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Nutrition for the Elderly: Micronutrients



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Nutrition for the Elderly: Micronutrients

Nutrition for the Elderly

- The importance of eating well does not lessen as we age
- Continuing with a healthy lifestyle and balanced diet enables us to:
 - live longer and stronger
 - keep a sharp mind
 - feel better in our bodies

Challenges of Aging

- As we continue to age, there are many changes occurring that may change the way we eat, or our ability to eat, these include:
 - slowed metabolism
 - actual age-related muscle deterioration will kick into high gear around age 50
 - fewer calories are needed than before
 - if same amount of food is eaten, then weight gain will occur

Challenges of Aging

- slowed metabolism
 - rather than concentrating on eating less, think about eating better
 - include foods that satisfy your hunger, fill your stomach, and help you cut calories
 - eat foods that will fill you up and keep you full longer

Healthy Snacks

- Fruits, nuts, vegetables, and yogurt provide:
 - fiber
 - protein
- Help fight disease and protect brain
- Keep you full and helps you eat a healthy balanced diet

Challenges of Aging

- As we continue to age, there are many changes occurring that may change the way we eat, or our ability to eat, these include:
 - weakened senses (less sensitive smell or taste)
 - new medications
 - can affect appetite
 - can affect taste or senses

Challenges of Aging

- As we continue to age, there are many changes occurring that may change the way we eat, or our ability to eat, these include:
 - illnesses slowed digestion
 - decrease digestion
 - foods may not digest as quickly and will sit in your stomach and make you feel full longer

Challenges of Aging

- A balanced meal that includes adequate amounts of vitamins and minerals is therefore essential for healthy aging

What are Vitamins and Minerals?

- Essential substances that our bodies need to develop and function normally
 - micronutrients - smaller amounts needed
 - macronutrients - bigger portions needed
 - protein
 - carbohydrates
 - fats

What are Vitamins and Minerals?

- There are 13 essential vitamins which include the vitamins A, C, D, E, K, and the B vitamins (amount needed of each)

What are Vitamins and Minerals?

- Nutrients that our body needs to survive and stay healthy
- Helps keep your immune system strong
 - a weakened immune system can lead to chronic inflammation causing damage throughout your body (stiff and achy joints)

What are Vitamins and Minerals?

- Essential substances that our bodies need to develop and function normally

What are Vitamins and Minerals?

- Some vitamins help resist infections and keep nerves healthy, while others may help the body get energy from food
- Infections can diminish one's appetite; infections can decrease one's ability to metabolize nutrients which further decrease the immune system

Micronutrients - Recommended Values and Sources

Micronutrients	Daily recommended values	Sources
Vitamin D	Men: 15 mcg (600 IU) Women: 15 mcg (600 IU)	Fatty fish, fish liver oils, fortified milk and milk products, fortified cereals
Vitamin B12	Men and Women: 2.4 mcg every day	Meat, fish, poultry, milk, and fortified breakfast cereals
Calcium	Men: 1,000 mg each day Women: 1,200 mg each day	Dairy products , tofu, dark-green leafy vegetables, soybeans, sardines and salmon
Magnesium	Men: 420 mg each day Women: 320 mg each day	Green leafy vegetables, whole grains, legumes, and nuts and seeds

Micronutrients - Recommended Values and Sources

Micronutrients	Daily recommended values	Sources
Sodium	Men and Women: 2,300 mg each day	Prepare your own meals at home without using lot of processed foods/salt
Potassium	Men: 3,400 mg each day Women: 2,600 mg each day	Dried apricots, lentils, milk, and potatoes
Vitamin B6	Men: 1.7 mg each day Women: 1.5 mg each day	Fish, beef liver, potatoes and other starchy vegetables, and fruit (other than citrus)
Vitamin A	Men: 900 mcg RAE Women: 700 mcg RAE	Eggs, milk, vegetables and fruits, like carrots and mangoes

Micronutrients - Recommended Values and Sources

Micronutrients	Daily recommended values	Sources
Vitamin B3 (Niacin)	Men: 16 mg each day Women: 14 mg each day	Nuts, legumes, and grains, poultry, beef, and fish.
Vitamin K	Men: 120 mg each day Women: 90 mg each day	Spinach and kale, blueberries and figs, cheese, egg, and different meats
Folate	Men: 400 mcg DFE each day Women: 400 mcg DFE each day	Broccoli, brussels sprouts, spinach, oranges, nuts, beans, and peas

Micronutrients - Recommended Values and Sources

Micronutrients	Daily recommended values	Sources
Vitamin C	Men: 75 mg each day Women: 90 mg each day	Citrus fruits, tomatoes, and potatoes
Vitamin E	Men and Women: 15 mg per day	Peanuts and almonds, green vegetables, like broccoli and spinach
Vitamin B1 (Thiamine)	Men: 1.2 mg each day Women: 1.1 mg each day	Pork, fish, whole grains, some fortified breads, cereals, and pastas
Vitamin B2 (Riboflavin)	Men: 1.3 mg each day Women: 1.1 mg each day	Eggs, organ meat - liver and kidneys, lean meat, asparagus, and broccoli

Calcium

- Calcium is not only important for bone strength, but also for heart, nerves, and muscles

Calcium

- If we do not eat enough calcium, our body will start to take the calcium that is stored in our bones to be used in other places in our body, leaving us with:
 - ⊙ weak brittle bones
 - ⊙ joint problems

Calcium

- Bone mass is reached at the age of 20
- The ability to maintain calcium balance worsens and bone loss accelerates after 50 years of age

Calcium

- Ten million Americans diagnosed with osteoporosis (weakening of bones)

Calcium

- The risk of fracture also increases with older age
- It is recommended that older adults consume three servings a day of low-fat milk and other dairy products

Calcium

- Other good dietary sources of calcium include kale and broccoli, as well as juices fortified with calcium

Vitamin D

- Adequate vitamin D is required for optimal calcium absorption, normal bone growth, and maintenance of bone density and muscle strength

Vitamin D

- Helps with treating autoimmune disease or chronic pain and depression
- Inadequate vitamin D status results in loss of bone integrity and muscle weakness; both can increase the likelihood of falls and bone fractures in older adults

Vitamin D

- Because vitamin D is found in few foods (fortified cereal and some dairy products), sun exposure is the main source for vitamin D

Vitamin D

- However, older adults have a reduced capacity to synthesize vitamin D in skin upon exposure to ultraviolet-B radiation and they also have impaired conversion of vitamin D to its active form in the kidneys

Vitamin D

- Best sources of vitamin D, include:
 - egg yolks
 - fortified milk
 - fatty fish
 - salmon
 - tuna
 - mackerel

Magnesium

- Essential for your bones
- The mineral that is necessary to convert vitamin D to the active form
 - ⊙ muscle contraction
 - ⊙ protein synthesis
 - ⊙ energy metabolism
 - ⊙ helps transport nutrients

Magnesium

- Getting enough magnesium keeps our immune system in top shape
 - ⊙ bone health
 - ⊙ blood pressure regulation
 - ⊙ heart health
 - ⊙ diabetes

Magnesium

- As we age, we get less and less magnesium in our diet
- Absorption of magnesium decreases with age. Some medications older people take, including diuretics, may also reduce magnesium absorption.

Magnesium

- Sources of magnesium include:
 - summer squash
 - greens, turnip/mustard greens
 - broccoli
 - halibut
 - nuts
 - whole grains
 - beans and seeds

Vitamin B12

- Makes the amino acid methionine from homocysteine, and makes a compound that is involved in the production of energy and in the synthesis of hemoglobin
- The prevalence of vitamin B12 inadequacy increases with age, making older adults more susceptible to deficiency

Vitamin B12

- Found in:
 - dairy products
 - yogurt
 - milk
 - cheese
 - meats
 - fortified cereals
 - fish

Vitamin B12

- Older adults are vulnerable to vitamin B12 deficiency because they are more likely to be affected by atrophic gastritis (a chronic inflammation of the lining of the stomach), which ultimately results in stomach atrophy and decreased stomach acid production

Vitamin B12

- Certain medications can inhibit absorption
 - metformin
 - heartburn medications

Vitamin B12

- If the deficiency is not corrected, problems with balance, anemia, cognitive impairment (depression, confusion, poor memory, dementia), as well as permanent neurological damage, and gastrointestinal symptoms can result

Folate/Folic Acid

- Helpful with:
 - nerve function
 - the production of red and white blood cells
 - energy, metabolism (specifically carbohydrates)
 - producing DNA and RNA



Folate/Folic Acid

- Folate is involved in a number of vital metabolic processes, and deficiency leads to an

array of negative health outcomes, including:

- megaloblastic anemia
- increased risk of heart disease
- certain cancers



Folate/Folic Acid

- Found in:

- green leafy vegetables
- dry beans and peas
- fortified cereals
- fruits and vegetables



Folate/Folic Acid

- Presumably due to low intake of fruits and vegetables, there is some concern that intake recommendations are not being met especially in the elderly



Folate/Folic Acid

- Even marginal deficiencies can elevate blood homocysteine levels, possibly increasing risk for cardiovascular diseases, as well as Alzheimer's disease and other types of dementia



Folate/Folic Acid

- The pigment that's responsible for making beets red has been studied. Studies showed that those who incorporate foods, like beets, into their diet have a:
 - decrease in heart disease
 - an improved heart health
 - decrease in homocysteine level

Meeting Micronutrient Needs - Food or Supplements?

- It is usually better to get the nutrients you need from food, rather than a pill. That's because nutrient-dense foods contain other things that are good for you, like fiber.

Meeting Micronutrient Needs - Food or Supplements?

- If you aren't sure, if you aren't feeling well, consult a physician or a registered dietitian to find out if you are missing any important vitamins or minerals

Meeting Micronutrient Needs - Food or Supplements?

- A healthy diet is going to help your immune system stay strong and keep your heart healthy. Most older people can get all the nutrients they need from foods.

Meeting Micronutrient Needs - Food or Supplements?

- calcium
 - milk
 - canned fish
 - dark green leafy vegetables
- vitamin D
 - fortified milk
 - fortified cereals
 - fatty fish (salmon)
- B12
 - meats
 - fortified cereals

Meeting Micronutrient Needs - Food or Supplements?

- They may recommend a vitamin or dietary supplement
- Avoid supplements with mega-doses
- Too much of some vitamins and minerals can be harmful, and you might be paying for supplements you don't need

Healthy Eating Tips for the Elderly

- Some suggestions to add variety to the diet are below
 - choose a variety of colors in fruits and vegetables, alternating choices throughout meals
 - vary protein sources: choose meats, fish, whole nuts, nut butters, and beans

Healthy Eating Tips for the Elderly

- Some suggestions to add variety to the diet are below
 - vary preparation methods for different foods
 - roast
 - steam
 - sauté vegetables
 - bake
 - grill
 - stew meats

Healthy Eating Tips for the Elderly

- Some suggestions to add variety to the diet are below
 - increase the variety of texture in meals; alternate between:
 - whole grain breads
 - cereals
 - pastas
 - rice

Healthy Eating Tips for the Elderly

- Some suggestions to add variety to the diet are below
 - try to increase fiber in your day by eating:
 - oatmeal
 - more fruits and vegetables (smoothies)
 - casseroles

A Perfect Day of Eating in Your 50s

- Breakfast

- ⊙ three egg vegetable omelet topped with a big dollop of Greek yogurt
- ⊙ glass of 2% milk or cup of low-fat cottage cheese with mixed fruit and toast with avocado

A Perfect Day of Eating in Your 50s

- Midmorning snack

- ⊙ apple or similar-sized piece of fruit

- Lunch

- ⊙ burrito bowl with chicken, black beans, brown rice, guacamole, cheese, lettuce and salsa

A Perfect Day of Eating in Your 50s

- Afternoon snack
 - ⦿ cheese slices, whole-grain crackers and blueberries
- Dinner
 - ⦿ 6-ounce salmon fillet with quinoa and vegetables

Nutritional impact: 1,540-1,920 calories; 99-145 grams protein; 26-34 grams fiber

A Perfect Day of Eating in Your 60s and 70s

- Breakfast
 - ⦿ three egg vegetable omelet topped with a large dollop of Greek yogurt
 - ⦿ glass of 2% milk

A Perfect Day of Eating in Your 60s and 70s

- Midmorning snack
 - apple or similar-sized piece of fruit
- Lunch
 - chicken-and-vegetable stir-fry with chickpeas, served over barley

A Perfect Day of Eating in Your 60s and 70s

- Afternoon snack
 - cottage cheese topped with blueberries and mixed nuts
- Dinner
 - 6-ounce salmon fillet served with black beans and vegetables

Nutritional impact: 1,840 calories; 140 grams protein; 39 grams fiber

Questions?

***I take vitamin D as a recommendation
from my physician.***

***Are there food sources that are
recommended to help with this?***

Food Sources

- Fatty fish

- ⊙ tuna

- ⊙ salmon

(pouches mixed with low-fat mayo on whole grain bread, twice a week also good)

Vitamin D

- Number one supplement to take by pill that is most beneficial because of fewer food sources
- With food, it is very difficult for your body to have too high levels of vitamin D

Shannon, is that the same for D3?

Yeah, it is D3. Hardly ever is D2 given, D2 would be a prescription. So, D3 is what you get over the counter. If you're buying it over the counter, it's D3.

Is there a blood test to determine B12 deficiency?

Yes, it's vitamin B12. It's pretty simple, if there are symptoms, like if there's fatigue or... I think that the number one symptom is fatigue. You could tell your physician, especially if you have any type of diagnosis, like if you have what they call gastritis, or if you have inflammation of your stomach lining. Those things will inhibit B12 absorption, but if you do not eat B12 foods, you could have a B12 deficiency. And, if you express those symptoms or tell the doctor, they may be willing to check that level. But yeah, it's a blood test for B12.

Are there health benefits to taking collagen supplements?

Yeah, it is D3. Hardly ever is D2 given, D2 would be a prescription. So, D3 is what you get over the counter. If you're buying it over the counter, it's D3.

Ha! I have read studies that it can help. I don't think it causes any harm. There's the same amount of studies that say, it doesn't help, so I would of course talk to your physician and make sure it's okay or at least give your doctor's office a call, talk with a nurse, and ask her if it's okay to take a collagen supplement...

***What food can assist with low iron levels?
This is a recent development.***

All of the meat sources are going to be great iron. If you do not like meat, then your plant sources are not as well absorbed. So, you can do things like oatmeal or bean are good plant sources of iron, but those do not absorb as well. So, take a vitamin C or have it with some oranges, or something that's high vitamin C to help it absorb.

Is there such a thing as too much, say like tuna and salmon? Can you eat too much of that?

You can! So what some research shows they are having to balance. That goes more into not your micronutrients, but your omega-3 and omega-6 fat. And, if you get too many of your omega-6 fat, which you could if you ate fish every single day, you could maybe have an off balance of your omega-3 and your omega-6s that could lead to more inflammation.

Recommendation: have fish only twice a week.

Did you say that the folic acid was reduced risk for developing dementia?

You know like magnesium maybe more associated with cognitive. The B vitamins will have a neurological affect, so yes, it will be... research isn't like, it will definitely reduce the risk. I think, having those levels adequate keeps your homocysteine level decreased and so because folate helps with the conversion of homocysteine. And so if you're low in folate, then that level will be elevated which has shown some correlation with Alzheimer's. But there's no definitive, but I think there's definite benefit to have adequate folate to have good cognitive health.

Thank you!



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