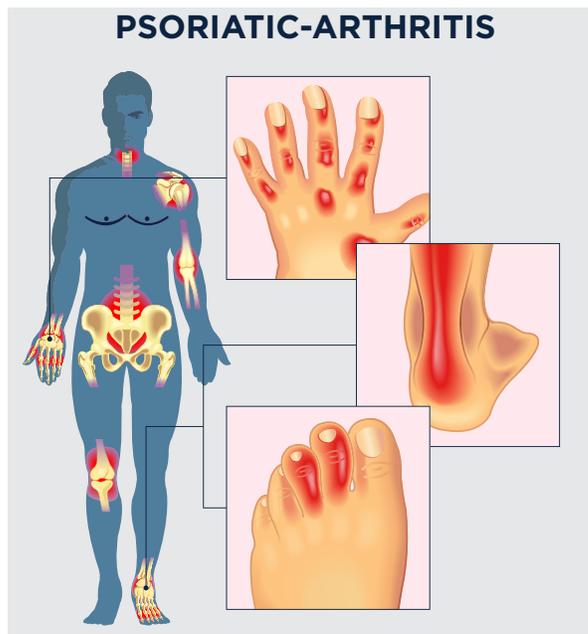


Psoriatic Arthritis Support Protocol

Clinical Protocol to Support Musculoskeletal Health and Healthy Inflammatory Responses*



The Pathophysiology of Psoriatic Arthritis

Psoriatic arthritis (PsA) is a chronic, inflammatory musculoskeletal disease characterized by dysregulated immune responses.^{1,2} The five musculoskeletal subtypes of PsA are oligoarticular arthritis (the most common), polyarticular arthritis, distal arthritis, arthritis mutilans, and spondyloarthritis.² PsA often presents with skin disease (psoriatic skin plaques) and nail disease.² It is associated with uveitis and inflammatory bowel disease.^{2,4} PsA may result in fatigue, physical function limitations, sleep disturbances, and reduced quality of life.⁵

PsA affects approximately 0.1% to 1% of the global population.² The etiology and pathophysiology of PsA are not entirely understood. However, it involves a complex interaction between genetics, environmental factors, and immune-mediated inflammation among the skin, joints, and other organs.² The onset of PsA usually begins at the age of 30 to 40 years and is equal among males and females. Approximately 6% to 41% of psoriasis patients concurrently have PsA. In about 68% of PsA patients, skin symptoms precede arthritis symptoms.² Therefore, dermatologists play a critical role in identifying PsA during the early stages.^{2,6}

Clinical manifestations of PsA can vary and change over time.² PsA patients have an increased prevalence of comorbidities, such as cardiovascular disease, atherosclerosis, metabolic syndrome, osteoporosis, diabetes mellitus, nonalcoholic fatty liver disease, anxiety, and depression.^{2,4,7-9}

This clinical protocol is designed to support patients with psoriatic arthritis through lifestyle, diet, and specific nutrients shown to help promote musculoskeletal health and support healthy immune and inflammatory responses.*

Diagnostic Biomarkers and Clinical Indicators of Psoriatic Arthritis

- Early diagnosis is critical to avoid permanent joint/spine damage and loss of function in patients.⁶ The Classification of Psoriatic Arthritis (CASPAR) is the most accepted PsA criteria.^{2,4} PsA is considered present if the patient has at least 3 points.² Clinical features and ratings include:
 - Skin psoriasis: If present (2 points), previously present (1 point), family history or patient not affected (1 point)
 - Nail lesions: Onycholysis, pitting, and hyperkeratosis (1 point)
 - Dactylitis: Present or past, documented by a rheumatologist (1 point)
 - Rheumatoid factor: Negative (1 point)
 - Juxta-articular bone formation: Distinct from osteophytes (1 point)
- There are no laboratory tests specifically for PsA.^{2,10,11} However, one can consider acute phase reactants such as erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP).¹¹ These are elevated in about 40% of PsA patients.²
- Radiographic images, CT scans, PET scans, ultrasounds, and MRIs can detect joint inflammation and damage, erosive changes, new bone formation, and axial changes.^{2,7,11}
- GI-MAP (GI Microbial Assay Plus) comprehensive stool testing. An unbalanced GI microbial environment or suboptimal intestinal barrier function may stimulate Th17 cells to release interleukin-23, a central cytokine in the pathogenesis of PsA.^{2,4} Inflammatory bowel disease is significantly associated with PsA.^{3,10}

Therapeutic Diet and Nutritional Considerations

- Advise patients to reduce or eliminate inflammatory foods, such as highly processed foods and refined sugars.¹ PsA is an inflammatory condition.^{2,5}
- Counsel patients to consume a whole-food diet emphasizing probiotics, prebiotics, omega-3-rich foods, and antioxidant rich foods, such as extra-virgin olive oil, nuts, and colorful fruits and vegetables.^{1,12-14}
- Consider a hypocaloric diet that may promote healthy body weight.^{1,5,15-18}

Lifestyle Interventions

- Advise patients to routinely visit a rheumatologist, dermatologist, and primary health-care practitioner due to the multidisciplinary nature of PsA.^{2,4}
- Recommend physical therapy, occupational therapy, massage therapy, or exercise programs to promote and help restore joint function.^{19,20} PsA is associated with a history of physical trauma and an increased risk of developing bone fractures.^{18,21,22}
- Encourage stress management techniques, such as meditation, yoga, or similar mindfulness practices, or seek professional mental help, if needed. PsA is associated with anxiety and depression.^{8,9,23}



Supplement Protocol

Primary Support:



ArthroSoothe™

Dose	4 capsules daily with meals
Duration	Ongoing as needed
Formula Highlights	ArthroSoothe™ provides joints with nutritional support for lubrication, free movement, and healthy function.* Joints, cartilage, ligaments, tendons, and synovial fluid (for joint lubrication) undergo a continuous, but slow turnover and remodeling process. This is affected by many physiological factors, such as diet, supplements, activity, stress, gut health, immune status, infections, aging, hormones, toxic load, and/or various medications. ArthroSoothe™ may support musculoskeletal health in individuals with PsA.*

ImmunoMod-A™

Dose	2 capsules with lunch and dinner (4 capsules total)
Duration	Ongoing as needed
Formula Highlights	ImmunoMod-A™ has been formulated to help balance a healthy inflammatory response, which is necessary to help maintain optimal immune function in the body.* It features ParActin®, an extract of the herb <i>Andrographis paniculata</i> , which has been shown to help modulate immune, inflammatory, and oxidative pathways. This product also contains the monosaccharide N-acetyl-D-glucosamine, along with curcumin, a polyphenolic compound extract from the spice turmeric. Both of these compounds help support a healthy inflammatory response.* Together, the ingredients in ImmunoMod-A™ work to support the proper expression of nuclear factor-kappa B and its related downstream cytokines to help maintain a healthy, balanced immune response.* ImmunoMod-A™ may help promote normal immune and inflammatory responses in patients with PsA.*

OmegaAvail™ Hi-Po

Dose	2 softgels twice daily with meals
Duration	Ongoing as needed
Formula Highlights	OmegaAvail™ Hi-Po is our highest potency omega-3 product, providing 1,600 mg of eicosapentaenoic acid (EPA)/docosahexapentaenoic acid (DHA) per 2-softgel serving. An adequate intake of EPA and DHA may be clinically supportive to those who have PsA by supporting joint health and potentially helping to attenuate a healthy inflammatory response in the body.*

Vitamin D Supreme

Dose	1 capsule with a meal
Duration	Ongoing as needed
Formula Highlights	Vitamin D Supreme provides clinically useful amounts of vitamin D3 and vitamin K (both K1 and K2 [as MK-4]), along with geranylgeraniol (GG), a substance produced naturally in the body, to promote optimal bone and arterial health and to maintain the immune system in proper balance.* The amount of vitamins D and K in this formula may be beneficial for those who do not receive adequate sun exposure and/or dietary sources of these vitamins. Vitamins D and K work synergistically, thus, increasing vitamin D increases the need for vitamin K.* Vitamin D may promote healthy immune and inflammatory responses in patients with PsA.*

Secondary Support:

GI-Revive™

Dose	2 teaspoons of powder or 7 capsules per day
Duration	Ongoing as needed
Formula Highlights	GI Revive® offers comprehensive support for optimum gastrointestinal health and function.* The lining of the gut must have proper permeability and integrity not only so it can absorb nutrients, but also to prevent toxins, allergens, and microbes from gaining access to the bloodstream. Maintaining gut health is the key to maintaining overall wellness.* The powder version of GI Revive®, which is sweetened with stevia leaf extract powder, can be mixed into any beverage or functional food powder, and it can be used to help support optimal gastrointestinal health and regularity.* An unhealthy gastrointestinal (GI) system may be associated with PsA.* Supporting GI health and intestinal barrier function may promote healthy inflammatory and immune responses in those who have PsA.*

For a list of references cited in this document, please visit:

<https://www.designsforhealth.com/api/library-assets/literature-reference---psoriatic-arthritis-support-protocol-references>

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Health-care practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage. Any product containing botanical substances has the potential for causing individual sensitivities, appropriate monitoring, including liver function tests (LFT) is recommended.

For considerations regarding herb-drug and nutrient-drug interactions, please refer to reliable, evidence-based resources such as the Natural Medicine Database or Stargrove MB, Treasure J, McKee DL. *Herb, Nutrient, and Drug Interactions: Clinical Implications and Therapeutic Strategies*. St. Louis, MO: Mosby-Elsevier; 2008.

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*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.