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Eating Well for Aging Well

October 10, 2018

Welcome!

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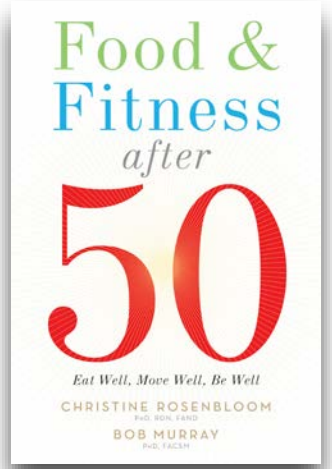
Slides will be available after the webinar

Today's Presenter



Christine Rosenbloom, PhD, RDN, FAND

President, Chris Rosenbloom Food and Nutrition Services, LLC

Co-author, Food & Fitness After 50

Slides will be available after the webinar

Disclosures

- This webinar is sponsored by the General Mills Bell Institute of Health & Nutrition
- Consultant for The Ginger Network, a food marketing firm as Scientific Advisor for FoodFluence™, a thought leadership conference for nutrition communicators.
- Co-Author of *Food & Fitness After 50.*
- Currently on Clif Bar and Company Nutrition Advisory Council and the IOC Sports Nutrition Diploma Program.

Thanks

Thanks to my co-author, Dr. Bob Murray for letting me use some of his slides on functional fitness.

Objectives

At the end of the webinar, the learner will be able to:

1. List key elements for choosing a healthy eating pattern for optimal aging.
2. Recognize the role of carbohydrate to support active aging and recognize quality carbohydrate sources.
3. Summarize research on the importance of dietary protein intake to maintain and/or build muscle mass, support activity, and prevent sarcopenia.
4. Identify key micronutrients that are needed in greater amounts with aging.
5. Recognize importance of fitness in maintaining functional health with aging and describe the basic components of fitness for older adults.

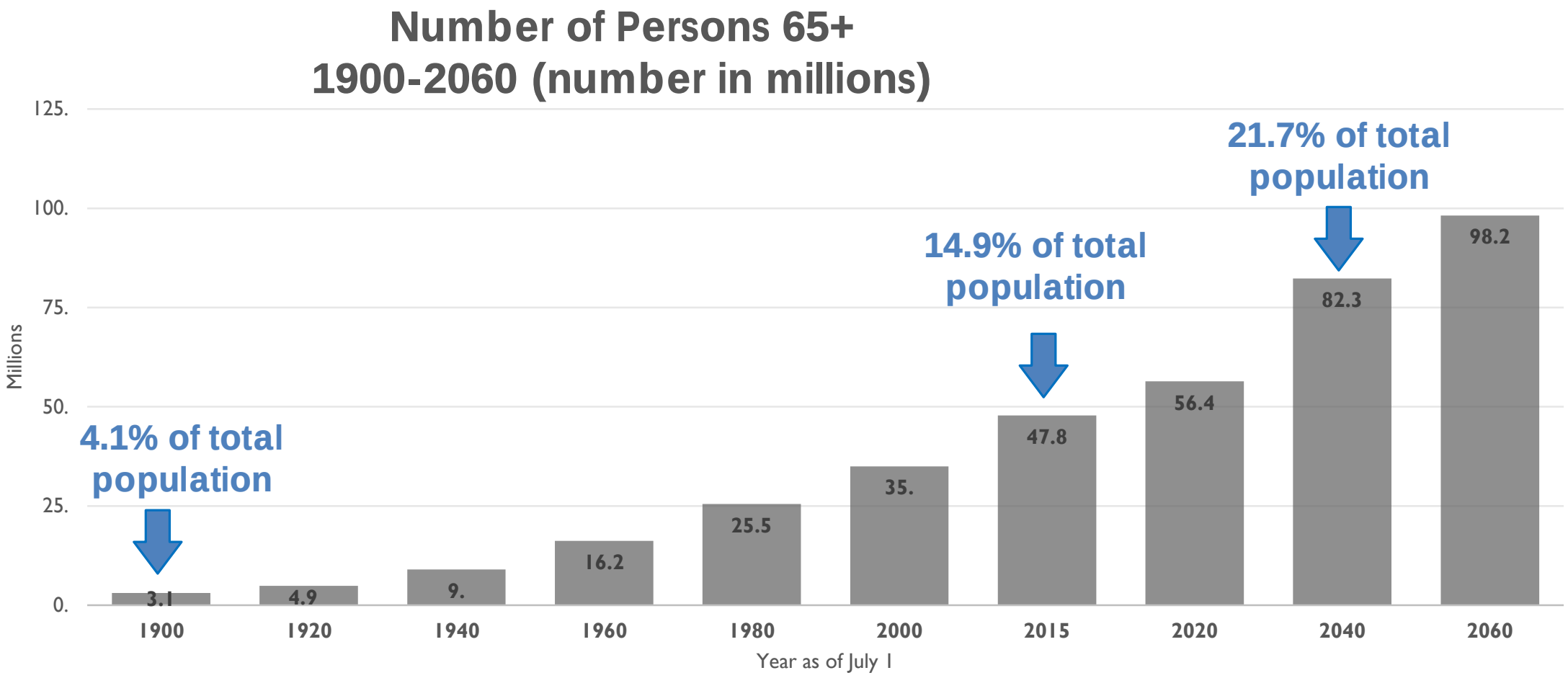
Aging Well

We will focus on <u>eating well</u> today, but all 3 are important for good health

Eat	Well
Move	Well
Be	Well

Changing Landscape of Aging in U.S.

There are more people on the planet over the age of 65 than ever before in human history



A Profile of Older Americans 2016, Administration on Aging USDHHS

A Brief Overview of Physiological Changes with Aging

Keep in mind it is hard to untangle normal aging from usual aging when disuse is the norm.

Physiological Changes Occurring with Normal Aging

Cardiovascular system

Skeletal system

Muscles

Body Composition

k JL, et al Ageing Research Reviews 2009;8:339-348; National Academy of Sciences, Engineering, and Medicine. 2017. Nutrition Across the Lifespan for Health Aging: Proceedings of a Workshop. Washington, DC: The National Academy Press; Tanaka H. Aging of competitive athletes. Gerontology. 2017;63:488-49

Physiological Changes Affecting Hydration Status

Normal age changes

- Less body water
- Decreased thirst sensation and blunting of thirst when dehydrated
- Decreased ability to concentrate urine
- Less sweat produced per sweat gland

Other considerations

- Medications, such as thiazide diuretics
- Dietary supplements, such as ginseng, saw palmetto, and St. John's Wort can increase urine production

Walters & Lenz. Am J Lifestyle Med. 2011;5:332-335.

Misguided Nutrition Advice Heard from 50+ Adults

- ***A nutritionist told me never, never, ever eat carbs!***
- ***Protein is the most important thing that we should eat.***
- ***I want to eat keto to oxidize more fat.***
- ***I can't eat fruit; it has too much sugar and sugar is poison.***

Eating Well: What is the best diet for aging well?

Answer: There is no “best”, but there are a lot of “goods.”

Eat Well: 4 Key Elements

Inclusion of all energy-containing nutrients (carbohydrate, protein, and fat)

A focus on nutrient-rich foods

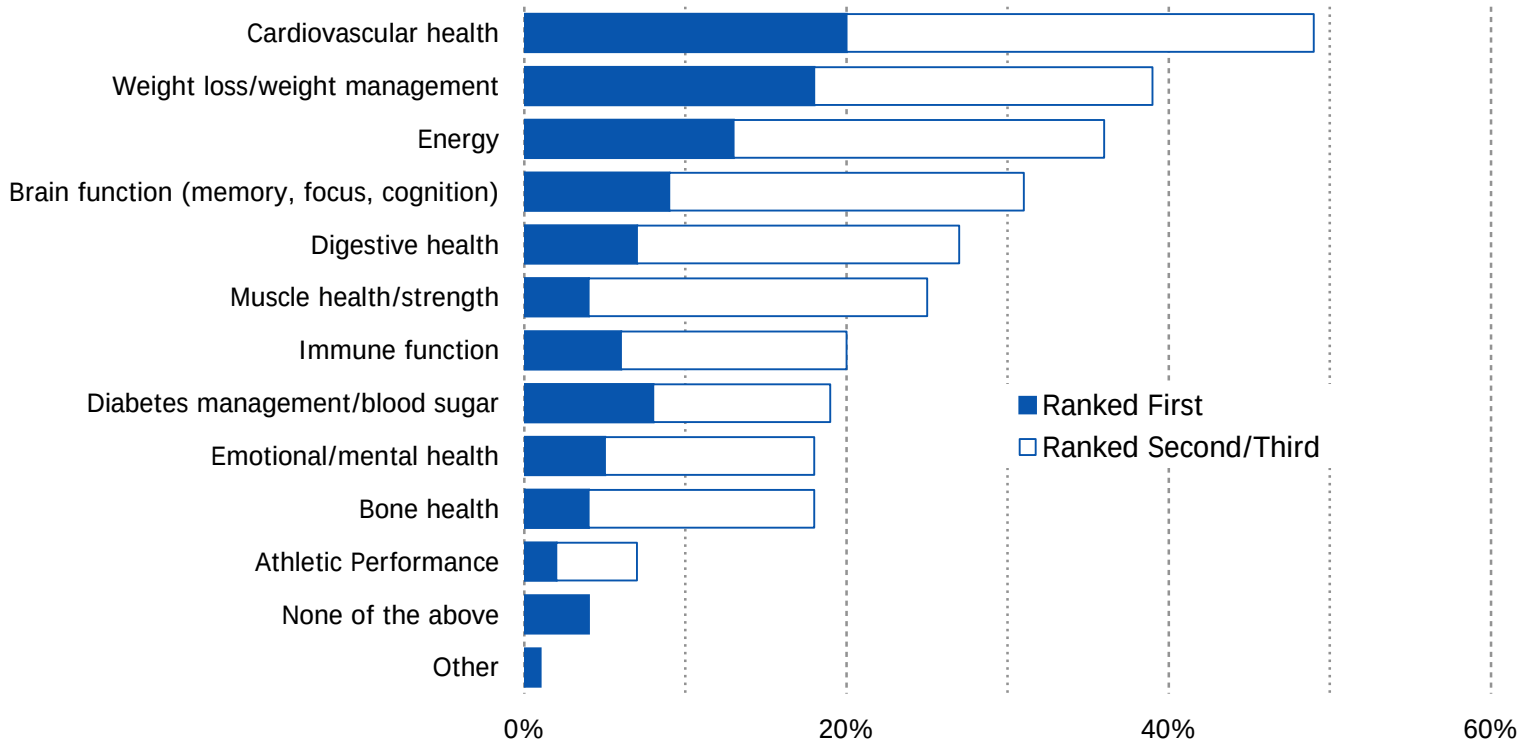
A concern for disease risk and management

Enjoyment of eating and mealtime

Cardiovascular Health Top Desired Benefit from Food

More older adults (65+) ranked bone health and diabetes management in top 3 benefits from food

Interest in Health Benefits from Food and Nutrients



Q31: Which of the following health benefits are you most interested in getting from foods or nutrients? Please rank the top 3 benefits. (n=1,009)

Putting it Together: *MyPlate* for Older Adults

MyPlate for Older Adults

Fruits & Vegetables

Whole fruits and vegetables are rich in important nutrients and fiber. Choose fruits and vegetables with deeply colored flesh. Choose canned varieties that are packed in their own juices or low-sodium.

Healthy Oils

Liquid vegetable oils and soft margarines provide important fatty acids and some fat-soluble vitamins.

Herbs & Spices

Use a variety of herbs and spices to enhance flavor of foods and reduce the need to add salt.

Fluids

Drink plenty of fluids. Fluids can come from water, tea, coffee, soups, and fruits and vegetables.

Grains

Whole grain and fortified foods are good sources of fiber and B vitamins.

Dairy

Fat-free and low-fat milk, cheeses and yogurts provide protein, calcium and other important nutrients.

Protein

Protein rich foods provide many important nutrients. Choose a variety including nuts, beans, fish, lean meat and poultry.

Remember to Stay Active!

Tufts UNIVERSITY · HNRCA · AARP Foundation

Four Plans that Work Well for Older Adults and Meet the 4 Key Elements

1. DASH eating plan
2. Mediterranean diet
3. Flexitarian diet
4. Mediterranean-DASH Intervention for Neurodegenerative Delay (MIND Diet)

Why These Four Plans?

- All plans feature wholesome foods from grains, fruit, and vegetables.
- Lean protein options from animal foods, seafoods, and plant-based proteins such as beans, peas, lentils, and soy foods.
- Heart healthy fats, such as olive, canola, and polyunsaturated vegetable oils, and healthy-fat containing foods such as avocado and nuts.
- Limit foods high in saturated fats and added sugars.

Importance of Carbohydrate and Protein to Aging Well

Why Carbohydrate?

One of the most important nutrients in your diet, from the standpoint of both health and athletic performance, is dietary carbohydrate.

- Mel Williams, Nutrition for Health, Fitness & Sport, 9th ed. 2010

Why Are Carbs Under Consumed by Adults?

Misinformation about carbohydrate nutrition

- "Carb phobia"

A fear of weight gain?

- Older active, adults often struggle to maintain weight due to normal hormonal changes and body composition changes with aging

Inadequate understanding of basic nutrition concepts, especially around nutrition and activity

- Active adults often do not consume sufficient carbohydrate to replenish glycogen stores

Birkenhead & Slater. Sports Med. 2015:45(11):1511-1522

What are the Effects of Inadequate Carbohydrate Availability?

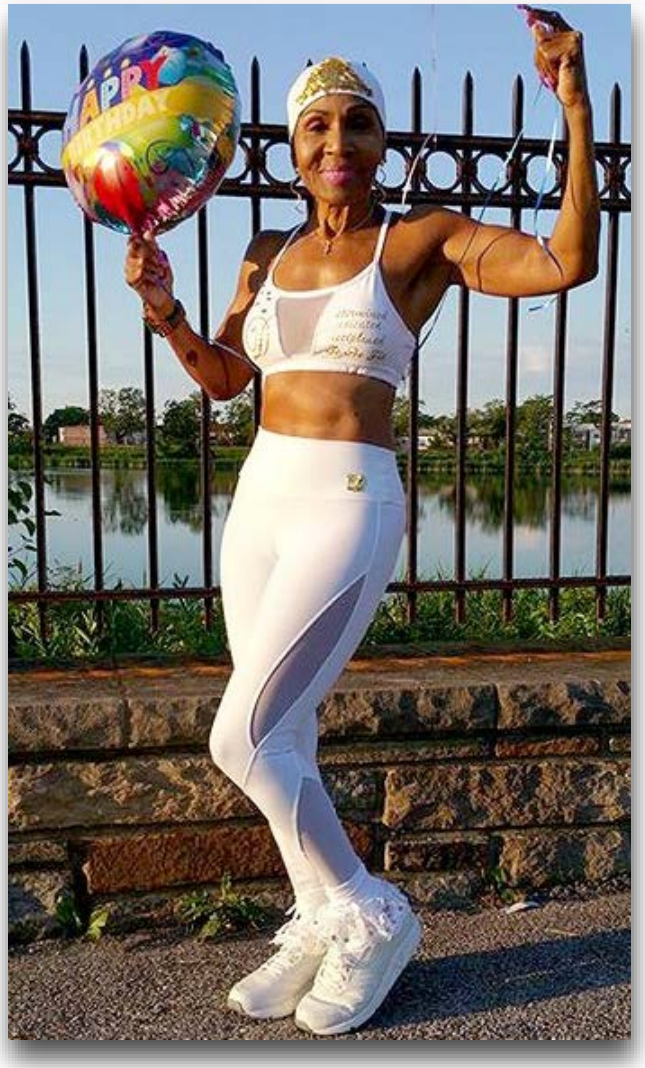
- General lack of energy.
- Muscle fatigue and breakdown.
- Confused thinking / lack of concentration.
- Inability to work at a higher intensity.

Eating Before Exercise: Example of 25-30 grams of Carbohydrate

- A mini-bagel
- 2 fig cookie bars
- Medium apple
- 1 cup oatmeal
- 1 cup ready-to-eat cereal
- 17 mini-pretzels
- ½ cup macaroni & cheese
- 6 oz fruited yogurt

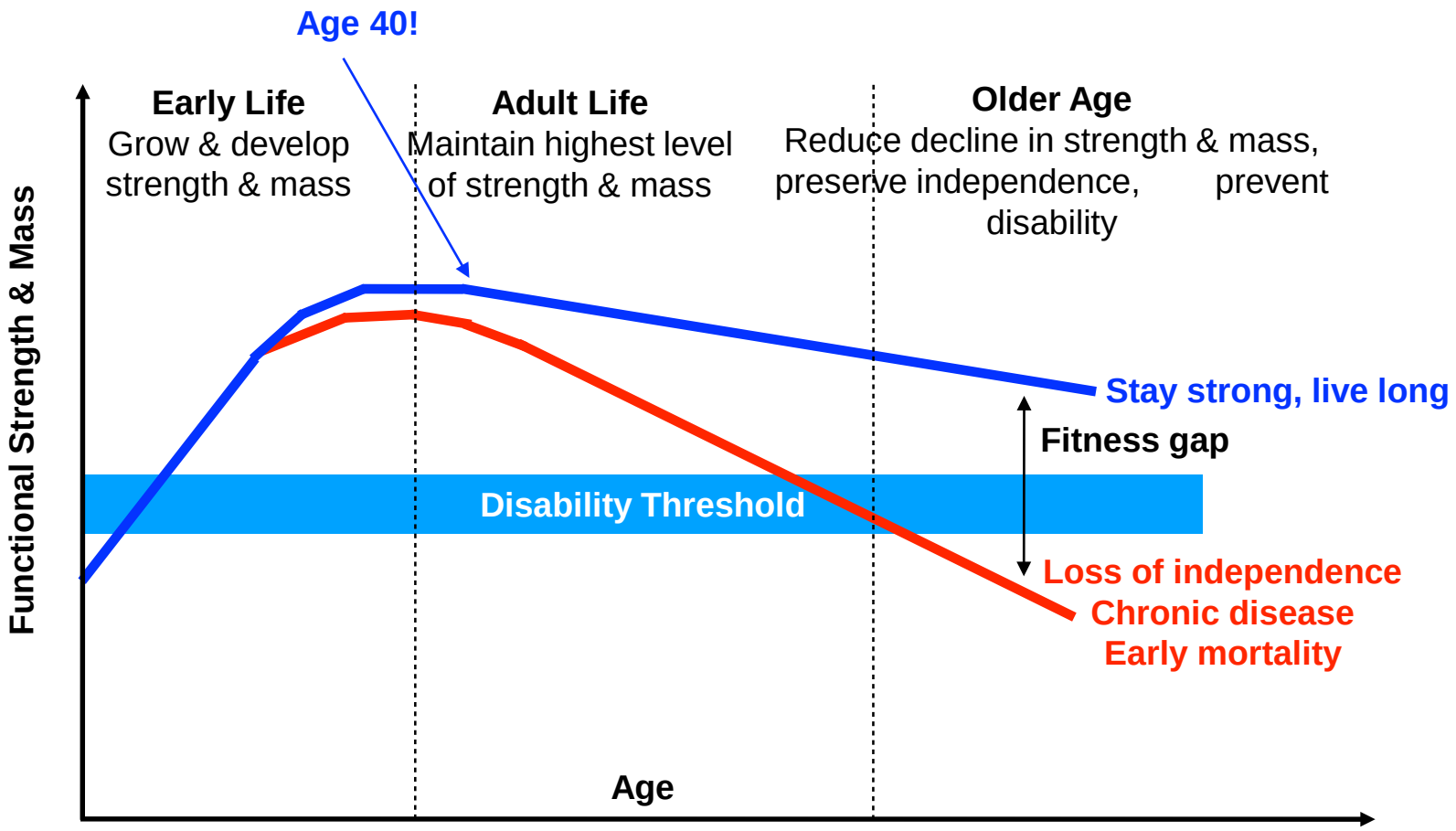
The Importance of Maintaining Muscle Mass and Strength with Aging

Clarence Bass



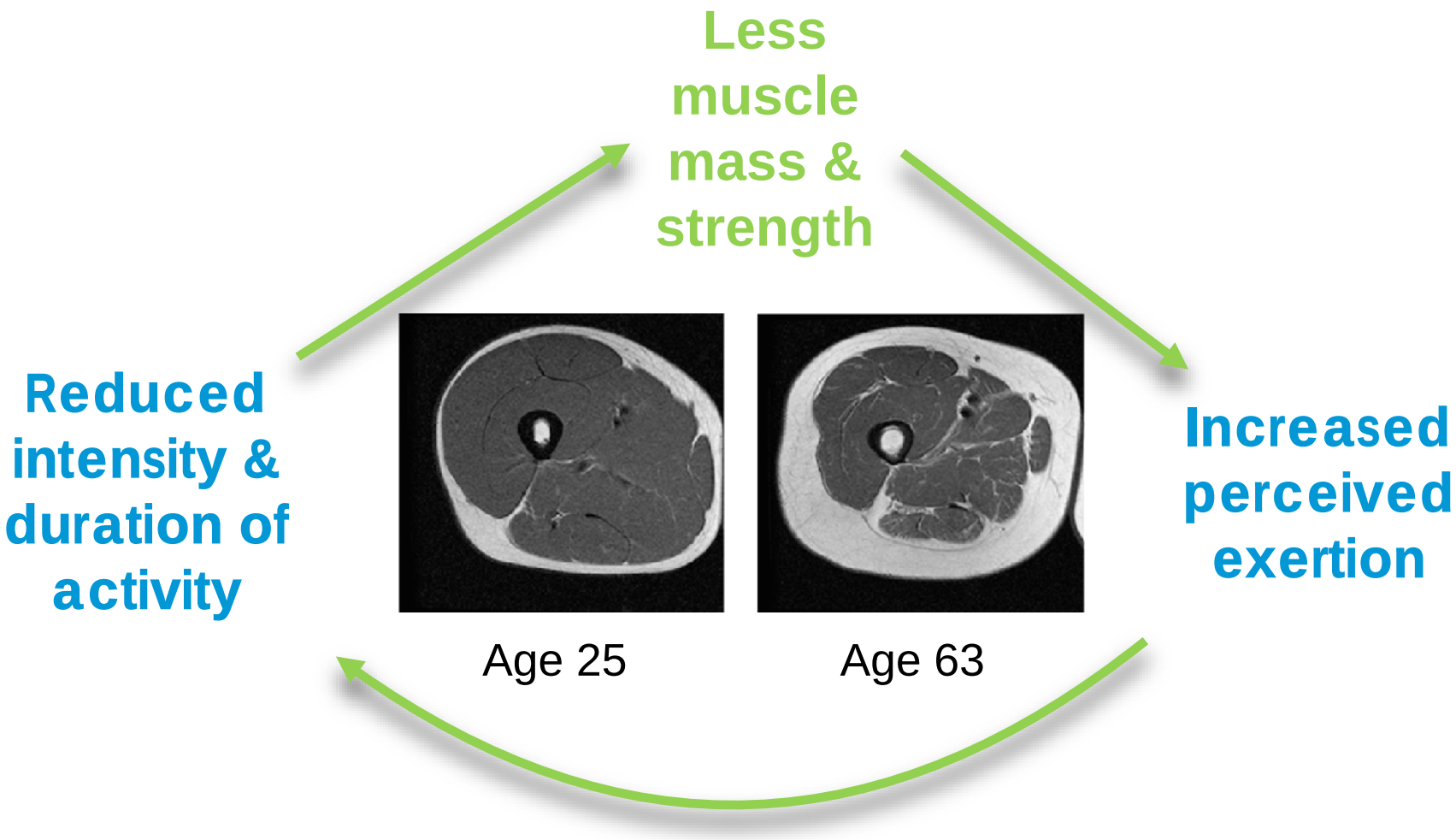
Ernestine Shepherd

Changes in Muscle Mass & Strength with Age

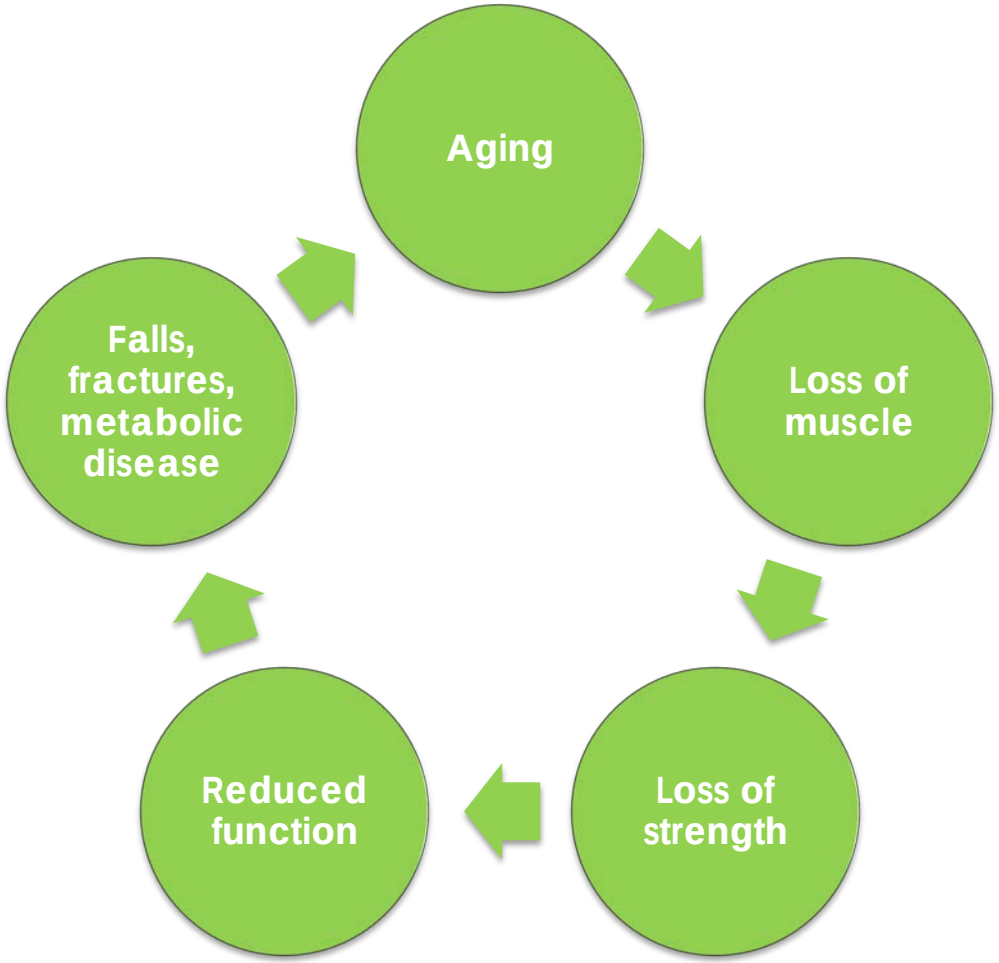


Graph adapted from WHO/NMH/HPS, Geneva 2000.; Keller K, Engelhardt M. Strength and muscle mass loss with aging process. *Muscles Lig Tend J.* 2013;3(4):346-350.

Sarcopenia: A Vicious Cycle



Loss of Muscle Mass can Lead to a Downward Spiral

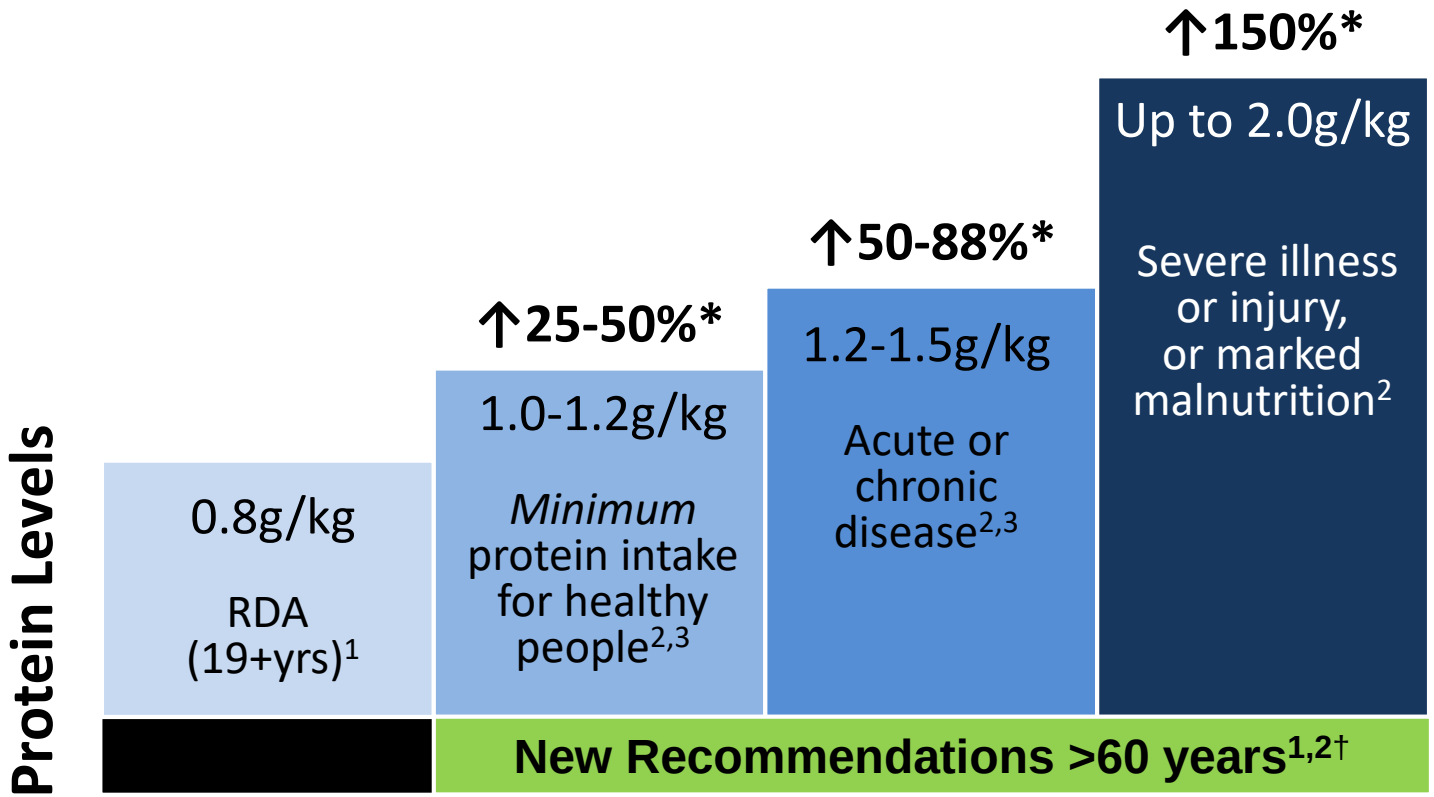


Age-Related Anabolic Resistance

- Older muscle responds more slowly to anabolic stimulus of dietary protein intake, termed “anabolic resistance".
- Older muscle recovers at a slower rate from exercise with more exercise-induced muscle damage compared to younger athletes with similar training.
- Could be underpinned by slower muscle signaling pathways leading to slower rates of muscle protein synthesis.
- Nutrition could offset anabolic resistance.

Doering et al. Int J Sports Nutr Exer Metab. 2016;26:168-178

New Recommendations: Higher Protein Intake* in Older Adults



*increase above current Protein RDA[1]

†Older people with severe kidney disease who are not on dialysis may need to limit protein intake.

1. *DRIs for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids (Macronutrients).* (2005) National Academy of Sciences. Institute of Medicine.
2. 2. Bauer J et al. Evidence-based Recommendations for Optimal Dietary Protein Intake in Older People: A Position Paper From the PROT-AGE Study Group. *JAMDA*. 2013;14:542-59. 3. Deutz NEP et al. Protein intake and exercise for optimal muscle function with aging: Recommendations for the ESPEN Expert Group. *Clinical Nutrition* (2014) In Press; http://dx.doi.org/10.1016/j.clnu.2014.04.007.

Leucine Content of Foods

Aim for 2.5 g leucine/meal

Animal Sources	Household Amt	Leucine (g)
Greek Yogurt	1 container (5.3 oz)	0.75
Raw Chicken Breast	4 oz	2.1
Raw Eggs	50g (1 lg egg)	0.54
Skim Milk	1 cup	0.78
Top Round Beef	4 oz	2.3
Soy Protein Isolate	1 oz	1.9

Plant Sources	Household Amount	Leucine (g)
Peanuts	1 oz	0.45
Tempeh	1 cup	2.4
Kidney beans	1 cup	1.3
Tofu, firm	½ cup	1.8
Pinto beans	1 cup	1.3
Green peas	1 cup	0.5
Chickpeas	1 cup	1.0
Chili with beans	1 cup	1.2
Edamame	1 cup	1.2
Refried beans	1 cup	1.0
Black-eyed Peas	1 cup	1.0

Source: USDA Nutrient Database – Standard Household Serving Sizes

Protein Guidelines

- **Aim for ~30-40 g protein per meal with ~2.5 g leucine per meal**
- **Spread protein throughout the day**
  - Average intake at breakfast <15g
  - Majority (60%) gotten at dinner
- **Plant-based eaters can get high quality protein from soy or quinoa**
- **More isn't better**

Falling Short: What nutrients and food groups are older adults missing in their diet?

2015 Dietary Guidelines Highlight Nutrients of Concern for Everyone

What you need to know:

- **Nutrients of public health concern:** Calcium, Potassium, Fiber, Vitamin D
- **Nutrients under-consumed**: Potassium, Fiber, Choline, Magnesium, Calcium, Vitamins A, C, D, and E

Fortified foods can help:

- **Fortified breakfast cereals and yogurt** were identified as key foods that provide nutrients of concern
- **Fortified foods and supplements** are useful in providing nutrients with inadequate intakes

Where do Americans, Age 51+, Fall Short?

% Not Meeting Recommendations

46%	Vitamin C	81%	Vitamin E
56%	Magnesium	42%	Vitamin A
59%	Calcium	94%	Vitamin D

% Meeting Recommendations

12%	Dietary Fiber	1%	Potassium

NHANES 2013-2014

Older Adults are Falling Short on Several Food Groups

Older adults, like all other age groups, are not eating enough vegetables and fruits

Among all age groups, the lowest intake of dairy is in adults 51 to 70 and 71 years and older

Protein intake for older men and women is within recommended intakes but intake of seafood is below recommendations

Total grain intake in older adults is within recommendations but whole grain intake is below recommendations

Nutrients to Pay Special Attention to

- Fiber
- Potassium
- Calcium
- Vitamin D
- Omega 3 fats
- Vitamin B12

Fiber

We should talk about fibers, like we talk about vitamins, because they do different things for our health. Many people believe that fruit and vegetables provide all the fiber anyone needs, but it is hard to reach fiber goals without including grains.

- Dr. Julie Miller Jones

Fiber

- Most Americans are woefully short on getting adequate fiber in their diets.
- The average intake is 17 grams of fiber a day and only 5% of Americans reach the Adequate Intake for fiber (25 g/day for women and 38 g/day for men.)
- Grains, especially the fiber found in wheat, are very effective for regularity due to the high bulking effect and resistance to fermentation in the large intestine. Oat fiber and corn fiber are also effective fibers for relieving constipation.
- One easy way to increase insoluble fiber is to include a high fiber breakfast cereal. Just a half-cup serving contains 9 to 14 grams of fiber, depending on the brand.

Dahl WJ & Stewart ML. Position of the Academy of Nutrition and Dietetics: health implications of dietary fiber. J Acad Nutr Diet. 2015;115:1861-1870.

Potassium

The Adequate Intake (AI) is 4700 mg/day for 51+ adults

What are the top sources of potassium in the diet of U.S. adults?

Potassium

Low potassium intakes increases the risk for high blood pressure, especially when combined with high sodium intakes.

Low potassium intakes are also linked to

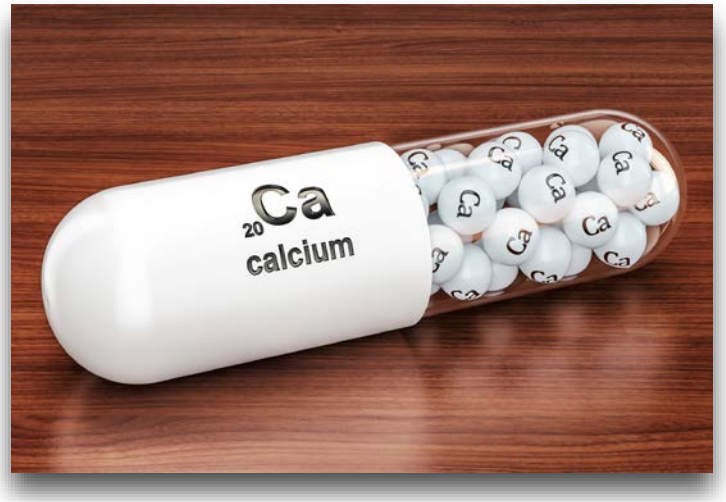
- Kidney stones
- Decreased bone density
- Blood glucose control and Type 2 diabetes

NIH Office of Dietary Supplements. Potassium: Fact Sheet for Health Professionals https://ods.od.nih.gov/factsheets/Potassium-HealthProfessional/

Calcium

Consider these headlines from 2012

- **Calcium Supplements May Raise Heart Attack Risk (Web MD)**
  - Study Finds Calcium From Supplements Appears to Boost Heart Attack Risk; Supplement Industry Disagrees
- **Calcium Supplements Could Give You a Heart Attack (NY Daily News)**
- **Calcium Supplementation Linked to Increased Risk of Heart Attacks (Huff Post)**



Calcium

- Data from Framingham Offspring Study does not support that dietary or supplemental calcium contributes to calcium deposits in arteries.
- Observational, prospective study of 670 women and 530 men (avg age 60) completed FFQ and had CT scans to determine calcium deposit; neither increased nor decreased coronary artery calcium.

Men and women should get adequate calcium from diet (or supplements) but more isn't better.

International Osteoporosis Foundation online calculator to determine usual calcium intake:

- https://www.iofbonehealth.org/calcium-calculator

Samelson et al Am J Clin Nutr 2012;96:1274-1280

Vitamin D

- Without sufficient vitamin D only 10-15% of calcium is absorbed.
- Skin production of vitamin D declines with age, and as vitamin D is difficult to obtain from food sources alone, IOF advises vitamin D supplementation to reach these recommended levels.
- IOF recommends a daily dosage of 800 to 1000 IU/day of vitamin D for fall and fracture prevention in adults aged 60 and older.
- To raise levels above 30 ng/mL, adults may need 1500-2000 IU/day.
- Foods fortified with vitamin D, like some breakfast cereals, yogurts, and soy beverages can help people meet recommended intakes.

National Academy of Sciences, Engineering, and Medicine. 2017. Nutrition Across the Lifespan for Health Aging: Proceedings of a Workshop. Washington,DC: The National Academy Press; NIH Office of Dietary Supplements. Vitamin D Fact Sheet for Health Professionals.

Omega-3s

- Omega-3s may help support muscle protein synthesis in older adults.
- Sarcopenia is associated with chronic inflammation and omega 3s can reduce inflammation.
- 2 g/day augmented gains in muscle mass, strength, and functional ability in older women after 3 months of resistance training.
- Research is preliminary and emerging, but omega-3 supplementation could be a supportive therapy for maintaining muscle mass.

Rodacki et al Am J Clin Nutr. 2012:95:428-436

Vitamin B12

- 30-40% of older adults have challenges absorbing food-bound vitamin B12.
- RDA isn't changed in older adults (2.4 mcg) but….
- Synthetic B12 is recommended for older adults for better absorption, either in fortified foods or supplements.

Move Well: What’s the best exercise to do after age 50?

Move Well

Strength

Endurance

Balance

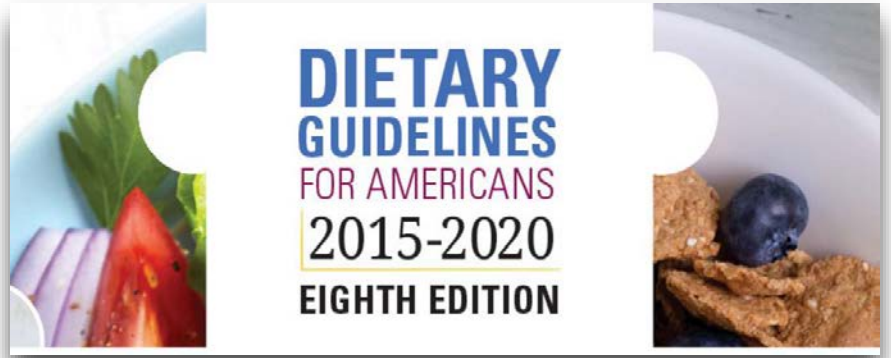
Dietary Guidelines

Provide evidence-based food and beverage recommendations that aim to promote health, prevent chronic disease, and help Americans reach and maintain a healthy weight.

First included physical activity recommendations in 1995.

150 minutes of moderate-intensity aerobic exercise every week.

Muscle strengthening exercise, working all major muscle groups twice a week.



Regular Activity/Physical Activity Improves Health

Take-Home Message: Keep Moving!

Physical Activity and Exercise

150-300 min of moderate-intensity exercise/wk
or
75 min of high-intensity exercise/wk
+
Strength training at least twice/wk

Only 24% of older adults meet the guidelines.

Goal: Reduce sedentary behavior.

Any movement is better than no movement.

Periodic “activity snacks” of any duration.

Raise heart and breathing rates. Challenge muscles.

Multi-component and dual-task activities

2018 Physical Activity Guidelines Advisory Committee. 2018 Physical Activity Guidelines Advisory Committee Scientific Report. Washington, DC: U.S. Department of Health and Human Services, 2018.

No Challenge, No Change

FOOD & FITNESS AFTER 50: NO CHALLENGE, NO CHANGE

MAY 29, 2018 | CHRISROSENBLOOM | EDIT

I first met Sally when she was 62 years old and teaching aerobics classes. She described herself as a "retired, healthy woman who lived her profession." For 30 years she was a high school health and physical education instructor who loved being active. One thing she always used to say that has stuck with me is "no challenge, no change." She was referring to our physical body, encouraging us to lift the heavier weight, go for a few more repetitions, or pick of the pace to get the heart and lungs moving to reap the benefits of

One tip to avoid early death ...

Walk faster than the Grim Reaper!

> 2.0 mph!

Stanaway FF, Gnjidic D, Blyth FM, et al. How fast does the Grim Reaper walk? Receiver operating characteristics curve analysis in healthy men aged 70 and over. *Brit Med J.* 2011;343:d7679.

Refusing to Go to the Gym is Not the Same Thing as Resistance Training!

ABCs

Agility: ability to change directions quickly and accurately

Balance: ability to remain upright and steady

Coordination: ability to use different parts of the body together smoothly and efficiently

Be Well:

What does it take to be well?

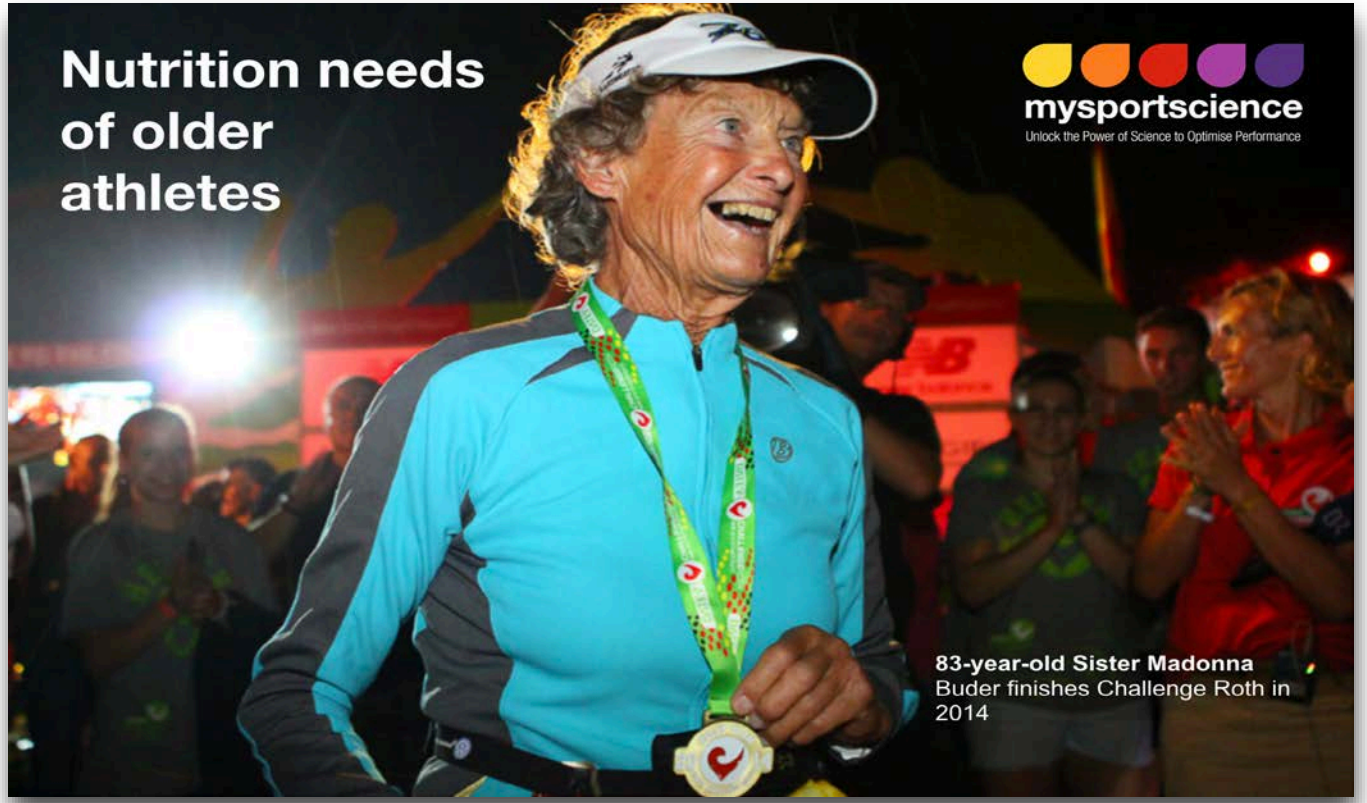
Be Well

Sleep

Stress

Social Support

It's Never too Late to Eat Well, Move Well, and Be Well.



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It's Never too Late to Eat Well, Move Well, and Be Well.

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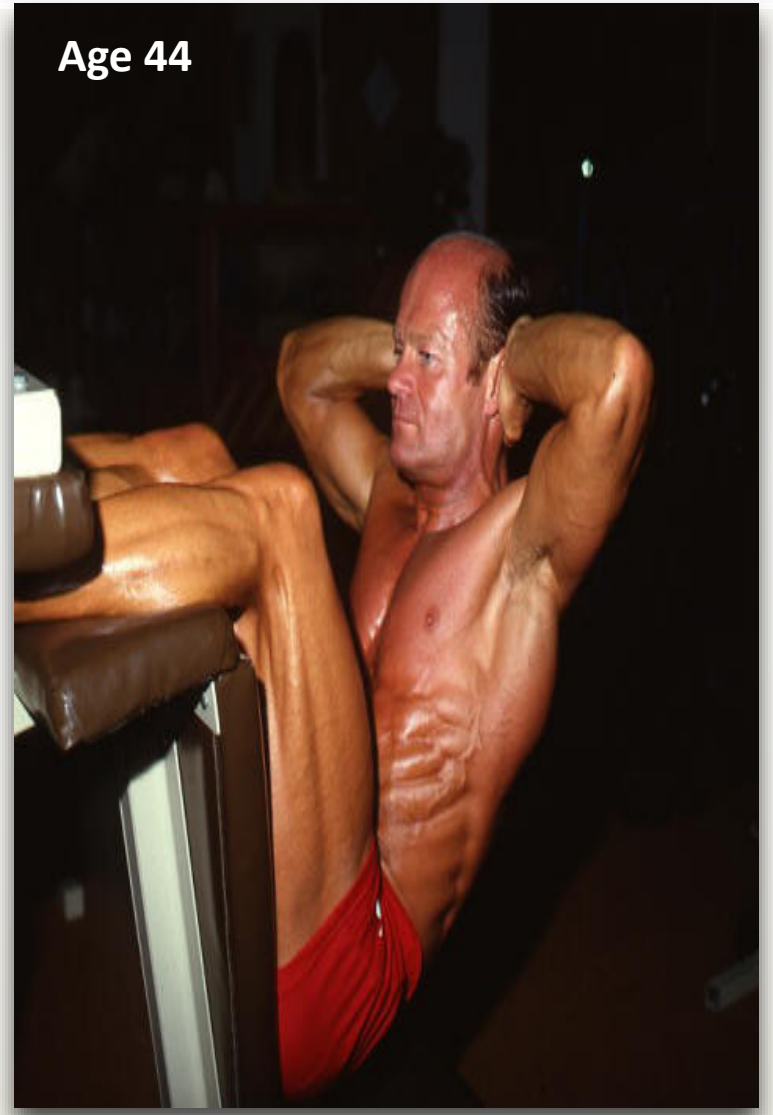

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- Follow my blog, *Fit to Eat*, for more inspiring stories of older adults and how they eat well, move well, and be well. https://chrisrosenbloom.com/fit-to-eat-blog/

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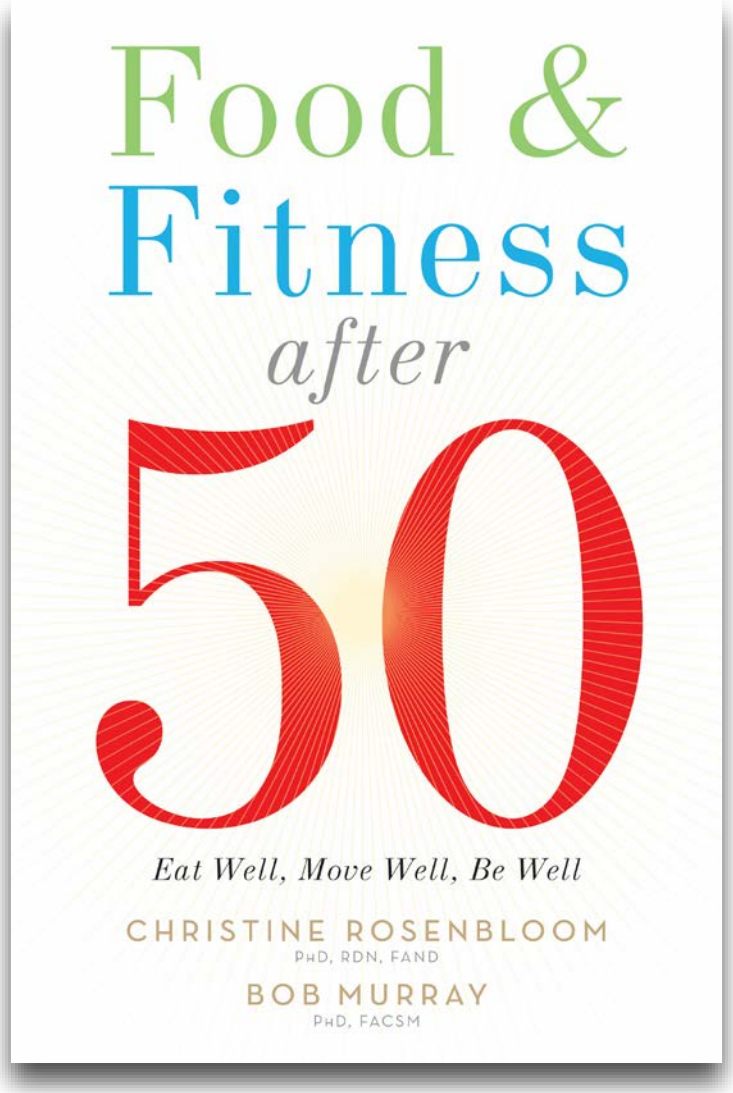

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