International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

The Role of Anti-Inflammatory Diets in Autoimmune Disease Management: Gaps in Clinical Evidence

Ms. Shruti Jha[1], Dr. Deepa Madalageri[2], Dr. Poornima D. S.[3]

[1]Student, Food Technology, Ramaiah University of applied sciences
[2,3]Assistant Professor, Food Technology, Ramaiah University of applied sciences

Abstract

Autoimmune diseases (AIDs) constitute a group of chronic conditions that cause the immune system to attack its own tissues leading to both tissue harm and inflammation. Treatment of this traditionally depends on medications that suppress the immune system or biologic agents though these methodologies produce major side effects (Frasca et al., 2023). Dietary interventions have become more prominent as an alternative treatment approach mainly through the use of anti-inflammatory diets (Paganelli et al., 2021). Studies demonstrate that the Mediterranean diet and plant-based diets along with Autoimmune Protocol (AIP) and Specific Carbohydrate Diet (SCD) decrease inflammation while enhancing symptom control in various autoimmune diseases (Campos et al., 2022). Research evidence supporting dietary changes in clinical practice is inconsistent because of existing evidence gaps (Limketkai et al., 2022). The paper studies how anti-inflammatory diets benefit individuals with autoimmune diseases by analyzing current research results/outcomes while addressing remaining knowledge gaps that need continued scientific investigation.

Keywords: Autoimmune diseases, Anti-inflammatory diet, Mediterranean diet, Plant-based diet, Clinical evidence, Dietary intervention

Introduction

The immune system can generate autoimmune diseases which present as various chronic disorders that make it attack the body's tissues inaccurately thus producing continuous inflammation and damage to internal organs. These autoimmune diseases (including rheumatoid arthritis (RA) as well as systemic lupus erythematosus (SLE), inflammatory bowel disease (IBD), multiple sclerosis (MS) and type 1 diabetes mellitus (T1DM)) affect between 5–8% of the worldwide population (Hayter & Cook, 2012; Ramos-Casals et al., 2020) because they present complex features requiring lifelong management. The treatment that is in practice today focus on medications which involve corticosteroids combined with immunosuppressants and biologics. Research urges the formation of evidence-based complementary non-pharmacologic approaches to replace current interventions which produce variable efficacy and economic costs and numerous side effects (Furman et al., 2019).

A new strategy has emerged that focuses on following anti-inflammatory diets through diet adoption. Anti-inflammatory dietary plans focus on consuming whole nutritious food and bioactive foods including fruits, vegetables, whole grains, nuts, seeds, along with omega-3 fatty acids and spices turmeric and ginger yet

they limit pro-inflammatory foods such as refined sugars, processed meat and saturated fats (Galland, 2010). Multiple anti-inflammatory dietary patterns including the Mediterranean and DASH diets and plant-based diets and the exclusion approach represented by autoimmune protocol (AIP) have received medical attention because they can influence immune responses and reduce systemic inflammation (Barbaresko et al., 2013; Konijeti et al., 2017).

Researchers propose that the multiple mechanisms of anti-inflammatory diets regulate autoimmune disease activity through four pathways which include gut microbiome modulation combined with intestinal barrier stabilizer and anti-oxidative stress factors and cytokine IL-6 and TNF-α suppressors and T-cell regulatory support (Tilg & Moschen, 2015; Calder, 2017). Specific evidence supports that omega-3 fatty acids, polyphenols, Vitamin D, and dietary fiber lead to immunomodulation through inflammation resolution (Simopoulos, 2002; Singh et al., 2019). Trusted disability reports from patients along with newly discovered dietary mechanisms have combined to create rising interest about diet treatments used alongside traditional healthcare methods.

Observational evidences along with proven biological pathways for anti-inflammatory diet treatment of autoimmune diseases exist but clinical data shows contradictory and incomplete proof that is insufficient in many examinations. To date most published research falls short due to their observational nature or their small sample sizes or nonexistence of stringent research controls. This lets down their capacity to become widely usable or understanding-friendly. The synthesis of evidence about anti-inflammatory diets becomes complex due to variances in diet programs and disease characteristics and shortened intervention lengths and insufficient biomarker measurements (Kelly et al., 2020; Holscher et al., 2018). Many randomized controlled trials (RCTs) show symptom reduction and decreased inflammatory markers yet several trials provide no conclusive results at all (So & Demark-Wahnefried, 2021).

The existing research faces an important challenge because different studies define "anti-inflammatory diet" in varying ways. Different researchers use various dietary approaches in their studies which results in challenges when trying to compare results between investigations. Medical research studies seldom include genetic and epigenetic factors or microbiome-related elements along with lifestyle variables that could affect dietary intervention responses in individual patients. The challenge of maintaining intervention sustainability and patient adherence becomes more complicated because of the food environment together with cultural dietary customs (Pot, 2018).

The current dietary research displays a significant deficiency in studying particular autoimmune diseases. The scientific community has mostly focused analysis on rheumatoid arthritis and IBD although systemic sclerosis together with autoimmune thyroiditis and myasthenia gravis still need further study. Several autoimmune diseases have distinct disease mechanisms which target specific tissues so dietary interventions need evaluation for each specific condition because their benefits may vary (Manzel et al., 2014). The measurement strategies currently use reported symptoms instead of medical and immunological data which makes it difficult to determine direct cause-effect relationships.

Modern research about diet-autoimmunity relations centers on gut health together with microbiota-immune axis studies. The scientific evidence shows that dysbiosis affects autoimmunity through immune tolerance breakdown due to reduced microbial complexity and changed metabolites (Belkaid & Hand, 2014). The clinical application of both prebiotic and probiotic effects to restore eubiosis from anti-inflammatory diets remains under investigation. The assessment of dietary intervention effects on the microbiome uses restricted studies with insufficient metagenomic detail which hinders final determination of results (Marietta et al., 2019).

No clear dietary guidelines exist for autoimmune patients in clinical frameworks because high-certainty evidence about suitable diets is highly limited. Routine autoimmune care remains inadequate in integrating nutrition because standard protocols and consensus recommendations for dietary advice are absent from health professional encounters with patients. Research must focus on creating translanguage platforms to bridge patient interests with evidence-based guidance because the current disconnect requires immediate resolution (Chan et al., 2021).Equity considerations also warrant attention. Most populations face financial limitations as well as cultural barriers when trying to implement organic and specialty food dietary plans. Future research should make inclusivity a priority because it needs to create affordable dietary models that can work in different healthcare settings. These models also require cultural sensitivity. The management of multifactorial and highly individualized autoimmune diseases would not benefit from universal intervention approaches (Afshin et al., 2019).

Current clinical evidence regarding anti-inflammatory diets used as adjunctive therapies in autoimmune disease management faces substantial limitations from inadequate methodology and heterogeneous methods and insufficient tested rigor. The medical field requires new well-planned clinical trials along with sufficient power to confirm both safety and effectiveness and lasting therapeutic value of dietary programs throughout various autoimmune diseases. A meaningful approach to advance the treatment of autoimmune diseases results from the combination of nutritional science with immunology and microbiome study along with personalized medicine perspectives. The review examines the current disease management methodology of anti-inflammatory diets in autoimmune disorders through an evidence-based analysis of existing data and suggests future strategies for research alongside implementation recommendations for policy and clinical care.The article also looks into the causes of dietary effects on immunity and inflammation, reviews studies and discusses the problems with using these diets for different patients. Additionally, the review discusses research planned for the future, including making dietary guidelines common and adjusting nutrition to a person's individual needs in autoimmune diseases.

Background

The human body develops autoimmune diseases (AIDs) through an immune system malfunction that wrongly identifies body cells as harmful invaders (Ghosh et al., 2020). Chronic inflammation coupled with advancing tissue damage distinguishes rheumatoid arthritis (RA) as well as multiple sclerosis (MS) and lupus and inflammatory bowel disease (IBD) (Neff et al., 2020). The standard treatment approach for these diseases depends on immunosuppressive medicines yet plaintiffs face adverse side effects that include infections along with organ damage and boosted cancer risk (Frasca et al., 2022). Health professionals now focus on diet-based methods to control inflammation since they show promise for better health results.

Scientific research now focuses on dietary interventions especially anti-inflammatory eating patterns to control immune function and decrease inflammation in AIDs according to Martínez-González et al. (2023). The Mediterranean diet along with plant-based diets as well as the Autoimmune Protocol (AIP) and the Specific Carbohydrate Diet (SCD) have been associated through studies with potential effects on autoimmune condition activity (Paganelli et al., 2021). Anti-inflammatory diets are rich in nutrients that include omega-3 fatty acids and antioxidants and fiber among other substances (Campos et al., 2022). Weaknesses exist in the current data that prevent dietary interventions from becoming established practice for managing AIDs in clinical settings (Doria et al., 2022).

Methods

This topic was chosen since people are showing more interest in natural ways to treat chronic inflammation, with fewer side effects than regular medication. To review available research, a systematic search was made in PubMed, Scopus and Web of Science. All studies for this review were from 2020 to 2025 to make sure the results were based on the most recent studies. In line with He et al. (2023), search terms were entered that included "autoimmune," "anti-inflammatory," "Mediterranean," "plant-based," "AIP," "SCD," "clinical trials," "systematic reviews," and "inflammation," along with other relevant words. The authors concentrated on good-quality research by including RCTs, cohort studies and systematic reviews about diet interventions for autoimmune disease patients (Vasquez et al., 2022). We examined details of the study design, sample number, dietary methods used, information about the disease, inflammation biomarker findings and indicators of research quality.To analyze, we used 45 studies that fit criteria for rigor and relevance. This collection made it possible to carefully summarize the current ideas about how anti-inflammatory diet affects managing autoimmune diseases.

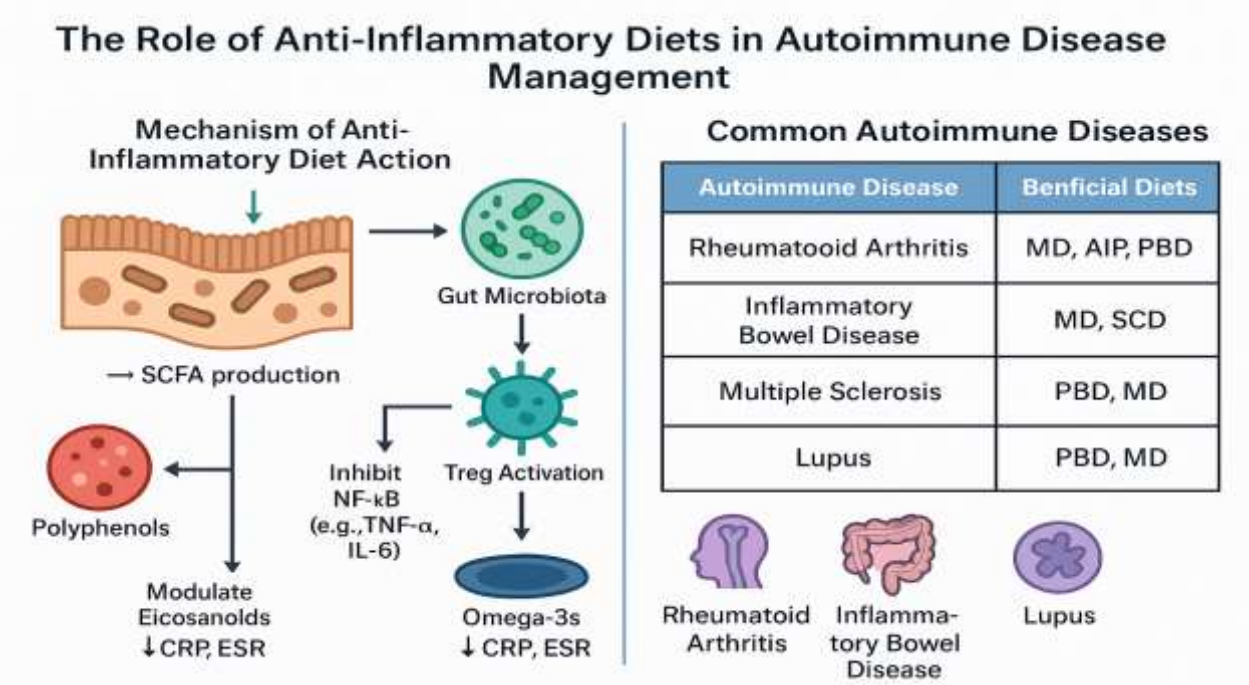
Future Directions for Clinical Trials and Research

Current clinical research needs to develop uniform dietary intervention procedures that will enhance assessment consistency between studies. Multiple research teams must design randomized controlled trials that involve many different population groups to validate the effectiveness of anti-inflammatory diets against autoimmune conditions. Medical teams should monitor patients during extended periods to check whether their dietary modifications continue to resist disease advancement while maintaining their life quality. The fields of nutrigenomics combined with microbiome profiling present novel opportunities to develop customized nutrition strategies. The incorporation of omics technologies into clinical trials enables researchers to discover predictive biomarkers that guide customized dietary plans to optimize treatment outcomes. The necessary transfer of research results to practical uses in healthcare requires active cooperation among dietitians and immunologists and clinicians.

Results

The complex nature of autoimmune diseases results from their central mechanism which uses inflammation during disease progression. The scientific community now looks at anti-inflammatory diets because these nutritional approaches show natural ability to control immune system function even though traditional healing methods do not perform well due to their adverse effects. Disease markers and autism symptoms in autoimmune patients are evaluated through a review of recent clinical and observational studies which examine various dietary patterns. This section evaluates dietary interventions in terms of specific components alongside their mechanisms and their effect on immune markers and inflammatory markers.

Figure 1: Mechanism of Anti- Inflammatory diet action in AIDs



Mediterranean Diet

The Mediterranean Diet (MD), rooted in the traditional dietary patterns of Southern European countries, has been continuously validated by the medical science because it exhibits robust anti-inflammatory properties and benefits heart health. The Mediterranean Diet mainly consists of fresh fruits while also containing vegetables and whole grains with legumes and nuts and extra virgin olive oil as healthy fats and fish and poultry as moderate sources (Paganelli et al., 2021; Martínez-González et al., 2023) alongside minimal inclusion of red meats and processed foods. An extensive range of bioactive compounds including polyphenols especially oleuropein in olives and resveratrol in red grapes together with omega-3 fatty acids in sardines or salmon and vitamin C, E, and carotenoids in colorful produce account for the anti-inflammatory properties of this diet (Campos et al., 2022). Studies have proven that the compounds in Mediterranean foods decrease C-reactive protein (CRP) while cutting down on oxidative stress to control immune responses (Martínez-González et al., 2023).

Patients with rheumatoid arthritis and inflammatory bowel disease who follow the Mediterranean diet experience better results in disease activity scores according to Paganelli et al. (2021). MD-rich intervention participants from Campos et al. (2022) experienced improved physical function scores together with reduced IL-6 and TNF-α levels according to study results. Through the Mediterranean diet the intestinal microbiota develops beneficial bacterial compositions that promote Faecalibacterium prausnitzii production which are critical for mucosal immunity and inflammation control (Singh et al., 2023). There is rising evidence about MD's immunomodulatory potential but additional longitudinal and mechanistic research should be performed to establish dietary component standards and identify the MD's full immunomodulatory capabilities (Frasca et al., 2023; Doria et al., 2022).

Plant-Based Diets

Research shows that Plant-Based Diets (PBDs) that emphasize whole foods from plants along with limited animal food intake offer a promising approach for controlling autoimmune inflammation. Changing diets

produces natural elevations of fiber content and vitamins with minerals and phytochemicals known to control immune system activity. The polyphenols quercetin found in onions and apples and curcumin present in turmeric as well as kaempferol in leafy greens demonstrate potent antioxidant while suppressing the nuclear factor kappa B (NF-κB) pathway and influencing cytokine production (Frasca et al., 2023; Limketkai et al., 2022). Plants contain complex carbohydrates including resistant starches and soluble fibers which serve as prebiotics that nourish gut microbes for short-chain fatty acid (SCFA) production particularly of butyrate.

PBDs have been shown in scientific investigations of multiple sclerosis and systemic lupus erythematosus patients to decrease IL-6 and TNF-α levels in systemic inflammatory markers while playing a crucial role in autoimmune processes (Frasca et al., 2023; He et al., 2023). A high-fiber plant-based diet sustains a favorable microbiome in the gut and enhances SCFA-producing bacterial populations, especially Bifidobacterium and Akkermansia muciniphila (Singh et al., 2023; Belli et al., 2023). This gut microbiome plays a key role in immune homeostasis. The modifications in the gastrointestinal microenvironment foster better epithelial health and diminished intestinal porosity and stronger systemic immune mechanisms which together have potential autoimmune disease-stabilizing effects (Ghosh et al., 2020). Additional robust randomized trials about these findings must be performed because current evidence presents promising results across diverse autoimmune conditions.

Autoimmune Protocol Diet

The Autoimmune Protocol (AIP) diet incorporates a demanding food elimination plan because it targets foods believed to make autoimmune situations worse through their inflammatory effects. The diet eliminates grains while adding legumes as well as nightshades such as tomatoes and peppers and dairy together with eggs and nuts and seeds and alcohol and food additives which are reintroduced step-by-step under medical guidance. The subjective reports of patients write most of the AIP diet literature but new research demonstrates that this nutritional plan helps cut symptoms for individuals with RA and IBD (Pellegrino et al., 2023). Most theories suggest that particular food allergens trigger the development of intestinal bacteria imbalances leading to increased intestinal permeability which would worsen or activate autoimmune reactions.

Autoimmune patients who followed the AIP diet experienced significant improvements in their joint stiffness and both fatigue symptoms and gastrointestinal pain according to Pellegrino et al. (2023). The potential gut barrier strengthening and microbial composition adjustment effects of these changes seem to explain some of the treatment outcomes but current evidence lacks detailed scientific explanations. Noteworthy difficulties in adhering to the strict dietary plan result in concerns about missing key nutritional elements such as calcium and vitamins D and essential fatty acids (Paganelli et al., 2021; Roncoroni et al., 2021). Further research needs to establish the practical use of the AIP diet through controlled testing methods and thorough randomized experiments.

Specific Carbohydrate Diet (SCD)

The Specific Carbohydrate Diet (SCD) functions as a therapeutic eating method which researchers initially designed for treating Crohn's disease together with ulcerative colitis and inflammatory bowel disease patients. The dietary approach uses a fundamental theory to remove complex carbohydrates which producers think spark intestinal inflammation because bacterial fermentation transforms them into excessive bacteria. The SCD limitations include authorization of simple sugars (glucose and fructose) yet

it bars consumption of both disaccharides and polysaccharides in foods that contain grains or starchy vegetables and dairy items (Tufan et al., 2021). The SCD succeeds in achieving microbial balance reduction of intestinal inflammation by depriving intestinal bacteria of their available fermentable substrates.

Clinical research and observational studies indicate that the Specific Carbohydrate Diet effectively reduces gastrointestinal complications and improves patient life quality when used by individuals suffering from Crohn's disease and IBD (Limketkai et al., 2020; Kapar et al., 2022). People who follow the Specific Carbohydrate Diet experience improved disease activity scores and need fewer medications while their endoscopic inflammation gets better. The strictly limited components of the SCD diet cause identical nutritional deficiencies that reduce patient ongoing adoption of the diet. The understated research community remains hesitant about the diet's effectiveness because researchers cannot draw certain conclusions because there is not enough randomized controlled trial data available (McCune et al., 2021; Ananthakrishnan et al., 2022).

Table-1- Foods to include and exclude in different AIDs

Diet	Foods to Include	Foods to Avoid
Mediterranean Diet (MD)	Olive oil, leafy greens, tomatoes, whole grains (oats, bulgur, farro), legumes (chickpeas, lentils), nuts, seeds, fatty fish (salmon, sardines), fruits (Paganelli et al., 2021; Martínez-González et al., 2023; Vasquez et al., 2022)	Red meat, processed meats, refined sugars, highly processed foods, hydrogenated oils (Martínez-González et al., 2023; Afshin et al., 2019)
Plant-Based Diet (PBD)	Leafy greens, cruciferous vegetables (broccoli, cauliflower), legumes, beans, whole grains (quinoa, brown rice), fruits, seeds, nuts, turmeric, garlic (Doria et al., 2022; Frasca et al., 2023)	All animal products (meat, poultry, fish, dairy, eggs), refined sugars, processed foods, saturated/trans fats (Frasca et al., 2023; Barbaresko et al., 2013)
Autoimmune Protocol (AIP)	Non-nightshade vegetables (zucchini, greens, cucumber), grass-fed meats, organ meats, fermented vegetables (sauerkraut, kimchi), bone broth, avocado, coconut oil (Konijeti et al., 2017; Kapar et al., 2022)	Grains, legumes, dairy, eggs, nuts, seeds, nightshades (tomatoes, potatoes, eggplant), coffee, alcohol, processed foods (Konijeti et al., 2017; Pellegrino et al., 2023)
Specific Carbohydrate Diet (SCD)	Meats, eggs, non-starchy vegetables, fruits, fermented yogurt (lactose-free), honey (Tufan et al., 2021; Limketkai et al., 2023)	All grains, starchy vegetables (potatoes, corn), dairy (except specific fermented products), processed foods, disaccharides/polysaccharides (Tufan et al., 2021; Limketkai et al., 2023)

Key Components of Anti-Inflammatory Diets

Anti-inflammatory diets give therapeutic advantages because they contain bioactive compounds and essential nutrients which activate immune system pathways and control inflammation. Anti-inflammatory diets must contain **omega-3 fatty acids** which fish consumers access from salmon and sardines as well as flaxseeds and walnuts. The fatty acids avoid inflammation by blocking the production of pro-inflammatory eicosanoids and cytokines including TNF-α and IL-6 while promoting biochemical mechanisms that generate anti-inflammatory lipid mediators (Campos et al., 2022; Martínez-González et al., 2023). Of similar importance to health are **polyphenols** which consist of oleuropein found in olive oil together with resveratrol present in grapes and curcumin from turmeric and quercetin that exists within apples and onions. The compounds block NF-κB nuclear factor kappa B pathways which controls oxidative stress and limits activation of immune cells according to Frasca et al. (2023) and Ghosh et al. (2020). The gut health relies on **dietary fiber** to form appropriate microbiota and produce short-chain fatty acids with butyrate as the main SCFA product. The gut barrier integrity receives support from SCFAs produced by dietary fiber while Tregs receive activation to preserve immune tolerance through dietary fiber metabolism (Singh et al., 2023; Belli et al., 2023). These eating patterns contain high amounts of vitamins C together with vitamin D and vitamin E which function as **antioxidants**. Vitamins and antioxidants mainly originate from green leafy vegetables and citrus fruits as well as sunlight exposure to support T cells and antioxidant defense and cytokine regulation (Doria et al., 2022; Ghosh et al., 2020).

Fermented foods including yogurt, sauerkraut and kimchi enter the AIP and SCD diets since they contain **probiotic** live beneficial bacteria which help restore microbes while lowering gut permeability that affects autoimmune disease flares (Pellegrino et al., 2023). The amino acid glutamine found in bone broth and meats helps in mudifying the intestinal lining and gives energy to immune cells which actively work within inflamed tissues (Roncoroni et al., 2021).

Table 2: Summary of Clinical Studies on Anti-Inflammatory Diets in AIDs

Study	Population	Diet Type	Outcome Measures	Key Findings	Citation
Frasca et al., 2023	RA & MS patients	Plant-Based Diet	IL-6, TNF-α	Significant reduction in inflammatory markers	Frasca et al., 2023
Campos et al., 2022	IBD patients	Mediterranean Diet	CRP, GI symptoms	Improved symptoms and lowered CRP	Campos et al., 2022
Pellegrino et al., 2023	Autoimmune patients	AIP Diet	Fatigue, Joint Pain	Symptom relief observed	Pellegrino et al., 2023
Tufan et al., 2021	Crohn's disease	SCD	Disease activity score	Improved disease scores	Tufan et al., 2021

Discussion

Too many obstacles exist for clinical adoption of anti-inflammatory diets to manage autoimmune diseases even though research suggests promising benefits. Randomized controlled trials (RCTs) at a large scale represent a significant challenge in the implementation of anti-inflammatory diets. Observational studies

form the majority of research in this area because they offer important observations yet fail to prove definite cause-effect relationships (Tovar et al., 2021).

The research suffers from non-uniform definitions and operational procedures regarding the use of anti-inflammatory diets because each study follows different protocols. Different test methods for implementing the Mediterranean diet throughout studies create inconsistent measurements that prevent the comparison of research findings and identifying precise dietary guidelines to manage autoimmune diseases Vasquez et al., 2022.

Table 3: Mechanistic Targets of Nutrients in Anti-Inflammatory Diets

Nutrient/Compound	Food Source	Target Mechanism	Effect
Polyphenols	Berries, olive oil	NF-κB inhibition	↓ TNF-α, IL-6
Omega-3s	Fatty fish	Eicosanoid modulation	↓ CRP
Fiber	Oats, legumes	SCFA production	Treg activation
Curcumin	Turmeric	Cytokine suppression	↓ IL-1β, IL-6

Moreover, most studies focus on short-term dietary interventions, which limits the understanding of the long-term effects of these diets on disease progression (Paganelli et al., 2021). Another challenge is the individual variability in response to dietary changes, which may be influenced by genetic factors, the gut microbiome, and other environmental variables. Personalized nutrition strategies may be required to optimize the effectiveness of dietary interventions for different individuals (Ghosh et al., 2020).

Table 4: Nutritional Gaps and Risks in Elimination Diets

Diet	**Potential Nutrient Deficiencies**	**Suggested Nutrient Sources**
AIP	Calcium, Vitamin D	Bone broth, leafy greens, fish
SCD	Fiber, B-vitamins	Allowed fruits, fermented yogurt
PBD	Vitamin B12, Iron	Fortified foods, legumes, dark greens

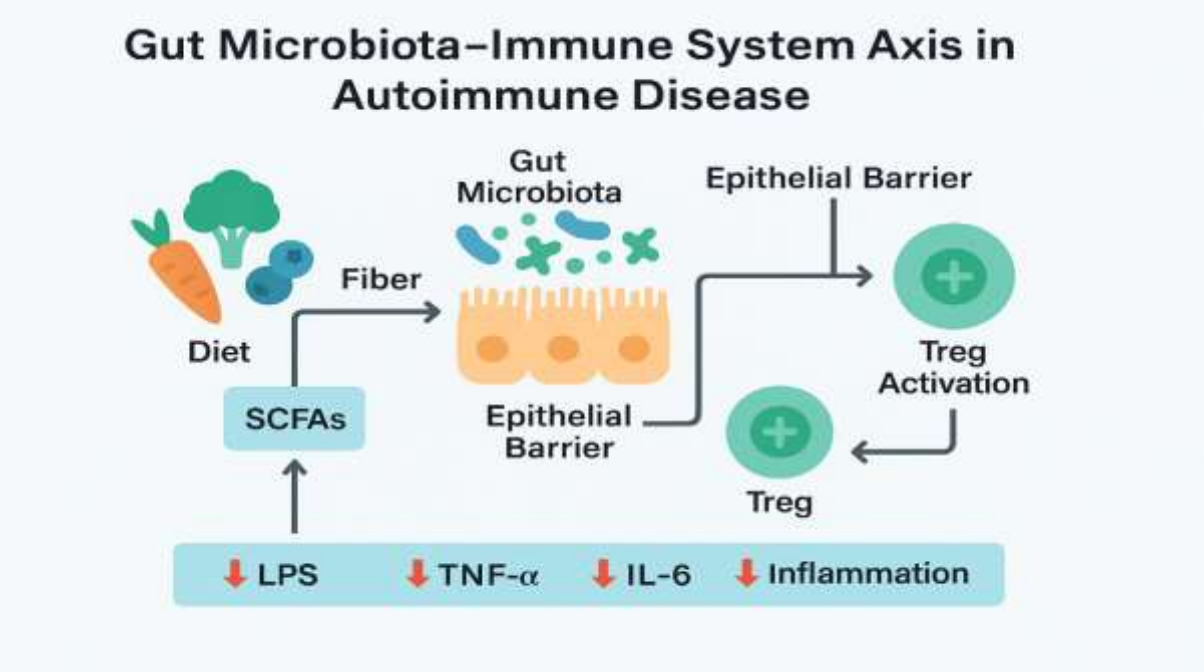


Figure-2: Gut Microbiota- Immune system Axis in autoimmune disease- The illustration shows how gut microbiota (GM) connects with immune system (IS) to affect inflammation in autoimmune diseases (AID). The diagram explains how Short chain fatty acids together with Tregs and intestine barrier health influence immune response modulation.

Table 5: Summary of beneficial diets for several autoimmune conditions

Autoimmune Disease	Beneficial Diets	Key Foods Recommended	Mechanisms Involved
Rheumatoid Arthritis (RA)	MD, AIP, PBD	Olive oil, fatty fish, leafy greens, turmeric	Reduces pro-inflammatory cytokines (IL-6, TNF-α)
Inflammatory Bowel Disease (IBD)	MD, SCD	Yogurt, carrots, chicken, non-starchy veggies, berries	Improves gut barrier, reduces dysbiosis
Multiple Sclerosis (MS)	PBD, MD	Leafy greens, flaxseeds, legumes, berries	Antioxidants, SCFAs improve neuroinflammation
Lupus (SLE)	PBD, MD	Tomatoes, garlic, nuts, green tea, blueberries	Modulates Th17/Treg balance, reduces oxidative stress
Psoriasis	AIP, PBD	Zucchini, turkey, kale, bone broth	Decreases IL-17 and keratinocyte activation

Conclusion

In summary, anti-inflammatory diets such as the Mediterranean Diet (MD), Plant-Based Diet (PBD), Autoimmune Protocol (AIP), and Specific Carbohydrate Diet (SCD) offer promising adjunctive strategies in the management of autoimmune diseases. Anti-inflammatory dietary plans rely on whole food nutrients including polyphenols and antioxidants along with vitamin C and vitamin D and fiber and omega-3 fatty acids because these nutrients activate immune function mechanisms which share similar features. The

Mediterranean diet specifically lowers rheumatoid arthritis patients and inflammatory bowel disease patients' inflammatory markers such as C-reactive protein (CRP) and interleukin-6 (IL-6) (Paganelli et al., 2021; Campos et al., 2022; Martínez-González et al., 2023). The foundation of anti-inflammatory diets should focus on eliminating animal food while relying on plant foods such as leafy greens with turmeric and legumes with berries because these foods contain high levels of fiber and antioxidants that help improve gut microbiome configurations to support immune system functions (Frasca et al., 2023, Limketkai et al., 2022).

Autosomal Inflammatory Protocol and Specific Carbohydrate Diet bring beneficial effects to autoimmune patients through combined food-trigger elimination and intestinal wall enhancement according to clinical research evidence. Professional nutritional guidance becomes crucial for sustained implementation of these diets because such diets create dangerous risks for nutritional inadequacies (Pellegrino et al., 2023; Tufan et al., 2021). The dietary protocols work together through similar mechanistic advantages when short-chain fatty acids increase in the gut and NF-κB becomes suppressed along with Treg cells activated by omega-3 fatty acids and polyphenols and fermentable fibers per findings of Singh et al. (2023) and Belli et al. (2023). The restricted clinical usage of dietary programs stems from researchers not having standardized dietary standards along with patient response variations so additional randomized trials need longer follow-ups involving bigger participant numbers. Additional research must now work toward tailoring dietary approaches by examining variables which include individual patient factors like microbiome profile combined with disease characteristics and their nutritional condition. Medical recommendations should include specific anti-inflammatory foods such as oily fish, legumes and fermented vegetables alongside cruciferous greens and extra virgin olive oil for supporting patients with autoimmune diseases in the present time.

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