

INTERNATIONAL **CONSENSUS DOCUMENT**

WOUND CARE AND SKIN TONE

**SIGNS, SYMPTOMS AND TERMINOLOGY
FOR ALL SKIN TONES**



Wounds
INTERNATIONAL

PUBLISHED BY:

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The meeting and this document have been supported by Essity, HARTMANN and Mölnlycke.



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How to cite this document:

Dhooonmoon L, Nair HKR, Abbas Z et al (2023)
International Consensus Document: Wound care and skin tone signs, symptoms and terminology for all skin tones. Wounds International. Available online at www.woundsinternational.com

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FOREWORD

While patient populations vary across the world, evidence shows that in many areas there are discrepancies in wound care due to variations in skin tone; for example, patients with dark skin are more likely to be diagnosed with higher-category pressure ulcers (PUs) (Oozageer Gunowa et al, 2017). This is due to a lack of accurate assessment and early identification; for example, the initial "redness" seen on light skin may not be present in dark skin and thus be missed in the initial assessment. The majority of existing evidence around skin tones in wound care is in the field of PUs, with a lack of evidence identified in other conditions and wound types (Oozageer Gunowa, 2022).

A literature search published in 2022 (Oozageer Gunowa, 2022) highlighted gaps in the evidence around skin tones and the need for further research in this area of patient care. Further, in wound care education, there is a need for the inclusion of dark skin tones in case studies and photographs as well as to address the gap in bias around light skin tones and lack of understanding of how to assess different skin tones (Dhoonmoon et al, 2021).

Skin changes in people with dark skin tones are not observed quickly enough on a global scale. 'Global Majority' is a collective term for people who are Black, Asian, Brown, dual-heritage, indigenous to the global south, and or have been racialised as 'ethnic minorities'; globally, these groups currently represent approximately 80% of the world's population (Campbell-Stephens, 2020).

To address these gaps, a group of global experts convened for an online meeting in September 2022 to develop this international consensus document, focusing on inclusive language, assessment, and treatment of all skin tones, to improve patient outcomes. The members of the expert group work in different areas of the world, with differing patient groups and within different healthcare systems; the aim of this meeting and the resulting document was to learn from shared experiences and provide guidance on best practice to improve outcomes for all patients, with a differing range of skin tones.

This international consensus document aims to:

- Provide practical guidance on accurate assessment and diagnosis in all skin tones
- Provide guidance on language and descriptors to use, aiding clear patient communication
- Discuss different geographical and cultural considerations across the globe
- Dispel myths relating to skin tones
- Focus on the future, the need for education and how outcomes can continue to improve.

The overall aim is to improve clinician confidence in delivering best practice to all patients, with the ultimate aim of improving patient experiences and outcomes.

Luxmi Dhoonmoon (Co-chair)

Harikrishna K. R. Nair (Co-chair)

Assessment and diagnosis

Patient assessment is the foundation of all care. Effective treatment cannot be commenced without accurate and thorough patient-centred assessment. Assessment may also mean that key preventative measures can be put in place that reduce a patient's risk of requiring further care.

A thorough inspection of the skin should be performed, as well as a baseline knowledge of identifying and taking into account the patient's baseline skin tone so that any changes to the patient's skin can be monitored and identified early (Dhoonmoon et al, 2021). A lack of early identification of skin changes can mean that important signs are missed, which can lead to further and preventable skin and tissue breakdown and damage.

A holistic wound assessment considers the entire patient, including their health, environment, physical, psychological and psychosocial factors, as well as their skin tone. Although not well documented, different skin tones respond differently to injury, pressure, healing and treatment. Therefore, it is critical that the assessment and any subsequent care are tailored to the individual patient and their needs from the beginning.

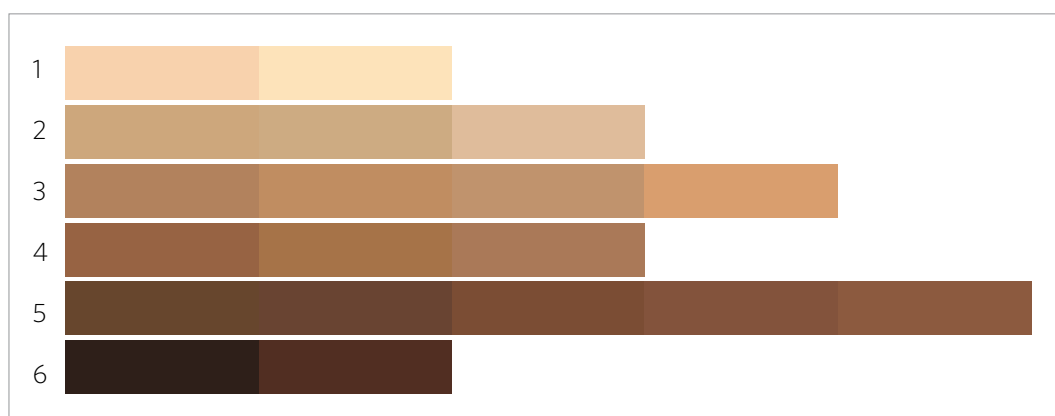
A holistic assessment should include:

- The patient's skin including their skin tone
- Their overall health
- Their medical history
- Their wound or skin condition
- Their lifestyle and environment
- Their individual needs and preferences
- Their education and ability to follow information and guidance, especially when caring for a wound at home
- Their socioeconomic status, as treating skin conditions in a private hospital setting can be expensive, and treatments may take longer to work depending on skin type and vascular status.

ESTABLISHING BASELINE SKIN TONE

The skin tone tool (adapted from Ho and Robinson, 2015) is a validated classification tool that shows a range of skin tones [Figure 1] so that the tone can be selected that most closely matches the patient's inside upper arm. The skin tone tool has been found to be a simple and economical way of assessing skin tone and can be used across care settings, including in patients who may have limited literacy (Ho and Robinson, 2015). The tool encompasses more gradients than binary 'light' and 'dark' generalisations so is more useful for use in practice.

FIGURE 1 | Skin tone tool (adapted from Ho and Robinson, 2015)





It has been found that using the skin tone tool is more effective than asking the patient to select what may be a subjective term to describe their own skin tone. Particularly in cultures where there may be bias towards light skin, or colourism is an issue, this may affect how patients view and describe their own skin tone (Everett et al, 2012). It is also important to note that skin tone may differ across different areas of the body. Injuries such as burns may also affect visible skin tone [see Figure 2 and Figure 3].

FIGURE 2 | Full-thickness burn (photograph courtesy of Ethel Andrews)



FIGURE 3 | Re-epithelialised burn (photograph courtesy of Ethel Andrews)



ERYTHEMA

Erythema means a change in colour of an area of skin, caused by increased blood flow (British Association of Dermatologists, 2021). It has traditionally been used to detect skin areas that may be infected or have other abnormalities. Although the term 'redness' may be used, it is important to note that erythema does not always appear as 'redness' in many skin tones. While redness can be an obvious symptom in people with less deeply pigmented skin, where it contrasts clearly against light skin tones, this is not necessarily the case in people with varying skin tones; for example, black, brown and olive skin tones. Changes in colour can run the spectrum of pink, red and purple – in some cases it may be limited to a subtle darkening of the existing skin tone [see Figures 4, 5, 6 and 7].

Assessment and diagnosis *(Continued)*

FIGURE 4 | While there is no visible redness in the image, erythema was identified using cardinal signs. The limb was warm to the touch and slightly swollen due to thrombophlebitis, and the patient also complained of pain, particularly when the area was touched (photograph courtesy of Simone McConnie)



FIGURE 5 | An example of erythema in an infected surgical site incision (photograph courtesy of Ethel Andrews)



FIGURE 6 | Hyperpigmentation and gangrene on the fourth toe were seen on this patient's right diabetic foot despite no visible signs of redness (photograph courtesy of Dr. Z. G. Abbas)



FIGURE 7 | There are no visible signs of redness on this diabetic left foot. The right foot in comparison shows small muscle wasting but no swelling, redness or warmth on touch (photograph courtesy of Dr. Z. G. Abbas)



With varying skin tones, there is no straightforward way to predict exactly what colour erythema will look like. It is dictated by a person's skin tone, of which there are many variations. Given the many possible variations, it is important to listen to the patient and use observation and other cardinal signs. In addition to this, if you suspect that erythema inflammation is not easy to spot on your patient's skin, then it is sensible to take into consideration other potential symptoms of their condition; this may go beyond the visual, such as whether the patient is feeling unwell or experiencing increased pain. This is of particular importance when a serious diagnosis such as cellulitis is suspected.

Assessing erythema in dark skin can be easy to miss, therefore, it is essential to use other cardinal signs such as pain, warmth and swelling. A change in skin colouration is often the main sign used to draw attention to the fact that there may be a problem. It can be easier to spot when affected areas are compared with other parts of the body or areas deemed as 'unaffected'; for example, if a limb is affected, comparing the skin to the other limb. When evaluating erythema in light skin tones, erythema may appear worse than it is, leading to the inappropriate prescription of antibiotics [see Box 1].



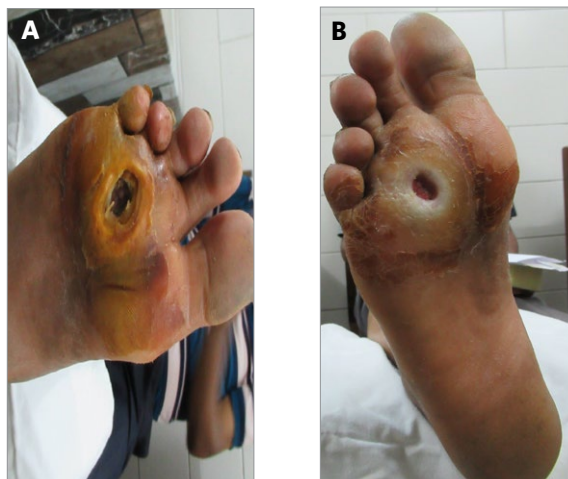
FIGURE 8 |
Hyperpigmentation due to normal ageing in this patient (photograph courtesy of Simone McConnie)



FIGURE 9 |
Hyperpigmentation is present on the diabetic left foot in addition to a lesion on the left big toe (photograph courtesy of Dr. Z. G. Abbas)



FIGURE 10 | (a) On Presentation: an iodine-stained punched-out ulcer with a callus is seen on the plantar aspects of the right foot (b) The punched-out ulcer after debridement (photograph courtesy of Dr. Z. G. Abbas)



SKIN PIGMENTATION

When assessing any patient's skin, it is important to note what is 'normal' to the patient. For example, age-related pigmentation may be misdiagnosed but may be a natural occurrence on the patient's skin [see Figure 8 for an example of this]. It is not uncommon for dark skin to present with age-related dark patches of skin on the palms and soles of the feet, which may be relevant when examining patients with diabetic feet [see Figure 9 and Figure 10]. Hyperpigmentation is associated with the ageing process and is therefore known to worsen with time. The development of hyperpigmentation is associated with several molecular mechanisms, including oxidative stress, mitochondrial DNA mutations, DNA damage, telomere shortening, hormonal changes and autophagy impairment, which have been identified as features of skin ageing (Lee, 2021). Thus, establishing the patient's baseline skin tone, and monitoring for any changes is vital.

TOUCH AND TEMPERATURE

It is important not to rely solely on appearance to assess a patient's skin, in case visual signs are missed. Full use of the senses – particularly touch – is valuable in assessment for all patients, but may be particularly important for patients with dark skin as there is less of a visual evidence base for assessment and diagnosis. For example, in cellulitis, the affected skin feels different from the surrounding skin, with tightness apparent to the touch.

Assessment and diagnosis *(Continued)*

FIGURE 11 | Example of a leg ulcer (photograph courtesy of Luxmi Dhoonmoon)



FIGURE 12 | In this foot, redness was not apparent, but warmth was detected, which triggered further investigation (photograph courtesy of Simone McConnie)



FIGURE 13 | There are no visible signs of redness (erythema) on the diabetic left foot. According to cardinal signs, the foot was swollen and warm to touch. The big toe was infected and gangrenous (photograph courtesy of Dr. Z. G. Abbas)



FIGURE 14 | Slight redness (erythema) can be seen on the diabetic right foot with the big toe gangrenous. The foot was warm to touch and the foot was swollen (photograph courtesy of Dr. Z. G. Abbas)



It is also important to ask the patient how their skin feels and whether they have noticed any changes to their own skin, such as pain, itch or changes in sensation, as well as the appearance of the skin.

Temperature can also be a useful marker in assessment and diagnosis. Touch can be used to assess for warmth, or to compare temperature (for example, in two limbs); see [Figure 11](#) for an example of a leg ulcer. [Figures 12, 13 and 14](#) show an example of how touch was important in the patient's diagnosis. [Figure 15](#) also shows a PU that was initially missed by staff until further investigations took place. If a more accurate measure is needed, an infrared thermometer may be a useful tool.

Patients should be educated to familiarise themselves with their own skin so that they can notice any changes and take action. This may be particularly important if a patient is at risk of foot damage. People with diabetic foot issues, for example, should be risk stratified and educated on their risk status, as this can serve as a guide for the practitioner and family.



FIGURE 15 | A pressure ulcer (PU) that was missed until further investigations took place (photograph Luxmi Dhoonmoon)



BOX 1 | Infection and antibiotics

While it is important not to miss signs of infection, antibiotics are generally over-prescribed and may be over-requested by patients. Overuse of antibiotics has led to antimicrobial resistance (AMR) when microorganisms evolve over time and no longer respond to any antimicrobial therapies (Fletcher et al, 2020).

The United Nations and other international agencies estimate that, if no action is taken, AMR-related diseases could cause 10 million deaths each year by 2050 (Interagency Coordinating Group on Antimicrobial Resistance, 2019).

Antimicrobial stewardship (AMS) approaches are needed, where antibiotics are used judiciously, and care is taken to prevent overuse. Accuracy in diagnosing infection is vital, both to ensure signs of infection are not missed, and that infection is not over-diagnosed and treated unnecessarily.

PHOTOGRAPHY

Photography should ideally be used only for recording and monitoring purposes, rather than as a diagnostic tool. However, telemedicine has an important role to play in wound care and, in some care settings, photography may be vital (e.g. in rural settings where an in-person assessment by the clinician is not possible). Monitoring changes in the skin or in a wound using photography can be vital to see the progression of healing. This can be useful if the patient is seen by more than one practitioner.

While cameras and phones have become more accurate in picking up skin tones, good lighting is essential, using natural light whenever possible. If possible, it is recommended that a calibrated colour chart is used when photographing a wound, to ensure that the colours captured are true (Institute of Medical Illustrators, 2019).

Video, rather than static photography, can sometimes be useful to see the wound from all angles. The patient or carer can also be asked to apply digital pressure on video, to monitor changes and reactions in the skin.

It is important to remember that not all patients have access to a smartphone or the technical skills to photograph their own wound. In all wound photography, care needs to be taken not to over-rely on photographs as a diagnostic tool. It should be used in conjunction with all of the other recommendations above, and patients being treated via telemedicine or other means should be clearly listened to, to determine how they are feeling about their wound. If a practitioner is unable to see the patient for an extended period of time, wound dressing exudate, appearances and odours should be recorded.

Action points: Assessment

- Use the skin tone tool to assess and record the patient's baseline skin tone
- Do not look for 'redness', but for skin changes
- Use all of the senses, especially touch
- Assess for warmth (use an infrared thermometer if needed)
- Ask the patient about their skin and listen to their perspective
- Use photography for recording and monitoring, rather than as a diagnostic tool, where possible.

Communication and language

Patient communication is a vital aspect of all care, not only to maintain a healthy clinician-patient relationship but also to improve patient outcomes. Patient engagement is increasingly recognised as an integral part of health care and a critical component of safe people-centred services. Patients, caregivers and/or relatives who use health services are increasingly asking for more responsive, open and transparent healthcare systems (WHO, 2016).

Engaged patients are better able to make informed decisions about their care options. In addition, resources may be better used if they are aligned with patients' priorities and this is critical for the sustainability of health systems worldwide (WHO, 2016).

Living with a wound is, in many ways, like living with any other chronic condition: it can have a significant effect on daily life and overall wellbeing (Moore et al, 2016). Patient feedback has indicated that there can be a perception that a wound is not as 'serious' as some other chronic conditions, and so there is less empathy in the care provided (WUWHS, 2020).

It is critical to understand the patient's perspective, as well as their thoughts and feelings about their wound and overall skin condition. Asking direct questions such as 'have you noticed any changes to your skin?' or 'are any parts of your skin sore?' are important for involving patients in their own care and obtaining information that might otherwise be missed (Wounds UK, 2021). See [Box 2](#) for examples of questions to consider asking yourself and the patient as part of a skin assessment.

BOX 2 | Questions to consider as part of skin assessment (Wounds UK, 2021)

- What is the wound/periwound skin like in comparison to the surrounding skin?
- Are there any differences in colour?
- Does the skin feel warm or cool? Are there any changes in temperature?
- Does the skin feel spongy or firm?
- Does the skin look or feel shiny or tight?
- Is there any swelling or inflammation?
- Are there any changes in the texture of the skin and underlying tissue?
- How is the overall condition/integrity of the skin?
- Is there any pain, itchiness or change in sensation?
- Have you moved the dressing? If yes, why?
- If compression therapy is used, how has the compression changed between the last skin assessment and now? Did you feel like you wanted to remove the bandages?
- Are you able to apply dressings at home with the guidance of a clinician?

When communicating with patients and developing a care plan, it is important not to take a 'one size fits all' approach. The patient always knows best because they are experts in their own body and health and have lived with their own wounds every day (WUWHS, 2020).

LANGUAGE

The importance of clear and appropriate language in healthcare is evident. Language barriers in healthcare lead to miscommunication between the medical professional and patient, reducing both parties' satisfaction and decreasing the quality of healthcare delivery and patient safety (Al Shamsi et al, 2020).

Some healthcare institutions use interpreter services, which may be useful for some patients where language and understanding are an issue. However, the use of interpreter services may not always be possible, and they have been found to contribute indirectly to increased costs and the length of treatment visits (Al Shamsi et al, 2020). It has been reported that the implementation of online



translation tools such as Google Translate increased the satisfaction of both medical providers and patients (to 92%) and improved the quality of healthcare delivery and patient safety (Al Shamsi et al, 2020).

Ultimately, as clinicians, it is our responsibility to take the time and communicate effectively in a way that the patient can easily understand. Consider your tone, speak slowly and use pictures or expressive gestures to help if language is an issue. It is important to listen to the patient's family, caregiver and/or relatives and involve them where possible, ensuring that everyone understands the treatment and their role in it [Box 3].

BOX 3 | Inclusive language in health and care (adapted from the King's Fund, 2021)

It is essential to keep in mind that language, much like identity and culture, is constantly evolving. Not to mention that intersectionality reminds us of how these shifting elements can overlap and interact with one another. So, rather than simply memorising 'correct' terms, we should make time to reflect on the language we use. When thinking about language, we may ask ourselves some key questions.

- Where does this term come from and why am I choosing to use it?
- Does this terminology or phrasing capture the specific group or experience that I am referring to?
- Does this description share only the characteristics pertinent to this discussion?
- Is this terminology or phrasing used by the people concerned? If I'm not sure, have I verified it?
- Who is my audience? Is this language welcoming and accessible to that audience?
- Is this term or acronym widely understood, or would readers benefit from clarification?
- What are the implications of this language beyond this immediate piece of work?

As healthcare professionals, the language we use matters.

SKIN TONE DESCRIPTORS

While language obviously varies across the globe, it is universally important to use clear and up-to-date language. When considering skin tone, it is important not to think of dark skin tones as 'difficult' or 'challenging'. Equally, it is important not to refer to particular patient groups as 'hard to reach', as it should be the responsibility of clinicians and healthcare systems to be inclusive.

While there is currently no standardised approach to describing skin colours, clinicians' language must be respectful, simple, professional and neutral. If you don't know something, ask the patient questions rather than make assumptions.

There is a difference between skin tones and ethnicity; not all black people have dark skin tones. Use terms like 'brown' or 'black' to describe skin tones rather than 'darker', which implies that white skin is the baseline or norm. Avoid using metaphors or similes when describing skin tone, such as comparing skin tones to foods, particularly those that fueled and continue to fuel the slave trade, such as cocoa and coffee; instead, use a validated classification tool such as the skin tone tool (Wounds UK, 2021).

Action points: Language and communication

- Use simple language
- Ask the patient or caregiver direct questions to obtain information about their skin
- Make sure the patient and their family/carers understand their treatment
- Be respectful and professional when describing skin tones
- Give/display information in a range of languages where possible
- Don't put patients in boxes, use labels or make assumptions
- If interpreter services are not available for patients where they may be useful, use simple online tools such as Google Translate
- Include written information if necessary and appropriate.

The importance of inclusive care

All healthcare should be inclusive of all patients and individualised to suit them. To be inclusive, all clinicians should be as culturally aware and educated as they can be, so that they are well-equipped to help all people individually. All patients need to feel supported and able to ask for help (WUWHS, 2020).

CLINICIAN EDUCATION

Different clinicians in different parts of the world may have different knowledge and needs, depending on factors such as the patient population in their area.

In all cases, evidence emphasises the importance of inclusive, compassionate and individualised care (WUWHS, 2020). The UK General Medical Council (UK GMC; 2019) emphasises the importance of good communication, compassion, and trust, as well as practical strategies for when things go wrong (see Box 4).

BOX 4 | Guidance for patient communication if care goes wrong

Guidance from the UK GMC (2019) states that healthcare professionals must:

- Tell the individual (or, where appropriate, the individual's advocate, carer or family) when something has gone wrong
- Apologise to the individual (or, where appropriate, the individual's advocate, carer or family)
- Offer an appropriate remedy or support to put matters right (if possible)
- Explain fully to the individual (or, where appropriate, the individual's advocate, carer or family) the short- and long-term effects of what has happened.

PATIENT EDUCATION

Individual patient capacity and understanding must be established, with communication tailored to the appropriate level, so that patients can get the most out of their treatment and feel supported. Engaging the patient's family and carers is also important.

In some cases, myths may need to be dispelled regarding the patient's wound and treatments e.g. patients believing that the wound 'needs air' and should not be covered. If possible, it is better that the patient can understand the rationale for their treatment, and why particular dressings or treatments are being used, to engage them with their treatment plan: this has the potential to radically improve patient outcomes (Sandy-Hodgetts et al, 2022).

For some individuals, care has to be a compromise and realistic goals must be set. Negotiation should always be a continuous process and finding common ground is needed, rather than retaining all control and employing a paternalistic approach. It is important to remember with some therapies (e.g. compression) that 'some care is better than no care'. As well as setting realistic goals, a degree of flexibility is important — not every element of treatment can be controlled, and we may need to expect some deviation from ideal plans (WUWHS, 2020).

MULTIDISCIPLINARY TEAM APPROACH

It is important to take a multidisciplinary approach, to ensure that the patient receives access to the best care. Making referrals, or involving other care teams or experts where necessary, should be seen as best practice and in the patient's best interest. Nurses or nurse practitioners, podiatrists or podiatric surgeons, orthopaedic surgeons, nephrologists, pathologists and psychologists should work collaboratively to provide their unique perspectives to assist the patient's healing.

In patients with wounds, it is important to identify and manage underlying causes. In wound care,



departments such as dermatology, vascular services or diabetes care (as well as others) may be relevant in ensuring that the patient receives the best care for their overall health and wellbeing.

Action points: Inclusive care

- Clinicians must be as culturally intelligent, aware and educated as possible to ensure that all patients receive clear communication and the best care possible
- Any patient education needs to be tailored to the individual, their capacity and their individual preferences, needs and beliefs
- Realistic treatment goals need to be set and clinicians may need to be flexible in their attitude
- A multidisciplinary approach is recommended wherever necessary, engaging other departments and managing any comorbidities or underlying causes
- Don't be afraid to ask someone else if you're unsure about something!

Global geographical considerations: Getting it right

In some areas of the world, there may be specific considerations regarding wound care, depending on local cultural and geographical factors. Different climates may have to be considered, as well as different cultures in different areas.

Additionally, some geographical areas may be better resourced than others, healthcare systems may vary, and patients in rural or urban areas may have differing access to healthcare and to seeing a clinician.

Different wound types may be more prevalent in different parts of the world: for example, there have been specific guidelines recently produced for the care of diabetic foot ulcers (DFUs) in the Asia-Pacific (APAC) region, as the Western Pacific and Southeast Asia regions are included in the area where diabetes is expected to increase most rapidly (Nair et al, 2020), making DFU care a particularly urgent issue.

CARE IN LOW-RESOURCE AREAS

There are significant challenges in healthcare systems in resource-poor regions of the world where there is no or limited access to water, sanitation procedures, standards of wound care (Toppino et al, 2022) and access to appropriate clinicians. Treatable injuries and wounds are the leading cause of death and disability in many developing countries among those under the age of 60 (MacKenzie, 2000). The fundamental principles of assessment are vital, particularly in the early identification of infection, focusing on awareness of signs and symptoms in all skin tones, such as pain, heat and erythema.

The World Health Organization's guidelines on 'Hand Hygiene in Health Care' should be followed as much as possible, while acknowledging that optimum conditions may not always be possible (WHO, 2009).

COMMUNITY AND TRADITIONAL MEDICINE

In all patient groups, it is important that respect is given to the patient's individual cultural beliefs, and that care is tailored appropriately whenever necessary. In some cultures, there may be mistrust of 'mainstream' medicine, so it is necessary to work with the patient at a level that feels comfortable for them (Sandy-Hodgetts et al, 2022).

It is important to be culturally sensitive and considerate of all patients' belief systems. In some cases, it may be necessary to work alongside 'traditional' healers or other leaders within the patient's community (Sandy-Hodgetts et al, 2022).

THE EFFECT OF CLIMATE

Climate can have an effect on wounds and dressings, particularly in parts of the world where the climate is hot and humid. However, cold climates can also have an effect and lead to issues such as dry and cracked skin, with low humidity levels resulting in dry air that draws moisture away from the skin.

A consensus of wound care specialists across Africa found that hot and/or humid climates can affect dressing adhesion, and potentially affect dressing selection. Additionally, this may increase the risk of maceration of the periwound skin requiring monitoring and protection (Sandy-Hodgetts et al, 2022). Humid climates may also increase the risk of fungal infections. Fungal skin infections appear differently on different skin tones. Fungus overgrowth causes small patches of skin to become lighter or darker than the rest of the skin. On light skin tones, patches of skin can usually appear as pink,



yellow, red or pale brown. On dark skin tones, the discoloured patches of skin can usually appear lighter than the skin tone or appear white or grey.

Many hot and humid countries have a barefoot culture. Practices such as walking barefoot on hot surfaces such as sand (Harkin, 2010) puts people at risk of injuring their feet and developing foot ulcers, particularly in people with diabetes. Even indoors, walking barefoot can expose the feet to potential trauma, such as splinters from hardwood flooring (Gulf Diabetic Foot Working Group, 2017).

Diagnosis of infection or ischaemia in people with DFUs and dark skin tones can be difficult due to the lack of colour change and the inability to assess for lymphangitis. When assessing DFUs, clinicians should not only use 'redness' as a descriptor, which is usually seen in light skin tones; any changes in colour should be assessed and monitored. Swelling, warmth and pain (Wang et al, 2020) are other key cardinal signs of inflammation that a clinician should be aware of. Severe DFUs in patients with dark skin tones may present with black or brown eschar overlying the ulcer. As a result, it is critical to thoroughly assess the skin to ensure that eschar or necrosis is not misdiagnosed (Wounds UK, 2021).

Where access to a clinician may not be readily available, particularly in rural and remote areas, clinicians must advise patients and people with diabetes to check their entire foot, including the underside, with a mirror on a regular basis, noting any redness, changes in colour, or bleeding between their toes (Khunkaew et al, 2019). It is also important to encourage patients to wear appropriate, properly fitted footwear, to avoid shoes that are too small, tight, or rub against a specific area of the foot, and to avoid walking barefoot. (Gulf Diabetic Foot Working Group, 2017).

SUNBURN

In some climates, sun damage is a major issue. Melanin, a brown pigment, is what gives skin its colour. Melanin absorbs ultraviolet (UV) radiation from the sun and protects the skin. Dark skin produces and concentrates more melanin in the epidermis, thus absorbing UV rays 'better' than light skin (Ho and Robinson, 2015; Gupta and Sharma, 2019). This is where the common misconception that people with dark skin are completely UV-resistant comes from. This gives the false impression that people with dark skin do not need to protect themselves from the sun, do not get sunburned and do not develop skin cancer, which is not the case.

Skin cancer, sunburn and skin peeling do occur in people with dark skin, albeit at a lower rate compared with light skin (Battie et al, 2013), although the discrepancy in skin cancer rates is largely believed to be due to delayed diagnosis.

It is important for clinicians, especially in warmer climates, to demystify and educate people of all skin tones about excessive sun exposure, the clinical signs of skin cancer, and the importance of wearing appropriate clothing such as hats and long sleeves (Linos et al, 2011), as well as not only using sunscreen but also reapplying it throughout the day. Equally, clinicians must also understand and be aware of how skin cancer manifests itself in different skin tones in order to avoid late diagnosis.

SKIN BLEACHING

Skin bleaching is a popular practice that affects many people all over the world, particularly women in Africa, North America, Europe, Asia and the Middle East (Masub and Khachemoune, 2022), who want to artificially achieve a lighter skin tone or improve the appearance of blemishes. It can involve using skin creams, soaps and injections that include unregulated chemicals that can be unsafe to use.

It is important to note that, in some areas and cultures, there can be a stigma associated with these complexion-altering practices, and people may not admit to them during skin tone assessments.

Global geographical considerations: Getting it right *(Continued)*

Therefore, clinicians should assist in creating an environment in which the patient feels supported and comfortable in reporting any changes to their own skin, including recent sun exposure and the use of skin bleaching or complexion-altering practices, particularly during skin tone assessments.

A study by Kibadi (2022) examined the time to remove sutures from the palmar surface of the hand in individuals with dark skin tones. This study found that 85% of patients without complete wound closure at suture removal had a history of use of skin-lightening products, raising the need for further research in this area, particularly in areas of the world where skin-lightening products may be more commonly used.

Clinicians should use neutral and non-judgmental language to educate patients about the risks of skin bleaching while keeping cultural practices in mind.

Action points: Global geographical considerations

- Remember that care varies around the world due to factors such as geography, culture, healthcare systems, resources and climate
- In some cultures, it may be necessary to work alongside 'traditional' treatments and community leaders; it is important to respect all patients' beliefs
- Consider the effects climate might have on wounds and dressings
- Remember that sunburn and protection from sun damage applies to all skin tones
- Consider practices or 'unofficial' treatments such as skin bleaching and the effect they may have on the patient's skin.

The future

There has been work to show that there is still generally a significant gap in evidence and research around skin tones and providing the best care to all patients (Oozageer Gunowa, 2022). The vast majority of the evidence that does exist is in the field of pressure ulcers, so there is a recognised need for evidence in other areas of wound care (Oozageer Gunowa, 2022).

There is a need for use of case studies and photographs of dark skin tones in general education around wound care to aid knowledge across the full range of skin tones, and to help address the gap in bias around light skin tones (Dhoonmoon et al, 2021).

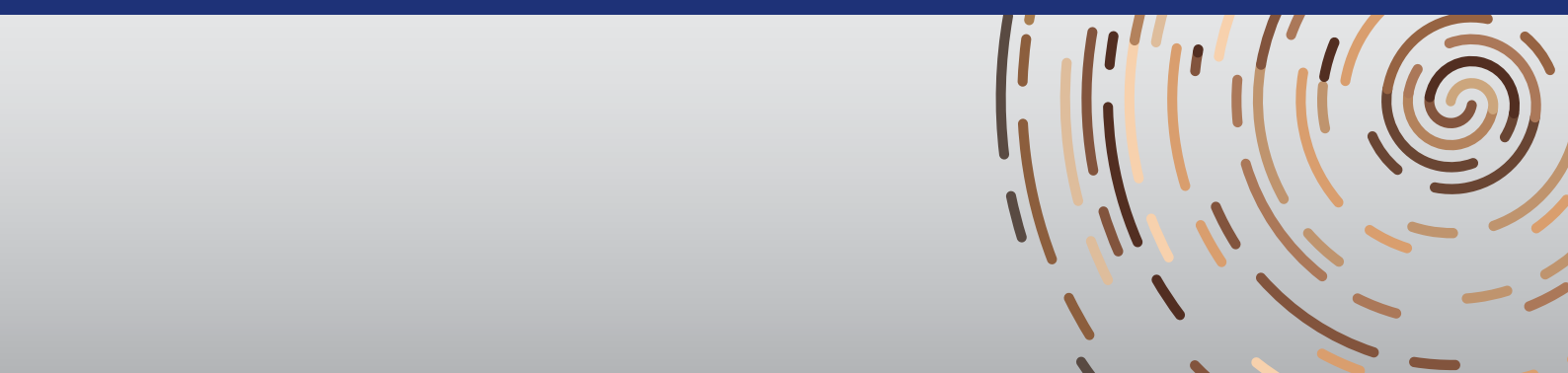
Initiatives such as the 'Mind the Gap' project in the UK have been developed to raise awareness of signs and symptoms in black and brown skin, relating to wound care, skin conditions and other illnesses to improve clinician engagement and patient outcomes (Mukwende, 2020).

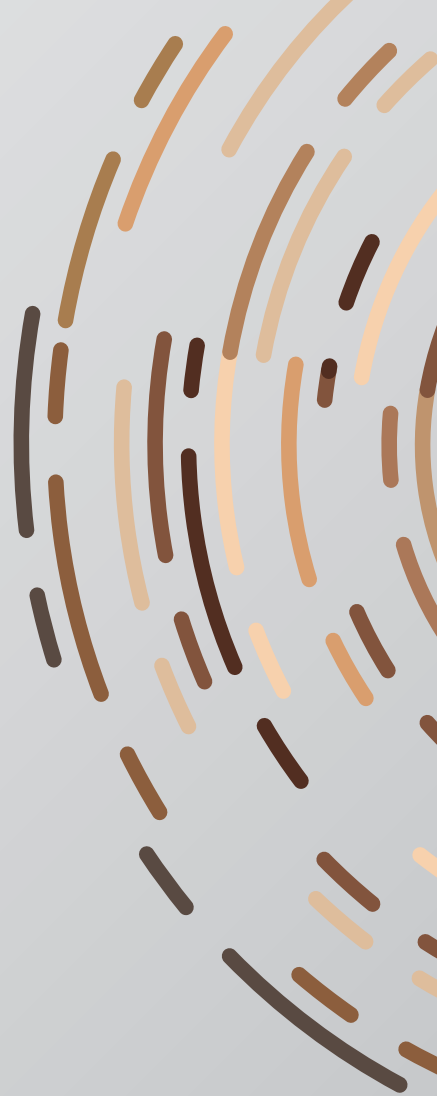
Aims for the future

- Building evidence and research in wounds in a range of skin tones
- Increasing awareness around signs and symptoms in a range of wound types - not just pressure ulcers
- Increasing use of case studies and photographs of dark skin tones in educational materials
- Improving inclusive care, cultural awareness and outcomes for all patients.

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