Toronto Myositis Centre
MYOSITIS CARE, EXPLAINED

PATIENT NUTRITION GUIDE

Vegetarian nutrition for myositis

High-protein vegetarian meals for inflammatory muscle disease

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PATIENT NUTRITION GUIDE

5 Vegetarian Meals for Inflammatory Muscle Disease

Plant-Based, Muscle-Supportive, Anti-Inflammatory Recipes

For Vegetarian Patients with Myositis (Dermatomyositis, Polymyositis, Immune-Mediated Necrotising Myopathy)

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Meeting the elevated protein demands of inflammatory myopathy on a vegetarian diet requires deliberate food combining and strategic nutrient selection. Muscle fibre damage and regeneration dramatically increases protein requirements to 1.2–1.5 g/kg/day, while immunosuppressive medications create additional nutritional challenges. These five vegetarian recipes are specifically designed to deliver high-quality, leucine-rich plant protein combinations that support mTOR-mediated muscle protein synthesis, alongside anti-inflammatory nutrients, omega-3 fatty acids from plant sources, and the folate, calcium, vitamin D, and iron that vegetarian myositis patients are at particular risk of depleting.

Each recipe addresses the specific intersection of vegetarian nutrition and myositis: complementary protein combining for complete essential amino acid profiles, plant-based omega-3 sources (ALA from flaxseed and walnuts), soft textures adaptable for dysphagia, and preparation methods requiring minimal hand strength and standing time.

The Vegetarian Challenge in Myositis

Vegetarian patients with inflammatory muscle disease face a compounded nutritional challenge. Myositis increases protein demands by 50–100% above the general population, while a vegetarian diet inherently provides lower protein density per calorie, lower leucine content per gram of protein, and reduced bioavailability of several critical micronutrients. However, with strategic food combining, these challenges are entirely manageable. The table below outlines the key nutritional gaps and how these recipes address them.

Nutritional Challenge	Why It's Harder on a Vegetarian Diet	How These Recipes Solve It
Protein quantity (1.2–1.5 g/kg/day)	Plant proteins are less protein-dense per calorie; larger portions are needed to meet the elevated demands of muscle regeneration	All 5 meals provide 18–36 g protein per serving using triple-stacked complementary sources (legume + grain + nut/seed)
Leucine content	Plant proteins contain 6–8% leucine vs. 8–11% in animal sources; higher total intake is needed to trigger mTOR activation	Soy (tofu, edamame), eggs, ricotta, and quinoa are the highest-leucine plant sources and feature in every meal
Omega-3 fatty acids	No dietary EPA/DHA without fish; must rely on ALA conversion (5–10% efficiency)	Walnuts and ground flaxseed (the two richest ALA sources) appear in Meals 4 and 5; consider algae-based EPA/DHA supplement
Iron bioavailability	Non-haeme iron is absorbed at 2–20% vs. 15–35% for haeme iron from meat	Every meal pairs plant iron with vitamin C (lemon, tomatoes, peppers) to maximise absorption
Vitamin B12	Absent from all plant foods; deficiency causes fatigue and neuropathy that can mimic myositis symptoms	Eggs (Meal 3) provide B12; all vegetarian myositis patients should discuss B12 supplementation with their physician
Calcium and Vitamin D	Corticosteroids deplete bone; dairy-free diets compound risk	Tofu, tahini, ricotta, and fortified foods provide calcium; eggs provide vitamin D; supplementation often needed

MEAL 1

High-Protein Tofu & Edamame Quinoa Bowl with Tahini-Miso Dressing

25 minutes | 2 servings | Easy | ~530 kcal per serving

This power bowl is designed to deliver the highest possible plant-based protein density for myositis patients who follow a vegetarian diet. Meeting elevated protein requirements (1.2–1.5 g/kg/day) on a vegetarian diet is achievable but requires deliberate food combining. This bowl stacks three complementary plant protein sources — firm tofu, edamame, and quinoa — to provide all nine essential amino acids with a combined leucine content that approaches animal-source equivalents. The tahini-miso dressing adds fermented probiotic benefit alongside additional protein and calcium.

MYOSITIS-SPECIFIC MECHANISM — VEGETARIAN

Tofu provides isoflavones (genistein and daidzein) that have documented immunomodulatory effects, reducing TNF-α and IL-6 production in inflammatory models. Critically, soy protein provides approximately 8% leucine by weight, which is relevant because leucine activates the mTOR signalling pathway essential for muscle protein synthesis in regenerating myofibres. Edamame adds additional complete protein with a high branched-chain amino acid (BCAA) content. Quinoa is one of the only plant foods providing all nine essential amino acids. Miso provides fermented probiotic organisms and enzymes that support the gut-immune axis, which is increasingly recognised as a modulator of systemic autoimmune inflammation. Avocado provides glutathione, supporting antioxidant defences against the oxidative stress that accompanies chronic muscle inflammation.

Ingredients

- 300 g extra-firm tofu, pressed and cut into 2 cm cubes
- 1 cup shelled edamame (frozen)
- 1 cup quinoa, rinsed
- 2 cups water or vegetable broth
- 2 cups baby spinach
- 1 medium carrot, grated
- ½ cup red cabbage, thinly sliced
- 1 tbsp sesame oil
- 1 tbsp tamari or soy sauce
- Sesame seeds for garnish

For the tahini-miso dressing:

- 2 tbsp tahini
- 1 tbsp white miso paste
- Juice of 1 lemon
- 1 tsp maple syrup
- 3 tbsp warm water

Step-by-Step Instructions

1. Cook the quinoa: bring 2 cups of water or broth to a boil, add the rinsed quinoa, reduce heat, cover, and simmer for 15 minutes. Remove from heat and let stand covered for 5 minutes. Fluff with a fork.

2. While quinoa cooks, heat the sesame oil in a non-stick pan over medium-high heat. Add the tofu cubes and cook for 3–4 minutes per side until golden and crisp on the outside. Drizzle with tamari in the last minute.

3. Add the frozen edamame to the quinoa pot during the last 3 minutes of standing time to warm through using residual heat.

4. Prepare the dressing: whisk together the tahini, miso paste, lemon juice, maple syrup, and warm water until smooth. Adjust consistency with additional water if needed.

5. Assemble the bowls: divide the quinoa and edamame between two bowls. Add baby spinach, grated carrot, and red cabbage alongside. Place the crispy tofu on top.

6. Drizzle generously with tahini-miso dressing and garnish with sesame seeds. Serve immediately.

Tip: If dysphagia is present, crumble the tofu instead of cubing it and mix through the quinoa with extra dressing for a softer, more uniform texture. Silken tofu can be substituted for firm tofu and blended into the dressing for a smoother consistency. For maximum protein, add 1 tablespoon of hemp seeds to each bowl (adds 5 g protein).

Nutritional Highlights: Protein: 36 g | Leucine: 2.8 g | Calcium: 420 mg | Iron: 8 mg | Folate: 210 µg | Fibre: 12 g | Isoflavones: 45 mg

MEAL 2

Creamy Coconut Lentil & Sweet Potato Stew with Turmeric

30 minutes | 4 servings | Very Easy — One Pot | ~430 kcal per serving

This one-pot stew is the ideal batch-cooking recipe for myositis patients with limited energy. It requires only 10 minutes of hands-on preparation before simmering unattended, and produces four servings that freeze exceptionally well. The naturally soft, creamy texture of cooked red lentils makes this one of the most dysphagia-friendly high-protein vegetarian meals available. Red lentils provide 18 g of protein per serving alongside folate — critically important for patients on methotrexate — while sweet potatoes deliver beta-carotene essential for muscle satellite cell differentiation and immune regulation.

MYOSITIS-SPECIFIC MECHANISM — VEGETARIAN

Red lentils are among the richest plant sources of folate (essential for countering methotrexate-induced folate depletion) and provide resistant starch that feeds Faecalibacterium prausnitzii, a keystone gut species that produces the anti-inflammatory short-chain fatty acid butyrate. Sweet potatoes provide beta-carotene, which is converted to vitamin A — a nutrient essential for T-cell regulation and skeletal muscle satellite cell activation during regeneration. Coconut milk provides medium-chain triglycerides (MCTs) that serve as an alternative energy substrate for compromised muscle tissue, as MCTs can be oxidised for energy without the carnitine shuttle — relevant because carnitine deficiency has been documented in some myositis patients. The turmeric-ginger-black pepper combination provides synergistic NF-κB and COX-2 inhibition, with piperine increasing curcumin bioavailability by up to 2,000%.

Ingredients

- 1½ cups dried red lentils, rinsed
- 1 large sweet potato, peeled and diced into 2 cm cubes
- 1 can (400 ml) light coconut milk
- 2 cups vegetable broth
- 1 medium onion, diced
- 3 cloves garlic, minced
- 1 tbsp fresh ginger, grated
- 1½ tsp ground turmeric
- ½ tsp black pepper
- 1 tsp ground cumin
- 1 tsp ground coriander
- 1 tbsp extra-virgin olive oil
- 4 large handfuls baby spinach
- Juice of 1 lemon
- Fresh coriander (cilantro) for garnish

Step-by-Step Instructions

1. Heat the olive oil in a large pot over medium heat. Add the diced onion and cook for 3–4 minutes until softened.
2. Add the garlic, ginger, turmeric, black pepper, cumin, and coriander. Stir for 1 minute until fragrant.

3. Add the rinsed red lentils, diced sweet potato, coconut milk, and vegetable broth. Stir well to combine.

4. Bring to a gentle boil, then reduce heat, cover, and simmer for 20 minutes, stirring occasionally, until the lentils are completely broken down and the sweet potato is tender.

5. Add the baby spinach and stir for 2–3 minutes until fully wilted. Stir in the lemon juice and season with salt.

6. Serve in deep bowls, garnished with fresh coriander. For an even smoother texture, blend briefly with an immersion blender.

Tip: This stew is the ultimate myositis batch-cooking meal. Make the full 4 servings on an energy-manageable day and freeze in individual portions. The texture thickens as it cools — add a splash of broth when reheating. For patients with dysphagia, purée to a completely smooth consistency. Pre-cut frozen sweet potato cubes eliminate all peeling and chopping.

Nutritional Highlights: Protein: 18 g | Folate: 290 µg (73% DV) | Vitamin A: 14,000 µg RE | Magnesium: 90 mg | Iron: 6 mg | MCTs: from coconut milk | Fibre: 13 g

MEAL 3

Protein-Packed Spinach & Ricotta Frittata with Mediterranean Vegetables

25 minutes | 4 servings | Easy — One Pan | ~400 kcal per serving

Eggs remain one of the most bioavailable and leucine-rich protein sources accessible to vegetarians, providing the full complement of essential amino acids in an easily digestible, soft-textured format. This frittata combines eggs with ricotta cheese for additional protein and calcium, addressing the dual concern of muscle repair and corticosteroid-induced bone loss. The soft, moist texture requires minimal chewing, making it one of the safest high-protein meals for myositis patients with oropharyngeal dysphagia. Critically, eggs are one of the few dietary sources of both vitamin D and choline — nutrients directly relevant to myositis pathophysiology.

MYOSITIS-SPECIFIC MECHANISM — VEGETARIAN

Egg yolks provide vitamin D3 (cholecalciferol), which regulates T-cell differentiation and reduces the Th1/Th17 immune polarisation observed in myositis. Vitamin D deficiency is significantly more prevalent in myositis patients and correlates with disease activity. Choline from egg yolks is required for acetylcholine synthesis at the neuromuscular junction and for repair of muscle cell membranes damaged by complement-mediated attack in dermatomyositis. Ricotta provides whey protein, which has the highest leucine content of any protein source — leucine activates the mTOR signalling pathway critical for myofibre regeneration. Spinach provides magnesium (reduces muscle cramping), folate (methotrexate protection), and nitrates that improve mitochondrial efficiency in compromised muscle tissue. Sun-dried tomatoes concentrate lycopene, a carotenoid that reduces oxidative stress markers in muscle tissue.

Ingredients

- 8 large eggs
- ¾ cup ricotta cheese
- 3 large handfuls baby spinach
- ½ cup sun-dried tomatoes (oil-packed), roughly chopped
- 1 medium courgette (zucchini), diced
- ½ red onion, finely diced
- 2 cloves garlic, minced
- 2 tbsp extra-virgin olive oil
- ¼ cup fresh basil leaves, torn
- 1 tsp dried oregano
- ¼ cup pitted Kalamata olives, halved (optional)
- Salt and black pepper
- ¼ cup grated Parmesan (optional)

Step-by-Step Instructions

1. Preheat the oven grill (broiler) to medium-high. Heat the olive oil in a large oven-safe skillet (approx. 25 cm) over medium heat.

2. Add the red onion and courgette. Cook for 4–5 minutes until softened. Add the garlic, sun-dried tomatoes, and olives. Stir for 1 minute.

3. Add the baby spinach and stir for 1–2 minutes until completely wilted.

4. In a bowl, whisk the eggs with the oregano, salt, and pepper. Fold in half of the ricotta and the torn basil.

5. Pour the egg mixture evenly over the vegetables in the skillet. Drop spoonfuls of the remaining ricotta across the surface. Sprinkle with Parmesan if using.

6. Cook undisturbed on the stovetop for 4–5 minutes until the edges are set. Transfer under the grill for 3–4 minutes until golden, puffed, and fully set in the centre. Let cool 2 minutes, then slice into wedges.

Tip: A frittata is uniquely suited to myositis patients because it can be eaten at any temperature — warm, at room temperature, or cold from the refrigerator — eliminating the need to reheat on low-energy days. It stores for 3 days in the refrigerator and travels well for lunch. For patients with dysphagia, cut into small pieces and serve with yoghurt or extra olive oil to moisten the texture.

Nutritional Highlights: Protein: 28 g | Leucine: 2.6 g | Vitamin D: 4.4 µg (29% DV) | Choline: 420 mg (76% DV) | Calcium: 310 mg | Folate: 160 µg

MEAL 4

Black Bean & Walnut Bolognese over Wholegrain Pasta

30 minutes | 4 servings | Easy — One Pot + Pasta | ~490 kcal per serving

This plant-based bolognese uses a combination of black beans and walnuts to create a rich, meaty sauce that provides both complete protein and omega-3 fatty acids in a single dish. Walnuts are the only tree nut with significant omega-3 content (as alpha-linolenic acid), making them one of the most important foods for vegetarian myositis patients who do not consume fish. Black beans provide anthocyanins, iron, and prebiotic fibre, while the wholegrain pasta adds complex carbohydrates that prevent the glycogen depletion common in myositis patients with impaired muscle metabolism. The sauce's soft, moist texture makes it naturally dysphagia-friendly.

MYOSITIS-SPECIFIC MECHANISM — VEGETARIAN

Walnuts provide alpha-linolenic acid (ALA), the plant-based omega-3 fatty acid that is partially converted to EPA and DHA. While conversion is limited (5–10%), regular walnut consumption has been shown to reduce CRP and IL-6 levels in clinical trials. Black beans are among the highest antioxidant-scoring legumes due to their anthocyanin content, which inhibits NF-κB signalling — the transcription factor that drives muscle fibre MHC class I upregulation in myositis. The lycopene from cooked tomatoes is more bioavailable than from raw sources and reduces oxidative stress in inflamed muscle tissue. Garlic provides allicin and S-allylcysteine, which inhibit inflammatory cytokine production by macrophages — the primary effector cells in myositis-associated muscle damage. Wholegrain pasta provides B vitamins (thiamine, niacin) critical for energy metabolism in compromised muscle tissue.

Ingredients

- 1 can (400 g) black beans, drained and rinsed
- ¾ cup walnuts
- 1 can (400 g) crushed tomatoes
- 1 medium onion, finely diced
- 2 medium carrots, finely grated
- 2 stalks celery, finely diced
- 4 cloves garlic, minced
- 2 tbsp extra-virgin olive oil
- 2 tbsp tomato paste
- 1 tsp dried oregano
- 1 tsp dried basil
- ½ tsp smoked paprika
- ½ cup vegetable broth
- 300 g wholegrain penne or spaghetti
- Fresh basil and Parmesan for serving

Step-by-Step Instructions

1. Pulse the walnuts in a food processor 8–10 times until they resemble coarse breadcrumbs. Do not over-process into a paste. Set aside.

2. Heat the olive oil in a large deep pan over medium heat. Add the onion, grated carrots, and celery. Cook for 5 minutes until softened.

3. Add the garlic, tomato paste, oregano, dried basil, and smoked paprika. Stir for 1 minute until fragrant.

4. Add the crushed tomatoes, vegetable broth, drained black beans, and pulsed walnuts. Stir well. Bring to a gentle simmer and cook uncovered for 15 minutes, stirring occasionally, until the sauce has thickened.

5. While the sauce simmers, cook the wholegrain pasta according to package directions in well-salted boiling water. Drain, reserving ¼ cup of pasta water.

6. Toss the pasta through the sauce, adding a splash of reserved pasta water to loosen if needed. Serve topped with fresh basil and Parmesan.

> **Tip:** For patients with dysphagia, use small pasta shapes (orzo or small shells) that are easier to control in the mouth, and cook the pasta 1–2 minutes beyond the package time for a softer texture. The sauce can be blended for a smoother consistency. This recipe makes 4 generous servings and freezes beautifully — freeze the sauce separately from the pasta for best results.

Nutritional Highlights: Protein: 22 g | ALA Omega-3: 2.8 g | Iron: 5.5 mg | Fibre: 14 g | Thiamine: 0.6 mg (50% DV) | Folate: 190 µg | Anthocyanins: high

MEAL 5

No-Cook Almond Butter & Chickpea Protein Wrap with Omega-3 Slaw

10 minutes | 2 servings | Very Easy — No Cooking | ~480 kcal per serving

This no-cook meal is designed for days when myositis symptoms make any extended cooking impossible. It can be prepared entirely while seated, requires no heat source, and uses only basic utensils. Despite its simplicity, it delivers 24 g of protein per serving through the combination of chickpeas, almond butter, and the wholegrain wrap. The omega-3 slaw provides ALA from flaxseed and walnuts, addressing the anti-inflammatory needs of myositis patients without requiring fish. Every component has a soft, moist texture suitable for patients with swallowing difficulties.

MYOSITIS-SPECIFIC MECHANISM — VEGETARIAN

Chickpeas provide saponins and isoflavones with anti-inflammatory activity, alongside prebiotic galacto-oligosaccharides that support gut microbial diversity. Almond butter delivers vitamin E (α-tocopherol), one of the most important fat-soluble antioxidants for protecting muscle cell membranes from oxidative damage during inflammatory myofibre destruction. Ground flaxseed in the slaw provides the highest concentration of ALA omega-3 of any food, along with lignans (secoisolariciresinol diglucoside) that have documented immunomodulatory properties. The combination of vitamin C from the lemon juice and plant-based iron from the chickpeas optimises non-haeme iron absorption — particularly important for vegetarian myositis patients, who are at compounded risk of iron deficiency from both dietary restriction and chronic inflammation.

Ingredients

- 1 can (400 g) chickpeas, drained and rinsed
- 2 tbsp almond butter
- Juice of ½ lemon
- 1 tsp ground cumin
- ½ tsp smoked paprika
- Salt and pepper
- 2 large wholegrain wraps or tortillas
- ½ avocado, sliced

For the omega-3 slaw:

- 1½ cups shredded green cabbage (or pre-packaged coleslaw mix)
- 1 medium carrot, grated
- 2 tbsp ground flaxseed
- 2 tbsp chopped walnuts
- 1 tbsp extra-virgin olive oil
- 1 tbsp apple cider vinegar
- 1 tsp honey or maple syrup

Step-by-Step Instructions

1. In a bowl, roughly mash the drained chickpeas with a fork. You want a chunky texture, not a smooth paste — unless a smoother consistency is needed for swallowing.

2. Add the almond butter, lemon juice, cumin, smoked paprika, salt, and pepper. Stir until well combined.
3. Prepare the omega-3 slaw: toss the shredded cabbage and grated carrot with the ground flaxseed, chopped walnuts, olive oil, apple cider vinegar, and honey.
4. Lay out the wraps. Spread the chickpea-almond butter mixture down the centre of each.
5. Top with sliced avocado and a generous portion of the omega-3 slaw.
6. Fold the bottom of each wrap up, then fold in the sides and roll tightly. Cut in half and serve.

Tip: This entire meal can be prepared while seated using only a fork and a bowl. For patients with severe hand weakness, use canned chickpeas with ring-pull lids and squeeze-tube almond butter to eliminate the need for a can opener or jar grip. If wraps are difficult to manage with limited hand function, serve the chickpea mixture and slaw in a bowl instead — it works equally well as an open bowl meal. The chickpea mixture stores for 3 days in the refrigerator.

Nutritional Highlights: Protein: 24 g | ALA Omega-3: 3.5 g | Vitamin E: 8 mg (53% DV) | Iron: 5 mg | Calcium: 180 mg | Fibre: 15 g | Lignans: from flaxseed

Supplementation Considerations for Vegetarian Myositis Patients

While these recipes are designed to maximise nutritional intake from whole foods, certain nutrients are difficult to obtain in adequate quantities from a vegetarian diet alone — particularly when combined with the elevated demands of inflammatory muscle disease and the metabolic effects of immunosuppressive medications. The following supplementation considerations should be discussed with your treating physician or dietitian.

Supplement	Why It May Be Needed	Dietary Shortfall	Notes
Vitamin B12	Absent from all plant foods; deficiency mimics myositis fatigue and causes neuropathy	Only Meal 3 (eggs) provides B12; other meals contain none	All vegetarian myositis patients should supplement B12 or consume fortified foods daily
Algae-Based EPA/DHA	Plant ALA converts to EPA/DHA at only 5–10% efficiency; direct supplementation is more effective	These recipes use ALA sources (flaxseed, walnuts) but no direct EPA/DHA	Algae-derived omega-3 supplements provide the same EPA/DHA as fish oil without animal sources
Vitamin D	Deficiency is prevalent in myositis and correlates with disease activity; few vegetarian food sources	Only eggs (Meal 3) provide meaningful vitamin D; all other meals rely on fortified foods	Most myositis patients require 1,000–2,000 IU daily; discuss dosing with your physician
Calcium	Corticosteroids accelerate bone loss; vegetarian diets may provide insufficient calcium without dairy	Tofu, tahini, ricotta, and fortified plant milks provide calcium across these recipes	Target 1,000–1,200 mg/day; supplement if dietary intake is consistently below this
Iron	Chronic inflammation reduces iron absorption; non-haeme iron has lower bioavailability	All recipes pair iron-rich foods with vitamin C to optimise absorption	Monitor ferritin levels; supplement only if confirmed deficient, as excess iron is pro-inflammatory
Folate	Methotrexate depletes folate; deficiency causes mouth ulcers, fatigue, and cytopaenias	Lentils (Meal 2) and spinach (Meals 1–3) provide substantial dietary folate	Patients on methotrexate typically require folic acid supplementation as directed by their rheumatologist

Kitchen Adaptations for Myositis Patients

Proximal muscle weakness affects the ability to stand for prolonged periods, lift heavy pots, and perform fine motor tasks. Meal 2 (one-pot stew) and Meal 5 (no-cook wrap) are specifically designed for high-symptom days. Use pre-cut frozen vegetables, canned legumes, and squeeze-tube nut butters to minimise hand strain. A perching stool at the kitchen counter eliminates the need to stand during preparation. Electric can openers, lightweight utensils with built-up handles, and non-slip mats are invaluable kitchen aids.

Important Note

These recipes are intended to complement, not replace, your prescribed medical treatment for inflammatory myopathy. Vegetarian diets can meet all the nutritional demands of myositis with appropriate planning, but they should be discussed with your rheumatologist, neurologist, or dietitian. This is particularly important for patients on corticosteroids (monitor calcium, vitamin D, and blood glucose), methotrexate (ensure adequate folate supplementation), or those with dysphagia (a formal swallowing assessment by a speech-language pathologist is recommended). Vitamin B12 supplementation is essential for all vegetarian patients. If you

experience worsening swallowing difficulty, nasal regurgitation, or choking, contact your medical team immediately.

Developed as a patient education resource for rheumatology and neuromuscular practice by Dr. O. Vinik and A. Papachristos — Myositis Clinic.