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## Aspiration Pneumonia

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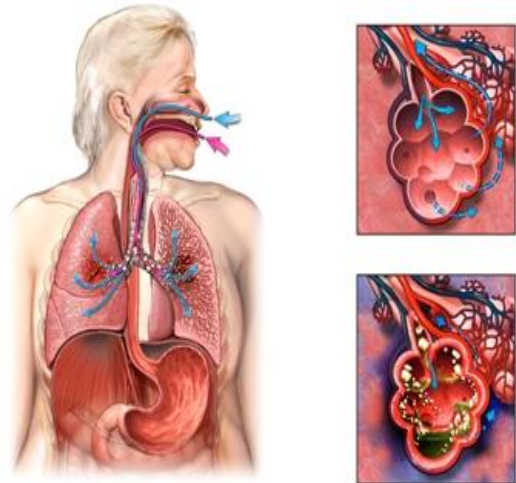
### Overview

Aspiration pneumonia is inflammation of the lungs and airways caused by breathing in foreign material, either from the mouth or regurgitated from the stomach. The foreign material can be made up of oral or gastric content including food, liquid, vomit, saliva or nasal secretions. This can lead to significant infection in the lung.

### Causes

Risk factors for aspiration of foreign material into the lungs include:

- poor gag reflex in people who are less alert due to medicines or illness, commonly in stroke or brain injury victims;
- coma;
- disorders of the oesophagus such as gastroesophageal reflux disease;
- drinking large amounts of alcohol;
- being under general anaesthesia;
- old age; and
- problems with swallowing.



The risk of aspiration occurring is indirectly related to the level of consciousness of the patient. For example, decreased Glasgow coma scale is related to increased risk of aspiration, this means the more unconscious a person is, the more likely the risk of aspiration.

Aspiration pneumonia can be divided into chemical or bacterial depending on the causative agent. Chemical aspiration pneumonia is when the patient inhales gastric acids which burn airways. Bacterial aspiration pneumonia is caused by inhalation of bacteria from oral or pharyngeal areas.

### Symptoms

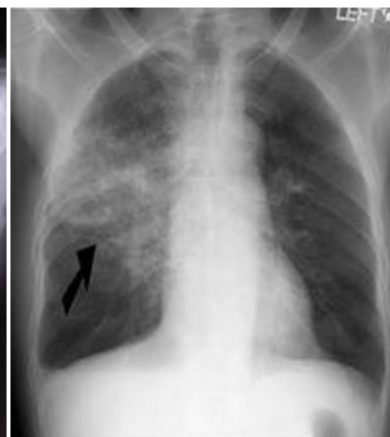
Clinical presentation of aspiration pneumonia can range from mildly ill to critical. Physical examination findings vary and depend on the severity of the disease, how the aspiration occurred and also whether there are other complications present. Patients with aspiration pneumonia caused by seizure, head trauma, or drug overdose should be inspected for signs related to these processes. In addition to exhibiting signs associated with the underlying condition that caused the aspiration, patients with aspiration pneumonia may demonstrate the following:

- fever – high body temperature;
- tachypnoea – rapid breathing;
- tachycardia – rapid heart rate;
- decreased breath sounds;
- dullness to percussion over affected areas of the lung;
- rales – a rattling or cracking sound from the chest on breathing;
- pleural friction rub audible with a stethoscope;
- altered mental status;
- hypoxaemia – insufficient oxygenation of arterial blood;
- hypertension – high blood pressure.

Symptoms occurring due to chemical aspiration pneumonia will be acute, being apparent within minutes to hours. Bacterial aspiration pneumonia may take days to weeks to cause any symptoms as the bacteria needs time to grow in number. Diagnosis is made by a number of methods, depending on the method of aspiration. Diagnostic tests include imaging of the chest, bronchoscopy and collection of cultures from lung secretions.



*X-ray of a normal chest*



*X-ray of the chest of a patient with aspiration pneumonia*

## Treatment

Most cases of aspiration pneumonia will need to be treated in hospital due to the possibility of fatal complications such as acute respiratory failure and sepsis. Any initial treatment, either inside or outside the hospital, should be directed towards stabilisation of the patient's breathing, and it may be necessary to remove foreign objects straight away to enable this.

Intubation, assisted breathing, may be indicated depending on severity of the patient's condition. Supplementary oxygen may need to be administered as well as intravenous fluids and electrolytes, and cardiac monitoring should be undertaken. Antibiotics are indicated for aspiration pneumonia regardless of the causative factor.

Treatment will also be directed at the causative factor, for example, if the aspiration pneumonia was caused by the patient having a fit, the cause of the fit needs to be identified and treated.

## Prognosis

The outcome depends on the severity and the cause of the aspiration pneumonia and how much of the lungs are involved. If acute respiratory failure develops, the patient may have a long term illness or die. Many people who have aspiration pneumonia have other serious health problems, which may affect the outlook for recovery.

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