

# The IMPORTANCE OF MAINTAINING GOOD NUTRITIONAL STATUS TO PREVENT HEALTH COMPLICATIONS ASSOCIATED WITH MALNUTRITION



## ❖ *YOU ARE WHAT YOU EAT!*

❖ The body needs to be well nourished; the nutrition provided will go to replenish depleted nutritional stores.

❖ All of the food groups play a role in maintaining good health so eliminating any food group can put you in jeopardy of poor nutritional status.



❖ When evaluating a patient's nutritional needs, the first goal is to assess their current nutritional status

- CURRENT WEIGHT
- IDEAL WEIGHT RANGE
- RECENT WEIGHT CHANGES
- BODY MASS INDEX (BMI)
- ABNORMAL BLOOD LEVELS
- ANY PROBLEMS WITH DIARRHEA OR CONSTIPATION
- SKIN BREAKDOWN
- DIFFICULTIES WITH CHEWING OR SWALLOWING
- DIAGNOSIS OF GERD
- TYPICAL EATING AND DRINKING HABITS
- ESTIMATING THEIR NUTRITIONAL NEEDS FOR CALORIES, PROTEIN AND HYDRATION



# UNPLANNED WEIGHT LOSS

- ❖ Unplanned weight loss may be the best indicator of an undernourished body
- ❖ Reflects poor intake or changes in metabolism of food and nutrients
- ❖ You have to resolve this issue first before your nutrition efforts will contribute to overall good health



# WHEN TO BE CONCERNED WITH WEIGHT LOSS?

## ❖ Significant weight loss:

- ✓ > 2% in 1 week
- ✓ > 5% in 1 month
- ✓ > 7.5 % in 3 months
- ✓ > 10% in 6 months



## ❖ Current weight = 118 pounds

Weight last month = 130 pounds

$$118 \text{ pounds} / 130 \text{ pounds} = 0.907$$

$$0.907 \times 100 = 90.7\%$$

$$100\% - 90.7\% = 9.3\% \text{ Weight Loss}$$

# IDEAL BODY WEIGHT RANGES

## DETERMINING YOUR IDEAL BODY WEIGHT RANGE



**MEN:** Allow 106 pounds for the first 5 feet and add 6 pounds for every additional inch over 5 feet

➤ For every inch below 5 feet subtract 2 ½ pounds from 106 pounds

**FEMALE:** Allow 100 pounds for the first 5 feet and add 5 pounds for every additional inch over 5 feet

➤ For every inch below 5 feet subtract 2 ½ pounds from 100 pounds

Add and subtract 10% to determine IBW range

# ESTIMATING IDEAL WEIGHT RANGE

❖ A man who is 5'8"

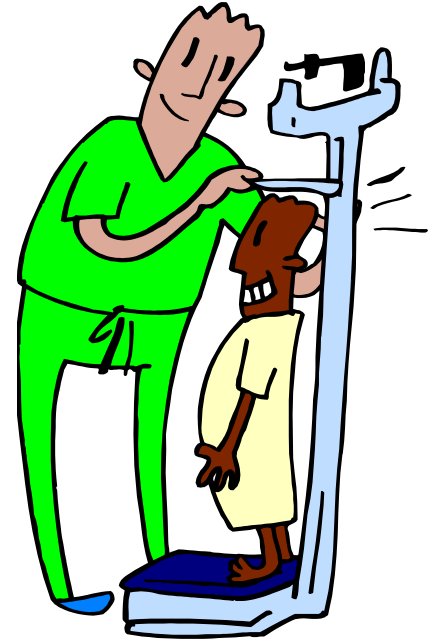
106 pounds for 5' and 48 pounds for 8"  
= 154 pounds +/- 10%

Ideal Weight Range: 139 – 169 pounds

❖ A woman who is 5'2"

100 pounds for 5' and 10 pounds for 2"  
= 110 pounds +/- 10%

Ideal Weight Range: 99 – 121 pounds



# IDEAL WEIGHT RANGE CHART

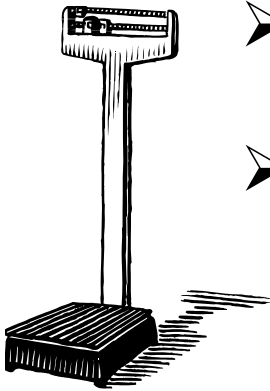
MEN		WOMEN	
5'3" (63")	112-136	4'10" (58")	85-105
5'4" (64")	117-143	4'11" (59")	87-107
5'5" (65")	122-150	5'0" (60")	90-110
5'6" (66")	128-156	5'1" (61")	95-115
5'7" (67")	133-163	5'2" (62")	99-121
5'8" (68")	139-169	5'3" (63")	103-127
5'9" (69")	144-176	5'4" (64")	108-132
5'10" (70")	149-183	5'5" (65")	112-138
5'11" (71")	155-189	5'6" (66")	117-143
6'0" (72")	160-196	5'7" (67")	121-149
6'1" (73")	166-202	5'8" (68")	126-154
6'2" (74")	171-209	5'9" (69")	130-160
6'3" (75")	176-216	5'10" (70")	135-165



# BMI = Body Mass Index

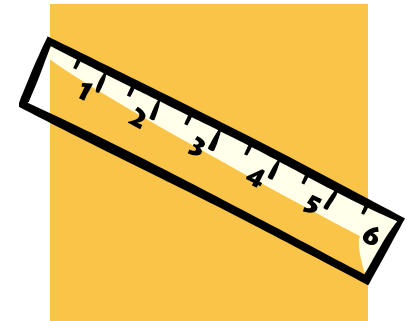
➤ Measurement of weight in proportion to your height

➤  $\text{BMI} = \text{Weight (pounds)} / \text{Height (inches)} / \text{Height (inches)} \times 703$



➤ A woman is 5'4" tall and 120 pounds

➤  $\text{BMI} = 120 \text{ lbs} / 64 \text{ inches} / 64 \text{ inches} \times 703 = 20.6 \text{ BMI}$



# BMI CHART

	19	20	21	22	23	24	25	26	27	28	29	30	35	40
4'10"	91	96	100	105	110	115	119	124	129	134	138	143	167	191
4'11"	94	99	104	109	114	119	124	128	133	138	143	148	173	198
5'0"	97	102	107	112	118	123	128	133	138	143	148	153	179	204
5'1"	100	106	111	116	122	127	132	137	143	148	153	158	185	211
5'2"	104	109	115	120	126	131	136	142	147	153	158	164	191	218
5'3"	107	113	118	124	130	135	141	146	152	158	163	169	197	225
5'4"	110	116	122	128	134	140	145	151	157	163	169	174	204	232
5'5"	114	120	126	132	138	144	150	156	162	168	174	180	210	240
5'6"	118	124	130	136	142	148	155	161	167	173	179	186	216	247
5'7"	121	127	134	140	146	153	159	166	172	178	185	191	223	255
5'8"	125	131	138	144	151	158	164	171	177	184	190	197	230	262
5'9"	128	135	142	149	155	162	169	176	182	189	196	203	236	270
5'10"	132	139	146	153	160	167	174	181	188	195	202	207	243	278
5'11"	136	143	150	157	165	172	179	186	193	200	208	215	250	286
6'0"	140	147	154	162	169	177	184	191	199	206	213	221	258	294
6'1"	144	151	159	166	174	182	189	197	204	212	219	227	265	302
6'2"	148	155	163	171	179	186	194	202	210	218	225	233	272	311
6'3"	152	160	168	176	184	192	200	208	216	224	232	240	279	319
6'4"	156	164	172	180	189	197	205	213	221	230	238	246	287	328

# What does your BMI mean?

	MALE	FEMALE
EMACIATED	<15	<15
UNDERWEIGHT	15 – 18.5	15 – 18.5
NORMAL WEIGHT	18.5 – 24.9	18.5 – 24.9
OVERWEIGHT	25 – 29.9	25 – 29.9
CLASS I OBESITY	30-34.9	30-39.9
CLASS II OBESITY	35-39.9	35-39.9
CLASS III OBESITY	$\geq 40$	> 40

# WHAT IS CAUSING THE WEIGHT LOSS.....

DECREASED APPETITE CAN BE CAUSED BY:

- ✓ History of Eating Poorly
- ✓ Depression and Anxiety
- ✓ Social Isolation
- ✓ Medication Interactions
- ✓ Chewing Problems
- ✓ Difficulty Swallowing
- ✓ GI Complications

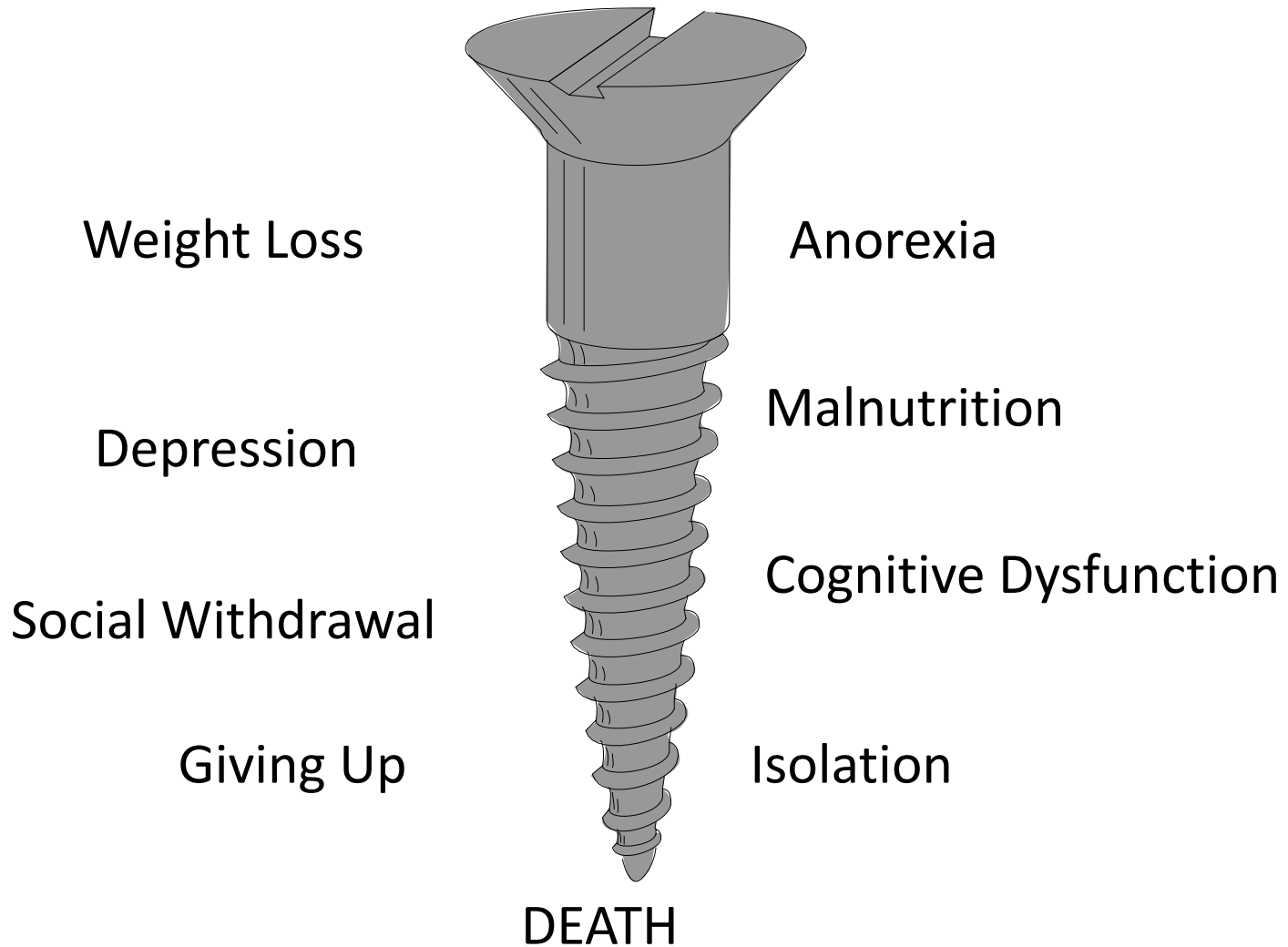




## MALNUTRITION CAUSES....

- ✓ Loss of Strength
- ✓ Depression
- ✓ Lethargy
- ✓ Immune Dysfunction
- ✓ Delayed Recovery from Illness
- ✓ Poor Wound Healing
- ✓ Pressure Ulcers
- ✓ Increased Chance of Hospital Admission
- ✓ Increased Mortality

# DOWNWARD SPIRAL OF *FAILURE TO THRIVE*



# Abnormal blood levels



- ❖ The blood levels that I focus on consistently are albumin, pre-albumin and BUN/Cre ratio.
- ❖ Albumin – serum albumin test measure the amount of protein in the clear liquid portion of the blood. Albumin has a serum half-life of approximately 20 days.
- ❖ Pre-Albumin – the half-life of pre-albumin is 2-3 days, so much shorter than that of albumin, making it a more favorable marker of acute change.
- ❖ Elevated BUN/Cre ratio – The ratio of BUN to creatinine is usually between 10-20. An increased ratio may be due to a condition that causes a decrease in the flow of blood to the kidneys, such as CHF or dehydration.

# Concerns with diarrhea



- ❖ Diarrhea can lead to malnutrition, poor absorption of vitamins and minerals, dehydration
- ❖ Diarrhea can be the result of infection, medications, food sensitivity, stress or emotional upset.
- ❖ Eat small amounts throughout the day.
- ❖ Keep activity to a minimum after eating.
- ❖ Try a water soluble fiber supplement to produce firmer stool, such as Metamucil, Citrucel or Benefiber.
- ❖ Drink plenty of fluids throughout the day, but avoid fluids at mealtime to prevent stimulating a bowel movement.
- ❖ Drink room temperature liquids.
- ❖ Avoid juices or dilute your juice.
- ❖ Try nonirritating foods: yogurt, rice, noodles, Farina, Cream of Wheat, ripe bananas, smooth peanut butter, white bread, boiled or baked skinless chicken, turkey, lean beef or fish



# constipation



- ❖ Constipation can be very uncomfortable and greatly affect someone's appetite.
- ❖ The goal is to have a soft bowel movement every 1-2 days.
- ❖ To help with regularity, try at least 64 ounces caffeine free fluids daily; slowly increase fiber intake by 3-5 grams per day only if fluid intake is sufficient; incorporate more physical activity; consider prune juice, pear juice, prunes, prune pudding, figs and dates; try warm beverages and/or a warm bath to stimulate bowel movements.

# SKIN BREAKDOWN



- ❖ Nutrition plays a big role in wound healing. Without sufficient nutrition you aren't going to heal the wound.
  
- ❖ Proper nutrition is an important part of wound healing. When the body is going through the healing process it requires extra calories, particularly in the form of protein to promote healing.
  
- ❖ Inadequate amounts of certain nutrients can aggravate the wound condition and contribute to delayed wound healing.
  
- ❖ The 4 main nutrient components of successful wound healing are:
  - Protein
  - Calories
  - Vitamin C
  - Zinc



# Adding Protein to Your Diet

- Add grated cheese or melted cheese to baked potatoes, vegetables, soups, noodles, meat and fruit
- Use milk or half and half when cooking cereal, soup, instant cocoa and puddings
- Add hard boiled eggs to salads, sandwiches or eat as a snack
- Add leftover cooked meats to soups, casseroles, salads, beans and pasta
- Sprinkle seeds or nuts on your salad or desserts
- Spread peanut butter on toast, muffins, crackers, vegetables and fruit
- Add beans and peas to salads, soups, casseroles and vegetable dishes
- Add dry skim milk powder to milk, mashed potatoes, cream soups

# Adding Calories to Your Diet

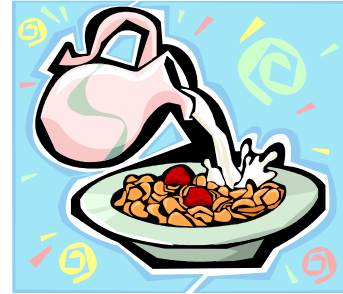
- Add butter or margarine to potatoes, rice, pasta, soups, vegetables, sandwiches, cooked cereals, bread. Once it melts add more!!!
- Use regular mayonnaise on sandwiches, salads and in dips with vegetables Add jam to bread, crackers, muffins, fruit and ice cream
- Add honey to coffee, tea, hot or cold cereals and bread
- Add whipping cream to pies, puddings, jello, pancakes, waffles, fruit and hot chocolate
- Add sour cream to baked potatoes and vegetables
- Add gravy to meats, poultry, potatoes, rice and hot open faced sandwiches
- Add cream sauces to pasta, chicken, rice, seafood, cooked vegetables
- Add cream cheese to bread, bagels, muffins, vegetables

# VITAMIN C

- ❖ Vitamin C is required for the growth and repair of tissues in all parts of your body. It is necessary to produce collagen, an important protein used to make skin, scar tissue, tendons, ligaments, and blood vessels.
- ❖ Adequate vitamin C can also help to reduce the risk of infection and damage caused by free radicals.
- ❖ Good sources of vitamin C are: orange/orange juice, strawberries, cantaloupe, tomatoes/tomato juice, broccoli, grapefruit, watermelon, peppers, pineapple, tangerine, blueberries, grapes, apricots, raspberries, nectarines, peaches, sweet potatoes and spinach.
- ❖ Another option is to supplement with 500mg Vitamin C twice daily



# ZINC



- ❖ Zinc is an essential mineral that is found in almost every cell. Not only does it aid in wound healing but it works to fight off any infection.
- ❖ Even a small amount of zinc deficiency is bad for a wound because zinc is used in the formation of white blood cells which are used to fight infection.
- ❖ Good sources of zinc include: oysters, beef, pork, poultry, beans, nuts, whole grains, fortified breakfast cereals and dairy products.
- ❖ Supplement with 220mg zinc sulfate daily for 14 days

# DIFFICULTIES WITH CHEWING OR SWALLOWING



- ❖ A concern with swallowing is best addressed by an SLP. So, I make sure a referral to an SLP is made if needed.
- ❖ Difficulties with chewing may be as simple as not wearing dentures during mealtime or needing dental treatment for decay, broken or cracked teeth, bleeding gums, sensitive teeth.
- ❖ The texture of the food can greatly improve oral intake if there are dental concerns or missing dentures.
- ❖ Observing individuals at mealtime is important to assess food texture needs and to make appropriate recommendations



# • TREATING GERD



- ❖ Uncontrolled GERD can greatly affect a person especially if they are intellectually and developmentally disabled as we can't explain to them why they feel so awful after eating, which may result in a big decrease in their intake.
- ❖ Long term uncontrolled GERD can lead to irreversible damage to the esophagus.
- ❖ A reflux diet is intended to minimize reflux or gastric fluid into the esophagus and to eliminate foods that irritate the esophageal mucosa.

# **TIPS FOR PREVENTING GERD**

- ❖ Maintain an upright posture during and for 45-60 minutes after eating
- ❖ Avoid eating within 2-3 hours of lying down
- ❖ Avoid clothing or belts which are tight around the waist
- ❖ Stop smoking as it lowers esophageal sphincter pressure
- ❖ Limit caffeine
- ❖ Maintain a healthy body weight
- ❖ Avoid large meals
- ❖ Determine tolerance to chocolate, alcohol, carbonated beverages, citrus foods and juice, tomato products, high fat foods, coffee, mint, spearmint, peppermint, vinegar, chili, jalapeno peppers, and gaseous foods.

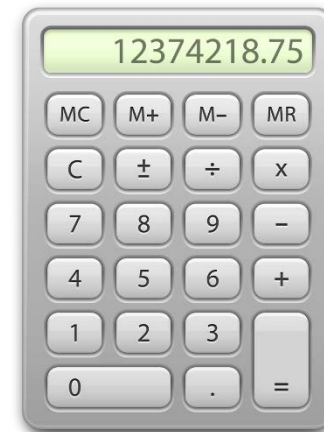
# TYPICAL EATING OR DRINKING HABITS



- ❖ There are 2 different approaches I use to gather this information. Either asking them to review a “typical” 24 hour food and beverage intake or asking them how many servings they get from each of the food groups and how many ounces of fluid per day.
- ❖ You may need to provide assistance of what is a serving size and food examples of each food group.
- ❖ It is also important to identify the types of beverages a person is consuming.

## Estimating their nutritional needs for calories, protein and hydration

- ❖ Keep in mind that these are equations, which is merely a starting point for estimating their needs. Everyone is different. Some gain weight on much less, while others are extremely under weight if they follow these recommended estimated needs.
- ❖ Calories:  $30 \text{ kcal / kg}$  for weight maintenance
- ❖ Protein:  $1.0 \text{ grams/ kg}$
- ❖ Hydration:  $30 \text{ ml / kg}$



## Summary of nutritional findings for tj

- ❖ TJ is 85<sup>th</sup> percentile weight versus stature on the CDC growth chart.
- ❖ TJ receives nutrition orally and via G-tube.
- ❖ Orally he gets a high calorie, puree diet with 2 ounces of baby food prunes every other day.
- ❖ Via the G-tube, TJ gets 6 ounces Pediasure with Fiber and 2 ounces Water 3 times daily and 10 ounces Pediasure with Fiber and 10 ounces water during the night.

## Nutrition recommendations for tj

- ❖ TJ eats a balanced diet that represents all the food groups. He has a good intake of fluids.
- ❖ His BMI has increased by 3.8 in the past 11 months and he is between 5<sup>th</sup> – 10<sup>th</sup> percentile BMI for age currently.
- ❖ He is followed by a registered dietitian currently.
- ❖ Continue 3 ½ cans Pediasure with Fiber daily along with 3 meals orally to produce a continual weight gain.
- ❖ Start a calcium supplement of 500mg daily to ensure the estimated needs of 1300mg daily are met.
- ❖ Continue regular visits with TJ's dietitian.

