

A STUDY ON THE FEATURES OF  
CHEST AND ABDOMINAL BREATHING BETWEEN  
RECITING AND CHANTING CHINESE POETRY

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ABSTRACT

This research studies the features of chest and abdominal breathing between reciting and chanting Chinese poems of different styles.<sup>1</sup> Eight participants were recruited to recite and chant 85 modern style poems (近體詩) and 39 Song poems (宋詞). The chest and abdominal breathing signals as well as speech signal were recorded simultaneously. Programs for breathing analysis have been written to extract parameters, such as breathing reset amplitude, time of inhalation phase, and slope of exhalation phase. The results show that the poem chanting has a larger depth of breathing and amount of breath, and more frequent exhalations compared with the poem reciting. In both poem reciting and chanting, the pause and declination of chest breathing is closely correlated with the prosodic boundaries. The major function of chest breathing in speaking is to keep the chest extended and provide enough breath for articulation and chest resonance. The function of abdominal breathing is to provide stable sub-glottal pressure through contraction of abdominal muscle and diaphragm, controlling continuous airflow to produce continuous sound.

SUBJECT KEYWORDS

Chest and abdominal breathing Poem reciting Poem chanting Speech production

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# 古詩詞朗讀與吟誦的呼吸特徵研究

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## 提要

為探討胸腹呼吸在不同文體與不同誦讀方式中的特徵，以及胸腹呼吸的作用和二者的關係，本文同步錄製了 8 位吟誦人的 85 首近體詩和 39 篇詞的語音、胸呼吸和腹呼吸三路信號。使用自主編寫的呼吸分析程式，提取了呼吸重置幅度、吸氣相時間、呼氣相斜率等參數。實驗結果表明，古詩詞吟誦比朗讀中呼吸重置幅度大，即呼吸深度大，氣息量增大，呼氣時間長，氣息更為平緩。言語狀態下腹呼吸重置時間早於胸呼吸和語音起始時間，胸呼吸間斷或下傾與韻律邊界相關。言語狀態下胸呼吸主要作用是在發音時胸腔保持擴張狀態至發音結束，為發音提供足夠的氣息，同時提供胸腔共鳴；腹呼吸主要作用是，通過腹肌和膈肌的穩健收縮，以保證穩定的聲門下壓，控制氣流持續釋放，以獲得連續的語音。

## 主題詞

胸腹呼吸 朗讀 吟誦 言語產生

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