
ABSTRACT
There is an ever-increasing body of evidence that supports the health advantages of plant-based nutrition. Working with a modified 'Paddison Program' version of this dietary framework, along with a strong daily exercise plan, enabled the author of this report to recover from crippling RA and become symptom free and drug free long term and help many others achieve life-changing results rarely witnessed with this condition. The objective of this report is to provide published evidence of the impact of lifestyle choices on RA disease progression, highlighting the link between gut health and disease activity, and to encourage medical practitioners to encourage safe, healthy lifestyle habits for their patients to minimise their disease perpetuation.

SUMMARY
Every patient needs to eat, and eat they will. So why not encourage them to eat in a way that supports their overall health? Despite popular belief that diet plays little role in RA outcome, the truth is that diet plays a dominant role, and changes to diet create rapid changes in patient symptoms. The table below explores the interaction between the BLAAME (bacteria, leaky gut, acidosis, acid levels in the stomach, mucosal lining integrity and enzymes) with disease severity.

<table>
<thead>
<tr>
<th>Issues: BLAAME</th>
<th>Description</th>
<th>Cause</th>
<th>Natural Solution (Effective)</th>
<th>Supplement Solution (Mildly Effective)</th>
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<tbody>
<tr>
<td>Bacteria</td>
<td>Autoimmune disease are dramatically influenced by gut bacteria. In cases of Rheumatoid Arthritis (RA), newly diagnosed patients have much higher presence of certain gut bacteria, more pathogenic gut bacteria, and lower levels of healthy bifidobacteria than controls. Established RA patients commonly have small intestinal bacterial overgrowth, and the severity of RA symptoms are proportional to the bacterial overgrowth. Likewise, in other autoimmune conditions, correlation has been validated between the altered intestinal microbiota composition with the onset of Type 1 Diabetes. While bacterial diversity is associated with health, Psoriatic Arthritis (PsA) patients have less gut bacteria, and both PsA and Crohns patients have less diversity than controls.</td>
<td>Diet has a huge impact on gut bacteria and therefore immune function. Antibiotics can permanently change the gut flora and even a single use can set a platform for pathogenic bacteria and rapidly reduce bacterial diversity.</td>
<td>Prebiotics (bacteria-friendly foods) such as leafy greens and all plant foods. Fermented foods (bacteria-rich foods) such as miso paste, sauerkraut, kefir. Exercise [not endurance ex.] improves microbiome. Brain and gut microbiome are linked in a functional axis; improving either improves immune control.</td>
<td>Probiotic Supplements have been shown to reduce RA symptoms via restoration of the gut microbiome.</td>
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<td>Leaky Gut</td>
<td>Intestinal permeability or 'leaky gut' is associated with Rheumatoid Arthritis. This process involves undigested food particles or bacteria leaking into the bloodstream, creating a cross reactivity to NSAID's are a major cause. Prednisone causes leaky gut. Avoidance of aggravators, heals naturally, cabbage juice and other NRF2 promoters. L-Glutamine supplementation can improve gut permeability.</td>
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the body’s own tissues. The presence of joint inflammation means more gut inflammation. Gut inflammation creates gut lesions, furthering more joint inflammation. Biopsies of intestinal tissue of RA sufferers show a partial or complete loss of the epithelium. If the leaky gut can be reversed by re-establishing the intestinal barrier then autoimmune diseases can be arrested in just five low dosages, either IV or tablet form.

| Acid Secretion Deficiency (Stomach) | RA sufferers have a high frequency of low gastric acid secretion. Low HCL equates to poor protein digestion. Undigested proteins leaking into the blood can trigger self-attack on the joint lining through molecular mimicry. Low HCL contributes to the small intestinal bacterial overgrowth (as described above) Low HCL means decreased absorption of ferric iron, possibly perpetuating anaemia, along with other minerals and trace elements exacerbating malnutrition (see Mucosal lining below). | Stress and Autonomic imbalance

| Acidosis | The Western diet develops a diet-induced low-grade systemic metabolic acidosis. We become more acidic as we age due to declined renal function (kidneys). The synovial fluid in RA patients is too acidic, associated with more inflammation. The most influencing factors on acid/alkaline balance are protein (acid forming) and potassium (alkaline forming). | Western diet, stress, all medications, poor respiration and age

| Mucosal Lining | Nutrients are absorbed in the mucosal lining which also acts as protective gut barrier. A depleted mucosal lining leads to a state of malnutrition in RA patients and the nutritional status/gut health and RA severity are inversely related. | Prednisone, NSAIDs Stress, causing autonomic imbalance and fight-or-flight system dominance

| Prebiotic fructans | Exercise

| Celery juice, oatmeal (later), Apple Cider Vinegar Meditation | Alternate nostril breathing to improve vagus, which can help improve gastric acidity

| Betaine Hydrochloride | RA symptoms improved from alkalizing minerals supplementation and potassium supplementation.

| Curcumin, Arginine, Probiotics | Plant-based “Phase 3” foods in the Paddison Program are all alkaline forming, to arrest acidosis: Buckwheat, Quinoa, Sweet potato, greens, seaweed Celery and Cucumber juice Polyphenol-rich foods such as olives, citrus, grapes, green tea that also target TNF

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Enzymes | Enzymes are required for all digestive and metabolic activity in the body\textsuperscript{149} Digestive enzymes are depleted with age, but can be accessed through foods | Western Diet | Sprouted nuts and seeds, raw honey, green juices, all raw foods, pineapple, papaya, Miso\textsuperscript{150} | Bromelain, papain, nattokinase\textsuperscript{151}

**FAQ's**

**HAS LEAKY GUT EVER BEEN PROVEN?**
The term “leaky gut” has become increasingly common in medical research, frequently appearing in the most prestigious publications. A review of the available articles reveals that there is growing consensus that the shift in microbiome demographics and intestinal permeability play a causative role in immune alteration towards an inflamed or autoimmune disease state.

Here’s what some leading researchers are publishing in the leading medical journals:

*International Journal of Clinical and Experimental Pathology:* “Autoimmune hepatitis is associated with leaky gut and intestinal microbiome dysbiosis. The impaired intestinal barrier may play an important role in the pathogenesis of autoimmune hepatitis”\textsuperscript{152}

*Therapeutic Advances in Gastroenterology:* “In health, homeostasis exists between the intestinal microbiome, mucosal barrier, and immune system. In irritable bowel disease, this homeostasis is disrupted leading to durable alterations in the intestinal microbiome (dysbiosis), disrupted barrier function (leaky gut), and immune system activation (inflammation)”\textsuperscript{153}

*FEBS Letters:* “these studies suggest that the intestine may be a critical organ in triggering disease through altered immune homeostasis and a leaky gut with proinflammatory conditions may be an event that begins before the actual onset of clinical phenotype”\textsuperscript{154}

*Journal of Internal Medicine:* “In addition, a leaky gut mucosa can trigger systemic inflammation mediating peripheral insulin resistance that together with a blunted incretin response aggravates the hyperglycaemic state”\textsuperscript{155}

*American Journal of Clinical Nutrition:* “The data suggest that a leaky gut barrier is linked with liver steatosis and could be a new target for future steatosis therapies.”\textsuperscript{156}

*Pediatric Diabetes:* “Increasing evidence, both functional and morphological, supports the concept of increased intestinal permeability as an intrinsic characteristic of type 1 diabetes (T1D) in both humans and animal models of the disease.”\textsuperscript{157}

**WHAT ABOUT NUTRITIONAL DEFICIENCIES?**
Although nutrient deficiency is a primary concern for many people when considering plant-based eating, the Academy of Nutrition and Dietetics states\textsuperscript{158} that “vegetarian diets, including total vegetarian or vegan diets, are healthful, nutritionally adequate, and may provide health benefits in the prevention and treatment of certain diseases.” The Academy’s position paper goes on to conclude that “well-planned vegetarian diets are appropriate for individuals during all stages of the life cycle, including pregnancy, lactation, infancy, childhood, and adolescence, and for athletes.” Plant-based diets, including calorie-restricted, weight-loss diets, have been found to be more nutritionally sound than typical dietary patterns.\textsuperscript{159}
ARE THERE OTHER BENEFITS?

It is now well established that RA is associated with increases in both morbidity and mortality compared with the general population. RA increases the risk of cardiovascular (CV) mortality by up to 50% compared with the general population. Plant-based diets have been associated with lowering overall and ischemic heart disease mortality. Furthermore, a plant-based diet has also been associated with sustainable weight management, reducing medication needs; lowering the risk for most chronic diseases; decreasing the incidence and severity of high-risk conditions, including obesity, hypertension, hyperlipidemia, and hyperglycemia, and even possibly reversing advanced coronary artery disease and type 2 diabetes.

ARE THERE ANY DANGERS, RISKS OR CONTRAINDICATIONS?

- The first two days of the Paddison Program is a 2 day cleanse. If patients are using medications that must be taken with food, these two days should be skipped.
- High blood pressure can usually resolve itself within a few days to a few weeks. Patients on high blood pressure medications should be made aware of this, so as to be monitored closely and avoid potential overmedication and be given guidelines about their medication dosages should their blood pressure come back to normal.
- Patients eating an all-plant diet should consume a B12 supplement to avoid potential deficiency.

SUMMARY

A whole-foods, low-fat, plant based (vegan) diet is the ideal approach for a patient with Rheumatoid Arthritis. Succinctly stated by authors of this British Journal of Rheumatology study “We conclude that a vegan diet changes the faecal microbial flora in RA patients, and changes in the faecal flora are associated with improvement in RA activity”. The Paddison Program for Rheumatoid Arthritis builds on the successful vegan dietary framework and adds evidence-based modifications to enhance these improvements to gastrointestinal health and intestinal barrier repair. For more information visit www.paddisonprogram.com
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