

## University of Alberta

### MEASUREMENT TOOLS FOR THE DIAGNOSIS OF NASAL SEPTAL DEVIATION CAUSING AIRWAY OBSTRUCTION: A SYSTEMATIC REVIEW

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**Objective:** To perform a systematic review of measurement tools utilized for the diagnosis of nasal septal deviation (NSD) causing airway obstruction in orthodontic patients.

**Methods:** Electronic database searches were performed until August 2013, using MEDLINE, EMBASE, Web of Science and all Evidence Based Medicine Reviews Files (EBMR); Cochrane Database of Systematic Review (CDSR), Cochrane Central Register of Controlled Trials (CCTR), Cochrane Methodology Register (CMR), Database of Abstracts of Reviews of Effects (DARE), American College of Physicians Journal Club (ACP Journal Club), Health Technology Assessments (HTA), NHS Economic Evaluation Database (NHSEED). The search terms used in database searches were 'nasal septum', 'deviation', 'diagnosis', 'nose deformities' and 'nose malformation'. The studies were reviewed using the updated Quality Assessment of Diagnostic Accuracy Studies (QUADAS-2) tool.

**Results:** A total of 8 studies were identified, selected and systematically reviewed. Diagnostic modalities such as acoustic rhinometry, rhinomanometry and nasal spectral sound analysis may be useful in identifying NSD in anterior region of the nasal cavity. However, compared to anterior rhinoscopy, nasal endoscopy, and imaging the above mentioned index tests lack sensitivity and specificity in identifying the presence, location, and severity of NSD.

**Conclusions:** RME has been proposed to correct NSD. Thus far, there appears to be no consensus on a single diagnostic tool or universal protocol to accurately or reliably diagnose NSD. None of the identified tests in isolation are currently of utility as NSD screening tool in orthodontic offices.