

**Martin H. Brutsche, Paul Grossman, Rebekka E. Müller, Jan Wiegand, Pello, Florent Baty and Willibald Ruch, "Impact of laughter on air trapping in severe chronic obstructive lung disease", *International Journal of COPD* 2008:3(1), 185–192.**

Summarized by Dr. Kareen Seidler

This study shows that smiling and light laughter can have a positive influence on lung disease. With patients suffering from COPD (chronic obstructive pulmonary disease), air can be trapped in the lungs. This leads to hyperinflation. Smiling and laughter can reduce the lung volume and thereby alleviate the symptoms.

Brutsche and his co-authors carried out a study with patients suffering from severe COPD. The patients participated in "humorous interventions" led by clown Pello, each of which lasted from 20 to 60 minutes. A clown is more effective than a humorous video for this purpose, since he can personally relate to the patients, respond to them individually and target his jokes accordingly.

The participating patients interrupted their normal breathing and inhalation therapy for the duration of the study. The study's results were positive. Even for patients with severe symptoms, laughing was not dangerous. On the contrary, the clown's intervention and the resulting smiling and laughter reduced hyperinflation and lung volume. However, the positive effect only lasted for about two hours.

The authors concluded that "a smiling-derived breathing technique might complement" other breathing techniques already in use for treating COPD (185).

### **So what exactly happens when we smile or laugh?**

We first exhale abruptly; afterwards our exhalation is repeatedly disrupted for periods of differing length. When we smile or laugh, we exhale considerably longer than we inhale. For laughing, we also use our voices, which means that additional muscles are activated. The respiratory system is under pressure and we use more oxygen. Occasionally, laughter can induce asthma attacks.

Smiling is a slightly more passive activity. Our abdominal muscles tense slightly, but rhythmically and we relax our diaphragm. The exhalation is also longer than the inhalation, but we don't use more oxygen as is the case for laughter.