

Adolescence

☆ Nutrition during Adolescence:

❧ *Characteristic of this Period:*

1. A rapid growth spurt, which generally occurs in girls between the ages of 9½ & 14½ and in boys between the ages of 10½ & 16
2. Calories needed are high.
3. Stress, fatigue, and peer group influence the adolescent's appetite and dietary intake.
4. The diet of adolescent girls can lack essential nutrients. Low calorie diets and poor food choices contribute to nutrient deficiency particularly of calcium, protein, vitamin B and iron.
5. Boys need more calories than girls
6. Protein intake should be 50 to 60 gm.
7. Calcium is needed for bone development.

8. Additional iron is needed to replace loss of blood in girls
9. Vitamin D is necessary for the binding of calcium with the bones.
10. Vitamin A is important for tissue growth and vision.
11. Vitamin C is needed for iron synthesis, cell growth and tissue healing.
12. Fluid intake should be 2000-3000 ml.
13. Eating disorders is common in older and young females, such as:

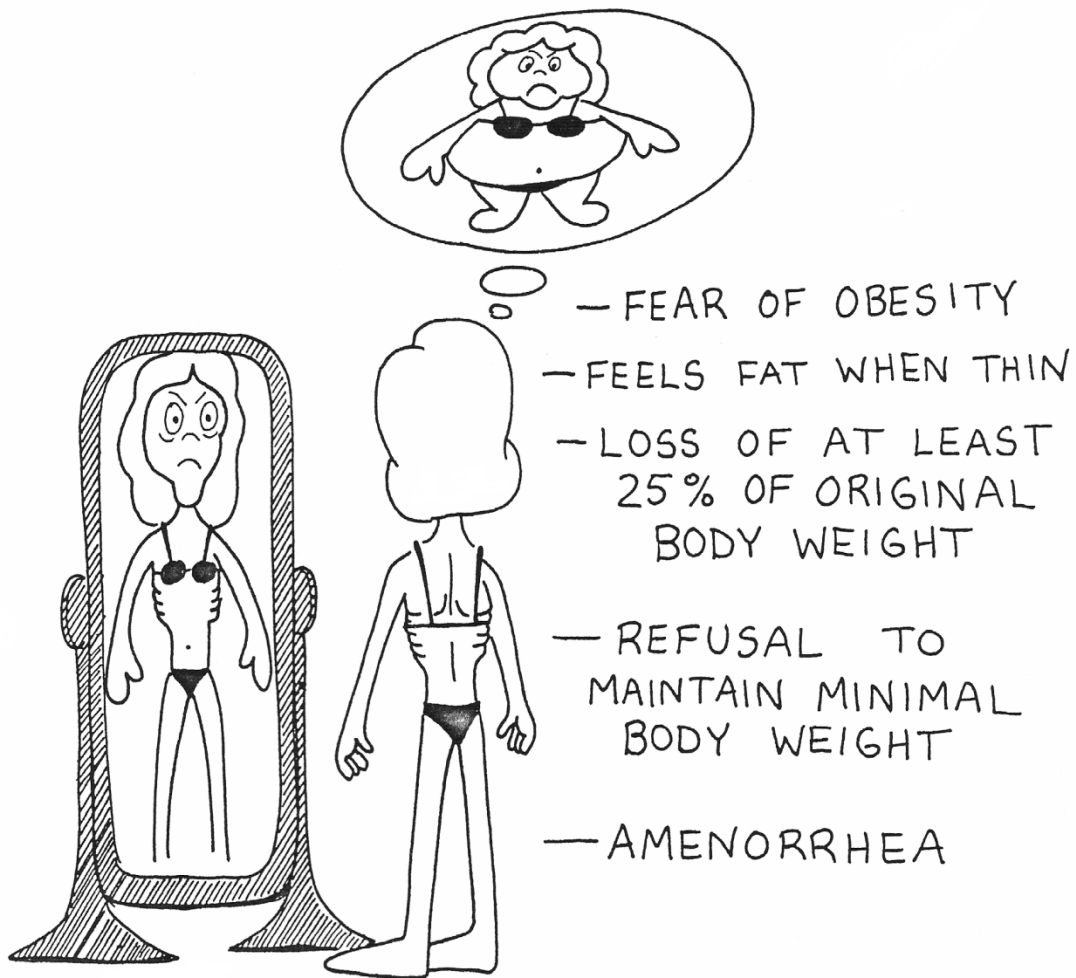
a. Anorexia Nervosa:

Is a condition of self-starvation based on unrealistic fear of being fat. The total body weight is 20% to 40% below normal.

✱ *Complications:*

Death may occur in prolonged. In severe cases, electrolyte imbalance, cardiovascular problems, arrhythmia and renal impairment.

ANOREXIA NERVOSA



b. Bulimia:

Is characterized by a cycle of abnormal consumption of food (longing) as much as 3000 to 5000 calories at one time, followed by self-induced vomiting or the use of diuretics or laxatives.

✱ *Complications:*

Muscle wasting, dark circles under the eyes, dental caries.

The adolescent may be unable to stop eating once beginning, with the cycle ending with depression. Cardiovascular and gastrointestinal problems may result.

BULIMIA

✱ BINGE EATING.

(USUALLY IN SOLITUDE)

✱ ↑ MOOD WHILE EATING.

✱ ↓ MOOD WHEN STOPPED.



☆ Health Problems of Adolescence:

A. Acne:

A skin condition associated with increase production of sebum from the sebaceous glands and characterized by comedones (blackheads, papules, whiteheads & pustules) on face, neck, upper trunk, shoulder and back.

1. Predisposing Factors:

- i. Lack of cleanness, stress and physical development
- ii. Some food like chocolate, nuts, sharp cheeses, and food high in fat

2. Care:

- i. Squeezing blackheads with heads and pimples with fingers and great forces is discouraged at all times.
- ii. Cleaning the skin two or three times a day with a soap substitutes containing sulfur and salicylic acid may be recommended
- iii. Application of ointment most frequently at night
- iv. Acne increases during the summer than winter, so more emphasis must be put on cleaning.
- v. Expose to ultraviolet ray of the sun, but not ultraviolet lamp

B. Scoliosis:

Lateral curvature of the spine by a brace will be used

C. Appendicitis:**1. Description:**

An inflammation of the blind sac at the end of the cecum. It is the most common cause of abdomen surgery in children.

2. Causes:

Inflammatory changes, lymphoid tissue, parasitic infestation, stenosis blocks the flow of mucoid secretion, causing pressure to build up in the blood vessels of the lumens.

3. Symptoms:

Low-grade fever, generalized abdominal pain that localizes to the right lower quadrant and abdominal tenderness.

The child's activity level decreases, and it becomes more comfortable lying on the side with knees flexed

4. *If the appendix rupture:*

A sudden relief of pain, abdominal distention, tachycardia, rapid shallow respiration and restlessness

5. *Treatment:*

i. *Diagnosis:*

History, physical examination, WBC's 12000

ii. *Appendectomy:*

✱ **Preoperative care**

- a. Child is kept NPO (given nothing by mouth)
- b. I.V. to correct any fluid and electrolyte imbalance
- c. Child is discharged within 5 days.

If the appendix ruptures, the child must be given I.V. antibiotics and nasogastric tube suction should begin, postoperatively the child requires 7 to 10 days of antibiotics, nasogastric tube suction and dressing changes.

- iii. Do not give enemas or laxatives until the cause of abdominal pain has been identified
- iv. Do not use hot compresses or water bottles it may lead to rupture of appendix.
- v. *After operations:* Observe signs of inflammation and redness.

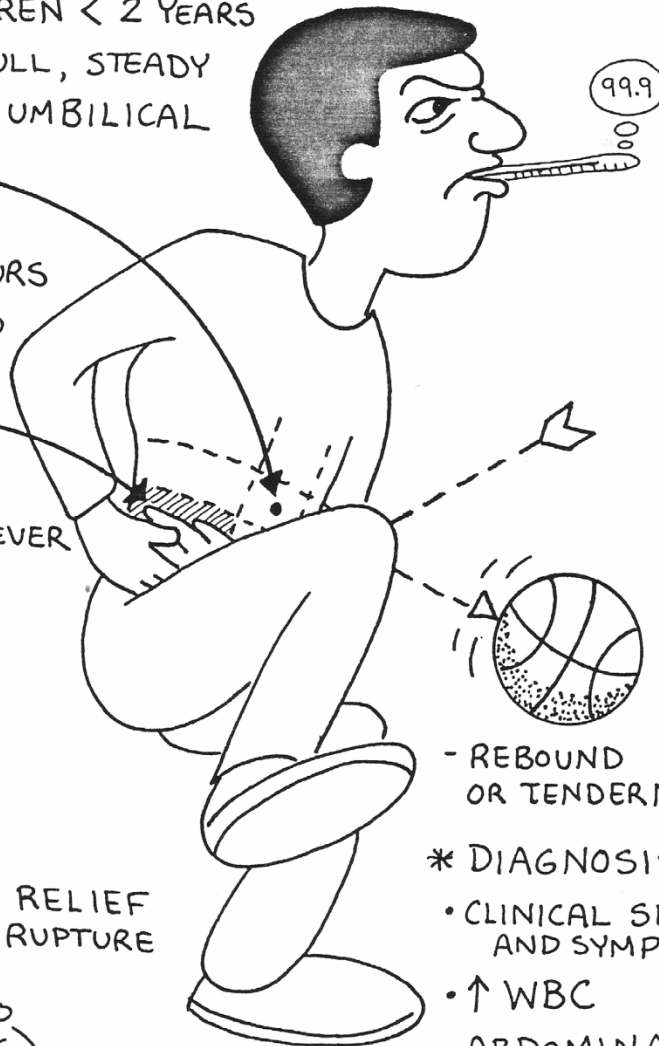
APPENDICITIS

- RARE IN CHILDREN < 2 YEARS
- BEGINS AS DULL, STEADY PAIN IN PERIUMBILICAL AREA...

PROGRESSES
OVER 4-6 HOURS
& LOCALIZES TO
RIGHT LOWER
QUADRANT

- LOW GRADE FEVER
- NAUSEA
- ANOREXIA

- SUDDEN PAIN RELIEF
MAY INDICATE RUPTURE
OF APPENDIX
(MAY LEAD TO
PERITONITIS)



- REBOUND PAIN
OR TENDERNESS

* DIAGNOSIS *

- CLINICAL SIGNS
AND SYMPTOMS
- ↑ WBC
- ABDOMINAL
SONOGRAM
- EXPLORATORY
LAP

D. Sports Injury:

1. Strains; pulling of ligaments
2. Sprains; muscle injury caused by over stretching.

**** Treatment:***

Rest, ice compressions and elevation for 24 hours to 36 hours

E. Contraception:

Using of oral contraception during this stage of development changes the metabolism of proteins, carbohydrates, lipids and some vitamins and minerals. Fluid retention increases the body weight.

F. Injury Prevention:

1. Firearms, motor vehicles and boat injuries causes about 70% of death during adolescence
2. Violence is an increasingly important factor in adolescent injury

G. Communication & Sexuality:

1. It is necessary to provide positive role models
2. Privacy should be ensured during the taking of health history or interventions with teens.
3. Teenagers need much information about their bodies and emerging sexuality
4. Information about how to prevent sexual transmitted disease, AIDS, contraception & importance of antenatal care

☆ Drug Addiction & Alcoholism:***A. Signs of Addiction:***

1. Poor personal hygiene
2. Needle marks (tracks) on body along veins
3. Red eyes
4. Constant, clear nasal discharge
5. Unreactive pupils; may be dilated or constricted
6. Drowsiness or hyperactivity
7. Poor ocular focus, constant oscillation of the eyes
8. Speech blurred, not fluent.

B. Symptoms of Addiction:

1. Abdominal cramping

2. Constipation
3. Anorexia
4. Apparent nutritional deficiencies
5. Nausea & vomiting
6. Poor work or school history
7. Muscle cramp
8. High blood pressure
9. Diarrhea
10. Less severe symptoms; weakness, insomnia, & anorexia

C. Treatment & Rehabilitation:

1. Long-term rehabilitation
2. Chemotherapy
3. Psychotherapy
4. Therapeutic communities
5. Hypnotherapy
6. Yoga

☆ **Diabetes Mellitus:**

The majority of children with diabetes have insulin-dependent diabetes mellitus (IDDM). This condition was known as juvenile diabetes. The peak ages of occurrence are between 5 and 7 years and at puberty.

A. Clinical Manifestation:

Polyuria, polydipsia, polyphagia (excessive appetite) with significant weight loss. Unexplained lethargy and occasional enuresis may also occur in a previously toilet-trained child. Adolescent girls may have Vaginitis caused by Candida, which thrives in the hyperglycemic tissues and menstruation may be delayed. In severe cases diabetic ketoacidosis may develop.

B. Etiology & Pathophysiology:

It is thought that IDDM is caused by a genetic component, environmental influences, and an autoimmune response.

Environmental factors such as viruses or chemicals in the diet are believed to play an important role.

C. Comparison between the Signs & Symptoms of Hyperglycemia & Hypoglycemia:

| <i>Hyperglycemia</i> | <i>Hypoglycemia</i> |
|---|---------------------------|
| - Gradual onset | - Rapid onset |
| - Lethargic, slowed response, confusion | - Irritable, nervous |
| - Deep rapid breathing | - Shallow breathing |
| - Weak pulse | - Tachycardia |
| - Flushed skin | - Pallor, sweating |
| - Dry mucus membrane, thirst, dehydration | - Moist mucus membrane |
| - weakness | - Tremors, shaky feelings |
| - Abdominal pain, nausea, vomiting | - Headache, dizziness |
| - Fruity or acetone breath | - Normal breath odor |

D. Exercises:

Exercise is extremely important in the management of diabetes because of its effect on lowering blood glucose level and reducing cardiovascular risk factors.

1. It also improves circulation and muscle tone. These effects are useful in relation to losing weight, reducing stress and maintaining a feeling of well being.
2. Exercise also alters levels of lipids in the blood.
3. Patients with diabetes (type 1) IDDM should be taught to eat 15 mg snack before engaging in moderate exercise to prevent unexpected hypoglycemia
4. In general, a slow, gradual increase in the length of the exercise period is encouraged.
5. Exercise recommendation must be individualized.
6. General precautions with exercise in diabetes are:
 - i. *Avoid exercise during periods of poor metabolic control.*
 - ii. *Avoid exercise in extreme heat or cold.*
 - iii. *Use appropriate footwear.*



iv. Inspect feet before and after exercise

E. Foot Care:

1. Take care of your diabetes.
2. Check your feet every day.
3. Clean foot everyday especially between toes.
4. Keep the skin soft and smooth.
5. Smooth corns and calluses gently.
6. Trim your toenails each week or when needed.
7. Wear shoes that are wide and comfortable and socks at all times.
8. Protect your feet from hot and cold.
9. Keeps the blood flowing to your feet
10. Check with your doctor.
11. Cut nail curved and avoid sharp edge to avoid trauma.
12. Notice signs of cyanosis

F. Health Education:

1. General hygiene
2. Foot care.
3. Care of the eye; visual check test to detect deterioration in visual function.
4. Monitoring growth and development.
5. Visit and/or confers with the physician when necessary.
6. Monitor the difference after therapy by blood glucose testing and urine testing for ketones.
7. Use proper techniques for storage and injection of insulin and glucagon.
8. Wear medical identification all the time.
9. Inform teacher, scout leader, other adults, and peers about the diabetes and possible precautions to take if hypoglycemia occurs.
10. Carry diabetes supplies (insulin, syringes, extra carbohydrates, and monitoring equipments).
11. Visit podiatrist, ophthalmologist, and physicians preventively or as soon as a problem develops.

G. Preparing & Injecting Dose of Insulin:

1. Preparing the dose of insulin:

- i. Wash your hands.
- ii. Gently roll the insulin bottle several times to mix the insulin. Be sure it is completely mixed. Do not shake bottle, flip off the colored protective cap on the bottle, but do not remove the rubber stopper.
- iii. Wipe top of the bottle with an alcohol swap.
- iv. Draw air into the syringe by pulling back on the plunger. The amount of air should be equal to your insulin dose.
- v. Remove the needle cover. Put the needle through rubber top of insulin bottle. Push plunger in, the air injected into the bottle will allow insulin to be easily withdrawn into syringe.
- vi. Turn bottle and syringe upside down in one hand. Be sure the tip of the needle is in the insulin. Your other hand will be free to move the plunger. Draw back on plunger slowly to draw the correct dose of insulin into syringe.
- vii. Check for air bubbles. The air is harmless, but a large air bubble will reduce the insulin dose. To remove air bubbles, push insulin back into the bottle and measure your correct dose of insulin.
- viii. Double-check your dose. Remove needle from the bottle. Cover needle with guard or lay syringe down so that needles does not touch anything.

2. Site of Injection:

Change the site of injection daily.

3. Inject the dose of insulin

H. Diet:

1. Each meal should consist of a balance of carbohydrates, proteins, and fats.
2. Consistency in timing of meals, amounts of food eaten on a day-to-day basis help regulate blood glucose levels.
3. Increase the intake of soluble and insoluble fiber
4. Avoid salt whenever possible.

5. Prepare food to retain vitamins and minerals and reduce fats.
6. Distribute snacks in the meal plan depending on the insulin/medication regimens, physical activity & lifestyle.
7. Use alternative, no caloric sweeteners in moderation.

1. How to know that diabetes is controlled?

1. Sugar in urine is not constantly high.
2. Hypoglycemia infrequent
3. Child is happy at home and mixing well at school.
4. Child is growing and maturing normally.

☆ **Obesity:**

Obesity is a complex condition that results not only from the higher caloric content of the ingested food than needed to supply the body with energy, but also because of the cycle of insulin resistance that it causes, and the pressure it puts on the heart and other body organs.

Obesity is a serious health risk because it leads to a broad range of physical and psychological problems. Childhood obesity is already the leading cause of;

1. *Sustained high blood pressure*
2. *Diabetes*
3. *High cholesterol level*
4. *Joint disease*
5. *Menstrual irregularities*
6. *Hormonal derangements*

The psychological effects of obesity can be equally devastating. Overweight teens especially girls are frequently teased by their peers and adults as individuals who are less desirable to have as friends.

While growing up, obese people suffer low self-esteem, feel inadequate, and are looked upon as the source of their own problem.

In school, obese teens perform poorer academically than their normal weight peers and have lower grade point averages.

As young adults, they have more difficulty-gaining acceptance into college and securing jobs and future promotions. It is no wonder that

over time these experiences lead to poor self-esteem and self-confidence. This begins an unfortunate cycle of social isolation, emotional withdrawal, depression, inactivity, more overeating, and further weight gain.

A. Predisposing Factors:

1. Overeating with inactivity
2. Hereditary or racial factors
3. Emotional difficulties
4. Unhappy, withdrawn adolescents may develop an excessive appetite to try to escape from a difficult environment
5. Some overprotective mothers may force food upon their children
6. Obesity due to endocrine problems or intracranial lesions may cause obesity, but this is too rare.

B. Health hazards resulting from obesity over the long run:

1. Arthritis:

A stronger association between osteoarthritis and obesity has been observed in women than in men.

2. Birth Defects:

Maternal obesity (BMI ≥ 29) has been associated with an increased incidence of neural tube defects (NTD) in several studies.

3. Breast Cancer:

- i. Women who gain about 45 lb or more after the age of 18 are twice as likely to develop breast cancer after menopause as women with no weight gain are.
- ii. Before menopause, women who are overweight and have breast cancer appear to have a shorter life span than women with lower BMI.
- iii. Women with a high fat diet may increase their risk of developing breast cancer later in life.

4. Endometrial Cancer:

Women with obesity have three to four times the risk of endometrial cancer than women with lower BMI.

5. Cardiovascular Diseases:

Women whose diets are high in monosaturated fats, plant proteins, whole grains, and fish are significantly less likely to develop heart diseases and strokes.

6. *Hypertension:*

There is a strong relationship between fast food, hypertension and obesity, eating an unbalanced meal results in this rise in blood pressure not only for adults but also for children as well and likely will not help someone attain their ideal blood pressure.

7. *Infertility:*

- i. Obesity has been found to affect ovulation, response to fertility treatment, pregnancy rates and pregnancy outcome.
- ii. Infertile women with obesity who lose weight have shown improvement in becoming pregnant and reaching full term.

8. *Obstetric & Gynecological Complications:*

- i. In addition to infertility, excess body fat can lead to complications such as menstrual abnormality, miscarriage and difficulties in performing assisted reproduction.
- ii. The frequency of menstrual disturbance in women with severe obesity is three times greater than for women in normal weight.
- iii. High pre-pregnancy weight is associated with an increased risk of pregnancy hypertension, gestational diabetes, urinary tract infection, cesarean sections and toxemia.
- iv. Women with obesity are 13 times more likely to have overdue births, longer labors, induced labor and blood loss.
- v. Complications after childbirth, related to obesity, include an increased risk of wound and endometrial infection, endometritis and urinary tract infection.

C. *Prevention:*

1. By diet
2. Exercise
3. Treatment of hypothyroidism
4. Treatment of Willems tumor

D. Treatment of Obesity:

1. Diet:

The diet should include:

- i. High fiber, low fat
- ii. Sufficient carbohydrates, but in the form of starch rather than pure glucose or sucrose
- iii. Moderation in salt intake
- iv. Sufficient protein, a minimum of 80 g for a male and 60 g for female
- v. Adequate vitamins and minerals
- vi. Realistic energy intake

The family can be helpful in this approach by eating three meals and a balanced diet, which should include fresh fruit, low fat dairy products, as well as protein and complex carbohydrates. The fiber content of the diet should be 300g/day, only 20% of the total calories should come from fat, and most should be unsaturated fat.

2. Exercise:

- i. Increasing daily activities, formal exercise class because they enjoy the support from other children.
- ii. Encourage children to exercise such as walking to and from school
- iii. Exercise burns up calories, and if the children's day light hours are filled with activities have less time to spend eating.
- iv. 30 minutes per day of brisk walking for one year with no specific diet will produce a 10lb (4.5 kg) weight loss.

3. Surgical Techniques:

- i. Surgical techniques such as an intestinal bypass are obviously extreme, measures and inappropriate for children.
- ii. Obese children might request one, however in an attempt to avoid the not insignificant difficulty of long term dieting.

E. Health Education:

1. Avoid fast food:

Meals plans consist of eating at set times, not accepting food offered by others and substituting exercises for snacks. Activities include storing food out of sight, eating all food in the same place, leaving the table immediately after eating, possibly using smaller dishes and never saving leftovers.

2. parties & holidays:

Should be planned in advance, taking low energy drinks, practicing polite ways to decline food, and possibly eating low energy snacks before going to a party.

3. Eating behaviors:

Includes chewing thoroughly before swallowing, putting the fork down between mouthfuls and not talking, reading or watching television while eating

4. Reinforcement:

This is rewarding oneself once goals are reached and soliciting help from family and friends.

5. Cognitive restructuring:

Avoid unreasonable goals, to avoid imperatives such as “never” and always, to think positively about achievements and progress and do not dwell on shortcoming.

6. Education & exercise