



ARTHRITIS TALKS

Gluten and Arthritis

SEPTEMBER 26, 2024



Presenters



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(Moderator)



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Arthritis steals... mobility. careers.
joy. identity. Arthritis devastates lives.

**Arthritis Awareness Month is
September 3–October 12.**

**It's time to crush the stigma
and change the conversation.**

Visit arthritis.ca/steals
to learn more.



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Arthritis SOCIETY CANADA

Q&A

Welcome to Q&A
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Gluten-related disorders and arthritis



Are gluten free diets recommended for people living with arthritis?



Potential food intolerances for people living with arthritis

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Q: What are gluten-related disorders?

Gluten-Related Disorders



Celiac Disease

Autoimmune disease that causes damage to the gut lining

Gluten



Wheat Allergy

IgE-mediated allergic reaction to proteins found in wheat

Wheat proteins



Non-Celiac Gluten/Wheat Sensitivity

GI and extra-GI symptoms after ingesting gluten or other wheat components

Gluten and/or ATIs

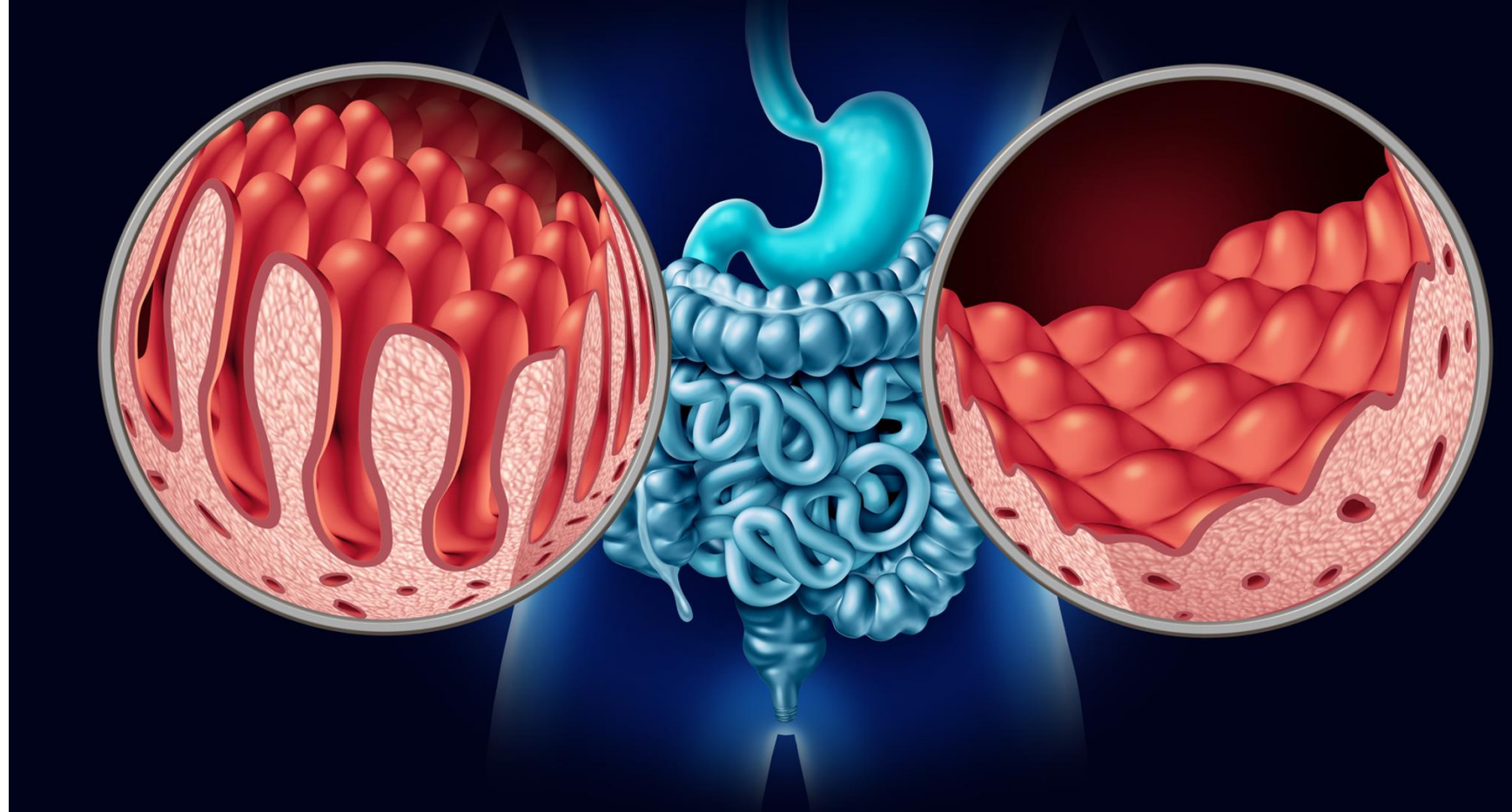


Fructan Intolerance


Intolerance to fermentable carbohydrates (FODMAP)

Fructans





Q: Is gluten intolerance the same as celiac disease?

	HIGH		LOW	
	Celiac Disease	Wheat Allergy	Non-Celiac Gluten/Wheat Sensitivity	Fructan Intolerance
Diagnosis	IgA (tTg-IgA) + IgA antibodies Small intestinal biopsy	Skin prick test Oral food challenge Allergist	Rule out CD and WA Gluten challenge No gut damage	Fructan-containing foods challenge (wheat, rye, barley)
Associated Symptoms	GI: Abdominal pain, heartburn, N/V, diarrhea, constipation, lactose intolerance Non-GI: Iron, folic acid and/or B12, A, D, calcium deficiencies, fatigue, wt loss, joint pain, muscle cramps	Allergic reaction: hives, swollen mouth/tongue, nausea/vomiting, difficulty swallowing, skin rashes, difficulty breathing, anaphylaxis.	GI: Abdominal pain, diarrhea, N/V, bloating Non-GI: headache, fatigue, eczema, joint pain, numbness hand and feet "brain fog"	GI: Abdominal pain, constipation and/or diarrhea, N/V, bloating, excessive gas production
Arthritis Connection	Sjögren's Disease Autoimmune thyroid disease Type 1 diabetes	N/A	Fibromyalgia Sjogren's Disease Spondyloarthritis (?) RA (?)	Fibromyalgia Associated with IBS
Level of Gluten Avoidance	Complete avoidance,  cross contamination	Complete wheat avoidance. Rye/barley may not trigger symptoms.	Unknown	No need to avoid gluten completely



Q: Are certain types of inflammatory arthritis at higher risk for developing celiac disease or non-celiac gluten sensitivity?

The Gut-Joint Axis Hypothesis



The mucosa of the gastrointestinal tract is essential for the immune system's function.

According to the **gut-joint hypothesis**, changes in the gut microbiota may cause immune cells to migrate to joints through intestinal permeability, triggering inflammatory reactions.

Gliadin activate the immune cells leading to an inflammatory response.

“The hypotheses assume that since celiac disease and other autoimmune disease share HLA genes, it is possible that this genetic load transfer some gluten toxicity to other autoimmune diseases.”

Reumatología Clínica

Non-celiac Gluten Sensitivity and Rheumatic Diseases[☆]

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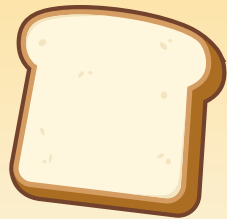


Sjögren's Disease

- Increased prevalence of CD and NCGS
- Shared genetic markers
- Symptom overlap

Bartoloni E, Bistoni O, Alunno A, et al. (2019)

Observations: individuals with fibromyalgia and spondylarthritis might benefit from a gluten-free diet when:



- Fatigue with unknown etiology
- Oral candidiasis (yeast)
- Digestive symptoms
- Iron-deficiency anemia
- Relatives with celiac disease

The evidence for rheumatoid arthritis is weak



**ARTHRITIS
TALKS**

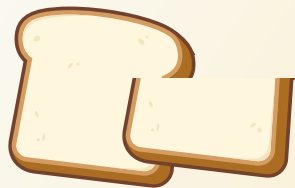


Q: What is a gluten challenge and when should I do it?

Gluten Challenge

- Transglutaminase (tTG) IgA antibodies are used to screen for CD.
- If the tTG test returns negative due to a GF diet, an HLA genetic test can help ascertain the need for additional testing.
- About 99% of individuals with CD test positive for HLA DQ2 and/or HLA DQ8; a negative result effectively rules out CD. A positive result does not confirm CD.
- Approximately 40% of adults in North America may test positive for these genes, yet only about 4% will develop CD.

Modified Gluten Challenge



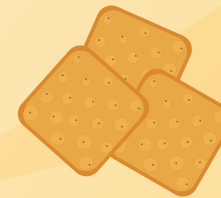
1.5 slice bread (3g) or equivalent a day



1/2 c pasta



1/2 c shredded wheat



3 graham cookies

A new approach has reduced the gluten challenge from 10g to 3g per day, resulting in improved patient tolerance.

www.celiac.ca

6 - 8 weeks







Q: Should I go on a gluten-free diet?

Before starting a gluten-free diet, consider these questions:


- Have you been tested for celiac disease and wheat allergy?
- If you experience digestive symptoms such as abdominal pain, bloating, nausea/vomiting, constipation, diarrhea, rectal bleeding, GERD, or early satiety, have you been assessed for any other GI conditions?
 - Inflammatory Bowel Diseases (AI)
 - Microscopic colitis
 - Functional GI disorders (dyspepsia)
 - Overlapping IBS or SIBO
 - Bile acid diarrhea
 - Exocrine pancreatic insufficiency
 - Dyssynergic defecation

What foods contain gluten, even the slightest amount?

 Wheat	 Barley	Rye 
<ul style="list-style-type: none"> Atta Bulgur (Tabbouleh) Couscous Communion wafers Farro or Spelt Durum, Einkorn, Emmer Farina Graham flour Hydrolyzed Wheat Protein Miso Semolina, Triticale Emmer Wheat bran, wheat starch Seitan (a meat substitute made from gluten) Soy Sauce Tempura Spelt (dinkel, farro) 	<ul style="list-style-type: none"> Beer (ale, lager, porter, stout) Barley (pearl, flakes, flour) Brewer's yeast Malt Malted barley Malted barley flour Malt extract (Malt syrup) Malt flavouring Malt vinegar Hidden sources: chocolates, Rice Krispies, Horlicks, Milo 	<ul style="list-style-type: none"> Rye flour Rye bread Rye crackers Oats Oats Oat bran Oat flour Oatmeal 

Sources of FODMAP foods/ingredients

Fermentable Oligo-Di-Mono-and Polyols

FODMAP	Examples
Fructans 	Barley, Rye, Wheat Artichoke, chicory root, inulin , dates, figs, garlic , onion , leek, watermelon
Galactans	Black beans, chickpeas, kidney beans, lentils, soybeans
Lactose	Milk, ice cream, soft cheese
Fructose	Agave, High-fructose corn syrup, honey Fruits (apple, cherry, mango, peaches, pear, prune, watermelon), Veggies: sugarsnap peas, artichoke, asparagus
Polyols and sugar alcohols	Fruits (apple, apricot, blackberry, nectarine, peach, pear, plum, prune, watermelon). Veggies (cauliflower, button mushroom, snow peas, sweet corn) Maltitol, Mannitol, Sorbitol, Xylitol

Q. Are foods without gluten-related ingredients safe for individuals with celiac disease or wheat allergies?

The product contained gluten that was not declared on the label

- The Canadian Food Inspection Agency recalled the product in June 2024
- Allergy information: produced in a facility that may contain wheat. It doesn't say if the rolled oats are gluten-free



INGREDIENTS: Organic Rolled Oats, Organic Oat Flour, Organic Invert Cane Sugar, Organic Dried Apricots, Organic Expeller Pressed Canola Oil, **Organic Unsalted Butter**, Organic Raisins, Organic Flax Seeds, Organic Sunflower Seeds, Organic Granulated Sugar, **Organic Shredded Coconut**, Organic Honey, Organic Quinoa, Organic Chia Seeds, Sea Salt, Baking Soda, Vanilla Extract, Organic Rice Flour.
ALLERGY INFORMATION: Contains Milk and Coconut. Produced in a facility that may contain Wheat, Soy, Eggs, Peanuts and Tree Nuts. May contain pit and nutshell fragments.
STORAGE: Store in a cool, dry area. Freezer Friendly.

Gluten-free baked products are not necessarily low FODMAP, and vice versa

Gluten Free Bread with **High FODMAP** ingredients

Gluten Free Bread

Gluten free. Number conscious. Plain, Seeded Herb & Garlic or Lemon Blueberry. Pick your bagel and bite in with no fear, knowing that the taste, texture, spreadability and crumb are going to live up to even the most astronomical expectations.

33 GRAM CARBS | **31** GRAMS OF FIBRE | **100** CALORIES PER SERVING

Ingredients:

Resistan...ava bean protein,
High ole...e, Rice bran,
Xanthan...ur.
For the m...ritional
informati...

Fava bean protein, inulin

NUTRITION FACTS



Low FODMAP bread with **Gluten** containing ingredients

COBS BREAD



LOWFOD™ LOAF

Low Fodmap Mix (**Wheat Gluten, Wheat Starch**, Oat Bran, Millet, Enriched Wheat Flour, Cracked Sorghum, Salt, Poppy Seed, Flax Seed, Hydroxyproyl Methylcellulose, Psyllium Seed Husk, **Malted Barley Flour**, Amylase, Ascorbic Acid, Lipase, Xylanase), Water, Yeast, Canola Oil.
Contains: Wheat. May Contain: Egg, Milk, Mustard, Soybeans, Sulphites.



Q: How do I identify foods that are gluten-free?

Gluten risk based on labelling

The Canadian Food Inspection Agency

Food Item or Product	ALLOWED	AVOID
NO "Gluten-Free" claim, NO gluten-containing ingredients	✓	
NO "Gluten-Free" claim AND a "Contains" statement for wheat or other gluten ingredients		✗
NO "Gluten-Free" claim, NO gluten-containing ingredients BUT a "May contain wheat" claim		✗
A "Gluten-Free" claim on a product	✓	
A "Gluten-Free" claim AND a "May contain wheat" claim	✓	
Gluten-Free Products made in a bakery that also produces gluten-containing products		✗

BLUEBERRY ALMOND

BARS

Nutrition Facts	
1 serving per container	
Serving size	1 bar (40g)
Amount per serving	
Calories	160
<small>% Daily Value*</small>	
Total Fat 6g	13%
Saturated Fat 2g	8%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 45mg	2%
Total Carbohydrate 24g	4%
Dietary Fiber 3g	7%
Total Sugars 7g	
Includes 6g Added Sugars	0%
Protein 3g	
Vit. D 0mcg 0%	Calcium 40mg 2%
Iron 0.9mg 4%	Potas. 80mg 2%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

INGREDIENTS: GRAIN & SEED BLEND (GLUTEN FREE ROLLED OATS, ORGANIC BROWN RICE CRISPS [ORGANIC BROWN RICE FLOUR], FLAX SEEDS, ORGANIC SPROUTED CHIA SEEDS, QUINOA), ORGANIC BROWN RICE SYRUP, BLUEBERRIES (WILD BLUEBERRIES, APPLE JUICE CONCENTRATE, SUNFLOWER OIL), ALMOND BUTTER, COCONUT OIL, ALMONDS, ORGANIC VANILLA FLAVOR, CINNAMON, SEA SALT, SUNFLOWER TOCOPHEROL, SUNFLOWER LECITHIN.
CONTAINS: ALMONDS.
MADE IN A FACILITY THAT ALSO USES: EGG, MILK, OTHER TREE NUTS, PEANUT, SOY.



Health Canada strongly recommends individuals with wheat allergies and celiac disease to **AVOID** products with "May contain wheat" statements, unless they have a "Gluten-free" label.

In Canada, foods containing less than 20 parts per million (ppm) of gluten do not have to be labelled as containing gluten

Labelling practices vary from one country to another



The Canadian Food Inspection Agency recalled the product in June 2024

INGREDIENTS: Organic Rolled Oats, Organic Oat Flour, Organic Invert Cane Sugar, Organic Dried Apricots, Organic Expeller Pressed Canola Oil, **Organic Unsalted Butter**, Organic Raisins, Organic Flax Seeds, Organic Sunflower Seeds, Organic Granulated Sugar, **Organic Shredded Coconut**, Organic Honey, Organic Quinoa, Organic Chia Seeds, Sea Salt, Baking Soda, Vanilla Extract, Organic Rice Flour.

ALLERGY INFORMATION: Contains Milk and Coconut. Produced in a facility that may contain Wheat, Soy, Eggs, Peanuts and Tree Nuts. May contain pit and nutshell fragments.

STORAGE: Store in a cool, dry area. Freezer Friendly.

The product contained gluten that was not declared on the label

Allergy information: produced in a facility that may contain wheat. It doesn't say if the rolled oats are gluten-free



Q. What does a day look like on a gluten-free diet?

Visualize a One-Day Gluten-Free (and Low FODMAP) Menu Packed with 25-38g of Fibre

Breakfast (Oatmeal = 6g)

- 1/2 c gluten-free rolled oats (2g)
- 1 c milk alternative (almond, hemp)
- 1/2 c blueberries (2g)
- 1 oz walnuts (2g)

Lunch (Mediterranean salad = 14g)

- 1/2 c cooked edamame (4g)
- 1/2 c cooked quinoa (5g)
- 1/4 c green onions - green tops only (1g)
- 3 tbsps fetta cheese
- 1/2 c baby spinach (1g)

Dinner (Salmon & Veggies = 6g)

- 4 oz Salmon
- 1 c lightly sauteed veggies (green beans, carrots) (4g)
- 1/2 baked small sweet potato (2g)

Dessert or Snack (Chia pudding = 9g)

- 2 tbsp chia seeds (7g)
- 1/2 cup almond milk
- 2 tbsp strawberries (2g)

Total Fibre: 35g

Low FODMAP

Breakfast

*serve with GF bread



Dessert or Snack



Lunch



Beverage



Dinner





Q. What are the nutritional risks of following a gluten-free diet without proper guidance?

Nutritional implications of a gluten free diet

- GF diets tend to be higher in saturated fats, sugar and salt and lower in protein and fibre.
- The intake of essential minerals and vitamins (iron, calcium, selenium, magnesium, zinc, folates, and B-complex vitamins) could be inadequate in those who follow a GF without professional guidance.
- Long-term avoidance of fructan-type resistant starches (like oligofructose and inulin) or FODMAPs may increase the risk of gut dysbiosis.
- Food insecurity and specialty diets. GF products are priced 500% higher.





Q. What other food intolerances are common for people living with arthritis?

Food intolerance vs sensitivity vs allergy

Intolerance

Inability to digest or process certain foods.

Lactose intolerance



Sensitivity

Symptoms unrelated to food intolerance or food allergy

Exposure to specific foods **MAY** create an immune reaction.



Gluten

Allergy

IgE-mediated immune response

“protein component”

8 Foods: milk, eggs, peanuts, tree nuts, fish, shellfish, wheat and soy



Food sensitivities can fade away with time due to our changing immune system and gut microbiome

Q. Why can't I tolerate certain dairy alternatives?

“Lactose intolerance is a clinical syndrome in which lactose ingestion causes symptoms such as abdominal pain, bloating, flatulence and diarrhea due to lactose malabsorption.”

- Bridges M (2018)

Fermentable Oligo Di- Mono
- and Polyols LOAD

 Milk, almond ● 240g	●
 Milk, rice ● 200g	●
 Milk, macadamia ● 240g	●
 Milk, oat ● 250g ● 121g ● 104g Personal Note: why is oat milk high in FODMAPs?	●
 Milk, cow, skim ● 257g ● 80g ● 20g	●
 Milk, quinoa, unsweetened ● 240g	●
 Milk, coconut, powder ● 20g	●
 Milk, soy (soy protein) ● 257g	●
 Milk, soy (soy bean) ● 257g ● 128g	●
 Cheese, Havarti ● 40g	●
 Cheese, Manchego, Spanish ● 40g	●
 Cheese, Monterey Jack ● 40g	●
 Cheese, Oaxaca ● 40g	●
 Cheese, Parmigiano-Reggiano, Italian ● 40g	●
 Cheese, Queso Fresco ● 40g ● 120g	●
 Cheese, Swiss ● 40g	●
 Cheese, brie, French ● 40g	●
 Cheese, cheddar style, vegan (coconut oil based) ● 40g ● 325g ● 409g	●
 Cheese, cheddar style, vegan (soy based) ●	●



Q. Do nightshade vegetables affect your arthritis symptoms?

Nightshades include commonly consumed fruits, vegetables and spices, which are rich in antioxidants, polyphenols and fibre:

- Hot peppers
- Cayenne pepper, paprika (Capsaicin)
- Eggplants
- Peppers
- Potatoes
- Tomatoes
- Goji berries
- Blueberries (contain solanine)

Histamine Intolerance

“Histamine intolerance is characterized by the accumulation of histamine to a point that exceeds the body's capacity to eliminate it.”





Q. What are the top safety tips for an individual with celiac disease or non-celiac gluten sensitivity?

10 Safety Tips for individuals with CD or NCGS on Gluten-Free Diet



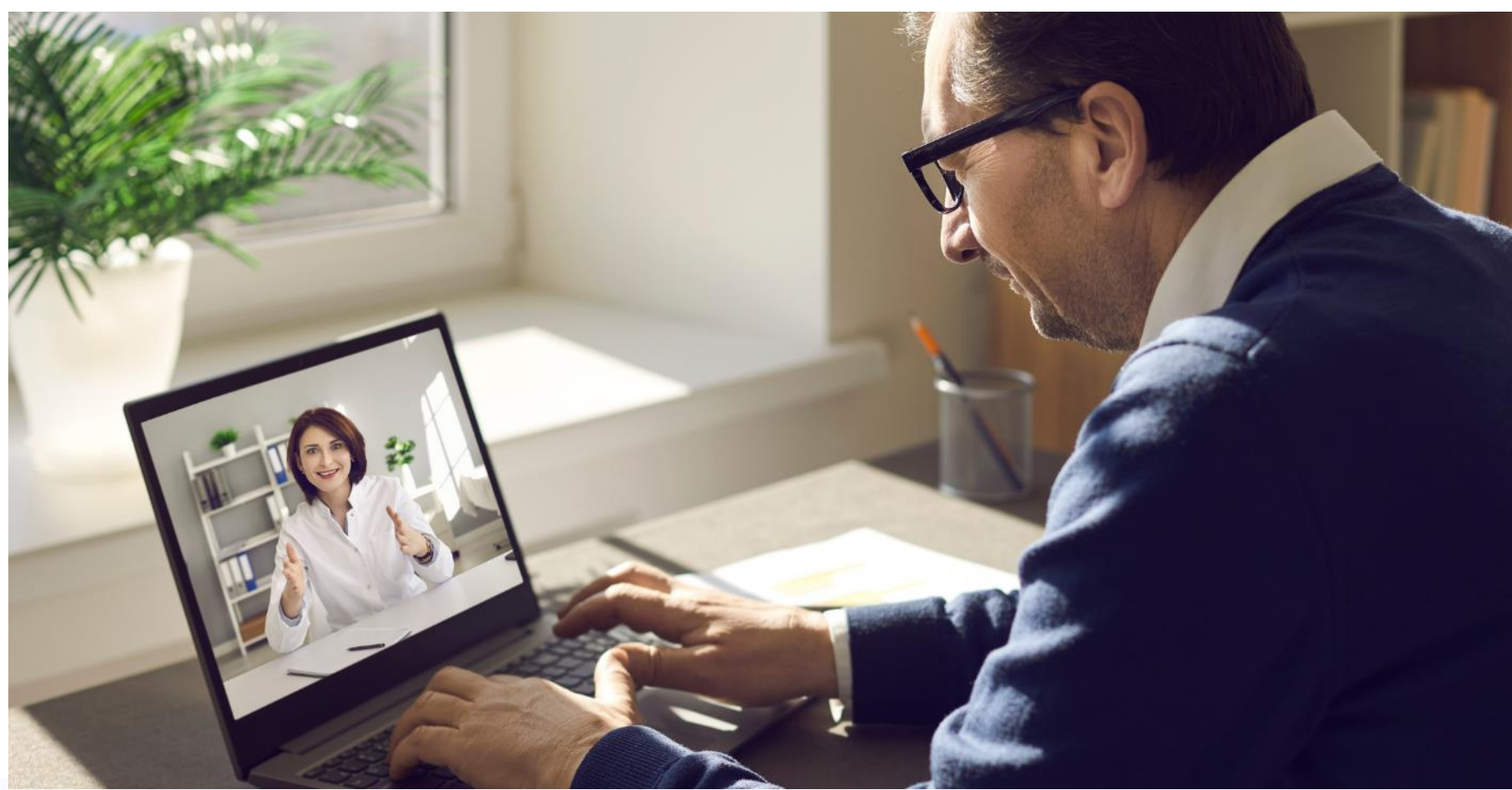
1. **Stick to a strict gluten-free diet**, avoid all foods and products containing **wheat, barley, rye, and their derivatives**.
2. **Check food labels** for hidden sources of gluten. Look for gluten-free certification on packaged foods.
3. **Avoid cross-contamination in the kitchen**. Use separate utensils, cutting boards, and toasters for gluten-free foods.
4. **When eating out**, call the restaurant in advance, inform the staff about your gluten-free needs. Ask about ingredients and food preparation methods to ensure no cross-contamination.
5. **Ensure a balanced and nutrient-rich diet** by including naturally gluten-free foods like fruits, vegetables, lean proteins, and gluten-free grains (e.g., quinoa, rice).

10 Safety Tips for individuals with Celiac Disease on Gluten-Free Diet

6. **Schedule regular check-ups** with your healthcare provider to monitor your health and nutritional status.
7. **Stay informed** about celiac disease and educate family, friends, and caregivers about your dietary needs.
8. **Consult with a Registered Dietitian** to assess the need of supplements, especially iron, folic acid, B12, calcium, and vitamin D.
9. **Connect with support groups** for emotional support and practical advice.
10. **Be aware of labeling** like “gluten friendly,” “gluten smart,” “gluten aware.”
When in doubt, leave it out!



Images source: Canva Pro



Q: What excites you about the future for those diagnosed today?

Collaborative research with people living with RA and OA

“Plants for Joints” for RA

Intervention Group + Usual care
16 weeks (n= 77)

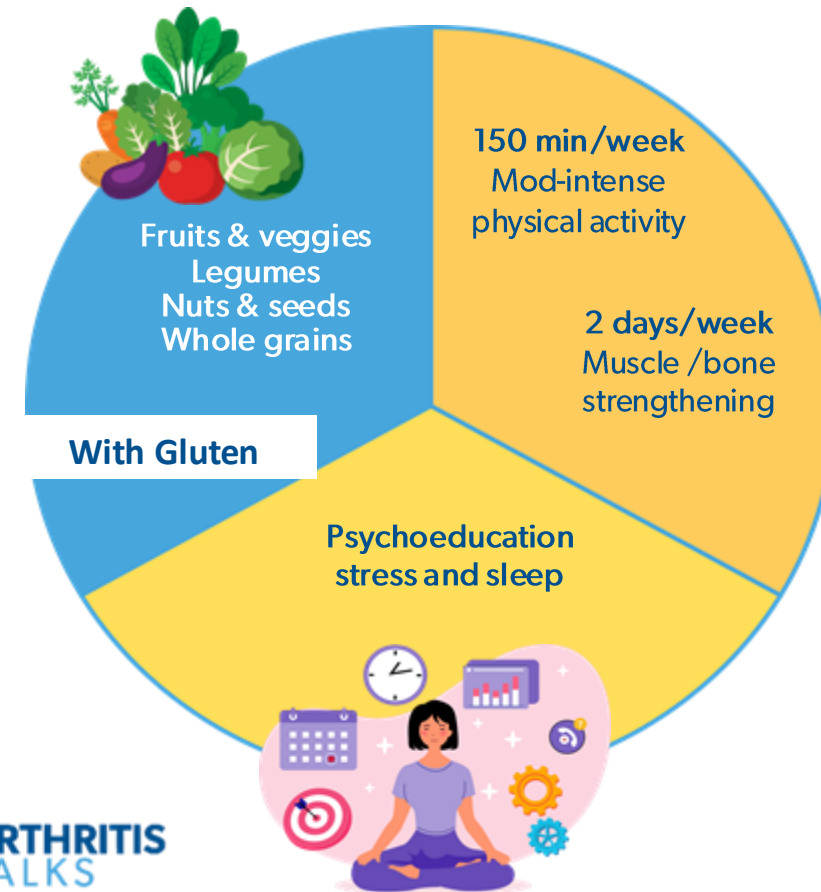
JOURNAL ARTICLE

A multidisciplinary lifestyle program for rheumatoid arthritis: the ‘Plants for Joints’ randomized controlled trial

Wendy Walravenstein ✉, Carlijn A Wagenaar, Marike van der Leeden, Franktien Turkstra, Jos W R Twisk, Maarten Boers, Henriët van Middendorp, Peter J M Weijs, Dirkjan van Schaardenburg

Rheumatology, Volume 62, Issue 8, August 2023, Pages 2683–2691,
<https://doi.org/10.1093/rheumatology/keac693>

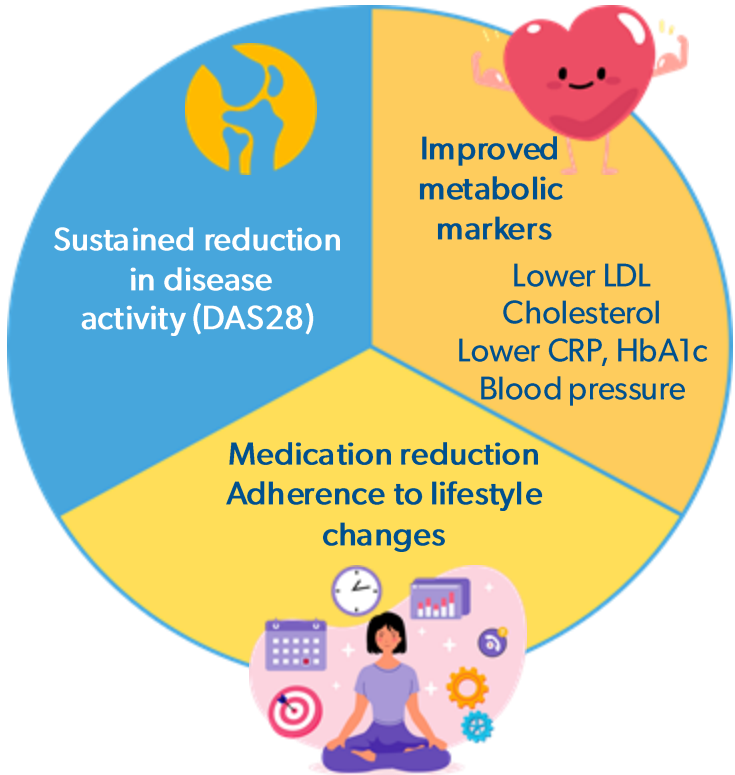
Published: 06 January 2023 **Article history** ▼



Collaborative research with people living with RA and OA

1 year follow-up "Plants for Joints" for RA and OA

RA = 77 OA = 49



RMD Open
Rheumatic & Musculoskeletal Diseases

ORIGINAL RESEARCH

Long-term effectiveness of a lifestyle intervention for rheumatoid arthritis and osteoarthritis: 1-year follow-up of the 'Plants for Joints' randomised clinical trial

Carlijn A Wagenaar ^{1,2} Wendy Walrabenstein ³ Marike van der Leeden ^{1,4} Franktien Turkstra ¹ Martijn Gerritsen ¹ Jos W R Twisk ⁵ Maarten Boers ⁵ Martin van der Esch ^{1,6} Henriët van Middendorp ⁷ Peter J M Weijs ^{8,9} Dirkjan van Schaardenburg ^{1,2}

“The results emphasized the potential use of the PFJ intervention as an additional treatment option in people with RA or OA, alongside care.”



Q: Any final thoughts or recommendations?

Final thoughts



Cristina Montoya RD
@arthritisdietitian

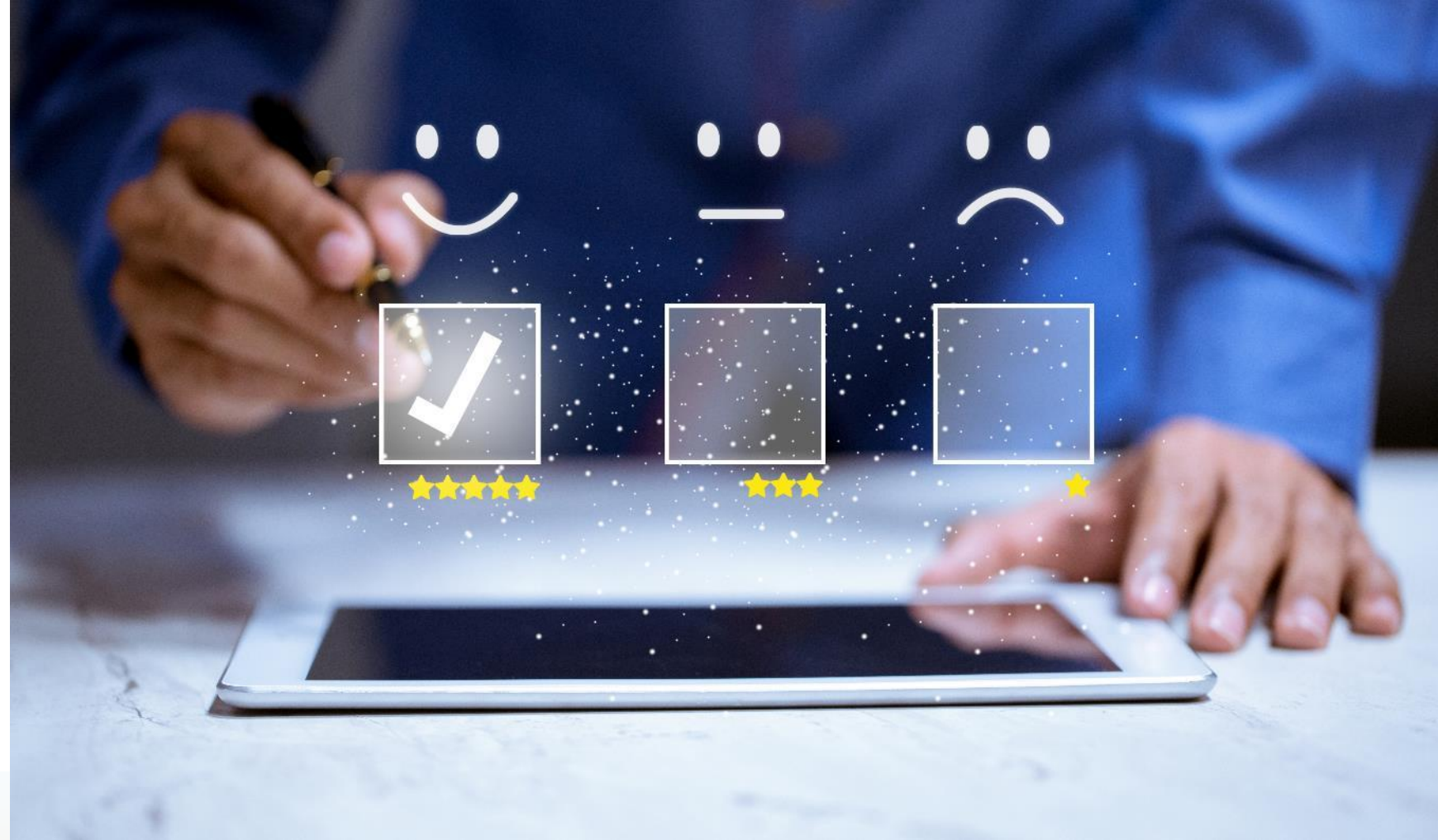
1. There is insufficient scientific evidence to support eliminating gluten from the diet of people with inflammatory arthritis or osteoarthritis **without celiac disease or NCGS**.
2. **Before initiating a gluten- or wheat-free diet**, consult with your healthcare provider to rule out celiac disease or wheat allergy.
3. **Sjogren's disease** has the strongest connection with CD and NCSG. Fibromyalgia is often accompanied by IBS, in which a low FODMAP diet can help improve GI symptoms.
4. **When travelling**, pack non-perishable gluten-free snacks. Research restaurants with GF menus. You can choose accommodations with a kitchenette.
5. **Consult with a Registered Dietitian** to ensure you meet your nutritional needs. Iron deficiency anemia is common in inflammatory arthritis and celiac disease and is often a missed cause of fatigue.

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- Celiac Canada. <https://www.celiac.ca/>
- Monash University Low FODMAP. <https://www.monashfodmap.com/>
- Arthritis Society Canada. <https://arthritis.ca/living-well>



Q: Questions



Q: Tell us what you think...



Double your impact

to help take back what arthritis has stolen.



