

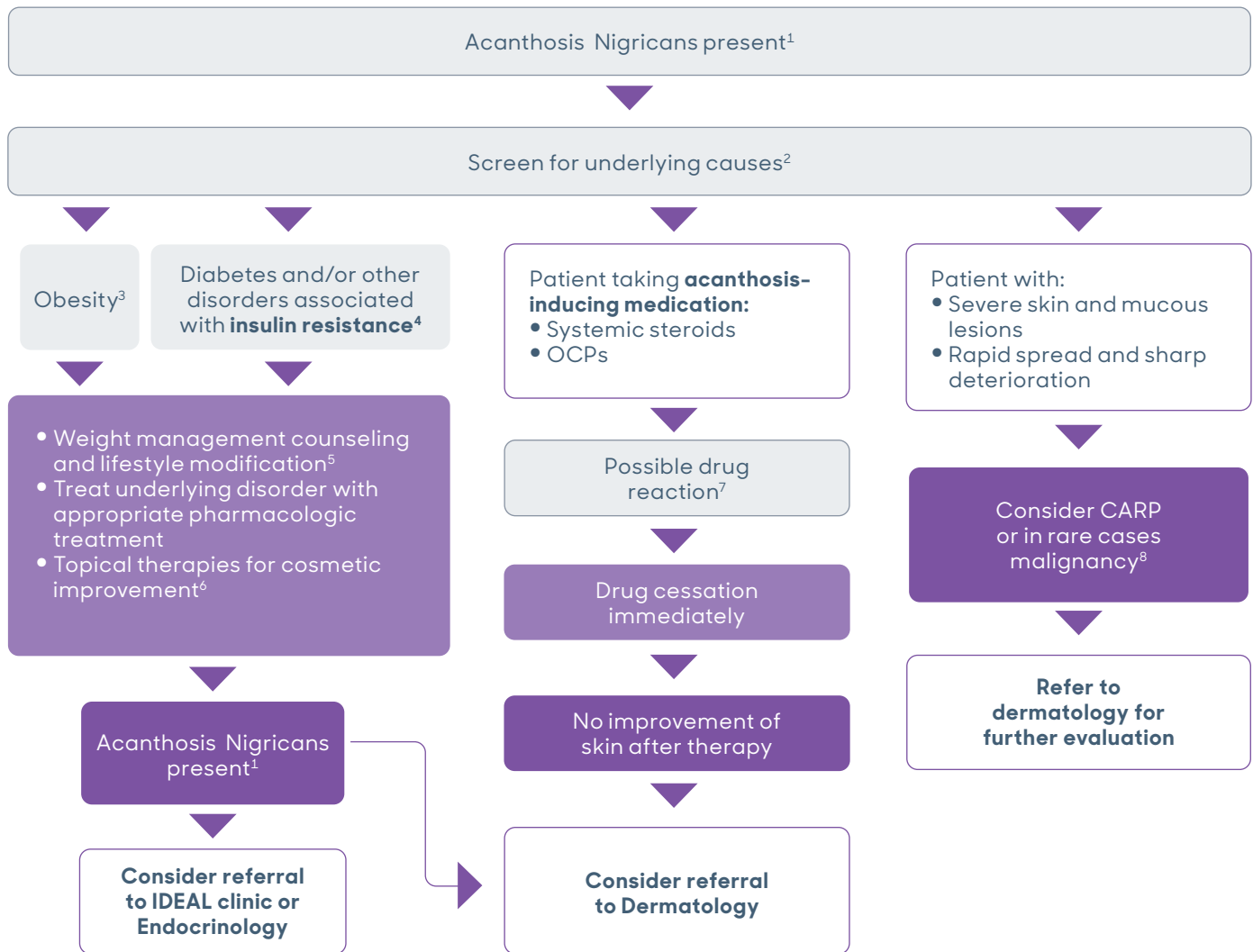
Algorithm for Acanthosis Nigricans

Examine areas including but not limited to¹:

- **Full circumference of the neck**
- **Axillae**
- Anogenital region
- Inframammary
- Abdominal folds
- Antecubital
- Inguinal skin folds
- Hands (knuckles), elbows, knees or feet
- Dorsocervical fat pads

TREATMENT GOAL:

1. **Treat underlying medical condition** causing acanthosis nigricans
2. Address cosmetic concerns with topical therapies



#	Subject	Description
1	Stages and location of acanthosis nigricans	<p>Acanthosis nigricans typically presents with thickened, velvety hyperpigmented plaques on the skin. It is most commonly found on the back/sides of the neck and axillae, but also present in other intertriginous areas, including the anogenital region, inframammary region, abdominal folds, antecubital region and inguinal skin folds. Severe cases may demonstrate lesions on areola, perineum, umbilicus, lips, buccal, or other mucosa and other non-intertriginous areas.</p> <ul style="list-style-type: none"> • Mild stages – affected skin appears “dirty” and a rough or dry texture with minimal elevation. As it advances, the skin may become thicker and skin tags may appear. • Typically appears in symmetrical distribution – unilateral cases may represent a variant of epidermal nevus. • Acral form – characterized by plaques on the knuckles of the hands, elbows, knees, or feet <p>Be sure to conduct a thorough examination of the patient’s skin, as the presence of acanthosis nigricans may suggest an underlying medical condition.</p>
2	Screen for underlying causes	<p>While acanthosis itself is not harmful, it is often caused by a harmful underlying disease or condition. These include obesity, diabetes and other insulin resistance diseases, drug reactions, malignancy and genetic/familial traits. While there is a high association with certain genetic disorders (ex. Down Syndrome) and acanthosis, it is still crucial to screen for any other underlying cause.</p>
3	Obesity	<p>Obesity is the most common medical disorder linked with acanthosis nigricans, and the prevalence of the skin condition increases with rising BMI when other factors are accounted for. Insulin resistance most likely plays a large factor in this, and weight management can lead to improvement of skin⁵.</p>
4	Insulin resistance diseases	<p>Type 2 diabetes mellitus is strongly associated with acanthosis nigricans, most likely due to insulin resistance. Other insulin resistance and endocrine disorders that may be associated with acanthosis include PCOS, hypertension, dyslipidemia, Cushing’s syndrome and other metabolic disorders.</p> <ul style="list-style-type: none"> • Be sure to screen patient thoroughly if you suspect patient may have an endocrine or metabolic disorder in combination with acanthosis.
5	Weight management counseling and lifestyle modification	<p>Weight loss is linked to improvements in skin in patients with obesity. Weight management counseling should include daily exercise and nutrition recommendations.</p> <ul style="list-style-type: none"> • At least 60 minutes or more of moderate-to-vigorous intensity physical activity daily, with at least 3 days a week including vigorous aerobic activity and resistance activity. • Because acanthosis is strongly associated with insulin resistance and exercise has been shown to mitigate insulin resistance, vigorous activity may be very effective in improving acanthosis. • Counsel patient that they should NOT scrub skin excessively.
6	Topical therapies	<p>Data on efficacy of topical therapies are limited but improvements have been reported. These include:</p> <ul style="list-style-type: none"> • Topical retinoids 0.1% gel – retinoids have keratinolytic effects on the skin. Application to localized areas for up to 2 weeks shows improvement. Combination therapy with tretinoin 0.05% cream and/or 2x daily application of 12% ammonium lactate cream also shows improvement.
7	Drug reaction	<p>Very rarely does medication cause acanthosis nigricans as a side effect and is most commonly found with medications that promote hyperinsulinemia. See algorithm for acanthosis inducing medications. Cessation of drug results in resolution of skin condition.</p>
8	Severe or progressive hyperpigmented skin thickening	<p>Confluent and Reticulated Papillomatosis (CARP) is due to disordered hyperkeratinization, it is primarily a clinical diagnosis however in some cases biopsy is needed to rule out other causes. Dermatology evaluation is recommended.</p> <p>Very rarely does acanthosis nigricans present as a paraneoplastic disorder in children. Malignant acanthosis nigricans is characterized by the presence of hyperpigmented, hyperkeratosis, and cutaneous thickening of the skin or mucous membranes that have rapid spread. The majority of acanthosis nigricans-associated tumors are due to gastric carcinomas. This is generally only found in adults without obesity.</p>

Sources:

Children’s National Hospital Dermatology Department

Acanthosis nigricans, Sander et al., UpToDate, <https://www.uptodate.com/contents/acanthosis-nigricans>

An approach to acanthosis nigricans, Phiske, Indian Dermatology Online Journal, doi: 10.4103/2229-5178.137765

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