

The history of the stethoscope

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The stethoscope was invented in 1816 by a French doctor, René Laënnec, from Quimper, France. He believed a method to diagnose chest conditions was needed, particularly for stout individuals where direct auscultation to the chest was either inadequate or embarrassing, especially for his female patients.

To listen to his patients' heartbeats and breathing, he first used rolled up paper tied with string and realized that the sounds were amplified, an improvement over direct auscultation. He struggled to find a name for his invention, discarding such names as "sonometer," "medical cornet," and "pectrolique." He particularly disliked his uncle's selection of "thoraciscope." Finally he chose stethoscope – literally meaning "I look into the chest" in Greek.¹

Percussion of the chest was used regularly during the 18th century to reveal various sounds and to help outline enlarged organs or lesions in the chest. This method was invented by Leopold Auenbrugger of Vienna. His father was an innkeeper and used this method regularly to discern

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the level of wine in a barrel, and so Auenbrugger applied it to the human chest.

Perfecting his invention

Laënnec had a special interest in diseases of the chest because tuberculosis was rampant during the 18th century; his own mother died of the disease. He perfected his auscultation methods while working at the Necker Hospital in Paris and made highly scientific and useful descriptions of his clinical findings on auscultation as they related to the pathology of the underlying chest disease.

Laënnec was said to be shy. In a personal account, he says "in 1816 I was consulted by a young woman labouring under general symptoms of a diseased heart and in whose case percussion and the application of the hand were of little avail on account of the great degree of fatness."² He continued, saying that direct auscultation was inappropriate because of the age and sex of the patient, and he recollected the great distinctness with which one can hear the scratch of a pin at one end of a piece of wood when the ear is applied to the other end. And so from this he went on to his rolled paper cylinder and his pleasure and surprise at finding that he could perceive sounds clearly and distinctly.

He continued his experiments and soon found that an aperture instead of solid wood was even better and that pine was the wood most suitable. In addition, he didn't just invent the stethoscope, but he recorded precisely those physical signs in the chest that he heard that corresponded to the underlying disease. That is, he was able to connect what he heard to specific cardiac and respiratory disease.

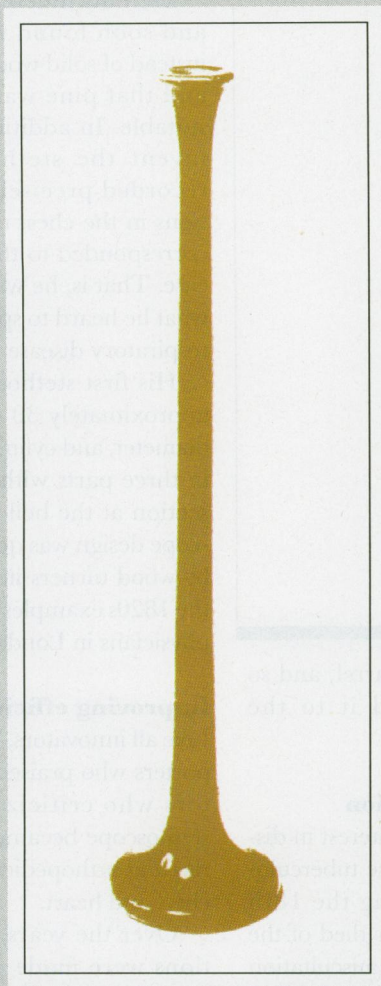
His first stethoscope design was approximately 30 cm long, 2 cm in diameter, and cylindrical. He made it in three parts with a funnel-shaped section at the bell end. The stethoscope design was quickly carried over by wood turners in England, and by the 1820s examples were available for physicians in London.

Improving efficiency

Like all innovators, Laënnec had supporters who praised him and detractors who criticized him, but the stethoscope became useful in obstetrics and orthopedics as well as for the chest and heart.

Over the years, many modifications were made of the monaural stethoscope to improve its efficiency, such as making one end the shape of a bell to transmit low-pitched sounds and the chest piece flatter and covering the end with a diaphragm of parchment or ivory. Later materials used included wood of every variety, glass, ivory, silver, pewter, and brass. An **extra** long stethoscope of 35 cm was used in pauper practices when physicians wanted to distance themselves from unclean, flea-ridden patients.

Attempts were made to produce binaural stethoscopes as early as 1829, but it was only when rubber was introduced in the 1850s that a reasonable improved model of the binaural stethoscope was produced. The invention of the binaural stethoscope is usually attributed to George Phillip Camman who, in 1853, published the specifications for his model using ivory earpieces, a wooden chest piece, and woven tubing held together by a broad rubber band.³



Stethoscope of exaggerated length: *Used in pauper practices, this stethoscope kept physicians at a distance from the stench and fleas of their patients.*



Monaural stethoscopes: *The stethoscope on its side is made of ebony. The chest piece can be unscrewed from the cylinder stem for easy carrying. The one standing up is made of brass and also has a removable chest piece.*

Dr Austin Flint of Petersham, Mass, popularized the stethoscope in the United States.

There is no doubt that the image of physicians is closely related to the stethoscope. Most illustrations or photographs of physicians depict them either wearing one around their neck or carrying one in their pocket. As a result, the antique stethoscope has become a very collectable medical artifact.

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