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Why we should abandon the misused descriptor 'erythema'

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DEAR EDITOR, The accurate meaning of 'erythema' has become so adulterated that we should abandon its use as a descriptor. This is necessary for clarity of scientific thinking, precise communication and appropriate education to reflect skin disease across the human race.

We agree with Burgin *et al.*¹ that appropriate skin colour descriptors should be used. While editing the British Association of Dermatologists' book *Dermatology Training: The Essentials*,² we tried to ensure that the text and images reflected multiethnic populations and the diversity of disease presentations, and reflected on the highly prevalent use of the word 'erythema'.

Different meanings ascribed to 'erythema', apart from red, include pink, dusky red, persisting redness, new redness, colour change, colour difference, inflammation, redness without inflammation, and even sunburn.³ These varied applications reveal a lack of clarity of thought. Confusion in applying the term across diverse populations exposes the cultural selection bias when the term was originally coined.

The most important reason why 'erythema' should be abandoned is its frequent misuse as a surrogate for 'inflammation'. Erythema means red, but its use is no longer confined to that meaning. One sign of inflammation is redness (Greek: 'erythros'), recognized in Celsus's classical signs of inflammation: *calor, dolor, tumor et rubor*.⁴ The *rubor* (redness) results from increased skin blood flow when inflamed. Lightly pigmented skin most easily shows redness, although other inflammation signs – heat (*calor*), swelling (*tumor*) and pain (*dolor*) – occur in all skin tones.

Over two centuries, White dermatologists describing skin disease in White patients have often used the word 'erythema' to mean 'inflammation'. However, in today's multiethnic societies, misuse of the word results in underrating disease severity in darker skin types, disadvantaging some people and potentially leading to inappropriate management. Misuse causes confusion among dermatologists and other physicians, aggravated by tortuous attempts to define 'erythema' across all skin types.

Let's be clear: redness is a colour and inflammation is a process. When referring to inflammation, use the word 'inflammation'. When describing skin colour, use a colour description, such as red.

Skin inflammation results in colour changes due to vasodilation and to effects on melanocytes. In lightly pigmented skin, inflammation causes redness but it can cause other colour changes. People with skin of colour with relatively light skin tones are more likely to show inflammation as redness. In those with darker skin tones, inflammation may cause

violaceous, grey, brown–dark brown or black colour changes, as well as redness. These changes can be subtle in darker skin, so look for other inflammation signs such as tenderness, heat, swelling, peeling, texture or contour changes, or prominent skin papules and pores. Inflammation may or may not include the sign redness, and redness may or may not be a sign of inflammation.

One example of the use of 'erythema' causing confusion is in the 'minimal erythema dose' (MED) test. The purpose of the test is really to determine the ultraviolet dosage that causes minimal detectable inflammation. Redness is used as the key sign, but in darker skin, other signs of inflammation may be more relevant: this argues for a change to a 'minimal inflammation dose' test.

We dermatologists like having our special words, a sort of secret code, mysterious to outsiders, that helps to define us. One of our most favourite is 'erythema'. But we need to complement dermatology's scientific and evidence-based advances by using clear, simple, unambiguous language. Thanks to the richness of English, there are no circumstances where the use of the word erythema is needed. Although 'erythema' is in dermatology's DNA, we should now apply a snip technique.

The use of 'erythema' in clinical descriptions can be avoided immediately, but erythema is also embedded in disease names: erythema multiforme, erythema nodosum and many others. In dermatology some names based on misconceptions, such as *mycosis fungoides*, are being renamed, and we should consider whether some names that include 'erythema' should be changed. Disease names should be appropriate for use across all skin types. However, the process of reaching agreement on retaining or renaming disease names will be complex.

Every time we are about to use the word erythema, we should think whether we mean a colour, or whether we are using it to mean inflammation. Self-censoring the use of 'erythema' promotes clarity of thought and more accurate communication. This is not always easy, as we have found when deleting 'erythema' throughout our new book.²

It is not always desirable to modernize old concepts, sometimes it is better to start afresh. Medicine has often dropped words that are made obsolete by advancing knowledge, such as 'humors' or 'miasmas', or are no longer fit for purpose, such as 'epinictis' and 'terminthis' (two lesser inflammatory pustules).⁵ Now may be the right time to abandon erythema as a daily descriptive term.

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