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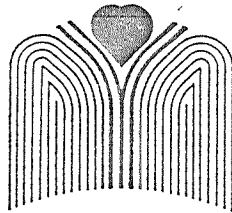
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EUROPEAN SOCIETY OF RESPIRATORY  
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PROCEEDINGS

RESPIRATORY SENSATION AND REHABILITATION PROGRAMS: A PROPOSAL FOR A NEW APPARATUS FOR RESISTIVE LOAD ADMINISTRATION TO BREATHING.

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A new device is shown which may be used to administer external inspiratory and/or expiratory resistive loads. The resistance circuit consists of a tube (3 cm ID) in which a diaphragm selects the resistances through an electronically controlled motor. The pressure-flow characteristics are linear over the flow rates used. All manouvers to change the resistances are hidden from the subject's view and may be performed in one minute. The resistor is placed in series to a computerized pneumotachograph used to assess respiratory pattern.

By means of this device we have performed a preliminary study on the ability to detect added resistive loads to breathing. Using open magnitude scaling we have observed (as well known) that the perceived magnitude of external added loads to breath follows Stevens' law that is the psychological magnitude grows as a power function of the added loads. Power function may be calculated and simultaneous recording of respiratory pattern allows both the subject to keep the same respiratory pattern and its changes by changing resistances to be studied. This device is simple to be operated and takes no influence on the attention processes of the subject minimizing the psychological effects of the manouvers on the subjective response.

Furthermore the simultaneous recording of respiratory pattern allows this device to be used in rehabilitative programs involving: 1) respiratory muscle training; 2) improving respiratory sensation in different respiratory diseases.