

1 → Breath Holding Spell or Breath Holding Spasm

Breath holding spells are brief periods when young children stop breathing for upto 1 minute. It may occur in children between 6 months to 5 years of age.

The child is found with violent crying, hyperventilation & sudden cessation of breathing on expiration, cyanosis & rigidity. Loss of consciousness, twitching & tonic-clonic movements may also be found. The child may become limp & look pale and lifeless. Heart rate becomes slow.

Causes

The cause of breath holding spasm is not known. Breath holding is usually involuntary, & is caused by a slowing of the heart rate or changes in child's usual breathing patterns. Sometimes breath-holding spells are brought on by strong emotions such as anger, fear, pain or frustration.

* There may be spasm of laryngeal muscles. This attack last for one or two minutes, then glottis relaxed & breathing resumed with no residual effects.

→ Management

- The breath holding spells are harmless & do not pose any danger to the life.
- The frequency of spells increases if parents or grandparents show extreme anxiety & panic during the attack & when the child is pampered and rewarded after the spell.
- Parents should accept the spell coolly & with confidence that no harm will come to their child by holding his breath.
- Parents should try to reduce episodes of frustration by meeting some of his genuine or minor demands.
- At times, when it appears that the child is going to hold his breath, he can be pinched when he will start breathing again.

↳ Somnambulism (Sleep walking)

Sleepwalking runs in certain families & is usually a self-limited condition. During sleep the child stands up with glassy stare eyes & starts walking. He may have mumbling speech & some semi-purposive activity like urinating or opening a cupboard. The child will go back to his bed of his own & sleep again. He will have no memory of the event next day. Some children

may wander out-of-door & at times may hurt themselves. Most sleep walkers give up the habit in a couple of months. When sleep walking is frequent, child can be given diazepam at bedtime under supervision of a child psychologist.

Causes of Sleepwalking include:

- Hereditary
- Lack of sleep or extreme fatigue
- Certain medications, such as sleeping pills
- Changes in sleep environment
- Stress
- Anxiety

→ Protein-Energy Malnutrition (PEM)

Protein energy malnutrition is a condition which occurs due to dietary inadequacy or chronic systemic disease and recurrent infections.

- In acute cases of PEM, body weight is affected more than height.
- In chronic cases of PEM, both body weight and height are affected.

→ Grading

According to Indian Academy of Pediatrics, PEM is graded as follows:

Grade I: Body weight between 71% & 80% of the expected weight-for-age

Grade II: Body weight between 61% & 70% of the expected weight-for-age

Grade III: Body weight between 51% & 60% of the expected weight-for-age

Grade IV: Body weight upto 50% or less of the expected weight-for-age.

→ Gomez Classification

Between 90% & 110% :- Normal nutritional status.

Between 75% & 89% :- 1st degree, mild malnutrition

Between 60% & 74% :- 2nd degree, moderate malnutrition

~~Below~~ Under 60% :- 3rd degree, severe malnutrition

→ Causes

- Inadequate intake of food
- Poor socioeconomic status
- Lack of housing
- Overcrowding
- Lack of environmental sanitation
- Unsafe drinking water
- Lack of awareness of health and nutrition

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- Gender inequality
 - Poor status of women in the society
 - Underlying systemic disorder such as disease of GIT tract, kidneys, liver and cardiovascular system.
 - Chronic infection such as TB, HIV infection or autoimmune disorder.

→ Clinical Forms

There are two clinical forms of PEM.

1. Marasmus
2. Kwashiorkor

① Marasmus

There is gross wasting of muscles & subcutaneous tissues resulting in emaciation and stunting. The loose folds of skin are seen over the buttocks and inner side of thighs. The buccal pad of fat is the last to disappear. Skin is thin, loose, dry, inelastic & wrinkled. The abdomen is distended due to wasting and hypotonia of muscles of abdominal wall. The bony points including ribs stand out prominently because of loss of subcutaneous fat and muscles. When a child with marasmus develops edema due to intercurrent infection & aggravation of protein deficiency, the condition is called as marasmic Kwashiorkor.

(2) Kwashiorkor

It is a severe form of dietary protein deficiency. Kwashiorkor is a language of West Africa means "The disease of the displaced child".

The classical features include growth retardation, psychomotor changes, generalized edema, skin changes, hair changes (thin, dry, brittle hair), enlargement of liver due to fatty infiltration and mental changes (lethargy, listlessness). The child looks miserable and has loss of appetite. There may be associated deficiency of micronutrients especially iron, folic acid, zinc & Vitamin A & Vitamin B complex.

Complications

- Oral thrush
- Septicemia
- Tuberculosis
- Nutritional anemia
- Rickets

Management

Nutritional rehabilitation is a slow process & demands health education to the family. It must be explained to parents that PEM is not a disease but child is suffering from lack of food. The following principles of management should be followed;

- Keep the child warm & protected

against nosocomial infections

- Look for associated metabolic disturbances like dehydration, hypoglycemia and treat them appropriately through intravenous route. Potassium supplements are required in all malnourished children.
- Nutrition education & health education must be provided to the family to prevent recurrence of malnutrition.
- Provide increasing quantities of well-balanced liquid & semisolid food depending upon the appetite and acceptability of the child. When child refuses to accept oral feeds due to severe anorexia, nasogastric feeding is recommended.
- The calculation of the calories & proteins are based on the actual or current weight of the child. Start with 80 Kcal/Kg/day of energy and 0.7 g/Kg of protein. The food intake is gradually increased to 150 Kcal/Kg/day with $2-3 \text{ g protein/Kg/day}$ over a period of next 7-10 days.
- Milk based diet fortified with vegetable or coconut oil with additional commercially available protein supplements or egg is suitable.
- In children with lactose intolerance, lactose-free milk is recommended.
- Supplements of micronutrients including potassium & magnesium should be

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provided.

- Iron should preferably given through parenteral route. When hemoglobin is below 6g/dl, packed cells or whole blood transfusion can be given slowly after administration of a diuretic.