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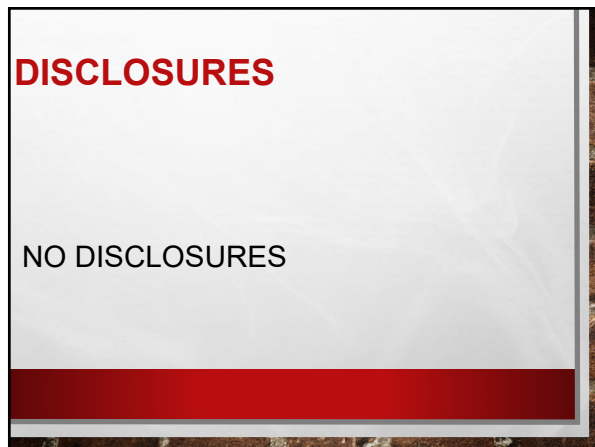
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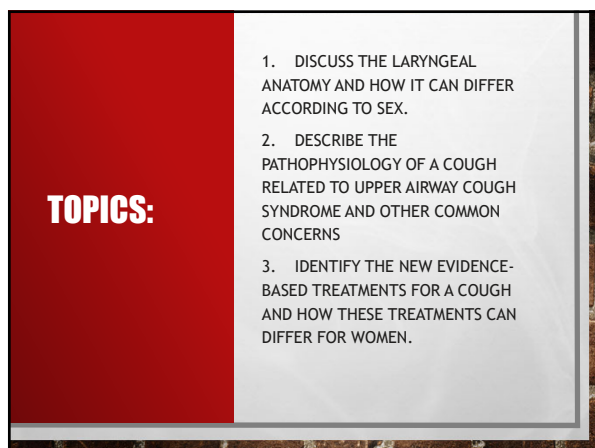
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## THREE TAKE HOME MESSAGES

This is complex.  
Complexity is best served  
by a team approach

We need to stick with  
patients until they get  
better

It's not in their head /  
assume we don't have all  
of the answers

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## A QUOTE:

CHRONIC COUGH IS VERY COMMON, WITH A PREVALENCE OF UP TO 12% IN COMMUNITY SURVEYS. A TYPICAL PATIENT WITH CHRONIC COUGH IS MOST COMMONLY A POST-MENOPAUSAL FEMALE, WHO HAS A COUGH FOR >5 YEARS. SHE HAS A SENSATION OF AN IRRITATION LOCATED AT THE BACK OF THE THROAT ASSOCIATED WITH AN URGE TO COUGH. THE COUGH MAY BE AN EXAGGERATED RESPONSE TO IRRITANTS, CHANGES IN TEMPERATURE AND CHEMICAL SPRAYS. IT CAN ALSO OCCUR DURING NORMAL ACTIVITIES SUCH AS EATING, EVEN STRETCHING HER NECK INTO A PARTICULAR POSITION. SHE HAS COUGH-INDUCED STRESS INCONTINENCE, AND WILL BE TAKING AN ANTI-DEPRESSANT. SHE IS SOCIALLY ISOLATED AND SLEEPS SEPARATELY FROM HER PARTNER. SHE HAS CONSULTED MANY PHYSICIANS IN DIFFERENT SPECIALTIES, BEEN EXTENSIVELY INVESTIGATED AND IRRADIATED, AND TRIED MANY TREATMENTS, ALL TO NO AVAIL. SHE CARRIES A BOTTLE OF WATER AT ALL TIMES, BECAUSE SWALLOWING WATER GIVES TEMPORARY RELIEF.

<https://academic.oup.com/hmh/article/96/1/61/300236>

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## CHALLENGED US...

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**HARVARD MEDICAL SCHOOL** **BWH BRIGHAM AND WOMEN'S HOSPITAL**

**Multidisciplinary Symposium on Women's Lung Health**  
November 10, 2017  
Joseph B. Martin Conference Center at Harvard Medical School  
Boston, Massachusetts

**OFFERED BY**  
Brigham and Women's Hospital, Departments of Medicine and Surgery, The Lung Center's Women's Lung Health Program

**COURSE DIRECTORS**  
Manuela Cernadas, MD • Yolonda Colson, MD, PhD • Jayme Dowdall, MD • Christopher Fanta, MD

**COURSE DESCRIPTION:** This course will provide participants with a comprehensive understanding of the clinical applications of sex differences and issues specific to women in lung and upper airway diseases. Taking a multidisciplinary approach to women's lung health care across the lifespan, this course will review emerging science on sex differences in lung and upper airway disease from experts in the fields of thoracic surgery, pulmonary medicine, otolaryngology, nutrition, and psychiatry. Learners in primary care, women's health, thoracic surgery, pulmonary medicine, and otolaryngology will benefit immensely from this continuing education opportunity.

Topics include issues unique to women such as asthma in pregnancy and the differences in presentation, diagnosis, and management of sleep apnea, COPD, lung cancer, and pulmonary hypertension in women. Based on educational objectives, the format includes didactic lecture and case presentations, followed by questions and answer periods. A multidisciplinary panel discussion as well as small group break-out sessions will allow participants to hear from multiple experts and expand their learning based on their interests.

**LEARNING OBJECTIVES:** Upon completion of this activity, participants will be able to:

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**TO LISTEN AND THINK!**

CME COURSE WITH PATIENTS!

CLARIFY GENDER AND SEX  
SEX IS DEFINED BY CHROMOSOMES  
GENDER IS MORE COMPLEX  
I ALSO WORK DO GENDER AFFIRMING WORK AND HAVE THE PRIVILEGE OF LEARNING ALONG SIDE THIS PATIENT POPULATION

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**PHENOTYPES OR PEOPLE?**

Chronic cough phenotypes

- UACS
  - Physical illness (e.g., allergic rhinitis, adenotonsillitis, etc.)
  - Rhinitis (e.g., PNC, AR, NAR)
  - Others
- LHR
  - External & middle ear pathology
  - Tinnitus
- GERD
  - Systemic diseases\* (e.g., Wegener's granulomatosis)
  - PCPD
- LACS
  - CA
  - CVA
  - NAB
  - COPD
- Others
  - OSA
  - Drug
  - UCC
  - COVID-19
  - Psychological
  - Multifactorial CC

THESE CHARTS MIGHT BE A REASON...

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## COUGH: WOMEN AND LUNG CANCER

- THE MOST COMMON BUT NONSPECIFIC SYMPTOM OF LUNG CANCER IS COUGH
- MORE MEN ARE DIAGNOSED WITH LUNG CANCER EACH YEAR, BUT MORE WOMEN LIVE WITH THE DISEASE
- 20% OF WOMEN DIAGNOSED WITH LUNG CANCER TODAY ARE LIFELONG NON-SMOKERS
- THE RATE OF NEW LUNG CANCER CASES (INCIDENCE) OVER THE PAST 42 YEARS HAS DROPPED 36 PERCENT FOR MEN WHILE IT HAS RISEN 84 PERCENT FOR WOMEN

<https://www.lung.org/lung-health-diseases/lung-disease-lookup/lung-cancer/resource-library/lung-cancer-fact-sheet>

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## WOMEN OFTEN HAVE DELAY IN DIAGNOSIS

- SOMETIMES WOMEN PRESENTING WITH POTENTIAL SYMPTOMS OF LUNG CANCER ARE NOT SUSPECTED OF HAVING LUNG CANCER BY THEIR GPs.
- THERE WAS A SIGNIFICANT DIFFERENCE IN *TIME* BETWEEN WOMEN AND MEN WITH WOMEN HAVING A LONGER DELAY MEAN 65.2 D VS 18.2 D IN MALE

Delays in the diagnosis and treatment of women with lung cancer: A systematic analysis. 2015

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## WOMEN AND DRYNESS

- MOST STUDIES HAVE FOUND THAT DRY MOUTH IS MORE COMMON IN PEOPLE BORN FEMALE
- OLDER ADULTS OFTEN EXPERIENCE DRY MOUTH, WHICH MAY BE PARTLY BECAUSE THEY ARE MORE LIKELY TO HAVE UNDERLYING HEALTH CONDITIONS
- COLD AIR = DRY AIR
- IF YOU GOOGLE WOMEN AND DRYNESS THE THROAT IS NOT WHAT COMES UP!

<https://ctajournal.biomedcentral.com/articles/10.1186/s13601-018-0208-9>

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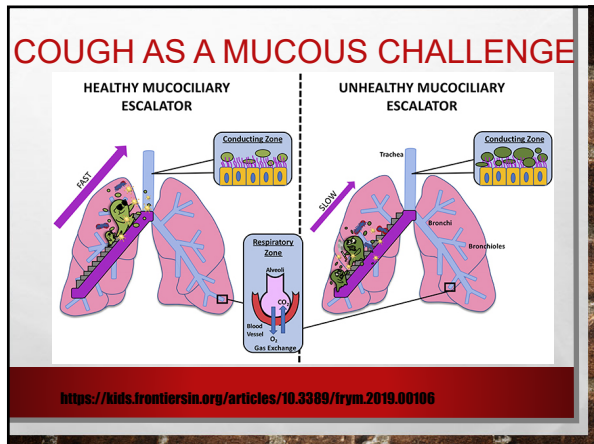
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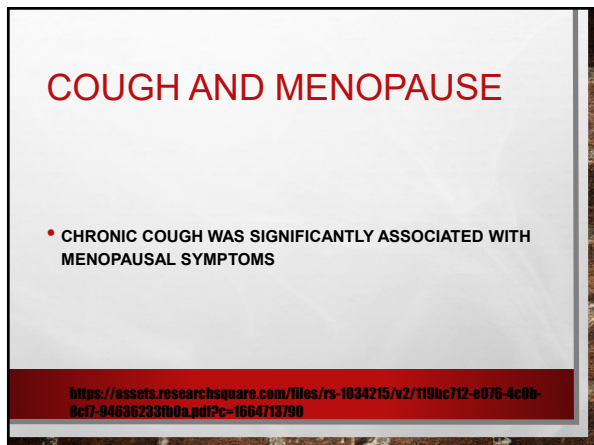
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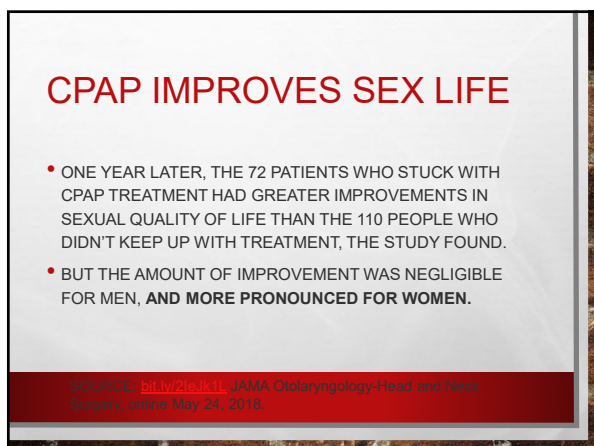
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## The Unified Airway

John H. Krouse, MD, PhD



**KEYWORDS**

- Airway • Respiratory tract • Pathophysiology
- Cardiopulmonary risk

**Key Points**

- The upper and lower airways function as an integrated, interdependent respiratory unit, known as the unified airway.
- Stimuli that affect one portion of the airway often trigger concurrent pathophysiologic changes at sites distant from the initial stimulus.
- Asthma coexists with allergic and nonallergic rhinitis in 40% of individuals, and with chronic rhinosinusitis in up to 50% of individuals.
- Recognition of increased prevalence of lower airway disease among patients with rhinitis and rhinosinusitis is important in the perioperative management of patients undergoing nasal surgery.
- Patients with significant upper airway symptoms should be screened by history for the presence of cough and exercise-induced wheezing and dyspnea.
- Nasal packing should be used judiciously in elderly patients and those with underlying cardiopulmonary diseases because of increased risk of hypoxia and arrhythmia.
- An appreciation of the unified airway among facial plastic surgeons permits safer nasal surgery.

Developmental Biology, 6th edition, Scott F Gilbert, Sinauer Associates, Sunderland (MA); Sinauer Associates; 2000. ISBN-10: 0-8053-245-2.  
Krouse JH. The unified airway. Facial Plast Surg Clin North Am. 2012 Feb;20(1):55-66.

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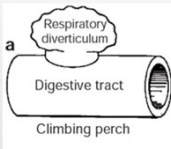
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## LARYNGEAL FUNCTION: VALVE




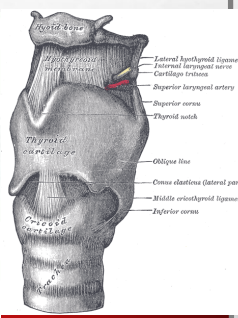
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Respiratory diverticulum

Digestive tract

Climbing perch





Developmental Biology, 6th edition, Scott F Gilbert, Sinauer Associates, Sunderland (MA); Sinauer Associates; 2000. ISBN-10: 0-8053-245-2.  
Sasaki, Clarence T. "Anatomy and Development and Physiology of the Larynx." *At Medcity Online* (2006).  
Henry Gray, *Anatomy of the Human Body*, 1918.

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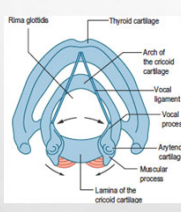
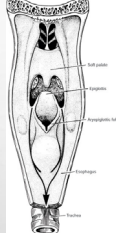
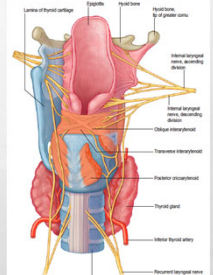
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## Laryngeal Anatomy: Two Points

Henry Gray, *Anatomy of the Human Body*, 1918.  
Sasaki, Clarence T. "Anatomy and Development and Physiology of the Larynx." *At Medcity Online* (2006).

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## TOPICS:

- REVIEW LARYNGEAL MECHANICS
- CARE PHILOSOPHY
- DISCUSS DIFFERENTIAL DIAGNOSIS/MODELS
- REVIEW ASSESSMENT
- TREATMENT
- FUTURE DIRECTIONS

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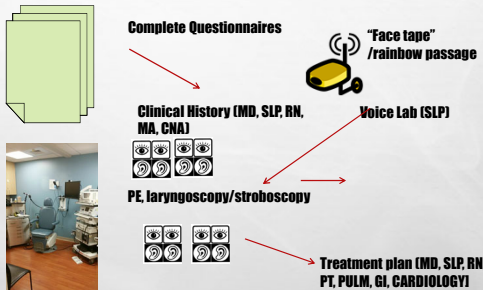
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## Welcome to the Voice Program Clinic...




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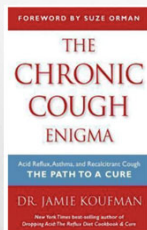
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## PATIENT BACK IN DRIVER'S SEAT



### KEY PATIENT EDUCATION STRATEGIES

While patient education may be used for many patient engagement purposes, several standard features characterize good patient education. Healthcare providers may consider:

- Written patient education materials available in numerous languages
- Patient teach-back
- Provider empathy
- Patient motivation
- Education follow-up
- Patient health literacy levels
- Social determinants of health barriers

<https://patientengagementmhl.com/news/why-patient-education-is-vital-for-engagement-better-outcomes>

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## EMPOWERMENT AND PRACTICAL SOLUTIONS TO “THE OTHER 45” MINUTES OF PATIENT EDUCATION

General | ORIGINAL ARTICLE

### The Other 45: Improving Patients' Chronic Disease Self-Management and Medical Students' Communication Skills

Alexis M. Stoner, MPHE, PhD; Matthew Cannon, DO; Liang Shan, PhD; Deanna Plewis, OMS IV; Claire Coudell, OMS IV; and Luke Johnson, OMS IV

NOTES AND AFFILIATIONS

J Osteopath Med: 118(12): 703-712  
<https://doi.org/10.7556/jaoa.2018.155>

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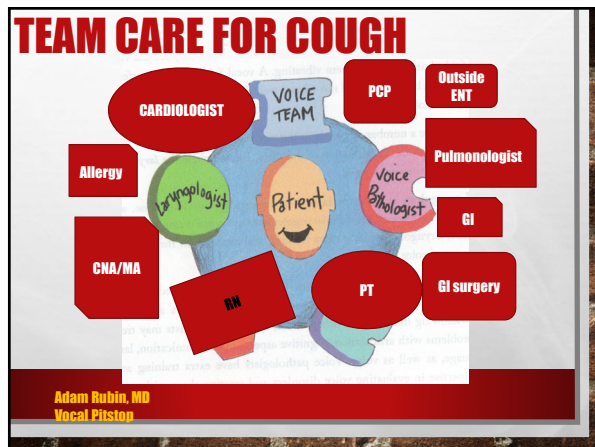
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## TOPICS:

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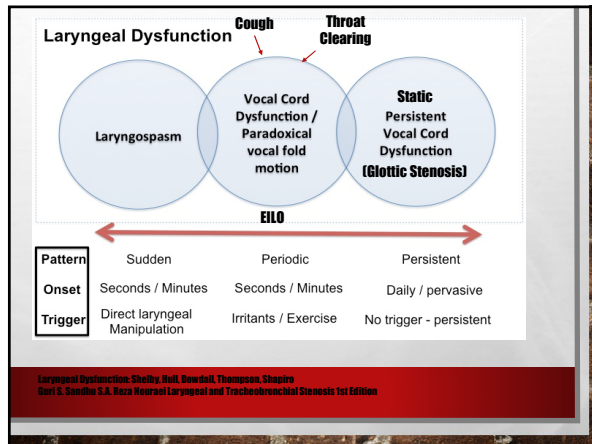
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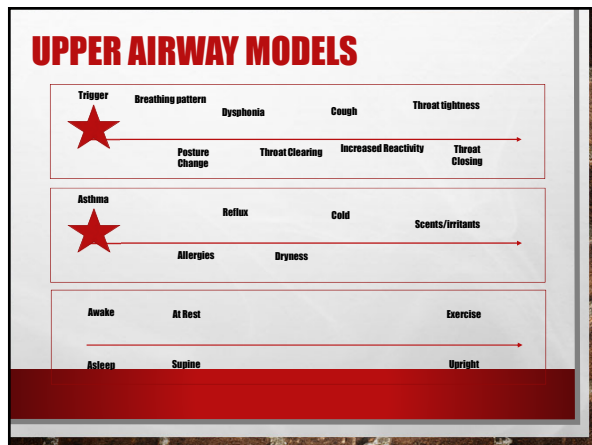
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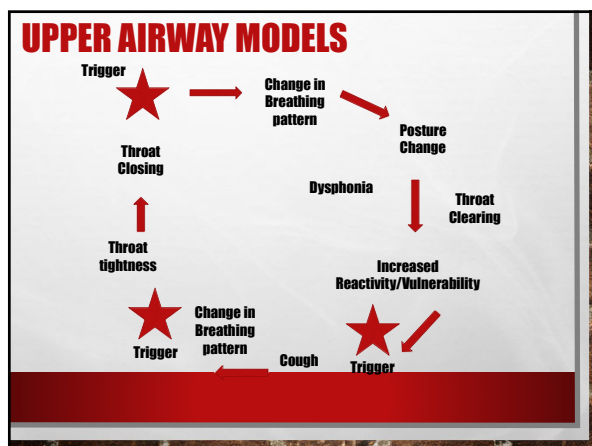
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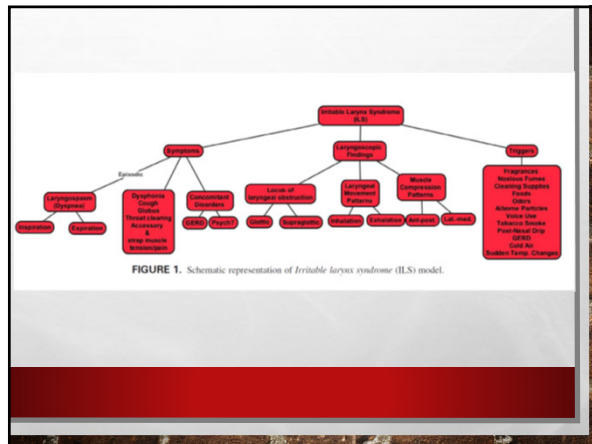
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## TOPICS:

- REVIEW LARYNGEAL MECHANICS
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- TREATMENT
- CASES EMBEDDED
- FUTURE DIRECTIONS

## ASSESSMENT ROADMAP 2017

LBD Integrative Phenotypic Theoretical Framework Clinical Features Checklist				
Laryngeal Findings				
Symptoms	Locus of Obstruction	Observations within respiratory cycle	Observations within respiratory cycle	Triggers
<input type="checkbox"/> Inspiratory/Expiratory wheeze	<input type="checkbox"/> Supraglottic	<input type="checkbox"/> Aryepiglottic	<input type="checkbox"/> Inspiration	<input type="checkbox"/> Exertional
<input type="checkbox"/> Nocturnal cough	<input type="checkbox"/> Glottic	<input type="checkbox"/> Epiglottic	<input type="checkbox"/> Expiration	<input type="checkbox"/> Endogenous
<input type="checkbox"/> Globus pharyngeus	<input type="checkbox"/> Subglottic	<input type="checkbox"/> Ventricular folds	<input type="checkbox"/> Inspiration	<input type="checkbox"/> Respiratory tract pressure changes
<input type="checkbox"/> Throat clearing			<input type="checkbox"/> Expiration	<input type="checkbox"/> Other
<input type="checkbox"/> Neck muscle tension				<input type="checkbox"/> Exogenous
<input type="checkbox"/> Dysphagia				<input type="checkbox"/> Dry environment
<input type="checkbox"/> Cough				<input type="checkbox"/> Cold environment
<input type="checkbox"/> Other	<input type="checkbox"/> Glottic	<input type="checkbox"/> True Vocal Folds	<input type="checkbox"/> Inspiration	<input type="checkbox"/> Humidity
			<input type="checkbox"/> Expiration	<input type="checkbox"/> Heat
				<input type="checkbox"/> Other
				<input type="checkbox"/> Psychological
				<input type="checkbox"/> Endogenous (strain)
				<input type="checkbox"/> Temperament
				<input type="checkbox"/> Mood disorders
				<input type="checkbox"/> Other
				<input type="checkbox"/> Exogenous (stress)
				<input type="checkbox"/> Stressful environments
				<input type="checkbox"/> Other
				<input type="checkbox"/> Endogenous
				<input type="checkbox"/> Endogenous Post nasal drip (PND)
				<input type="checkbox"/> Laryngopharyngeal reflux (LPR)
				<input type="checkbox"/> Gastroesophageal reflux (GERD)
				<input type="checkbox"/> Other
				<input type="checkbox"/> Exogenous
				<input type="checkbox"/> Perfumes
				<input type="checkbox"/> Smoke
				<input type="checkbox"/> Chemicals
				<input type="checkbox"/> Other

Laryngeal Dysfunction: Sherry B. Boudreau, Therapist, Boudreau, Sherry  
 Gert V. Sandhu S.A. Royal Journal Laryngeal and Tracheobronchial Diseases 1st  
 Edition

## HISTORY

### Airway Symptoms?

- Inspiration, Expiration, Biphasic
- Nose, mouth, lungs (site?)
- Patterns to coughing?
- Effort, hard to breath, hard to talk, hard to walk, leaking air?
- Upper and lower sensations?

### Noise?

- Stertor, something else (Snorting, Wheezing, Nasal)
- Stridor (Every breath, Episodic)
- Something we don't have a word for yet?

### Other..

- Dysphonia?
- Globus, throat clearing, reflux

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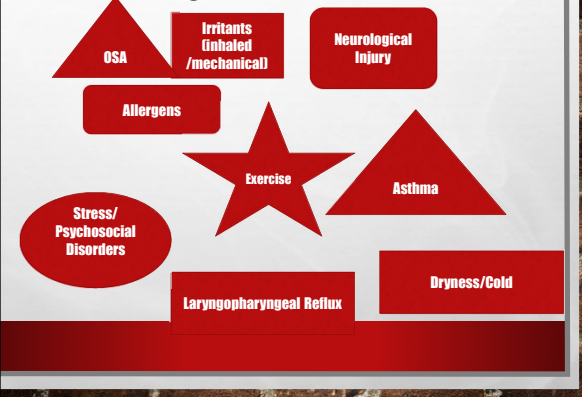
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## TRIGGERS




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## TOPICS:

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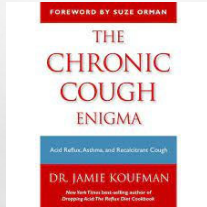
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## WE USE EDUCATION/EMPOWERMENT AND A TEAM (STEPHANIE SHONING, RNI)




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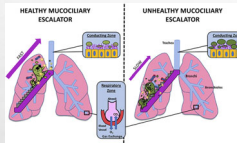
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### COCONUT OIL INSTRUCTIONS:

PLEASE PURCHASE A JAR OF COCONUT OIL FROM THE GROCERY STORE. THIS CAN BE FOUND IN THE OIL, CRISCO SECTION OR SOMETIMES THE NATURAL FOOD SECTION.

**PURCHASE UNREFINED COCONUT OIL CAN BE USED UP TO EVERY HOUR**

USE A SPOON TO SCOOP A PEA-SIZED GLOB OF COCONUT OIL (WHICH IS WHITE AND SOLID LIKE LARD AT ROOM TEMPERATURE) ONTO YOUR FINGER. WIPE THE COCONUT OIL OFF IN THE INSIDE OF YOUR NOSE WITH YOUR FINGER. SQUEEZE YOUR NOSTRILS TOGETHER AND THEN WIPE OFF THE EXCESS OIL.

IT WILL MELT AT BODY TEMPERATURE AND COAT YOUR NOSE.

**-HOURLY NASAL SALINE WHILE AWAKE (OCEAN)**

**-"AYR" BRAND SALINE NASAL GEL**

**-USB PERSONAL HUMIDIFIER IN YOUR CAR OR AT YOUR COMPUTER.**

**-HUMIDIFIER 3 FEET FROM YOUR BED WHILE SLEEPING IDEALLY ON NIGHTSTAND/BEDSIDE TABLE.**

**-PERSONAL STEAMER USE THIS FOR 2-3 MINUTES 5 MINUTES BEFORE HIGH VOICE USE.**

## SECRET REGIMEN

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## FUTURE DIRECTIONS

- SEX DIFFERENCES
- IMPROVE TESTING CRITERIA
- MACHINE LEARNING?
- MULTI – D – WE HAVE ADDED BODY WORK

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