

Difference Between Exudate and Transudate

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Key Difference - Exudate vs Transudate

The two membranes namely visceral membrane and parietal membrane outline the closed cavities of the body such as the pleural cavity, pericardial cavity and peritoneal cavity. Between these membranes, a smaller quantity of body fluids is accumulated which get released and absorbed in a balanced manner. Due to certain conditions, this balance can be altered by leading to higher accumulation of body fluids. These body fluids mainly consist of exudate and transudate. **Exudate is a cloudy fluid that is oozed out from the blood vessel walls into the surrounding tissues due to an injury or inflammatory condition while transudates occur due to high hydrostatic and osmotic pressure that is built up within veins and capillaries and appear as a clear fluid.** This is the key difference between exudates and transudate.

What is Exudate?

Exudate is a fluid which is rich in proteins and other cellular components. Blood vessels and organs release this fluid as a result of an inflammation. Once it is oozed out, exudates get deposited in the surrounding tissue. Due to an injury or inflammation, the walls of the blood vessels get damaged causing the increment in permeability. Alteration in blood vessel permeability causes the large molecules and different solid matter to pass through the vessel walls. This causes the leakage of fluids into the nearby tissues. The oozing fluid or exudate is mainly composed of fibrin proteins, blood serum and white blood cells.

The oozed out exudate appear in a translucent cloudy appearance. The protein content of exudates is high when compared to transudates. The exudates could be of different types according to the location and constituents. The suppurative or purulent exudate is composed of plasma cells such as active and dead neutrophils, necrotic cells and fibrinogen. This exudate is commonly referred to as 'pus' that occurs due severe inflammatory conditions. Fibrinous exudate consists of proteins fibrinogen and fibrin in larger quantities. This exudate is a common characteristic of rheumatic carditis. It is also present in severe cases of injuries which include strep throat and pneumonia caused by bacteria.

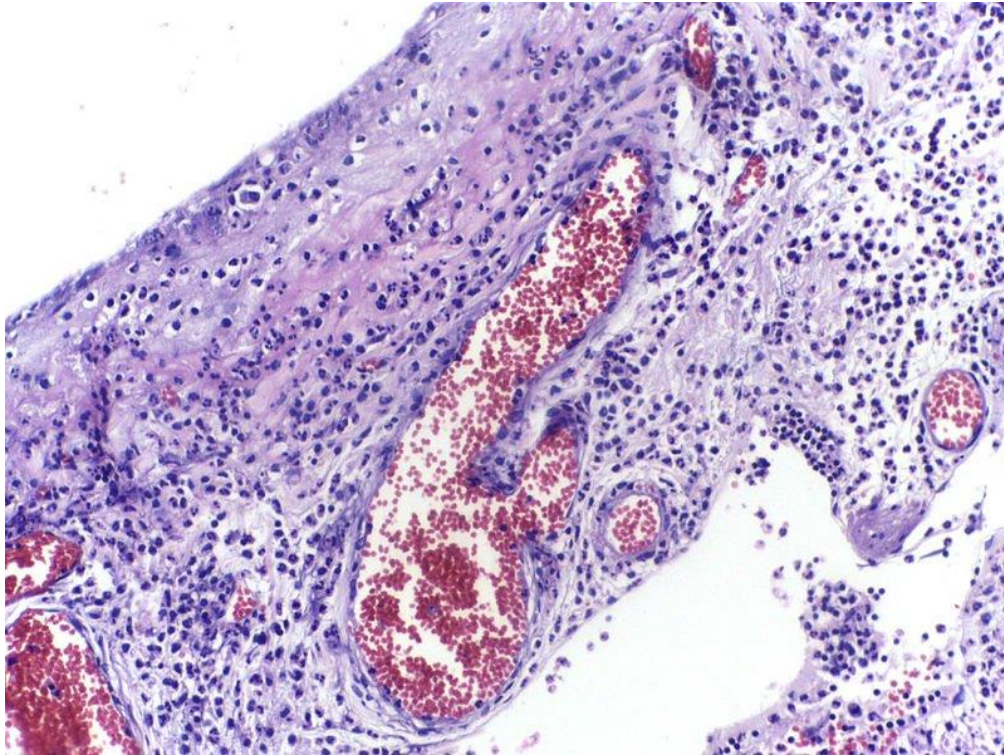


Figure 01: Exudate

Inflammation due to high fibrinous content is difficult to cure. But in the presence of higher dosages of powerful antibiotics, this condition could be resolved to a greater extent. Presence of high amounts of mucus and pus in the throat and nose characterise catarrhal exudate. In malignant exudate, it contains cells which are cancerous.

What is Transudate?

In the context of transudate, it is also a body fluid that is passed through a membrane. The membrane mostly filters the cells and different proteins and yields a solution of watery liquid. Mostly, transudates occur due to increment in hydrostatic and osmotic pressure that is built into the veins and capillaries. This imbalance in fluid forces results in high-pressure movement of fluids through the blood vessel walls which get filtered. Therefore transudate is a filtrate of blood which accumulates in the surrounding tissues that are present outside the blood vessels. Transudates consist of a lower protein content. The occurrence of transudates causes edema. Like exudates, inflammatory conditions do not lead to transudates. Transudates contains a clear appearance. This may be due to the reason of lower protein content.

Its specific gravity is low compared to exudates. The nucleated cell count is also low. The most abundant cell types of this blood filtrate are macrophages, mononuclear cells, lymphocytes, and mesothelial cells. Transudates have a lower cholesterol content. Different conditions lead to the formation of pathological transudates. The most common cause as mentioned above is an increment in osmotic and hydrostatic pressure. This could lead to left ventricular heart failure. Disease conditions like cirrhosis, nephrotic syndrome and malnutrition are potential causes of transudates.

What is the Similarity Between Exudate and Transudate?

- Both are body fluids.

What is the Difference Between Exudate and Transudate?

Exudate vs Transudate	
Exudate is a fluid which is rich in proteins and other cellular components that is emitted by blood vessels and organs due to inflammation.	Transudates occur due to high hydrostatic and osmotic pressure that is built up within veins and capillaries and appear as a clear fluid.
Resulted By	
Inflammation and injury are the causes of exudates.	Imbalances in osmotic and hydrostatic pressure are the causes of transudates.
Appearance	
Exudates are appearing in cloudy.	Transudates are clear.
Protein Content	
Higher protein content is there in exudates.	Comparatively lower protein content is there in transudates.

Summary - Exudate vs Transudate

Exudate is a fluid which is rich in proteins and other cellular components that is emitted by blood vessels and organs due to inflammation. Transudates occur due to high hydrostatic and osmotic pressure that is built up within veins and capillaries and appear as a clear fluid. The protein content of exudates is high when compared to transudates. The exudates could be of different types according to location and constituents. The occurrence of transudates causes edema. The nucleated cell count is also low. The most abundant cell types of this blood filtrate are macrophages, mononuclear cells, lymphocytes, and mesothelial cells. This can be identified as the difference between Exudate and Transudate.

Reference:

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Image Courtesy:

- 1.'Acute inflammatory exudate'By Department of Pathology, Calicut Medical College - Government Medical College, Kozhikode, [\(CC BY-SA 4.0\)](#) via [Commons Wikimedia](#)

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