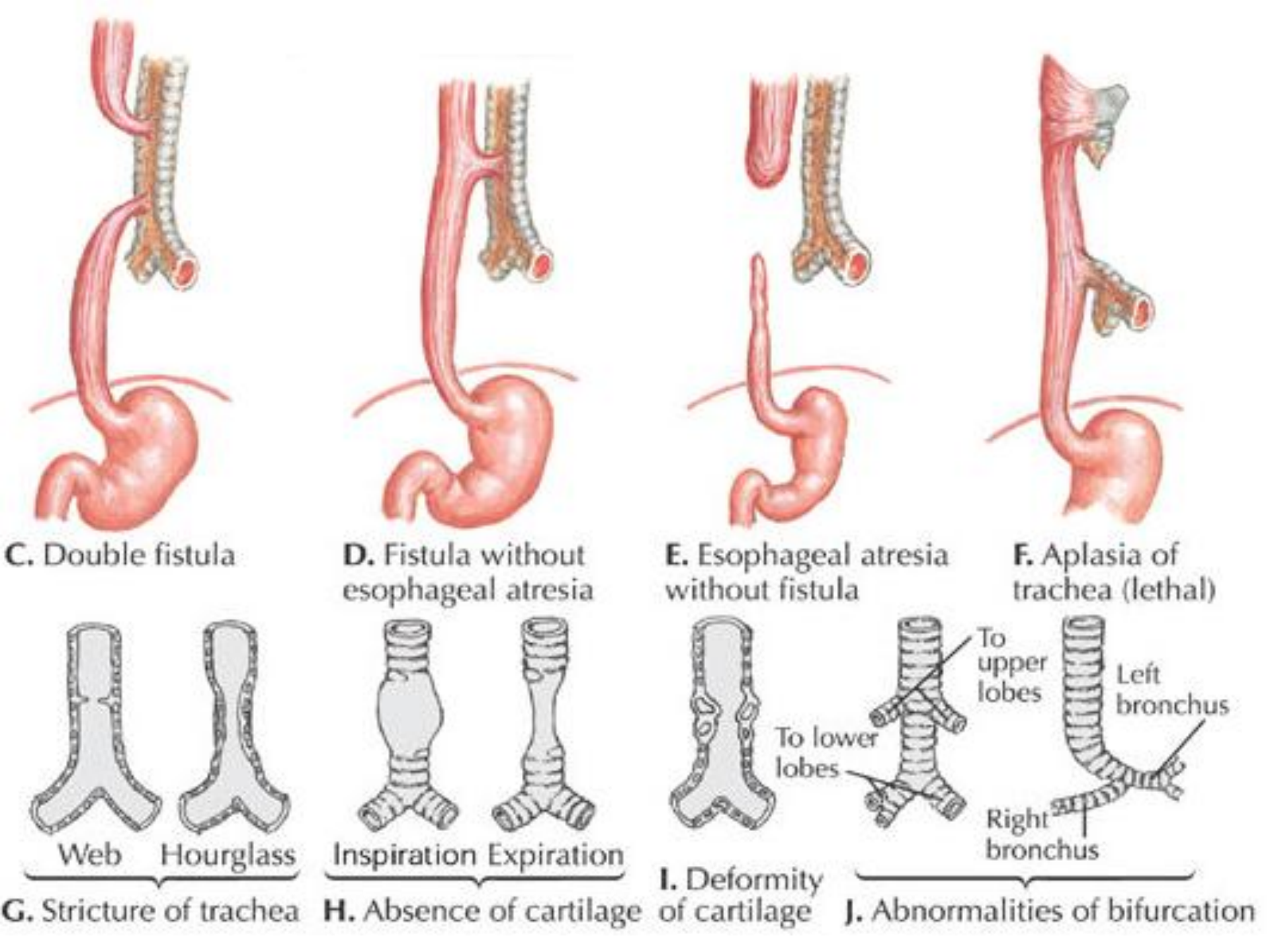
Pediatric Nursing

Gastrointestinal part 2

Lecture 17

Trachoesophageal fistula
Esophageal atresia

- Esophageal atresia: Is a malformation that results from failure of the esophagus to develop as a contentious tube during the forth to fifth weeks of gestation.
- In this case the esophagus fails to lengthen and become separated. Instead it fused into the trachea by fistula or may end in a blind pouch.
- It is associated with maternal history of polyhydrominous.
- Associated anomalies may occur including: heart defects, urinary tract anomalies, & musculoskeletal anomalies.


C. Double fistula
D. Fistula without esophageal atresia
E. Esophageal atresia without fistula
F. Aplasia of trachea (lethal)
Web
Hourglass
G. Stricture of trachea
Inspiration
Expiration
H. Absence of cartilage
I. Deformity of cartilage
To upper lobes
To lower lobes
Left bronchus
Right bronchus
J. Abnormalities of bifurcation

- Symptoms in newborn includes: excessive salivation & drooling, often accompanied with cyanosis, choking, & sneezing.
- During feeding, the infant returns fluid through the nose & mouth.
- Abdomen may become distended due to trapped air.
- Diagnosis is made by attempting to pass a 5 or 8 French nasogastric tube into the stomach, the tube meets resistance.
- X-ray may show the associated defects.
- Echocardiogram & abdominal ultrasound may be done to confirm the diagnosis.

Management

- Intravenous fluid & antibiotic is started.
- Suction of the upper pouch of esophagus.
- Surgery is performed as soon as possible.
- By ligation of the fistula & connecting the two sides of the esophagus.
- Complication may includes: gastroesophegeal reflux, aspiration.

Nursing interventions

- Esophageal atresia is a surgical emergency .
- Post operatively interventions includes marinating airway by:

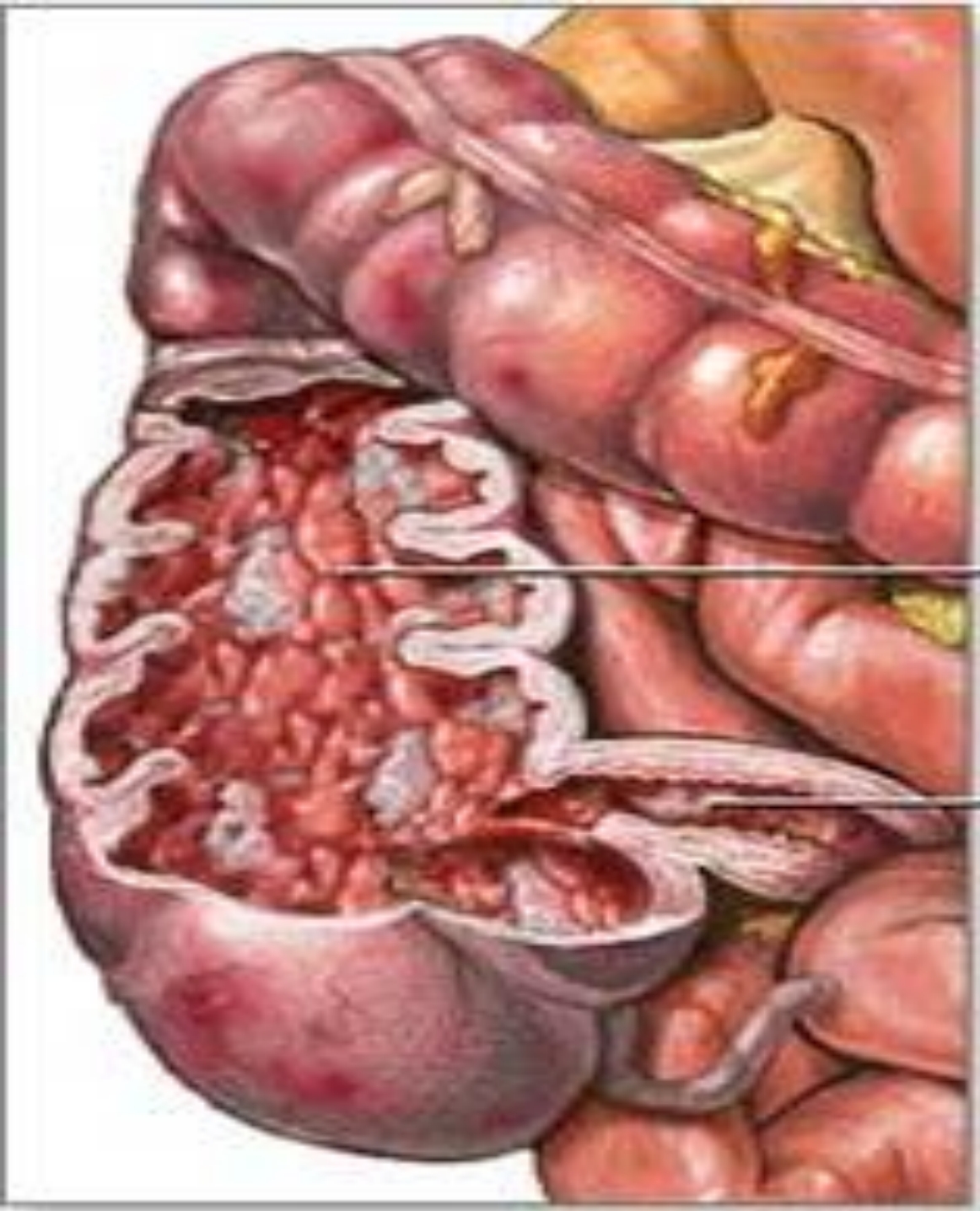
1. Keeping suction ready to use, when needed.
2. Place the head of the bed slightly lowered to prevent aspiration from secretion.
3. Withhold oral fluid
4. Provide IVF.
5. Measure gastrostomy drainage.
6. Administer antibiotic as ordered.
7. Total parenteral nutrition may be needed until feeding is tolerated.

- The parents require emotional support.
- Teach the parents about the operation.
- Educated the parent about the function of the connecting tubes after the surgery.
- Encourage the parents to participate in care.

- The infant may be discharged at home with gastrostomy tube.
- Educate parents about its care, feeding, signs of infections, & how to prevent complications.

Inflammatory bowel diseases IBD Crohn's Disease & Ulcerative Colitis

- IBD encompasses two distinct chronic disorders, Crohn's Disease & Ulcerative Colitis, that have similar symptoms & treatment.
- Genetics & environmental factors are involved in the development of IBD.
- Crohn's disease is a chronic, inflammatory process. It can occur randomly throughout the GI tract, with the ileum, colon, & rectum the most common sites.
- A distinct features of Crohn's disease is the development of enteric fistulas between loops of bowel or nearby organs.


Inflammatory bowel disease (IBD)
Ileum portion of small intestine

- Mucosal ulcers began in small locations, & then grow in size & depth into the mucosal wall.

- The onset of Crohn's disease is obvious crampy abdominal pain, followed by diarrhea. Other symptoms includes fever, anorexia, growth failure of weight loss, general malaise, & joint pain.

- In serum analysis: anemia is common finding; in addition to elevated ESR, hypoalbuminemia.

- Ulcerative colitis is chronic recurrent disease of the colon & rectal mucosa of unknown etiology.

- The inflammation is limited to the mucosa along the entire length of the bowel with varying degree of inflammation, ulceration, hemorrhage, & edema.

- The first symptoms is diarrhea. Lower abdominal pain, & cramping are present before & during a bowel movement & are relived by the passage of stool & flatus.

- The stool is often mixed with blood & mucus. Wight loss or delayed growth, nutritional deficiencies, & arthralgia often occur as effects of the disease.

Clinical Therapy

- Crohn's disease & ulcerative colitis have periods of remission & exacerbation.
- Treatment for both disease includes pharmacological interventions (antibiotic, anti-inflammatory, immunosuppressive, & antidiarrheal medications). And in sever cases, surgery.
- Nutritional therapy includes high protein, high carbohydrate, low fiber diet with normal amount of fat.
- Temporary colostomy may be performed to allow the bowel to rest.
- In ulcerative colitis, the removal of the diseased bowel provides a permanent cure.

Nursing Intervention

- Provide adequate stress reduction.
- Provide emotional support & counseling.
- Include body image in the plan of care.
- Teach the child the relaxation technique such as deep breathing & verbalizing a favorite places.
- Teach parents about medication & diet.
- Several small meals better than three big meals.
- Limiting fiber intake to decrease motility.
- Offer high caloric meals if the child do not eat well.
- Watch for foods that cause intestinal problems & avoid them in the future.

Constipation

- Decreased of the frequency of passage of the stool; the formation of hard, dry stool.
- Constipation is characterized by firm stool < 2 times per week for at least 2 weeks with no structural, endocrine or metabolic diseases.
- Babies with bottle feeding are more prone to hard stool than breast feed babies.
- Because stool patterns vary among children, identification of abnormal pattern is some times difficult. For young child, one bowel movement a day may be normal. As the child grows, three to four bowel movement in a week ,may be normal.

Etiology & Pathophysiology

- Constipation may be caused by an underlying disease, diet, or psychological factors.
- It may be result from defects of filling or emptying the rectum.
- Pathological causes of defective filing includes: ineffective colonic propulsive activity, caused by hypothyroidism or use of medication obstruction caused by structural anomaly.
- If rectum fails to fill, stasis leads to excessive dryness of the stool.
- The child may complain of vomiting, growth failure abdominal pain. An abdominal mass may be felt.

Clinical Therapy

- Treat the underlying cause.
- Dietary management is the treatment of choice for constipation with no underlying cause.
- Increasing fluid intake for infant & young children may be effective.
- Removing foods that increase constipation such as bananas, rice, cheese from the child's diet.
- Increasing the intake of high fiber foods such as whole grain breads, raw fruits & vegetables.
- a single glycerin suppository or enema may be given to relieve hard stool & then dietary & fluid managements.

- Pharmacological managements of sever constipation usually occur over two stages:

1- softening the hard stool by giving the child lactoulose.

2- evacuation of stool by giving the child laxatives.

educate the family not to use these medication frequently, since overdose can cause bowel dependency

- Behavior management:

By changing the young child behavior in regarding to toileting by offering rewards.

Placing the child on the toilet for 30 minutes after a meal

Feeding disorders: Colic

- Is feeding disorder characterized by convulsive abdominal pain of intestinal origin & sever crying.
- Episodes of colic usually occur between 2-6 weeks of age & subsided by 3 months of age.
- It has unknown etiology, but predisposing factors could lead to it, such as feeding too rapidly, & swallowing large amount of air.
- The infant cries loudly & continuously, often for several hours. The abdomen is distended & tense.
- Crying may stops when the child completely exhausted or after passage of stool or flatus.

Managements

- Management is supportive.
- Assess the child's feeding pattern as well as frequency of burping.
- Observe the family interaction with the child's colic episode.
- Assure the parents that they are not responsible for the child condition, because they may blame themselves.
- Positioning the child frequently, preventing sudden loud noises, avoiding smoking, offering pacifier, massaging the abdomen, providing warm bath, feeding smaller amount with frequent burping would help in decreasing episodes of crying & colic.

Celiac disease

- Is a chronic malabsorption syndrome, it is immunological disorder that characterized by an intolerance for gluten (protein found in wheat, oats & barley).
- Inability to digest gluten result in accumulation of the amino acid glutamine, which is toxic to the mucosal cells in the intestine.
- Leading to damage of the villi ultimately impairs the absorption process in the small intestine.
- In early stages, celiac disease affect the absorption of fat, leading to execration large amounts of fat in stool (steatorrhea). Stool are greasy, foul smelling, frothy, & excessive.

- As the changes in the villi continues, the absorption of protein, carbohydrate calcium, iron, folate, & vitamin A,D,E. K & B_{12} become impaired.
- Symptoms occur after taking solid food containing gluten. The child exhibit chronic diarrhea, vomiting, irritability, malabsorption, abdominal pain, & failure to thrive.
- Symptoms improved after dietary interventions, & the villi retain to normal within 6 months. Vitamin supplement may be needed until the child gain normal absorption function.

Nursing managements

- Support the parents in maintain diet free from gluten for the child.
- Educate the parents that celiac disease needs lifelong dietary restriction & should not be discontinues when the child is symptoms free.
- Avoidance of food rich in gluten is important such as:

Bread, cake, doughnuts, cookies, crackers, chocolate candy, ice cream.

1- Which of the following measures would be the most effective in helping the infant with cleft lip & palate to retain to oral feeding?

A. Bubble the infant at frequent intervals.
B. Feed the infant small amounts at one time.
C. Place the end of the nipple far to the back of the infant's tongue.
D. Maintain the infant in a lying position while feeding.

2- When teaching the mother of an infant who has undergone surgical repair of cleft lip how to care for the stutre line, the nurse demonstrates how to remove formula & drainage, which of the solutions would the nurse use?

A. Mouth wash.
B. Povedone-iodine solution.
C. A mild antiseptic solution.
D. Half strength hydrogen peroxide.

3- On the second postoperative day after repair of a cleft palate, which of the following would the nurse expect as most appropriate to use with a toddler?

A. Cup.
B. Straw.
C. Rubber-tipped syringe.
D. Large holed nipple.

4- immediately of return to the nursing unit after surgical repair of a cleft palate, in which of the following position would the nurse place the child?

A. On the back with the head in a position of comfort.
B. In low fowler's position with the head turned to the side.
C. Lying on the abdomen with the head turned to the side.
D. In reverse trendelenburg with the head tilted forward.

5- which of the following nursing diagnosis would the nurse identify as a priority for the infant with trachoesophegial fistula?

A. Impaired parenting related to newborn's illness.
B. Risk for injury related to increased potential for aspiration.
C. Ineffective breathing patterns related to a weak diaphragm.
D. Imbalanced nutrition: less than body requirements, related to poor sucking ability.

6- which of the following would indicate that the infant with trachoesophegial fistula needs suctioning?

A. Brassy cough.
B. Substernal retractions.
C. Decreased activity level.
D. Increased respiratory rate.

7- When obtaining the nursing history from mother of an infant with suspected intussusception, which of the following questions would be most helpful?

A. " what do the stools lock like".
B. " when was the last time your child urinate"
C. " is your child eating normally"
D. " has your child has any episodes of vomiting"

8- which of the following assessments would be the priority for an infant who has had surgery to correct an intussusception & is now at risk for development of a paralytic ileus postoperatively?

A. Measurement of urine specific gravity.
B. Auscultation of bowel sounds.
C. Inspection of the first stool passed.
D. Measurement of gastric output.

9- during physical assessment of a 4 month old infant with Hirschsprung's disease, the nurse would most likely note which of the following?

A. Scaphiod-shaped abdomen.
B. Weight less than expected for height & age.
C. Cyanosis of the fingers & toes.
D. Hyperactive deep tendon reflexes.

10- when teaching the parents of an infant with Hirschsprung's disease who received temporary colostomy about the types of foods that infant will be able to eat. Which of the following would the nurse recommends?

A. High fiber diet.
B. Low fat diet.
C. High-residue diet.
D. Regular diet.