The Role of Chronic Inflammation in Hidradenitis Suppurativa Progression and Patient Outcomes

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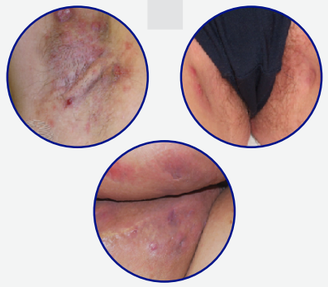
What is HS?

- HS is a chronic, inflammatory, recurrent, and debilitating skin disease of the hair follicle[1]
- HS presents with painful, deep-seated, inflamed lesions in the intertriginous, apocrine gland-bearing areas of the body[1]



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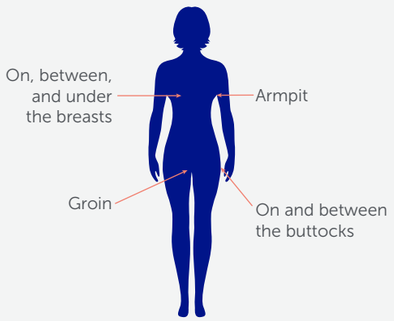
Most common locations of HS:[1,3,4]



Diagnosis of HS is made by naked-eye clinical observation and symptom history[3,4]

Criteria: Recurrent painful or suppurating lesions occurring more than twice in 6 months in one of the intertriginous areas of the body[1,4]

Affected populations

Approximately **1 in 100** people in Europe have HS[5]

HS typically develops at, or shortly after, **puberty**[5]

There is a **female preponderance** of approximately 3:1 in Europe[5]

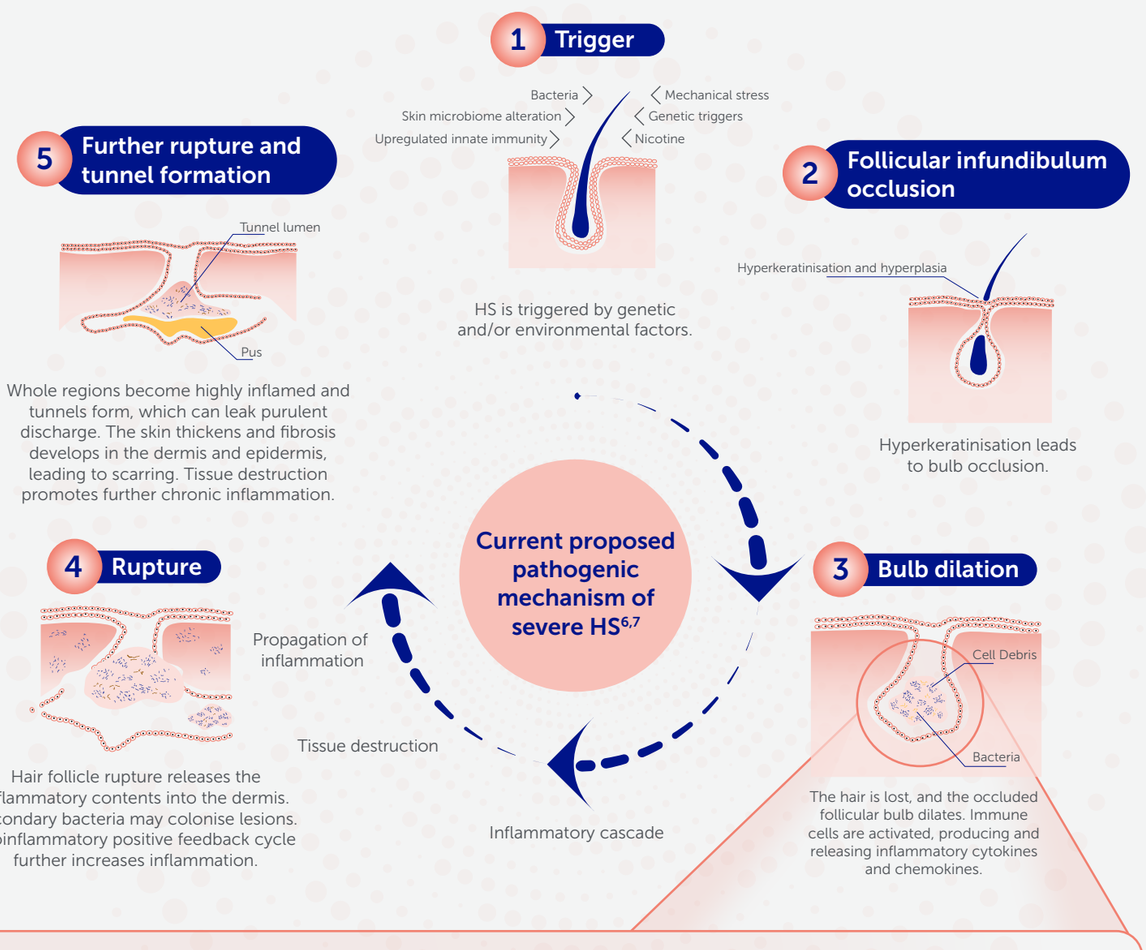
Chronic uncontrolled inflammation leads to tunnel formation, irreversible tissue destruction, and scarring[6,7]

- HS is a complex, multifactorial disease[4]
- Although the pathophysiology of HS has not yet been fully elucidated, the TNF-α and IL-17 pathways have an important role, and synergise with many cytokines to sustain inflammation[6]

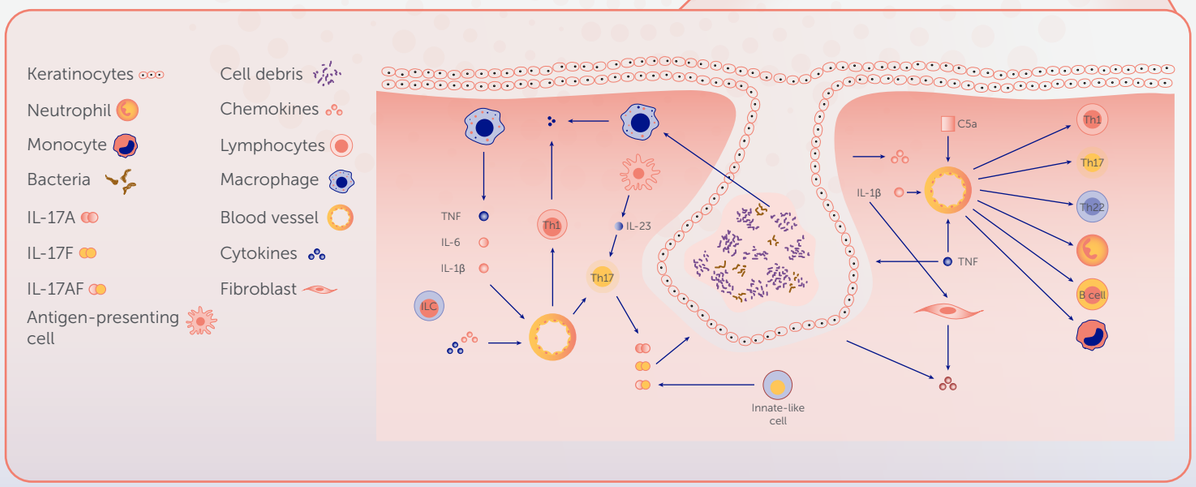
Compared with healthy controls:

- **>40x** IL-17-producing $CD4^+$ T cells[6]
- Elevated levels of IL-17A and IL-17F[8]
- **5x** TNF expression[9]

have been found in lesional tissue in patients with HS



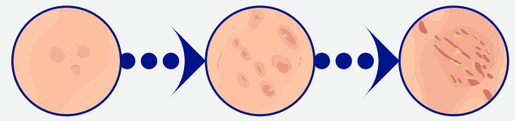
- **Draining tunnels are a unique feature of moderate-to-severe HS and a source of inflammation, actively contributing to further disease progression[6,10]**
- **IL-17A and IL-17F activate tunnel-lining keratinocytes to release a range of chemokines, which drive dermal inflammation around tunnels and neutrophil influx into the tunnel lumen[6]**
- **This positive amplification loop of inflammation contributes to irreversible tissue destruction and scarring[6]**



HS is a chronic and debilitating disease[4]

The Hurley staging system assesses the extent and type of lesions to indicate the severity of HS and direct treatment[1]

Increasing severity, decreasing quality of life[11]



Stage 1
Single or multiple abscesses without tunnels or scarring[1]

Stage 2
Widely separated recurrent abscesses, with tunnels and scarring[1]

Stage 3
Multiple interconnected tunnels and abscesses across the entire area, with scarring[1]

Stage 3 HS has a profoundly negative impact on all aspects of a patient's life[11]

- Many patients with HS report a very much or extremely impaired quality of life,[12] which declines with increasing Hurley stage[11]
- Patients live daily with chronic pain, purulent discharge, restriction of mobility (due to interconnected tunnels and scarring), stigmatisation, impaired body image, sexual dysfunction, unemployment, and social isolation[6]
- The burden of HS leads to high rates of depression, anxiety, and suicide[6]
- Uncontrolled chronic inflammation can also result in systemic inflammation, and patients with HS have a high frequency of comorbidities, adding to the existing burden[6]
- Despite the extensive impact on patient quality of life, diagnostic delay is a serious and prevalent issue for patients with HS and is associated with severe disease and a higher prevalence of systemic comorbidities[6]

The average diagnostic delay[7]

The average number of healthcare professionals visited before diagnosis[13]

Timely diagnosis of HS is essential for the initiation of appropriate treatment to minimise disease progression, irreversible tissue destruction, and disease burden[6]

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Abbreviations

C5a: complement component 5a; $CD4^+$: cluster of differentiation 4; HS: hidradenitis suppurativa; IL: interleukin; ILC: innate lymphoid cell; Th: T helper cell; TNF: tumour necrosis factor.

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