

“Why are my armpits discoloured?”

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A 43-year-old obese female complains of “dirty brown armpits.” She has similar findings in the groin and posterior neck. She is currently on metformin for diabetes.

What is your diagnosis?

Acanthosis nigricans (AN) is most commonly due to the effects of insulin or insulin-like growth factor, which stimulates epidermal keratinocyte and dermal fibroblast growth. It is less commonly due to malignancy or exogenous medication. Most patients with benign AN have no complications with their condition, though many have an underlying insulin-resistant state which should be monitored. In fact, treatment of the insulin-resistant state can improve the skin findings. In malignant AN, the tumour is often aggressive. Elderly individuals with new onset AN have a much higher association with malignancy and thus require an appropriate work-up. Darker skin types are more commonly affected by AN and there is no gender difference in incidence.

Along with symmetric, velvety-brown thickening of skin, most commonly in the axillae, groin and neck, there are often associated skin tags. Eight types of AN have been described:

- Obesity-associated (pseudo-acanthosis nigricans)
- Syndromic (e.g., hyperandrogenism [HA], insulin resistance [IR] and acanthosis nigricans [AN] [HAIR-AN] syndrome)
- Acral (usually darker skin patients)
- Unilateral (likely autosomal dominant)
- Familial (rare, autosomal dominant)
- Drug-induced (e.g., nicotinic acid, systemic steroids)



Figure 1. Dirty brown armpits.

- Malignant (especially GI adenocarcinoma)
- Mixed type

Darker skin types are more commonly affected by the condition and there is no gender difference in incidence.

Hyperpigmentation and thickening can be improved with weight reduction and appropriate management of any insulin resistance; screening for hypercholesterolemia and coronary artery disease should be considered. Topical steroids, retinoids, or hydroquinone and/or a combination of these can provide some benefit.

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