

Screen Sleep Patients...

While Their Awake

Acoustic reflection has been proven to **measure cross-section area of upper airway**. (1)

A **reduced cross-section area** of the hypopharynx has been demonstrated to be a **risk factor for OSA and snorers**. (2)

Eccovision is a **simple method of documenting a reduced cross-section area of the hypopharynx in snorers**. (3)

Mandibular advancement through the use of an oral appliance has been proven to be effective in **enlarging the cross-section area** of the pharynx in patients with high risk factors (reduced cross-section area) for OSA. (4)

Mandibular advancement through the use of an **oral appliance** has been proven to be an **effective method** of treating patients with **mild to moderate Obstructive sleep apnea**. (5)

Eccovision is **95% accurate** in predicting likelihood of oral appliance failure and **60% accurate** in predicting likelihood of oral appliance success. (6)

By **objectively diagnosing nasal obstructions**, Rhinometry assists in differentiating reversible mucosal disease from irreversible structural abnormalities, **aiding in the selection of appropriate medical management**. (7)

Rhinometry can evaluate relief of nasal obstruction post-surgery, providing **objective outcome analysis** in forensic and medico-legal evaluation regarding nasal obstruction and its relief. (7)

(1) [Hoffstein V, et al.](#) *Chest*. 1991 Jul; 100(1):81-85

(2) [Katz I, et al.](#) *Am Rev Respir Dis*. 1990 May; 141(5 Pt 1): 1228-1231

(3) [Sheppard, et al.](#) *Sleep* 14(4):361-371

(4) [Smith SD.](#) *Cranio* 1996 Oct;14(4):332-343

(5) [Loube D.](#) *Clin Pulm Med* 1998;5(2):124-128

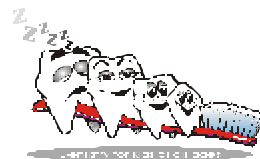
(6) [Loube D.](#) *Predictive Value of Pharyngometry Derived Measurements for Oral Appliance Treatment of OSAS*-abstract publication

(7) *Otolaryngology Head and Neck Surgery - Volume 117 Number 4*

John S. Viviano B.Sc. D.D.S., obtained his credentials from the University of Toronto and has practiced General, Family and Cosmetic Dentistry in Ontario, Canada since 1983.

He maintains a special interest in the conservative treatment of sleep-disordered breathing. A member of various sleep organizations, he is credentialed by the certifying board of the Academy of Dental Sleep Medicine, and has lectured on the treatment of sleep disordered breathing and the use of Acoustic Reflection. He has authored articles reviewing Acoustic Reflection and establishing protocols for its use in assessing airway normalization.

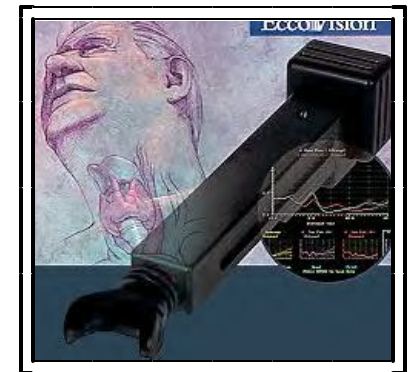
Dr. Viviano utilizes various appliance designs including trial appliances in his conservative therapy of sleep-disordered breathing.



Eccovision

Airway Diagnostics

Protocol for Professionals



Dr. John Viviano

Conservative Therapy
Snoring-Sleep Apnea
Breathing Related
Sleep Disorders

*Family, General and
Cosmetic Dentistry*

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Snoring? Sleep Apnea?

Are You a candidate for
**Airway Orthotic
Therapy?**

Eccovision uses *acoustic reflection technology* to objectively assess and document the cross sectional area and sites of obstruction of the nasal passages and upper airway from the oral cavity through the hypopharynx. During a **5-minute, simple, non-invasive, diagnostic procedure**, a patient's potential sites of sleep related upper-airway obstruction can be assessed.

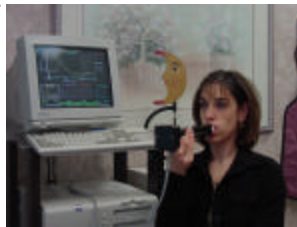
More than 80% of habitual snorers have Respiratory Disturbance Indices of less than 15 apneas and/or hypopneas per hour.

Although many of these patients have a clinically significant sleep disorder, most remain undiagnosed.

When one considers the annual cost to industry and health care undiagnosed daytime drowsiness is responsible for, **screening for these individuals would benefit everyone involved.**

Airway Orthotic Therapy is a mainstream treatment option for these snoring and apnea patients. An Airway Orthotic re-establishes patency in the upper airway by repositioning the lower jaw during sleep.

Eccovision enables us to measure the effect that an Airway Orthotic has on airway patency, allowing us an objective method of determining Airway Orthotic Candidacy along with Fabrication and Titration parameters.



Non-Invasive acoustic screening of the upper airway in 5 minutes

Screening for Breathing Related Sleep Disorders

Eccovision allows us to...

- ◆ Non-invasively image the upper airway
- ◆ Establish risk factors for OSA
- ◆ Demonstrate structural and functional abnormalities of the pharynx, glottis septum and turbinate.
- ◆ Determine site & degree of obstruction, establishing site specific data for surgery
- ◆ Determine the impact of tonsils on upper airway - pre and postoperative
- ◆ Determine the nature of nasal obstruction and impact of surgical outcome

Are You a Candidate for Airway Orthotic Therapy?

Eccovision allows us to...

- ◆ Determine airway response to therapeutic intervention. We are looking for a change in airway Cross Sectional Area & Volume with advancement of the mandible or opening of the vertical

Airway Orthotic Titration

Eccovision allows us to...

- ◆ Determine the point of titration with the most favorable impact on cross sectional area and volume of airway, assisting the titration process once the Orthotic is delivered.

If airway volume and cross section reduce in dimension...

- ◆ We are witnessing airway collapse. This has been found to be **95% predictive of Orthotic failure (6)**

If airway volume and cross section remain static in dimension...

- ◆ We are witnessing no dimensional change. This indicates that airway dilation is unlikely with an Airway Orthotic. However, we cannot tell from this whether the advancement results in “airway splinting”, necessary to prevent snoring and apnea. These patients would be considered **borderline responders.**

If airway volume and cross section increase in dimension...

- ◆ We are witnessing “dilation” of the airway. However, the amount of “airway splinting” cannot be established from this measurement. An increase in airway volume has been found to be **60% predictive of Orthotic success. (6)**

This information allows us to...

- Isolate individuals not likely to be Oral Appliance Candidates reducing the likelihood of treatment failure
- Ensure that a change in jaw position results in a favorable change in airway cross section and volume
- Establish advancement and vertical parameters for fabrication and titration of an oral appliance