

An illustration of an elderly woman with short white hair, smiling warmly. She is wearing a light blue long-sleeved shirt and a dark blue apron over a pink top. She is holding a white plate with a bowl of colorful salad. The background is a bright, clean kitchen with white tiled walls, a blue stove, and a window with a view of greenery. The scene is framed by various fresh fruits and vegetables like a pineapple, blueberries, and leafy greens.

Ensuring Good Nutrition for Seniors at Home .

An e-book For Food Gatekeepers

Department of Food Science & Nutrition

Smt.P.N.Doshi Women's College

DISCLAIMER

ALL THE IMAGES USED IN THIS RESOURCE HAVE BEEN DOWNLOADED FROM GOOGLE FOR EDUCATIONAL PURPOSES ONLY.

Preface

As a country, we are currently enjoying a demographic dividend, the elderly population is also increasing. The rise of the nuclear family with hectic lifestyles, along with a deficit of comprehensive support systems, add to the vulnerability of seniors. One of our departmental research projects.... highlighted the need for creation of a resource for caregivers of seniors to support them through some basic yet critical nuances of nutrition care for seniors.

The layout and the language has been kept simple for ease of use.

We are optimistic that this resource will be used by many Caregivers to build and sustain a holistic nutrition care eco-system for elders in their homes.

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Why do
Seniors eat
differently as
they age?



Physical, physiological and cognitive changes

Loss of muscular strength, endurance, **Sarcopenia**-loss of muscle mass and bone leading to functional decline

Chronic conditions like

- Type II diabetes
- Atherosclerosis
- Coronary heart disease &
- Anorexia of aging related malnutrition

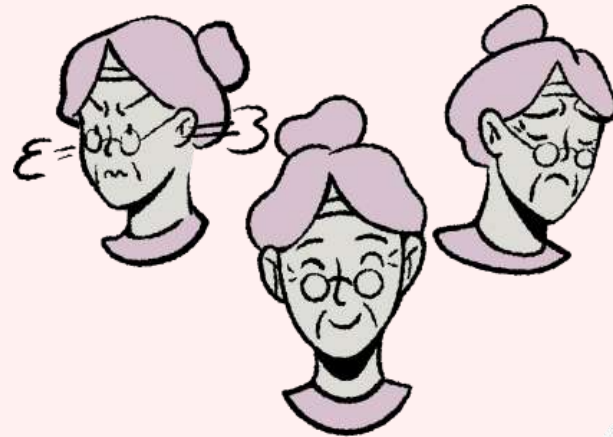
Memory Loss

Factors Contributing to Reduced Food Intake

Marked loss of appetite (Anorexia of Aging) leading to Frailty

Common Causes of Anorexia of Aging

- Decreased acuity of taste, smell, touch, sight
- Poor oral health-decayed/missing teeth, ill-fitting dentures
- Hormonal influence on appetite
- Slowing down of the digestive system



SENSORY IMPAIRMENT & POOR FOOD INTAKE

Anosmia

Reduced sense of smell



Hypogeusia

Reduced sense of taste due to decreased number and sensitivity of papillae, taste buds or taste bud density on the tongue



Xerostomia

Dry mouth or hyposalivation is a contributor to this condition



HORMONAL CHANGES AND FOOD INTAKE



Early satiety



Delayed gastric emptying



Reduced food intake

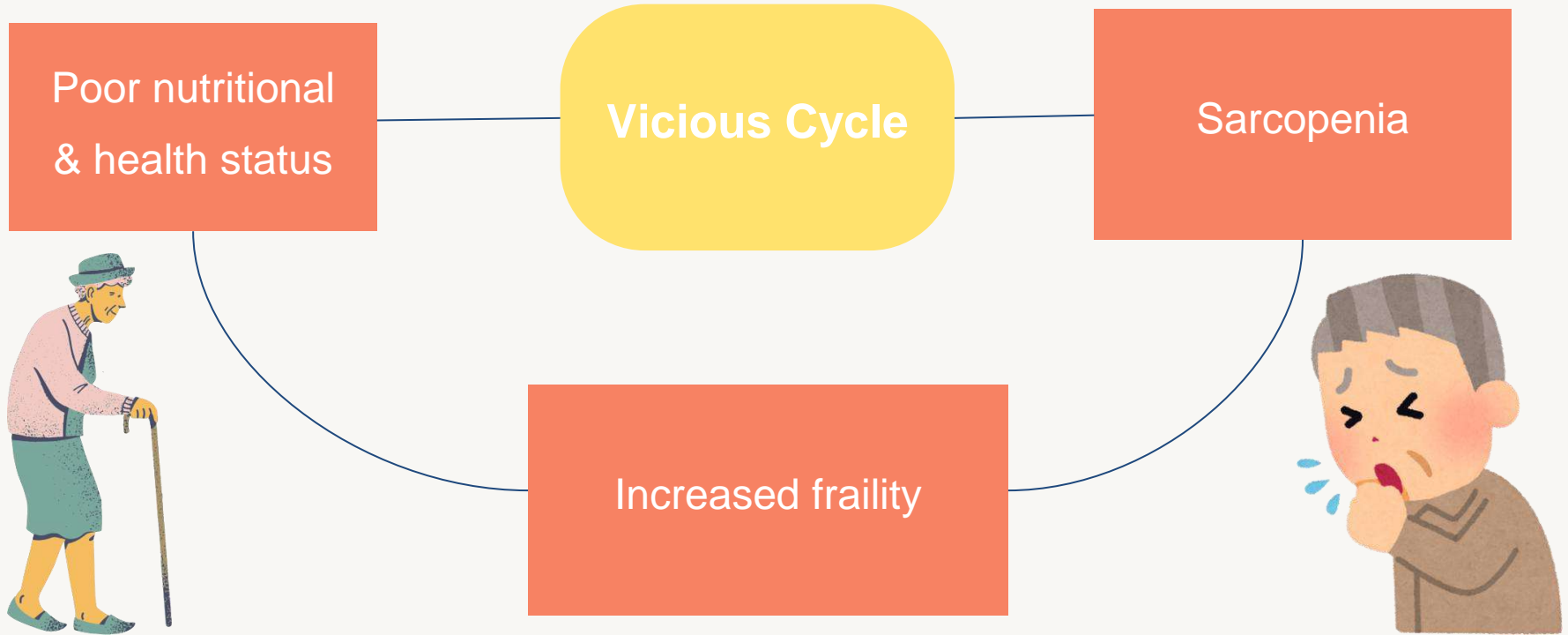
PSYCHOLOGICAL AND SOCIAL FACTORS INCREASE STRESS & DECREASE FOOD INTAKE



Sarcopenia

VICIOUS CYCLE OF MALNUTRITION

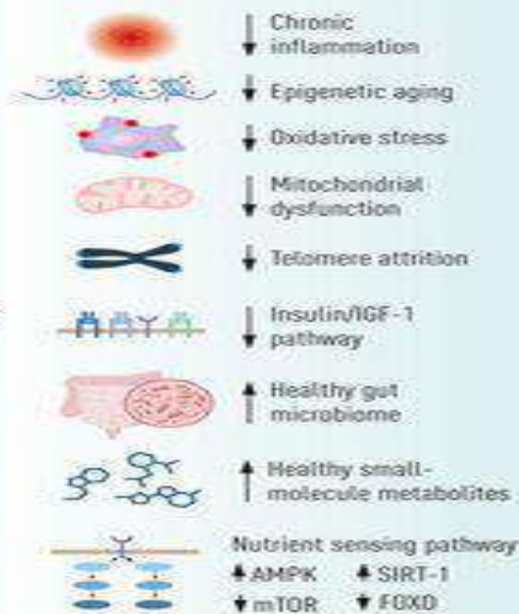
Combination of physiological and non-physiological factors lead to:
Reduced food intake among the elderly



Diet strategies for promoting healthy aging and longevity: An epidemiological perspective



*Limiting excess calories
and maintaining a healthy weight*



↓ Chronic diseases



↓ Physical disabilities



↑ Cognitive/social functioning



↑ Mental health



↑ Healthy lifespan



FOOD BASED STRATEGIES- BASED ON HEALTHY DIETS



No One-Size-Fits-All Diet

Traditional Diets:

Mediterranean Diet (MedDiet)

Nordic Diet

Asian Diet

Contemporary Dietary Patterns:

Healthy Eating Index (HEI-2015)

Alternate Healthy Eating Index

(AHEI)

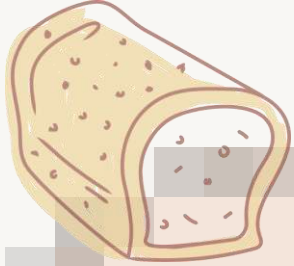
DASH Diet

Strategy 1



Maintaining a healthy weight is crucial for achieving longevity and healthy aging especially within today's **obesogenic** food environment.

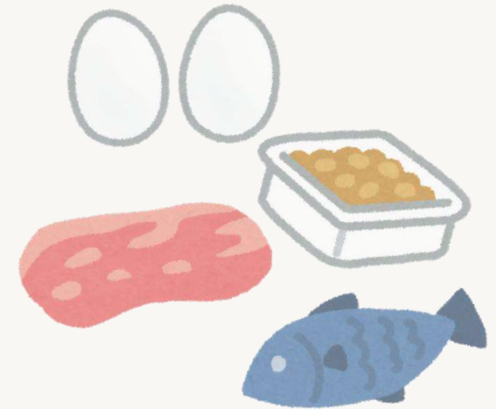
“70-80% full” principle found in the traditional Ayurvedic and Okinawan Principles



Specific food sources or **types of dietary fat, protein, and carbohydrates** appear to be **more important** in influencing the risk of chronic diseases and mortality **than their quantity.**



Strategy 2



Emphasis on culturally appropriate personalised diets to enhance enjoyment and adherence

Strategy 3

Dietary patterns include:

Minimally processed plant foods

Healthy fats, Reduced consumption of red and processed meats and added sugars.

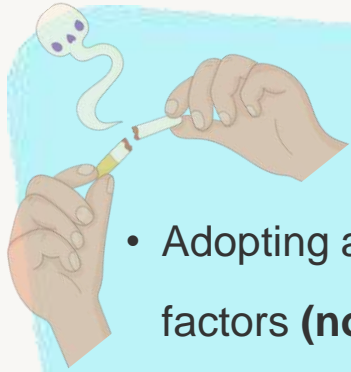
Include a variety of plant foods rich in polyphenols and other phytonutrients with antioxidant and anti-inflammatory properties.

Strategy 4

Higher consumption of polyphenols has been associated with beneficial effects on the gut microbiome, contributing to better physical and mental health.

Polyphenol-rich foods drawn from diverse cultures and regions of the world, such as Coffee, Tea, a variety of fruits and vegetables, cocoa, EVOO, avocados, nuts, and seeds, can be tailored to fit individuals' own food preferences.

Strategy 5



- Adopting a healthy diet along with other lifestyle factors (**not smoking, engaging in regular physical activity, maintaining a healthy weight, and consuming alcohol in moderation [if any]**)
- Can potentially add approximately **8 to 10** years of disease-free life expectancy.
- Can help to promote **mental well-being** and
- Mitigate age-related cognitive decline, reducing the risk of **dementia** and enhancing the overall quality of life



Strategy 6.

Emphasis on **plant-based foods** and **sustainable practices** aligns with concerns about the environmental impact of the global food system.

- Reduce risk of chronic diseases and mortality contribute to lower greenhouse gas emissions, resulting in lower environmental



Common age related problems and preventive measures



Common age related problems and preventive measures

Constipation

Hypertension

High Cholesterol

Heart disease

Type II diabetes

Osteopenia

Protein energy

malnutrition

Dementia

Alzheimers disease

Cataract

Age – related Macular
degeneration

Hypertension

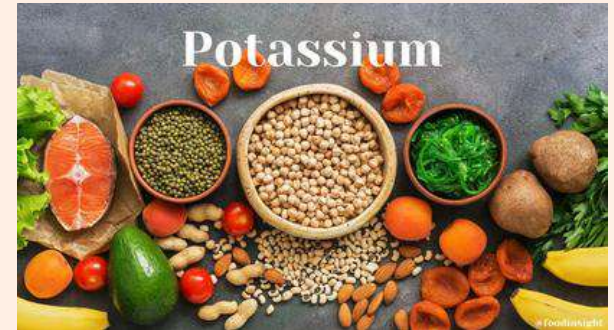
Low Sodium Diet

Fish Oil Consumption: can reduce blood pressure.

Calcium supplementation: can ameliorate systolic hypertension.

Manage dietary Sources of Potassium & Magnesium

Please consult your Doctor
& Dietician for supplementation





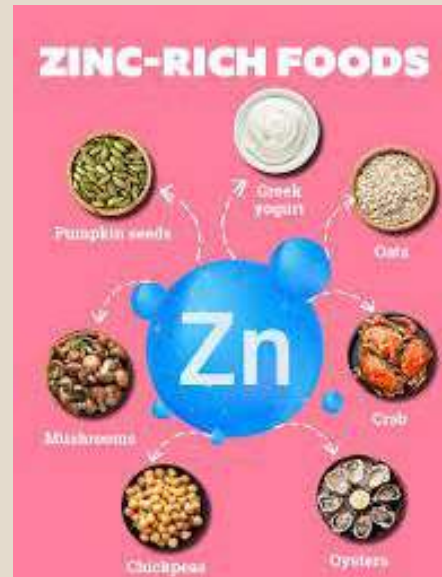
Osteopenia

- Calcium and vitamin D supplementation
- Fortified milk
- Fish liver oil
- Saltwater fish



Type II diabetes

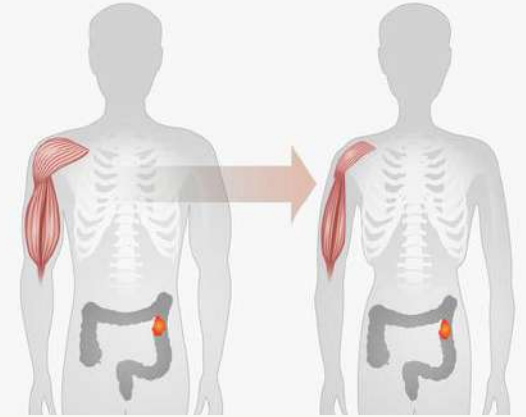
- ↑ Zn loss in urine
 - Foot ulcers
 - Urinary tract infections
 - Delayed wound healing
- Ensure adequate dietary intake of zinc, fibre and protein



Protein Energy Malnutrition

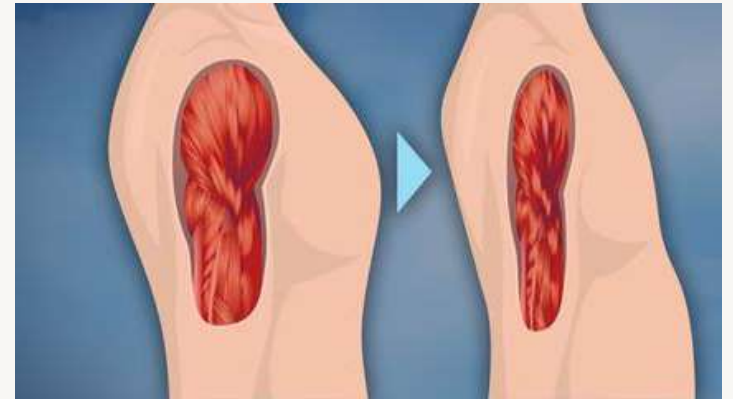
Leads to:

Sarcopenia

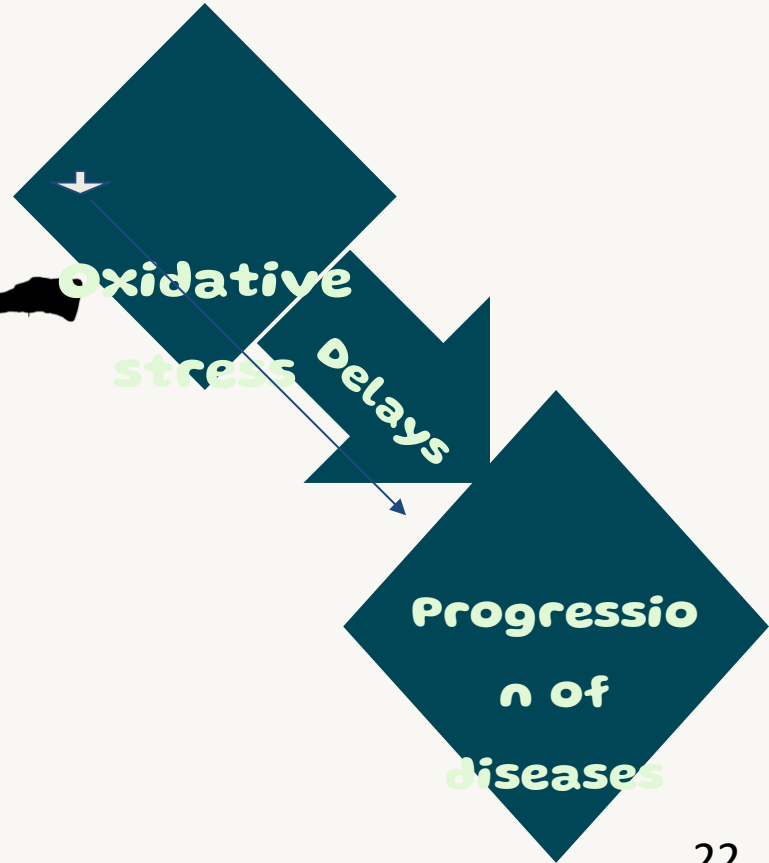
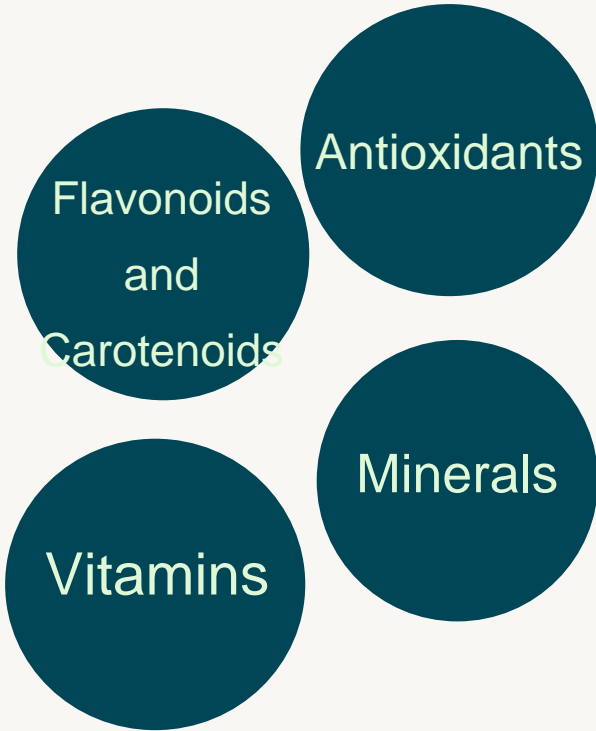


Dietary
modifications

Nutritional
supplements
Orexigenic drugs to
stimulate appetite



Alzheimer disease, Cataract and Age – related Macular Degeneration (AMD)



Constipation

- Daily consumption of 25-30g fiber proves beneficial in relieving constipation
- Water and fluid consumption



High Cholesterol and Heart Disease

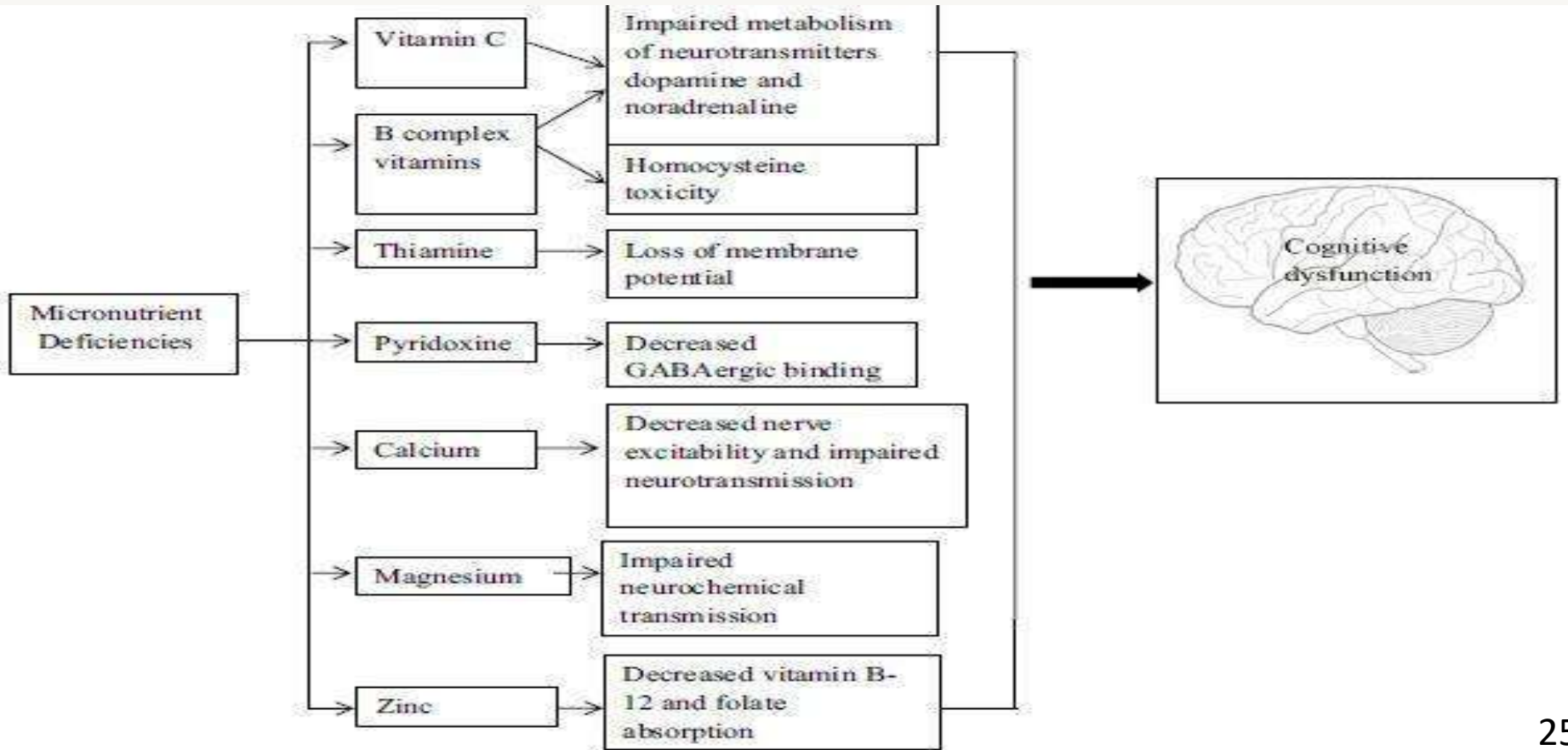


- Incorporation of good fats, particularly omega-3 fatty acids,
- Low glycemic index foods,
- High biological protein sources



Vitamin rich foods in the daily diet is associated with lowering cholesterol levels and thus helps to maintain a healthy lifestyle

NUTRIENT BASED STRATEGIES





PROTEIN

- Lower protein levels: chronic muscle wasting, poor bone health leading to functional loss and frailty
- Try to ingest equal amounts during breakfast, lunch and dinner.
- Better preservation of muscle mass associated with consumption of animal protein (with more essential amino acid content) than plant protein
- 25-30g protein per meal, out of which 2.5-2.8g should be contributed by leucine so as to maintain optimum protein anabolism.



CALCIUM AND VITAMIN D FOR OPTIMUM BONE HEALTH

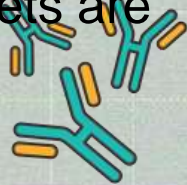


- Calcium and vitamin D3 plays a crucial role. The process of aging is characterized by several losses, of which loss of bone mineral density is most common .
- Increased muscular weakness and decreased physical function among elderly, can lead to severe osteoporotic fractures and can limit the mobility of elderly.
- Dietary sources or through supplementation.

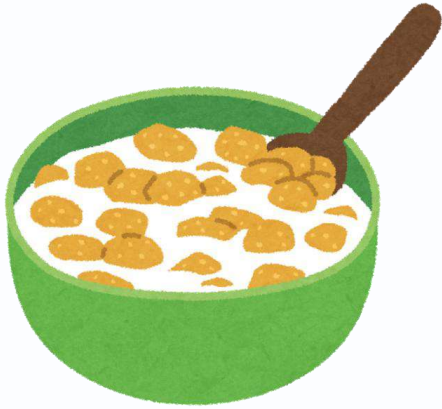
ZINC

Deficiency -

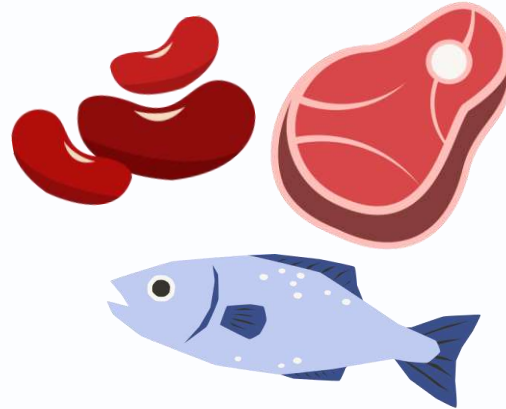
- Weakened immune system, susceptible to infections increases the risk of morbidity.
- Decreased gustatory sense which strongly affects the food intake.
- Predominantly plant-based diets are deficient in zinc



Sources



Fortified breakfast cereals,
whole grains,

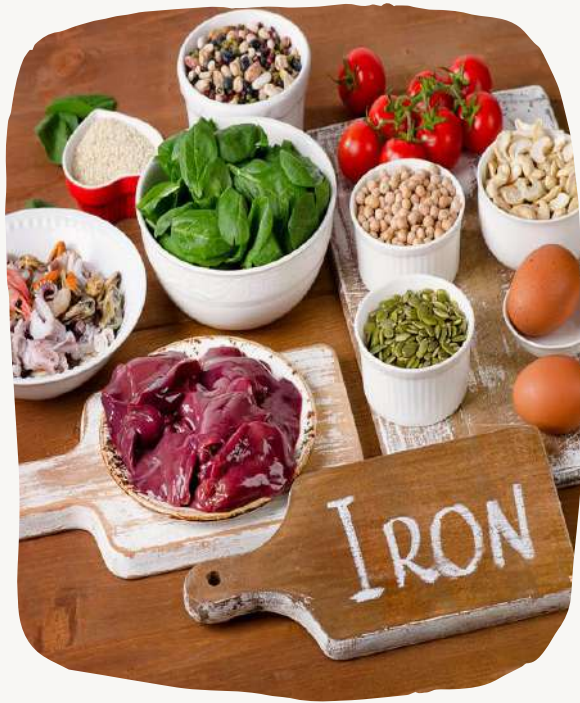


Seafood, poultry, red meat,
beans



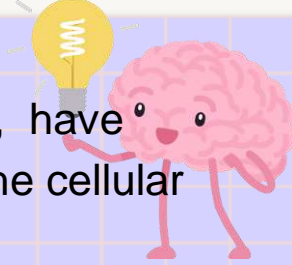
Nuts and dairy
products

IRON




- Deficient intakes due to:
 - decreased food intake, frequent medications, gastrointestinal malabsorption and occult bleeding.
- poor quality of life associated with depression, fatigue, impairment of cognitive functioning and loss of muscle strength.
- Tannins and polyphenols present in tea and coffee exhibit an inhibitory role in iron absorption
- vitamin C rich food components are known to enhance iron absorption.
- Iron supplementation can be an alternate for treatment of severe iron deficiency anemia.

- Group of eight water soluble vitamins, have interrelated functions in maintaining the cellular function and brain atrophy.
- Deficiency of vitamin B12, B6 and folate are known to affect cognitive functioning and is accompanied with depressive symptoms
- Associated with increased serum homocysteine levels which increases the risk of diseases like Alzheimer's disease and dementia.
- Insufficient food intake and malabsorption of vitamin B12 due to degenerative digestive conditions.

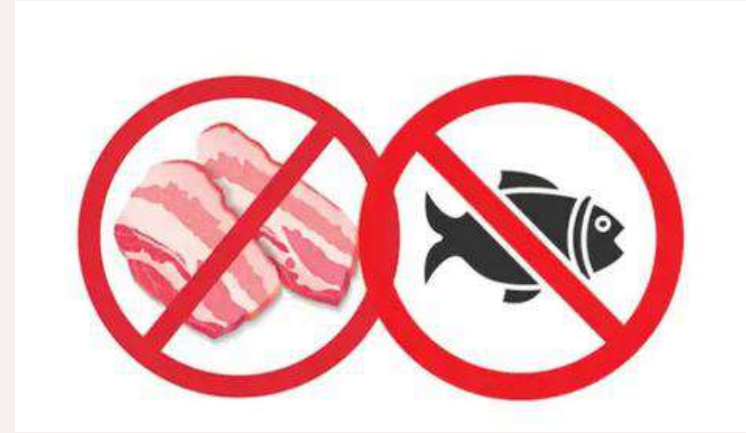


B-VITAMIN COMPLEX





Found mainly in animal food sources. low consumption of animal food sources owing to cultural or religious limitations and the high cost of these foods. Fortified foods can be an alternative for vegetarians



Supplements to Ensure Optimal Nutrition

- Elderly people fail to meet their requirement for nutrients through dietary sources due to their inadequate food intake.
- Supplement usage must be wisely monitored as the combined intake of supplement and fortified food may increase a risk of exceeding the upper tolerable limit and also increases the risk of their toxicity



Calcium and Vitamin D3

Prevention of hip fracture and nonvertebral fracture.

Reduced risk of falling.

Decreased muscle fibre size in older adults is due to limited mobility, limited vitamin D3 deficiency.

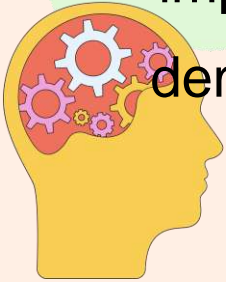


Daily dose
of
Vitamin D

A hand-drawn illustration of a sun with a yellow center and black rays. The text 'Daily dose of Vitamin D' is written in a cursive font around the sun.

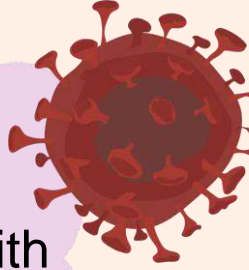
Folic acid, B6 and B12

Reduction in cognitive decline and memory decline rates and improvement in clinical dementia rating scores.



Zinc

T cell function increased with increased number of T cell.



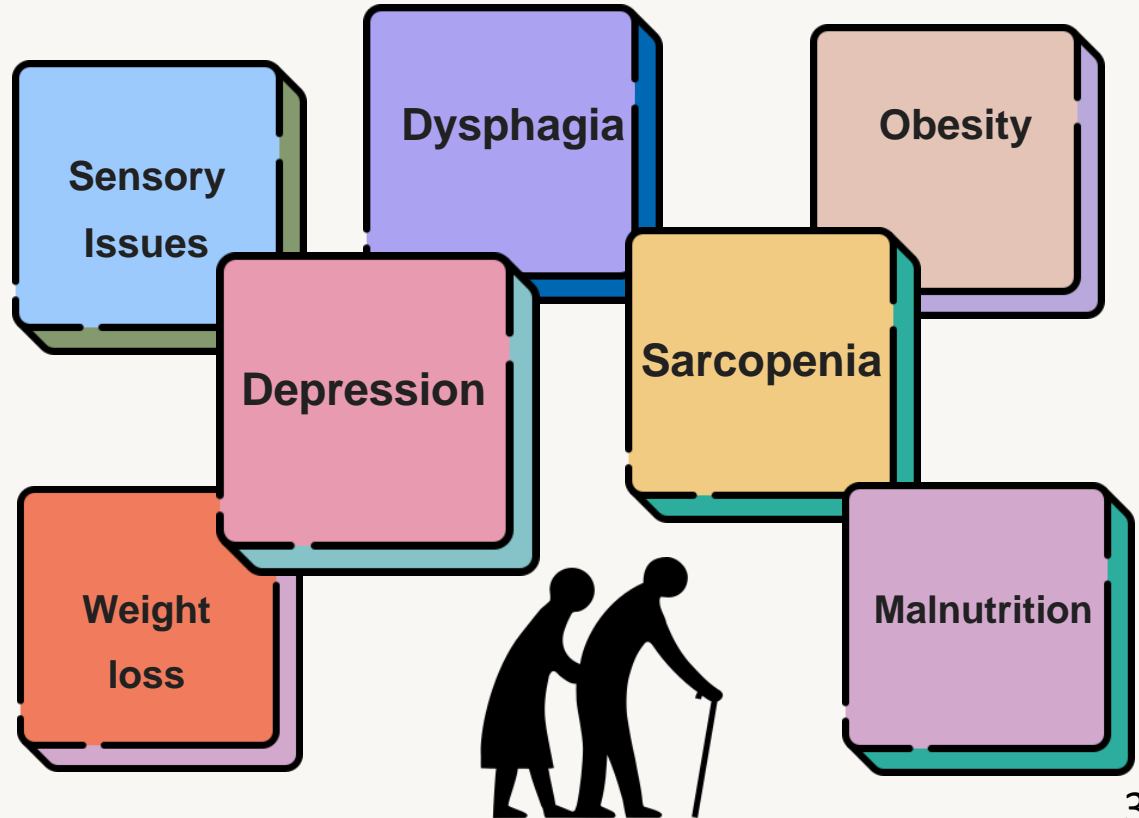
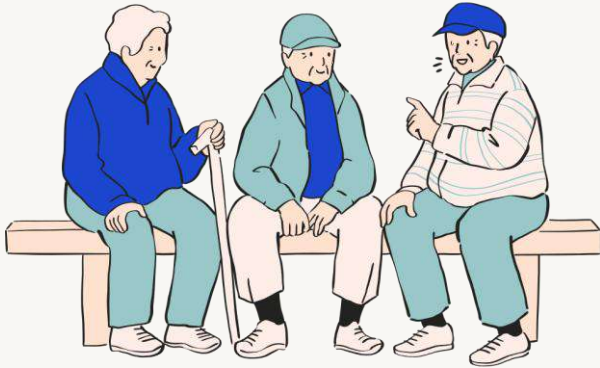
Whey protein / leucine/EAA mix

Amino acid supplementation along with exercise resulted in increased muscle protein synthesis, muscle strength, muscle mass and walking

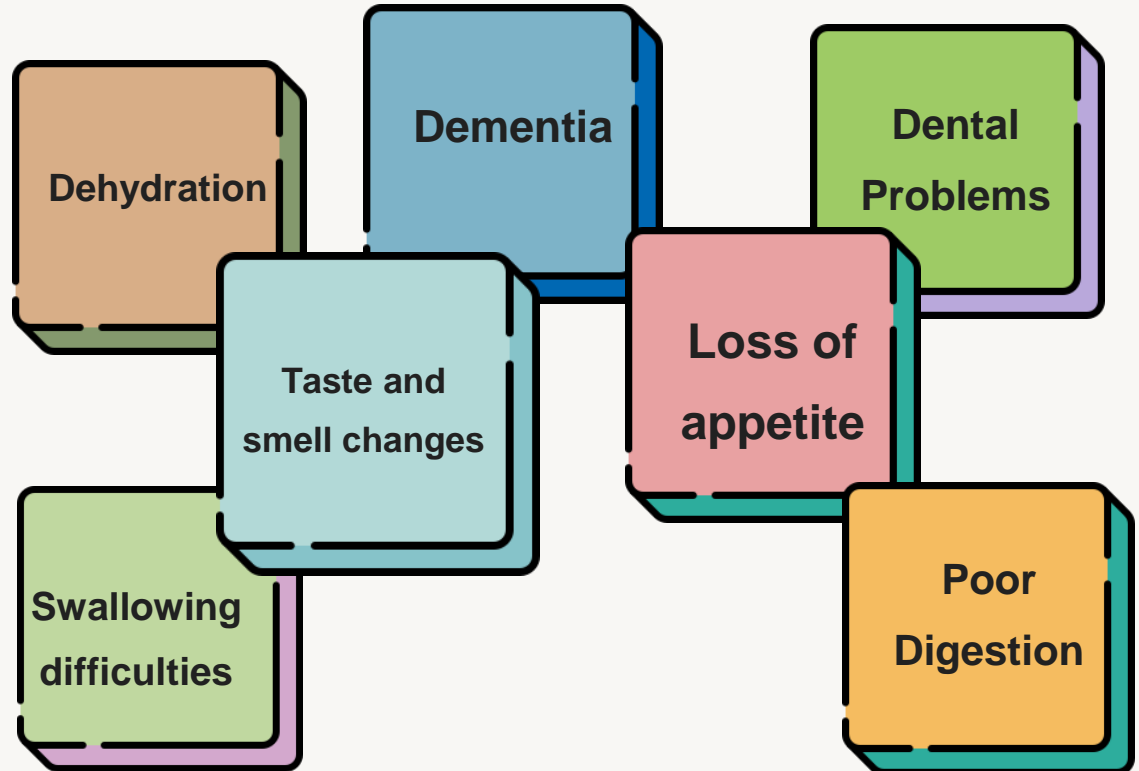
speed



Nutritional Challenges Faced by the Elderly



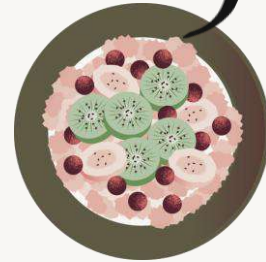
Managing Feeding Challenges Effectively



Strategy 1: Create a Routine

Creating a routine for meals, snacks and drinks can help to develop familiarity and certainty for those who need sustenance but might be confused or suspicious about whether they should be eating when they don't feel hungry. Having certain times of the day at which food and drink is consumed helps to create an expectation that eating and drinking is the established activity for that time of the day.

Routine doesn't only have to revolve around time; it can also focus on what type of food you eat. For example, if you consistently start the day with a bowl of porridge, then your loved one may soon accept their porridge as part of their normal day.



Strategy 2 : Include fortified foods

When your loved one eats, you want them to be ingesting as much nutrition as possible. Fortifying foods can help to increase intake of vital nutrients such as vitamins, iron and calcium. Some foods, including most breakfast cereals, are already fortified by the manufacturer. However, there are several ways in which you can fortify snacks and meals for people with no appetite or suffering from malnutrition.

To increase calorie intake, the NHS recommends adding butter, cream, full fat milk or cheese to snacks or meals. 1 knob of butter, for example, adds 150 kcal to a scoop of mashed potato. Protein can be boosted by adding a wide range of foods, including meat, fish, eggs, beans and pulses, whilst multi-vitamins can also be taken to supplement meals.



Strategy 3: Eat with others

Turning meal times into a social event can set an example to your loved one about the importance of eating, as well as creating an enjoyable event for them to look forward to. Meals can often be a battle for people lacking appetite, so the prospect of spending time with others is something that can make mealtimes a more enticing prospect.



Find out what meals and foods your loved one particularly enjoys, and how they like it to be prepared, as this will always increase the likelihood of them finding their appetite.



Strategy 4: Fight dry mouth

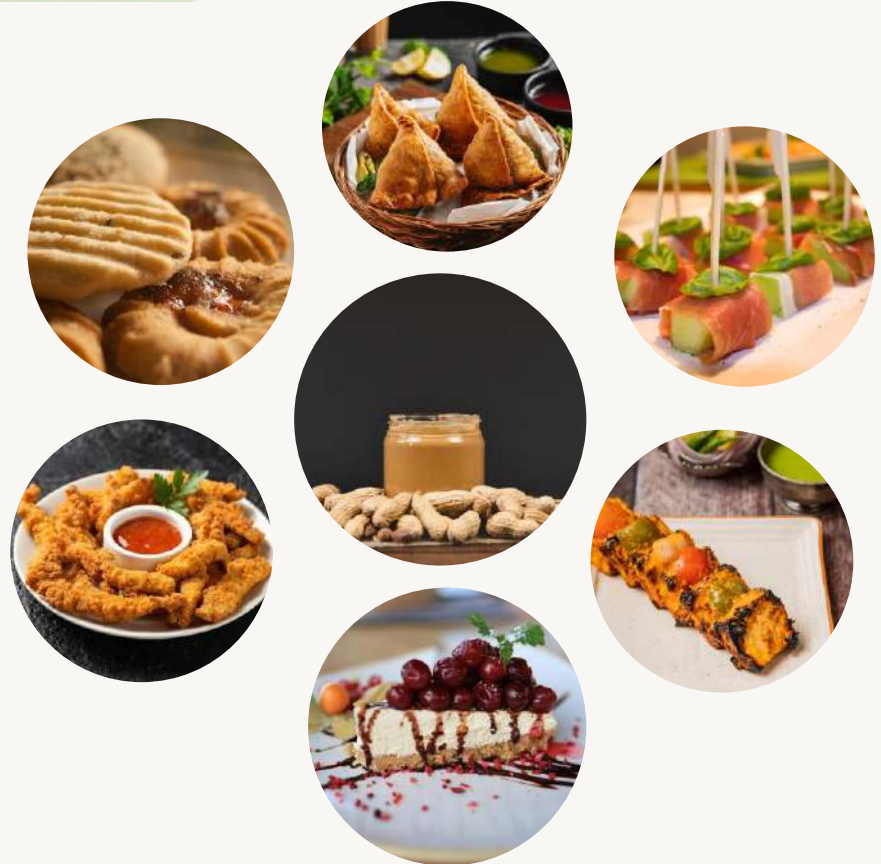
Dry mouth has been known to hinder an elderly person's ability and desire to eat and drink. If this appears to be the case for your loved one, the first step to take is to consult your doctor or dentist, as often medication is the primary cause of dry mouth. Ask your doctor or dentist to recommend you products that moisturise your mouth, including prescription or over-the-counter mouthwashes. Your doctor may determine that medication isn't the cause of dry mouth, in which case it's likely to be caused by dehydration, an existing medical condition or treatment such as chemotherapy.

Steps that can be taken include increasing water consumption, limiting caffeine intake, stopping tobacco use and brushing your teeth at least twice a day.



Strategy 5: Use finger foods

Finger foods can be a great alternative to a full meal for your elderly loved one if you can find options with enough nutritional value to be a viable source of sustenance. Vegetable cutlets, kababs, paneer cubes, peanut butter on toast and vegetable sticks can all be helpful in encouraging a greater calorie intake through small, digestible portions. Finger food also removes the need for cutlery and cooking.



Strategy 6: Encourage snacking

You might be accustomed to hiding snacks from hungry teenagers at home, but it's a great idea to encourage your elderly loved ones to graze throughout the day. Snacks can be a fantastic way to ensure your loved one is eating enough calories and consuming enough nutrients every day.

Nuts, raisins, carrot sticks, orange slices, dark chocolate and yoghurt can all make for tasty snacks that provide vital nutrition and sustenance.



Strategy 7: Suggest stimulants

Appetite stimulants are medications that can be taken to increase appetite in cases where people aren't consuming enough nutrients. In some cases, vitamin supplements such as zinc, thiamine and fish oil can act as appetite stimulants. In others, medication may be required, but always consult your doctor first.



Fish Oil



Strategy 8: Use drinkable meals

When swallowing or using cutlery becomes difficult, drinkable meals are a straightforward way to continue to provide your loved one with all the sustenance and nutrition that they need without changing their diet. Drinkable meals generally take the form of smoothies and shakes, and you can really get creative with food combinations. Whatever ingredients you choose, ensure food is blended properly and contains no large lumps to avoid potential choking hazards.

This should be used as a last case resort, seeking a referral from your GP to speech and language therapy for a swallowing assessment would be beneficial.



Breaking the Vicious Cycle: Improving Nutritional Intake with Assistive Dining Aids



Without Tools



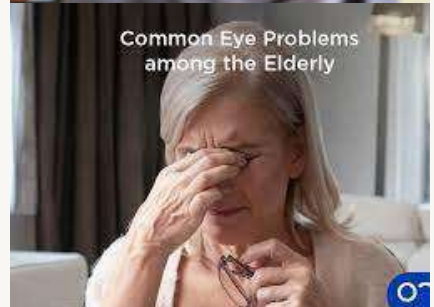
With Tools



Aids For Overcoming Self-Feeding

Challenges To Improve Quality of Life

- Stiff joints and loss of dexterity due to arthritis can interfere with utensil use.
- Poor coordination and tremors from conditions such as Parkinson's disease can make lifting food or drink or opening containers impossible tasks.
- Limb weakness after a stroke can create challenges with cutting and scooping food onto a fork.
- Visual deterioration caused by conditions such as glaucoma can significantly impact a person's ability to locate food on his or her plate.



Interventions to ensure proper nutritional intake and to promote independence in self-feeding.

Patients with physical or cognitive limitations.

Support in Correct, upright position



Encourage with verbal and nonverbal cues



Adhere to diet modifications and safe feeding strategies





TIPS TO PROMOTE A RENEWED INTEREST IN MEALS FOR PERSONS

WITH COGNITIVE ISSUES

Calm environment is helpful

Caregiver staying in the patient's direct line of sight.

Soothing music

Appropriate lighting



WHAT CAN FOOD GATEKEEPERS DO TO HELP?

Pay close attention to the quality of a patient's diet

- Direct nutritional support & prescribed supplements
- Snacks
- Additional fluids between scheduled mealtimes.



TOOLS TO PROMOTE INDEPENDENT DINING

Help improve self-feeding ability and promote safety and independence for improving nutritional intake



BUILT-UP GRIP UTENSILS

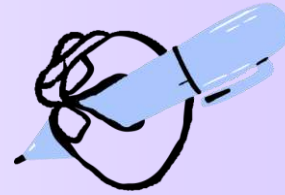
**Easy-to-grip,
comfortable,**

**Oversized
textured
handles**



Improve grip and dexterity due to stiff joints

WEIGHTED CUPS



- Help control spilling from tremors or poor coordination Weighted-base slows tremors to help self-drinking
- Oval shape to direct flow of liquid
- Nose clearance so patients can drink without tilting head



SCOOP PLATES

- **To assist with poor dexterity or one-handed eating high-contrast red more visible and visually appealing, for improved food helping to stimulate the appetite, improve food intake.**



- **Helps patients with low motor skills slide food onto utensils.**
- **Non Slip bottom helps prevent food spills, which can cause slips. High-contrast Red color makes food promotes dining independence**

SECTIONED PLATES

To help with loading food onto utensils and limit spilling High-contrast red for improved food intake and independence

Keep food separated for enjoyable dining experience



HIGH CONTRAST TABLEWARE



**(Red or yellow) for easier
visibility of food on the plate**

ROCKER KNIVES

**Allows safe and
easy one-handed**

**Cutting Requires less
strength**



NONSLIP MATTING

A non-slip, rubber-like plastic material used to stabilize surfaces

Reusable Cuts with scissors

Cleans with soap and water





Cups with lids, handles, cutouts, and more for ease of use.



Includes Anti-Splash and Feeding Spout Lids to reduce spillage and limit flow High-visibility



Nosey cut glass: for those who cannot use straws or tip the head back.

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