

Nutrition and the stroke patient

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Objectives:



DETERMINE RISK FACTORS
FOR STROKE



PREVENTING MALNUTRITION
IN THE STROKE PATIENT



HOW TO REDUCE THE RISK
OF STROKE WITH NUTRITION



Risk Factors

Age

Gender

Race

Hypertension

Smoking

Weight Status, Elevated BMI

Diabetes

Hyperlipidemia

Atrial Fibrillation

Sedentary Lifestyle



Risk Factors that you **CAN NOT** control

Age: The likelihood of having a stroke increases as you age, although more common in the elderly, people under 65 have strokes

Gender: women have more strokes than men; factors that may increase stroke risks for women include pregnancy, history of preeclampsia/eclampsia or gestational diabetes, oral contraceptive use (especially when combined with smoking) and post-menopausal hormone therapy.

Race: African-Americans have a much higher risk of death from a stroke than Caucasians do. This is partly because Black people have higher risks of high blood pressure, diabetes and obesity.



Clinical Features that put stroke patients at risk for malnutrition

- Dysphagia
- Impaired consciousness
- Cognitive dysfunction

A dark blue arrow points to the right at the top left. Below it, several thin, curved lines in shades of blue and grey sweep across the left side of the slide.

Malnutrition in stroke patients

- ▶ Malnutrition before and after stroke is responsible for extended hospital stay, poor functional outcome, and increased mortality rates at 3-6 months after stroke.
- ▶ Dysphagia is a major risk factor for developing malnutrition. In the acute stage of stroke, dysphagia occurs in 30-50% of patients and leads to increased risk of aspiration pneumonia and subsequent malnutrition.
- ▶ Cognitive impairments, visual changes, language and speech deficits can hinder effective communication about food preferences and satiety leading to malnutrition.



Malnutrition Criteria

Energy intake

Interpretation of Weight Loss

Physical Findings

- Body Fat
- Muscle mass

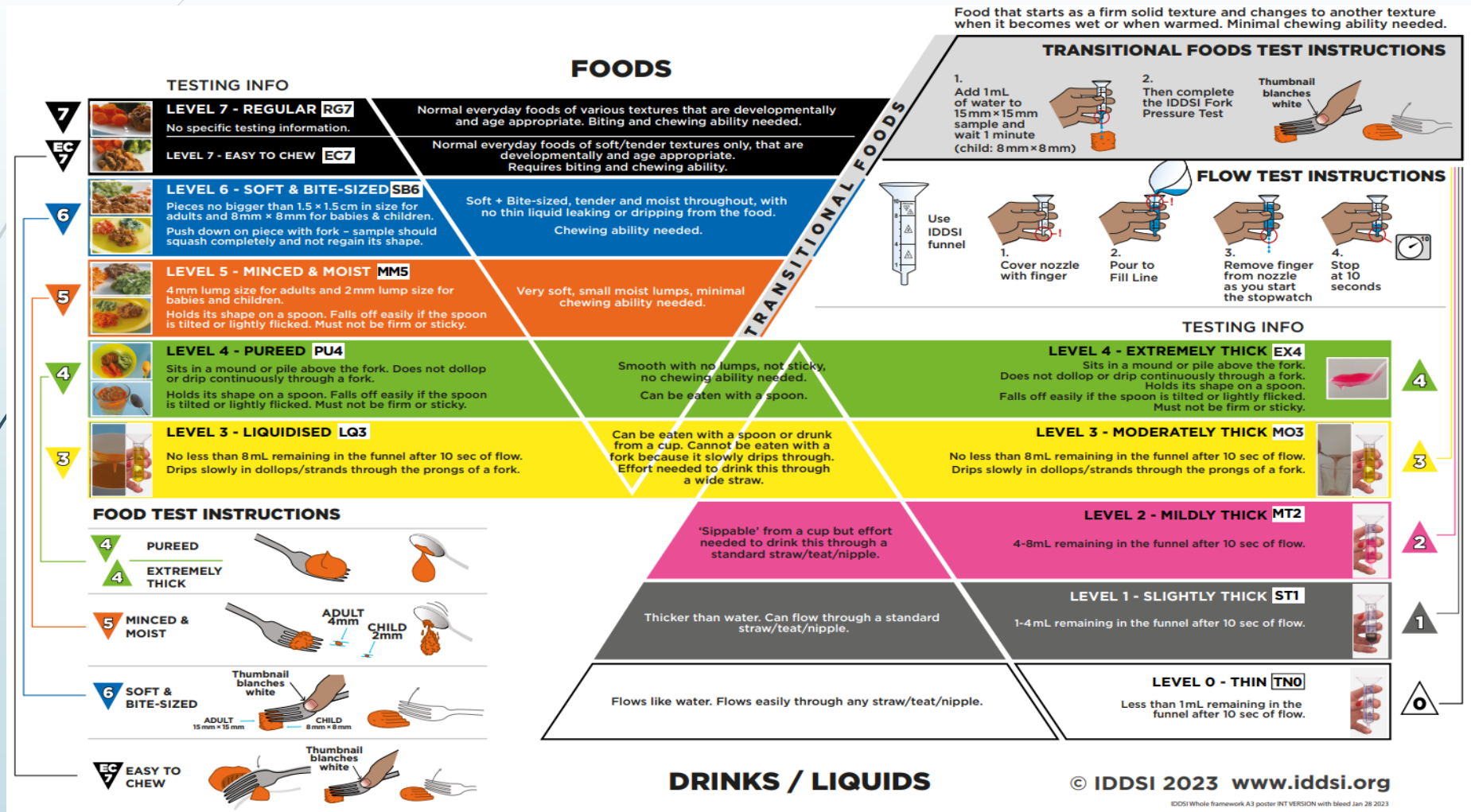
Fluid accumulation

Malnutrition Criteria

Table 3: Summary of Malnutrition Characteristics¹³

Type of Malnutrition	Acute Illness or Injury		Chronic Illness		Social or Environmental Circumstances	
	Nonsevere (moderate) malnutrition	Severe malnutrition	Nonsevere (moderate) malnutrition	Severe malnutrition	Nonsevere (moderate) malnutrition	Severe malnutrition
Energy Intake	<75% of estimated needs for >7 days	≤50% of estimated needs for ≥5 days	<75% of estimated needs for ≥1 month	≤75% of estimated needs for ≥1 month	<75% of estimated needs for ≥3 months	≤50% of estimated needs for ≥1 month
Weight Loss	1% to 2% in 1 week 5% in 1 month 7.5% in 3 months	>2% in 1 week >5% in 1 month >7.5% in 3 months	5% in 1 month 7.5% in 3 months 10% in 6 months 20% in 1 year	>5% in 1 month >7.5% in 3 months >10% in 6 months >20% in 1 year	5% in 1 month 7.5% in 3 months 10% in 6 months 20% in 1 year	>5% in 1 month >7.5% in 3 months >10% in 6 months >20% in 1 year
Body Fat Wasting	Mild	Moderate	Mild	Severe	Mild	Severe
Muscle Wasting	Mild	Moderate	Mild	Severe	Mild	Severe
Presence of Edema	Mild	Moderate to severe	Mild	Severe	Mild	Severe
Grip Strength	Not applicable	Measurably reduced	Not applicable	Measurably reduced	Not applicable	Measurably reduced

IDDSI: International Dysphagia Diet Standardization Initiative



IDDSI cont...

- Level 1 – Slightly Thick is most often used if you have swallowing problems with thin liquids. Slightly Thick liquids are thicker than water, but still thin enough to flow through a straw. Some drinks may naturally be slightly thick (like some fruit nectars or milks).

1 SLIGHTLY THICK

- Level 2 – Mildly Thick drinks may be used if Thin drinks (water, milk, and others) and Level 1 Slightly Thick liquids flow too quickly for you to swallow them safely. Some milk shakes and thick shakes may be this thickness level already, but other drinks may need thickener added to reach the correct thickness level.

2 MILDLY THICK

IDDSI cont...

- ▶ Level 3 – Moderately Thick drinks may be used if your tongue control is not good enough to manage Mildly Thick, Slightly Thick or Thin drinks. Moderately Thick drinks allows more time for the tongue to “hold and move” the drink. These drinks are best taken from a cup or using a spoon.



MODERATELY THICK



IDDSI cont...

- ▶ Level 4 – Pureed Food may be used if you are not able to bite or chew food or if your tongue control is reduced. Pureed foods only need the tongue to be able to move forward and back to bring the food to the back of the mouth for swallowing.

4 PUREED



IDDSI cont...

- ▶ Level 5 – Minced & Moist food may be used if you are not able to bite off pieces of food safely but have some basic chewing ability. Some people may be able to bite off a large piece of food but are not able to chew it down into little pieces that are safe to swallow.



MINCED & MOIST



IDDSI cont...

- Level 6: This diet consists of many ordinary foods that are soft and easy to chew. Foods can be eaten with a fork or spoon. Foods are soft and fork-tender; they are moist, but there is no separate thin liquid present. Solid food pieces are 15mm (about ½ inch) for adults.



SOFT & BITE-SIZED



IDDSI cont...

- ▶ Level 7 – Regular Easy to Chew Foods: ✓ Normal, everyday foods* of soft/tender texture ✓ Any method may be used to eat these foods (e.g. fingers, fork, spoon, chopsticks etc.) ✓ Food piece size is not restricted in Level 7, therefore foods may be a range of sizes

7 **REGULAR**





Risk factors that you **CAN** control through diet

High Blood Pressure: High blood pressure, or hypertension, is a leading cause of stroke and the most significant controllable risk factor

Diabetes: People with diabetes have a 1.5 times greater risk of having a stroke

Dyslipidemia: Large amounts of cholesterol in the blood can build up and cause blood clots

Obesity: Excess body weight is linked with an increased risk of high blood pressure, diabetes, heart disease and stroke

Sedentary Lifestyle: Physical inactivity can increase your risk of stroke, heart disease, overweight/obesity, high blood pressure, high blood cholesterol and diabetes



Tips to control sodium intake

- Avoid processed foods. Eat more fresh foods.
- Eat less salt—at the table and when cooking. A single teaspoon of table salt has 2,300 mg of sodium.
- Leave the salt out of recipes for pasta, casseroles, and soups.
- “Very low-sodium” products contain less than 35 milligrams of sodium per serving.
- “Low-sodium” products contain less than 140 milligrams of sodium per serving.



Tips to control blood Cholesterol Levels

- ▶ Choose unsaturated fats, such as soybean, canola, olive or sunflower oil.
- ▶ Keep total amount of fat that you eat less than 25%-35% of total calories.
- ▶ Limit the high cholesterol foods, such as egg yolks, fatty meats, shrimp, dairy products.
- ▶ Get 20-30 grams of fiber per day
- ▶ Eat cold water fish like salmon, tuna, mackerel and sardines twice a week.

Tips to reduce diabetes risk

- ▶ Lose extra weight
 - ▶ The American Diabetes Association recommends people with pre-diabetes lose 7-10% of body weight to decrease disease progression.
 - ▶ Weight loss should be 1-2 lbs per week



On Your Way to Preventing
Type 2 Diabetes





Choose healthy foods

- Fatty foods are high in calories and should be eaten in moderation. To help lose and manage weight, your diet should include a variety of foods with unsaturated fats, sometimes called "good fats."
- Fiber-rich foods promote weight loss and lower the risk of diabetes. Eat a variety of healthy, fiber-rich foods, which include:
 - Fruits, such as tomatoes, peppers and fruit from trees
 - Nonstarchy vegetables, such as leafy greens, broccoli and cauliflower
 - Legumes, such as beans, chickpeas and lentils
 - Whole grains, such as whole-wheat pasta and bread, whole-grain rice, whole oats, and quinoa

Be more physically active

- ▶ Aim for 30 minutes or more of moderate to vigorous aerobic exercise — such as brisk walking, swimming, biking or running — on most days for a total of at least 150 minutes a week.
- ▶ Resistance exercise — at least 2 to 3 times a week — increases your strength, balance and ability to maintain an active life. Resistance training includes weightlifting, yoga.





Thank you!

Questions?



References



- ▶ Rosa, B., Breton, I., Cereda, E., et al. ESPEN Guideline Clinical Nutrition in Neurology. *Clinical Nutrition* 37, 354-396 (2018).
- ▶ [IDDSI - Patient Handouts](#) 8/15/2023
- ▶ Sabbouh, T., Torbey, M.T. Malnutrition in Stroke Patients: Risk Factors, Assessment, and Management. *Neurocrit Care* **29**, 374–384 (2018). <https://doi.org/10.1007/s12028-017-0436-1>
- ▶ Lancet Neurology, The, 2022-04-01, Volume 21, Issue 4, Pages 296-297, Copyright © 2022
- ▶ [Diabetes prevention: 5 tips for taking control - Mayo Clinic](#) 9/1/2023