

## Junctional naevus

See also the separate [Black and Brown Skin Lesions](#) article.

### What is a junctional naevus?

A melanocytic naevus (or 'mole') is a common benign skin lesion due to a local proliferation of pigment cells (melanocytes). A brown or black melanocytic naevus contains the pigment melanin, so may also be called a pigmented naevus. A junctional naevus has groups or nests of naevus cells at the junction of the epidermis and the dermis, and presents as a flat mole.<sup>[1]</sup>

Junctional naevi are often quite darkly pigmented and are macular or very thinly papular with only minimal elevation above the level of the skin<sup>[2]</sup>. A junctional naevus is an acquired lesion and as they age they can change their characteristics to that of a compound naevus, where there are accumulations of melanocytes in the dermis and at the dermo-epidermal junction, which cause the lesion to become increasingly papular.

Junctional naevi occur at any site on the body and are regularly shaped, usually round or oval. They are most often uniform in colour and range in pigmentation from light to dark brown. They are usually <7 mm in diameter. They are benign lesions but have the potential to undergo transformation to [malignant melanoma](#).<sup>[3]</sup>

# How common is junctional naevus? (Epidemiology)

There are no reliable figures for the prevalence of melanocytic naevi or junctional naevi in the general population but they are exceedingly common in congenital and acquired form. They appear in all age groups. [4] Their prevalence is so high that some believe they cannot even be considered an abnormality or pathological entity, as most people with light-coloured skin will have at least a few. They are much more common in ethnic groups with light skin but they still have an appreciable prevalence in those with more pigmented skin. The true frequency of malignant transformation to melanoma is unknown but is known to be higher in lesions greater than 20 cm [5] .

## Presentation

### Junctional naevus symptoms

- Establish if the lesion is congenital or acquired (junctional naevi are usually acquired).
- When a lesion presents medically it is important to ascertain whether there have been any associated symptoms such as:
  - Enlargement.
  - Change in shape or size.
  - Change in pigmentation.
  - Itchiness/pain/irritation.
  - Bleeding.

### Junctional naevus signs

- Examine the lesion in bright light, preferably daylight if available.
- Use drawings or photography to note the site(s), size and pigmentation of the lesion(s).
- Assess for **A**symmetry of the lesion, **B**order (any irregularity?), **C**olour of lesion, **D**iameter of the lesion.

- Establish that the lesion has the typical pattern of pigmentation and is not significantly raised from the level of the skin, to confirm as a junctional naevus.
- Distinguish from other similar pigmented macules that affect the skin:
  - Freckles (ephelides) are usually multiple, small and darken after sunlight exposure.
  - Café-au-lait spots are usually larger, lighter in pigmentation and have very distinct borders.
  - Lentigines are small, sharply circumscribed and pigmented, surrounded by normal-appearing skin and tend to be multiple, lighter brown and more irregular in shape.
  - Melanoma tends to be darker, have an irregular border, be asymmetrical and have recently grown.
  - Any lesion that has increased in size, become irregular in shape, changed its colour, become heterogeneous in pigmentation, become inflamed, bled, crusted or oozed suggests a possibility of melanoma and should be assessed by excision biopsy.

## Differential diagnosis<sup>[6]</sup>

- [Malignant melanoma](#).
- Lentigines.
- Atypical mole (dysplastic naevus).
- Other melanocytic naevi.
- [Pyogenic granuloma](#) (usually reddish but may be brown, usually elevated from skin surface).
- Seborrhoeic keratosis (usually elevated).
- Acanthoma.
- Histiocytoma.
- [Skin tag](#) (acrochordon, elevated).

- Actinic keratosis.
- Squamous cell carcinoma.
- Naevi of Ota and Ito.

## Investigations

- No investigations are necessary in the case of a simple acquired junctional naevus that has not undergone any recent change.
- Some dermatologists may use dermoscopy to try to distinguish the nature of pigmented lesions.<sup>[7]</sup> The value of this technique has been demonstrated by several meta-analyses.<sup>[8]</sup> A new sign – the 'mistletoe sign' – has been described for junctional naevi which are in the inflammatory phase.<sup>[9]</sup>
- More recent diagnostic techniques for the identification of melanoma include:<sup>[10]</sup>
  - In vivo confocal scanning laser microscopy (which uses laser scanning to produce digital images of a patient's skin, with cellular detail similar to that obtained from histology of surgical biopsies).
  - MelaFind® (an automated computer-vision system that captures multi-spectral digital data from pigmented skin lesions).
  - SIAscopy (a non-invasive technique for detecting micro-architectural information, using near infrared and visible spectra light shone from a handset through the skin).
  - Genomic detection.
- If there is any suspicion of malignant melanoma then the investigation of choice is excision biopsy.<sup>[11]</sup>

- Perform excision biopsy or refer if there are  $\geq 2$ -3 of the following features:
  - Size greater than 7 mm.
  - History of itching.
  - Evidence of inflammation or redness.
  - Increase in diameter.
  - Change in colour, particularly streaming of pigment at edges.
  - Irregular or asymmetrical shape.
  - Previous oozing, crusting or bleeding.

## Junctional naevus treatment and management<sup>[2]</sup>

- If the diagnosis of junctional naevus is clear and there has been no change in a long-standing lesion then reassurance and monitoring of the lesion are all that is usually required.
- Where there is any doubt as to the diagnosis, perform excision biopsy or refer for dermatological advice. A French study emphasised the importance of training for GPs in the early detection of potentially malignant lesions.<sup>[11]</sup>
- Perform excision biopsy whenever the lesion has:
  - Grown.
  - Become symptomatic.
  - Developed asymmetry.
  - Developed an irregular border.
  - Altered its degree or pattern of pigmentation.
  - Developed satellite lesions.

# Complications and prognosis

Junctional naevi are, on the whole, benign lesions with a very low risk of transformation to malignant melanoma. Patients with multiple lesions and high sun exposure or episodes of sunburn may be at higher risk of developing melanoma and should be warned of potentially alarming symptoms and reviewed if there is any cause for concern.

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## Further reading

- [Improving outcomes for people with skin tumours including melanoma](#); NICE Guidance (May 2010 update)
- [Marghoob AA, Changchien L, DeFazio J, et al](#); The most common challenges in melanoma diagnosis and how to avoid them. *Australas J Dermatol.* 2009 Feb;50(1):1-13; quiz 14-5.
- [Witt C et al](#); Clinical and epidemiological aspects of subtypes of melanocytic nevi (Flat nevi, Miescher nevi, Unna nevi), *Dermatology Online Journal* 2010;16 (1): 1.
- [Liang ZP, Xu SE, Jiang L, et al](#); Scalp junctional nevus with malignant transformation (melanoma) metastatic to parotid lymph node region, cervical lymph nodes and the back: a case report and review of literature. *Int J Clin Exp Pathol.* 2015 Jan 1;8(1):954-9. eCollection 2015.

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