

ATI proctor, Nutrition

Chapter 1:

Carbohydrate, protein and fat 3 main nutrients.

Carbs: 45-65% of daily calories

function: energy, regulate fat, cardiac and cns system, protein metabolism.

Glycogen: stored carb in the liver and muscle and it release between the meals to regulate the Blood glucose level.

Carbs 4 calories per gram per energy

- * Fiber intake 25gr women, for M 38gr per day
- * Protein 10-35% daily calories, 0.8 gr per kg body weight, tissue building, immune function, neutral nitrogen balance. Wound healing is important.
 - Complete protein: all 9 amino acids, animal sources and soy
 - Incomplete: 2 different one together is complete like rice plus beans.
 - Protein 4 calories per gram per energy.
 - Fat lipids: 20-35% of daily calories. Les that 10 sutured fat, ideally 7%

Function: store energy, padding insulation. Hormone, absorption of fat-soluble vitamin

- Cholesterol: 200-300 mg/day
- Fat provides 9 calories/energy

If you eat 5 gr of fat how many calories: 45 calories.

Vitamins:

Fat soluble: A, D, E, K they have risk for toxicity, don't overdose, CF, celiac and crohns disease

Water soluble: Vitamin C and B complex thiamine, niacin, pardaxin, panthocacid, folic,

cobalamin: no risk for toxicity, you will pee it out.

Vitamin c: iron absorption, tissue building Citrus fruits, tomatoes, green veggie.

Deficiency in vitamin C: bleeding, swelling gums and joint pain, during pain and illness take more, during smoking take more

B complex: CNS functioning, meats, milk, whole grains, legumes, green leafy veggies.

Pregnancy get folic acid.

Def B12: pernicious anemia.

Vitamin A: vision health, skeletal and soft tissue: orange and yellow fruits, fatty fish, dairy products.

Deficiency: xerophthalmia and vision issue

Vitamin D: absorption of calcium and phosphorus. Sunlight, Milk, fatty fish and eggs.

Deficiency: bone loss

Vitamin E: serve as antioxidants: fat containing food, nuts, dark green veggies.

Deficiency very rare: muscle pain.

Vitamin K: blood clotting and bone maintenance, dark green veggie, carrots deficiency: increase bleeding time. Antidote for Warfarin

Electrolytes:

Sodium Na: 136-145 normal level.

function: fluid balance and nerve and muscle function. Food high in Na: salt and processed food.

Hyper: hypervolemia and HTN

Hypo: confusion, muscle cramps, headache, fatigue, NV

Potassium K: 3.5-5 normal level.

Function: ICF, nerve function, muscle and heart contraction

FOOD HIGH IN K: bananas, potatoes, tomatoes, oranges, avocados, dark green veggies, dried foods

Hyper: dysrhythmias, muscle weakness, NV, confusion

Hypo: dysrhythmias, muscle cramps and constipation

Chloride Cl: 98-106 is normal level

Function: Help with digestion, ICF and ECF. Find in salt

Hyper: NV

Hypo: muscle cramps, GI upset

Calcium CA: 9-10.5 is normal level

Function: bone, teeth formation, nerve and muscle function, BP

Food: dairy, dark green veggie, fruits

Hyper: constipation, decreased DTR, kidney stones, lethargy

Hypo: Positive **Chvostek and Trousers'**, muscle spasm and tingling

Magnesium Mg: 1.3-2.1

Function: Nerve, muscle function, bone formation, biochemical reactions

Foods: nuts, veggies, whole grain, milk

Hyper: NV/ hypotension, muscle weakness, lethargy. Respiratory and cardiac arrest

Hypo: increased DTR, dysthymias, **seizure**, tremors

Ph: Phosphorus 3-4.5 is normal level

Function: bone and teeth formation

Dairy and cheese, dark green veggies, fish and legumes

Inverse relationship with calcium, high Calcium low Ph

Trace Minerals:

1. Iodine: synthesis of thyroxine required level is 100-150mcg. Find in table salt and sea food
2. Iron: make help HH. Meat, fish, legumes, Vitamin C, constipation, increase fiber intake, tooth discoloration. Z track for IM injection. Calcium lower absorption
3. Zinc: important in immune functions, NUTS, cereal and beans
4. Fluoride: help protect cavities, in water

Water: 2-3 L/day .minimum requirement level is 1.5 L

I should fi O

Sensible fluid loss: can be measured. Urine, vomit

Insensible: fluid loss from lung, water excreted in the feces. Sweat

Older adult and children greater risk for dehydration

S/S: dehydration poor skin turgor, **confusion**, hypotension, decrease Urine output, dry mucous membrane, increase urine osmolarity. Sunken in babies.

Chapter 2:

Catabolism: breaking down of substance to release energy

Anabolism uses energy to repair

BMR: energy required for involuntary activities within 24hrs. heart function, respiration

INCREASE BMMR: Male gender, more muscle mass, periods of growth such as puberty, stress, exposure to cold, disease and illness, hyperthyroidism, seizure, surgery, pregnancy and lactation

Decrease: female gender, shorter height, less muscle mass, starvation, older age and hypothyroidism.

Nitrogen balance: component amino acids: nitrogen intake-nitrogen excretion

For the Adults this nitrogen balance should be neutral.

Negative nitrogen: insufficient protein intake, malnutrition or aging, illness.

Positive nitrogen balance: growth, pregnancy and lactation

Chapter 3:

S/s of malnutrition: poor wound healing, hair loss, brittle hair, weakness, poor LOC and look for pre albumin (15-36) albumin (3.5-5)

- Increase protein and calories: add milk powder to milk, whole milk, high calories food, cheese, peanut butter, use of supplement and collaborate with dietitian.
- Calculations weight change: usual weight- current weight/ usual weight *100

- 2% weight loss in 1 wk. or 7.5% weight loss in 3 months indicate weight loss.

when to weight them? early in the morning

BMI: kg/m (WEIGHT (kg)/ Height (m))

BMI ranges include:

Under 18.5 is underweight

18.5-24.9 healthy

25-29.9 overweight

30 or more is obese

300 calories equal 1 pound.

Decrease 500 calories a week lose 1 lb. in 1 wk. 1lb fi2.2 kg

Pt teaching: monitor hunger 1-10 scale before eating. Certain food should not be forbidden.

Moderation is good. Weight loss is not consistent. Don't weight daily for fluctuations.

Eat meal free of distraction, not in front of TV

Chapter 4:

5 or more serving of veggie, fruits daily is recommended for everyone.

Monosaturated fat. Less than 7% of calories from saturated fat

Salt: 2300mg /day intake

Alcohol: women 1 drink a day and Men 2 drinks a day or less.

Exercise rec: 2.5 hrs. /wk. vigorous or 1.25/wk.

SWIMMING IS NOT HELPING TO PREVENT OSTEOPOROSIS ,NOT WEIGHT BARING

Children: 16 minutes/day of physical activities.

Vegan diet no animal products at all

Lacto-vegetarian: dairy is ok

Lacto-ovo: dairy and eggs are ok

Vegan diet not get enough vitamin D, B12, Omega 3 fatty acid.

Food labels: calories, calories from fat, sutured fat, trans fat, Na, carbs, dietary fiber, sugar, protein, Calcium and Iron. NO Mg IN THE LIST.

Chapter 5:

Food born illness:

- frequent wash hands, refrigerate perishable 2 hrs. or 1 hr if it is hot.
- Prevent cross contaminations.
- Cooks food to recommended temperature.
- Raw and undercooked meats, sprouts, unpasteurized fruit juice, raw milk high risk food
- Salmonella, E. Choli, Listeria, Norovirus

Foods that affect med: grapefruits juice is a NO, affects statins

High in vitamin K: interfere with Warfarin

Foods high in protein affects Levodopa/ Carvedopa for Parkinson disease

Tyramine: smoked meats, cheeses, avocados, wine, peanuts, chocolates MAOI's inhibitors will cause hypertensive crisis.

Potassium rich food: hyperkalemia for pt. who are taking ACE inhibitors or potassium sparing, Lisinopril cause hyperkalemia.

Allergy to egg for vaccination of flu.

Chapter 6:

Acculturation: adopting the ways of dominant culture

ethnocentrism: one's culture is superior to others. Avoid it as a nurse

- Orthodox, Jewish: kosher kitchen no pork, no shellfish, no dairy with meats.
- Muslims: no caffeine, soda, fast during Ramadan
- Mormons: no caffeinated beverages
- Catholic: no meat on Ash Wednesday
- African-American culture: animal fats and high in fat and sodium, type II diabetes and hypertension. Transition to vegetable oils.
- Asian: salt intake is high.
- Latino: a lot of oil, replacement of corn with flour tortilla. Corn is healthier than flour. Type II diabetes

Chapter 7:

During 2nd trimester: women consume 340 calories/day additionally

During 3rd trimester: 450 calories/day additionally.

Lactation 330/day first 6 months additional 400/day after that

Weight changes for the First trimester, all 3 months: 2-4 lbs. only

2nd, 3rd, weight gain of 2-4lbs/ each month

Weight gain for normal patients: 25-35 lbs. during pregnancy

Underweight patient: 28-40 lbs.

Overweight pt: 15-25 lbs.

Dietary rec: 2,3 L of fluid, no alcohol, limit caffeine, 600mcg of folic acid. Iron supplement and vitamin C, NO to fish and shellfish due to mercury toxicity.

N/V is common: advised them to eat dry crackers, toast, low fat carb, no liquid with the meal, no caffeine and spicy food, room temp and colder food, maintain good oral hygiene.

Constipation is common: increase fiber and fluid, engage physical activity for bowel

Maternal fennel ketonia: PKU: avoid high protein food, meats, fish. Blood test very frequently

Infant nutrition:

birth weight X2 by 6 months

X3 by one year

Breast milk or formula for almost 4-6 months. Solid food once the baby can sit up and has a head control

Iron fortified cereal first food, starting on the new food :one out of a time. New food for 5-7 days for allergic reaction. No cow's milk until 1 year old.

Breastmilk: any unused should be discarded, in fridge 5-8 days. No microwaves ever. Can be frozen 6-months regular freezer and 12 months in special freezer. Never re-freeze THAWED MILK. Q4h breast feeding.

Colic: persistent crying for 3 hrs. or more a day, resolves around 3 months old. Mother should tries eliminated eating cow's milk, chocolate and onions.

Lactose intolerance: abdominal distention, gas, diarrhea

Try: soy-based cuisine hydrolyzed formula.

Diarrhea: cause by virus, oral rehydration solution. No sport drinks! Oral hydration only.

S of dehydration: sunken eyes, fontal head, decrease urine output, dry mucus membrane

Childhood and adolescence:

Gain 5lbs/ year.

Choking hazardous foods: POPCORN, RAISEN, GREAPES, RAW CARROTS, HOT DOGS,

PEANUTBUTTER, TOFFME. CELERIES, PEANUTS, CANDIES

LIMIT juice intake 4-6 oz.

Limit intake of milk to 24 oz: can lead to iron deficiency anemia. Not hunger. Iron rich food.

Vitamin D for bone development for absorption of calcium

Eating disorders: anorexia begins in adolescence

Older adult: lower BMI, fewer calories bc of slower metabolism. Dehydration due to decrease thirst sensation and med side effects. Folic acid and calcium, chewing issues is common, chop the food, thicken liquid make it easier to swallow.

Osteoporosis: bone loss occurs at 35 years old. Caucasian highest risk

Increase intake of calcium and vitamin D, weight bearing exercise. Limit alcohol consumption.

Chapter 8:

NPO: surgery

After surgery clear liquid, full liquid, soft foods and normal diet

Clear liquid diet: GI disorder, water, tea, coffee, broth, clear juices, gelatin, carbonated drinks, gingerier.

Full liquid: all the clear + milk, pudding, ice-creams, fruit and vegetable juice, sherbet
Soft diet: no raw fruit or veggie, no gas making food, no cereal or coarse bread, sharp edges.
Only soft foods.

Pureed diet: oral and facial surgery, chewing difficulties, wire in the jaws. Through straw.
Mechanical soft diet: don't have teeth, dysphagia and chewing difficulties, minimal chewing, ground meats, canned fruits, cooked veggies.

Dysphagia diet 3 levels

Level 1: pureed: pudding texture

Level 2: Mechanically altered: moist soft texture

Level 3: advanced: moist, near normal food, no crusty

Liquid consistency:

Thin: water, any beverage, no restriction.

Nectar-thick liquid: heavy syrup consistency, have it through straw

Honey-thick: spoon, not a straw. Like yogurt

Spoon thick: shape and needs spoon, custards or pudding.

Chapter 9:

Enteral nutrition: used in pt. not able to eat nutrient orally, but have minimal partially functioning digestion tract

- NG tube: nose into stomach, short term use
 - Gastrostomy tube: directly into stomach or intestine and that's for long term use.
1. Standard: whole protein, require fully functioning GI
 2. Hydrolyzed: partially GI tract function needed

Interventions:

- * Verify the tube placement by X-ray before you feed.
- * Measure the tube each feeding
- * Auscultate the bowel sound before each feeding
- * Discard bags and tubing every 24hrs. (Bacterial contamination)
- * Measure Gastric residual q4-6h, return them back to stomach.
- * Whole feeding if residual exceed 500ml, return to stomach but don't feed them.
- * Flush feeding tubes q4h 30ml of water.
- * Solution at room T
- * Elevate HOB 30 degrees, 30-60 minutes after the feeding
- * Flush the tubing 15-30 ml of water before/after/during the med.
- * Cover and label any unused and fridge for 24hrs.
- * Fill it for 4 hrs. only and slowly increase the volume and rate.

Chapter 10:

Nutrient in the blood stream is parenteral

GI disorder pts, cancer, trauma, burns, critical illness, increased BMR, required more nutrition.

Parenteral nutrient bag includes: dextrose, electrolyte, vitamin, trace elements, protein, lipids

! Lipids can admin separately!

Allergic to soy bean oiled, eggs, oiled no IV LIPID, hepatic disease or hyperlipidemia NO.

2 types:

1. TPN: central vein, picc line or central line, longer term, >7 days. 70% dextrose
2. PPN: peripheral vein, short term 7-10 days. Isotonic. No more than 10% dextrose.

What med can you add: INSULIN (DUE TO DEXTROSE ADMIN), also Heparin to the solution for clot formation.

Other medication: never-ever through the same line. Separate line, different arm.

Nursing considerations: Micron filter for PPN

IMPORTANT: DUE FOR NEXT BAG BUT ITS DELAYED, NEVER STOP THE TPN ABRUPTLY, HANG THE BAG OF D10 OR D20 UNTIL THE BAG ARRIVES.

If the bag is oily, through it out, verify the bag with second RN, check the prescription and content of the bag,

Change the bag and all the tubing q24hr.

Monitor I and O and daily weight and BS.

Can be discontinued when oral intake is 60% of patient's requirement, Cautions for hypoglycemia.

Chapter 11:

Dysphagia: difficulty swallowing. Parkinson, CVA, MS and palsy.

Nursing interventions:

- Lightly stroke their throat while they are eating
- Thin liquid is not safe, thick liquid
- Check their mouth for food pocket, ulcers.
- **Encourage the pt. to tuck their chin IN, NEVER TILT THE HEAD BACK. RISK FOR ASPIRATION**
- Monitor during meal, have suction available

Education for lack of access, financial issues:

- Avoid canned box or processed food, high in calories and sodium
- Choose frozen fruits and veggie, affordable and last longer.
- Read food label, high fat sodium and healthy ones
- Transportation issue: delivery services

Nursing care for malnourished, anorexia:

- Offer several small meals of the day verses big meals. Limit liquid at meal time.
- Cold or room T food better than hot food for NV.
- Provide oral care before/after meal can help
- Increase intake of supplement between meals
- More foods in the morning when nausea is less.
- Not to fill up on calories food, high calories, high protein food should be consumed.

Visually impaired patients:

Describe what's on the tray with clock, 12 mashed potatoes, 3 vegetables. Bigger and larger utensils for grasp.

Chapter 12:

Metabolic syndrome: 3 of the following: (3 out of 5)

1. Increased abdominal girth 40 inch for M, 35 in for W
2. Elevated triglyceride equals or more than 150
3. Decreased HDL less than 40 M and 50 W
4. HTN: 130/85
5. Elevated BS: over 100 fasting blood glucose level.

Nutrition rec: low fat, low cholesterol, less than 200 mg cholesterol/day

Saturated fat and trans-fat avoid, increase fiber, decrease red meat, used lean meats, increase omega 3 fatty acid (fish nuts, seeds), check on their homosystem level: higher the worst

HTN: DASH diet, low sodium, high potassium and high calcium. 1500mcg Na, high in sodium should be avoided such as chips. Low fat dairy and intake veggies and fruits and limit alcohol

HF: limit sodium and water. Less than 200mcg and less than 2L per day. Increase protein and frequent meals.

MI: avoid caffeine, small frequent meals, healthy diet.

Anemia: body requires Iron, B12 and folic acid for RBC, increase of intake of them

Iron can be found in green leafy dark veggies. Meats, whole grains, bean, tofu

B12: meats, egg, milk

Folic acid: veggies, beans, cereal, bread and CHICKEN LIVER.

Chapter 13:

GI disorders: nausea and vomiting: eat low fat, toast crackers, pretzels, avoid liquid w meal, elevated HOB, serve food at the room T, avoid high food high in fat.

Anorexia: loss of appetite

1. decrease unpleasant odor
2. frequent meals
3. avoid high fat food
4. mouth care before and after meals.

Constipation:

1. increase fiber and fluid intake and exercise.
2. Avoid chronic use of laxatives.

Anorexia Nervosa:

1. provide privileges based on calories intake and weight.
2. Weight at same time each day
3. stay with 1 hr. after meal.
4. Avoid caffeinated beverages.

Dumping syndrome: stomach rapidly empties into small intestine, hypoglycemia, osteomalasia, iron deficiency anemia.

Symptoms:

1. abdominal cramping,
2. diaphoresis,
3. hypotension,
4. diarrhea,
5. tachycardia

Nutrition rec:

1. encourage small frequent meal.
2. Protein and fat at each meal.
3. Avoid concentrated juiced sugars.
4. Avoid dairy products.
5. No liquids with meals. Consume between.
6. Lay down 20-30 minutes after food.

GERD: Avoid thighs fitting clothing, no lying down after 2 hrs. of meal, avoid large meals, avoid: citrus spicy, fatty, caffeine and chocolate and alcohol

Lose weight and not smoke.

Gastritis and PUD: encourage to reduce stress, **no NSAIDS**, no smoking and alcohol and **avoid frequent meals**. Black peppers and caffeine should be avoided.

Chapter 14:

Renal disorders:

CKD:

- limit protein intake to 0.8 to 1 gr per kg of body weight.
- Limit phosphorus, fish, cola, chocolate, beer.
- Limit potassium intake. Bananas potatoes, tomatoes, oranges, cantaloupe
- Limit their intake of sodium

End stage renal diseases: encourage higher protein intake. Due to protein loss. Limit K and Ph and Na and water. Dialysis. provide Calcium and Vitamin D supplement.

AKI: Oliguric, diuretic, recovery

- Limit protein for those NOT receiving dialysis 0.6 gr/day
- If on dialysis 1,1.5gr/kg of protein
- Oliguric: restrict fluid intake for daily urine output plus 500
- K and Na intake depends on the phase of AKI

Nephrotic syndrome:

- sufficient protein intake 0.7-0.8 gr/kg/day
- **Soy based protein.**
- Low sodium diet to prevent HTN and edema.

Nephrolithiasis: kidney stones, risk factors: too much protein, calcium, Na and oxalate.

Inadequate fluid intake is a risk factor

Nutrition:

1. increase fluid intake 2-3L /day,
2. decrease animal protein, alcohol, sodium, caffeine.

Pt have problems made stone from oxalates: avoid foods high in spinach, rhubarb, nuts, tea, beets and strawberries.

Uric acids kidney stones: avoid foods high in purines such as: meat, whole grain and legumes.

Chapter 15:

Hypoglycemia: BS less than 70.

s/s: shakiness, diaphoresis, confusion, headache. If they are conscious nutritional supplements.

If they are not conscious: glycogen.

10-20 grs of carbs 4oz juice or soda, wait 15 minutes less than 70, repeat it again.

After its stabilized, give them snack that contain protein and carbs.

Hyperglycemia: BS above 200.

1. s/s: polyuria, polyphagia, polydipsia
2. kusmer respiration rapid
3. fruity breath
4. decreases LOC and
5. headache,
6. dehydrations.

Give them insulin ASAP.

- **SOMOGYI phenomenon:** morning hyperglycemia due to untreated overnight hypoglycemia, bedtime snack before going to bed and insulin.

General rec: increase of fiber (beans, veggies), limit carbs, decrease saturated fats less than 7%, trans fat less than 1% daily calories, cholesterol 200-300 mg /day/. no smoking

HbgA1C is below 7

Encourage to exercise and lose weight and monitor BS level and counting carbohydrate, consumption 45-75 carbs per meal.

Chapter 16

Nutrition for cancer prevention: fiber for colon cancer, no smoking for lung cancer. Serving of fruits and veggies (5 serving.) Eating whole grain, avoid eating pickles, nitrate containing meals, polyunsaturated fats, reduced alcohol consumption.

Who has cancer: higher metabolism, encourage intake of protein and calories, to maintain their weight. Whole milk adds milk and cheese to their food. Add Peanut butter spread, add yogurt.

HIV and aids: consume frequent high protein, high calorie nutrient meals

HIV associated wasting: lost 10% of their body weight, diarrhea, fever or chronic weakness.

Stomatitis: ulceration in the mouth, no alcohol-based washes, soft tooth brushes, avoid crunchy food and acidic food, scramble eggs. Consumed room T food, cut food in smaller bite, avoid trauma to mucosa.

Taste alterations:

Tart food citrus fruit and juices, plastic utensil to decrease metallic taste. suck on mint, candies, gargle with mouthwash, try seasoning and sauces to help with appetites.

