

# Acute Diarrheal Disease: Causes, Symptoms, and Treatment

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## DESCRIPTION

Acute diarrheal disease, commonly referred to as acute diarrhea, is a prevalent gastrointestinal condition characterized by the sudden onset of loose, watery stools. It is a global health concern, particularly in developing countries, where it contributes significantly to morbidity and mortality, especially among young children.

### Causes and Transmission

Acute diarrheal disease can be caused by a variety of factors, including viral, bacterial, and parasitic infections. Common pathogens associated with acute diarrhea include:

**Viral infections:** Rotavirus and adenovirus are among the primary viral infections responsible for acute diarrhea, particularly in children.

**Bacterial infections:** Bacterial pathogens such as *Escherichia coli*, *Salmonella*, *Shigella*, *Campylobacter*, and *Vibrio cholera* can cause acute diarrheal illness through ingestion of contaminated food or water.

**Parasitic infections:** Parasitic organisms like *Giardia lamblia* and *Cryptosporidium parvum* can lead to acute diarrhea, often associated with contaminated water sources.

**Transmission modes:** Acute diarrhea is primarily transmitted through the fecal-oral route. This can occur due to the ingestion of contaminated food or water, poor sanitation practices, inadequate hand hygiene, or close contact with an infected individual. Contaminated surfaces, utensils, or objects can also contribute to the spread of pathogens.

### Symptoms and Complications

**Clinical presentation:** The hallmark symptom of acute diarrheal disease is the sudden onset of loose, watery stools. Other common symptoms may include:

**Abdominal cramps:** Patients often experience abdominal discomfort or cramping due to increased bowel activity.

**Nausea and vomiting:** Some individuals may experience nausea and vomiting in addition to diarrhea.

**Dehydration:** Prolonged or severe diarrhea can lead to dehydration, characterized by symptoms such as increased thirst, dry mouth, decreased urine output, and fatigue.

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**Complications:** If left untreated or managed inadequately, acute diarrhea can lead to complications, especially in vulnerable populations such as young children, older adults, and individuals with weakened immune systems. Potential complications include severe dehydration, electrolyte imbalances, malnutrition, and in rare cases, life-threatening conditions like Hemolytic Uremic Syndrome (HUS) or sepsis.

The management of acute diarrheal disease focuses on addressing the underlying cause, relieving symptoms, preventing complications, and promoting rehydration. Treatment approaches may include:

**Fluid replacement:** Oral Rehydration Therapy (ORT) is the preferred method for mild to moderate dehydration. It involves consuming Oral Rehydration Solutions (ORS) that contain a precise balance of water, electrolytes, and glucose to replace lost fluids and maintain hydration. Severe dehydration may require intravenous fluids administered in a healthcare setting.

**Symptomatic relief:** Medications to alleviate symptoms such as diarrhea and abdominal cramps are generally avoided in most cases of acute diarrhea, as they can prolong the duration of the illness. However, in certain situations, antidiarrheal agents or anti-motility medications may be prescribed under medical supervision.

**Antibiotics:** Antibiotic treatment may be warranted in cases of bacterial diarrhea caused by specific pathogens or in severe infections. However, indiscriminate use of antibiotics can contribute to antimicrobial resistance and should only be prescribed based on appropriate diagnostic tests and medical evaluation.

### Prevention Strategies

Prevention plays a crucial role in the management of acute diarrheal disease. Implementing preventive measures can help reduce the incidence and spread of diarrhea. These strategies include:

**Hand hygiene:** Promoting regular hand-washing with soap and water, especially before handling food, after using the toilet, and after changing diapers, can significantly reduce the risk of diarrheal infections.

**Safe water and sanitation:** Improving access to clean and safe drinking water, along with proper sanitation practices, is essential in preventing diarrheal diseases. This includes the proper treatment of drinking water, proper disposal of human waste, and maintaining hygienic conditions in food preparation areas.