

Food for Thought



EXPLORING THE ROLE BETWEEN DIET AND A HEALTHY BRAIN



Presented by Christine Tuan, RD
Geriatric & ABI Programs, Selkirk Mental Health Centre

On the Agenda



During today's session you will learn about:

- The dining experience and pleasurable meals
- Dietary challenges and strategies during the stages of dementia
- Impact of healthy choices on physical and brain health
- How Canada's Food Guide can work for your loved one
- Fats, vitamins and antioxidants
- Deciphering popular "diets" and claims
- Finding reputable health information

Food for Thought

Think about the best meal you
have ever had...

What made it so enjoyable?

Now think about the worst meal
you have ever had...

What made it so unpleasant?



The Truth about Eating



- The most social of all activities of daily living
- Fundamental pleasure
- Ability to eat is the first activity of daily living that is mastered and it is the last to be lost in dementia
- Meals not only satisfy hunger, but also provide opportunity to slow down, be with others, and socialize

are more than just food!

- Meals are about the experiences that go beyond the first and last mouthful. They involve:
 - Preparation of the dining room
 - Invitation to the meal
 - Greetings, conversations and social aspects
 - Taste, color, aroma, presentation, texture of the food
 - Clearing of meal and washing up
 - Satisfaction of a good meal



Eating is not like it used to be...



- As people age and disease progresses, eating changes
 - Weakened senses
 - Slower digestion
 - Difficulty chewing and swallowing
 - Dry mouth
 - Side effects of medications
 - Physical limitations – some people require assistance with eating
- Caring for someone with dementia can be challenging at meal times

Challenges in Dementia



Early Stages of Dementia

- **Goal** = maintain good nutrition and independence
- What you may see...
 - Decrease of variety in diet
 - Forgetting to eat, or forgotten that they have already eaten
 - Forgetting to drink or purposely drinking less
 - Decreased attention to food safety or unaware of spoiled food
 - Eating from dirty dishes
 - Forgetting that food is cooking on the stove
 - Trouble with complex meal preparation
 - Difficulty with grocery shopping
 - Skipping/refusing meals

Challenges in Dementia



Early Stages of Dementia

- What you can do...
 - Ensure a variety of nutritious foods are available
 - Choose foods with a longer shelf life and that can be easily accessed
 - Keep non-perishable snacks in sight to encourage consumption and give prompts
 - Limit items with lots of caffeine
 - Provide a variety of fluids to help with hydration
 - Ensure glasses, dentures, hearing aids, etc are worn during meals
 - Check refrigerator for spoiled food and discard

Challenges in Dementia

Early Stages of Dementia

- What you can do...
 - Check cabinet/pantry for possible spoiled food, dirty dishes/containers
 - Consider disconnecting stove/oven if this is a safety issue
 - Simplify menus and recipes
 - Provide assistance with grocery shopping
 - Consider home delivered meals/meal programs
 - Have frozen or pre-made and ready to heat meals on hand
 - Monitor weight and how clothes are fitting



Food Safety: Bacteria Gone Bad

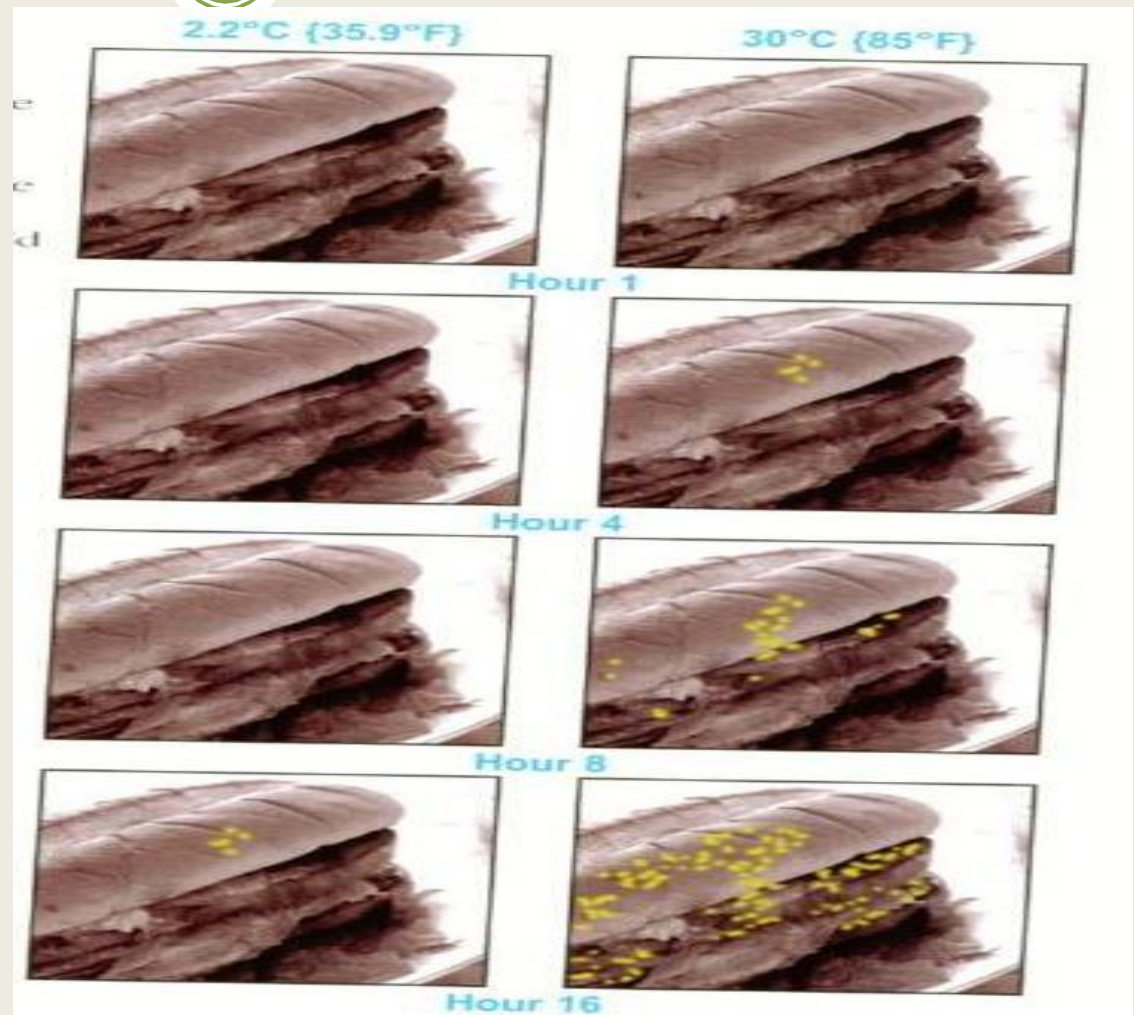


- What is foodborne illness?
- Symptoms: cramps, diarrhea, fever, vomiting, dehydration
- Affects between 11 to 13 million Canadians yearly
- Sickness can occur one or more days after eating
- Most cases can be prevented by using safe food handling
- Bacteria are concerning because...
 - They grow in many conditions
 - They can travel
 - They are invisible
 - They can contaminate food through water, air or direct contact.
 - They can multiply quickly!

Safety: Bacteria Gone Bad

- **DANGER ZONE** is the temperature range in which many bacteria grow rapidly

**Danger Zone =
4C – 60C
(40°F - 140°F)**



Challenges in Dementia



Middle Stages of Dementia

- **Goal = Maintain good nutrition and a healthy weight**
- What you may see...
 - Forgetting to eat and drink
 - Not recognizing how to use utensils
 - Possible changes in the ability to eat (chewing, swallowing)
 - Preference for sweets and sugary items
 - Loss of interest in food, decrease sense of smell
 - Weight loss
 - Unable to prepare food without assistance
 - Overwhelmed by many foods on the plate or items presented
 - May eat spoiled food that has been hidden/saved
 - May eat non-food items

Challenges in Dementia

Middle Stages of Dementia

- What you can do...
 - Supervise meals
 - Explore nutritional supplements (Boost, Ensure) - consult dietitian and physician
 - Maintain good oral hygiene/dental care
 - Offer finger foods
 - Provide sweet foods that have nutritional value (fruits, milk, pudding, jello, cereal)
 - Use seasonings and color to make food appealing and attractive



Challenges in Dementia

Middle Stages of Dementia

- What you can do...
 - Serve foods one at a time or on smaller plates
 - Avoid distractions such as TV, radio, loud music
 - Offer frequent small meals during the day and snacks
 - Use food aromas to stimulate appetite (*bake small pan of vanilla/cinnamon in oven on low, bake bread at snack/meal times*)
 - Search for and discard “stashed” food regularly
 - Remove non-food items that may look like food
 - Monitor weight and food/fluid intake

Challenges in Dementia



Late Stages of Dementia

- **Goal = Providing nutrition as able; comfort and care during the end stages of life**
- What you may see...
 - Pocketing food, forgetting to swallow or chew
 - May not recognize foods or know what to do with it
 - Refusal to wear dentures or may be ill-fitting
 - Weight loss even with adequate dietary intake
 - May required full assistance/feeding provided at meals

Challenges in Dementia

Late Stages of Dementia

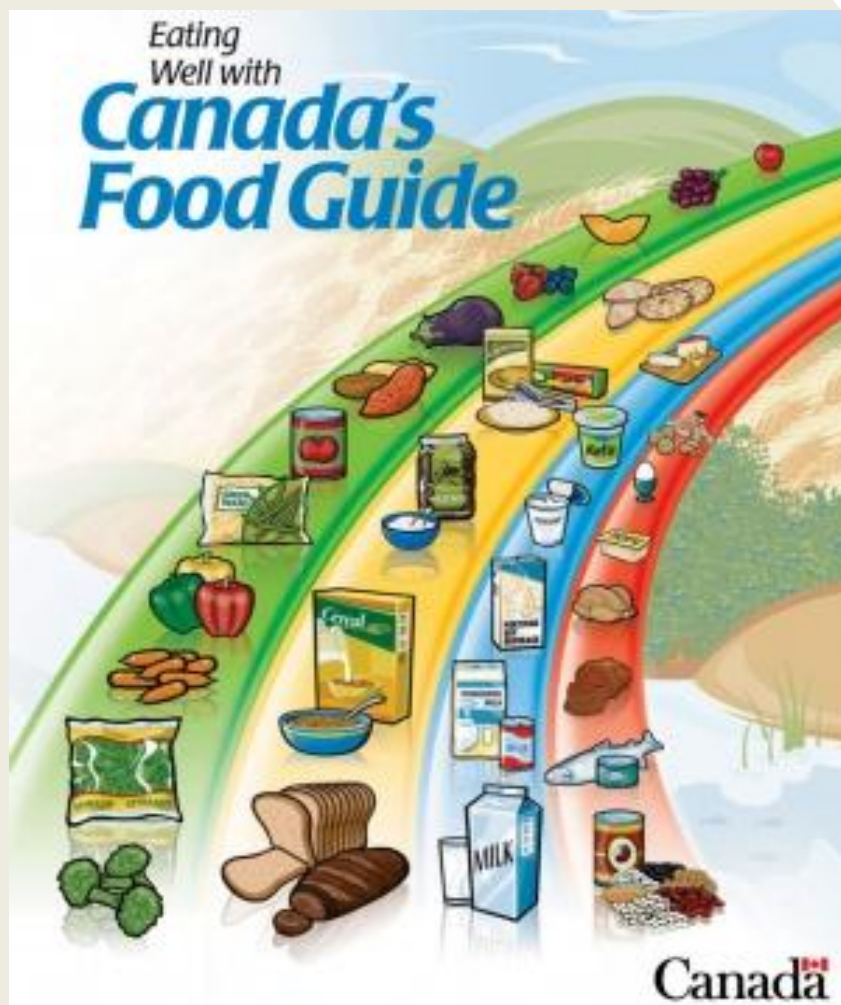
- What you can do...
 - Arrange for training on feeding techniques and provide assistance at meals
 - Referral to dietitian, speech language pathologist, occupational therapist to evaluate swallowing and positioning
 - Modify the texture of foods (soft, ground, pureed)
 - Allow plenty of time to complete meals
 - Make meal times pleasant and relaxed, try soft music, good lighting, gentle conversation
 - Feed with dignity, not as a child (use apron instead of bib, give choices, identify foods, ask if food is too hot/cold)
 - Encourage independence where possible (place cups/utensils in hands and guide)
 - Provide cues and prompts

g Healthy Food Choices



- Eating healthy is essential for our physical and mental wellbeing
- Healthy food choices can reduce risk of disease such as heart disease, stroke, diabetes
- Brain health can also be improved by healthy eating
- Research shows that life long healthy eating can:
 - Help with brain function
 - Slow memory decline
 - Reduce risk of dementia

Canada's Food Guide



Recommended Number of Food Guide Servings per Day

Age in Years Sex	Children		Teens		Adults				
	2-3	4-8	9-13	14-18		19-50		51+	
	Girls and Boys		Females	Males	Females	Males	Females	Males	
Vegetables and Fruit	4	5	6	7	8	7-8	8-10	7	7
Grain Products	3	4	6	6	7	6-7	8	6	7
Milk and Alternatives	2	2	3-4	3-4	3-4	2	2	3	3
Meat and Alternatives	1	1	1-2	2	3	2	3	2	3

Canada's Food Guide



- CFG aims to help people:
 - Get enough vitamins, minerals and other nutrients
 - Reduce the risk of obesity, type 2 diabetes, heart disease, certain types of cancer and osteoporosis
 - Emphasize healthy eating and regular physical activity
 - Achieve overall health and vitality
- Encourages choosing a variety of foods from each of the 4 food groups
- Describes what **amount** of food people need and what **type** of food is part of a healthy eating pattern

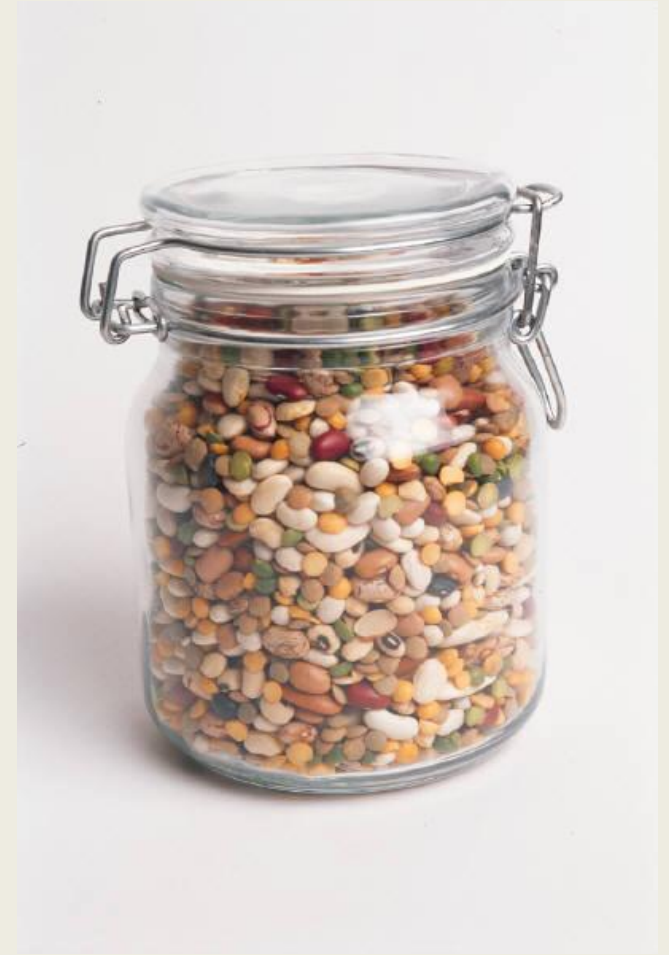
The Famous Four

- Fruits & Vegetables
 - Largest arc on the rainbow
 - Important nutrients such as vitamins, minerals and fibre
- Grain Products
 - Whole grains are a good source of fibre
 - A diet rich in whole grains may also help reduce the risk of cardiovascular disease
 - Whole wheat bread, brown rice, whole wheat pasta, bran
 - The first ingredient should be a whole grain such as whole grain wheat



The Famous Four

- Milk & Alternatives
 - Drink skim, 1% or 2% milk, lactose-free options (soy, almond)
 - Select lower fat milk alternatives – cheese, yogurt
 - Calcium and vitamin D
- Meat & Alternatives
 - Meat alternatives - beans, lentils, eggs, nuts/seeds, tofu
 - Eat at least two serving of fish each week
 - Select lean meats and alternatives prepared with little or no added fat or salt



Canada's Food Guide

- Other factors to consider:
 - Dark green and orange vegetables
 - ✦ Rich in folate and vitamin A
 - ✦ Examples: spinach, leafy greens, broccoli, carrots, squash
 - Variety of vegetables and fruit
 - Include a small amount of unsaturated fat each day (2-3 Tbsp)
 - ✦ Canola, olive and soybean oils, soft margarine
 - ✦ Limit butter, hard margarine, lard, shortening
 - Satisfy your thirst with water
 - ✦ Drink more water in hot weather and when you are very active
 - Enjoy regular physical activity

Canada's Food Guide

- What are the benefits of eating healthy and being active?
 - Better overall health
 - A healthy body weight
 - More energy
 - Lower risk of disease
 - Feeling and looking better
 - Stronger muscles and bones



The Role of Fat



- Higher intakes of fat, especially saturated and trans fat have been associated with greater cognitive decline and dementia risk (particularly AD)
- Saturated fat
 - Found in animal-based foods (meat and high-fat dairy products), and tropical fats (coconut and palm oil)
 - Solid at room temperature
- Trans fat
 - Found in commercially fried foods, hard margarine and some processed foods (store-bought cookies, baked goods and crackers). Trans fat is also known as partially hydrogenated fat or vegetable shortening.

The “Good” Fats



- Conversely, higher intakes of “healthy fats”, such as monounsaturated and polyunsaturated fats have been linked with better brain function
- Monounsaturated fat
 - Such as olive oil and canola oil, should be the main source of fat in the diet. When it replaces saturated fat, LDL cholesterol levels can be reduced.
- Polyunsaturated fat
 - Found in corn or sunflower seed oil; should be emphasized in the diet. Omega-3 fats, found in fish, should be increased.

me about Omega-3 Fats



- There are 3 types of omega-3 fats:
 - ALA (alpha-linolenic acid)
 - EPA (eicosapentaenoic acid)
 - DHA (docosahexaenoic acid)
- Include all 3 types in the diet
- EPA & DHA - fatty fish like salmon, mackerel, anchovies, sardines, herring, Arctic Char and trout
- CFG recommends at least 2 servings of fish per week
 - One serving = 75 grams (2 1/2 ounces) or half a cup of cooked fish
- ALA - flax seeds (ground), walnuts, soy products, omega-3 enriched products like eggs, milk and margarine

me about Omega-3 Fats



- If you are a vegetarian, vegan or have limited fish intake, a supplement may be worth exploring
- Speak to your physician before starting any supplement.
- Research of omega-3 fats...
 - Regular fish consumption has been associated with decreased risk of AD in several European and American research studies
 - However, there are few studies that show that individuals with existing AD or dementia can be treated with omega-3 fats, or that it will slow the rate of decline

ets: The Mediterranean Diet

- Emphasis on plant foods, olive oil, fish, wine
 - Some dairy and meat/poultry
- Has been associated with risk heart disease, cancer, cognitive decline
- Potential protective effects on the brain
 - Fish (omega-3), monounsaturated fats, vitamin B12, folate, antioxidants
- Includes many elements of CFG:
 - Emphasizes vegetables and fruit
 - Whole grains
 - Fats/oil with low saturated fat (olive oil)
 - Fish
 - Low fat dairy (skim milk, fat-free yogurt, low-fat cheese)
- More research is needed, nonetheless, eating a healthy diet is important to stay physically and mentally fit.



ar Diets: Raw Food Diet

- Devotees insist that a diet consisting mainly of uncooked, unprocessed plant foods cuts the risk of disease
- Made up of 75% fruits and vegetables. Staples of the raw food diet include:
 - Seaweed, sprouts, sprouted seeds, whole grain, beans, dried fruit, nuts
- Raw foodists do not cook using a traditional stove or oven
- Potential for B12 deficiency
 - Calcium, iron, and omega-3 fatty acids
- Claims that eating a raw food diet can treat moderate stage AD
- Medical literature is scant and information is mostly testimonial; no scientific evidence

Side Scoop on Coconut Oil

- Coconut oil is a tropical oil
- Made up of 92% saturated fat
 - More saturated fat than many other oils (olive/soybean ~15%, butter 63%)
- Solid at room temperature and doesn't go rancid quickly; used in chocolate and candy
- Coconut oil is unique because it contains a high percentage of fats called **medium chain triglycerides** (MCTs)



Wide Scoop on Coconut Oil



- Our bodies metabolize MCTs differently
- Touted as a potential cure for AD...but how?
 - Our brains normally use glucose for energy; during fasting/starvation we use fat (ketones)
 - **The hope**: If the level of ketones in the brain could get high enough in AD, they could be used a constant energy source and restore some brain function
 - **While ketones are produced when they metabolize the MCTs in coconut oil, it does not lead to levels anywhere near the amount needed to fuel the brain!**
 - Research is ongoing, but for now, there no evidence suggesting that coconut oil can cure or slow progression

Family of B-Vitamins



- Help make red blood cells, keep the nervous system healthy and help your body use energy from food
- B-vitamins are found in all four food groups, therefore we must aim for variety!
- Thiamin, niacin, riboflavin, folate, B6 and B12
- Research has shown that low intakes of B-vitamins, particularly folate, B6 and B12 have been associated with increased risk of AD and vascular dementias

Family of B-Vitamins



- **Thiamin (Vitamin B1)**
 - Helps body use carbohydrates and protein to make energy
 - Pork, fortified breakfast cereals, enriches grain products
- **Niacin (Vitamin B3)**
 - Energy, enzymes, DNA
 - Meats and alternative, fortified enriched grains
- **Riboflavin (Vitamin B2)**
 - Energy, production of niacin and pyridoxine (vitamin B6)
 - Milk and milk products are the richest sources
- **Folate**
 - Red blood cells, prevent birth defects
 - Broccoli, spinach, chickpeas, beans, lentils
- **Vitamin B6**
 - Body uses to make and use protein and glycogen, hemoglobin
 - Meat, enriched cereals, soy products, nuts, lentils
- **Vitamin B12**
 - DNA, healthy blood cells, nerve function
 - Milk, cheese, milk products, meat, fish, shellfish and poultry

Family of B-Vitamins

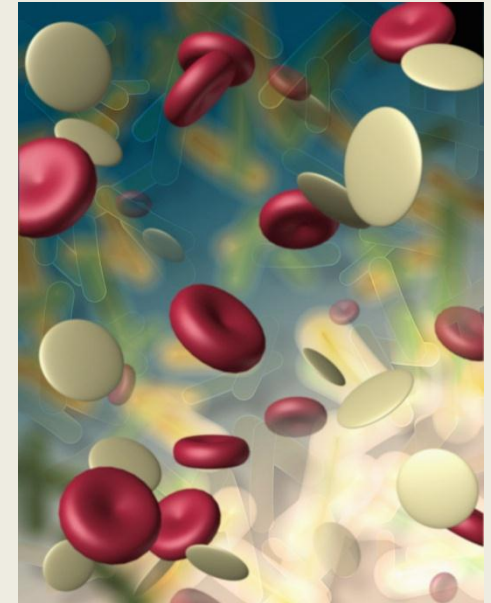


- Research has shown that low intakes of B-vitamins, particularly folate, B6 and B12 have been associated with increased risk of AD and vascular dementias
- What about vitamin B supplements?
 - Speak to your physician
 - If you suspect that you are not getting enough of the B-vitamins through diet, a supplement may be beneficial
 - Studies show that if you are taking B-vitamins in hopes of slowing cognitive decline, there is no known evidence that vitamin B supplements will have that effect

Antioxidants 101



- Antioxidants protect the body's cells from damage
- Cell damage happens naturally as we age; can also happen with exposure to pollution or cigarette smoke
- Can lead to common diseases like heart disease, diabetes, cancer, dementia
- A diet rich in antioxidants can help lower your risk of these diseases



Antioxidants 101



- What foods are rich in antioxidants?
 - Foods with vitamins such as A, C or E
 - ✦ Broccoli, spinach, potatoes, peppers, strawberries, raspberries, kiwi, mango, almonds, nut butters, avocados, fish...
 - Plant based foods with flavonoids and carotenoids
 - ✦ Green tea, blueberries, strawberries, raspberries, apples, red grapes, tomatoes, carrots, sweet potatoes, squash, spinach, kale
 - Foods containing a mineral such as selenium
 - ✦ Fish, nuts, meat, soy, yogurt, rice, pasta

Aim for LOTS of **color** on your plate!

Alternative Treatments



- This includes herbal remedies, dietary supplements and “medical foods” that are promoted as memory enhancers or treatments to delay or prevent dementia
- The safety and effectiveness of these treatments is largely based on testimonials, tradition and little scientific research
- Concerns about alternative therapies:
 - Effectiveness and safety are unknown (as approval for the market is not as rigorous as prescription drugs)
 - Purity is unknown
 - Side effects are not routinely monitored
 - Serious interactions with prescription medications

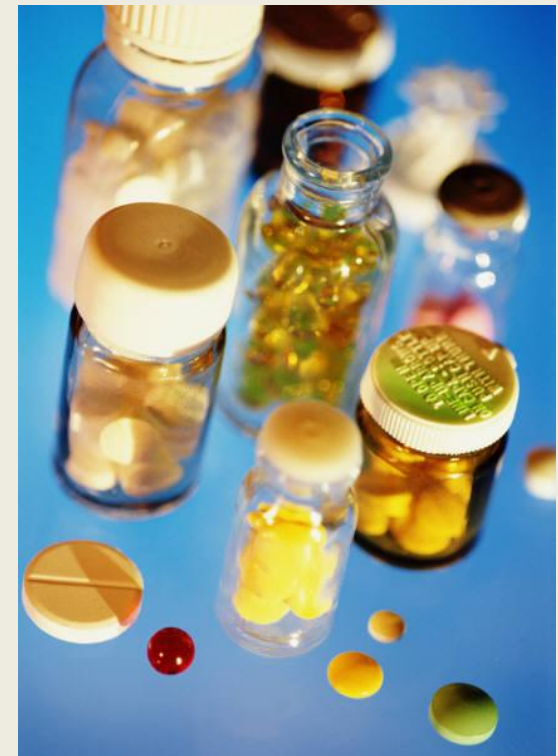
Coenzyme Q10



- An antioxidant that occurs naturally in the body and is required for normal cell function
- A synthetic version of the compound “Idebenone” claims to slow decline in AD, however studies to date show it has no benefit in the disease
- Little research has been done on coenzyme Q10 and it is unknown what amount is considered safe; there could be potential harmful effects if too much is taken

Supplements and Claims

- Hundreds of herbal supplements on the market
- Before taking a supplement, speak to your physician about:
 - Safety and dosage issues
 - Scientific evidence
 - Potential risks
- Use of herbal therapies in addition to conventional drug therapies may lead to interactions that result in an adverse drug event



Supplements and Claims

- Ginkgo Biloba
 - Reported to have “memory enhancing” effects in older adults, however research has failed to confirm positive results
- Vinpocetine
 - Similar claims to ginkgo biloba
 - Research is very preliminary and in its infancy stage
- Huperzine A
 - Has been promoted as a treatment for Alzheimer’s disease
 - Large U.S. clinical trial was completed for treatment of mild to moderate AD; no greater benefit than those taking a placebo

Supplements and Claims

- Coral Calcium
 - Marketed as a “cure” for Alzheimer’s disease, as well as cancer
 - Is a form of calcium carbonate said to be derived from the shells of organisms of coral reefs
 - Only difference is that coral calcium contain trace of some additional minerals; no extraordinary health benefits known
 - No reliable scientific evidence supporting the claim
 - If taking a calcium supplement, consult a physician



g Reputable Information



Tips from the Canadian Public Health Association:

- The internet is not regulated; anyone can publish
- Looks for authors with approved credentials such as physician (MD), registered nurse (RN), registered dietitian (RD), etc.
- Look for links that say “about us”, “about this site”, or “contact us.”
- Purpose of website – information or selling?
- Consider non-profit, education/medical organizations/
government agencies
- References to journals and other sources to back up info
- Easy to understand
- Trust your instinct

Parting Thoughts



- Food is a shared interest and fundamental pleasure
- Watch for changes and challenges that can arise with eating as dementia progresses
- Use Canada's Food Guide as “your personal guide”
- Aim for variety in the diet
- Think critically about the pros and cons before going forward with popular diets and alternative treatments
- Consult a physician before starting anything
- Search for credible information

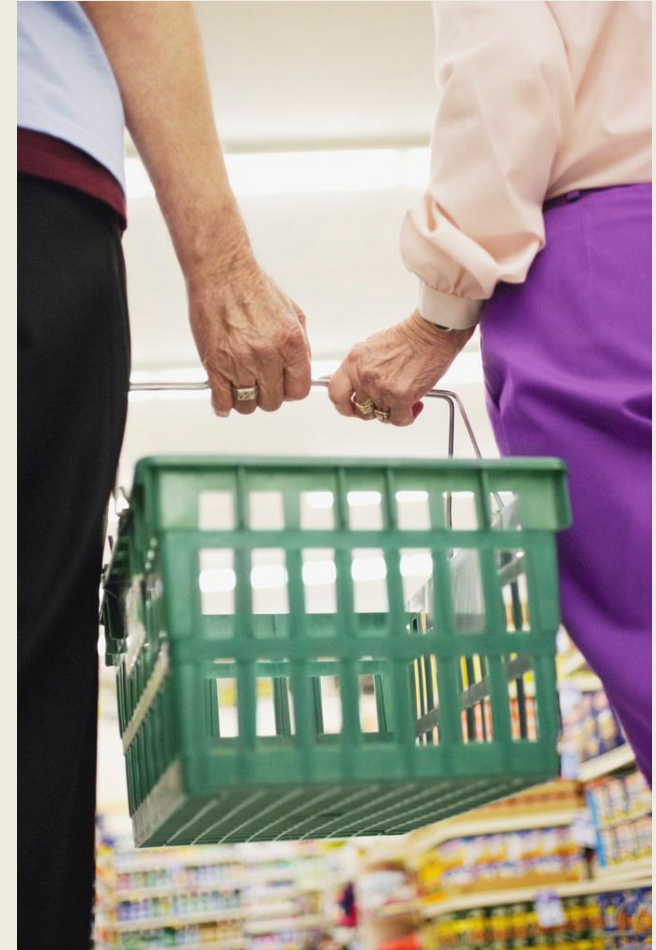
Parting Thoughts



Mealtimes can be powerful and play a crucial role in maintaining the quality of life for individuals living with dementia.

One cannot think well, love well, sleep well, if one has not dined well.

~ Virginia Woolf



References



- Alzheimer's Association. *Alternative treatments*. Retrieved from http://www.alz.org/alzheimers_disease_alternative_treatments.asp
- Alzheimer's Association – South Central Wisconsin Chapter. (2002). *Planning guide for dementia care at home: A reference tool for care managers*. Retrieved from <http://www.dhs.wisconsin.gov/aging/dementia/nutrition.pdf>
- Alzheimer Society Canada. (2012). *Make Healthy Food Choices*. Retrieved from <http://www.alzheimer.ca/en/About-dementia/About-the-brain/Brain-health/Make-healthy-food-choices>
- Canadian Public Health Association. *Evaluating health information online*. Retrieved from <http://www.cpha.ca/en/portals/h-l/web.aspx>
- Dietitians of Canada. (2012). *Dietary Fats*. Retrieved from <http://www.dietitians.ca/Dietitians-Views/Dietary-Fats.aspx>
- Eat Right Ontario (2012). *Omega-3 fats deliver Oh Mega benefits*. Retrieved from <http://www.eatrightontario.ca/en/Articles/Heart-Health/Omega-3-fats-deliver-Oh-Mega-benefits.aspx>
- Feart, C., et al. (2009). Adherence to a Mediterranean diet, cognitive decline, and risk of dementia. *The Journal of the American Medical Association*, 302(6), 638-648.
- Ferland, G., Greenwood, C., & Shatenstein, B. (2011). Nutrition and dementia: A clinical update. *Journal of Current Clinical Care*, 1-12.
- Holford, P. (2004). Alzheimer's and dementia: The nutrition connection. *Primary Care Mental Health*, 2, 5-12.
- Zgola, J. & Bordillon, G. (2001). *Bon appetit!: The joy of dining in long-term care*. Maryland: Health Professions Press, Inc.