Prurigo nodularis: Improving awareness, diagnosis, management and quality of life

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Expert panel

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Agenda

What are the clinical challenges associated with prurigo nodularis (PN) that contribute to the overall burden of the disease?

How can PN be differentiated from other skin conditions and what are the current management options?

Which emerging treatments may help to address the current unmet need for patients with PN?

What are the clinical challenges associated with PN that contribute to the overall burden of the disease?

Prof. Sonja Ständer

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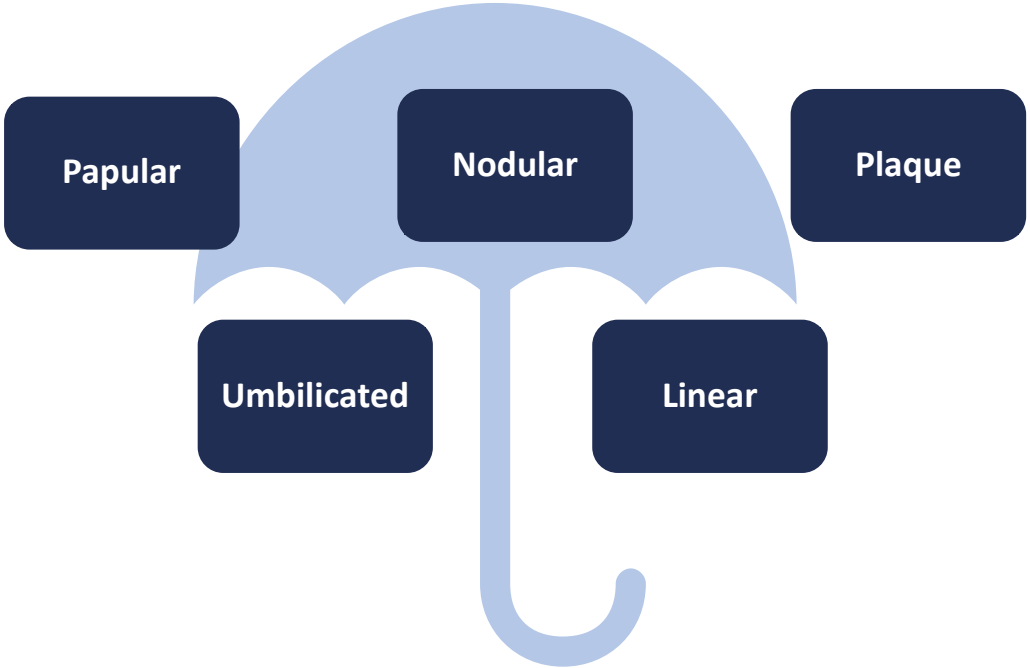
What is chronic prurigo?[1,2]



1. Pereira MP, et al. *J Eur Acad Dermatol Venereol*. 2018;32:1059–65; 2. Pereira MP, et al. *J Eur Acad Dermatol Venereol*. 2019;33:263–6.

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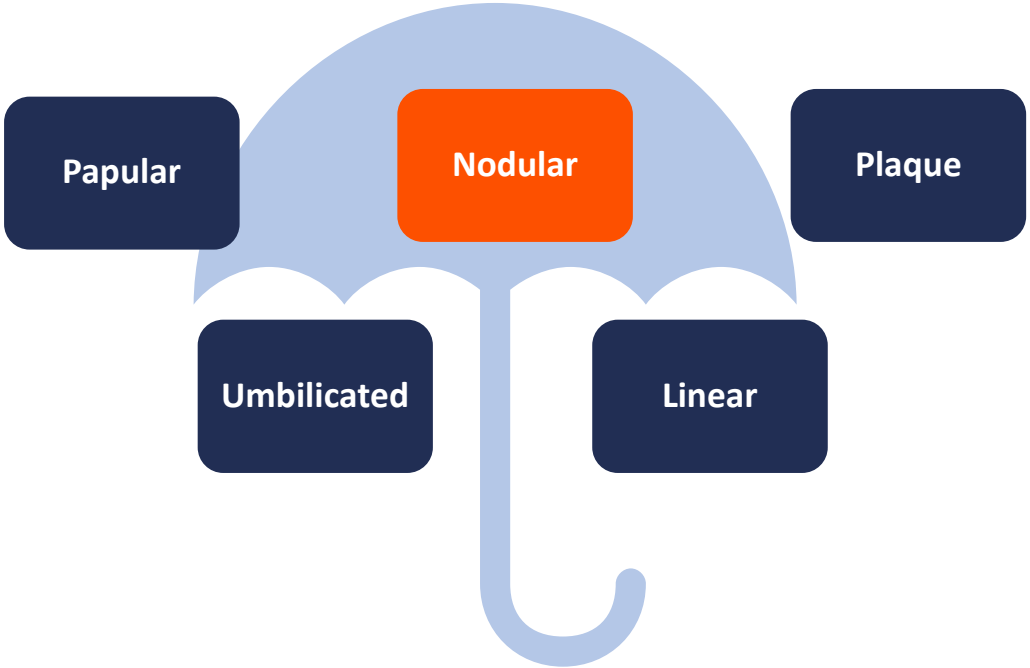
What is chronic prurigo?[1,2]



1. Pereira MP, et al. *J Eur Acad Dermatol Venereol*. 2018;32:1059–65; 2. Pereira MP, et al. *J Eur Acad Dermatol Venereol*. 2019;33:263–6.

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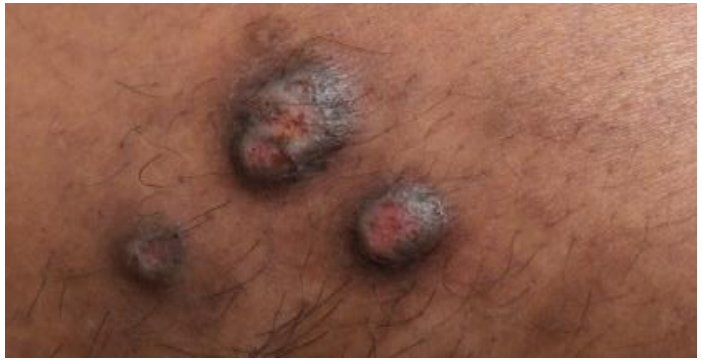
Clinical features of PN[1,2]

- Hyperkeratotic, excoriated/crusted dome-shaped nodules, papules or plaques
- Flesh coloured, red, pink, brown or black lesions, with hyperpigmented borders
- Lesions can number from a few to hundreds, and measure from a few mm up to 2–3 cm
- Often symmetrically distributed on the extensor surfaces of the extremities and trunk
- ‘Butterfly sign’ on the back is often present where patients cannot reach to scratch
- Highly pruritic, and patients often report stinging, burning, tingling, heat and cold



Pruriginous lesion

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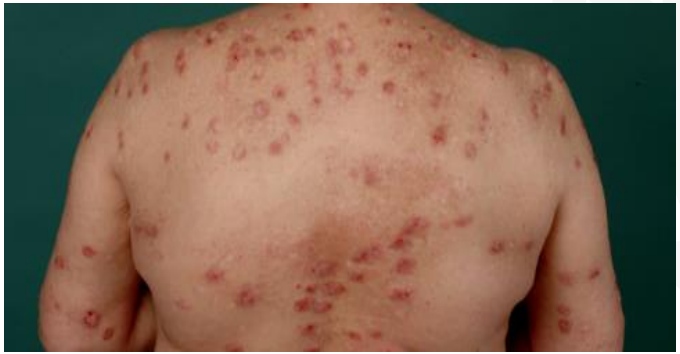

Butterfly sign on back of trunk

Copyright, Westfälische Wilhelms-Universität (WWU Münster, Dept. Dermatology)

PN, prurigo nodularis.

1. Kwon CD, et al. *Medicines (Basel).* 2019;6:97; 2. Zeidler C, et al. *Acta Derm Venereol.* 2018;98:173–9.

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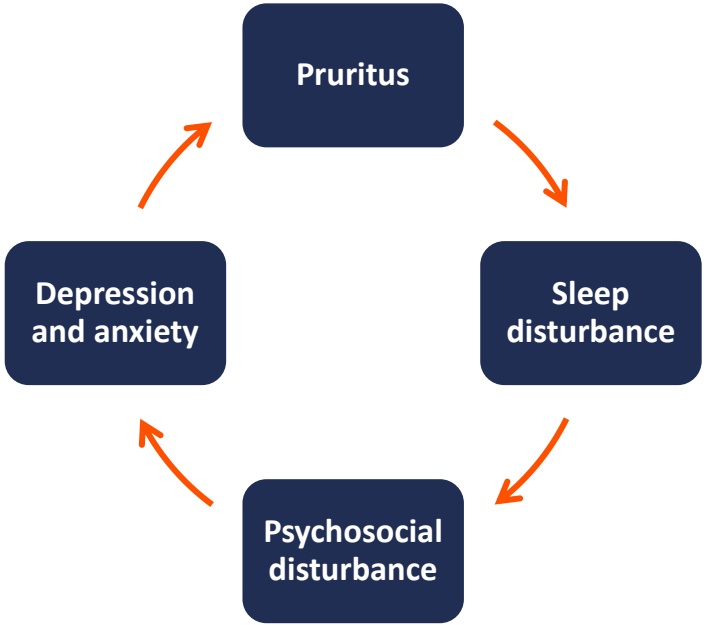
Burden and comorbidities associated with PN

Itch-scratch of PN significantly impairs QoL[1]



Patients with PN have increased association with:[1,2]

- Mental health disorders
- HIV infection
- Type 2 diabetes
- Chronic kidney disease
- Dermatologic, hematologic and solid organ malignancies

In an analysis of US emergency department admission data:[3*]

- The most common comorbidities identified with PN were sepsis (8.3%), cellulitis (6.3%), heart failure (5.8%) and HIV (2.5%)
- Patients with PN were significantly more likely to be admitted as inpatients compared with the general population (67% vs 13%)

Figure adapted from Williams et al. 2021.
*Date from 2016 National Emergency Department Sample from the Healthcare Cost and Utilization Project
HIV, human immunodeficiency virus; PN, prurigo nodularis; QoL, quality of life.
1. Williams KA, et al. *Expert Rev Clin Pharmacol*. 2021;14:67–77; 2. Larson VA, et al. *J Am Acad Dermatol*. 2019;81:1198–201;
3. Whang KA, et al. *J Am Acad Dermatol*. 2021;84:1138–40.

How can PN be differentiated from other skin conditions and what are the current management options?

Prof. Sonja Ständer

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Diagnosing PN

Differential diagnosis: many conditions can have a similar presentation to PN, including:[1,2]

Pemphigoid nodularis	Actinic prurigo	Multiple keratoacanthomas	Hypertrophic lichen planus
Atopic dermatitis	Autoimmune blistering diseases	Arthropod bites	Scabies
Neurotic excoriations	Skin picking syndromes	Lichen amyloidosis	Other types of chronic prurigo

PN, prurigo nodularis.

1. Williams KA, et al. *Expert Rev Clin Pharmacol*. 2021;14:67–77; 2. Elmariah S, et al. *J Am Acad Dermatol*. 2021;84:747–60.

Diagnosing PN

Diagnostic workup

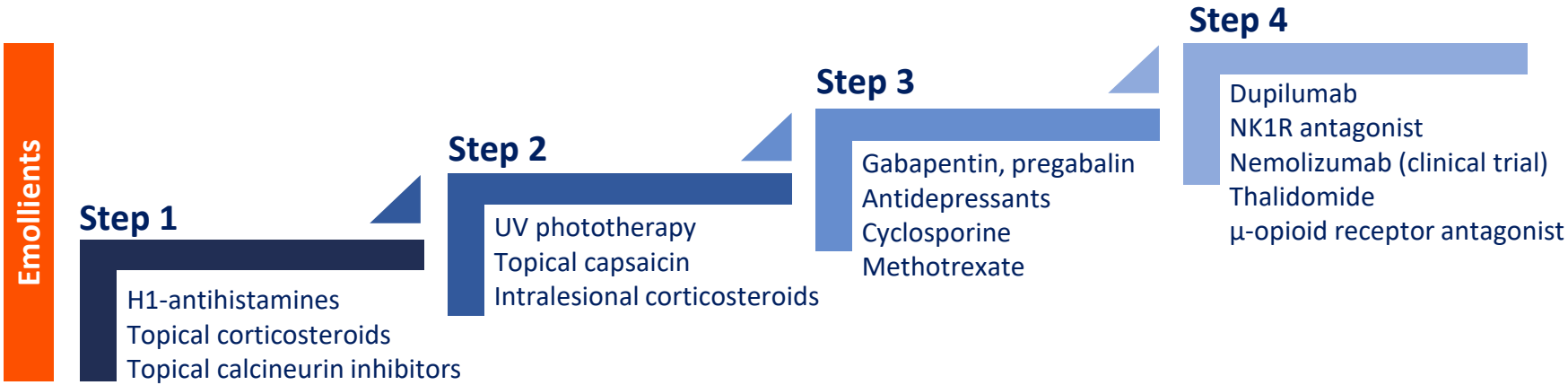
Initial visit	• **Clinical examination with complete review of systems** • **Assess PN severity**: extent of lesions, pruritus intensity, disease burden • **Assess need for support related to anxiety or depression**
Laboratory tests	• **All patients**: complete blood count, liver and renal function tests • **Depending on risk factors/review of systems:** thyroid function, diabetes assessment, HIV and hepatitis B/C testing
Additional tests	• **Malignancy screening**: refer if malignancy suspected and pruritus <1 year • **Biopsy:** if suspicious of an alternative or other contributing condition

PN, prurigo nodularis.

Elmariah S, et al. *J Am Acad Dermatol*. 2021;84:747–60.

Current treatment options for PN

- An IFSI guideline recommends a treatment ladder based on expert recommendations and RCT evidence[1]



- Dupilumab is the first approved (FDA) treatment for adult patients with PN, based on data from the PRIME and PRIME2 clinical trials[2]

FDA, US Food and Drug Administration; IFSI, International Forum for the Study of Itch; NK1R, neurokinin 1 receptor; PN, prurigo nodularis; RCT, randomized controlled trial; UV, ultraviolet.

1. Ständer S, et al. *Itch*. 2020;5:e42; 2. FDA. Available at: www.fda.gov/drugs/news-events-human-drugs/fda-approves-first-treatment-prurigo-nodularis (accessed September 2022).

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Which emerging treatments may help to address the current unmet need for patients with PN?

Prof. Sonja Ständer

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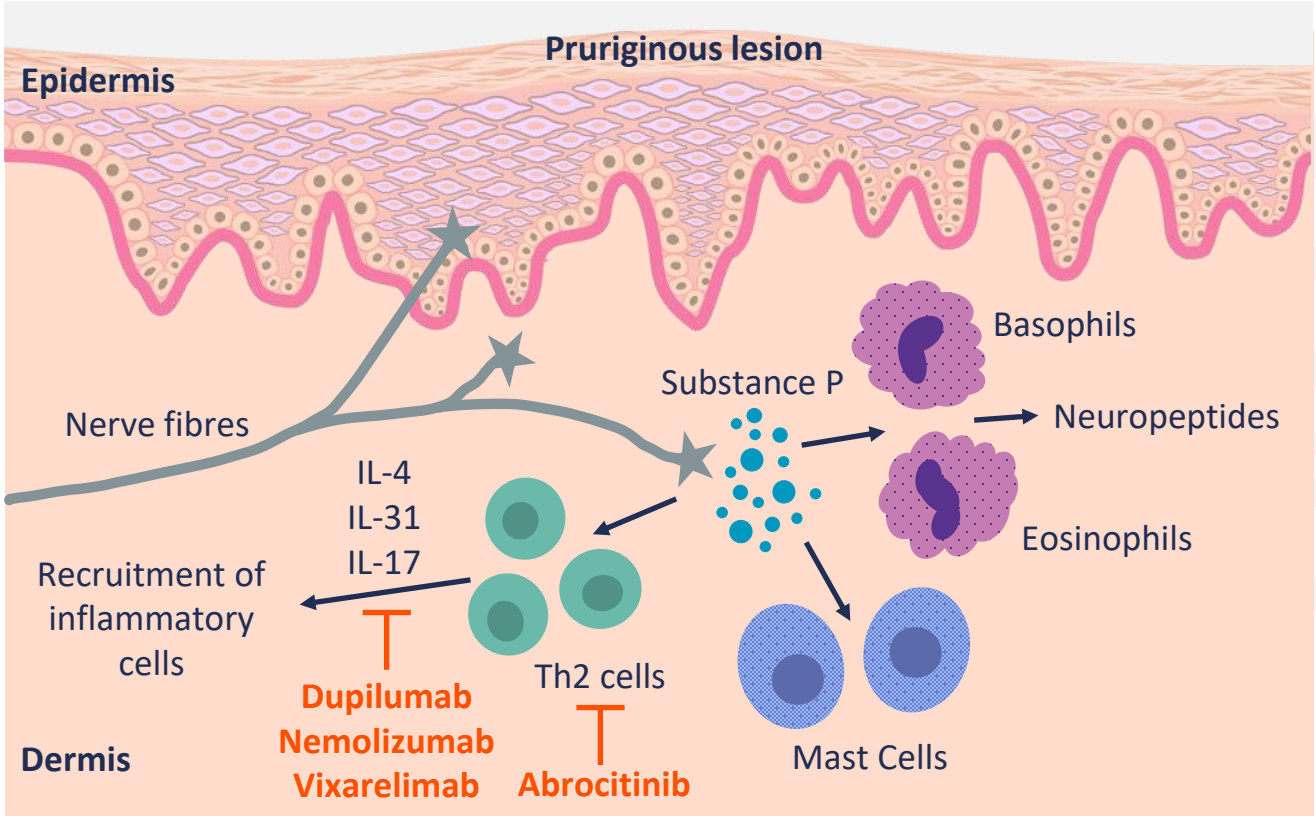
MoA of emerging therapies for PN



MoA, mode of action; PN, prurigo nodularis.
Adapted from Labib A, et al. *Immunotargets Ther*. 2022;11:11–21.

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Latest on new and emerging therapies for PN

Agent (target)[1]	Clinical trials	Efficacy outcome(s)	Safety
Dupilumab (anti-IL-4)	LIBERTY-PN PRIME (NCT04183335); phase III[2]	• ≥4-point reduction in WI-NRS score at week 24: 60.0% dupilumab vs 18.4% placebo (P<0.0001) • IGA 0/1 at week 24: 48.0% dupilumab vs 18.4% placebo (P=0.0004)[2]	TEAEs in 70.7% dupilumab vs 62.7% placebo[2]
	LIBERTY-PN PRIME2 (NCT04202679); phase III[3]	• ≥4-point reduction in WI-NRS score at week 12: 37.2% dupilumab vs 22.0% placebo; P<0.0216 • IGA 0/1 at week 24: 44.9% dupilumab vs 14.9% placebo (P<0.0001)[3]	TEAEs in 57.1% dupilumab vs 51.2% placebo[3]
Nemolizumab (anti-IL-31)[4,5]	OLYMPIA 2 (NCT04501666); phase III	• ≥4-point reduction in PP-NRS score at week 16: 56% nemolizumab vs 21% placebo (P<0.0001) • IGA 0/1 at week 16: 38% nemolizumab vs 11% placebo (P<0.0001)	AEs in 68% nemolizumab vs 67% control. Most common AEs: nasopharyngitis, conjunctivitis, bronchitis and dermatitis
	OLYMPIA 1 (NCT04501666); phase III	Same outcomes as OLYMPIA 2; trial ongoing	Trial ongoing

AE, adverse event; IGA, investigator's global assessment; IL, interleukin; PN, prurigo nodularis; PP-NRS, Peak Pruritus Numeric Rating Scale; TEAE, treatment-emergent AE; WI-NRS, Worst Itching Intensity Numerical Rating Scale.

1. Labib A, et al. *Immunotargets Ther*. 2022;11:11–21; 2. Yosipovitch G, et al. Presented at: EADV Congress, Milan, Italy. 7–10 September 2022. Abstr 3583; 3. Yosipovitch G, et al. Presented at: AAD 2022 Annual Meeting, Boston, USA. 25–29 March 2022. S026; 4. Ständer S, et al. *N Engl J Med*. 2020;382:706–16; 5. Business Wire. Press release, 22 June 2022. Available at www.businesswire.com/news/home/20220621005754/en/ (accessed 10 October 2022). Clinical trial information can be found at ClinicalTrials.gov using the study identifier.

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Latest on new and emerging therapies for PN

Agent (target)[1]	Clinical trials	Efficacy outcome	Safety
Nalbuphine (KOR agonist and MOR antagonist)	PRISM (NCT03497975); phase IIb/III	≥4-point reduction from baseline in WI-NRS score at week 14: 25% nalbuphine vs 14% placebo; p=0.0157[2]	TEAEs in 48% nalbuphine vs 45% placebo during 12-week fixed dose period[2]
Abrocitinib (anti-JAK 1)	NCT05038982; phase II	Percent change in weekly average PP-NRS. Trial complete, data pending	Data pending
Vixarelimab (anti-OSMRβ)	NCT03816891; phase II	Significant reduction in the weekly-average WI-NRS from baseline at week 8	Well-tolerated with no SAEs[1]

JAK, Janus kinase; KOR, κ-opioid receptor; MOR, mu opioid receptor; OSMRβ, oncostatin M receptor beta; PN, prurigo nodularis; PP-NRS, Peak Pruritus Numeric Rating Scale; SAE, serious adverse events; TEAE, treatment-emergent adverse event; WI-NRS, Worst Itching Intensity Numerical Rating Scale.

1. Labib A, et al. *Immunotargets Ther*. 2022;11:11–21; 2. Ständer, et al. Presented at: EADV Congress, Milan, Italy. 7–10 September 2022. Abstr 3630. Clinical trial information can be found at ClinicalTrials.gov using the study identifier.