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Drug-induced skin pigmentation

Drug-induced [skin pigmentation](#) is quite common and accounts for 10–20% of all cases of acquired hyperpigmentation. Pigmentation may be induced by a wide variety of drugs; the main ones implicated include non-steroidal anti-inflammatory drugs (NSAIDs), phenytoin, antimalarials, amiodarone, antipsychotic drugs, [cytotoxic drugs](#), [tetracyclines](#), and heavy metals.

Drug-induced pigmentation



Minocycline pigmentation



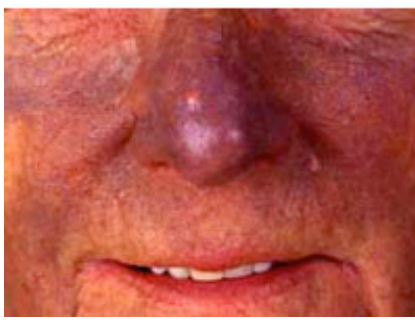
Minocycline pigmentation



Fixed drug reaction to cotrimoxazole



[Flagellate pigmentation](#) from bleomycin



Amiodarone photosensitivity



Carotenaemia from antiepileptic drug

What causes drug-induced skin pigmentation?

Several mechanisms may be involved in the drug-induced changes of pigmentation of the skin.

- Certain heavy metals, e.g. iron, may be deposited in the dermis following damage to dermal vessels. If deposited in sufficient quantities a distinctive change in skin colour may be seen without any significant increase in melanin.
- Some drugs react with melanin to form a drug-pigment complex. Exposure to sunlight often stimulates sun-induced melanin synthesis with formation of these complexes.
- Some drugs will induce hypermelanosis (accumulation of melanin) as a non-specific post-inflammatory change in predisposed individuals. This is often worsened by sun exposure.
- Some drugs induce pigmentation directly by accumulating and/or reacting with other substances in the skin.

What are the clinical features of drug-induced skin pigmentation?

The clinical features of drug-induced skin pigmentation are very variable according to the drug involved. A large range of patterns and shades may be formed.

Drug/drug group	Clinical features
Antipsychotics (chlorpromazine and related phenothiazines)	<ul style="list-style-type: none"> • Bluish-grey pigmentation, especially in sun-exposed areas • Pigmentation is cumulative and some areas may develop a purplish tint • Pigmentation of the conjunctiva in the eye may also occur, along with cataracts and corneal opacities
Phenytoin	<ul style="list-style-type: none"> • 10% of patients develop pigmentation of the face and neck resembling chloasma (clearly defined, roughly symmetrical dark brown patches) • Fades after a few months when drug has been stopped
Antimalarials	<ul style="list-style-type: none"> • About 25% of patients receiving chloroquine or hydroxychloroquine for several years develop bluish-grey pigmentation on face, neck and sometimes lower legs and forearms • Continuous long-term use may lead to blue-black patches, especially in sun-exposed areas • Nail beds and corneal and retinal changes may also develop
Cytotoxic drugs	<ul style="list-style-type: none"> • Busulfan, cyclophosphamide, bleomycin and adriamycin have all produced hyperpigmentation to some degree • Banded or diffuse pigmentation of nails often occurs
Amiodarone	<ul style="list-style-type: none"> • Blue-grey pigmentation in sun-exposed areas (face and hands) • Photosensitivity occurs in 30-57% of patients whilst 1-10% show skin pigmentation • Skin pigmentation is reversible but may take up to one year for complete resolution after the drug has been stopped
NSAIDs	<ul style="list-style-type: none"> • Often associated with fixed drug eruptions (drugs that cause a single or few sharply demarcated erythematous lesions which resolve promptly but leave a local brown pigmentation) • May occur on the face, extremities and genitalia

What is the treatment for drug-induced skin pigmentation?

Although drug-induced skin pigmentation appears to be rather benign it can become cosmetically disfiguring. In many cases once the offending drug has been stopped, fading of the lesions occurs. However, in some cases the pigmentation may last a long time or become permanent. Because many drugs that induce skin pigmentation also cause [photosensitivity](#) reactions, [sun protection](#) is usually recommended.

More recently, [laser](#) treatment has been successful in treating amiodarone induced skin pigmentation.

Related information

References:

- Book: Textbook of Dermatology. Ed Rook A, Wilkinson DS, Ebling FJB, Champion RH, Burton JL. Fourth edition. Blackwell Scientific Publications.
- Dereure O. Drug-induced skin pigmentation. Epidemiology, diagnosis and treatment. Am J Clin Dermatol 2001;2(4):253-62

On DermNet NZ:

- [Skin pigmentation](#)
- [Flagellate pigmentation](#)

Other websites:

- Electronic textbook of dermatology [Drug reactions](#)
- emedicine health [Drug allergy overview](#)

Books about skin diseases:

See the [DermNet NZ bookstore](#)

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DermNet does not provide an on-line consultation service.
If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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