounds
Radiation skin injury or burns
Chronic venous insufficiency (also known as varicose vein disease)
Peripheral artery disease (also known as leg artery disease)
Nerve disorders, like neuropathy
Rheumatologic diseases, like rheumatoid arthritis, scleroderma, or lupus

foot ulcer each year. Diabetic foot ulcers account for 80% of major amputations. Diabetes can cause abnormal sensation in the feet and toes, callous formation, bone misalignment or destruction of the bones of the foot known as **Charcot foot**, and **peripheral artery disease**. When the blood sugars remain elevated, there is also increased risk of infection and poor healing response. Therefore, diabetes can lead to circumstances that can cause a minor skin injury not to heal. For these reasons, diabetes increases the risk of limb loss, among other consequences.

Other chronic health factors that cause wounds and contribute to their inability to heal include **pressure injury** to the skin, **chronic venous insufficiency, heart failure,** or **lymphedema** causing severe swelling in the tissues of the feet and legs, **malnutrition**, and **infection**. Pressure injury wounds are often related to chronic pressure on a body part with limited or no mobility. Pressure injury wounds may require special footwear, bracing, or **prosthetics** to promote **offloading** to reduce contact on the wound surface.

Chronic swelling of the legs can cause spontaneous **venous leg ulcers** and often requires additional **compression therapy** to support healing of ulcers. Radiation and burn injuries can also lead to non-healing wounds. Your medical team should address the care of your wound as well as the underlying chronic health factors that contribute to wound non-healing.

Ultrasound and the **ankle-brachial index (ABI)** are important vascular tests to evaluate for vascular disease that may be further evaluated and treat **ischemia** during an **angiogram**.

Why causes a wound not to heal?

After a wound develops, several factors can contribute to the wound not healing or healing slowly. Infection, lack of mobility such that chronic pressure is applied to the wound, malnutrition, tobacco use, including smoking, untreated depression, and lack of access to healthcare are important factors that reduce healing potential. It is important that you and your health care team address these factors to promote prompt healing. Daily monitoring of wounds is important to identify new skin problems to prompt additional treatment and avoid complications, including limb loss. New redness, pain, drainage, an abnormal smell, or increased size of the wound should be reported to your wound care team.

Infection is the most important wound-related complication. Infection can prevent a wound from healing and increases the risk of complications, including limb loss and death. Infection can often be detected by the presence of abnormal wound drainage, a foul smell, warmth, redness, swelling around the wound, increased pain associated with the wound, and loss of function of the body part near the wound. If the wound shows signs of infection, it is important to seek prompt evaluation to avoid more aggressive forms of infection, including **abscess** or **osteomyelitis**, which can increase the risk of limb loss.

Common factors that reduce wound healing
Untreated or ongoing infection, especially when involves the underlying bones
Inability to avoid contact or pressure on the wound, such as with immobility
Poor nutrition
Smoking of any kind, including tobacco, marijuana, or vaping
Depression
Lack of access to healthcare
Reduced immune function ● **Certain medications for cancer,** ● **Certain medications for rheumatologic diseases** ● **Immune function disorders**

Consequences of Non-healing

Lower extremity wounds are associated with reduced mobility or body function, poor quality of life, and amputation. In cases where infection involves the tissues deep in the leg or foot, surgery is often required. When a portion of the foot is severely infected or no continued wound care treatment is longer practical to save a portion of the foot or leg, amputation may be necessary.

A **minor amputation** occurs when a part of the foot or toe is removed. While losing a portion of your toe or foot is disfiguring and may impair balance and foot function, a minor amputation may be recommended to prevent progressive infection that could threaten the entire leg, leading to major amputation. When infection is rapidly progressive or when osteomyelitis involves the bones of the ankles or leg, a **major amputation** may be required to prevent further complications, including overwhelming infection of the body or death. Major amputation refers to the surgical removal of the leg above or below the knee.

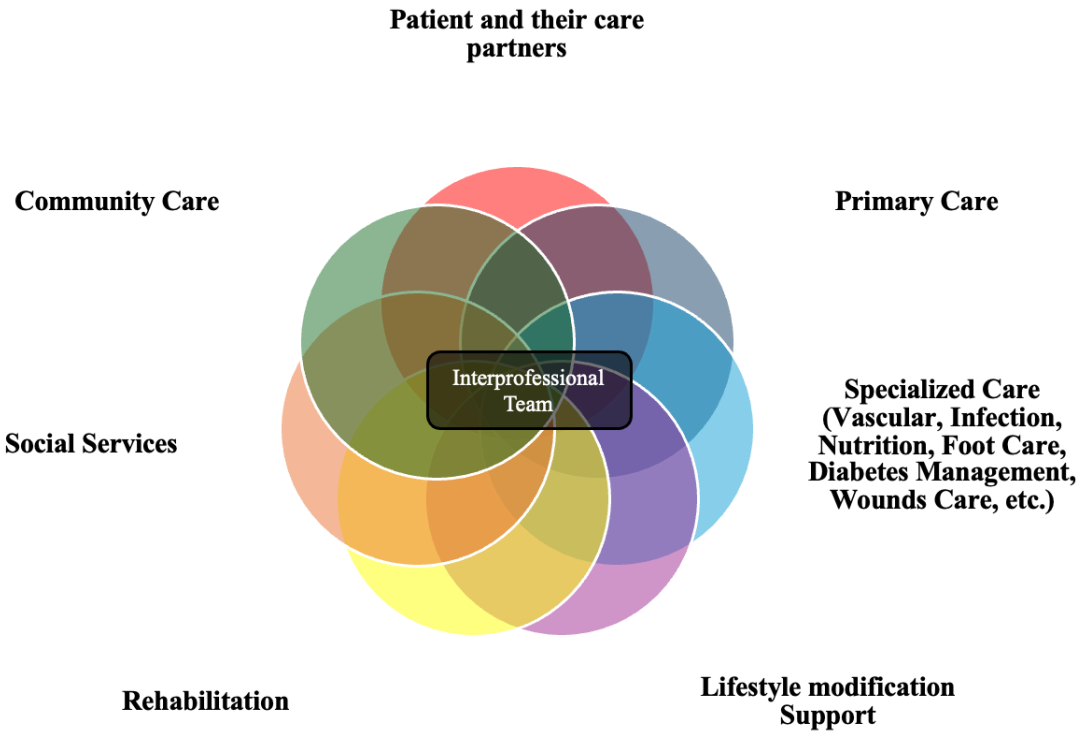
Developing a wound on the legs is an important indicator of other health problems, including heart and vascular complications, anxiety, depression, and death. Therefore, prompt healing of wounds is important to avoid loss of physical function, maintain or improve quality of life, and avoid amputation and other complications.

Voicing Your Goals of Care

To reduce the impact of wounds, patients are encouraged to be an active participant in their care. Patients who are curious about the causes of their wounds and are active participants of the care team are more likely to successfully heal the wound and avoid limb loss. Engagement in the care team, ensuring your preferences are recognized, and asking for help when questions arise introduces an important concept of **interdisciplinary care**.

Join the Interdisciplinary Care Team

You are the most important part of the comprehensive wound care team. While health and social service professionals can offer their expertise, you understand your medical history, personal circumstances, and health care goals better than anyone. It is important to consider your health care goals and tell your medical team about those goals. The process of sharing these goals and your wishes along with understanding the risks and benefits of certain treatments allows for **shared decision making**. Shared decision making is a process between an individual and their clinicians, enabling medical decisions to be made based on scientific evidence, but also on individual's specific needs, values and preferences. It is an important process to maximize quality of life, support prompt healing, and avoid potentially preventable complications, including major amputation. When partnering with your team of health professionals, your involvement creates an interdisciplinary team that will be most effective in reaching your goals in care. You as a patient (and your families and caregivers) are the most important member of the interdisciplinary care team.



Receiving the Support of Others

Receiving the support of others is important and necessary. When possible, make a list of the people (also in the community and organization) around you who can help and support you in achieving your goals. Ask trusted medical professionals whether you have the right specialists involved in your care.

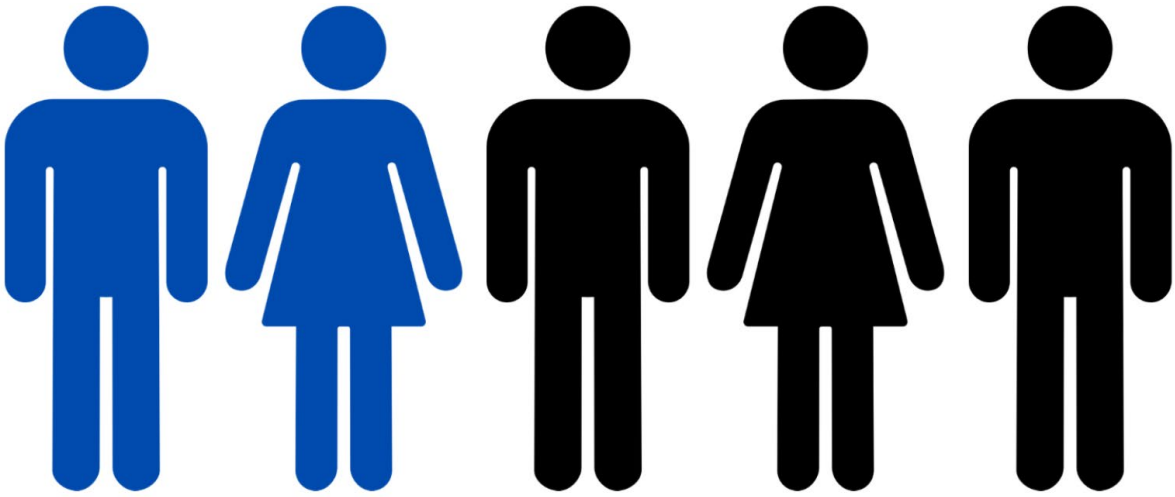
Many patients with wounds experience mobility issues that challenge their ability to attend medical appointments, perform self-care, and carry out activities of daily living. In fact, walking is often more difficult due to modifications to footwear or may be prohibited depending on the location of the wound. Lacking financial resources and access to healthcare can further challenge necessary activities to promote wound healing. Due to these difficulties, it is common for patients to feel alone or feel as though they are a burden on family or friends. For these reasons, many suffer anxiety and depression.

Even if you don't have the support of family or caregivers, the healthcare team and social services can help support your treatment goals. In addition, patient support groups, faith-based and social service community organizations, and national chronic disease advocacy groups can

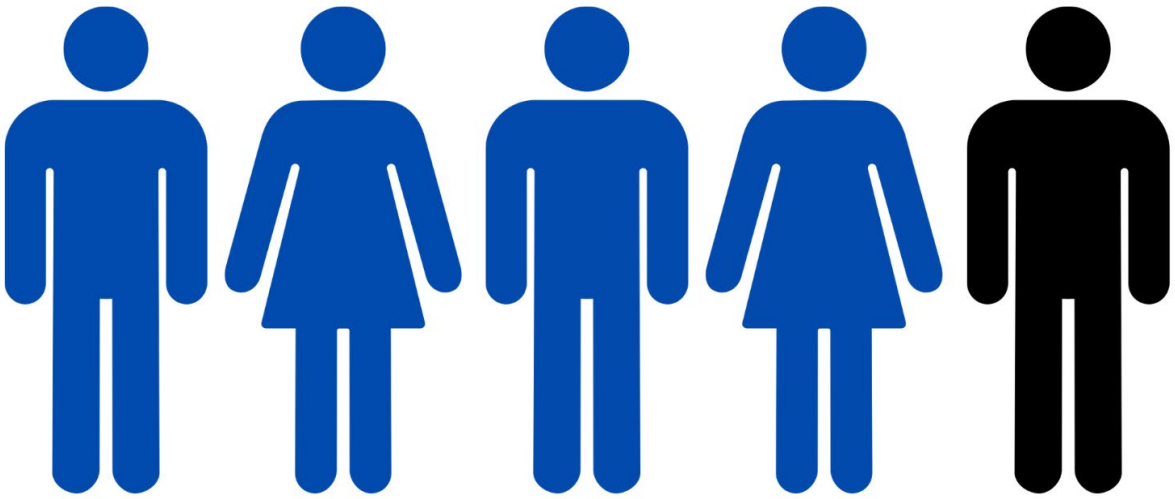
provide reassurance and valuable information through shared experience to help navigate uncertainty.

Empowerment through Knowledge

Wound healing can require a considerable amount of time and effort.



Two out of 5 patients with wounds are healed by **3 months**.



Nearly 4 out of 5 patients are healed by **1 year.**

This also means that a significant number of patients may not be healed, even after 1 year of treatment.

Gaining knowledge about your condition is empowering and can reduce treatment-related anxiety. Do not hesitate to ask questions of health professionals and social services. Your care team should support realistic goals for your care, while honoring your living circumstances, beliefs, values, and preferences aligned with your health circumstances. These objectives must be realistic in relation to your situation, achievable, relevant, and specific as to what needs to be accomplished, measurable, and time bound. This could include setting goals for blood sugar management, medication intake, exercise, hygiene and foot care, smoking cessation, and stress management. In addition, setting quality-of-life goals that address various aspects of your physical, social, and psychological well-being, including pain management related to neuropathy or peripheral artery disease is essential.

Section 3: Foot and Wound Care Standards

Wound healing is a complex process that involves several steps to address the cause of the skin injury and tissue repair. Sometimes wound healing occurs slower than expected. This section reviews the key elements to consider when seeking care, where to seek care in the community, and what to expect during treatment. Commonly used tests in evaluating a wound and medical and surgical treatment you may need are discussed. This section also reviews the benefits of team-based, interdisciplinary care are highlighted to reduce the risk of amputation and improve patient quality of life.

Finding a Wound Care Professional in my Community

When a foot or leg wound has not healed within several days, or when wounds are complicated by underlying health factors like diabetes, seeking a wound care professional is a good idea. Finding a specialist in your community can be confusing. Start early by asking your primary care physician who may have additional recommendations and can often help in finding a comprehensive wound care center. Comprehensive wound care centers specialize in treating patients with chronic and slow-healing wounds. These centers also provide care personalized to your needs in a team-based approach.

If a comprehensive wound care center is not available in your community or if you do not have a primary care physician, there are likely specialists in your community that can support care of your wound. A podiatrist is a specialist that treats conditions of the foot and ankle. Podiatrists are specially trained to evaluate and treat patients with foot and ankle wounds. Because many

foot and leg wounds involve vascular disease, a vascular surgeon or vascular medicine specialist can be another resource to support care of your wound. An infectious disease specialist may be another resource to facilitate initial care of your wound since many wounds require evaluation for infection. Podiatrists, vascular care, and infectious disease specialists can be a good place to start in care of your wound, especially if you do not have a comprehensive wound care center in your community.

How Should Foot and Leg Wounds Be Evaluated?

A non-healing wound requires a comprehensive assessment, which includes taking your medical history and a clinical examination. In most cases, additional testing is required, including laboratory testing and medical imaging. Patients with foot or legs wounds routinely require evaluation for vascular disease, which is often determined by the location of the wound.

Test type	Examples
Laboratory measures	Blood work and tissue cultures to evaluate for infection and evaluation of other chronic diseases that may affect to wound healing
Foot imaging	X-rays, CT scan, MRI scan to evaluate for infection
Vascular testing	Ankle-brachial index, ultrasound, CT angiography, MRI angiography, invasive angiography
Nutrition assessment	Screening by dietician, blood work
Social needs	Social worker may provide an assessment of social needs, including health insurance transportation issues, lack of nutritious food, and financial instability

Laboratory measures and imaging studies are often routinely performed, and particularly when infection is suspected. **X-ray**, **computed tomography (CT)**, and **magnetic resonance imaging (MRI)** tests may be necessary to evaluate for **abscess** or **osteomyelitis**. **Antibiotics** may be necessary to treat soft tissue infections although when osteomyelitis is present, the antibiotics may require intravenous (IV) administration and the duration of treatment may be much longer.

A dietician or other care team member may evaluate your nutrition status and offer recommendations, including nutritional supplements, that support wound healing. A social services worker may assess for social needs, including health insurance, transportation issues, lack of nutritious food, or financial instability. Addressing these factors improves your ability to participate in your care.

How Are Leg and Foot Wounds Treated?

All wounds require frequent monitoring, treatment of infection, ensuring the wound has appropriate blood supply, and avoiding excessive external pressure on the wound to avoid ongoing pressure injury. Managing diabetes mellitus with lifestyle changes and medications, along with other underlying conditions that contribute to leg wounds, is also important.

After initial wound assessment and considering the role of antibiotics, the wound must be cleaned and have regular changes to **dressings**. Special wound treatments, including topical medications, **negative pressure wound therapy (a.k.a wound vac)**, biologics or **skin grafts** can also be used to reduce the risk for infection and promote healing. Diabetic foot ulcers also commonly require foot surgeries to remove unhealthy tissue or fix deformities of the foot that led to the ulcer. Surgical **debridement** may be necessary to drain infection from the deep tissues of the foot, as with abscess, or to remove the infected bone to ensure healing, as with osteomyelitis.

Treatment of underlying vascular disease is key to prompt healing. For example, venous leg ulcers often rapidly improve with control of leg swelling with the use of compression therapy. Diabetic foot ulcers often are associated with peripheral artery disease, which may require invasive treatment to improve blood flow to the feet and toes. Invasive vascular treatments may include surgery, including artery bypass surgery. More commonly, less invasive techniques are used in the treatment of peripheral artery disease to include an invasive angiogram commonly with balloons and stents, among other tools.

It is important to recognize that some specialists can perform multiple functions. For example, most podiatrists routinely perform wound care and foot surgery. However, not all specialists perform the same comprehensive set of services. Therefore, it is important to confirm that you have the necessary specialty care to comprehensively address your healthcare needs. Often a complete team includes a wound care specialist, foot surgeon, vascular specialist, infectious disease specialist, nutritionist, social worker, and endocrinologist working in collaboration with your primary care clinician. Your medical team should include the necessary specialists to address your leg or foot care needs.

How Can the Risk of Diabetic Foot Ulcer Recurrence Be Reduced?

Four out of ten patients who have a healed diabetes-related foot ulcer will develop another wound within 1 year. Therefore, patients with a history of diabetic foot ulcers should undergo regular examination of their feet by an appropriately trained clinician. Patients can also monitor for callus and other signs of discoloration or foot injury that might indicate an impending ulcer.

Knowledge about proper foot self-care is important to watch for these changes and to wear properly fitted and pressure-relieving footwear to reduce risk of foot wound recurrence.

Participation in Clinical Research

Some care teams support clinical research to help improve the medical science of wound care. It is important to understand that clinical research is essential to advances in medicine. If you are approached to participate in medical research, it should be carefully considered. It is important to keep in mind that while some research may not directly benefit you, it is likely to help other future patients or your future health care. Because women and underserved minorities are often underrepresented in research, it is even more important to include these subgroups to ensure all patients are well represented in evolving clinical science.

Section 4: Limb Preservation Resources

Learning about the things you can do to prevent wounds, care for your wounds, and recover from surgery is an important part of joining the interdisciplinary care team. ALPS is committed to offering key patient resources to support knowledge that can help to avoid unnecessary limb loss by taking an active role in your care. Unfortunately, some patients require amputation despite active participation and a vast knowledge and personal experience. Resources for amputation care, support groups, and resources for caregivers can preserve and protect personal health care goals and choices. Below are a sample of key resources that may provide important opportunities to understand your condition better.

Amputation Care

- National Health Service Amputation Care Guide

Diabetes and the diabetic foot

- American Diabetes Association
- Diabetic Foot Blog
- Diabetic Wound Care

Nutrition

- American Diabetes Association Recipes and Nutrition
- American Heart Association Diet and Lifestyle Recommendations

Resources for Caregivers

- National Alliance for Caregiving
- Well Spouse Association

Support Groups

- Amputee Coalition Support Group Network

Understanding Vascular Disease

- American Heart Association PAD National Action Plan
- Patients and Referring Physicians | Society for Vascular Surgery
- Show-Me PAD Shared Decision Aid
- Vascular Cures

Glossary

Your doctor or care team may use words that may not be familiar to you. If you are unfamiliar with a term used in your care, ask your medical team to explain what the term means. Below are some commonly used terms that are defined and are bolded and in red type in this document.

Abscess: a collection of bacteria and dead tissue under the skin that increases the risk of complications.

Amputation: removal of part of the body that is no longer healthy or functional and puts the health of the body at risk for future complications.

- **Minor amputation:** an amputation of a smaller amount of tissue in the feet, including a part of a toe, an entire toe, or a portion of the foot that involves the toes or a part of the heel.

- **Major amputation:** an amputation that removes a significant portion of the leg, including the foot, ankle, and lower leg and that may extend from removal of the thigh (above-knee amputation, AKA) or from below the knee (below-knee amputation, BKA).

Angiogram: a procedure used to evaluate and treat vascular disease; the procedure is often performed invasively in the operating room or catheterization lab that allows for treatment of impaired blood flow in the legs; the procedure may also be performed non-invasively with computed tomography or magnetic resonance imaging.

Ankle-brachial index (ABI): a non-invasive imaging test to diagnose peripheral artery disease by quantifying the amount of blood flow to the lower leg.

Antibiotics: a medication commonly given by mouth or intravenously (IV) to treat bacterial infections.

Cellulitis: a common type of infection of the skin that causes pain, redness, swelling, and may lead to more serious blood stream infection.

Charcot foot: abnormal bone alignment in the foot associated nerve injury, often due to diabetes mellitus, that impairs normal walking mechanics and can lead to bony prominence and skin breakdown.

Chronic venous insufficiency (CVI): a common, chronic condition associated with abnormal blood return from the legs to the heart and central circulation that can lead to the development of varicose veins, leg swelling, skin inflammation, and skin breakdown in the lower legs.

Compression therapy: a treatment used to tightly squeeze or wrap the leg to remove excess fluid in the soft tissues, often used in treatment of venous leg ulcers; compression therapy may come in the forms of wraps, applications, or graduated compression stockings and may be require long-term to prevent the recurrence of ulceration.

Computed tomography (CT): a non-invasive imaging test that uses x-rays to diagnose abnormal anatomy or problems deep within the body; the test may be combined with a contrasting agent injected into the blood to visualize blood vessels to perform a non-invasive angiogram.

Debridement: a procedure or process to remove unhealthy tissue from a wound, sometimes accompanied by a minor surgical procedure to drain infection or cut out infected tissue (incision and drainage, I&D) or special ointments applied to the wound to promote removal of unhealthy tissue.

Diabetes mellitus (DM): an acquired or hereditary condition of chronically impaired blood sugar control that can damage organs, including the eyes, kidneys, nerves, and blood vessels, and lead to increased risk of infections.

Diabetic foot ulcer (DFU): a complication of diabetes mellitus leading to skin breakdown in the feet or toes, often because of abnormal sensation in the feet, abnormal circulation to the lower leg, or both; diabetic foot infections may be limb-threatening when associated with abscess formation and increase the risk of amputation and death.

Dressings: a protective wrap or application to protect the damaged skin and help remove unhealthy tissue within the wound.

Gangrene: an advanced and serious type of wound characterized by a black discoloration of the skin or affected tissue that is caused by infection and/or a lack of blood flow; gangrene can lead to amputation, serious systemic infection, or death if left untreated

Heart failure: a chronic heart condition that contributes to inefficient blood flow to the tissues of the body, often causing fluid retention and swelling, including swelling in the legs.

Infection: an abnormal collection of bacteria in the tissues causing pain, swelling, fevers, and may require antibiotics, surgery, or amputation to avoid serious complications, including death.

Interdisciplinary care: a team-based approach to medical and social care that works with the patient and their advocate, to set up goals for health-related medical and social decision making.

Ischemia: a lack of proper blood flow to the tissue to support normal tissue function; in the context of foot wounds, ischemia is often associated with peripheral artery disease.

Limb loss: refers to the circumstance of undergoing a major amputation.

Lymphedema: a chronic condition associated with abnormal drainage of extra fluid in the tissues, causing swelling, pain, and inflammation that is difficult to control and can lead to skin infection, including cellulitis. Lymphedema most commonly occurs in the arms or legs, and especially in the setting of lymph node removal after cancer surgery or with severe chronic venous insufficiency.

Magnetic resonance imaging (MRI): a non-invasive imaging test that uses magnets to diagnose abnormal anatomy or problems deep within the body; the test may be combined with a contrasting agent injected into the blood to visualize blood vessels to perform a non-invasive angiogram.

Malnutrition: a lack of proper nutrients in the diet that can contribute to disease or poor wound healing; deficiencies of essential nutrients, including minerals and protein, or excesses in poor nutrients, such as sugars or unhealthy fats, can impair normal body function and wound healing.

Offloading: a treatment strategy to promote healing by reducing pressure created by body weight or contact with a shoe across the wound surface; offloading may involve modification of existing footwear, new footwear, or application of a cast or other orthotic device to ensure reduce or eliminate contact to the surface of the wound.

Osteomyelitis: inflammation and/or infection of the bones, often underlying a wound; osteomyelitis often indicates deep infection of the wound, and frequently requires debridement, antibiotics, and potentially amputation.

Peripheral artery disease (PAD): a common, chronic condition characterized by obstructed leg arteries, whereby blood flow to the lower legs, feet, and toes is limited and prevents normal healing and repair; peripheral artery disease is often caused by chronic cholesterol build up and inflammation in the arteries associated with elevated blood sugars (i.e., diabetes mellitus), kidney disease, high blood pressure, high cholesterol levels, and smoking.

Pressure injury: a common cause of non-healing wounds caused by prolonged pressure to the skin during long durations of immobility, bony abnormalities of the feet, or poorly fitting shoes.

Prosthetic: a medical device that supports normal body function when body parts are missing or are not functioning properly; prosthetic devices may include footwear to support balance or include artificial limbs to facilitate normal walking function.

Quality of life: an important patient-focused goal in medical care to improve individual perception of well-being with focus on maximizing mental and physical health, while avoiding undue harm or suffering.

Shared decision making: a process of medical decisions that incorporate patient priorities and quality of life to balance the risks and benefits of certain treatment alternatives.

Skin graft: a treatment that transfers healthy skin from another location to cover a wound; skin grafts are often used for larger wounds, burn injuries, or at sites of prior tissue loss from infection, surgery for skin cancer, or after amputation.

Ulcer: a form of skin injury that comes from an internal cause or condition that leads to unhealthy tissue and skin breakdown; ulcers in the legs are commonly associated with diabetes, chronic venous insufficiency, or peripheral artery disease.

Ultrasound: a non-invasive test that uses sound waves to diagnose abnormal anatomy or disease; ultrasound may be used to evaluate soft tissues for infection or study the characteristics of blood flow to diagnose diseases of the arteries or veins.

Venous leg ulcer (VLU): a form of skin injury caused by chronic venous insufficiency, associated swelling and chronic congestion in the soft tissues of the legs leading to inflammation, skin discoloration, and skin breakdown; compression therapy is a key treatment of venous leg ulcers.

Wound: a form of skin injury that comes from an external cause or condition that leads to unhealthy tissue and skin breakdown; wounds in the legs are commonly associated with trauma or surgery but can lead to a chronic ulcer if associated with chronic conditions that prevent healing, including diabetes mellitus, chronic venous insufficiency, or peripheral artery disease.

Wound vac: a treatment for wounds that uses an adherent dressing and a vacuum pump to gently pull fluid from the wound to keep the wound; also known as vacuum-assisted wound closure.

X-ray: an imaging test using radiation to diagnose abnormal anatomy; in the context of wound care of the legs and feet; an initial test to evaluate for osteomyelitis or abnormal bony alignment.

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