# Diagnosis of Nodule



Expert insights video. Click to view
Alexis Truax, RN
Debra Johnston, RN

## Characteristics

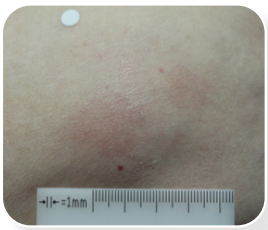
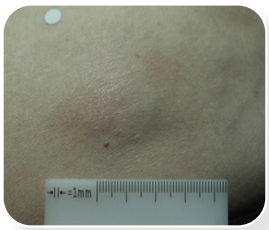
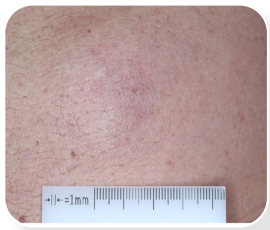
- **Nodules** are palpable, circumscribed lesions >1 cm in diameter.[1,2]
  - Different from **papules** (<1 cm) and **plaques** (>1 cm) which are usually more superficial and less voluminous.[3]
- Usually involve **dermis and/or hypodermis** and the greatest portion is typically **beneath the skin surface**.

## Causes/Etiology

- Mechanisms of the development of subcutaneous nodules are not fully understood. Histological studies demonstrate the presence of an eosinophilic infiltration and suggest cell-mediated allergic type IV hypersensitivity or late-phase type I response.[4-6]
- Some evidence indicates that higher drug concentrations and rapid auto-oxidation may increase nodule formation.[7,8]

## Prevention

- Subcutaneous nodules can be minimized by rotating infusion sites frequently and avoiding reuse of previously affected areas.





1. Mosby. Mosby's Medical Dictionary. 11th ed. St. Louis, MO: Elsevier; 2021. ISBN-13: 978-0-323-63915-6; 2. Nast A, Griffiths CE, Hay R, et al. The 2016 International League of Dermatological Societies' revised glossary for the description of cutaneous lesions. *Br J Dermatol*. 2016;174(6):1351–1358; 3. Potter PA, Perry AG, Stockert PA, Hall A. Essentials for Nursing Practice. 9th ed. St. Louis, MO: Elsevier; 2019. ISBN: 978-0-323-48184-7; 4. Acland KM, Churchyard A, Fletcher CL, et al. Panniculitis in association with apomorphine infusion. *Br J Dermatol*. 1998;138(3):480-482; 5. van Laar T, van Hilten B, Neef C, et al. The role of EDTA in provoking allergic reactions to subcutaneous infusion of apomorphine in patients with Parkinson's disease: a histologic study. *Mov Disord*. 1998;13(1):52–55; 6. Borgemeester RWK, van Laar T, Schuttelaar MLA. Cutaneous adverse drug reaction after apomorphine infusion, possibly caused by a systemic type IV hypersensitivity reaction to sodium metabisulfite: Report of 2 cases. *Contact Dermatitis*. 2018;79(5):316–318; 7. Borgemeester RWK, Diercks GFH, Jonkman MF, Van Laar T. Treatment of apomorphine-induced skin reactions: a pilot study. *Mov Disord*. 2015;30:S72; 8. Borgemeester RWK, Diercks GFH, Schuttelaar MLA, Van Laar T. Histology of subcutaneous nodules in PD patients treated with continuous apomorphine infusion: case series and review of the literature. Mov Disord. 2016;31:S653–S654.