

## New vibration sensor reduces Positional Sleep Apnea

Positive results in trial of combination therapy for Positional Sleep Apnea

**Positional Obstructive Sleep Apnea (POSA) can effectively be treated with an innovative sensor that is worn around the chest and trains patients by means of soft vibrations not to sleep on the back: The Sleep Position Trainer or the SPT by NightBalance. The combination with a custom-made mandibular repositioning appliance or MRA, a mouth prosthesis that brings the lower jaw forward during sleep, even improves the results. This is demonstrated by a new award-winning trial of the multidisciplinary team around sleep apnea and snoring at the Antwerp University Hospital (UZA) and the University of Antwerp, led by Professor Olivier Vanderveken.**

### Sleep apnea causes sleep disruption

Obstructive sleep apnea syndrome (OSAS) occurs during sleep when the upper airway collapses, causing more than 5 cessations of breathing per hour lasting at least 10 seconds. Severe snoring, excessive fatigue, memory disorders and irritability are the main symptoms of this chronic condition. Untreated OSAS can lead to heart and vascular diseases, diabetes, depressions and traffic accidents. 6 to 12% of adults suffer from this condition. Apart from continuous positive airway pressure (CPAP) therapy, treatment with a MRA, a mouth prosthesis that brings forward the lower jaw during sleep to clear the airway, is one of the non-surgical treatment options for OSAS.

### Tennis balls as a treatment option for positional sleep apnea

In half of all OSAS cases the supine sleep position is the cause. This is a condition called Positional Obstructive Sleep Apnea or POSA and it is estimated that about half a million Belgians suffer from it. In the past, attempts have been made to treat POSAS with the "tennis ball technique": inserting a tennis ball on the back side of the pyjamas. This approach was barely tolerated by the patients and could cause back problems. Patient compliance was insufficient so this technique ceased to be an option.

### New treatment with vibration sensor prevents supine sleeping position

An innovative therapy for POSAS was developed by NightBalance, a spin-off company of the Delft University of Technology in the Netherlands. The Sleep Position Trainer is a small and light device that is worn around the chest and contains an active sleep position sensor that measures the active sleep position of the patient and gradually trains him by means of soft vibrations not to sleep on his back. According to recent clinical trials in The Netherlands, this therapy is very effective and has high patient compliance.

*Prof. Vanderveken "the Sleep Position Trainer is an inventive and innovative positional therapy with promising clinical results both in reducing the severity of OSAS and in increasing patients' satisfaction coming with a remarkably high adherence to the therapy. To add the SPT to the therapeutic options for OSAS will clearly increase the overall effectiveness of OSAS treatment."*

### Comparative trial of treatment options

A multidisciplinary team led by professor Vanderveken (ENT and Sleep Center UZA) compared the effectiveness of MRA treatment with the SPT therapy in POSA patients. Both therapies were similarly effective: the SPT as well as the MRA reduces the average nightly breathing stops of 21 per hour both to only half of that number of events.

According to the study, the combination of SPT and MRA causes an even larger reduction of this index to a final score of 6 apneas per hour of sleep.

Furthermore, the trial demonstrates that the STP therapy counteracts the supine sleeping position.

Participants that slept an average of 30 % on their backs, reduced this number to 0% with the use of the SPT.

*Professor Vanderveken: "the comfort and the effectiveness of the combined treatment will enhance patient satisfaction and compliance."*

In Belgium the ENT specialist, the pulmonologist or neurologist can prescribe the Sleep Position Trainer at [www.nightbalance.be](http://www.nightbalance.be). In The Netherlands the SPT is reimbursed.

Reference of the awarded publication in the international journal "Sleep and Breathing" :  
Dijlts M, Vroegop AV, Verbruggen AE, Wouters K, Willemen M, De Backer WA, Verbraecken JA, Van de Heyning PH, Braem MJ, de Vries N, Vanderveken OM. A promising concept of combination therapy for positional obstructive sleep apnea. Sleep Breath. 2015 May;19(2):637-44. doi: 10.1007/s11325-014-1068-8.