



Abstracts

International Society for Advancement of Respiratory Psychophysiology. Proceedings of the annual meeting September 19–21, 2014

Paul Lehrer

Rutgers – Robert Wood Johnson Medical School, Piscataway, NJ, USA

The 2014 annual meeting of the International Society for Advancement of Respiratory Psychophysiology was held at Rutgers University – Robert Wood Johnson Medical School, New Brunswick, NJ, on September 19–21, 2014. The meeting was hosted by Rutgers, the state university of New Jersey, who has recently absorbed the medical school and several other health-related colleges and schools, and has thus become one of the major American academic centers for health care and health research.

ISARP is an interdisciplinary society of researchers, teachers, and students, all interested in the interplay between behavior and breathing. Meeting alternately in Europe and the United States, ISARP fosters international cross-fertilization of ideas, and allows collaboration and mentoring both within and between continents, with contributors and participants from throughout the world. In addition to ISARP members, this year's meeting was attended by a number of faculty, students, residents, and fellows from Rutgers, several of whom made substantial contributions to our program.

This year I have celebrated my 45th year at Rutgers and its associated institutions. It was wonderful to celebrate this occasion together with ISARP and my Rutgers colleagues and students, and to bring the culture of ISARP into closer contact with people in our medical school and university. In support of this, I took the unusual step of introducing the meeting with an overview of the corner of respiratory psychophysiology I know best, including my own past work, mostly in the field of clinical psychophysiology, with an emphasis on the interplay between breathing and psychological stress, and ways that breathing interventions can play an important role in psychological treatment of all disorders affected by stress – i.e., perhaps *all* disorders.

Other papers covered a wide range of topics relating to the interplay between behavior and breathing, including perception of respiratory symptoms and sensations, the psychophysiology of coughing, asthma self-care behaviors, stress and mental illness effects on the lung and respiratory dynamics, dysfunctional breathing patterns, psychological effects of respiratory disease, Abstracts of posters and symposium contributions follow, mostly in alphabetical order by first presenter.

Breath, beats, and behavior: Applied psychophysiology, stress management, and behavioral medicine

Paul Lehrer

Rutgers – Robert Wood Johnson Medical School, Piscataway, NJ, USA

E-mail address: Lehrer@rwjms.rutgers.edu (P. Lehrer)

Stress can produce dysregulation in various body systems. This talk reviews research on various forms of stress-related autonomic dysfunction, including parasympathetic as well as sympathetic overactivity and symptomatology, respiratory correlates of stress, and respiratory interventions to help manage stress and its symptoms. Changes in various parameters of respiration are important for normal regulation. They typically occur during exposure to stress, and are part of normal adaptation to environmental demand. These include changes in bronchial tone, tidal volume, respiratory drive, and total ventilation, often accompanied by changes in pattern of respiration rate in the form of yawning and sighing. In normal function, respiratory changes aid in regulating acid base balance in the blood and adaptation to exercise, altitude, air pollution, and changes in respiratory resistance. They also may affect autonomic regulation. Taking a slow deep breath can relax the body, stimulate parasympathetic control, and regulate the respiratory system. In excess, it can produce hyperventilation. Stress-related respiratory changes can thus produce a mismatch between physical demand for oxygen and respiration, leading to respiratory dysregulation, and produce a host of physical and emotional symptoms. These may include headache, dyspnea, chest pain, muscle tension, performance decrements, confusion, and panic. Data on laboratory stressors and clinical conditions are reviewed. Breathing slowly at about six breaths/min is a therapeutic intervention that may have powerful effects in combatting various sources of respiratory dysregulation. It protects against hyperventilation while improving respiratory gas exchange. It helps maintain oxygen saturation, and, through its effects on the baroreflex system, improves cardiovascular and emotional regulation. An important mechanism is through stimulation of

parasympathetic-ally mediated regulatory processes. Yogis and Sherpas are often observed to breathe with this pattern, as do Zen monks. Breathing at this pattern appears to help improve symptoms, quality of life, and often physical condition, among people suffering from a variety of emotional and physical, including respiratory, disorders. Data from a current trial suggest that it decreases airway reactivity to methacholine among asthma patients. These effects appear to be maximized when heart rate variability biofeedback is included as a way to teach optimal patterns of slow breathing, where resonance characteristics of the baroreflex system are stimulated, and gas exchange is maximized. Combinations of psychophysiological techniques may be particularly helpful for patients with multiple somatic symptoms and a pattern of somatization, as well as people with combinations of comorbid respiratory and emotional symptoms.

Child & parent symptom perception as predictors of asthma illness representations and asthma control

Kimberly Arcoleo¹, Jonathan Feldman²

¹The Ohio State University, College of Nursing, Columbus, OH, USA;

²Ferkauf Graduate School of Psychology, Yeshiva University, Bronx, NY, USA

E-mail address: Arcoleo.1@osu.edu (K. Arcoleo)

Background. Asthma remains a major public health problem despite advances in pharmacologic management of the disease. Recognition of asthma symptoms and early warning signs is dependent upon subjective perceptions of children and parents. Failure to detect asthma symptoms is associated with poor asthma control. What is not known is how children's and parents' symptom perception influences their asthma illness representations which are predictive of asthma control. **Methods.** 1 year longitudinal study of 300 Mexican & Puerto Rican mothers & 300 children ages 5–12 w/asthma recruited from 2 school-based health centers & Breathmobile in Phoenix, AZ & 1 pediatric asthma & allergy clinic in Bronx, NY. Interviews & child PFTs @ baseline and 3, 6, 9, & 12 months; medical record reviews @ 12 months. **Results.** Results from $N = 267$ baseline interviews. SEM examined effects of sociodemographic characteristics, parental depression, child and parent symptom perception, and asthma illness representation on clinician rated asthma control by ethnicity. Results: the data fit the model well ($RMSEA = .02$, $CFI = .97$, $TLI = .93$, $\chi^2 = .39$) and accounted for 22% of the variance in AIRS scores and 9% in asthma control. Parents reporting higher depressive symptoms, living in poverty, lower education, and higher panic and irritability had AIRS scores aligned with the lay model. There was no effect for children's symptom perception. AIRS scores congruent with the lay model and Puerto Rican ethnicity were associated with poor asthma control. There was an indirect effect of parents' education through AIRS on asthma control. **Discussion.** A window of opportunity exists when asthma patients can use bronchodilator medications to prevent asthma exacerbations and maintain good control. Parents who have elevated depressive symptoms, panic, and irritability may delay administration of medications resulting in adverse health outcomes for their children. Interventions targeting medication adherence need to assess and treat caregiver psychiatric disorders to achieve optimal outcomes.

Respiratory kinematics of reflex and voluntary cough in healthy adults

Alexandra E. Brandimore^{1,2}, Michelle S. Troche², Paul W. Davenport³, Karen W. Hegland¹

¹Department of Speech, Language, & Hearing Sciences, University of Florida, Gainesville, FL, USA; ²Brain Rehabilitation Research Center, Malcom Randall VA, Gainesville, FL, USA; ³Department of Physiological Sciences, University of Florida, Gainesville, FL, USA

E-mail address: aessman@ufl.edu (A.E. Brandimore)

Background. Voluntary cough (VC), or cough initiated on command, is dependent upon cortically mediated mechanisms (e.g. cognitive functioning, intention). In contrast, reflex cough (RC) is a brainstem-mediated sensorimotor response to a stimulus (i.e. penetrant/aspirant in the airway), that is modified cortically, or volitionally in the awake human. There is evidence to suggest that physiological differences exist between the RC and VC; however, the mechanistic and airflow differences between the cough types are not fully understood. Therefore, the aims of this study were to determine the lung volume, respiratory kinematic and airflow differences between RC and VC in healthy young adults. **Methods.** Twenty-five participants (14 female; 18–29 years) were recruited for this study. Participants were evaluated using respiratory inductance plethysmography calibrated with spirometry. Experimental procedures included: (1) respiratory calibration (rest breathing, vital capacity maneuvers, and iso-volume maneuvers), (2) three sequential voluntary cough trials, and (3) three reflex cough trials induced with 200 μ M capsaicin. Repeated measures ANOVA and linear regression were used to evaluate the differences between RC and VC. **Results.** Lung volume initiation (LVI; $p = .003$) and lung volume excursion (LVE; $p < .001$) were significantly greater for VC compared to RC. The rib cage and abdomen significantly influenced LVI for VC ($p < .001$); however, only the rib cage significantly impacted LVI for RC ($p < .001$). LVI significantly influenced peak expiratory flow rate for VC ($p = .029$), but not RC ($p = .610$). **Discussion.** Production of a RC results in significant lung volume, respiratory kinematic and airflow differences compared to VC. These findings likely reflect the influence of a perceived urge-to-cough prior to RC whereby detection of the sensory stimulus modifies motor aspects of the reflexive behavior. Further understanding of the urge-to-cough and the differences between RC and VC in older adults and in persons with dystussia (cough dysfunction) will be essential to facilitate the development of successful cough treatment paradigms.

Immediate efficacy of a school-based intervention for urban adolescents with undiagnosed asthma: A randomized control trial

Jean-Marie Bruzzese¹, Amarilis Cespedes¹, Sharon Kingston², Beverley J. Sheares³, Zhe Su¹, Hossein Sadeghi³, Meyer Kattan³, David Evans³

E-mail address: Jean-Marie.Bruzzese@nyumc.org (J.-M. Bruzzese)

¹NYU School of Medicine, New York, NY, USA; ²Dickinson College, Carlisle, PA, USA; ³Columbia University College of Physicians and Surgeons, New York, NY, USA

Background. Undiagnosed asthma has high prevalence and morbidity in adolescents. No intervention has specifically targeted undiagnosed adolescents. This study tests the immediate efficacy of Asthma Self-Management for Adolescents with Undiagnosed Asthma (ASMA-Undx), a school-based intervention to help adolescents obtain a clinical evaluation and diagnosis, and manage their symptoms. **Methods.** 399 urban, predominately Hispanic and African American adolescents with symptoms of moderate to severe persistent asthma, but no diagnosis, were randomized to ASMA-Undx or a control condition. ASMA-Undx consists of (1) an 8-week intervention delivered to students, which includes referral

Download English Version:

<https://daneshyari.com/en/article/7278411>

Download Persian Version:

<https://daneshyari.com/article/7278411>

[Daneshyari.com](https://daneshyari.com)