



FACT SHEET: Rheumatoid Arthritis & Diet

Key Points

Global incidence and prevalence rates are increasing (1).

International guidelines (3) focus on treatment with disease-modifying anti-rheumatic drugs (DMARDs), which are not without significant risks and side effects.

It is more common in women, smokers, and those with poor dental health, poor sleep, unhealthy diets, obesity, or family history of RA (2).

Optimal diets are high in fruits, vegetables, whole grains, omega-3 fats, and nuts while low in other fats, salt, sugar, red, and processed meats (4).

An optimal diet is anti-inflammatory, and reduces the risk of comorbidities.

Rheumatoid arthritis (RA) causes significant disability (1) and increases risk of all-cause mortality, cardiovascular disease, infection, respiratory illness, osteoporosis, and cancer (2).

Pathomechanisms Influenced by Diet

Inflammation

Obesity

- Visceral adipose tissue increases cytokine production and chronic systemic inflammation
- Increased clearance diminishing bioavailability of anti-TNF drugs
- Increased erythrocyte sedimentation rate (ESR) values - a marker of inflammation
- Increased risk of CVD comorbidity

Plant-based diet

- Reduced neutrophils, monocytes, and platelets
- Increased dietary fibre
- Decreased risk of CVD comorbidity

Intestinal Flora

Anti-Proteus mirabilis antibodies elevated in RA

- Molecular mimicry

Prevotella copri and TMAO

- Thrive on choline and carnitine from meat, poultry, fish, eggs
- Reduced effectiveness of DMARDs
- Increased inflammation
- Increased risk of CVD comorbidity

Plant-based diet

- Decreased TMAO
- Increased dietary fibre, SCFA
- Decreased risk of CVD comorbidity



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The Scientific Evidence

Epidemiological Evidence

A study of participants from the 2017 NHANES survey (n=8789) found that advanced age, regular smoking, obesity, osteoporosis, diabetes, excess to toxic levels of supplemental vitamin A intake, as well as inadequate copper intake were positively correlated with having RA (5).

A 2004 study of dietary risk factors for the development of polyarthritis found that the highest level of consumption of red meat (OR 1.9), meat and meat products combined (OR 2.3) and total protein (OR 2.9) were at increased risk of disease. (6).

Evidence From RCTs and Corresponding Meta-Analyses

There are few RCTs for diet and RA. In a small 2001 RCT, 40.5% of patients randomised to 9 months on a vegan diet free of gluten met ACR20 improvement criteria, compared with just one patient in the non-vegan control group (7). Recently, Lederer et al. demonstrated significant decreases in markers of inflammation, including neutrophils, platelets in a small group of healthy omnivores after 4 weeks on a controlled vegan diet compared with a controlled mixed diet control group (8).

References

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General Recommendations

Eat from a wide variety of whole plant foods:

Maximize the intake of high-quality plant foods such as vegetables, whole grains, legumes, fruits, nuts, seeds, herbs, and spices; your health will benefit from every step towards more whole plant foods.

Eliminate or limit all processed foods, refined carbohydrates, and sugar-sweetened foods and beverages.

Eliminate red and processed meat products such as burgers, sausages, bacon, ham, salami, dried meat, canned meat, and pastrami (10).

Eliminate or limit other animal products such as poultry, fish, eggs, cheese, and dairy.

Make sure to **cover potentially critical nutrients** with a wide variety of plant foods, enriched foods/drinks, or supplements (especially vitamin B12 and vitamin D).

Disease Specific Recommendations

Limiting sugar intake may be important for management of RA. While omega-3 fats appear to be beneficial plant-based and algae-based sources may be preferable due to environmental contaminants and a possible role for TMAO in RA.

Some RA patients may see improvement with elimination of dietary gluten.