

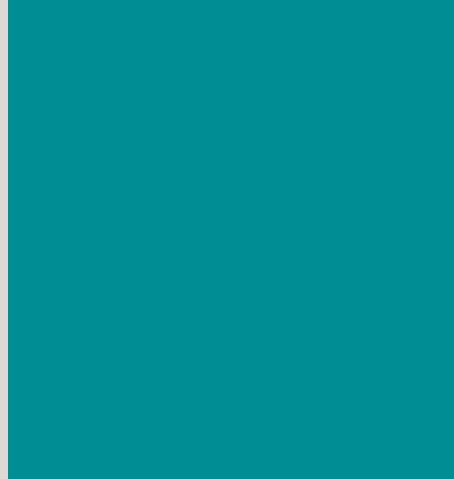


2024 FSHD Conference

Better Nutrition

For FSHD

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Practical

Nutrition

Workshop

For FSHD



Goals of the Diet for FSHD

- Ensure adequate nutrition for optimal health and well-being.
- Support muscle growth and preservation.
- Promote reduced inflammation and reactive oxygen species (ROS) through diet and safe supplementation.

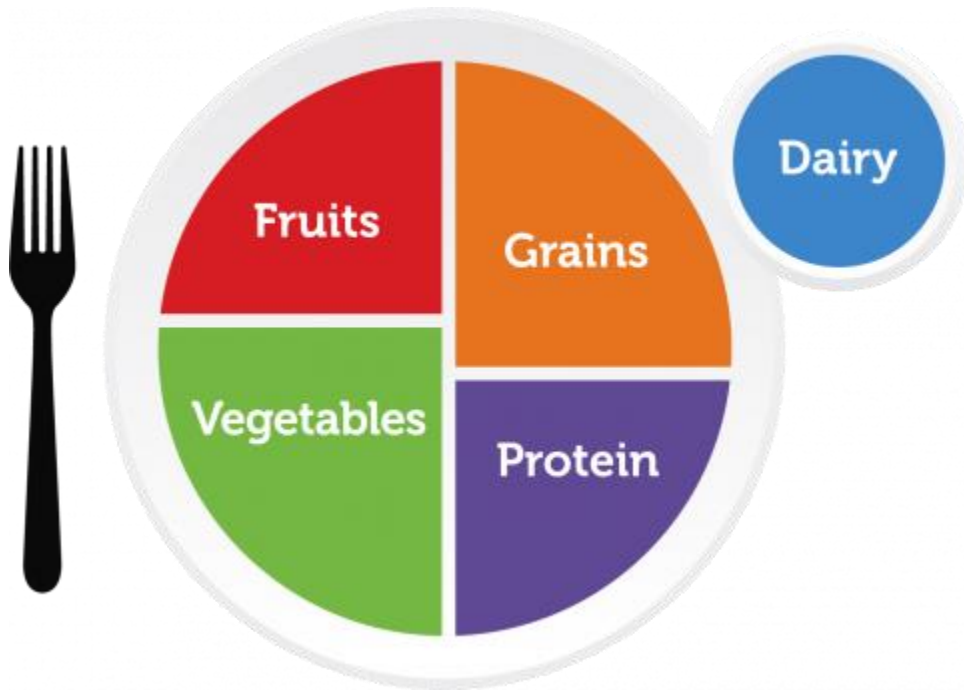


Raise Your Hand if you know what...

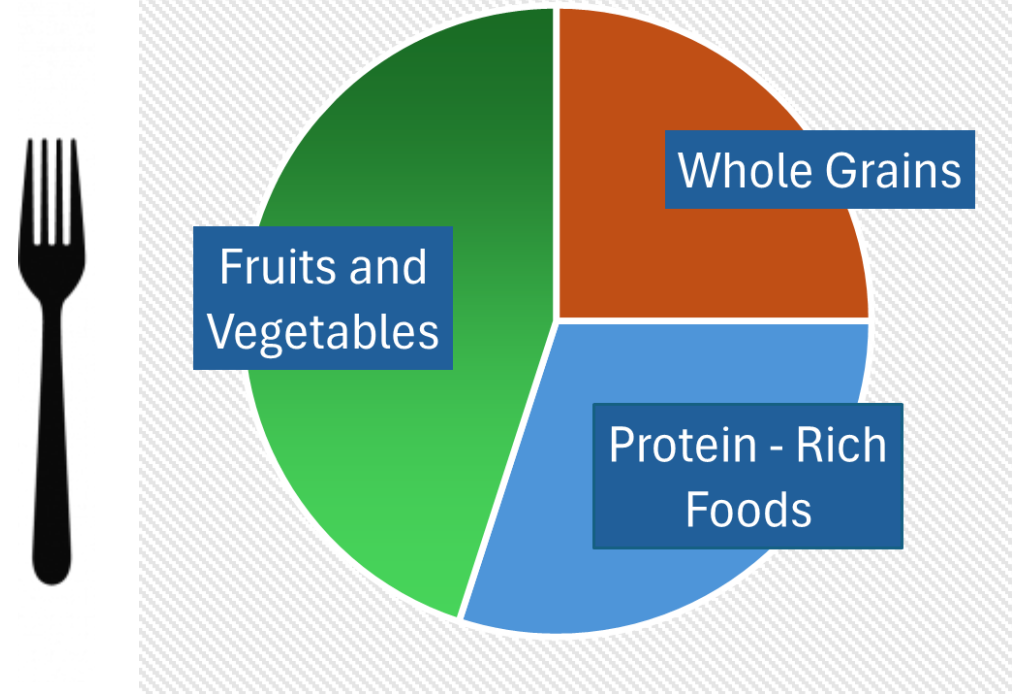
- **Antioxidant** - A substance that **protects cells from the damage caused by free radicals** (see ROS below). Antioxidants include **beta-carotene, lycopene, vitamins A, C, and E**, and other natural and manufactured substances.
- **BCAA** – Branched Chain Amino Acid – the **essential amino acids leucine, isoleucine and valine** which are metabolized in skeletal muscle and **regulate protein synthesis and turnover**.
- **Essential Nutrient** – nutrients that are **not synthesized by our body** and thus must be supplied from foods.
- **Gluten** – a **substance present in cereal grains**, especially wheat, that is responsible for the elastic texture of dough. A mixture of two proteins, it causes illness in people with **Celiac disease**.
- **MUFA, Monounsaturated Fatty Acid** – Fatty acids with a single double bond. **Examples: olive oil, avocado oil, peanut oil, nuts and their oils, canola oil.**
- **PUFA – Polyunsaturated Fatty Acid** – Fatty acids with more than one double bond. **Examples: Nut and seed oils, fish oils**
- **Polyphenols** - Polyphenols are **strong antioxidants** that complement and add to the functions of antioxidant vitamins and enzymes as a **defense against oxidative stress** caused by excess reactive oxygen species (ROS). Examples: **flavonoids, phenolic acid, polyphenolic amides, resveratrol, curcumin, and lignans.**
- **ROS – Reactive Oxygen Species** – Oxygen containing reactive species that are **byproducts of cellular metabolism**. Examples: hydrogen peroxide, superoxide anion, hydroxyl radical.

MyPlate.gov vs. My FSHD Plate

MyPlate.gov



My FSHD Plate



Better Nutrition can make a difference for FSHD

Key Research Take-aways for FSHD Nutrition

- ❑ At least 1.2 grams protein per kilogram body weight daily.
- ❑ Animal protein sources stimulate protein synthesis better than vegetable protein sources.
- ❑ The FSHD disease process includes inflammation and oxidative damage at the cellular level thus dietary choices to reduce inflammation and Reactive Oxidative Species (ROS) may help.
- ❑ Dietary supplementation with key antioxidants may help protect muscle from oxidative damage in FSHD patients.
- ❑ Many FSHD patients don't consume adequate calories thus have difficulty meeting daily nutrient requirements. SIMPLIFYING meal preparation may help patients improve dietary intake.



Step One – Adequate Nutrition for Muscle Health

- 2-3 meals with high quality protein at each meal. 2.5 - 2.8 g Leucine per meal
 - High quality protein – whey protein powder, eggs and egg whites, cheese, yogurt, cottage cheese, milk, chicken, turkey, fish & seafood, red meat, soy protein powder, quinoa, nut butters.
 - **HINT:** Combining animal proteins with vegetable proteins improves the bioavailability of vegetable proteins for skeletal muscle synthesis.
 - **HINT:** Typical serving size of 3-4 oz of a protein-rich food combined with a portion of legumes or grains provides recommended leucine amounts in a meal.
- Eat snacks that include foods from at least 2 food groups.
- Adequately hydrate. Carry non-caffeinated beverages with you for sipping.
- Take a multivitamin and mineral supplement from a reputable manufacturer.



Protein Basics

- Animal proteins contain higher amounts of BCAA, metabolized in muscle cells.
- Most efficient protein utilization – eggs, dairy.
- Whey protein stimulates protein synthesis.
- Combining vegetable protein sources with animal protein improves their utilization.
- Consume high quality protein at each meal to stimulate muscle growth.



Protein Basics

Chart for Recommended Daily Protein Intake*

	120-150lbs	150-180lbs	180-220lbs +
General Population (0.8g/kg BW)	43-54g	54g-65g	65g-80g +
F S H D Older Adults (1.2-1.8g/kgBW)	81-102g	102-121.5g	121.5-150g+
Athletes (1.2-2.8g/kgBW)	81-102g	102-121.5g	121.5-150g+
Weight Management (1.2-1.8g/kgBW)	81-102g	102-121.5g	121.5-150g+

**Approximate values based on the median gram of protein required by age.*

Citation: Stay Above Nutrition Blog Post, January 12, 2024. "How Much Protein Do You Need Based on Your Age?". https://stayabovenutrition.ca/blog/how-much-protein-you-need-based-on-your-age/?goal=0_88c4d02344-02ccdb569e-528209129&mc_cid=02ccdb569e&mc_eid=b65d357f2b.

Make it Real – Protein Basics

Group Food Diary Activity - Evaluate the protein quality in the dietary records at your table.
Group Discussion about dietary proteins.
Table sharing of ideas.



Step Two - Anti-Inflammatory Superfoods for FSHD

- ❑ **Nuts and Seeds** – Source of monounsaturated and polyunsaturated fatty acids that shift metabolism towards reduced inflammation. Also, an important source of trace minerals, vitamin E.
- ❑ **Green Leafy Vegetables** – Vitamins A, C, K, E plus more. Carotenoids. Frozen or fresh, daily.
- ❑ **Fatty Fish** – Omega 3 Fatty Acids to protect against inflammation, 2 to 3 times a week.
- ❑ **Berries/Citrus** – Excellent source of polyphenols and other antioxidant compounds and vitamins. Include daily, fresh, frozen or freeze-dried.
- ❑ **Pomegranates** – Rich source of polyphenols. Juice, frozen, fresh.
- ❑ **Dark Chocolate** – Source of polyphenols.
- ❑ **Whole Grains and Legumes** – Trace minerals, iron, fiber, and complementary proteins.
- ❑ **Avocado Oil for high heat cooking, Extra Virgin Olive Oil for low heat cooking, cold food preparation.**



Items to Avoid/Minimize

- **Ultra-processed foods:** “Industrial formulations made by deconstructing natural foods into its chemical constituents, modifying them and recombining them with colorants, flavorings and other additives.”
- **Highly processed seed oils:** canola, soybean, corn, safflower oils.
- Consumption linked to chronic diseases, inflammation.
- **EXAMPLES** - Mass-produced bread, packaged breakfast cereals, cookies, sweets, carbonated drinks, fruit-flavored yogurts, frozen desserts and instant soups/sauces.



Make it Real – Anti-Inflammatory Superfoods for FSHD

Group Food Diary Activity – Make modifications to the food record at your table. What foods can be added using the *Grocery List for FSHD*?
Table sharing and discussion.



What about Gluten?

- Whole grains such as wheat, barley and rye contain gluten. Some individuals have a sensitivity to gluten protein or Celiac disease and avoid eating these grain sources.
- Alternative whole grains that are gluten-free include: quinoa, brown/black/red rice, buckwheat, amaranth, and corn.
- Nutrients to replace when avoiding wheat products include B vitamins, magnesium and iron.
- Oats are gluten-free but sometimes have gluten contamination because of food processing.
- Beware of highly processed gluten-free foods.

Step 3 - Science Behind Supplements for FSHD

- Dietary supplements may help reduce the presence of ROS in mitochondria and improve skeletal muscle function.
- **What has been studied in FSHD Patients?**
- Studied together - Vitamin C (500 mg), Seleniummethionine (200 mcg), Zinc Gluconate (25 mg), Vitamin E, alpha – tocopherol (400 mg)
- Studied together - CoQ10 (200 mg)*, Creatine Monohydrate (5g, 3-5g daily recommended), Alpha Lipoic Acid (200 mg), Vitamin E (400 mg)
- Creatine Monohydrate – provides a substrate for ATP energy pathways. Important for muscle recovery after exercise. May reduce fatigue.
- Using a combination of antioxidant supplements may provide multiple pathways to reducing oxidative species in skeletal muscle.
- *Ubiquinol is the active form of CoQ10 and studies have shown it is better absorbed in people over age 55.

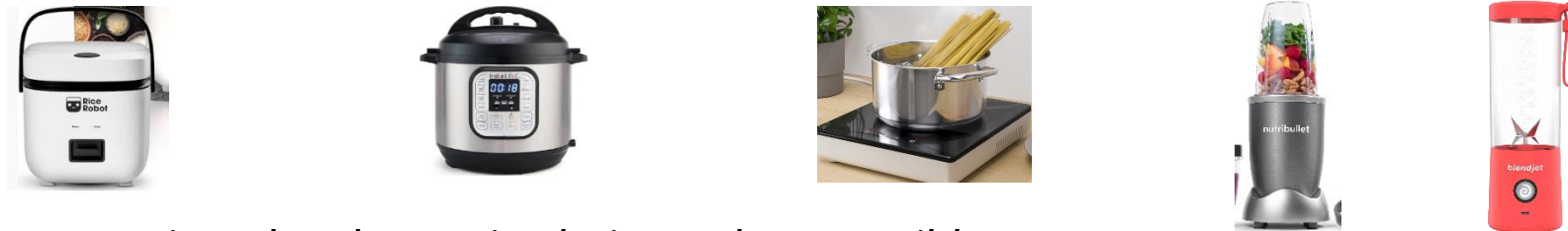


Step 4 - Tips for eating successfully

- **SIMPLIFY** food preparation as needed –
- Kitchen efficiency – purchase pre-cut fruits and vegetables, flash frozen fruits and vegetables, portioned proteins.



- Kitchen appliances – Personal size Instant pot or rice cooker, induction cooktop (Ikea), lightweight blender.



- Shopping – Grocery delivery services, local organic choices when possible.
- Many quality, healthy options available in bulk at CostCo, Sam's Club, Superstore (Canada), Bulk Barn (Canada).
- Eat “fresh in season” to optimize nutrition quality of fresh produce.

Make it Real – Simplify food preparation

Table discussion and sharing about ways to simplify food preparation. Group sharing of resources.



THANK
YOU!

