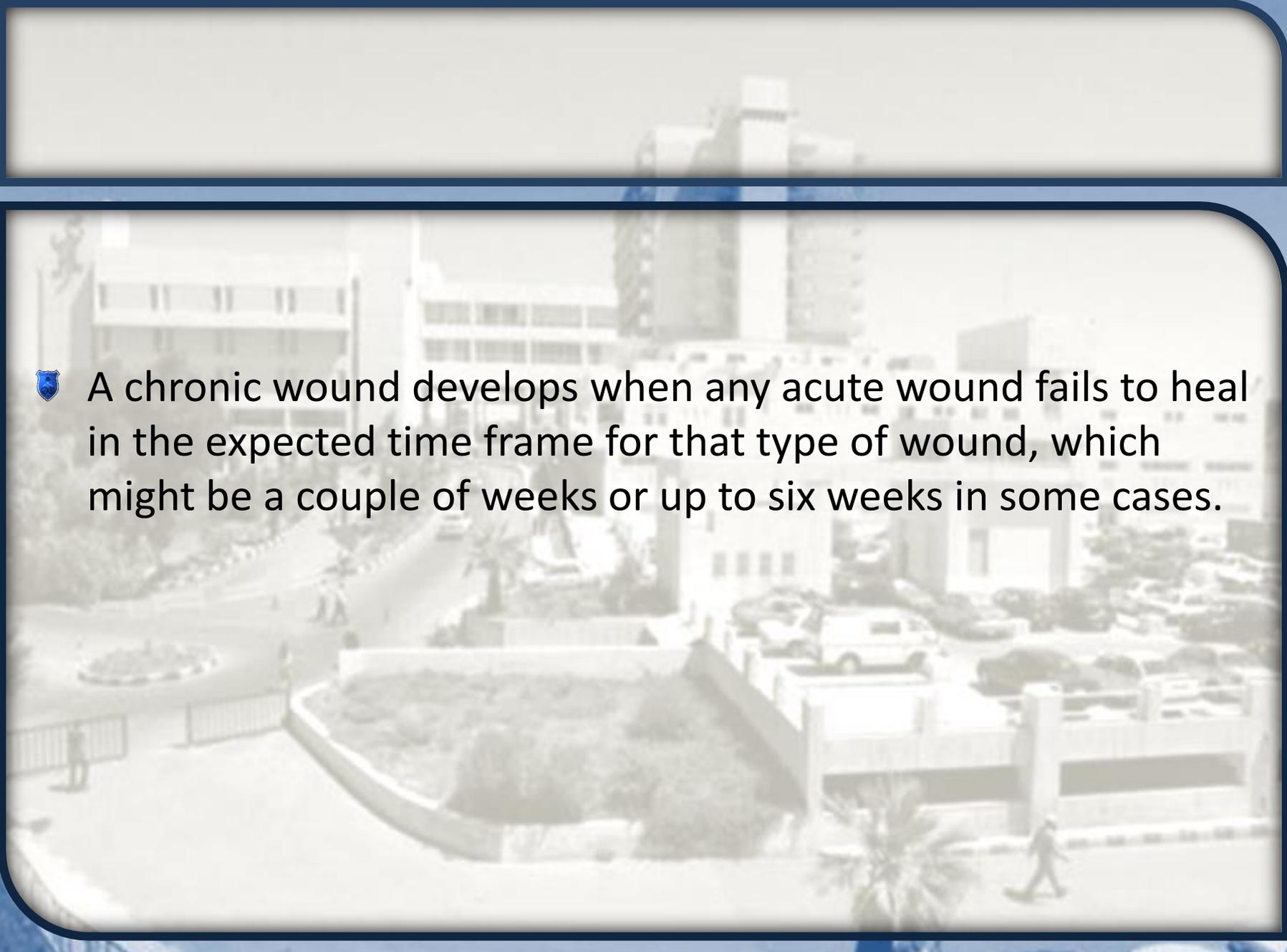


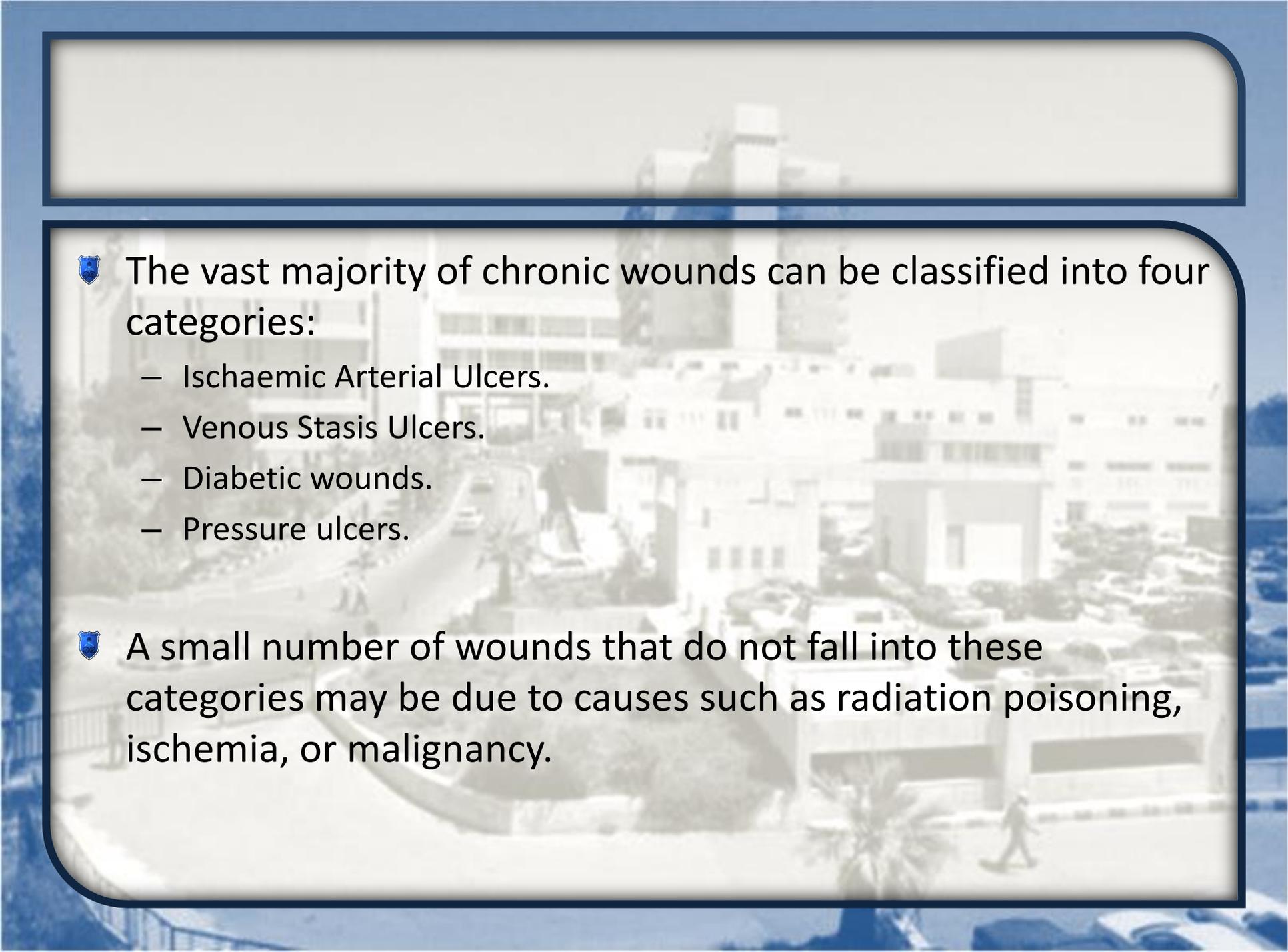


Chronic Wounds

 *Chronic wounds are defined as wounds that have failed to proceed through the orderly process that produces satisfactory anatomic and functional integrity or that have proceeded through the repair process without producing an adequate anatomic and functional result.*



 A chronic wound develops when any acute wound fails to heal in the expected time frame for that type of wound, which might be a couple of weeks or up to six weeks in some cases.



🛡️ The vast majority of chronic wounds can be classified into four categories:

- Ischaemic Arterial Ulcers.
- Venous Stasis Ulcers.
- Diabetic wounds.
- Pressure ulcers.

🛡️ A small number of wounds that do not fall into these categories may be due to causes such as radiation poisoning, ischemia, or malignancy.

Scope of the problem

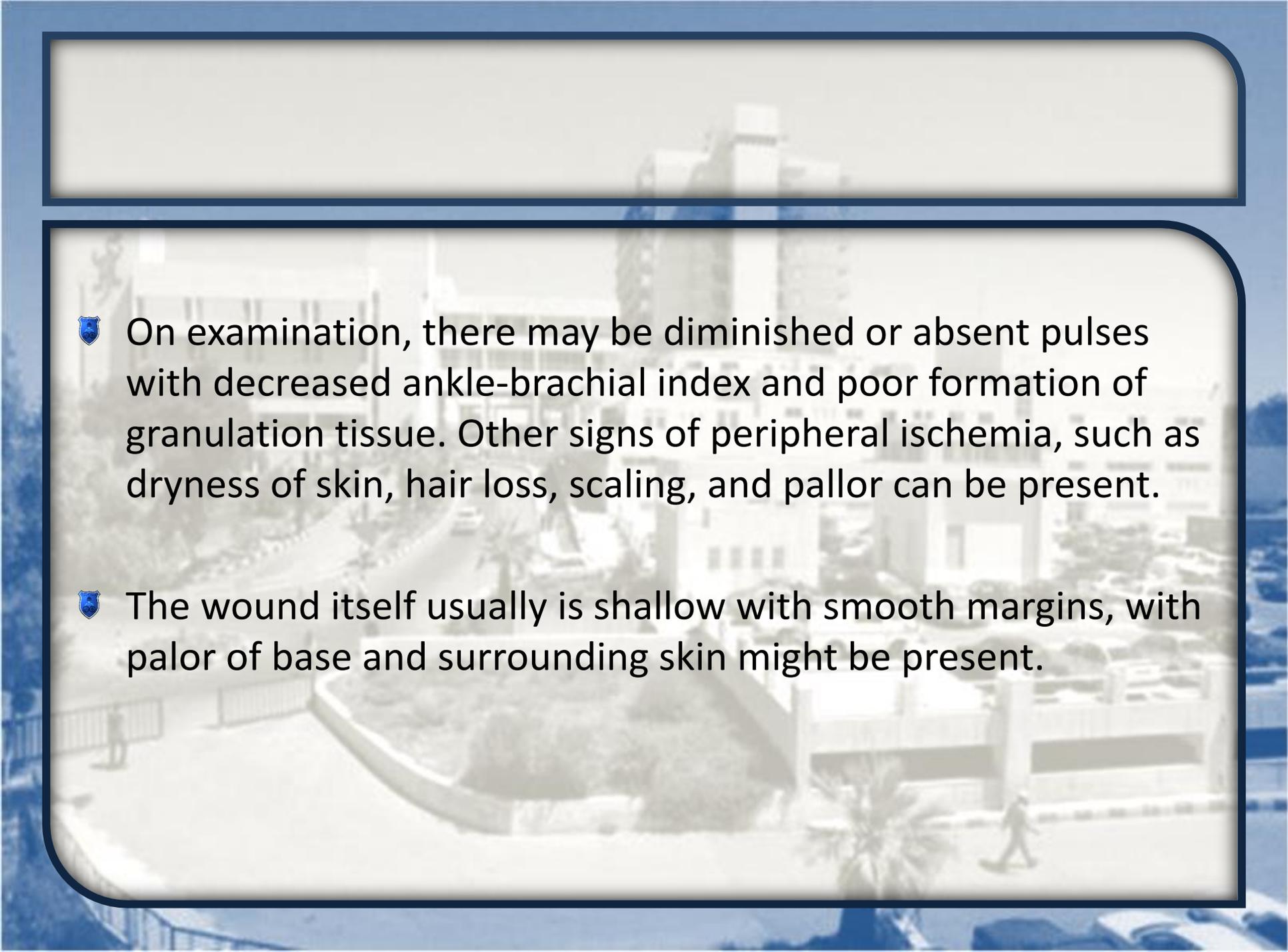
🛡️ Incidence 2.7% - 29.5%

🛡️ High risk patients:

- Quadriplegics
- Neurosurgery
- Orthopedic..post-op hips..up to 66%
- Critical care MICU/CCU/SICU...33% - 41%
- Prolonged anaesthesia time
- Debilitated and elderly(age > 70)

Ischemic ulcers

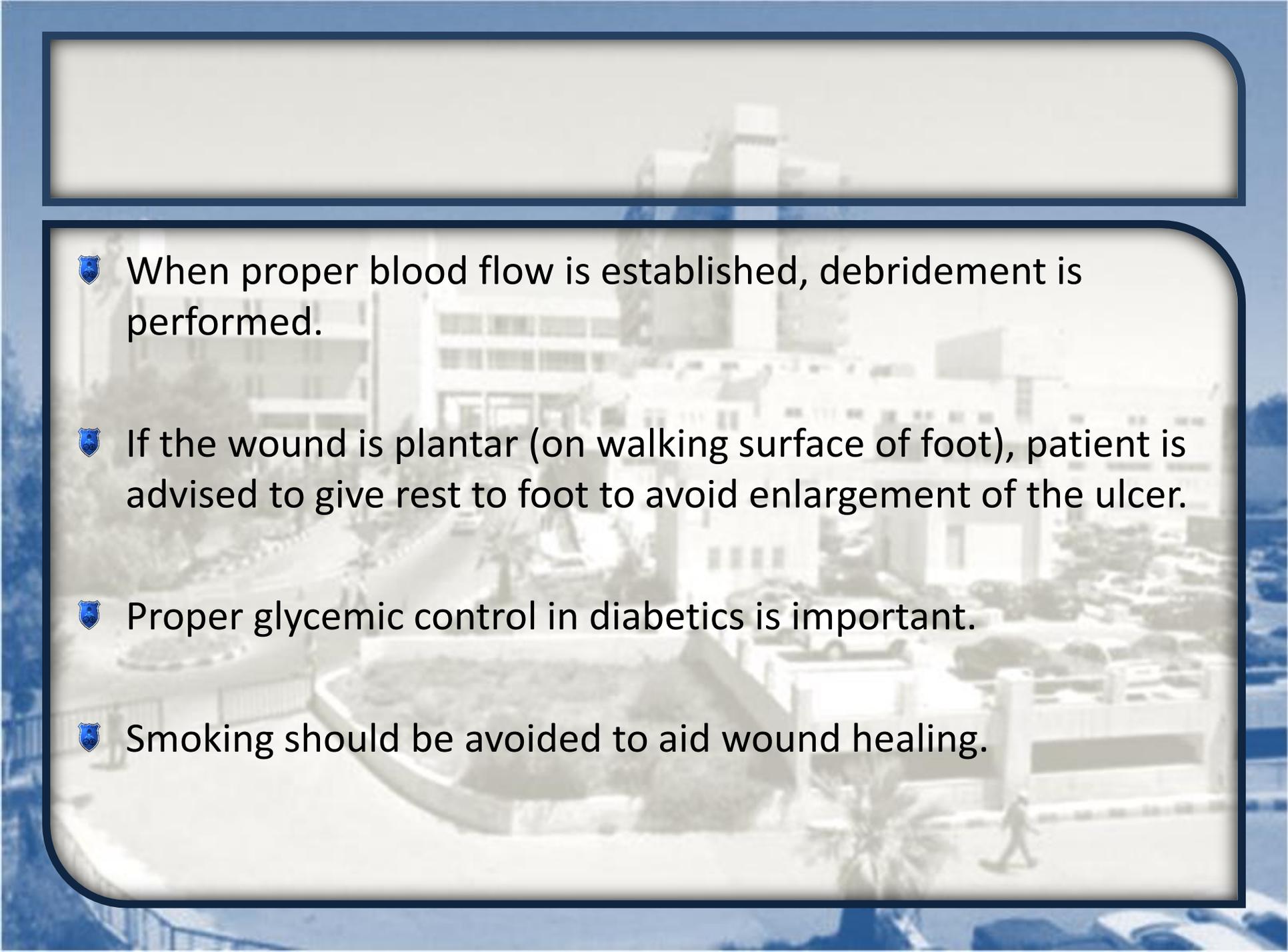
- 🛡️ Ischemic arterial ulcers occur due to a lack of blood supply and are painful at presentation.
- 🛡️ They usually are associated with other symptoms of peripheral vascular disease, such as intermittent claudication, rest pain, night pain, and colour changes.

- 
- On examination, there may be diminished or absent pulses with decreased ankle-brachial index and poor formation of granulation tissue. Other signs of peripheral ischemia, such as dryness of skin, hair loss, scaling, and pallor can be present.
 - The wound itself usually is shallow with smooth margins, with palor of base and surrounding skin might be present.



Management of ischemic ulcers

- ♣ The management of these wounds is too-pronged and includes ***revascularization and wound care***.
 - It depends on the severity of the underlying arterial insufficiency.
- ♣ The affected region can sometimes be revascularized via vascular bypass or angioplasty.
- ♣ If infection is present, appropriate antibiotics are prescribed.

- 
- When proper blood flow is established, debridement is performed.
 - If the wound is plantar (on walking surface of foot), patient is advised to give rest to foot to avoid enlargement of the ulcer.
 - Proper glycemc control in diabetics is important.
 - Smoking should be avoided to aid wound healing.

Venous stasis ulcer

- ♣ The clinically characteristic picture is that of an ulcer that fails to re-epithelialise despite the presence of adequate granulation tissue.
- ♣ Venous stasis occurs due to the incompetence of either the superficial or deep venous systems.
 - ***Chronic venous ulcers usually are due to the incompetence of the deep venous system and are commonly painless.***



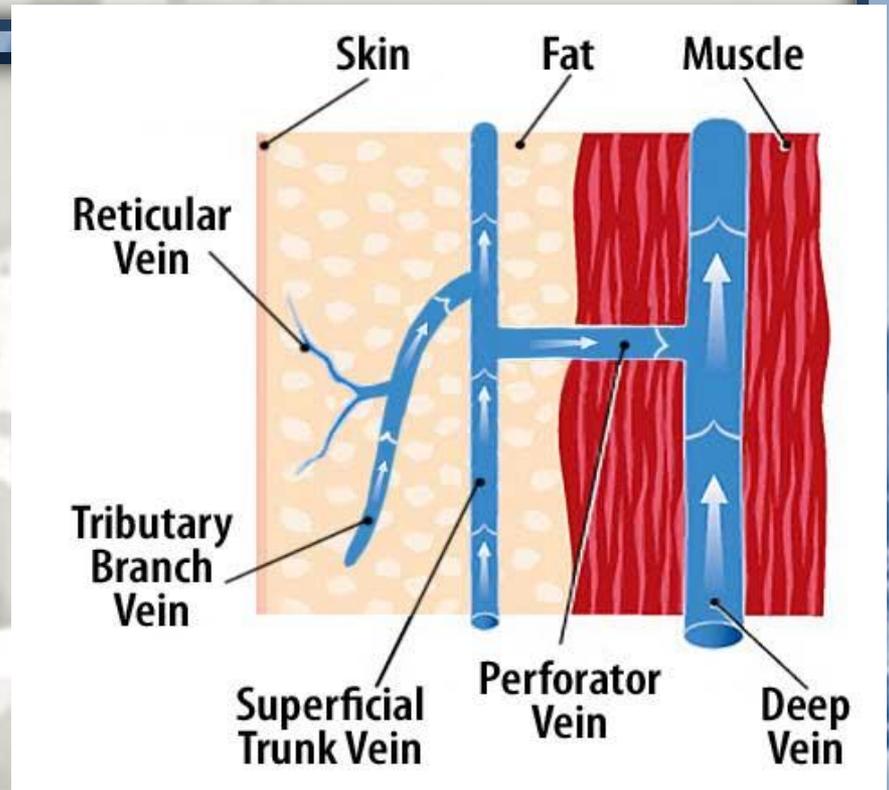
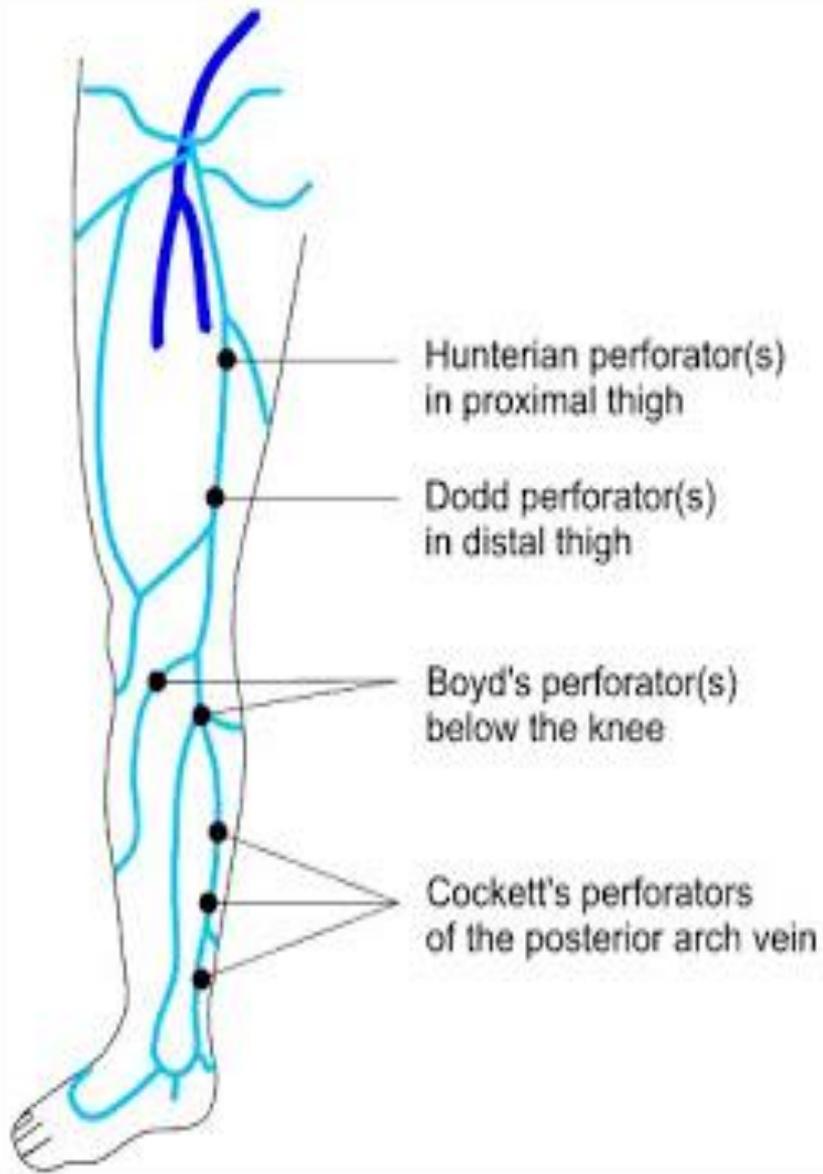
🛡️ Stasis ulcers tend to occur at the sites of incompetent perforators, ***the most common being above the medial malleolus, over Cockett's perforator.***

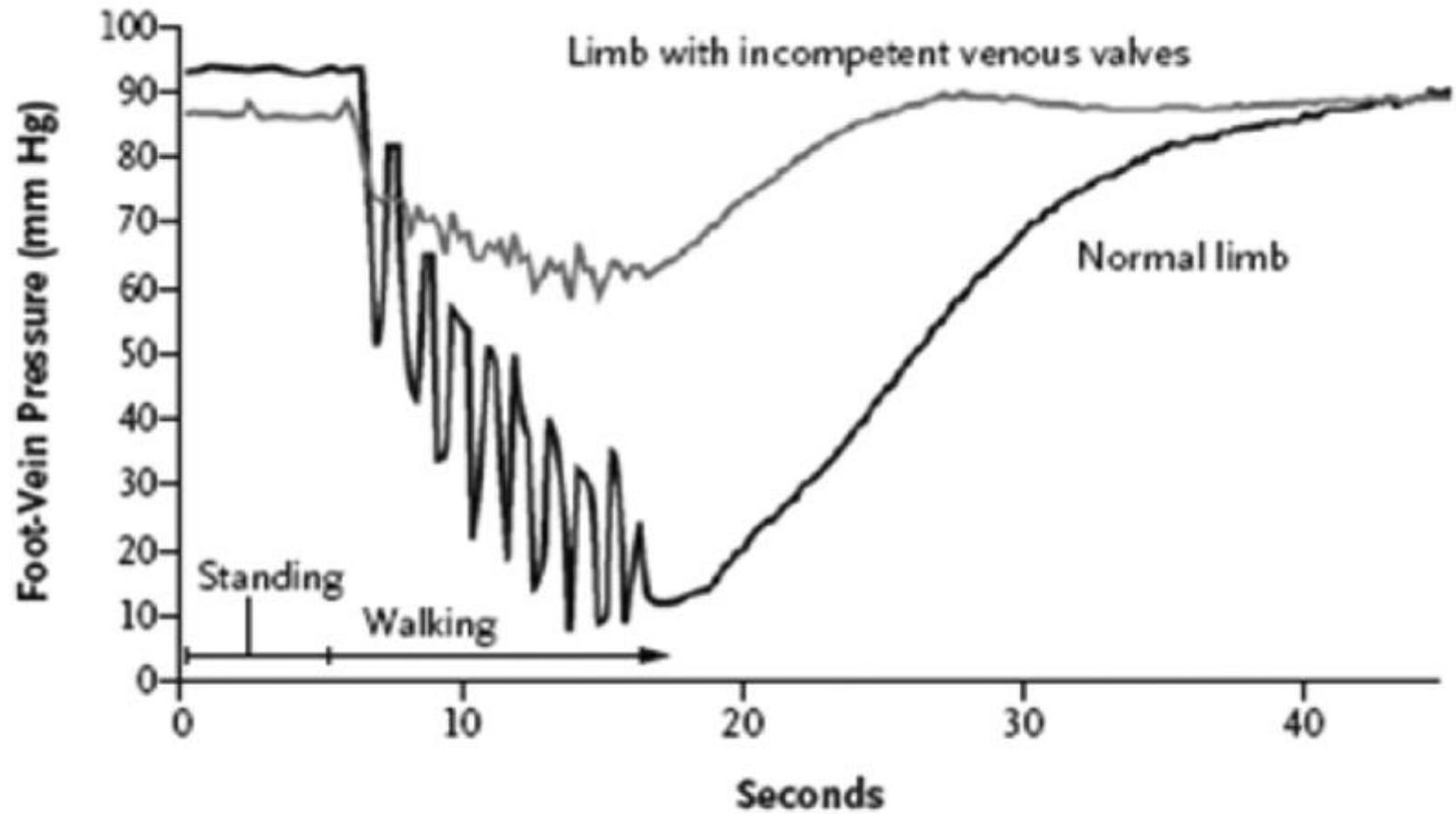
🛡️ The wound usually is shallow, with irregular margins and pigmented surrounding skin.



alamy stock photo





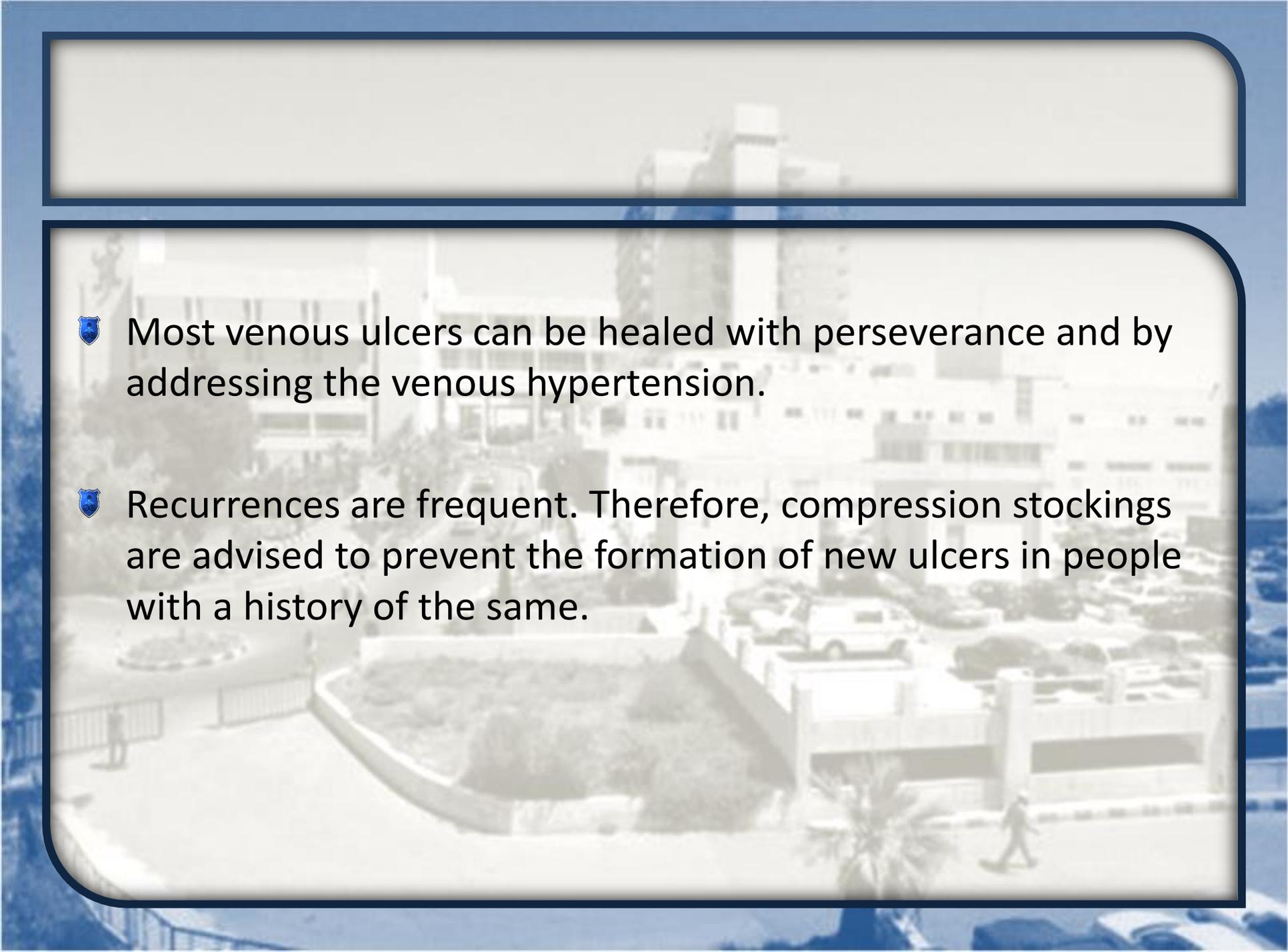


(Reproduced from Coleridge Smith¹⁷ with the permission of the publisher)



Management

- ♣ The cornerstone of treatment of venous ulcers is compression therapy.
 - It can decrease blood vessel diameter and pressure, which increases their effectiveness, preventing blood from flowing backwards.
- ♣ Compression is also used to decrease release of inflammatory cytokines, lower the amount of fluid leaking from capillaries and therefore prevent swelling, and prevent clotting by decreasing activation of thrombin and increasing that of plasmin.



Most venous ulcers can be healed with perseverance and by addressing the venous hypertension.

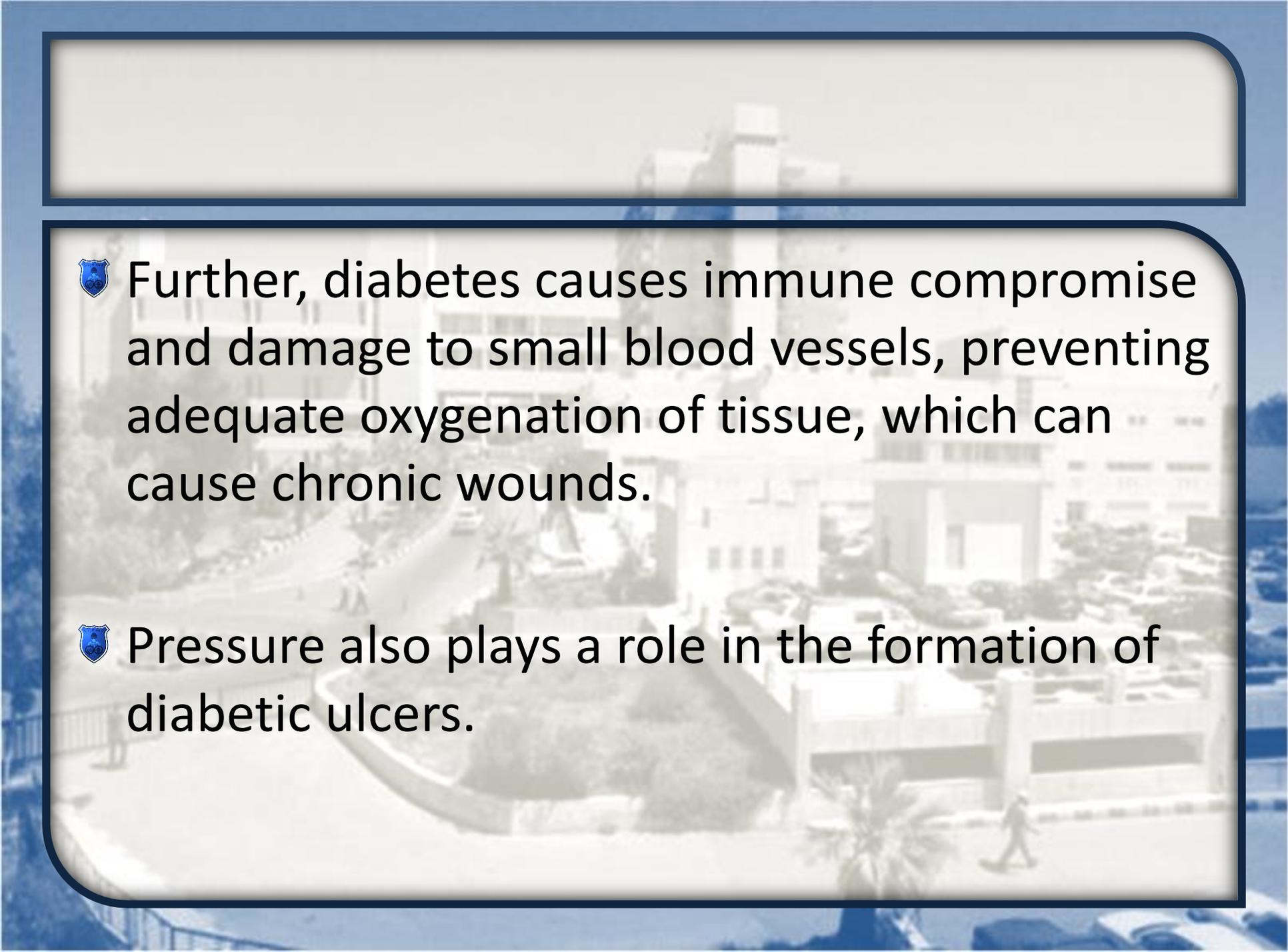
Recurrences are frequent. Therefore, compression stockings are advised to prevent the formation of new ulcers in people with a history of the same.

Diabetic Foot ulcer

🛡️ One of the major complications of uncontrolled ***Diabetes Mellitus***,

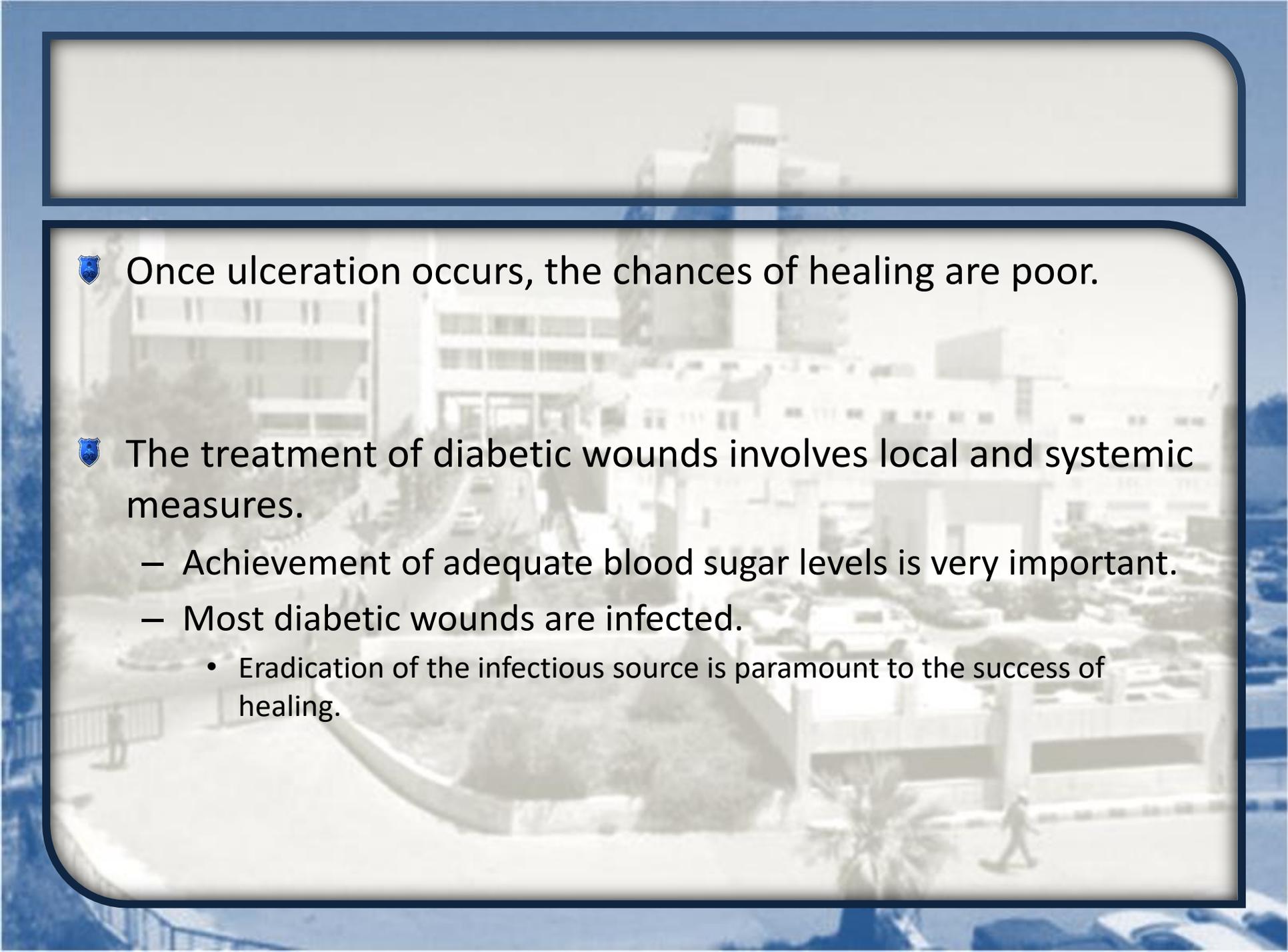
– Diabetic Foot Ulcers are a result of impedance of Wound Healing process due to a prolonged inflammatory phase.

🛡️ Diabetes causes neuropathy, which inhibits nociception and the perception of pain. Thus patients may not initially notice small wounds to legs and feet, and may therefore fail to prevent infection or repeated injury.



Further, diabetes causes immune compromise and damage to small blood vessels, preventing adequate oxygenation of tissue, which can cause chronic wounds.

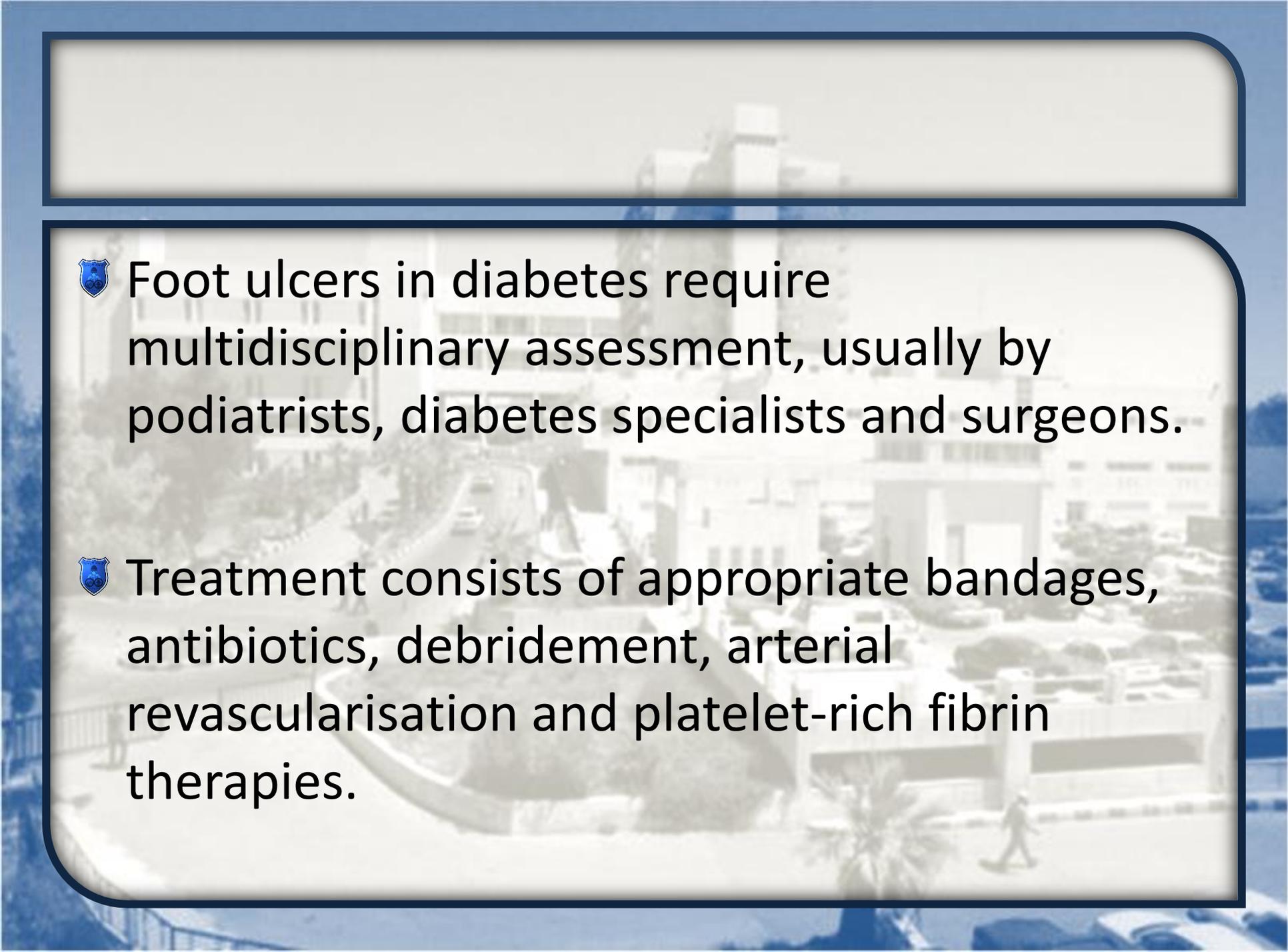
Pressure also plays a role in the formation of diabetic ulcers.



Once ulceration occurs, the chances of healing are poor.

The treatment of diabetic wounds involves local and systemic measures.

- Achievement of adequate blood sugar levels is very important.
- Most diabetic wounds are infected.
 - Eradication of the infectious source is paramount to the success of healing.



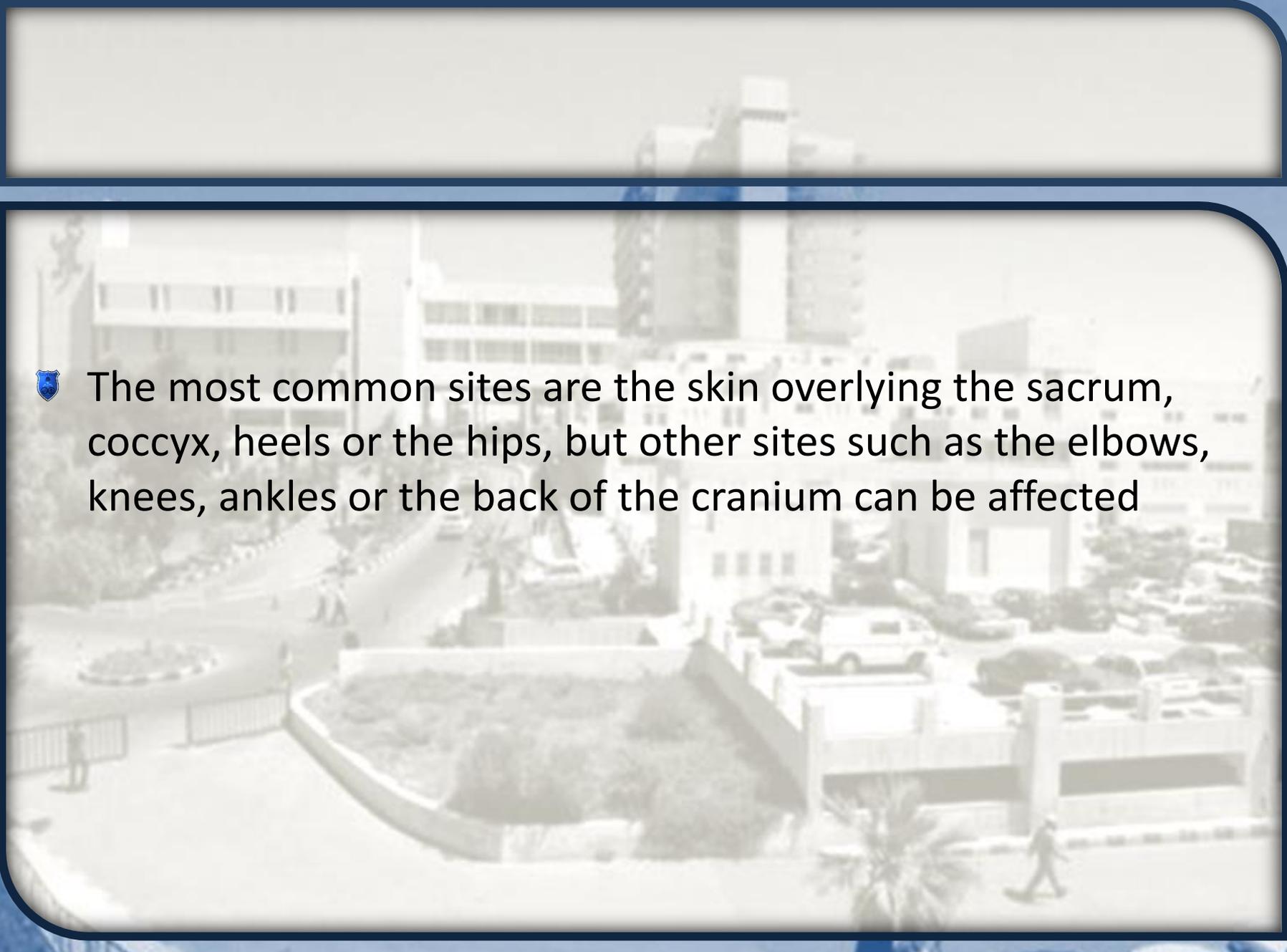
Foot ulcers in diabetes require multidisciplinary assessment, usually by podiatrists, diabetes specialists and surgeons.

Treatment consists of appropriate bandages, antibiotics, debridement, arterial revascularisation and platelet-rich fibrin therapies.



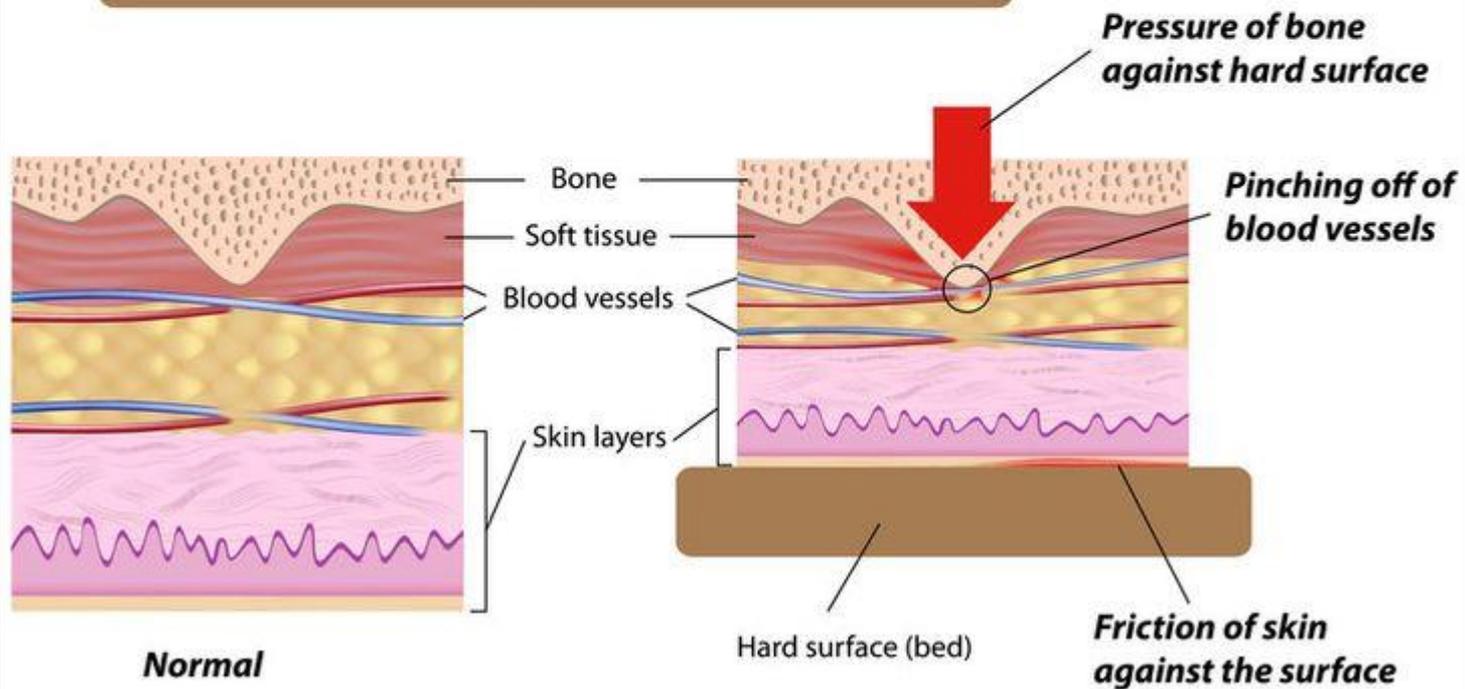
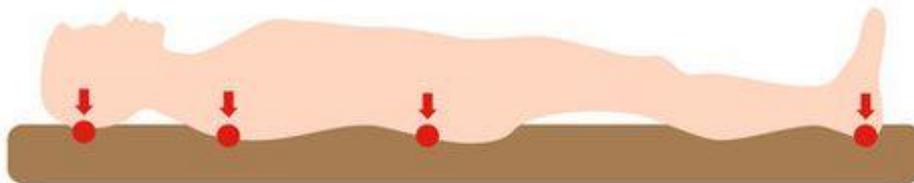
Decubitus / Pressure Ulcer

- 🛡️ A pressure ulcer is a localized area of tissue necrosis that develops when a soft tissue is compressed between a bony prominence and an external surface.
- 🛡️ Pressure ulcer formation is accelerated in the presence of ***friction, shear forces, and moisture.***
- 🛡️ Other contributory factors in the pathogenesis of pressure ulcers ***include immobility, altered activity levels, altered mental status, chronic conditions, and altered nutritional status.***



🛡️ The most common sites are the skin overlying the sacrum, coccyx, heels or the hips, but other sites such as the elbows, knees, ankles or the back of the cranium can be affected

Anatomy of A Pressure Sore



ICEBERG principle

- ♣ Pressure is distributed in a roughly upright cone, expanding outward and down through the subdermal tissues:
- ♣ Eschar indicates Stage 3 or higher
- ♣ Subcutaneous wound is larger than the visible area of eschar



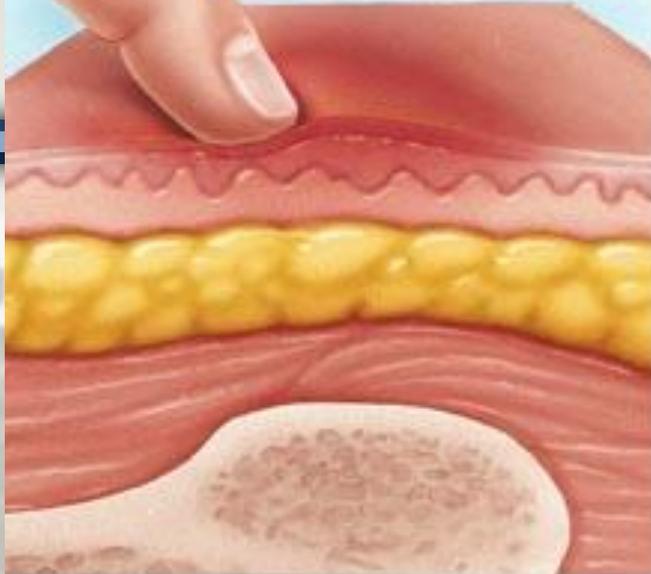


Pressure ulcers are divided into the following stages depending on severity:

- **Stage I: Intact skin with non-blanchable redness of a localized area usually over a bony prominence.**
- **Stage II: Partial thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed, without slough.**
- **Stage III: Full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscle are not exposed.**
- **Stage IV: Full thickness tissue loss with exposed bone, tendon or muscle.**

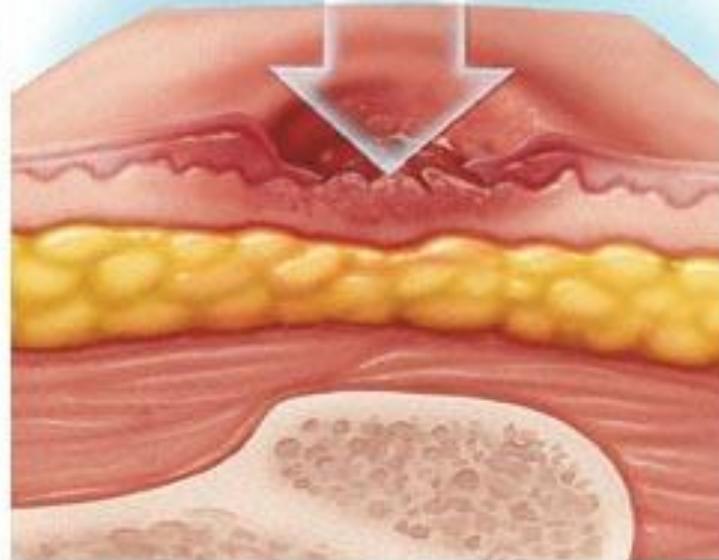
Stage 1

Skin is unbroken
but inflamed



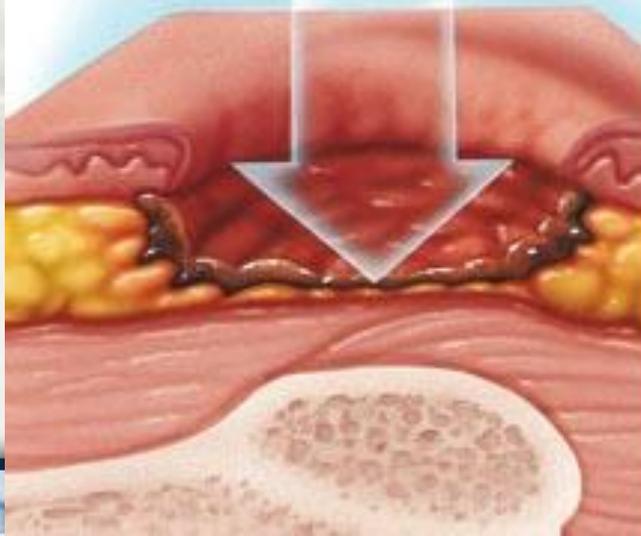
Stage 2

Skin is broken to
epidermis or dermis



Stage 3

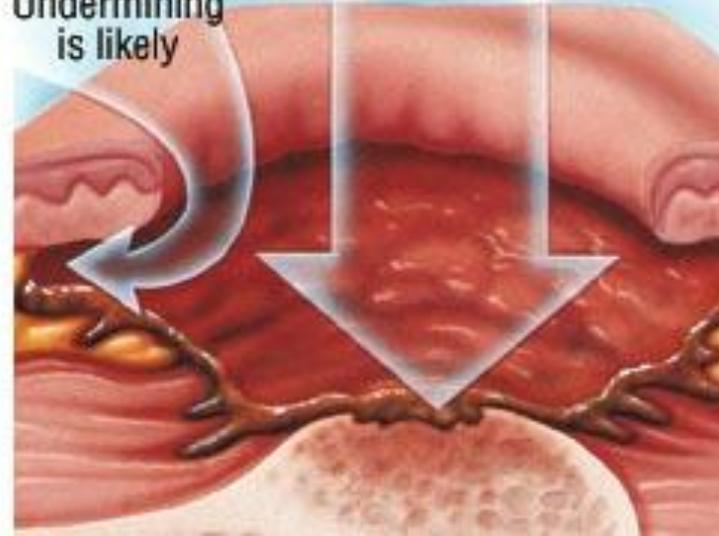
Ulcer extends to
subcutaneous fat layer

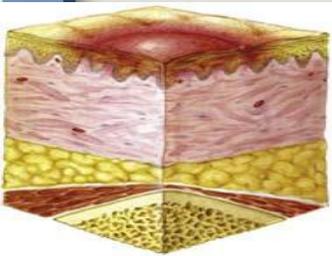


Stage 4

Ulcer extends to
muscle or bone

Undermining
is likely

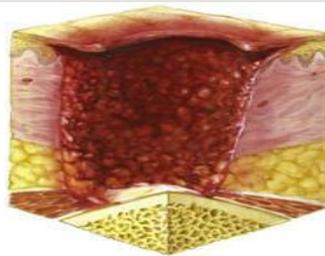




Stage 1



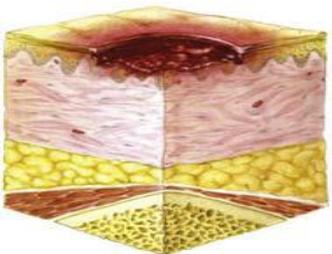
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Stage 4



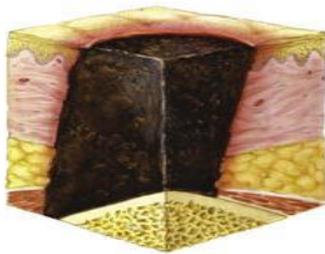
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Stage 2



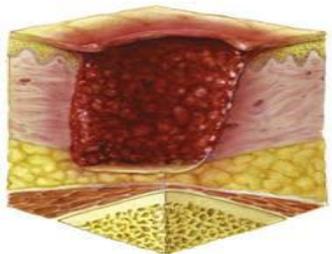
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Unstageable



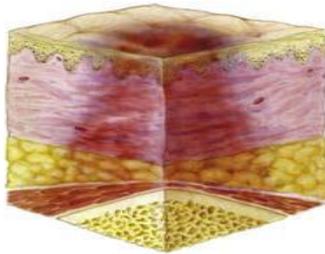
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Stage 3



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Suspected deep tissue injury



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PUPPS 3 – The National Pressure Ulcer Advisory Panel (NPUAP) Pressure Ulcer Staging System

Pressure ulcers are classified by the depth of tissue damage present.

The following staging of pressure ulcers are recommended for use by the Australian Wound Management Association, which is consistent with the recommendations of the National Pressure Ulcer Advisory Panel (NPUAP) U.S.A.

Stage 1

Observable pressure related alteration of intact skin whose indicators as compared to the adjacent or opposite area of the body may include changes in one or more of the following: skin temperature (warmth or coolness), tissue consistency (firm or boggy feel) and/or sensation (pain, itching).

The ulcer appears as a defined area of persistent redness in lightly pigmented skin, whereas in darker skin tones, the ulcer may appear with persistent red, blue or purple hues.



STAGE 1



Please note: heel pressure ulcer covered with a film dressing

Stage 2

Partial thickness skin loss involving epidermis and/or dermis. The ulcer is superficial and presents clinically as an abrasion, blister, or shallow crater.



STAGE 2



Stage 3

Full thickness skin loss involving damage or necrosis of subcutaneous tissue that may extend down to but not through underlying fascia. The ulcer presents clinically as a deep crater with or without undermining of adjacent tissue.



STAGE 3



Stage 4

Full thickness skin loss with extensive destruction, tissue necrosis or damage to muscle, bone, or supporting structures (for example, tendon or joint capsule). Undermining and sinus tracts may also be associated with Stage 4 pressure ulcers.



STAGE 4

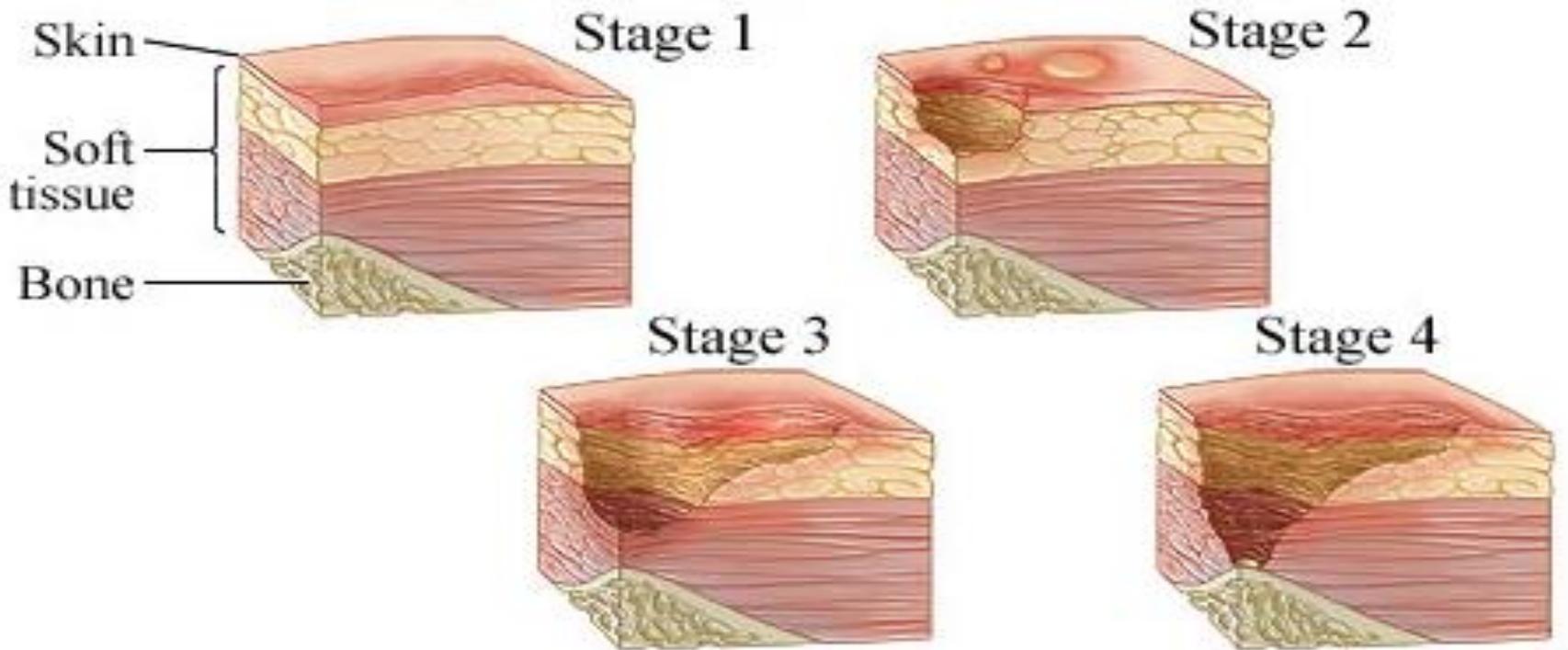


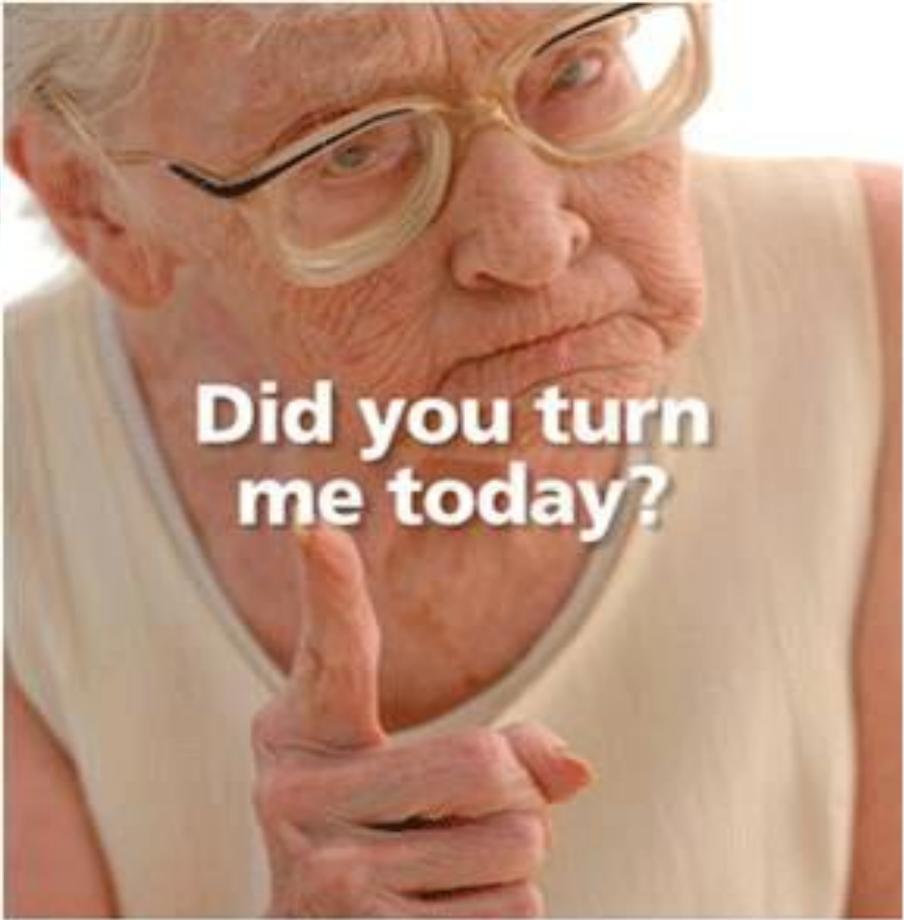


MANAGEMENT

- The most important care for a person at risk for pressure ulcers and those with bedsores is the redistribution of pressure so that no pressure is applied to the pressure ulcer.
- Debridement and Dressing is helpful in existing cases.
- Stage 1&2
- Stage 3&4

Stages of Pressure Sores





**Did you turn
me today?**

**People who can't move
themselves need your help.**

For more information on pressure ulcer prevention please visit
www.preventpressuresulcers.ca

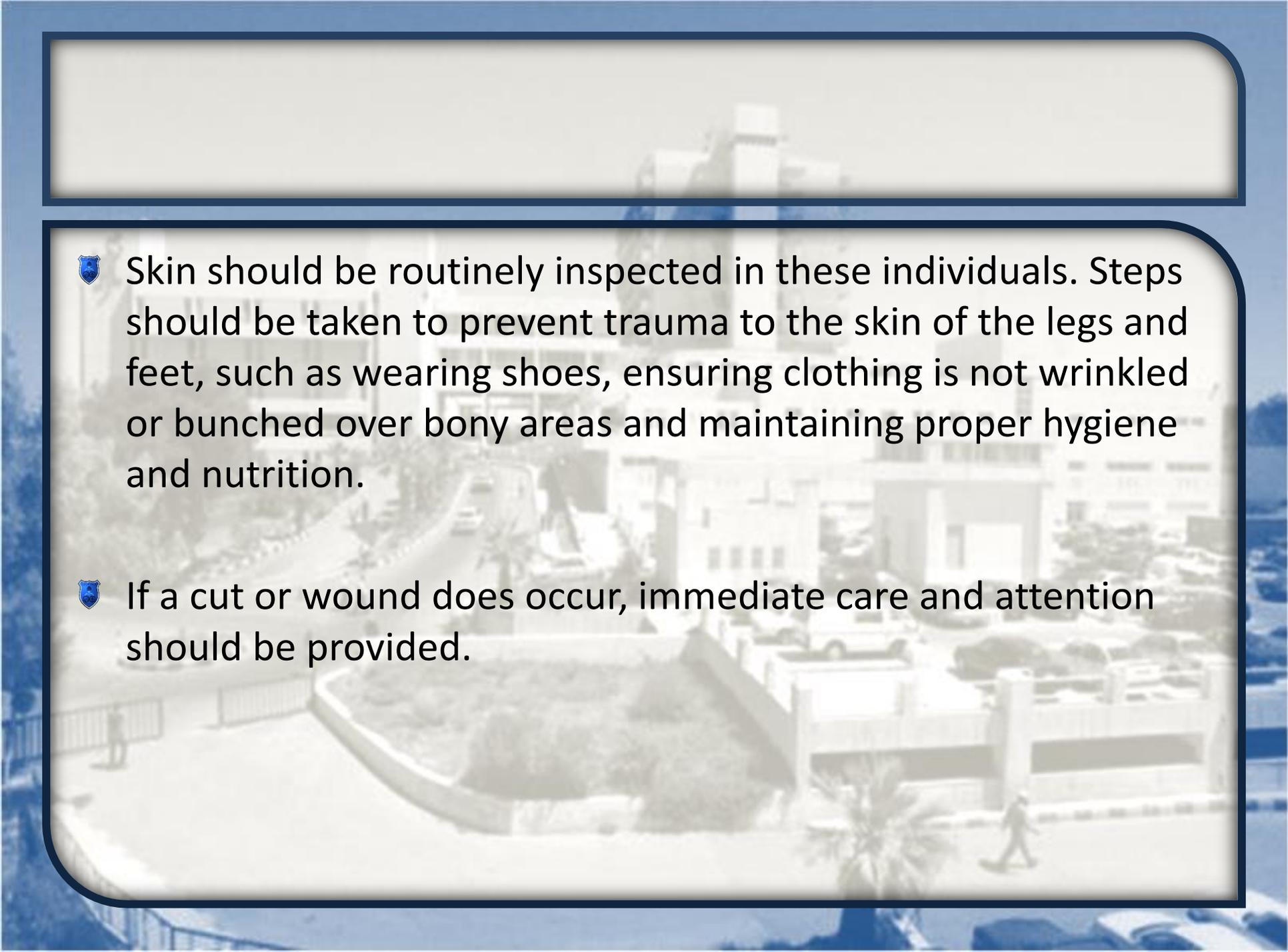


Malignant transformation of chronic wounds

- Any wound that does not heal for a prolonged period of time is prone to malignant transformation (Marjolin Ulcer)
- Malignant wounds are differentiated clinically from non-malignant wounds by the presence of overturned wound edges.
- In patients with suspected malignant transformations, biopsy of the wound edges must be performed to rule out malignancy.
- Cancers arising de novo in chronic wounds include both squamous and rarely basal cell carcinomas.

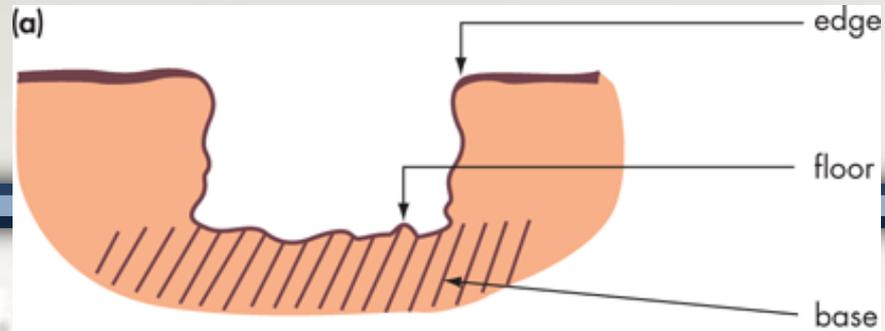
Chronic Wounds

- ❖ Chronic wounds are much easier to prevent than to treat.
- ❖ The best way to prevent a chronic wound is to actively and appropriately manage chronic medical conditions such as diabetes, high blood pressure, venous insufficiency and peripheral neuropathy.

The background of the slide is a faded, high-angle photograph of a large, multi-story hospital building with a central tower. The building is surrounded by a paved area with some greenery and a few people walking. The entire slide has a blue border with rounded corners.

🛡️ Skin should be routinely inspected in these individuals. Steps should be taken to prevent trauma to the skin of the legs and feet, such as wearing shoes, ensuring clothing is not wrinkled or bunched over bony areas and maintaining proper hygiene and nutrition.

🛡️ If a cut or wound does occur, immediate care and attention should be provided.



(b)

Edge	Example
<p>punched out</p>	trophic ulcer arterial ulcer
<p>undermined</p>	pressure injury e.g. bed sore
<p>everted</p>	squamous cell carcinoma
<p>rolled</p>	basal cell carcinoma

Source: John Murtagh, Jill Rosenblatt: *John Murtagh's General Practice*, 6e: www.murtagh.mhmedical.com
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