What are photodermatoses?

PHOTOPROTECTION | BASIC

Photodermatoses can be defined as skin disorders that are induced or exacerbated by UV radiation and are different from acute reactions such as sunburn. Sunburn and photoaging can occur in anyone exposed to sufficiently high levels of UV radiation. Conversely, photodermatoses are abnormal reactions to UV in some individuals and are most commonly triggered by UVA radiation (320-400 nm)[1,2]

They can be categorized as primary or secondary disorders.3 Primary photodermatoses are either idiopathic, or caused by photosensitizing agents. Secondary dermatoses usually accompany systemic diseases like lupus erythematosus or represent a metabolic problem (porphyrias) or DNA repair abnormality (xeroderma pigmentosum).[2]

PRIMARY	
Idiopathic	Drug- and chemical-induced photosensibility
Polymorphous light eruption	Phototoxicity (Furocoumarins (Psoralens), Dyes, Nonsteroidal Anti-inflammatory Drugs (NSAIDs), Amiodarone)
Actinic prurigo	
Hydroa vacciniforme	
Solar urticaria	Photoallergy (sulphonamides, sulphonylurea derivatives, chlorothiazides, quinine, quinidine, and piroxicam)
Chronic actinic dermatitis	Photocontact allergy

SECONDARY	
Defective DNA repair disorders	Photoaggravated dermatoses
Xeroderma pigmentosum	Lupus erythematosus
Cockayne syndrome	Dermatomyositis
Trichothiodystrophy	Pellagra
Bloom syndrome	Porphyrias
Kindler syndrome	Darier's disease
Rothmund-Thomson syndrome	Bullous pemphigoid
	Autoimmune bullous dermatoses (pemphigus, pemphigoid)

Table 1. Photodermatoses and their classifications.[4,5]

How to diagnose photodermatoses ?

Given that the clinical features of photodermatoses vary widely, the diagnosis of primary photodermatoses can be challenging.

Suspicion should be aroused when skin eruptions occur in UV-exposed sites after sun exposure.

It is important to conduct:
A systematic evaluation including an assessment of the patient's history as well as photodiagnostic procedures.[3]

During the physical examination, clinicians could note:
• **the localization of lesions on sun-exposed areas** *versus* non-sun-exposed areas.
• Other features to note include the **morphology of the eruption**, specifically the presence of erythema, urticaria, edema, eczema or scars, and **the type of lesions present** (papules, vesicles, blisters, none).[3]

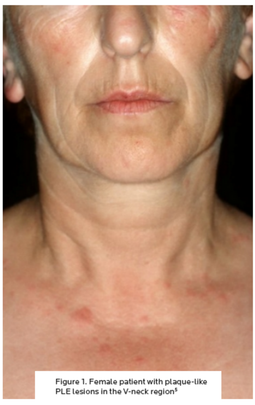

Figure 1. Female patient with plaque-like PLE lesions in the V-neck region[3]

AGE GROUPS	PHOTODERMATOSES[3]
Infancy	• Congenital erythropoetic porphyria (Günther's disease) • Neonatal lupus • Genodermatoses
Childhood	• Polymorphous light eruption • Juvenile spring eruption (a variant of polymorphous light eruption) • Actinic prurigo • Hydroa vacciniforme • Erythropoetic porphyria • Lupus erythematosus
Adulthood	• Polymorphous light eruption • Drug-induced photosensitivity • Solar urticaria • Lupus erythematosus • Porphyria cutanea tarda
Elderly	• Chronic actinic dermatitis • Drug-induced photosensitivity • Dermatomiositis

Table 2. Photodermatoses by age groups

What's to be done in practice?

Photodermatoses, while challenging, can be identified through a systematic approach and by establishing an exact diagnosis for better control of photosensitivity reactions.

All patients with photodermatoses need education about :

• The avoidance of direct sunlight
• And on photoprotection strategies (eg, phototherapy, topical and/or systemic drugs and sun protection/ avoidance).[5]

Affected individuals should be counseled :

• To wear protective clothing (e.g. a long-sleeve shirt, hat)
• And to use sunscreens that cover the action spectrum of the dermatosis.

When necessary, patients may have to consider lifestyle changes (e.g. avoiding the sun during peak times of the day) or even changes in occupation for those who are required to work outside. If an external drug or agent is identified, avoidance of that drug is obviously required.[3]

Special diagnostic considerations in pediatric patients[5,6]

Although photodermatoses are not common in children, when they occur they cause discomfort for the child and anxiety for the family. The large majority of photodermatoses in children are cases of polymorphous light eruption.

Diagnosing photodermatosis in children is challenging:

• Clinical presentations include a variety of eruptions that are usually localized on sun-exposed skin.
• Provocation testing can provide useful information, however photopatch testing to identify external photosensitizers is rarely performed in children.
• Immunoserology and occasionally immunofluorescence of skin lesions may be used to distinguish idiopathic photodermatoses and lupus erythematosus.
• Genetic testing may be useful in genophotodermatoses.

When a severe photosensitivity is noted shortly after birth (as indicated by screaming in response to light exposure and burgundy-stained diapers), congenital erythropoietic porphyria may be suspected. Other dermatoses that may present in infancy include homozygous porphyrias and occasionally, familial porphyria cutanea tarda. Neonatal lupus may present within weeks of birth as an erythematous, polycyclic, scaling rash that may occur even on non-sun-exposed skin. Fortunately for sufferers, neonatal lupus clears within the first year of life as the anti-Ro antibody is eliminated. An increased sun sensitivity may be present in children with xeroderma pigmentosum within the first two years of life. Solar urticaria usually occurs in older children or adults, but it can occur in infancy.[4]

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