

Nutrition:



Optimizing Health & Independence

Nutrition = Health Promotion

- Enhances natural healing potential
- Restores balance
- Boosts overall health
- Helps target causes –
not just symptoms





Miss Joanne Smith
1-3 bottles per day
for weight gain.



Nutrition

- Using food to nourish your body with the essential elements it needs to live, grow and heal



Benefits for SCI:

- Fulfills higher need for nutrients
- Replenishes nutrients depleted by medication
- Helps maintain function and control over body & health
- Helps prevent development of secondary health conditions



Common Secondary Health Complications:

- Constipation/ bowel obstruction/diarrhea
- UTI's
- Obesity
- Pressure sores
- Osteoporosis
- Arthritis
- Diabetes
- Heart disease



Digestion

Common Nutrient Deficiencies

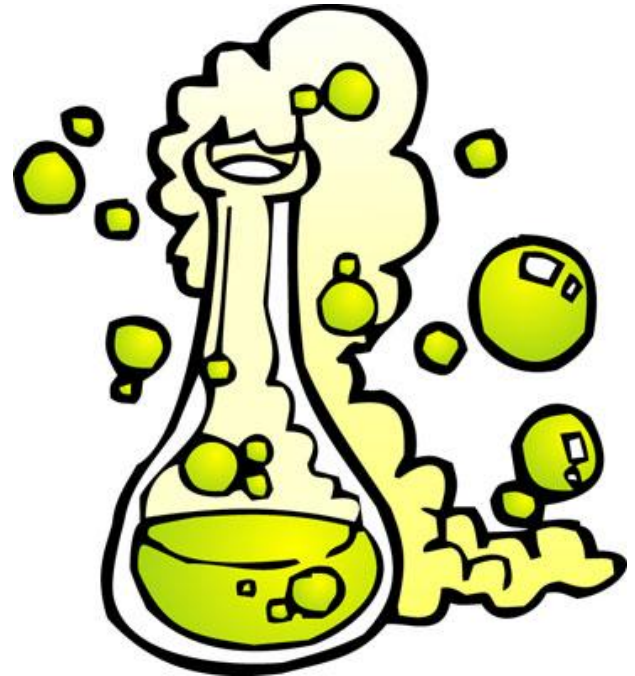
- Vitamin A
- B2 (riboflavin)
- B9 (folic acid)
- B12
- Vitamin D
- Vitamin E
- Calcium
- Chromium
- Magnesium
- Zinc
- Fibre
- EFA's



Processes of Digestion

1. CHEMICAL

- Stomach Acid
- Digestive Enzymes



Stress



- Lowers stomach acid production – required for digestion of protein and absorption of minerals
- Lowers digestive enzyme activity – lowers effectiveness of digesting fats, proteins and carbohydrates

Nutritional Recommendations:

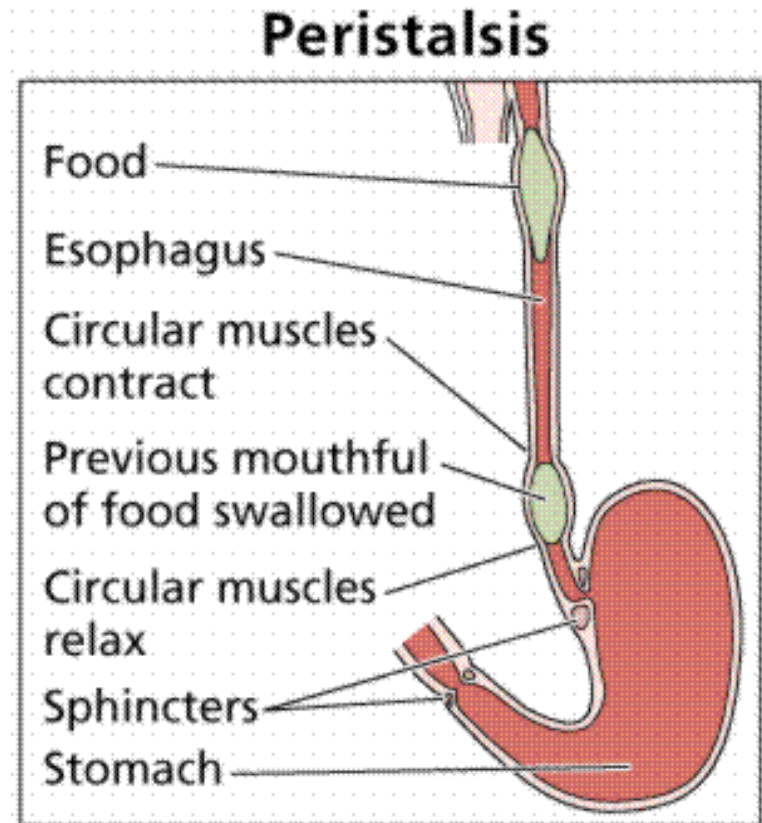
- Consume enzyme rich foods:
 - fresh vegetables
 - pineapple
 - avocado
 - papaya
- Digestive supplement (1-2 every meal)
 - betaine hydrochloride
 - bile salts
 - enzymes



Processes of Digestion...

2. MECHANICAL

- Peristalsis



Nutritional Recommendations:

- Increase fibre
 - Fruits
 - Vegetables
 - Whole grains
 - Legumes
 - Fibre supplement (whole husk psyllium or ground flax seed 1 tbsp/d)
- Reduce/eliminate sugar and high glycemic foods
- Eat small, frequent meals



Processes of Digestion

3. INTESTINAL FLORA

- Aid digestion of food
- Stimulate intestinal transit
- Produce B & K vitamins
- Reduce risk of antibiotic-induced diarrhea
- Ideal: 85:15 ratio



Nutritional Recommendations:

- Probiotics (1-2 per day)
 - 2-3 months
 - 15-30 billion per capsule
- Fermented foods
 - Yogurt
 - Kefir
 - Sauerkraut



**Nutrition:
Preventing/Managing
Secondary Health
Complications**

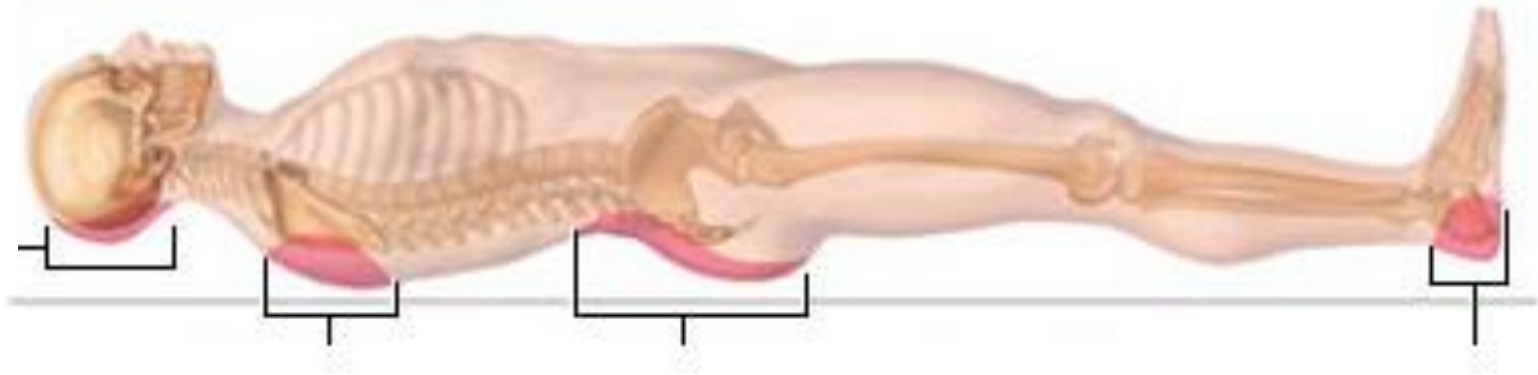
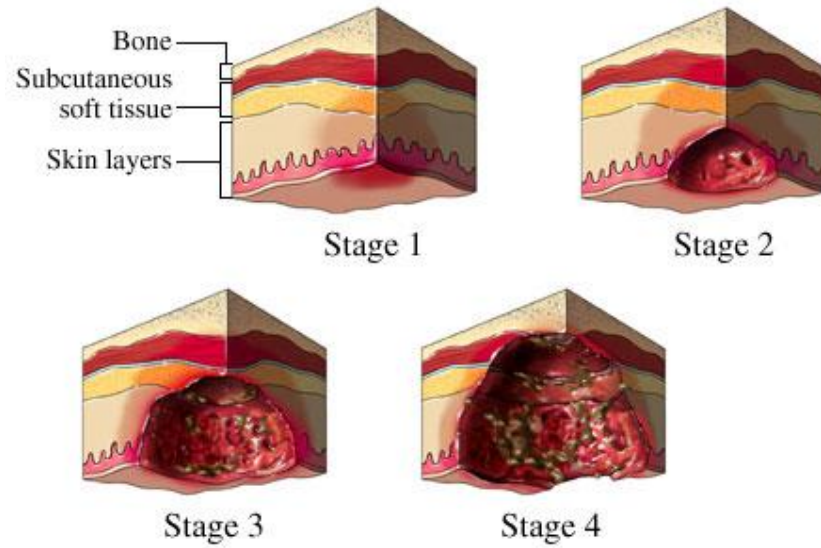
Pressure Sores

SCI FACTS:

- Risk of pressure sores increases with time since injury
- Account for high number of re-hospitalizations
- Life-threatening



Pressure Sores:



Nutritional Protocol



Nutritional Protocol

1. Increase protein intake
(1.5g/km weight)
2. L-glutamine (500 mg/3x/d)
3. Vitamin A (10 000 IU/d)
4. Vitamin C (2000-3000 mg/d)
5. Vitamin E + (800 IU/d)
6. EFA's (2-4 capsules/d)



Nutritional Protocol (con't)

7. Zinc (50-100 mg/d)
8. COQ10 (90 mg/d)
9. Eliminate all refined/processed foods



Bowel Function

SCI FACTS:

- Increased risk of:
 - Constipation
 - Involuntaries
 - Bowel obstruction
- Over the counter bowel medications can deplete nutrients



Nutritional Protocol



1. Increase Fibre

- Helps reabsorb cholesterol
- Helps eliminate toxins
- Reduces risk of certain cancers
- Decreases liver burden
- Increases mental energy

- 35 grams of fibre per day



Two Types of Fibre

INSOLUBLE Fibre

Benefits:

- Decreases constipation
- Prevents colon cancer and diverticulitis

Sources:

- Vegetables
- Fruit Skins
- Whole Grains

SOLUBLE Fibre

Benefits:

- Help prevent diabetes
- Helps lower cholesterol
- Helps regulate blood sugar

Sources:

- Oats
- Nuts
- Fruits
- Beans

How to increase fibre intake?

- ✓ Eat whole fruits instead of drinking juice
- ✓ Replace white bread, rice and pasta with whole grain products
- ✓ Choose whole grain cereals for breakfast
- ✓ Snack on raw vegetables
- ✓ Substitute legumes for meat 2-3 times/wk



Recommended Serving / Day

- Legumes – 2 servings
- Whole grains - 1 servings
- Vegetables – 5 or more servings
- Fruit – 2 servings

1 serving = baseball



Nutritional Protocol (con't)

2. 4-5 small meals/day
3. Whole husk psyllium or ground flax seed (1 tbsp/day)
4. Probiotics (1-2x/day)
5. EFS's (2 capsules) fish or flax seed oil/day)
6. Drink 6-8 cups fluid/day
7. Eliminate all refined/processed foods

Bladder Infections

SCI FACTS:

- UTI's one of most common & costly secondary health complication
- 80% experience them
- UTI & diseases of urinary system 5th overall cause of death for people with SCI



Potential Side Effects

- Fatigue
- Fever
- Autonomic dysreflexia
- Sepsis
- Kidney failure



Nutritional Protocol



1. Boost Immune System

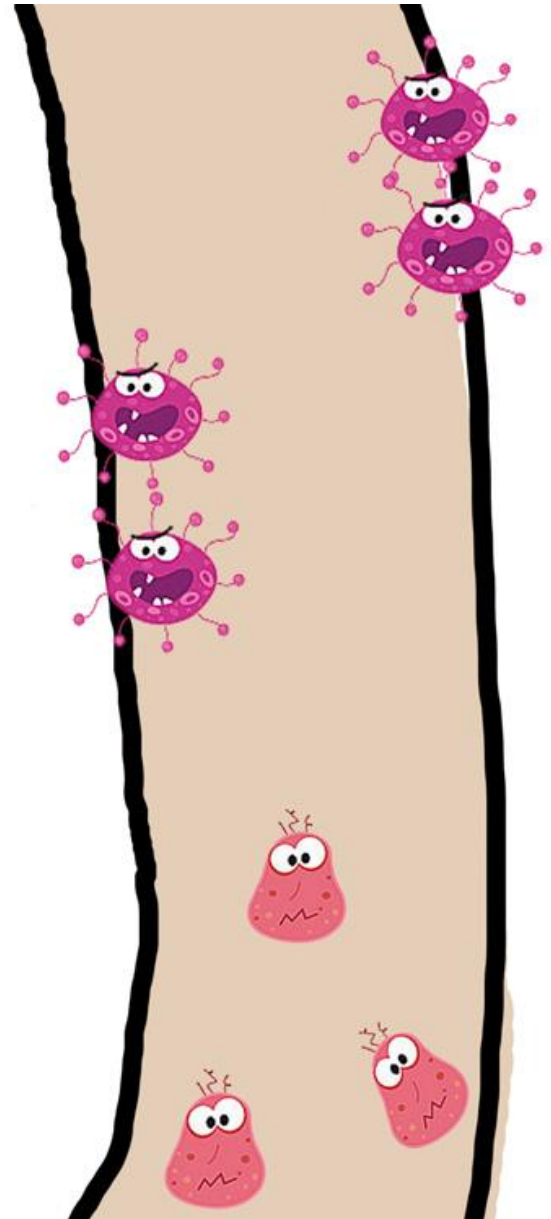
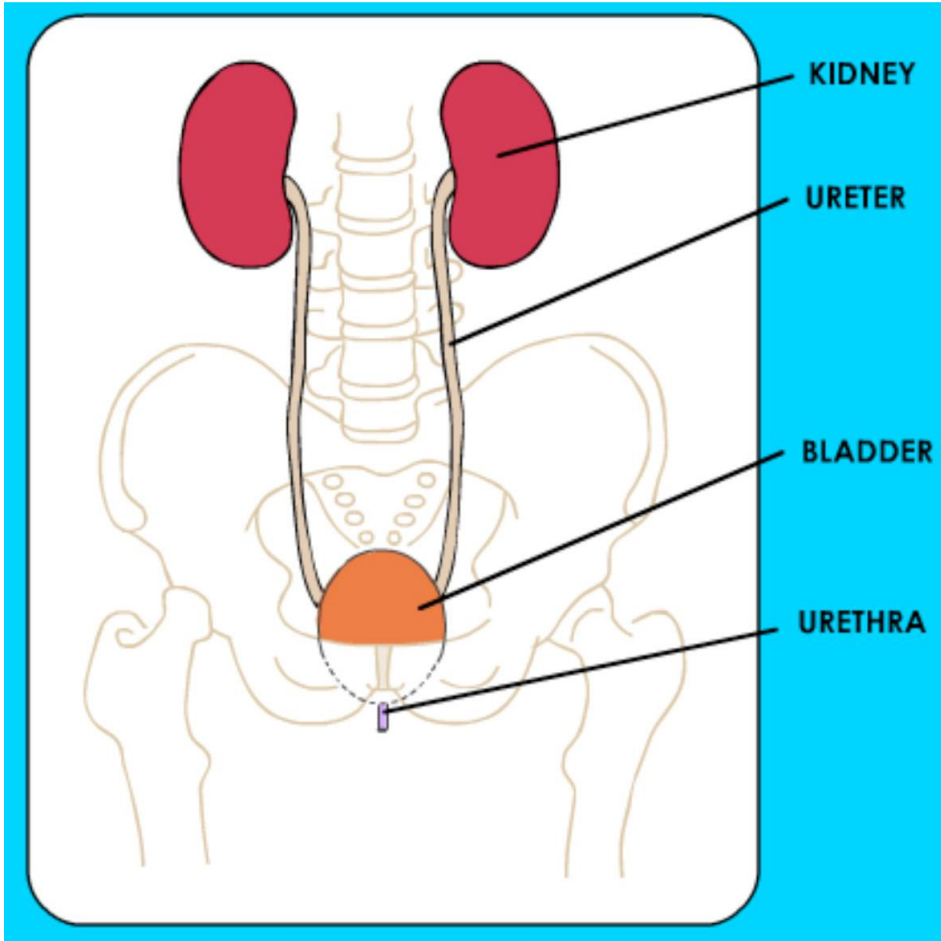
- Nutrient deficiency is the most common cause of low immune function
- UTI's occur more frequently when the body's immune system is low
- Eat lots of foods rich in Vitamins A & C
 - Citrus fruits
 - Red & green pepper
 - Yellow & orange vegetables
 - Sweet potato
 - Vitamin A supplement (5-10 000 IU/d)
 - Vitamin C supplement (2-3000 mg/d)



2. Cranberries

- **Hippuric acid** = creates unfriendly growth environment
- **Tannins** = prevent bacteria from attaching to cell wall of bladder
- Drink 16 oz. of ***unsweetened*** cranberry juice a day





3. Probiotics

- Good bacteria help keep bad bacteria at bay
- Boost immune system
- Eat fermented foods
 - Yogurt
 - Sauerkraut
 - Pickled foods
 - Probiotic supplements



4. Alkalinize Urine

- Raising the pH balance of the urine creates an unfriendly environment for bacteria to live in
- Citrate tablets: dose 125-250 mg
3 to 4 times/day



5. Uva Ursi

- Antiseptic herb
- Especially active against E. Coli
- Takes as a tea or in supplement form



6. D-Mannose

- Naturally occurring sugar
- E-coli prefer to adhere to D-mannose molecule instead of bladder wall – they are then flushed out of bladder with D-mannose



7. Drink

- 6-8 cups of liquid/day helps flush bladder
 - Water
 - Unsweetened cranberry juice
 - Herbal teas



Obesity / Weight Loss

SCI FACTS

- 60% overweight
- Increased risk of CVD & diabetes
- Slowed metabolism 14-27%
- Calorie needs & ideal body weight decrease
- Resume old eating habits



**Hormone Imbalance =
Weight Gain**

Insulin Connection

- Insulin = Hormone
- Simple Carbohydrates = Increased Insulin
- Increased Insulin = Weight Gain



Nutritional Protocol



1. Stabilize blood sugar levels

- Eat 4-5 small meals/day
- Low glycemic foods
- Increase proteins & complex carbohydrates
- Eliminate refined/processed foods



Breakfast

Eat **protein** within one hour of waking

SNACK

2 hrs after -
protein

Lunch

Complex carb meal or
protein with **vegetables**

SNACK

2 hrs after -
protein

Dinner

Complex carb meal or
protein with **vegetables**

SNACK

2 hrs later -
fruit or **veg**

Eat Low Glycemic Foods

- Prevent high blood sugar spikes, which cause high insulin surges and insulin resistance
- Reduce sugar being stored as fat



High GI

- Candy, Cookies & Cake
- White Potatoes/fries
- White bread & bagels
- White pasta
- Fruit Juices
- Potato/corn chips
- Sugar
- Many breakfast cereals (Cheerios & Special K)
- Pop

Low GI

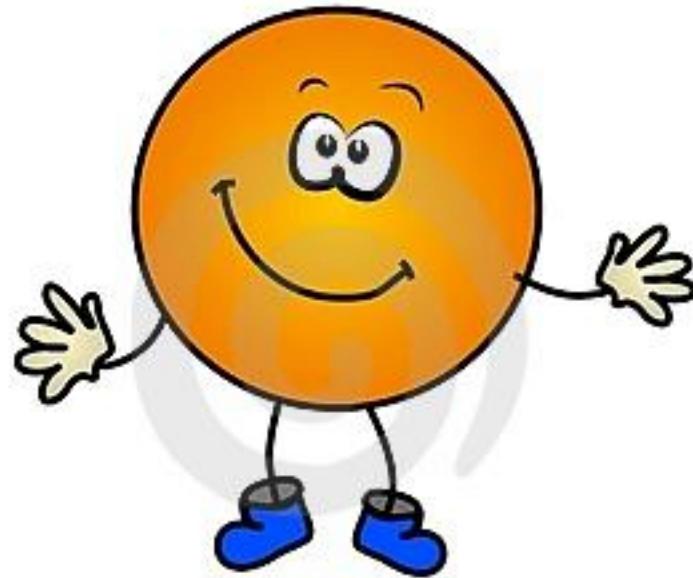
- Apples
- Berries
- Barley
- Grapefruit
- Legumes & Nuts
- Unsweetened Oatmeal
- Green peas
- Tomatoes
- Unsweetened, plain yoghurt

Nutritional Protocol

2. Reduced total calorie intake
 - Paraplegic 28 cal/kg ideal weight
 - Quadriplegic 23 cal/kg ideal weight
3. Chromium picolinate (200mcg/day)
4. Fibre supplement (1 tbsp whole husk psyllium per day)
5. EFS's (500 mg/4x/day)

Lifestyle Recommendations

1. 7 to 8 hours of sleep per night
2. Keep your joy!



Budget

Direct Health Care Costs after Traumatic Spinal Cord Injury:

**\$2,800 to \$5,400
per year**



SCI Unemployment Rate:

60%



Budget Tips

1. Build meals around grains & legumes
2. Buy in bulk
3. Don't have to always buy organic and wash well!
4. Skip middle aisles
5. Pass on prepared, pre-chopped foods
6. Store fresh herbs in freezer



Budget Tips (con't)

7. Store asparagus upright in 1 inch of water
8. Wrap celery in tinfoil
9. Store veggies in plastics bag with air squeezed out
10. Refresh celery, carrots & radishes in ice water with potato slice
11. Spread butter on hard cheeses
12. Store butter in freezer



Budget Tips (con't)

- 13. Garlic & onion in cool, dark place
- 14. Buy in local and in season
- 15. Money you spend on healthy foods today-saves you on medical bills later!





Miss Joanne Smith
1-3 bottles per day
for weight gain.