

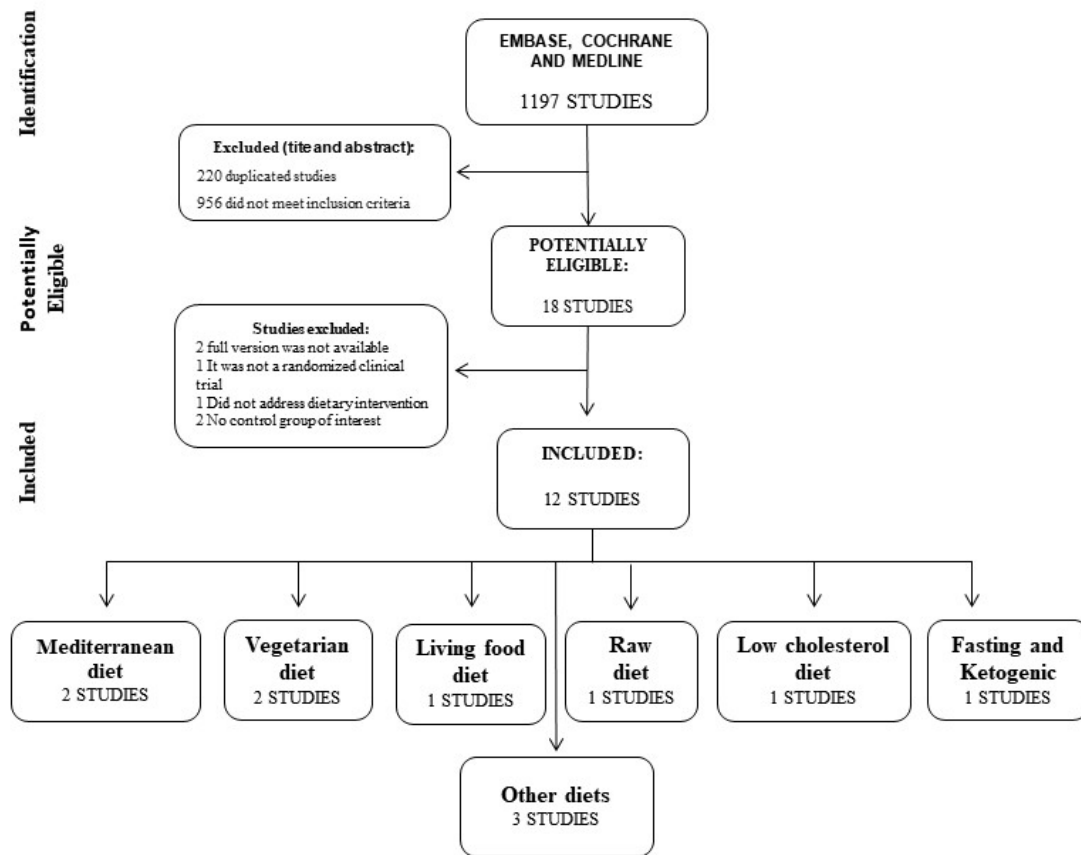
First author, Year	Inclusion criteria	Intervention group	Outcomes of the study	No	Main results
<b>Sköldstam L, 2003</b>	-Rheumatoid arthritis (the 1987 American College of Rheumatology criteria); -disease duration $\geq 2$ years; -clinically stable and under adequate control;	Mediterranean diet	-DAS28; - Health Assessment Questionnaire; - Physical function index; - SF36 Health Survey; -health survey of quality of life; -daily consumption of NSAID;	56	- MD group showed a decrease in DAS28 of 0.56 ( $p < 0.001$ ), in HAQ of 0.15 ( $p = 0.020$ ), and in two dimensions of the SF-36 Health Survey: an increase in "vitality" of 11.3 ( $p = 0.018$ ) and a decrease in "compared with one year earlier" of 0.6 ( $p = 0.016$ ).
<b>Margaretha AH, 1994</b>	- Rheumatoid arthritis (American Rheumatism Association criteria)	Vegetarian diet (vegano or lactovegetarian diet)	-Fatty acids in the plasma; -No of swollen joints, - HAQ; - Pain score on a visual analogue scale - Patients global assessment - ESR	27	-The concentrations of the fatty acids were significantly reduced after 3.5 months with a vegan diet ( $P < 0.0001$ and $e P < 0.01$ respectively), but the concentration increased to baseline values with a lactovegetarian diet. -The alterations of the fatty acid profiles in plasma phospholipids as a result of a vegan and a lactovegetarian diet were extensive in patients with rheumatoid arthritis.
<b>Nenonen MT, 1998</b>	-Chronic and active rheumatoid arthritis (American Rheumatism Association criteria criteria); - Steinbrocker's functional class II-III;	Uncooked vegan diet, rich in lactobacilli	-Subjective experiences; - Gastrointestinal functions on the 0-10 visual scale - CRP and ESR - Changes in the disease activity: - No number of swollen and tender joints, number of tender joints; - HAQ - DAS28	43	-Subjective relief of the symptoms of the rheumatoid arthritis was achieved with a radical dietary manipulation (uncooked extreme, lactobacilli rich vegan diet, 'living food') $P < 0.03$ , but a return to an omnivorous diet aggravated symptoms. - Decrease in the disease activity with lactobacilli-rich and chlorophyll-rich drinks, increase in fibre intake, and no need for gold, methotrexate or steroid medication ( $R^2 = 0.48$ , $P = 0.02$ ). - No significant effects on other disease markers;
<b>García-Morales JM, 2020</b>	- Women older than 18 years, with a confirmed diagnosis of rheumatoid arthritis (American College of Rheumatology 2010 classification criteria); - Functional class I-III;	Mediterranean diet; DEP; DEP + MD	-DAS28 -Perception of pain: visual analog scale (0-10). -CRP and ESR; -HAQ -SF 36 Health Survey	144	-The combination of MD + DEP improved the quality of life in rheumatoid arthritis patients with low disease activity receiving DMARDs -The MD intervention alone exerted improvements in several dimensions of the SF-36 score (i.e., physical function, body pain, global score, physical and mental components), but without reaching a significant difference compared with the other groups. -Patients who were included in the MD + DEP and DEP groups showed 15 points of increase in health-related quality of life global punctuation ( $p = 0.01$ ).
<b>Hanninen O, 2000</b>	- Fibromyalgic subjects, - Rheumatoid arthritis	Living food diet Omnivorous;	-Subjective symptoms. -Activity of rheumatoid arthritis. -Joint stiffness at morning and pain at rest in fibromyalgic subjects. -Serum carotenoids, -Antioxidant and lignan levels, -Daily urinary lignans and related compounds.	115	LF users, compared to omnivorous controls, showed high amounts of quercetin, kaempferol and myricetin in their diet; serum vitamin C levels and vitamin E cholesterol ratio had a statistically significant increase; significantly higher amounts of various carotenoids; the serum levels of beta and alfa carotenes as well as those of lycopene and lutein were several folds higher in long term users of the living food. The rheumatoid patients reported significant subjective alleviation of their symptoms. In the fibromyalgic subjects, their joint stiffness at morning ( $P = 0.001$ ), their pain at rest ( $P = 0.003$ ) as well as their general health improved.

<b>Hare DC, 1983</b>	-Rheumatoid arthritis; Or - Osteoarthritis which have led to deformity of the joints and osteophytic outgrowths;	Raw diet	- Perception of pain and symptoms; - ESR and hemoglobin; - Weight records.	12	Eight patients felt better within from one to four weeks, of the other four patients, two improved up to five or six weeks and then had relapses, and two found no relief at all. The improvement noted in each case was a decrease of pain, stiffness and swelling. The conditions which were not relieved were the pain arising in joints with active disease of bone and the symptoms due to toxemia. All the patients lost weight during the first week on the diet.
<b>Panush RS, 1983</b>	Rheumatoid arthritis stage I-III, who were on stable medication regimens;	Experimental diet (little meat except fish and occasional fowl, no fruit, no herbs or spices, no dairy products, no alcoholic beverages, no additives)	-Patients' and examiner's global assessments; - Duration of morning stiffness, joint count, swelling of joints, bilateral grip strength, time to walk 50 feet; -Hand films, complete blood count and differential count; - Urinalysis, - Chemistry profile; - Rheumatoid factor, -Antinuclear antibody test, C3, C4, and ESR	30	There were no clinically important differences among rheumatologic, laboratory, immunologic, radiologic, or nutritional findings between patients on experimental and placebo diets. This study failed to provide evidence of objective overall clinical benefit of this diet as followed by a group of patients with longstanding, progressive, active rheumatoid arthritis.
<b>Shah M, 2002</b>	- Systemic lupus erythematosus for at least 6 months - have an LDL cholesterol level $\geq 100$ mg/dl	National Cholesterol Education Program Step 2 diet: 30% or less calories from fat (7% from saturated fat, 13% from monounsaturated fat, and 10% from polyunsaturated fat), and < 200 mg of cholesterol per day;	-TC, LDL, HDL, TG; - TC:HDL ratio; - Body weight; - nutrient intakes (percentage total calories from fat, SFA, MUFA and PUFA); - QOL;	17	- -The treatment by time interaction was significant for all the dietary variables ( $p = 0.0003$ to $0.02$ ). QOL was reported to improve by 15–17% in the diet group and decrease by 4–6% in the control group, and the treatment by time interaction was significant ( $p = 0.05$ ). -The treatment by time interaction was significant for HDL cholesterol ( $p = 0.04$ ). -A significant reduction was seen in the diet group for total cholesterol at 6 and 12 weeks, LDL and HDL cholesterol at 6 weeks, and body weight at 12 weeks ( $p = 0.0002$ to $0.01$ ).
<b>Beri D, 1988</b>	Rheumatoid arthritis who had not received any DMARDs drugs previously	Diet I: isocaloric diet consisting of fruit, vegetables, sugar, and refined oil. Diet II: diet I + all pulses. Diet IIIA: diet I + wheat and wheat products. Diet IIIB: diet I + rice and rice products. Additions of milk and milk products (diet IV) and non-vegetarian food (diet V).	- Morning stiffness - Joint pain score - Articular index: Ritchie's method. - Patients' global assessment; - Hemoglobin, total leucocyte estimation; -ESR -Latex fixation titre;	27	- 71% of the participants showed significant clinical improvement (responsive), and four didn't show benefit from the first and second diets. - Responsive patients and diet I: patients showed a mean percentage improvement in the clinical variables varying from 25% to 54%, comparing with their baseline levels, and the improvement in their ESR was 33%. - Responsive patients and diet II: it led to deterioration in the condition of three patients; one showed a rapid flare of symptoms. The resting two patients had aggravation of their disease, especially with one pulse. The other seven patients had clinical improvement and a mean percentage improvement of 45% in their ESR. - Responsive patients and diet III (A and B): it led to deterioration in the status of the remaining six patients; four of them worsened with the cereals and two with rice and rice products. Only four patients joined diet IV; two deteriorated, and two improved. Two patients entered diet V, and both worsened. - Five patients (9%) presented weight loss (there was no difference between good and poor responders' weight loss).
<b>Abou-Raya A, 2014</b>	Adults with a body mass index $\geq 30$ , who satisfied	Diet only, exercise only,	- PASI; - DAS28;	55	- In the intervention groups, the mean reduction in body weight was 15.0% (12

	the classification of psoriatic arthritis criteria.	and diet plus exercise groups	<ul style="list-style-type: none"> <li>- HAQ;</li> <li>- DBI</li> <li>- Fatigue numeric rating scale.</li> <li>- Glucose, lipid profile, ESR, CRP;</li> <li>- TNF alpha, IL-6, IL-17;</li> <li>- BMI</li> <li>- ACR20</li> <li>- systemic inflammation markers,</li> <li>-PGA</li> </ul>		<p>months); in the control group it was 2% (p=0.001).</p> <ul style="list-style-type: none"> <li>- Diet plus exercise group showed a significant improvement in ACR20, PASI, DAS28, BDI, fatigue, PGA.</li> <li>Further, there was significant reductions in serum levels of IL-6, TNF-alpha, CRP and IL-17 compared to controls.</li> <li>- Exercise group showed significant reductions in systemic inflammatory markers and significant improvement in ACR20 and response.</li> <li>- Linear correlation between mean percent of body weight loss and PASI score reduction (<math>r=0.587</math>; <math>p=0.002</math>).</li> <li>- There was evidence that lifestyle modification supports traditional pharmacological approach in the treatment of obese PsA patient.</li> </ul>
<b>Fraser DA, 2000</b>	Rheumatoid arthritis (American College of Rheumatology criteria)	<p><b>Fasting:</b> 7 day supervised sub-total fast &lt;50 g carbohydrate/day , total energy &lt; 865 kJ (205kcal)/day.</p> <p><b>Ketogenic diet:</b> 7 days providing between 2000 and 2500kcal (8.4-10.5 MJ) per day, including 0.8g protein/kg body weight per day and &lt; 40g carbohydrate/day .</p>	<ul style="list-style-type: none"> <li>- IL-6;</li> <li>- DHEAS and cortisol;</li> <li>- Kketone body</li> <li>- b-HB</li> </ul>	23	<ul style="list-style-type: none"> <li>- Significant changes at day 7 of fasting: decrease in the concentration of serum IL-6, improvements in ESR, CRP and tender joint count.</li> <li>- No changes in disease activity variables during ketogenic diet study at any time-point.</li> <li>- DHEAS concentrations were increased (by 34%) at day 7 comparing to baseline after fasting and ketogenic diet.</li> <li>- Cortisol increased significantly at day 7 of the ketogenic diet.</li> <li>- Significant increases in b-HB at day 7 (in both groups).</li> <li>- Statistically significant correlations: <ul style="list-style-type: none"> <li>*IL-6 and tender joint count at baseline (<math>\tau = 0.57</math>, <math>p &lt; 0.03</math>)</li> <li>*IL-6 and CRP at day 7 (<math>\tau = 0.55</math>, <math>p &lt; 0.03</math>) in the fasting patients</li> <li>* IL-6 and ESR (<math>\tau = 0.47</math>, <math>p &lt; 0.05</math>), CRP (<math>\tau = 0.47</math>, <math>p &lt; 0.05</math>) and tender joint count (<math>\tau = 0.55</math>, <math>p &lt; 0.02</math>) at day 21 in the ketogenic diet patients.</li> <li>* IL-6 concentrations correlated with cortisol at baseline (<math>\tau = 0.63</math>, <math>p &lt; 0.02</math>) and day 21 in the fasting patients (<math>\tau = 0.54</math>, <math>p &lt; 0.03</math>).</li> <li>* DHEAS and ESR at day 21 (<math>\tau = 0.49</math>, <math>p &lt; 0.05</math>) in the fasting study.</li> </ul> </li> </ul>

No: number; MD: Mediterranean diet; DMARDS: The disease modifying antirheumatic drugs;NSAID: non-steroidal anti-inflammatory drug; DAS 28: Disease Activity Score Calculator for Rheumatoid Arthritis; SF36 Health Survey: Short Form 36-item Health Survey; HAQ: Stanford Health Assessment Questionnaire Index; ESR: erythrocyte sedimentation rate; CRP: C-reactive protein; DEP: dynamic exercise program; LF: living food diet; TC: Total Cholesterol; LDL: low density lipoprotein; HDL: high density lipoprotein; TG: triglyceride; SFA: saturated fat; MUFA: monounsaturated fat; PUFA polyunsaturated fat; QOL: Quality of life; PASI: psoriasis area and severity index; BDI: Beck's Depression Inventory; TNF-alpha: tumour necrosis factor alpha; IL-6: interleukin- 6; IL-17: interleukin-17; ACR20: American College of Rheumatology 20 criteria; PGA: patient global assessment; PsA: psoriatic arthritis criteria. DHEAS: dehydroepiandrosterone; B-HB:beta-hydroxybutyrate;

**Supplemental Table 1:** Description of clinical trials included in the systematic review.



**Figure 1:** Flow diagram of the systematic review procedures.