Stories From the Psoriasis CaseBook

Overcoming Challenges in Diagnosis and Treatment for Family Physicians

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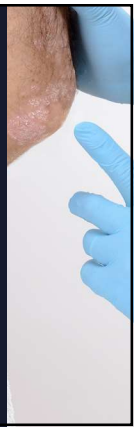
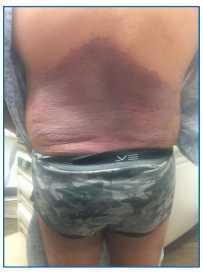


Case #1: Tommy, a 46-Year-Old Man

Presents with erythematous plaques covering scalp, torso, arms, and lower extremities

What type of psoriasis does Tommy have?

- Erythrodermic
- Guttate
- Plaque
- Pustular



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Disclosures

Jashin J. Wu, MD, has a financial interest/relationship or affiliation in the form of:

Consultant For:

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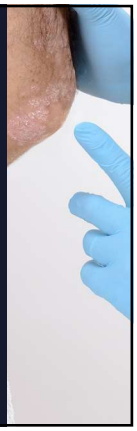

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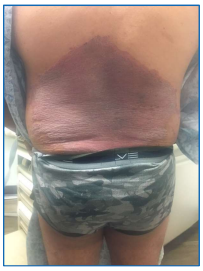

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CaseBook 1

A Closer Look at the Diagnosis and Classification of Psoriasis

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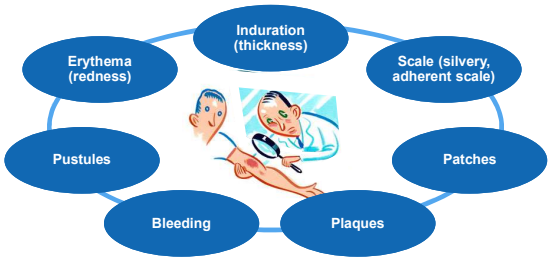
Physical Signs of Psoriasis



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Symptoms Associated With Psoriasis[1,2]

Symptoms
- Itch
- Pain
- Burning
- Stinging

1. https://plaquepsoriasis.com/symptoms-affect-body/. Accessed July 5, 2018. 2. https://www.ifpma.org/wp-content/uploads/2016/01/IFPMA_Psoriasis_Infographic_May2014.pdf. Accessed July 5, 2018.

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Major Clinical Categories of Psoriasis: Erythrodermic Psoriasis[1-3]

Erythrodermic psoriasis
- All of skin is red from psoriasis
- Very severe; may lead to hospitalization or death

1. https://www.psoriasis.org/about-psoriasis. Accessed July 5, 2018. 2. Image courtesy of Dr. Alan Menter.

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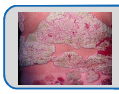
Major Clinical Categories of Psoriasis: Chronic Plaque Psoriasis[1,2]



Chronic plaque psoriasis
- Most common form of psoriasis (80%)
- Red, thick, scaly plaque

1. https://www.psoriasis.org/about-psoriasis. Accessed July 5, 2018. 2. Image courtesy of Dr. Alan Menter.

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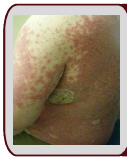
Major Clinical Categories of Psoriasis: Pustular Psoriasis[1-3]



Pustular psoriasis
- Most common form involves the palms and soles, with potentially disabling pain
- Generalized form is associated with fevers and chills, systemic sickness, and high WBC count
- Pustules can be seen with the naked eye
- Very rare to see generalized pustular psoriasis without erythroderma

1. https://www.psoriasis.org/about-psoriasis. Accessed July 5, 2018. 2. http://www.papaa.org/resources/about-psoriasis. Accessed July 5, 2018. 3. Image courtesy of Dr. Alan Menter.

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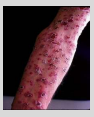
Major Clinical Categories of Psoriasis: Guttate Psoriasis[1,2]



Guttate psoriasis
- Often follows strep nasopharyngitis
- Many small plaques distributed rather diffusely, usually all over the chest, stomach, and back; may have scattered involvement on extremities
- Early treatment may delay progression to chronic plaque psoriasis

1. https://www.psoriasis.org/about-psoriasis. Accessed July 5, 2018. 2. Image courtesy of Dr. Alan Menter.

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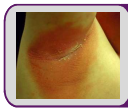
Major Clinical Categories of Psoriasis: Inverse Psoriasis[1,2]



Inverse psoriasis
- Primarily affects armpits and folds of groin, breasts, and buttocks
- Compared to plaque PsO, inverse psoriasis lacks scale, is flatter, and is more red

1. https://www.psoriasis.org/about-psoriasis. Accessed July 5, 2018. 2. Image courtesy of Dr. Alan Menter.

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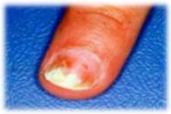
Clinical Manifestations of Nail Psoriasis[1,2]

- Pitting



- Lifting of nail plate from nail bed (onycholysis)
- Red spots (salmon patches)

- Nail plate thickening
- Crusting under nail
- Nail plate crumbling

1. Piraccini BM, Starace M. *Psoriasis (Auckl)*. 2015;5:25-33. 2. Images courtesy of Dr. Alan Menter.

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Psoriatic Arthritis

- **Inflammatory arthritis** and 3 or more of the following:
  - Evidence of psoriasis (current, personal history, or family history)
  - Psoriatic nail dystrophy
  - Negative RF
  - Dactylitis (current or history)
  - Radiographical evidence of juxta-articular new bone formation

CASPAR = ClASsification criteria for Psoriatic ARthritis

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Most Common Locations of Lesions in Patients With Psoriasis[1]

Location	PsO Patients, %
Scalp	80
Elbows	78
Legs	74
Knees	57
Arms	54
Trunk	53
Lower part of body	47
Base of the back	38
Other	38
Palms and soles	12

Inverse psoriasis is more common in overweight people and people with deep skin folds

Involvement of hands and feet can be so painful that patients may not be able to function

A substantial proportion of patients (up to 63%) experience genital lesions at some time during the course of psoriasis; increased awareness of the prevalence of psoriatic lesions in the genital area may drive improved assessment and treatment[2]

1. Van De Kerkhof PCM. In: van de Kerkhof PCM, ed. *Textbook of Psoriasis*. Oxford, UK: Blackwell Science Ltd; 2003:3-29. 2. Meeuwis KAP et al. *J Dermatolog Treat*. 2018:1-7.

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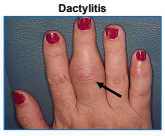
Psoriatic Arthritis (Cont'd)[1,2]

- Psoriasis precedes psoriatic arthritis in 75% of psoriatic arthritis patients
- Psoriatic arthritis usually occurs 5 to 10 years after the onset of psoriasis
- All patients with psoriasis should be screened regularly for psoriatic arthritis

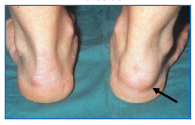
Hallmark Features of Psoriatic Arthritis

Peripheral Arthritis

Dactylitis



Enthesitis



1. Raychaudhuri SP et al. *J Autoimmun*. 2017;76:21-37. 2. Images courtesy of Dr. Alan Menter.

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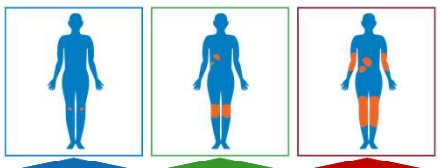
Psoriasis Coverage and Severity[1]



Mild
Less than 3% of the body has psoriasis

Moderate
3% to 10% of the body has psoriasis

Severe
More than 10% of the body has psoriasis

Assess involvement using patient's palm

1% = surface area of the hand (including fingers)

1. https://www.psoriasis.org/about-psoriasis. Accessed July 5, 2018.

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CaseBook 2
The Treatment Algorithm for Patients With Psoriasis

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Case #2: Samantha, a 48-Year-Old Woman

Psoriasis had been well controlled with topical steroids

However, over the past year, her psoriasis had progressed to involve large areas of her torso, genitalia, and lower extremities. Her estimated body surface area of involvement is now approximately 12%. When you consider treatments for her psoriasis, which of the following is the most important factor?

- Gender
- Preference for oral versus injectable medications
- Psoriatic arthritis
- Tuberculosis status
- Weight

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Treat To Target: The National Psoriasis Foundation Consensus[1]

When to Assess?	Treatment Target
Target response at 12 weeks after treatment initiation	BSA ≤1%
Target response every 6 months during maintenance therapy	BSA ≤1%

1. Armstrong AW et al. *J Am Acad Dermatol*. 2017;76:290-298.

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- Gender
- Preference for oral versus injectable medications
- **Psoriatic arthritis**
- Tuberculosis status
- Weight

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Phototherapy for Psoriasis[1,2]

- **Office-based phototherapy**
- **Home phototherapy**
- **Tanning beds (not effective, AAD discourages use)**
- **Sun exposure**

1. https://www.psoriasis.org/about-psoriasis/treatments/phototherapy. Accessed October 23, 2017.
2. https://www.psoriasis.org/advance/tanning-beds-no-substitute-phototherapy-psoriasis. Accessed October 23, 2017.

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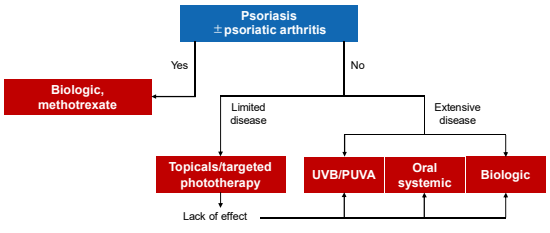
Treatment Pathways for Psoriasis[1]



Updated AAD psoriasis guideline series to be released as six manuscripts; first two expected to be released during the first quarter of 2019[2]

1. Menter A et al. *J Am Acad Dermatol*. 2008;58:826-850.
2. https://www.aad.org/practicecenter/quality/clinical-guidelines. Accessed September 14, 2018.

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Non-Biologic Systemic Treatment Considerations[1,2]

Treatment	Considerations
Methotrexate	• Antimetabolite • Effective in 40% of patients and overall safe for PsO when used short-term at low doses and properly monitored • Commonly used in combination with biologics • Associated with several side effects and toxicity issues
Cyclosporine	• Calcineurin inhibitor • Useful as a "rescue drug" for patients who need rapid response with symptomatic relief • Associated with many side effects (specifically renal toxicity); limit use to short-term therapy

1. https://www.psoriasis.org/sites/default/files/systemics_booklet.pdf. Accessed July 5, 2018.
2. West J et al. *PLOS One*. 2016;11:e0153740.

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Non-Biologic Systemic Treatment Considerations (Cont'd)[1,2]

Treatment	Considerations
Acitretin	• Oral retinoid • Modest efficacy against plaque psoriasis • Commonly used to treat palmoplantar psoriasis • Has been used in combination with UVB and PUVA therapy, resulting in more effective treatment • Contraindicated in women of childbearing age (very potent teratogen)
Apremilast	• Phosphodiesterase-4 inhibitor • Substantially lower efficacy compared with biologics, but offers an alternative to patients who prefer an oral agent • Minimal toxicity

1. https://www.psoriasis.org/sites/default/files/systemics_booklet.pdf. Accessed July 5, 2018.
2. Lee CS, Koo J. *Expert Opin Pharmacother*. 2005;6:1725-1734.

Short-Term Head-to-Head Clinical Trials Among Biologics Approved for Psoriasis

Comparison	Greater Short-Term Efficacy
Ustekinumab vs etanercept[1]	Ustekinumab
Secukinumab vs etanercept[2]	Secukinumab
Secukinumab vs ustekinumab[3]	Secukinumab
Ixekizumab vs etanercept[4]	Ixekizumab
Ixekizumab vs ustekinumab[5]	Ixekizumab
Brodalumab vs ustekinumab[6]	Brodalumab
Guselkumab vs adalimumab[7]	Guselkumab
Tildrakizumab vs etanercept[8]	Tildrakizumab

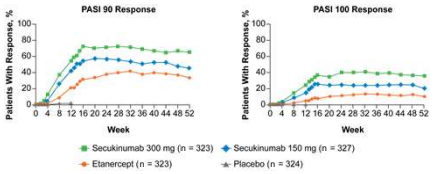
1. Griffiths CE et al. *N Engl J Med*. 2010;362:118-128. 2. Langley RG et al. *N Engl J Med*. 2014;371:326-338. 3. Thaçi D et al. *J Am Acad Dermatol*. 2015;73:400-409. 4. Griffiths CEM et al. *Lancet*. 2015;386:541-551. 5. Reich K et al. *Br J Dermatol*. 2017;177:1014-1023. 6. Lebwohl M et al. *N Engl J Med*. 2015;373:1318-1328. 7. Reich K et al. *J Am Acad Dermatol*. 2017;76:418-431. 8. Reich K et al. *Lancet*. 2017;390:276-288.

Biologic Options for Moderate to Severe Psoriasis: TNFα Inhibitors

Agent	Approved for PsA	Route of Admin.	Safety Considerations
Adalimumab[1]	✓	SubQ	• Black box warning: serious infections, malignancy • AEs: infections, injection-site reactions, headache, rash
Etanercept[2]	✓	SubQ	• Black box warning: serious infections, malignancy • AEs: infections, injection-site reactions • Approved for pediatric psoriasis
Infliximab[3]	✓	IV	• Black box warning: serious infections, malignancy • AEs: infections, infusion-related reactions, headache, abdominal pain
Certolizumab[4,5]	✓	SubQ	• Black box warning: serious infections, malignancy • AEs: infections, injection-site reactions, headache, rash

1. Humira (adalimumab) Prescribing Information. http://www.rxabbvie.com/pdf/humira.pdf. Accessed July 5, 2018. 2. Enbrel (etanercept) Prescribing Information. http://pi.amgen.com/united_states/enbrel/derm/enbrel_pi.pdf. Accessed July 5, 2018. 3. Remicade (infliximab) Prescribing Information. https://www.remicade.com/shared/product/remicade/prescribing-information.pdf. Accessed July 5, 2018. 4. Cimzia (certolizumab pegol) Prescribing Information. https://www.cimzia.com/sites/default/files/docs/Prescribing_Information.pdf. Accessed July 5, 2018.
5. Campanati A et al. Expert Opin Biol Ther. 2017;17:387-394.

FIXTURE Study: Secukinumab vs Etanercept[1]



- **Secukinumab also superior to etanercept in DLQI improvements[1]**
- **Secukinumab provided faster and greater sustained improvements in QoL than etanercept over 52 weeks, consistent with greater clinical response[2]**

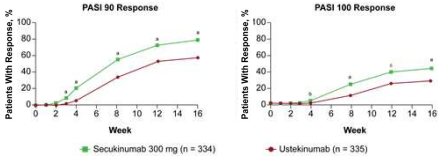
1. Langley R et al. *N Engl J Med*. 2014;371:326-338. 2. Strober B et al. *J Am Acad Dermatol*. 2017;76:655-661.

Additional Biologic Options for Moderate to Severe Psoriasis

Agent	Approved for PsA	Target	Route of Admin.	Safety Considerations
Ustekinumab[1]	✓	IL-12/23	SubQ	• AEs: infections, headache, fatigue
Secukinumab[2]	✓	IL-17A	SubQ	• AEs: infections, diarrhea, IBD
Ixekizumab[3]	✓	IL-17A	SubQ	• AEs: injection-site reactions, infections, nausea, IBD
Brodalumab[4]	–	IL-17RA	SubQ	• Black box warning: suicidal ideation and behavior • AEs: arthralgia, headache, injection-site reactions, infections, IBD
Guselkumab[5]	–	IL-23	SubQ	• AEs: infections, headache, injection-site reactions, arthralgia
Tildrakizumab[6]	–	IL-23	SubQ	• AEs: upper respiratory infections, injection site reactions, and diarrhea

1. Stelara (ustekinumab) Prescribing Information. https://www.stelarainfo.com/pdf/prescribinginformation.pdf. Accessed July 5, 2018. 2. Cosentyx (secukinumab) Prescribing Information. https://www.pharma.us.novartis.com/sites/www.pharma.us.novartis.com/files/cosentyx.pdf. Accessed July 5, 2018. 3. Taltz (ixekizumab) Prescribing Information. http://uspl.lilly.com/taltz/taltz.html#pi. Accessed July 5, 2018. 4. Siliq (brodalumab) Prescribing Information. https://siliqrems.com/SiliqUI/rems/pdf/resources/SILIQ_REMS_Prescribing_Information.pdf. Accessed July 5, 2018.
5. Tremfya (guselkumab) Prescribing Information. https://www.tremfyainfo.com/shared/product/tremfya/prescribing-information.pdf. Accessed July 5, 2018. 6. Ilumya (tildrakizumab) Prescribing Information. http://www.sunpharma.com/Media/Press-Releases/ILUMYA%20US%20Prescribing%20Information.pdf. Accessed July 5, 2018.

CLEAR Study: Secukinumab vs Ustekinumab[1]



- **Secukinumab also superior to ustekinumab in improving HR-QoL[1]**
- **Greater sustained (1 year) improvements in daily activities and personal relationships versus ustekinumab[2]**

[a] $P \leq .0001$. [b] $P < .05$. [c] $P < .001$.

1. Thaci D et al. *J Am Acad Dermatol*. 2015;73:400-409.
2. Blauvelt A et al. *J Eur Acad Dermatol Venereol*. 2017;31:1693-1699.

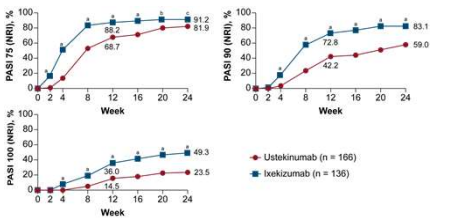
Secukinumab: Additional Findings

- ☑ Efficacy and safety sustained at 5 years[1]
- ☑ Among the patients that discontinued treatment, 21% maintained skin clearance for up to 1 year without treatment and 10% maintained skin clearance for up to 2 years without treatment[2]
- ☑ Superior to fumaric acid esters in patients with moderate to severe plaque PsO who are naïve to systemic treatments[3]
- ☑ Effective in treating palmoplantar PsO[4]

ARROW: A head-to-head proof of concept study to compare secukinumab versus guselkumab in clearing psoriatic plaques refractory to ustekinumab; study results expected in 2019[5]

1. Bissonnette R et al. 26th European Academy of Dermatology and Venereology Congress (EADV 2017). P2223.
2. http://www.pharmatimes.com/news/study_shows_novartis_cosentyx_may_modify_course_of_psoriasis_1189557. Accessed July 5, 2018. 3. Sticherling M et al. *Br J Dermatol*. 2017;177:1024-1032. 4. Gottlieb A et al. *J Am Acad Dermatol*. 2017;76:70-80. 5. ClinicalTrials.gov Identifier: NCT03553823.

IXORA-S Study: Ixekizumab vs Ustekinumab[1]



Ixekizumab also superior to ustekinumab in improving DLQI and sPGA

[a] *P* < .001. [b] *P* < .01. [c] *P* < .05 via Fisher's exact test.
1. Reich K et al. *Br J Dermatol*. 2017;177:1014-1023.

UNCOVER Studies: Ixekizumab vs Etanercept[1-3]

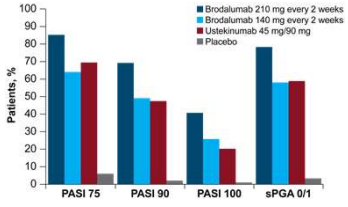
Twelve-Week Results From UNCOVER Studies

Outcome Measure	Ixekizumab > Placebo[a]	Ixekizumab > Etanercept
PASI 75	*P* < .0001	*P* < .0001
PASI 90	*P* < .0001	*P* < .0001
PASI 100	*P* < .0001	*P* < .0001
sPGA 0/1	*P* < .0001	*P* < .0001
DLQI 0/1	*P* < .0001	*P* < .0001
Palmoplantar PsO (PPASI 100)[b]	*P* < .001	*P* = 0.39

Ixekizumab effective through 108 weeks of treatment[3]

[a] *P* from UNVCOVER-2 and -3. [b] *P* values are from UNCOVER-2, Q2W dose.
1. Gordon KB et al. *N Engl J Med*. 2016;375:345-356. 2. Farahnik B et al. *Dermatol Ther (Heidelb)*. 2016;6:25-37.
3. Blauvelt A et al. *J Am Acad Dermatol*. 2017;77:855-862.

Brodalumab vs Ustekinumab[1-3]



✓ Efficacy and safety established up to 120 weeks

1. Farahnik B et al. *Dermatol Ther*. 2016;6:111-124. 2. Papp K et al. *J Am Acad Dermatol*. 2014;71:1183-1190.
3. Galluzzo M et al. *Expert Rev Clin Immunol*. 2016;12:1255-1271.

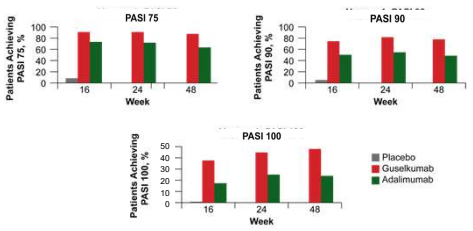
Ixekizumab vs Etanercept: Moderate to Severe Non-Pustular Palmoplantar Involvement and Plaque PsO[1]

Week 12

	UNCOVER-1, UNCOVER-2, and UNCOVER-3			UNCOVER-2 and UNCOVER-3
	PBO n = 85	IXE Q4W n = 92	IXE Q2W[a] n = 114	ETN[b] n = 59
PPASI 75 (NRI), n (%)	16 (18.8)	68 (73.9)[c]	79 (69.3)[c]	26 (44.1)[d,f]
PPASI 100 (NRI), n (%)	7 (8.2)	45 (48.9)[c]	59 (51.8)[c]	19 (32.2)[d,f]
DLQI 0/1 (NRI), n (%)	6 (7.1)	47 (51.1)[c]	61 (53.5)[c]	17 (28.8)[e,f]
	Improvement From BL (MMRM), % (Least Squares Means [SE])			
PPASI improvement, %	28.8 (4.2)	82.0 (4.0)[c]	79.9 (3.6)[c]	57.7 (6.5)[d,f]
PASI improvement, %	6.7 (3.2)	84.3 (3.1)[c]	84.8 (2.8)[c]	61.3 (3.5)[d,f]

[a] IXE Q4W compared with IXE Q2W not statistically significantly different for any of these variables. [b] All comparisons to ETN based on subpopulation of patients in studies that include ETN (UNCOVER-2 and UNCOVER-3 only). [c] *P* < .001 vs placebo. [d] *P* < .05 vs placebo. [e] *P* < .05 for IXE Q4W vs ETN. [f] *P* < .05 for IXE Q2W vs ETN.
1. Menter A et al. *J Eur Acad Dermatol Venereol*. 2017;31:1686-1692.

VOYAGE 1 Study: Guselkumab vs Adalimumab[1,2]

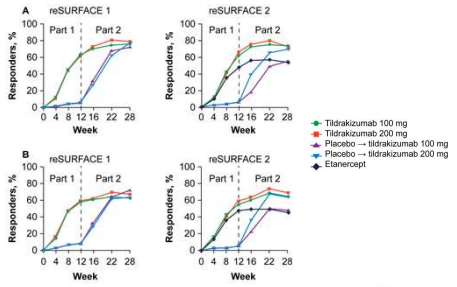


Similar results were observed in VOYAGE 2

1. Nakamura M et al. *Dermatol Ther (Heidelb)*. 2017 June 21 [Epub ahead of print].
2. Blauvelt A et al. *J Am Acad Dermatol*. 2017;76:405-417.

reSURFACE Studies: Tildrakizumab vs Etanercept[1]

Proportion of patients achieving PASI 75 (A) and PGA "clear" or "minimal" with at least 2 grade reduction (B) in reSURFACE 1 and reSURFACE 2 at 12 wk



1. Reich K et al. *Lancet*. 2017;390:276-288.

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PsO Treatment Targets Outlined by NPF: Summary From the Delphi Consensus[1,a]

Preferred assessment instrument in clinical practice	BSA
Acceptable response after treatment initiation	Either BSA ≤3% or BSA improvement ≥75% from baseline at 3 months after treatment initiation
Target response after treatment initiation	BSA ≤1% at 3 months after treatment initiation
Target response during maintenance therapy	BSA ≤1% at every 6-month assessment intervals during maintenance therapy

[a] Treatment targets apply to plaque psoriasis, and they are to be discussed in the context of individualized evaluation of benefit–risk assessment and elicitation of patient preferences; they are not to be used to deny access to therapies.

1. Armstrong A et al. *J Am Acad Dermatol*. 2017;76:290-298.

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reSURFACE Studies: Tildrakizumab vs Etanercept (Cont'd)[1]

Primary and Secondary Efficacy Endpoints at 12 wk in reSURFACE 2 Part 1 (Full Analysis Set)

	Tildrakizumab 200 mg (n = 314)	Tildrakizumab 100 mg (n = 307)	Placebo (n = 156)	Etanercept (n = 313)
PASI 75				
n (%)	206 (66)	188 (61)	9 (6)	151 (48)
% diff. from placebo (95% CI; *P*)	59.8 (52.9-65.9; <.0001)	55.5 (48.3-61.8; <.0001)	NA	NA
% diff. from etanercept (95% CI; *P*)	17.4 (9.7-24.9; <.0001)	13.1 (5.3-20.7; <.01)	NA	NA
Clear or minimal PGA				
n (%)	186 (59)	168 (55)	7 (4)	149 (48)
% diff. from placebo (95% CI; *P*)	54.7 (47.9-60.8; <.0001)	50.2 (43.2-56.5; <.0001)	NA	NA
% diff. from etanercept (95% CI; *P*)	11.7 (4.0-19.3; .0031)	7.3 (-0.5-15.0; .0663)	NA	NA
PASI 90				
n (%)	115 (37)	119 (39)	2 (1)	67 (21)
% diff. from placebo (95% CI; *P*)	35.3 (29.2-41.1; <.0001)	37.5 (31.1-43.4; <.0001)	NA	NA
% diff. from etanercept (95% CI; *P*)	15.2 (8.3-22.1; <.0001)	17.4 (10.3-24.4; <.0001)	NA	NA
PASI 100				
n (%)	37 (12)	38 (12)	0	15 (5)
% diff. from placebo (95% CI; *P*)	11.7 (7.8-16.0; <.0001)	12.4 (8.5-16.6; <.0001)	NA	NA
% diff. from etanercept (95% CI; *P*)	7.0 (2.8-11.6; .0014)	7.6 (3.3-12.3; .0006)	NA	NA
DLQI score 0 or 1				
n (%)	145 (47)	119 (40)	12 (8)	108 (36)
% diff. from placebo (95% CI; *P*)	39.3 (31.8-46.1; <.0001)	32.1 (24.5-39.1; <.0001)	NA	NA
% diff. from etanercept (95% CI; *P*)	11.9 (4.1-19.5; .0029)	4.8 (-2.9-12.5; .2206)	NA	NA

1. Reich K et al. *Lancet*. 2017;390:276-288.

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When to Initiate Systemic or Biologic Therapy for Psoriasis[1]

- ☑ Moderate to severe disease (BSA >5%)
- ☑ Involvement of functionally critical areas: hands, feet, genitalia
- ☑ Lack of response to topical agents or phototherapy
- ☑ Significant impact on QoL

1. Menter A et al. *J Am Acad Dermatol*. 2009;61:451-485.

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CaseBook 3

Essentials of Comprehensive Multidisciplinary Care in Psoriasis

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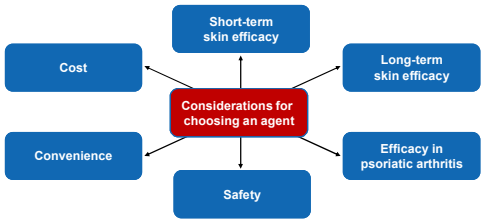
Which Biologic/Small Molecule Should You Choose First?



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Comorbid Disease in Psoriasis[1-8]

- Psoriatic arthritis
- Obesity
- Metabolic syndrome
- Cardiovascular, cerebrovascular, and peripheral vascular disease
- Malignancy
- Autoimmune diseases
- Kidney disease
- Nonalcoholic fatty liver disease
- Cardiac arrhythmia
- COPD
- Obstructive sleep apnea
- Parkinsonism
- Psychosocial effects
- Psychiatric disorders
- Alcohol abuse
- Smoking

1. https://www.psoriasis.org/about-psoriasis/related-conditions. Accessed October 2, 2017. 2. Prodanovich S et al. *Arch Dermatol*. 2009;145:700-703. 3. González-Parra E et al. *Actas Dermosifiliogr*. 2016;107:823-829. 4. http://www.rheumatologynetwork.com/psoriatic-arthritis/psoriatic-disease-carries-risk-arrhythmia. Accessed October 2, 2017. 5. Ungprasert P et al. *J Dermatolog Treat*. 2016;27:316-321. 6. Papadavid E et al. *Sleep Breath*. 2017 May 8. [Epub ahead of print] 7. Ungrasert P et al. *Indian J Dermatol*. 2016;61:152-156. 8. Haves J, Koo J. *Dermatol Ther*. 2010;23:174-180.

2015 EULAR and GRAPPA Recommendations for Psoriatic Arthritis: Overview of Features[1-3]

Feature	EULAR	GRAPPA
Recommendations committee	Physicians, patients, rheumatologists, and dermatologists involved in development	
	• Additional representation of allied health professionals	• Greater representation by dermatologists
General principles	• Treatment target: remission or, alternatively, low or minimal disease activity • Overarching principle states that comorbidities should be considered	• Treating to target recommended, but no specific target defined • Specific literature review addressing prevalence of comorbidities, the need for screening, and potential effect on choice of therapy
Predominant axial or entheseal disease	bDMARDs without prior use of a csDMARD	

1. Gossec L et al. *Nat Rev Rheumatol*. 2016;12:743-750. 2. Gossec L et al. *Ann Rheum Dis*. 2016;75:499-510. 3. Coates LC et al. *Arthritis Rheumatol*. 2016;68:1060-1071.

Case #3: Larry, a 38-Year-Old Man

Has had psoriasis since he was a teen

His psoriasis involves nails, elbows, and knees. During the past year, he noticed stiffness and pain in his back lasting 45 minutes in the morning. Which of the following is the most appropriate therapy for his back stiffness?

- Adalimumab
- Apremilast
- Hydroxychloroquine
- Ibuprofen
- Methotrexate

2015 EULAR and GRAPPA Recommendations for Psoriatic Arthritis: Treatment Selection[1-3]

Treatment	EULAR	GRAPPA
Methotrexate	• csDMARD of choice	• Consider alongside other csDMARDs (no specific preference)
TNF inhibitors	After failure of csDMARDs for predominant peripheral disease or earlier in predominant axial or entheseal disease	
	• After failure of csDMARDs • Clear preference as first-line bDMARD	• Potential to use as a first-line therapy, before csDMARDs, in patients with severe active disease • No clear preference as first-line bDMARD
Secukinumab, Ustekinumab	• After failure of MTX, but TNFis preferred as first-line bDMARD	• Recommended alongside TNFis
Apremilast	• After MTX if bDMARDs are contraindicated	• For csDMARDs failure or if contraindicated • Conditionally recommended before csDMARDs in certain cases

1. Gossec L et al. *Nat Rev Rheumatol*. 2016;12:743-750. 2. Gossec L et al. *Ann Rheum Dis*. 2016;75:499-510. 3. Coates LC et al. *Arthritis Rheumatol*. 2016;68:1060-1071.

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- Apremilast
- Hydroxychloroquine
- Ibuprofen
- Methotrexate

Case #4: Cardiovascular Monitoring in a 52-Year-Old Patient

A 52-year-old psoriasis patient presents for an annual visit

His blood pressure was 142/74 mmHg, and he appeared to have a large waist circumference. Compared to someone with similar blood pressure and waist circumference without psoriasis, your psoriasis patient's risk of having metabolic syndrome is:

- Decreased
- Same
- Double
- Four times

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- **Double**
- Four times

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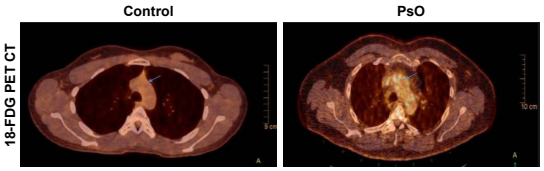
PET CT of Non-PsO vs PsO Subjects[1,2]



1. Harrington CL et al. *Am J Physiol Heart Circ Physiol*. 2017;312:H867-H873.
2. Images courtesy of the American Physiological Society.

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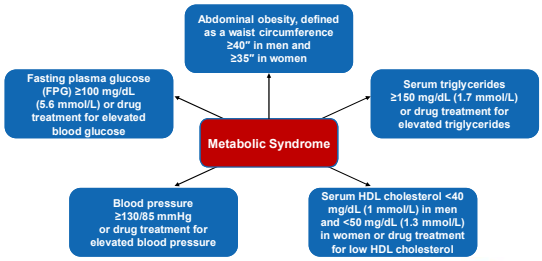
What Is Metabolic Syndrome?[1]

- Metabolic syndrome is a group of risk factors that raises the risk of heart disease, diabetes, stroke, and other health problems
- Diagnosed when any 3 of the following 5 risk factors are present:



1. Grundy SM et al. *Circulation*. 2005;112:2735-2752.

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CV Risk Factor Standard Screening Recommendations

CV Parameter	Recommendation
Hypertension[1]	Every 2 years if BP <120/80 mmHg
	Yearly if BP 120-139/80-89 mmHg
Diabetes (fasting blood glucose, HbA1C, or OGTT)[2]	Adults ≥45 years of age
	Adults with BMI ≥25 kg/m^2 and at least one additional risk factor
	Repeat every 3 years
CV risk assessment[3,4]	Traditional risk factors every 4 to 6 years in patients 20 to 79 years of age
	Estimate 10-year risk in patients 40 to 79 years of age
	Coronary artery calcium scores

Treating PsO may lower CV disease risk

1. Wolff T, Miller T. *Evidence of the Reaffirmation of the US Preventative Services Task Force Recommendations on Screening for High Blood Pressure*. Rockville, MD: Agency for Healthcare Research and Quality; 2007. 2. American Diabetes Association. *Diabetes Care*. 2014;37(suppl 1):S5-S13. 3. Goff DC et al. *Circulation*. 2014;129(suppl 2):S49-S73.
4. Mansouri B et al. *JAMA Dermatol*. 2016;152:1244-1253.

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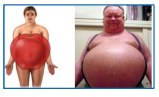
Psoriasis and Metabolic Syndrome[1]

- Systematic review and meta-analysis on 12 studies from January 1, 1980 to January 1, 2012
  - 1.4 million patients (41,853 patients with psoriasis)
- **Pooled OR = 2.26 (95% CI, 1.70-3.01)**
- **Dose–response relationship** between psoriasis severity and presence of metabolic syndrome, with adjusted ORs of 1.22, 1.56, and 1.98 for mild, moderate, and severe psoriasis, respectively



1. Armstrong AW et al. *J Am Acad Dermatol*. 2013;68:654-656.

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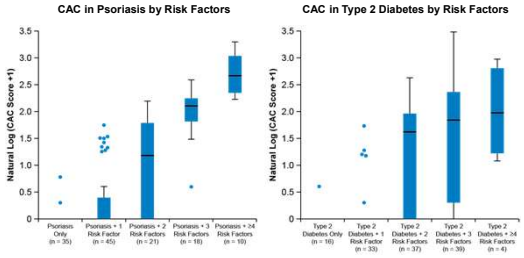
Comparison of Coronary Artery Calcium Scores Between Patients With Psoriasis and Type 2 Diabetes[1]

Median Coronary Artery Calcium (CAC) as Assessed by Mean Agatston Scores



1. Mansouri B et al. *JAMA Dermatol*. 2016;152:1244-1253.

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Approach to Self-Management of Psoriasis[1]

Psoriasis Self-Management

Address treatment expectations and goals by establishing a personalized doctor–patient partnership

Medical

Topical therapies
- Written recommendations
- Simplify regimens
- Choice of vehicle

Systemic therapies
- Provide information on efficacy and safety
- Monitoring for side effects

Psychosocial
- Awareness of psychiatric comorbidities and acknowledgement of social restrictions
- Utilization of educational resources (ie, National Psoriasis Foundation)
- Establish a support system
- Recommend mental health professional

1. Pathak SN et al. *Psoriasis: Targets and Therapy*. 2014;4:19-26.

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Referral Timing and Coordination of Care

When to Refer to a Dermatologist	
✓	Defined treatment goals are not met
✓	Patient dissatisfied with treatment outcomes
✓	Discomfort with treating moderate to severe disease
✓	Patients with PsO, PsA, plus multiple comorbidities

Involve other healthcare providers in the education, follow-up, and long-term care of patients

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Approach to Self-Management of Psoriasis[1]

Ask patients about preferred vehicle for topical therapy (gels and creams versus ointments)

Provide information about diagnosis, drug dosing, and treatment duration

Build patients' trust by being empathetic, listening to them, physically examining their skin, practicing good communication skills, and discussing their comorbidity profiles

Clarify treatment goals in the context of patient expectations

1. Bewley A, Page B. *J Eur Acad Dermatol Venereol*. 2011;25(suppl 4):9-14.

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Conclusions

- PsO significantly impacts the QoL of patients
- New treatment options provide the potential for complete skin clearance in PsO
- A variety of factors influence treatment selection for patients with PsO, including comorbidities, patient preference, disease severity, QoL issues, and evidence-based guidelines
- Comprehensive care is critical for the achievement of optimal outcomes for patients with PsO

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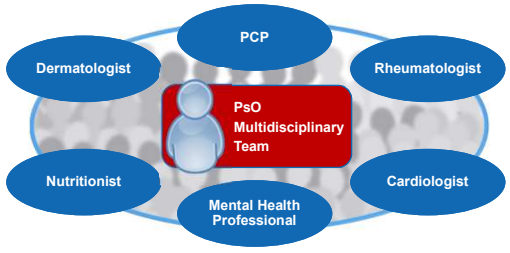
Potential Members of the PsO Patient's Care Team[a]



[a] Other HCPs may be involved as well based on the patient's comorbidities and extra-articular manifestations.

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