Consensus Recommendations: Simplifying Venous Leg Ulcer Management

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Disclosure Statement

Lynn Peterson is employed by 3M Health Care
Critical & Chronic Care Solutions Division

Objectives

1. Describe key gaps in current venous leg ulcer (VLU) management
2. Explain the ABC model for leg ulcer management
3. Describe the difference between a ‘Simple’ and ‘Complex’ VLU
4. Identify 3 wound and skin management best practices
5. Describe the properties of a wound dressing for use under compression
6. Articulate the importance of compression therapy for VLU management
7. Identify 3 attributes of the ideal compression therapy system

Comprehensive, expert approach to treating Venous Leg Ulcer

- December 2014 – group of international experts in leg ulcers and venous disease met to discuss
- **Goal:** encourage broader use of compression therapy
- **Result:** Global document: Consensus Recommendations: Simplifying Venous Leg Ulcer Management
- Published Spring 2015 by *Wounds International*
- Objectives of document:
  - Simplified approach to VLU care – “ABC” model
  - Focus on active treatment
  - Assist clinicians to clearly understand why, when, and how compression should be used

Introduction

Facts about compression therapy:

- Considered the Gold Standard treatment of venous leg ulcer management
- Increases healing rates as compared to treatment without compression
- Reduces risk of recurrence
- Healing efforts are focused wound dressings and adjunctive therapies

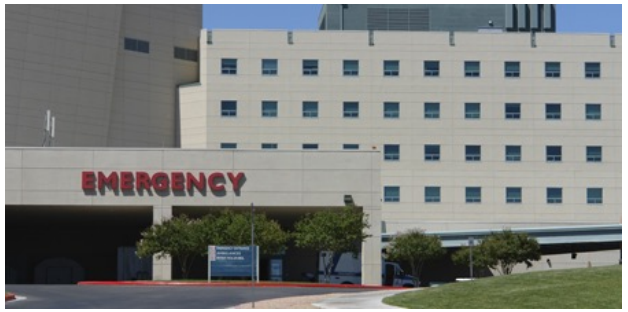
Regardless of guidelines, compression therapy is underutilized

- Missed opportunities to healing wounds and improvement in patient's quality of life

"We need to actively seek to enhance affected patients' lives by improving healing rates through increased appropriate use of compression therapy."

Keith Harding,
Chair of International Expert group

Why is compression underutilized?



Healthcare system

- Confusion regarding correct type to use
- Inconsistent and/or incorrect use of compression therapy
- Poor financial incentives for using compression therapy

Clinician

Need to increase awareness and training:

- Diagnosing and categorizing VLUs and other leg ulcers
- Understating that compression therapy is the corner stone of VLU management and improves healing and preventing reoccurrences
- Application techniques to avoid suboptimal compression

Patient

- Lack of understanding of purpose and need for compression therapy
- Financial impact – inability to afford
- Negative experience, discomfort, slippage, bunching
- Inability to follow through on appointments

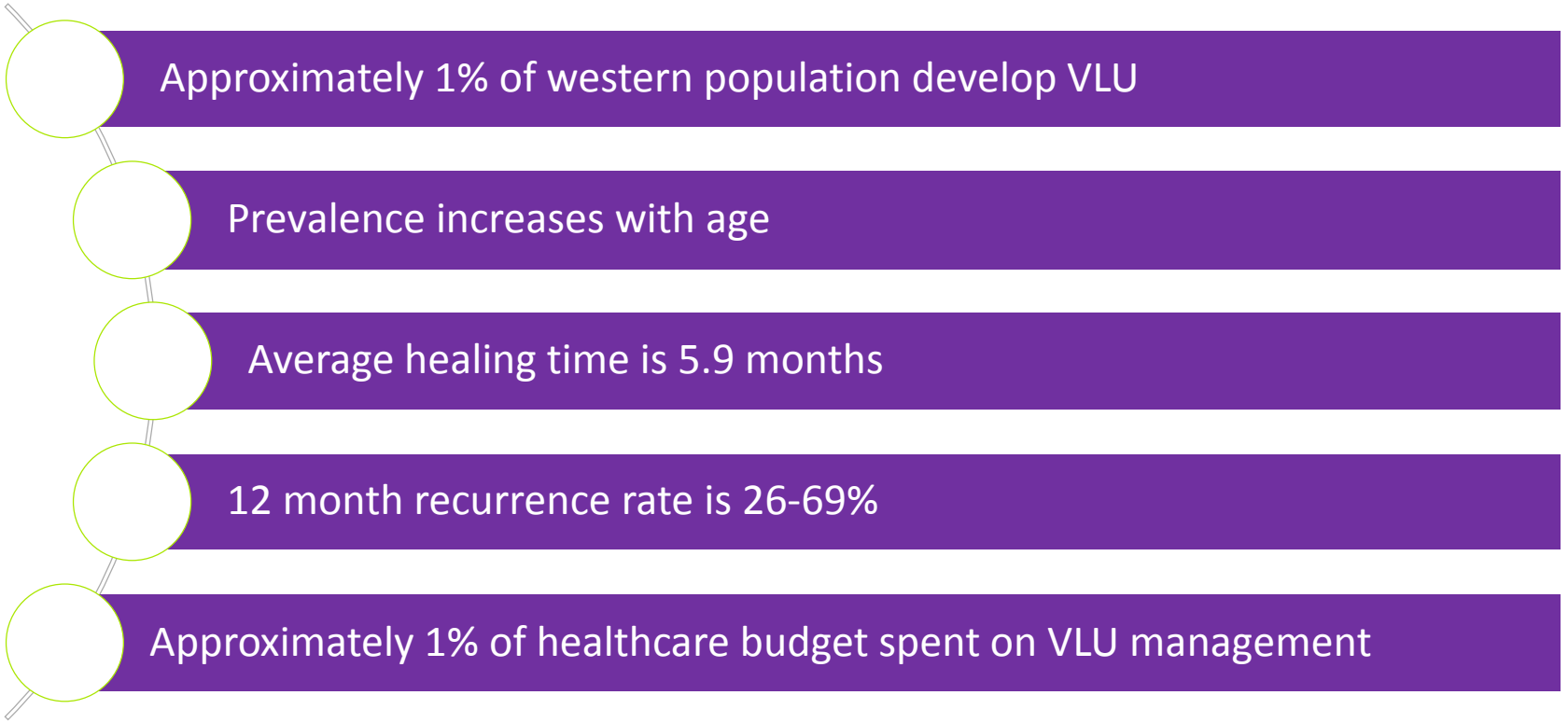
Understanding a venous leg ulcer

An open skin lesion that usually occurs on the medial side of the lower leg between the ankle and the knee as a result of chronic venous insufficiency (CVI) and ambulatory venous hypertension, and that shows little progress towards healing within 4-6 weeks of initial occurrence.

The challenge with VLUs

80 to 90%

of all leg ulcers are VLUs

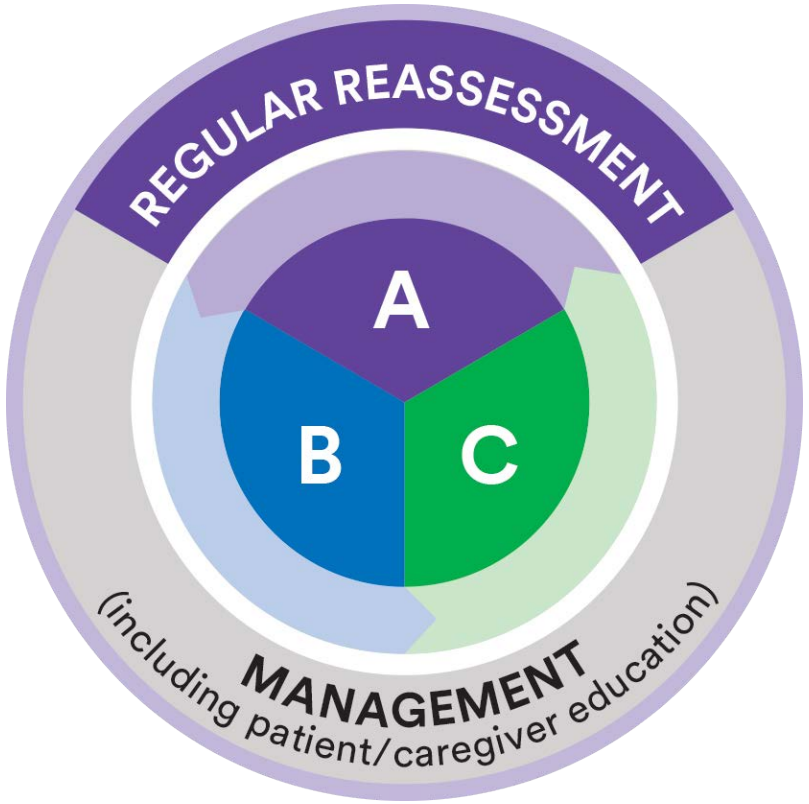


Time consuming to healthcare system!

Impact on patient quality of life

- Inability to manage ADLs
- Depression, decreased self-esteem
- Decreased mobility, functionality of affected limb
- Pain
- Leaking exudate, odor
- Difficulty finding appropriate clothing/shoes
- Inability to work, job loss, social isolation

Consensus recommendations:
ABC model for leg ulcer management



A Assessment and diagnosis

B **B**est practice wound and skin management

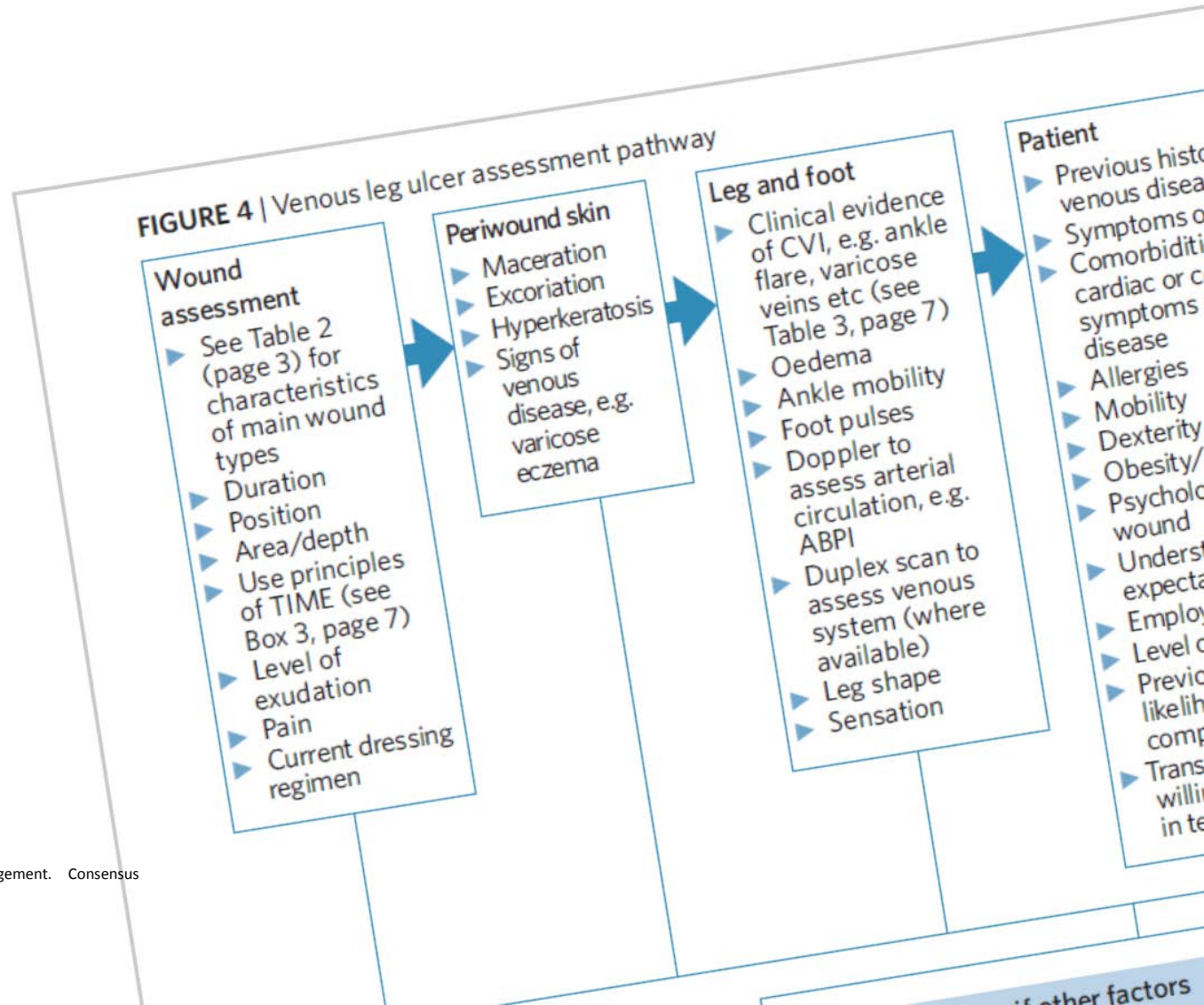
C Compression therapy for active treatment and for prevention of recurrence

ABC model:

Assessment and diagnosis

Assessment and diagnosis

- Determine etiology of wound
- Collect indicators for appropriate management
- Referral to specialist as appropriate
- Categorize the wound
- Evaluate appropriateness for compression therapy



Harding K. et al. Simplifying venous leg ulcer management. Consensus recommendations. *Wounds International 2015*

Differential etiologies – wound assessment

Venous Ulcer

Arterial Ulcer

Neuropathic Ulcer

Mixed ulcer

Lower extremity wound characteristics

Type	Location	History	Ulcer characteristics	Other findings
Venous leg ulcer	Gaiter region – ankle to knee, most common around medial malleolus	Varicose Veins DVT Other venous disease Trauma surgery	Irregular margins Usually shallow Fibrinous, granulating base Variable size High exudate levels May be painful	Edema Ankle flare Varicose veins Varicose eczema/dermatitis Lipodermatosclerosis Hyperpigmentation Atrophie blanche

Adapted from Table 2, page 3, Harding K. et al. Simplifying venous leg ulcer management. Consensus recommendations. *Wounds International 2015*

Lower extremity wound characteristics

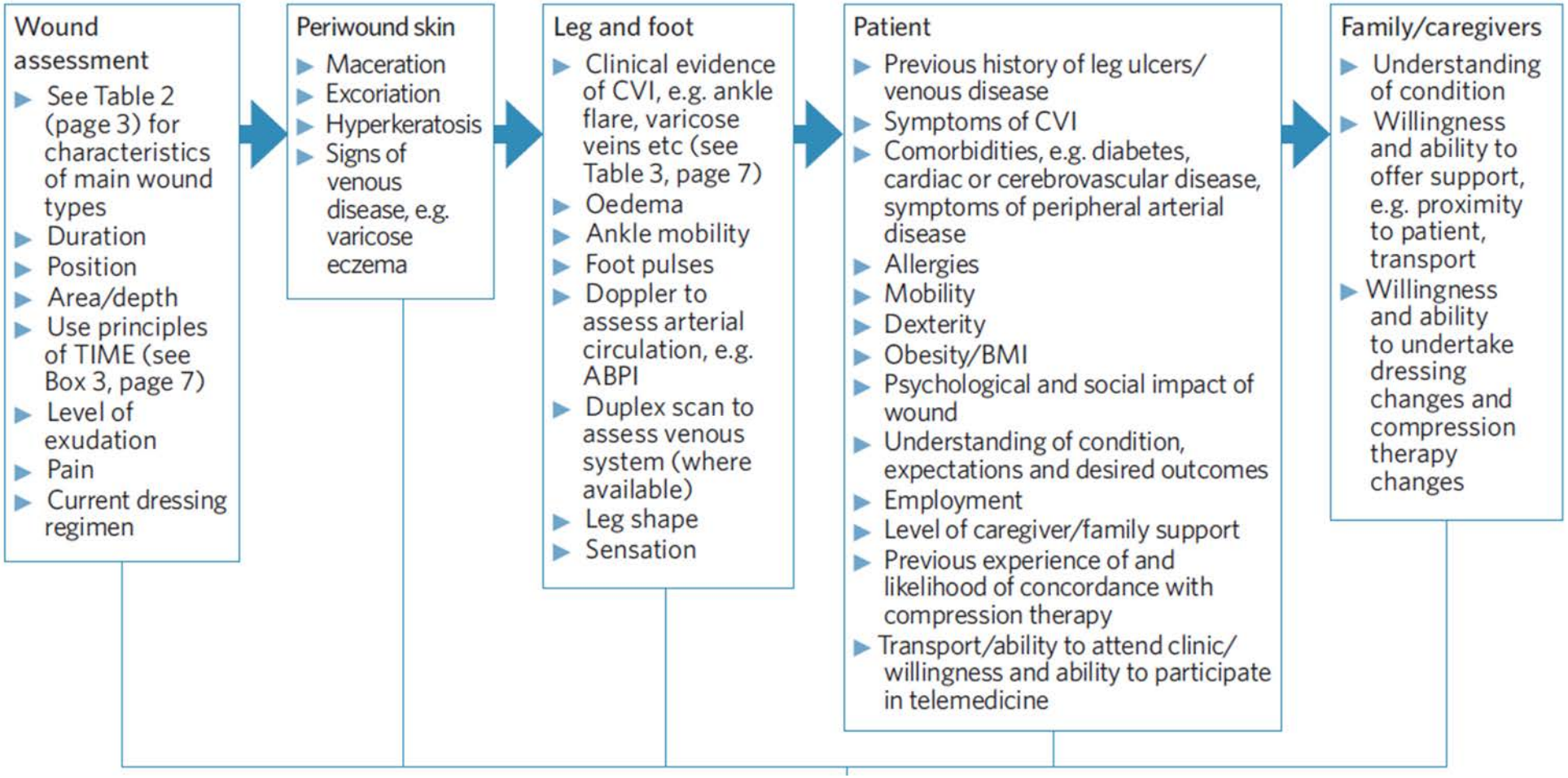
Type	Location	History	Ulcer characteristics	Other findings
Arterial Leg Ulcer 	Toes, feet, or lateral pretibial aspects of the lower leg	Intermittent claudication/rest pain Cardiac or cerebrovascular disease	Punched out, sharply demarcated edges Painful Small and deep Necrotic wound base Dry/low exudate levels Gangrene may be present	Surrounding skin is often dry and shiny with loss of hair Weak or absent foot pulses

Type	Location	History	Ulcer characteristics	Other findings
Diabetic foot ulcer 	Pressure bearing areas of the sole of the foot Margins of the foot, over first or fifth meta-tarso-phalangeal joints	Diabetes	Sensory loss when neuropathy is present Variable depth: may ne deep +/- sinuses, may involved tendon and bones	Neuropathic: foot may be warm; ulcer often surrounded by callus Neuroischemic: foot may be cool and foot pulses may be absent

Adapted from Table 2, page 3, Harding K. et al. Simplifying venous leg ulcer management. Consensus recommendations. *Wounds International 2015*

Venous leg ulcer assessment pathway

FIGURE 4 | Venous leg ulcer assessment pathway



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Comprehensive patient assessment

Past medical history

Comorbidities – history of CVI/vascular disease

Wound assessment

Treatment/response to treatment regime

Medication

Pain status

Mobility status

Nutritional status

Psychosocial circumstances i.e. home and work

Understanding of disease

Caregiver family involvement

Wound assessment

Location

Size

Depth

Exudate level

Tissue type

Periwound skin

Pain

Duration or age of wound

Current treatment regime

Vascular assessment

ABPI

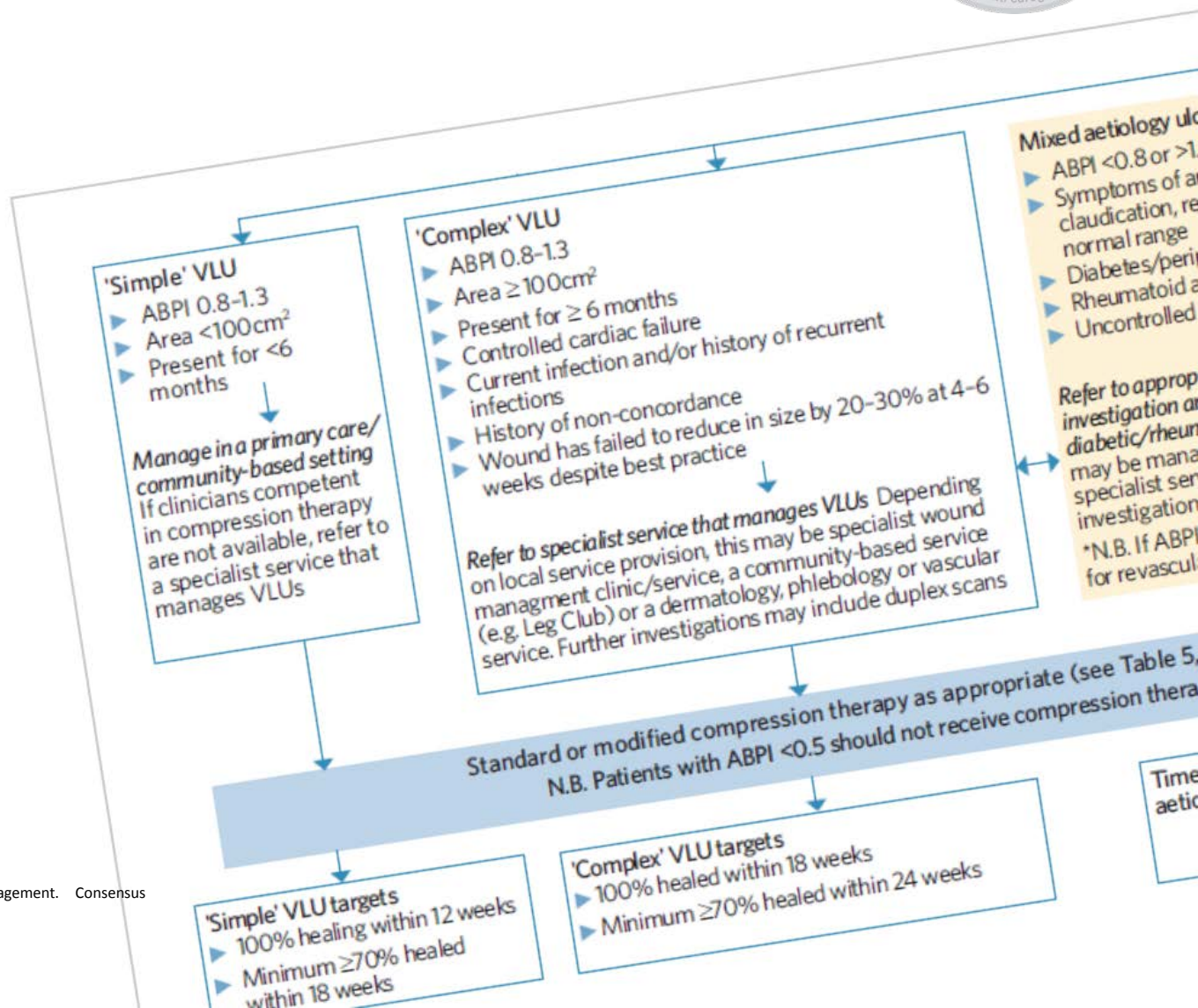
Duplex imaging

Use as guidance to determine level of compression therapy

ABPI	Interpretation
>1.3	Arterial calcification may be present
>1.0-1.3	Probably no peripheral arterial disease
0.81-1.0	No significant or mild peripheral arterial occlusive disease
0.51-0.80	Moderate peripheral arterial occlusive disease
<0.5	Severe peripheral arterial disease, ‘critical ischemia”

Venous leg ulcer categories

- Simple VLU
- Complex VLU
- Mixed etiology



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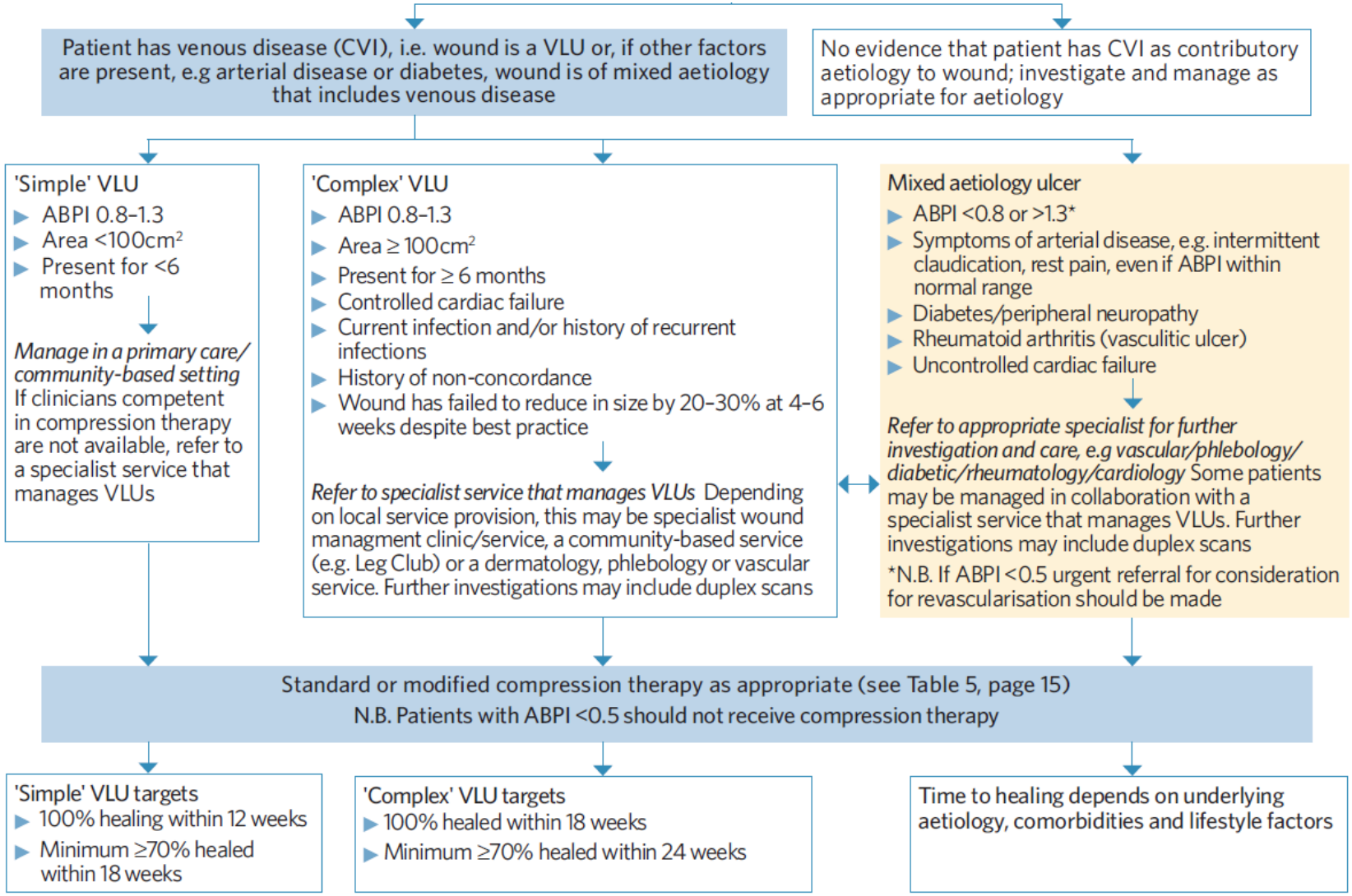
Why categorize

To help determine:

- Likely prognosis
- Appropriate time frames for monitoring, reassessment, and referral
- Treatment goals
  - Heal the wound
  - Control CVI and related skin changes
  - Reduce edema
  - Control symptoms, e.g. pain
  - Address or reduce the impact or comorbidities
  - Prevent recurrence

Venous leg ulcer categories



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Patient referral

ABPI <0.5 have severe peripheral arterial disease

Refer to a vascular surgeon for possible revascularization

Other potential referrals:

- Wound clinics or specialist in VLU management
- Vascular medicine/surgery
- Phlebology
- Dermatology
- Rheumatology
- Cardiology
- Diabetes medicine

ABC model:

Best practice wound and skin management

Best practice wound and skin management

Cleansing and skin preparation → Debridement → Periwound skin protection i.e. acrylate terpolymer → Wound dressing selection to protect wound and manage exudate → Antimicrobial dressings short-term for treatment of wound infection

"The most important factor in reducing exudate levels is appropriate sustained compression therapy, not the dressing."

Harding K. et al. Simplifying venous leg ulcer management. Consensus recommendations. *Wounds International 2015*

Cleansing and skin preparation

Cleanse

- water or saline
- helps remove dry, loose tissue on lower leg
- If using skin cleanser – gentle, pH balanced, non-sensitizing

Rehydrate skin

- simple, non-sensitizing emollient

Dermatitis

- Topical steroid may be used

Debridement

Debride as necessary to remove slough and devitalized/necrotic tissue per facility protocol

Sharp debridement

- Reserve for “complex VLU”
- By trained healthcare providers in suitable facility i.e. wound clinic, hospital, physician office

Periwound and surrounding skin management

Protect periwound skin with barrier film e.g. acrylate terpolymer

Debridement pads may be helpful to remove hyperkeratonic skin plaques

Wound dressing

Protect the wound and manage exudate

- Select a simple non-adherent dressing to protect and absorb exudate
- If exudate levels are high, select an alginate, other gelling fiber, or a foam dressing
- Superabsorber dressings may be used if exudate levels are very high
- Antimicrobial dressings may be used short-term for treatment of wound infection

Ideal properties of a wound dressing used under compression (per consensus doc):

- Maintains a moist wound environment while able to handle varying levels of exudate
- Absorbs and retains fluid when used under compression
- Low profile
- Conforms to the wound bed
- Does not adhere to the wound bed (non-adherent)
- Comfortable
- Does not damage the wound bed (atraumatic)
- Low allergy potential
- Remains intact on removal
- Cost-effective, i.e. offers optimal wear time

ABC model:

Compression therapy for active treatment and for prevention of recurrence

Compression –

Standard of Care for VLU management

- Considered the Gold Standard treatment of venous leg ulcer management
- Increases healing rates as compared to treatment without compression
- Reduces risk of recurrence
- Effective compression:
  - Decreases exudate levels
  - Improves venous return
  - Reduces lower extremity edema and inflammation

" We need to actively seek to enhance affected patients' lives by improving healing rates through increased appropriate use of compression therapy."

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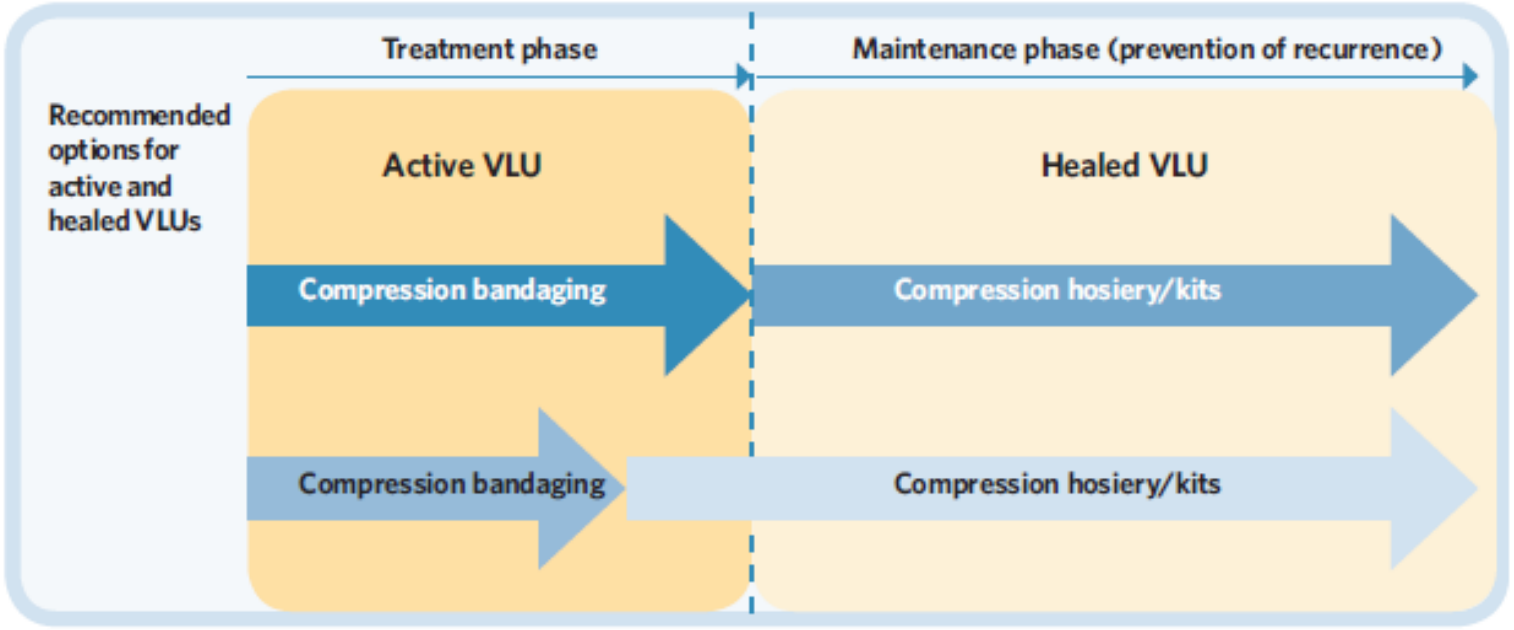
Chair of International Expert group

Implementing compression therapy

To optimize the benefits of compression:

- Apply the correct type of compression
- For the right duration
- In a way acceptable to the patient

Figure 5: Variations of the compression bandaging-hosiery continuum



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Stiffness –
the degree of elasticity of a compression system

- High stiffness (inelastic)
  - Produces greater fluctuations in lower leg pressure during walking compared to lower stiffness systems
  - Produce the greatest improvements in venous blood flow
- Low stiffness (elastic) – produce higher resting pressure
- Multi-component systems preferred – the higher the stiffness, the better the outcome
- Patients report higher stiffness systems are more comfortable

How to select compression therapy

All patients who are candidates for compression therapy should have ABPI measured and recorded.

- Compromised arterial need lower levels of compression (20-30 mmHG)
- Two component stiff compression systems have shown to be safe for patients with arterial disease (ABPI >0.5)
- Consult "*Guide to using therapy in 'simple', 'complex' and mixed etiology leg* ulcers" (Table 5, page 15)

TABLE 5 | Guide to using compression therapy in 'simple', 'complex' and mixed aetiology leg ulcers

	Compression therapy with a stiff inelastic compression therapy system		
Level of compression	**'Standard'**	**'Modified' (i.e. lower resting pressure)**	**Comments**
Simple VLU Primary care/community setting ABPI 0.8–1.3			
Area <100cm² **and** wound has been present <6 months	✔		• Refer to specialist service that manages VLUs if wound has not decreased by 20–30% in area by 4–6 weeks despite optimal compression therapy • If concordance is an issue, start compression at a lower level and increase gradually
Complex VLU Specialist service/clinic that manages VLUs +/- other services as required ABPI 0.8–1.3			
Area ≥100cm² **and/or** wound has been present >6 months (no other comorbidities) Wound has failed to decrease by 20–30% by 4–6 weeks despite optimal compression therapy	✔		• Reassess and confirm venous aetiology; consider malignancy • Review current compression regimen • Review wound management • Assess concordance and understanding • If prior management has been optimal, consider advanced therapies or implement compression therapy and review progress after 4 weeks
Lymphovenous disease	✔		• Specialist bandaging techniques may be required, e.g. to accommodate unusual limb shape or to treat toe swelling • Refer to lymphoedema service if skills/competencies not available • Skin care is a priority because of increased risk of infection
Cardiac failure		✔	• Ensure any cardiac failure is under control before commencing compression due to risk of overloading the heart once any oedema starts to clear • Monitor closely for signs of exacerbation of cardiac failure • If in any doubt, involve a physician/cardiologist and start compression at a low level and increase if tolerated
Current infection and/or history of recurrent infection	✔	(✔)	• Current infection: treat as appropriate and consider reducing level of compression if difficult to tolerate. Increase frequency of dressing change to monitor infection • Recurrent infection: ensure wound and skin are examined regularly; reassess and address any modifiable factors that may contribute to recurrence
History of non-concordance	✔	✔	• Reassess to confirm diagnosis of CVI • Determine reasons for non-concordance and address any modifiable reasons • Consider implementing lower level of compression and gradually increasing to a level that is tolerable for the patient • Consider the use of compression hosiery

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Guide to using compression therapy with mixed arterial leg ulcers

Mixed aetiology leg ulcers Appropriate specialist service +/- collaboration with specialist service that manages VLU ABPI <0.8 or >1.3			
ABPI >1.3			• Refer to specialist for further investigation and care
ABPI 0.5–<0.8		✔	• Refer to specialist for further investigation and care • Modified compression using a stiff system may be applied with frequent reassessment and monitoring for ischaemia and pressure damage
ABPI <0.5			• Refer to vascular surgeon for possible revascularisation • Consider IPC if revascularisation is not possible

Table 5, page 15

Harding K. et al. Simplifying venous leg ulcer management. Consensus recommendations. *Wounds International 2015*

Factors to consider for selection

BOX 7 | Factors that affect choice of compression therapy system

- Training, competency and experience of the healthcare practitioner applying compression: in healthcare systems where there is a high turnover of staff it may be preferable to mainly use a compression therapy system that is relatively straightforward in application, e.g. two-component compression bandaging
- Wound status, e.g. size of the ulcer and exudate levels
- Patient mobility (see section on the importance of mobility, page 16)
- Patient dexterity and ability to self-apply compression therapy
- Previous experiences of the patient and likely concordance with treatment
- Pain levels
- Access to care, e.g. the possible frequency of clinic or home care visits
- Level of compression required, e.g. if adjustment is likely to be required to enhance tolerance, can this be undertaken with the proposed system?
- Availability of compression therapy systems: where restrictions occur, minimum provision should be multi-component compression bandaging and compression hosiery

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Attributes of ideal compression therapy system

- Delivers therapeutic compression and has high stiffness
- Permits good anatomical fit
- Stays in place, i.e. does not slip
- Comfortable
- Allows patient to wear their own shoes and to maintain normal gait
- Easy to apply and remove
- Requires minimal training in fitting and application
- Non-allergenic
- Aesthetically acceptable
- Affordable and/or reimbursed

Encourage mobility

Improves the action of calf muscle pump

Optimizes therapeutic effect of compression system

Avoid padding under compression system

- May impair function of the system
- May lead to slippage

Restricted mobility (low calf muscle pump, able to stand, flex toes)

- Stiff compression, multi-component system preferred

Completely immobile

- IPC or hosiery may be more suitable

Assess patient and wound related outcomes

Change in wound area and depth

Change in tissue type

Change in exudate level

Changes in wound odor

Change in extent and severity of limb edema

Timing to heal

Change in mobility and ability to carry put self care activities of daily living

Changes in mood and anxiety levels

Ulcer-free duration

Assess clinical outcomes

Pressure levels are appropriate when:

- Foot perfusion is not compromised
- Pain levels are reducing and no new pain is occurring
- Exudate level is reducing
- Lower leg edema is decreasing

If wound size reduction of less than 20-30% in 4-6 weeks, reconsider:

- Level of compression
- Type of compression
- Level of concordance

Refer to a specialist as appropriate.

Recurrence

“Compression therapy ‘for life’ is essential to reduce the risk of ulcer recurrence”

Ensuring success with ABC Model

- ✓ Actively involve the patient
- ✓ Promote concordance
- ✓ Manage pain effectively
- ✓ Educate patient and family

BOX 10 | Methods for patient, caregiver and family education and training

- Ongoing assessment and review with feedback on progress
- Continuity of care with consistent messages
- Verbal explanations: build up level of information and repeat as appropriate
- Information leaflets and resources
- Telemedicine, e.g. online video calling, apps and smart phone support
- Online videos and tutorials (webinars)
- Workshops and demonstrations with opportunities to practice application of compression therapy systems and dressings where appropriate
- Patient self-help and support groups

Box 10, page 18

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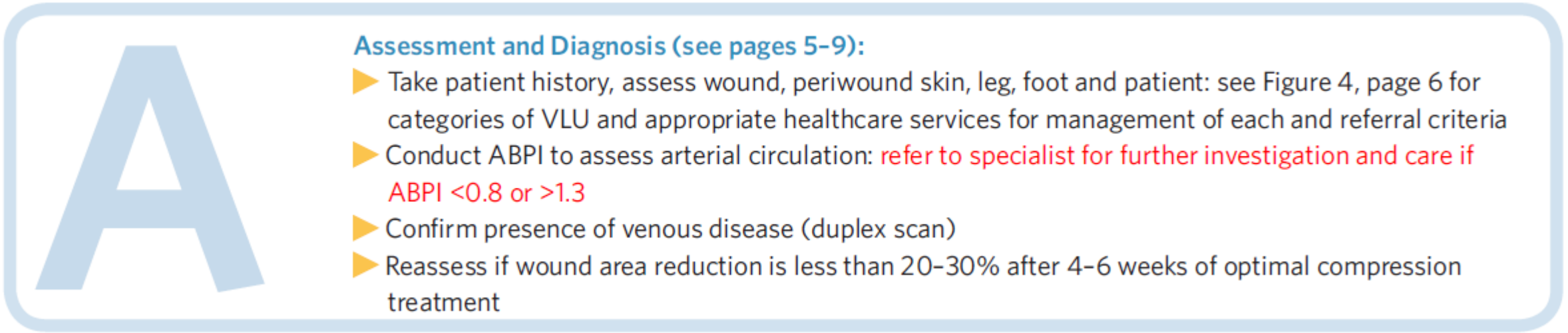
Adopting the ABC model into practice



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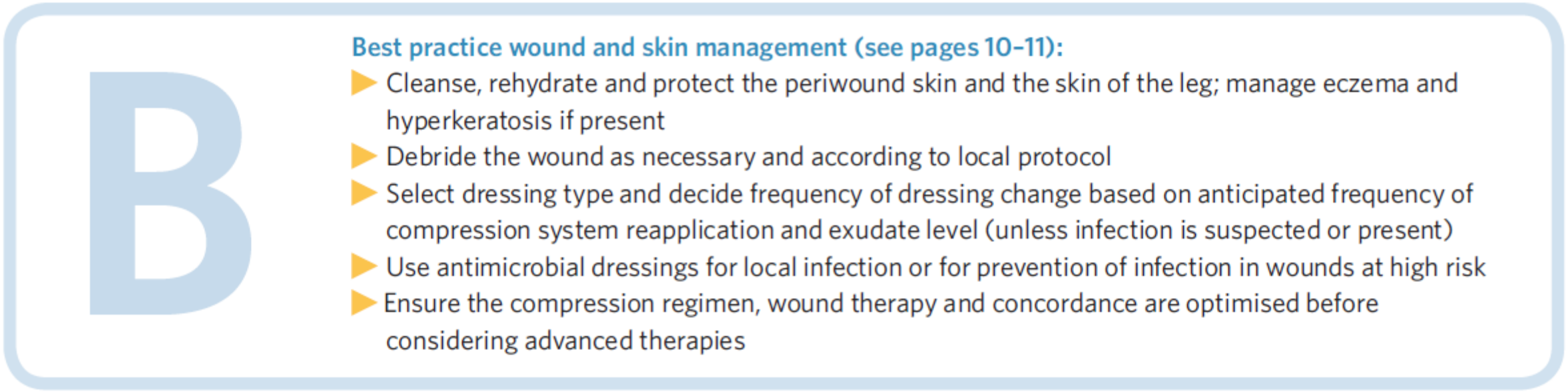
Adopting the ABC model into practice



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Adopting the ABC model into practice

C

Compression therapy (see pages 12–16):

- Select compression bandaging for active treatment (stiff, inelastic multi-component systems are preferable)
- Be aware that some patients may require modified compression (see Table 5, page 15)
- Consider compression hosiery for prevention of recurrence or active treatment once oedema has resolved
- Refer to specialist for further investigation and care if considering compression therapy for patients with a mixed aetiology ulcer with an ABPI <0.8 or >1.3
- Do not use compression therapy on patients with ABPI <0.5: refer to a vascular surgeon for possible revascularisation
- Encourage patients to be active and mobile
- Consider IPC for totally immobile patients

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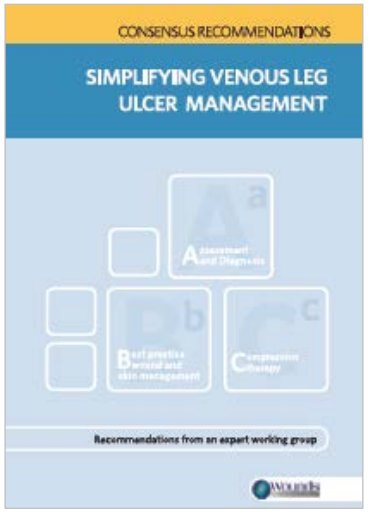
New in the Consensus Recommendations



NEW

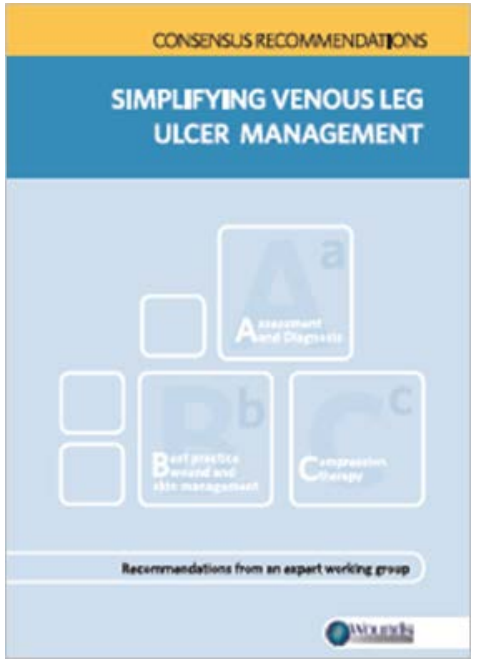
- ✓ ABC Model for leg ulcer management
- ✓ Venous leg ulcer pathway
- ✓ Venous leg ulcer categorization
- ✓ Table to guide the level of compression therapy needed based on ABPI and need for referral to other services
- ✓ Tips to optimize compression therapy
- ✓ How to incorporate the ABC model into practice
- ✓ Checklist and tips for the use of compression therapy

Thank you

- Consensus document –

  Free download available at: safety.3M.com/VLU

  Funded by an unrestricted 3M educational grant



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