

FACT SHEET: Rheumatoid Arthritis & Diet

Key Points

Global incidence and prevalence rates are increasing.¹

International guidelines* focus on treatment with disease-modifying antirheumatic 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, and/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.³

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

*Mian et al. A Systematic Review of guidelines for managing rheumatoid arthritis. BMC Rheumatology (2019) 3:42. <https://doi.org/10.1186/s41927-019-0090-7>



Rheumatoid arthritis (RA) causes significant disability¹ and increases risk of all-cause mortality, cardiovascular disease, infection, respiratory illness, osteoporosis, and cancer.²

Pathomechanisms That Are Influenced by Diet

Inflammation

Obesity

Visceral adipose tissue increases cytokine production and chronic systemic inflammation

Increased clearance diminishing bioavailability of anti-TNF drugs

Increased ESR values

Increased risk of CVD comorbidity

Plant-based diet

Reduced neutrophils, monocytes, and platelets

Increased dietary fiber

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 fiber, SCFA

Decreased risk of CVD comorbidity



FACT SHEET: Rheumatoid Arthritis & Diet

The Scientific Evidence

Epidemiological Evidence

2017 NHANES Survey found multivariable odds ratios (OR) as follows: obese, 3.26 ($P < 0.001$) and, interestingly, insufficient vitamin A intake 0.70 ($P = 0.036$). Univariate OR for excess (toxic) vitamin A intake was 4.22 ($P = 0.048$), and inadequate copper intake 1.42 ($P = 0.019$).⁴ While carotenoid conversion to vitamin A is adjusted based on need, preformed vitamin A from supplements and animal-derived foods may be absorbed in excess.

In 2004, Pattison et al. found that, “Among patients, the level of red meat intake was higher ($P = 0.04$) and that of vitamin C was lower ($P = 0.03$) compared with intake among controls, but no difference in total energy intake was observed.”⁵

Evidence From RCTs and Corresponding Meta-Analyses

There are few **RCTs for diet and RA**. In a small 2001 RCT, 40.5% of patients randomized 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.⁶

Recently, Lederer et al. demonstrated **significant decreases in markers of inflammation**, including neutrophils, monocytes, and platelets in a small group of healthy omnivores after 4 weeks on a controlled vegan diet compared with a controlled mixed diet control group.⁷

General Recommendations

Eat predominantly or entirely 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 or limit red and processed meat products (such as burgers, sausages, bacon, ham, salami, dried meat, canned meat, and pastrami).

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); find more information in our [Nutrition Library](#).

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.

For more details on how to implement a whole food, plant-based diet, have a look at [our brochure](#).

¹ Safiri S, et al. Ann Rheum Dis 2019;0:1–9. doi:10.1136/annrheumdis-2019-215920

² Sparks, JA, Ann Int Med 2019; 170(1): ITC 1-22. doi:10.7326/AITC201901010

³ Chehade L, et al. Curr Rheumatol Rev 15(3): 209-214

⁴ Xu and Lin (2017), Characteristics and risk factors of rheumatoid arthritis in the United States: an NHANES analysis. PeerJ 5:e4035; DOI 10.7717/peerj.4035

⁵ Pattison, DJ, et al. Arth & Rheumat 2004; 50(12): 3804-3812 DOI: 10.1002/art.20731

⁶ Hafström, B et al. Rheumatology 2001; 40: 1175-1179

⁷ Lederer A-K et al., Vegan diet reduces neutrophils, monocytes and platelets related to branched-chain amino acids – A randomized, controlled trial, Clinical Nutrition, <https://doi.org/10.1016/j.clnu.2020.02.011>

