

Medical Policy



Title: Rhinomanometry and Acoustic / Optical Rhinometry

Professional

Original Effective Date: March 20, 2008

Revision Date(s): October 6, 2008

Current Effective Date: October 6, 2008

Institutional

Original Effective Date: November 5, 2008

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Current Effective Date: November 5, 2008

DESCRIPTION

Rhinomanometry is a test of nasal function that measures air pressure and the rate of airflow in the nasal airway during respiration. These findings are used to calculate nasal airway resistance. Rhinomanometry is intended to be an objective quantification of nasal airway patency.

Acoustic rhinometry is a technique intended for assessment of the geometry of the nasal cavity and nasopharynx and for evaluating nasal obstruction. The technique is based on an analysis of sound waves reflected from the nasal cavities. Optical rhinometry uses an emitter and a detector placed at opposite sides of the nose and can detect relative changes in nasal congestion by the change in transmitted light. This technique is based on the absorption of red/near-infrared light by hemoglobin and the endonasal swelling-associated increase in local blood volume.

The techniques are proposed for use in allergy testing, comparing decongestive action of antihistamines and corticosteroids, for evaluation of obstructive sleep apnea, and for assessment of the patient prior to nasal surgery.

Ten models of rhinomanometers or acoustic rhinometers have received marketing clearance by the U.S. Food and Drug Administration (FDA) 510(k) mechanism between 1984 and 2002. Optical rhinometry is a new technique that is being developed in Europe; at the time of the latest review no devices had received clearance for marketing in the United States.

POLICY

Rhinomanometry and acoustic/optical rhinometry are considered **investigational**.

RATIONALE

2005 Update

A literature search was performed on the MEDLINE database for the period of 1997 through October 2005. The published literature did suggest that both acoustic

manometry and rhinomanometry are frequently used in research studies in which objective measurements of nasal obstruction may be important to determine treatment effects. (1-11). However, no studies provided a detailed analysis of how these 2 diagnostic studies would be used in the clinical management of the patient and whether they were more clinically relevant or accurate compared to patient self-assessment. While patient self-assessment may be difficult in infants and small children (12, 13), data are insufficient to permit scientific conclusions in this population of patients. Acoustic rhinometry has also been investigated as a technique to measure nasal valve area. However, how this information may be used in the management of patients is unknown. (14)

2006-2007 Update

A search of the MEDLINE database for the period of September 2005 to December 2006 found no evidence to support a change in the policy statement. As described previously, rhinomanometry and acoustic rhinometry are frequently used as objective measurements of treatment efficacy in research studies. Use of acoustic rhinometry for the diagnosis of allergic rhinitis and surgical evaluation of nasal obstruction has been the topic of recent reviews. (15, 16) Pilot studies are also being reported for use of acoustic rhinometry in patients with obstructive sleep apnea to assess tolerance to nasal continuous positive airway pressure (CPAP). (17) However, no studies were found that demonstrate how use of these diagnostic procedures would improve outcomes compared to standard approaches, such as patient self-assessment. Therefore, the policy statement remains unchanged.

2008 Update

A search of the MEDLINE database for the period of January 2007 through April 2008 did not identify any evidence that would alter the conclusions reached above. Several papers from Germany describe the development of optical rhinometry; 1 compared optical rhinometry with rhinomanometry using histamine, allergens, solvent, and xylometazoline hydrochloride for nasal provocation in 70 normal subjects. (18) There was a higher correlation between subject's rating of nasal congestion and optical rhinometry ($r = 0.84$) than for rhinomanometry ($r = -0.69$). Although this early work suggests that optical rhinometry may provide a quantitative measurement that is more similar to patient's assessment of nasal congestion than rhinomanometry, information on the clinical utility of these measurements is lacking. The impact of this technology on health outcomes is uncertain. Therefore, rhinomanometry and acoustic/optical rhinometry are considered investigational; the policy statement is unchanged.

CODING

The following codes for treatment and procedures applicable to this policy are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

CPT/HCPCS

92512	Nasal function studies (e.g., rhinomanometry)
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DIAGNOSIS

470- 478.9	Code range, other diseases of the upper respiratory tract
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