Protocol—Immune Response

Assessment		
Health history	☐ Chronic stress ☐ History of autoimmune disease ☐ History of immunodeficiency	
Symptoms	☐ Chronic/reoccurring infections ☐ Allergies ☐ Pruritis ☐ Fatigue	☐ Joint pain ☐ Myalgia ☐ Sleep disturbances ☐ Difficulty concentrating/brain fog
Physical signs	☐ Allergic shiners ☐ Pallor ☐ Rash, urticaria ☐ Edema ☐ Delayed wound healing	
Labs	☐ hs-CRP ☐ Cytokines: e.g., IL-6, TNF-a, IL-1β, IL-10 ☐ Lipid mediators: e.g., PGE2 ☐ MMP-9, TGFβ ☐ CBC—WBC populations and relationship e.g., neutrophil/lymphocyte ratio ☐ Antibodies: IgM, IgG, IgA and/or IgE tests ☐ ANA (antinuclear antibodies) ☐ Erythrocyte sedimentation rate (ESR) ☐ Serum vitamin B_{12} ☐ RBC magnesium ☐ 25-Hydroxyvitamin D ☐ Organic acid test (OAT) ☐ Thyroid panel (TSH, anti-TPO, FT4, FT3, rT3)	☐ 4pt cortisol ☐ Assess for leaky gut: Lipopolysaccharide (LPS) and anti-LPS levels; Zonulin ☐ Iron binding (TIBC), serum iron, and saturation ☐ Ferritin ☐ Omega-3 index (fatty acid [FA] status [i.e., EPA and DHA]) Oxidative stress: ☐ Urinary F2-isoprostanes, serum ox-LDL ☐ GSH, GSSG, SOD

Assessment cont.	
Rx/OTC directions	☐ Antihistamines ☐ Antibiotics ☐ Immunosuppressant medications ☐ Anti-inflammatories ☐ Immunoglobulin therapy ☐ Interferon-gamma therapy ☐ Growth factors
Other considerations	Increased risk for/associated with: ☐ GI concerns/dysbiosis/leaky gut ☐ Opportunistic infections ☐ Chronic fatigue syndrome ☐ Autoimmune conditions
Additional	Review medications; certain medications may interfere with immune response.
Notes:	

Recommendations		
Focus	**Nutritional & Lifestyle Recommendations**	**Notes**
Nutrition	☐ Nutrient-dense, high-protein food plan ☐ Anti-inflammatory food plan ☐ Hydration	
Lifestyle	☐ Stress management ☐ Restorative movement	
Foundational nutrients and nutritional bioactives	☐ Allicin[1–3] ☐ *Andrographis paniculata*[4,5] ☐ *Boswellia serrata*[6,7] ☐ Curcumin[8–13] ☐ *Echinacea purpurea*[14,15] ☐ EPA and DHA[17,18] ☐ Hemp extract (*Cannabis sativa*)[19,20] ☐ Lactoferrin[21–23] ☐ Magnesium[24–27] ☐ Multivitamin/mineral[28,29] ☐ Medicinal mushrooms including: Reishi (*Ganoderma lucidum*), Shiitake (*Lentinus edodes*)[30–32] ☐ Probiotics (*Saccharomyces boulardii*, *Lactobacillus paracasei* 8700:2, *Lactobacillus plantarum HEAL9*)[33–36]	

Recommendations

Focus	Nutritional & Lifestyle Recommendations	Notes
Foundational nutrients and nutritional bioactives	☐ Quercetin[37–39] ☐ Specialized pro-resolving mediators (SPM)[40–44] ☐ Vitamin A[45] ☐ Vitamin C[46-48] ☐ Vitamin D_3[49–53] ☐ Whey protein concentrate[54,55] ☐ Xanthohumol[56-58] ☐ Zinc[59] ☐ *Zingiber officinale*[60,61]	

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