



## TREATMENT AND PREVENTION MEASURES FOR PNEUMONIA (PNEUMONIA) IN CHILDREN

**Soibova Kamola**

Bukhara State Medical Institute

3rd year student of the Department of Pediatrics

<https://doi.org/10.5281/zenodo.15877320>

**Annotation:** This article provides general information about pneumonia (pneumonia) in children. Pneumonia is a severe infectious disease of the respiratory system, characterized by high morbidity and mortality, especially among children under 5 years of age. According to the World Health Organization (WHO), pneumonia affects millions of children worldwide every year and poses a serious threat to their health. The article extensively covers the etiology of the disease, namely bacterial, viral and, in rare cases, fungal causes. It also analyzes the early signs, clinical course, diagnostic methods and modern treatment approaches of pneumonia. The importance of vaccines, hygiene rules and a healthy lifestyle in preventing the disease is emphasized. The study shows the importance of preventive measures in protecting children's health.

**Keywords:** pneumonia, lung, bronchopulmonary, dyspnea, viruses, fungi, mycoplasmas, prophylaxis, apnea, bradypnea, auscultation, staphylococci, hypothermia, oxygen therapy, hypoxia, inhalation therapy, mycovirus, reovirus.

### **Introduction.**

The global statistics on pneumonia (pneumonia) are as follows (based on WHO and UNICEF data, data up to 2024):

Global statistics on pneumonia (mainly among children)

#### 1. Deaths:

Every year, more than 700,000 children under the age of 5 die from pneumonia worldwide. This is the leading cause of child death - one child dies from pneumonia every 42 seconds.

#### 2. Incidence:

Every year, about 150 million children get pneumonia. Of these, 11-14 million require hospitalization due to severe illness.

#### 3. Regional distribution:

The regions most affected by pneumonia are:

South Asia (especially India, Pakistan, Bangladesh)

Africa (especially Nigeria, Congo, Ethiopia)

Weak health systems, low vaccination rates, and nutritional problems are the main factors in these regions.

#### 4. Preventable deaths:



Experts believe that 70–80% of deaths from pneumonia can be prevented with the help of existing vaccines, antibiotics, and oxygen therapy.

Emphysema is an acute infectious process that develops in the respiratory tract of the respiratory system and is accompanied by inflammation of the lung tissue. It can develop independently or as a complication of any disease. Emphysema is accompanied by fluid filling the alveoli and is manifested by a general response of the body to pathogens (malaria, general intoxication), cough, respiratory failure (shortness of breath, involvement of accessory muscles in breathing), local and physical symptoms, infiltrative changes on the X-ray.

Factors that cause emphysema in children:

The group of children at risk of developing bronchopulmonary diseases includes:

1. Children living in poor living conditions (violation of the daily routine, repeated artificial feeding, lack of walks in the fresh air, etc.).

2. Children with poor health (hypotrophy, rickets, anemia, purulent foci, children who often get sick with ARVI).

3. Hereditary predisposition in the anamnesis (bronchial diseases, allergic diseases, occupational diseases in parents, complications of pregnancy and childbirth).

Causes of infection:

The most common cause of pneumonia in children are infections. They are grouped as follows:

A. Bacteria

*Streptococcus pneumoniae* is the most common bacterial cause.

*Haemophilus influenzae* is especially common in children under 2 years of age.

*Staphylococcus aureus* can cause severe cases of pneumonia, abscesses.

*Mycoplasma pneumoniae* is mild to moderate pneumonia in school-age children.

*Chlamydomphila pneumoniae* is found in middle school age.

*Klebsiella pneumoniae* is in immunocompromised children.

B. Viruses

Viral pneumonia is common in children, especially under 5 years of age.

Respiratory syncytial virus (RSV) is the most common in infants and toddlers.

Influenza viruses (Influenza A/B)



Parainfluenza viruses

Adenoviruses

Coronaviruses (including COVID-19)

C. Fungi

Pneumocystis jirovecii – mainly in children with HIV or weakened immune systems. Candida, Aspergillus – are rare, but are observed in severe forms.

Initial (first) symptoms of pneumonia in children

The symptoms observed in children at the onset of pneumonia may vary depending on the severity of the disease, the child's age, immune status and the causative microorganisms. However, in most cases, the following common symptoms are observed:

1. Fever

Often rises to 38–40°C.

Sometimes it is subfebrile (37.5–38°C).

In some viral forms, the temperature may not be present at all.

2. Cough

At first, it may be dry, then phlegmy.

Sometimes phlegm is not produced, but the child has a strong cough.

In infants, instead of a cough, there may only be shortness of breath.

3. Accelerated breathing

The child breathes deeply and frequently (tachypnea).

This is especially important in infants.

Respiratory rate by age:

0–2 months: >60 times/min

2–12 months: >50 times/min

1–5 years: >40 times/min

4. Difficulty breathing (dyspnea)

The chest is drawn in during breathing.

The movement of the wings of the nose increases.

The child breathes heavily even when awake.

5. General condition disorder

The child may be weak, capricious, sleep a lot or, conversely, be restless.

Appetite loss.

Sometimes vomiting, diarrhea (especially in viral forms) may occur.

6. Paleness or bruising of the skin

In severe forms, bruising around the mouth (cyanosis), bruising of the fingertips.



## Treatment

### Antibacterial Treatment (Antibiotics):

The choice of antibiotic depends on the severity of the child's pneumonia and the suspected causative agent.

#### At home (mild cases):

Amoxicillin (first-line antibiotic)

Azithromycin (if mycoplasma or chlamydia is suspected)

#### Hospital (moderate and severe cases):

Amoxicillin/clavulanate

Ceftriaxone, Ceftazidime, Ampicillin, or Macrolides

Intravenous antibiotics (in severe bronchopneumonia or sepsis)

### 3. Symptomatic treatment:

Fever-reducing drugs: Paracetamol, Ibuprofen

Cough suppressants: only if necessary and as directed by a doctor

Fluid therapy: drink plenty of fluids to prevent dehydration

Gastrointestinal support: in cases of impaired digestion

### 4. Additional supportive measures:

Oxygen therapy: in case of respiratory failure

Breathing exercises or physiotherapy (after severe cases)

Bed rest: complete rest

Healthy nutrition: to strengthen immunity

### 5. Conditions that require hospitalization:

Severe respiratory failure

Infants under 6 months of age

Unresponsive to antibiotics

Seizures, fainting, signs of sepsis

Acute dehydration

### 6. Rehabilitation and monitoring:

It is important to monitor the child for several weeks after pneumonia

Repeat chest X-ray (if necessary)

Restoring immunity and avoiding other infections

#### Preventive measures:

##### 1. Vaccination (Immunization)

One of the most effective means of preventing pneumonia:

Pneumococcal vaccination (PCV): against *Streptococcus pneumoniae*

Flu vaccination: recommended annually, as the risk of pneumonia increases after the flu.



Hib vaccine (*Haemophilus influenzae* type B)

Measles, mumps, and rubella vaccine (MMR vaccine): protects against viruses that cause pneumonia

2. Proper care and feeding of children

Breastfeeding (at least 6 months): strengthens the baby's immunity

A healthy and balanced diet: should be rich in vitamins and minerals

Prevent vitamin D and vitamin A deficiency

3. Improve the environment

Frequent ventilation of the room

Reduce humidity and dust

Prohibit smoking: passive smoking leads to lung diseases in children

Reduce air pollution

4. Follow the rules of personal hygiene

Frequent washing of hands with soap

Covering the mouth when coughing and sneezing (with a tissue or elbow)

Stay away from infected patients

5. Prompt treatment and observation

Timely treatment of diseases such as influenza, angina, bronchitis

Cough, see a doctor if you have shortness of breath, fever

Keep chronic diseases under control.

6. Strengthen immunity:

Play sports;

Walk outdoors;

Good sleep and a stress-free environment.

### **References:**

1. Abdurakhmonov A.A. Childhood diseases. – Tashkent: “National Encyclopedia of Uzbekistan” publishing house, 2018. – 456 p.
2. Behrman R.E., Kliegman R.M., Jenson H.B.
3. Nelson Textbook of Pediatrics. – 21st edition. – Elsevier, 2020. – 4264 p.
4. American Academy of Pediatrics (AAP) Red Book: 2021–2024 Report of the Committee on Infectious Diseases. – Elk Grove Village, IL: AAP, 2021.
5. Shaymardanova L.K., Khodjaeva M.Kh. Childhood infectious diseases. – Tashkent: Medicine, 2015. – 312 p.
6. Shavkatova Z.B., Juraeva N.B. Pediatrics: Textbook. – Tashkent: Ilm ziyo, 2021. – 378 p.