

Appendix

Tactile vocal fremitus (TVF) is assessed by placing a hand on the chest bilaterally in the anterior and posterior upper, middle, and lower zones and asking the patient to say 'ninety-nine'. The resulting low-frequency sounds should normally be palpable, and transmission should be compared for symmetry and differences between the areas assessed.

Vocal resonance is assessed by asking the patient to whisper 'one, two, three' and listening with a stethoscope in the areas described for assessing TVF. Some resonance (although not the words themselves) should normally be detected and differences between areas should be noted as described above. Increased sound transmission, demonstrated by clear detection of words spoken by the patient and known as whispering pectoriloquy, is abnormal.

Both TVF and vocal resonance are used to assess for the presence of consolidation (increased resonance) or pneumothorax or pleural effusion (decreased resonance).