

#### **News Release**

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New Data Show Majority of Adults with Moderate to Severe Plaque
Psoriasis Treated with First-in-Class TREMFYA® (guselkumab)

Experienced Durable Skin Clearance Through Five Years Regardless of Metabolic Syndrome Status, Baseline Disease Severity, or

Treatment History

Post hoc analysis shows TREMFYA responders reported clinically significant improvements across measures of social and sexual function and fatigue

Pooled analysis of seven Phase 2/3 studies of TREMFYA in moderate to severe plaque psoriasis shows a consistent safety profile and no new safety signals

## SPRING HOUSE, PENNSYLVANIA, March 25, 2022 – The Janssen

Pharmaceutical Companies of Johnson & Johnson today announced its first-in-class interleukin (IL)-23 inhibitor TREMFYA® (guselkumab) provided a consistent, high degree of durable skin clearance through five years in a majority of adult patients across broad subpopulations with moderate to severe plaque psoriasis (PsO) in the

Phase 3 VOYAGE 1 and VOYAGE 2 clinical trials.¹ A separate post hoc analysis of the VOYAGE studies showed TREMFYA provided high rates of efficacy and durability through five years and similar safety outcomes among patients with and without metabolic syndrome status at baseline.² These data are among 10 abstracts presented at the 2022 American Academy of Dermatology (AAD) Annual Meeting taking place March 25-29, 2022. TREMFYA is the first selective IL-23 inhibitor therapy approved in the U.S. to treat both adults with moderate to severe plaque PsO who are candidates for systemic therapy or phototherapy, and adults with active psoriatic arthritis (PsA).³

"The latest analyses of VOYAGE 1 and 2 complement the previously reported fiveyear data from the studies," said Joseph Merola, M.D., M.M.Sc., Associate Professor, Harvard Medical School, Brigham and Women's Hospital.<sup>a</sup> "These additional insights into the potential for TREMFYA to mitigate the varied symptoms of psoriasis across broad populations are helpful to physicians as we seek long-term treatment solutions for the many symptoms our patients face with this disease."

For an estimated 125 million people worldwide, plaque PsO can present in varied and debilitating manifestations, including physical and psychological symptoms.<sup>4,5</sup> Plaque PsO can cause inflamed, scaly skin plaques as well as social distress and impairment.<sup>6</sup> The analyses presented at the 2022 AAD Annual Meeting further support the role of TREMFYA in improving the symptoms of moderate to severe plaque PsO and outcomes associated with patients' health-related quality of life. These data show:

#### **Durable Skin Clearance in Broad Patient Population**

A pooled analysis of VOYAGE 1 and 2 evaluated the efficacy of TREMFYA in 1829 patients across subgroups based on disease severity and treatment history, including an open-label extension period from weeks 52-252. Across the subgroups evaluated, approximately 80 percent of patients achieved and maintained skin clearance as measured by an Investigator's Global Assessment (IGA) Score of 0/1b or a Psoriasis Area Severity Index (PASI) 90c response.1

- IGA 0/1 and PASI 90 responses were evaluated across subgroups defined by patients' baseline PASI and IGA scores, body surface area, and prior PsO treatments.
- Among TREMFYA-treated patients, IGA 0/1 or PASI 90 responses were comparable across baseline disease severity characteristics, prior phototherapy, and prior non-biologic systemic therapy. This trend was consistent across subgroups, and the level of efficacy was maintained at each timepoint evaluated.<sup>1</sup>
- In a separate post hoc analysis of VOYAGE 1 and 2 data, TREMFYA
  demonstrated high levels of skin clearance, assessed by the achievement of
  PASI 90, IGA 0/1, and PASI 100 responses among patients with and without
  metabolic syndrome (MetS).<sup>2,d</sup>
  - Among TREMFYA-treated patients, 77.7 percent of patients with MetS (n=256) and 83.4 percent of patients without MetS (n=1118) achieved PASI 90 at week 252.
  - MetS is strongly associated with plaque PsO and should be taken into consideration in treatment decisions.<sup>2,7</sup>
  - These levels of clear or almost clear skin were maintained over time from weeks 100-252 across both groups, in patients with or without MetS.<sup>2</sup>

#### Reported Improvements in Social and Sexual Function and Fatigue

TREMFYA provided significant clinical improvements for patients across multiple measures of health-related quality of life.

- Results from VOYAGE 1 and 2 show patients with moderate to severe PsO receiving TREMFYA reported social relationship difficulty (SRD) and sexual difficulty (SD) measures improved as their skin symptoms improved, based on related questions included in the Dermatology Life Quality Index Questionnaire and PASI scores.<sup>8</sup>
  - At baseline, 35 and 31 percent of patients reported SRD and SD, respectively. At week 16, patients receiving TREMFYA or adalimumab achieved greater improvements in SRD and SD than those receiving placebo.<sup>8</sup>

- At week 24, the improvements TREMFYA-treated patients experienced in SRD and SD were maintained and greater than those for patients receiving adalimumab.<sup>8</sup>
- In addition, two new analyses show greater proportions of patients taking TREMFYA versus placebo achieved clinically meaningful improvements in fatigue from baseline across both moderate to severe plaque PsO (at week 16) in the VOYAGE studies and active PsA (at week 24) in the DISCOVER-1 and -2 studies, as measured by the 36-Item Short-Form Health Survey (SF-36)<sup>d</sup> vitality scale. 9,10 These results are important for patients in both disease areas, as people with moderate to severe plaque PsO and active PsA often experience clinically important fatigue, especially in active PsA. 10

## **Demonstrated Safety Profile**

- Pooled analyses of seven Phase 2/3 studies support the demonstrated safety profile of TREMFYA for moderate to severe plaque PsO patients treated for up to five years (2891 patients/8662 patient years).<sup>11</sup> Rates of adverse events (AEs) of interest were shown to be consistent with or numerically lower than those of the general PsO populations in the Psoriasis Longitudinal Assessment and Registry (PSOLAR) and Marketscan database.<sup>11</sup>
  - During the placebo-controlled period, rates of AEs, serious AEs, infections, and serious infections were similar for placebo and TREMFYA.<sup>11</sup>
  - Through the end-of-reporting period, these rates remained low for patients treated with TREMFYA, as did non-melanoma skin cancer (NMSC; 0.35 per 100 patient years), malignancies other than NMSC (0.43 per 100 patient years), and major adverse cardiac events (0.33 per 100 patient years).<sup>11</sup>
  - Among TREMFYA-treated patients, there were no reported cases of active tuberculosis or opportunistic infections and no serum sicknesslike/anaphylactic reactions related to TREMFYA.<sup>11</sup>
- In the VOYAGE 1 and 2 studies, the safety profile of TREMFYA was generally similar in patients with and without MetS at baseline through week 264.<sup>2</sup>

"Despite effective medical treatments for the disease, people living with psoriasis can experience challenges with fatigue, interpersonal relationships, and intimacy," said Lloyd S. Miller, M.D., Ph.D., Vice President, Immunodermatology Disease Area Leader, Janssen Research & Development, LLC.<sup>12,13</sup> "The results of these analyses are encouraging for those living with psoriasis, showing that the long-term improvement of physical symptoms of psoriasis can also be accompanied by improvements to the psychological and social distress associated with the disease."

The latest data are part of Janssen's comprehensive clinical development program for TREMFYA, which includes the recently initiated <u>VISIBLE study</u>, the first largescale prospective clinical study dedicated to Black, Hispanic, Asian, Indigenous and other people of color living with moderate to severe plaque PsO.<sup>14-17</sup> Janssen continues to be dedicated to developing therapies that can support patients' unmet needs, including further analyses such as a recent publication on TREMFYA in adults with active PsA in <u>RMD Open</u>.<sup>18</sup>

#### **Editor's Note:**

- a. Dr. Merola is a paid consultant for Janssen. He has not been compensated for any media work.
- b. The IGA Score is a 5-point clinical scale evaluating disease severity.<sup>19</sup> IGA 0 and 1 are defined as clear and almost clear skin, respectively.
- c. PASI 90 is defined as at least 90 percent improvement from baseline in the PASI score. The PASI score grades the amount of surface area on each body region that is covered by PsO plaques and the severity of plaques for their redness, thickness, and scaliness.<sup>20</sup>
- d. MetS was defined in this study as ≥3 of the following: body mass index >30 kg/m;² triglycerides ≥150 mg/dL; HDL cholesterol <40/<50 mg/dL (men/women); blood pressure ≥130/85 mmHg; and fasting glucose ≥110 mg/dL.²</p>
- e. SF-36 is a set of quality-of-life measures used for patient self-reporting. The SF-36 includes one multi-item scale that assesses eight health concepts: limitations in physical activities because of health problems; limitations in

social activities because of physical or emotional problems; limitations in usual role activities because of physical health problems; bodily pain; general mental health (psychological distress and well-being); limitations in usual role activities because of emotional problems; vitality (energy and fatigue); and general health perceptions.<sup>21</sup>

## **About VOYAGE 1 (NCT02207231)**15

This Phase 3, randomized, double-blind, placebo and active comparator-controlled trial with 837 patients was designed to evaluate the efficacy and safety of TREMFYA compared with placebo and adalimumab in adults with moderate to severe plaque PsO. Patients were randomized to receive placebo at weeks 0, 4 and 12, followed by crossover to TREMFYA at weeks 16 and 20 and then every eight weeks (q8w) dosing; TREMFYA 100 mg at weeks 0, 4 and 12, followed by q8w dosing; or adalimumab 80 mg (n= 334) at week 0, followed by 40 mg at week 1, then dosing every two weeks (q2w) through week 47, with crossover to TREMFYA q8w at week 52.

The co-primary endpoints of the study were the proportions of patients receiving TREMFYA versus patients receiving placebo achieving IGA 0/1 (clear/almost clear skin) and PASI 90 at week 16. Secondary endpoints were assessed at weeks 16, 24, and 48, with safety monitoring throughout the study. Through week 48, non-responder imputation (NRI) rules were used for missing data (after the application of treatment failure rules [TFR]).

During the open-label extension period, which started at week 52, all patients continued open-label treatment with TREMFYA through week 252. Efficacy assessments included proportions of patients achieving PASI 90, PASI 100, IGA 0/1, and IGA 0 (clear skin). Efficacy was analyzed using prespecified TFR for the primary analysis, while NRI and as observed (OBS) methodology were used for the secondary analyses.

# **About VOYAGE 2 (NCT02207244)**<sup>22</sup>

This Phase 3, randomized, double-blind, placebo and active comparator-controlled trial was designed to evaluate the efficacy and safety of TREMFYA compared with placebo and adalimumab in adults with moderate to severe plaque PsO. Patients (N=992) were randomized to receive subcutaneous (SC) injections of TREMFYA 100 mg (n=496) at weeks 0, 4 and q8w thereafter; placebo (n=248) at weeks 0, 4, and 12 followed by crossover to TREMFYA 100 mg at week 16; or adalimumab 80 mg (n=248) at week 0, 40 mg at week 1, then 40 mg q2w until week 23. Weeks 28-72 incorporated a randomized withdrawal study design. During the open-label period (weeks 76-252), all patients received TREMFYA 100 mg q8w. Physician- and patient-reported outcomes were assessed. Efficacy was analyzed using prespecified treatment failure rules (patients discontinuing due to lack of efficacy, worsening of PsO, or use of a prohibited treatment were considered non-responders). Data were combined for patients randomized to TREMFYA and for those originally randomized to placebo who later crossed over to TREMFYA at week 16. Patients were treated and followed for up to 264 weeks.

Co-primary endpoints of the study were proportions of patients receiving TREMFYA versus patients receiving placebo achieving IGA 0/1 (clear/almost clear) [84 percent versus 9 percent, respectively; p<0.001 versus placebo] and PASI 90 [70 percent versus 2 percent, respectively; p<0.001 versus placebo] at week 16.

Additional efficacy assessments included proportions of patients achieving PASI 75, and PASI 100 responses, as well as IGA scores of 0, a Dermatology Life Quality Index (DLQI) score of 0/1, a Psoriasis Signs and Symptoms Diary (PSSD) score of 0, SF-36, the Hospital Anxiety and Depression Scale (HADs), and the Work Limitations Questionnaire (WLQ). Efficacy was analyzed using pre-specified treatment failure rules, non-responder imputation, and as observed methodology.

#### **About Plaque Psoriasis (PsO)**

Plaque PsO is an immune-mediated disease resulting in an overproduction of skin cells, which causes inflamed, scaly plaques that may be itchy or painful.<sup>4</sup> It is estimated that eight million Americans and more than 125 million people worldwide live with the disease.<sup>5</sup> Nearly one-quarter of all people with plaque PsO have cases

that are considered moderate to severe.<sup>5</sup> Living with plaque PsO can be a challenge and impact life beyond a person's physical health, including emotional health, relationships, and handling the stressors of life.<sup>6</sup>

# **About Psoriatic Arthritis (PsA)**

PsA is a chronic, immune-mediated inflammatory disease characterized by peripheral joint inflammation, enthesitis (pain where the bone, tendon and ligament meet), dactylitis (severe inflammation of the fingers and toes), axial disease, and the skin lesions associated with plaque PsO.<sup>23-25</sup> In addition, in patients with PsA, comorbidities, such as obesity, cardiovascular diseases, anxiety and depression are often present.<sup>26</sup> Studies show up to 30 percent of people with plaque PsO also develop PsA.<sup>27</sup> The disease causes pain, stiffness and swelling in and around the joints; it commonly appears between the ages of 30 and 50, but can develop at any age.<sup>27</sup> Nearly half of patients with PsA experience moderate fatigue and about 30 percent suffer from severe fatigue as measured by the modified fatigue severity scale.<sup>28</sup> Although the exact cause of PsA is unknown, genes, the immune system and environmental factors are all believed to play a role in disease onset.<sup>29</sup>

# About TREMFYA® (guselkumab)<sup>3</sup>

Developed by Janssen, TREMFYA is the first approved fully human monoclonal antibody that selectively binds to the p19 subunit of IL-23 and inhibits its interaction with the IL-23 receptor. IL-23 is an important driver of the pathogenesis of inflammatory diseases such as moderate to severe plaque PsO and active PsA. TREMFYA is approved in the U.S., Canada, Japan, and a number of other countries worldwide for the treatment of adults with moderate to severe plaque PsO who are candidates for injections or pills (systemic therapy) or phototherapy (treatment using ultraviolet light), and for the treatment of adult patients with active PsA. It is also approved in the EU for the treatment of moderate to severe plaque PsO in adults who are candidates for systemic therapy and for the treatment of active PsA in adult patients who have had an inadequate response or who have been intolerant to a prior disease-modifying antirheumatic drug therapy.

The Janssen Pharmaceutical Companies of Johnson & Johnson maintain exclusive worldwide marketing rights to TREMFYA®.

#### **IMPORTANT SAFETY INFORMATION**

What is the most important information I should know about TREMFYA®? TREMFYA® is a prescription medicine that may cause serious side effects, including:

- **Serious Allergic Reactions.** Stop using TREMFYA® and get emergency medical help right away if you develop any of the following symptoms of a serious allergic reaction:
  - o fainting, dizziness, feeling lightheaded (low blood pressure)
  - o swelling of your face, eyelids, lips, mouth, tongue or throat
  - trouble breathing or throat tightness
  - chest tightness
  - o skin rash, hives
  - itching
- **Infections.** TREMFYA® may lower the ability of your immune system to fight infections and may increase your risk of infections. Your healthcare provider should check you for infections and tuberculosis (TB) before starting treatment with TREMFYA® and may treat you for TB before you begin treatment with TREMFYA® if you have a history of TB or have active TB. Your healthcare provider should watch you closely for signs and symptoms of TB during and after treatment with TREMFYA®.

Tell your healthcare provider right away if you have an infection or have symptoms of an infection, including:

- o fever, sweats, or chills
- muscle aches
- weight loss
- cough
- warm, red, or painful skin or sores on your body different from your psoriasis
- o diarrhea or stomach pain
- shortness of breath
- blood in your phlegm (mucus)
- o burning when you urinate or urinating more often than normal

**Do not take TREMFYA®** if you have had a serious allergic reaction to guselkumab or any of the ingredients in TREMFYA®.

# Before using TREMFYA®, tell your healthcare provider about all of your medical conditions, including if you:

- have any of the conditions or symptoms listed in the section "What is the most important information I should know about TREMFYA®?"
- have an infection that does not go away or that keeps coming back.

- have TB or have been in close contact with someone with TB.
- have recently received or are scheduled to receive an immunization (vaccine). You should avoid receiving live vaccines during treatment with TREMFYA®.
- are pregnant or plan to become pregnant. It is not known if TREMFYA® can harm your unborn baby.
- are breastfeeding or plan to breastfeed. It is not known if TREMFYA® passes into your breast milk.

**Tell your healthcare provider about all the medicines you take,** including prescription and over-the-counter medicines, vitamins, and herbal supplements.

What are the possible side effects of TREMFYA®? TREMFYA® may cause serious side effects. See "What is the most important information I should know about TREMFYA®?"

The most common side effects of TREMFYA® include: upper respiratory infections, headache, injection site reactions, joint pain (arthralgia), diarrhea, stomach flu (gastroenteritis), fungal skin infections, herpes simplex infections, and bronchitis.

These are not all the possible side effects of TREMFYA®. Call your doctor for medical advice about side effects.

Use TREMFYA® exactly as your healthcare provider tells you to use it.

Please read the full <u>Prescribing Information</u>, including <u>Medication Guide</u> for TREMFYA®, and discuss any questions that you have with your doctor.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit <a href="www.fda.gov/medwatch">www.fda.gov/medwatch</a>, or call 1-800-FDA-1088. cp-82626v3

## **About the Janssen Pharmaceutical Companies of Johnson & Johnson**

At Janssen, we're creating a future where disease is a thing of the past. We're the Pharmaceutical Companies of Johnson & Johnson, working tirelessly to make that future a reality for patients everywhere by fighting sickness with science, improving access with ingenuity, and healing hopelessness with heart. We focus on areas of medicine where we can make the biggest difference: Cardiovascular & Metabolism, Immunology, Infectious Diseases & Vaccines, Neuroscience, Oncology, and Pulmonary Hypertension.

Learn more at www.janssen.com. Follow us at www.twitter.com/JanssenGlobal.

Janssen Research & Development, LLC is a part of the Janssen Pharmaceutical Companies of Johnson & Johnson.

### **Cautions Concerning Forward-Looking Statements**

This press release contains "forward-looking statements" as defined in the Private Securities Litigation Reform Act of 1995 regarding TREMFYA® (guselkumab) product development. The reader is cautioned not to rely on these forward-looking statements. These statements are based on current expectations of future events. If underlying assumptions prove inaccurate or known or unknown risks or uncertainties materialize, actual results could vary materially from the expectations and projections of Janssen Research & Development, LLC, any of the other Janssen Pharmaceutical Companies and/or Johnson & Johnson. Risks and uncertainties include, but are not limited to: challenges and uncertainties inherent in product research and development, including the uncertainty of clinical success and of obtaining regulatory approvals; uncertainty of commercial success; manufacturing difficulties and delays; competition, including technological advances, new products and patents attained by competitors; challenges to patents; product efficacy or safety concerns resulting in product recalls or regulatory action; changes in behavior and spending patterns of purchasers of health care products and services; changes to applicable laws and regulations, including global health care reforms; and trends toward health care cost containment. A further list and descriptions of these risks, uncertainties and other factors can be found in Johnson & Johnson's Annual Report on Form 10-K for the fiscal year ended January 2, 2022, including in the sections captioned "Cautionary Note Regarding Forward-Looking Statements" and "Item 1A. Risk Factors," and in Johnson & Johnson's subsequent Quarterly Reports on Form 10-Q and other filings with the Securities and Exchange Commission. Copies of these filings are available online at www.sec.gov, www.jnj.com or on request from Johnson & Johnson. None of the Janssen Pharmaceutical Companies nor Johnson & Johnson undertakes to update any

forward-looking statement as a result of new information or future events or developments.

# # #

#### References

- 1. Gordon, K.B. *et al.* Efficacy Responses Across Disease Severity and Treatment History Subgroups of Patients With Moderate to Severe Plaque Psoriasis Treated With Guselkumab: Pooled Results From VOYAGE 1&2 Through 5 Years. Presented at 2022 AAD Annual Meeting, March 25-29.
- 2. Merola, J.F. *et al.* Guselkumab Efficacy and Safety Through 5 Years Among Psoriasis Patients With and Without Metabolic Syndrome at Baseline: Results From VOYAGE 1 and VOYAGE 2. Presented at 2022 AAD Annual Meeting, March 25-29.
- 3. Food and Drug Administration. TREMFYA® Prescribing Information. Horsham, PA. 2017. Available at: https://www.janssenlabels.com/package-insert/product-monograph/prescribing-information/TREMFYA-pi.pdf. Accessed March 2022.
- 4. National Psoriasis Foundation. About Psoriasis. Available at: <a href="https://www.psoriasis.org/about-psoriasis">https://www.psoriasis.org/about-psoriasis</a>. Accessed March 2022.
- 5. National Psoriasis Foundation. Statistics. Available at: https://www.psoriasis.org/content/statistics. Accessed March 2022.
- 6. National Psoriasis Foundation. Life with Psoriasis. Available at: <a href="https://www.psoriasis.org/life-with-psoriasis/">https://www.psoriasis.org/life-with-psoriasis/</a>. Accessed February 2022.
- 7. Gisondi, P. *et al.* Psoriasis and the metabolic syndrome. Clin Dermatol. 2018 Jan-Feb;36(1):21-28.
- 8. Armstrong, A. *et al.* Social Relationships, Sexual Difficulty, and the Impact of Treatment With Guselkumab Versus Adalimumab in Men and Women With Psoriasis: Results From VOYAGE 1 and 2. P33018. Presented at 2022 AAD Annual Meeting, March 25-29.
- 9. Strober, B. *et al.* Correlation of Fatigue Severity and Psoriasis Severity, and the Treatment Effect of Guselkumab: A Detailed Analysis of SF-36 Vitality Scores From the VOYAGE 2 Study. Presented at 2022 AAD Annual Meeting, March 25-29.
- 10. Merola, J.F. *et al.* An Analysis of Fatigue in Patients With Psoriatic Disease Utilizing SF-36 Vitality Scores: Results Through Week 24 in Phase 3 Trials of Guselkumab in Patients With Psoriasis and Psoriatic Arthritis. Presented at 2022 AAD Annual Meeting, March 25-29.
- 11. Lebwohl, M. *et al.* Safety of Guselkumab in Patients With Moderate-to-Severe Psoriasis: Pooled Analyses Across Clinical Studies. Presented at 2022 AAD Annual Meeting, March 25-29.
- 12. Zill, J.M. *et al.* Psychosocial Distress of Patients with Psoriasis: Protocol for an Assessment of Care Needs and the Development of a Supportive Intervention. *JMIR Res Protoc*. 2018;7(2):e22. Published 2018 Feb 7.
- 13. Kolli, S.S. *et al.* Psychosocial impact of psoriasis: a review for dermatology residents. Cutis. 2018 Nov:102(5S):21-25.
- 14. Blauvelt, A. *et al*. Efficacy and safety of guselkumab, an anti-interleukin-23 monoclonal antibody, compared with adalimumab for the continuous treatment of patients with moderate to severe psoriasis: Results from the phase III, double-blinded, placebo- and active comparator-controlled VOYAGE 1 trial. J Am Acad Dermatol. 2017 Mar;76(3):405-417.
- 15. Langley, R.G. *et al.* Efficacy and safety of guselkumab in patients with psoriasis who have an inadequate response to ustekinumab: results of the randomized, double-blind, phase III NAVIGATE trial. Br J Dermatol. 2018 Jan;178(1):114-123.
- 16. Reich, K. *et al.* Guselkumab versus secukinumab for the treatment of moderate-to-severe psoriasis (ECLIPSE): results from a phase 3, randomised controlled trial. Lancet. 2019 Sep 7;394(10201):831-839.
- 17. Clinicaltrials.gov. A Phase 3b, Multicenter, Randomized, Double-Blind, Placebo-Controlled Trial of the Efficacy and Safety of Guselkumab in Patients With Skin of Color who Have Moderate-to-Severe Plaque and/or Scalp Psoriasis (VISIBLE). NCT05272150. Available at: <a href="https://www.clinicaltrials.gov/ct2/show/NCT05272150">https://www.clinicaltrials.gov/ct2/show/NCT05272150</a>. Accessed March 2022.

- 18. Ritchlin, C.T. *et al.* Sustained and improved guselkumab response in patients with active psoriatic arthritis regardless of baseline demographic and disease characteristics: pooled results through week 52 of two phase III, randomised, placebo-controlled studies. RMD Open 2022;8:e002195.
- 19. Langley, R.G. *et al.* The 5-point Investigator's Global Assessment (IGA) Scale: A modified tool for evaluating plaque psoriasis severity in clinical trials. J Dermatolog Treat. 2015 Feb;26(1):23-31.
- 20. Thompson Jr, D. How the Psoriasis Area and Severity Index Works. *Everyday Health*. Available at: <a href="https://www.everydayhealth.com/psoriasis/living-with/how-the-pasi-index-works/">https://www.everydayhealth.com/psoriasis/living-with/how-the-pasi-index-works/</a> Accessed March 2022.
- 21. Ware, Jr, J.E. & Sherbourne, C.D. The MOS 36-item short-form health survey (SF-36): I. Conceptual framework and item selection. *Medical care*. 1992;473-483.
- Clinicaltrials.gov. A Study of Guselkumab in the Treatment of Participants With Moderate to Severe Plaque-Type Psoriasis With Randomized Withdrawal and Retreatment (VOYAGE 2). Identifier NCT02207244. <a href="https://www.clinicaltrials.gov/ct2/show/NCT02207244">https://www.clinicaltrials.gov/ct2/show/NCT02207244</a>. Accessed February 2022.
- 23. Belasco, J. & Wei, N. Psoriatic Arthritis: What is Happening at the Joint? *Rheumatology and Therapy*, 2019: 6(3), 305–315. https://doi.org/10.1007/s40744-019-0159-1
- 24. Donvito T. CreakyJoints: What Is Enthesitis? The Painful Arthritis Symptom You Should Know About. Available at: <a href="https://creakyjoints.org/symptoms/what-is-enthesitis/">https://creakyjoints.org/symptoms/what-is-enthesitis/</a>. Accessed October 2021.
- 25. Donvito T. CreakyJoints: What Is Dactylitis? The 'Sausage Finger' Swelling You Should Know About. Available at: <a href="https://creakyjoints.org/symptoms/what-is-dactylitis/">https://creakyjoints.org/symptoms/what-is-dactylitis/</a>. Accessed October 2021.
- 26. Haddad A. & Zisman D. Comorbidities in Patients with Psoriatic Arthritis. *Rambam Maimonides Med J.* 2017;8(1):e0004.
- 27. National Psoriasis Foundation. About Psoriatic Arthritis. Available at: <a href="https://www.psoriasis.org/about-psoriatic-arthritis/">https://www.psoriasis.org/about-psoriatic-arthritis/</a> Accessed January 2022.
- 28. Husted, J. A. *et al.* Occurrence and correlates of fatigue in psoriatic arthritis. *Annals of the Rheumatic Diseases*, 2008:68(10), 1553–1558. <a href="https://doi.org/10.1136/ard.2008.098202">https://doi.org/10.1136/ard.2008.098202</a>
- 29. Cassell, S. & Kavanaugh, A. Psoriatic arthritis: Pathogenesis and novel immunomodulatory approaches to treatment. *Journal of Immune Based Therapies and Vaccines*. 2005;3:6. <a href="https://jibtherapies.biomedcentral.com/articles/10.1186/1476-8518-3-6">https://jibtherapies.biomedcentral.com/articles/10.1186/1476-8518-3-6</a>