



# CLINICAL PRESENTATION AND PATHOPHYSIOLOGY OF PRURIGO NODULARIS (PN)



Although the exact pathogenesis of **Prurigo nodularis (PN)** is not yet fully understood, it is an independent disease entity with an underlying systemic inflammation.<sup>1,2</sup>

PN is a disease with **severe itching** characterised by **impaired signalling between the skin, the nervous system and the immune system**.<sup>2</sup> Epidermal stress and inflammatory responses of the skin to pruritus lead to activation of immune cells and **release of type 2 cytokines and other inflammatory mediators**.<sup>2,3</sup> The inflammatory mediators released by the dermal infiltrate directly activate receptors on sensory neurones and/or modulate the expression and sensitivity of pruritus receptors.<sup>2,3</sup> This leads to the **release of neuropeptides** that stimulate and enhance neuronal function, resulting in nerve dysplasia and neuronal hypersensitivity.<sup>2,3</sup> This neuronal transmission to the central nervous system and nearby efferent neurons triggers itching and promotes the itch-scratch cycle, which in turn favours **neurogenic and cutaneous inflammation, barrier defects, skin remodelling and the development of lesions**.<sup>2,3</sup>

1 Elmariah S et al. J Am Acad Dermatol. 2021; 84(3):747-776; 2 Garcovich S, et al. Vaccines (Basel). 2021; 9(3):303; 3 Mack MR, Kim BS. Trends Immunol. 2018; 39(12):980-991. 3 Dupixent SPC, fass.se

**DUPIXENT®** (dupilumab) 300mg, injektionsvätska, lösning i förfylld spruta och förfylld injektionspenna. Rx, (F), D11AH05. **Indikation: Prurigo nodularis vuxna:** Dupixent 300mg är indicerat för behandling av måttlig till svår prurigo nodularis hos vuxna vilka är aktuella för systemisk behandling. **Varning och försiktighet:** Patienter med astmakomorbidity ska inte justera eller avsluta astmabehandlingen utan att först konsultera sin läkare. För ytterligare säkerhetsinformation samt information om pris och förpackning, se [www.fass.se](http://www.fass.se). **Kontaktuppgifter:** Sanofi AB, Box 30052, 104 25 Stockholm, [www.sanofi.se](http://www.sanofi.se). Vid frågor om våra läkemedel kontakta: [infoavd@sanofi.com](mailto:infoavd@sanofi.com). Datum för senaste översynen av produktresumé: november 2024.

Dupixent ingår i läkemedelsförmånen för patienter med prurigo nodularis när konventionell systemisk behandling gett otillräcklig effekt eller inte är lämplig.

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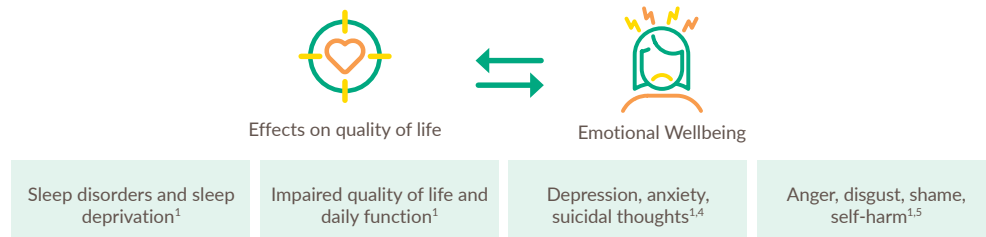


Pruritus can be multifactorial and become chronically persistent. PN is characterised by a disturbed interaction between the nerve cells, the immune system and the skin. <sup>1</sup>

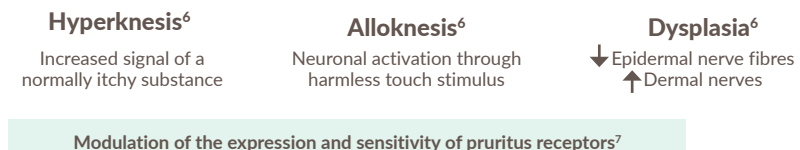
### The main symptoms of PN<sup>1</sup>



### Beyond itching and lesions<sup>1</sup>

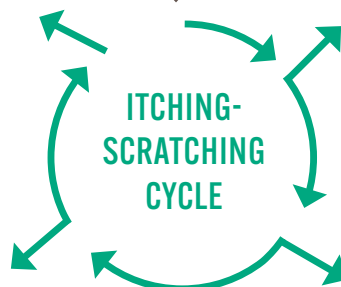
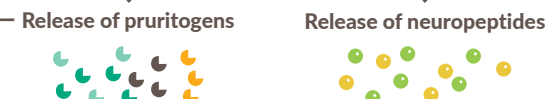
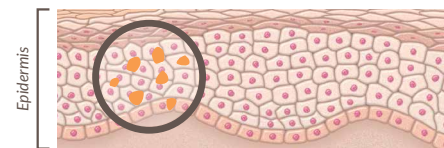


### Neuronal sensitisation<sup>8,12</sup>

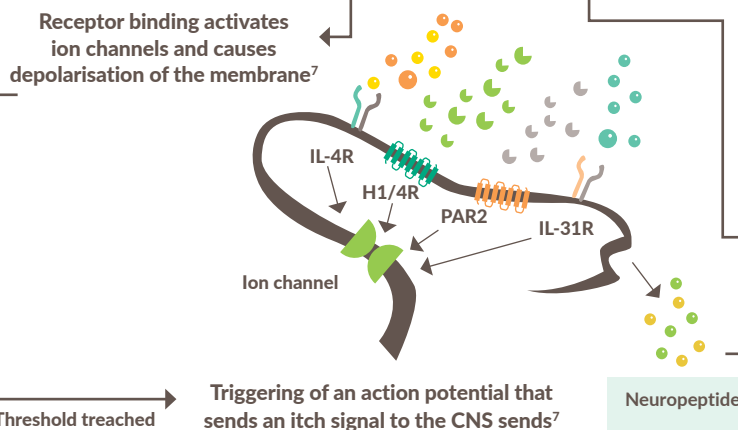


### Epithelial stress response<sup>6,7</sup>

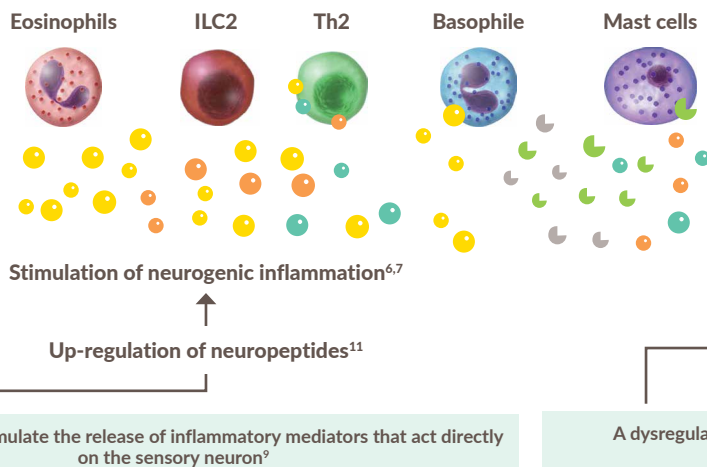
Triggered by pruritogenic stimuli (exogenous or endogenous) and disruption of the skin barrier



### Neurogenic Inflammation<sup>6,7</sup>

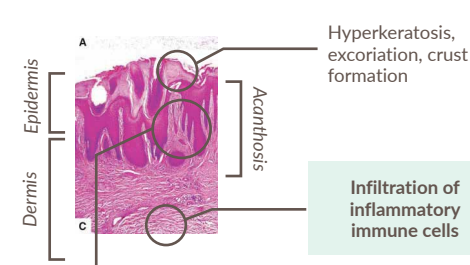


### Systemic dysregulation of the immune system<sup>6,7</sup>



Activation of immune cells in the skin

### Histopathological findings in PN skin lesions<sup>8</sup>



Fibrosis with vertically arranged collagen fibres

A dysregulation of IL-4, IL-13 and IL-31 can lead to excessive tissue repair and fibrosis<sup>9,10</sup>

CGRP Calcitonin Gene-Related Peptide; H1/4R Histamine-1/4-receptor; IL Interleukin; ILC2 Type 2 innate lymphoid cells; PAR2 Protease-activated receptor; PN Prurigo nodularis; QoL Quality of Life; R Receptor; Th2 Type 2 helper cells; TSLP thymic stromal lymphopoietin; CNS central nervous system.

1. Pereira MP et al. J Eur Acad Dermatol Venereol. 2018; 32:1059-1065; 2. Zeidler C et al. Dermatol Clin. 2018; 36:189-197; 3. Kwon CD et al. Medicines. 2019; 6(4):97; 4. Jørgensen KM et al. J Eur Acad Dermatol Venereol. 2017; 31:e106-e107; 5. Huang AH et al. J Invest Dermatol. 2020; 140(2):480-483; 6. Garcovich S et al. Vaccines (Basel). 2021; 9(3):303; 7. Mack MR, Kim BS. Trends Immunol. 2018; 39:980-991; 8. Weigelt N et al. J Cutan Pathol. 2010; 37:578-586; 9. Nguyen JK et al. Arch Dermatologic Res. 2020; 312(2):81-92; 10. Tsoi LC et al. J Allergy Clin Immunol. 2021; S0091-6749(21)01557-8; 11. Kabata H, Artis D. J Clinical Invest. 2019; 129(4):1475-1482; 12. Zeidler C, Ständer S. Eur J Pain. 2016; 20(1):37-40; 13. Dupixent SPC, fass.se

