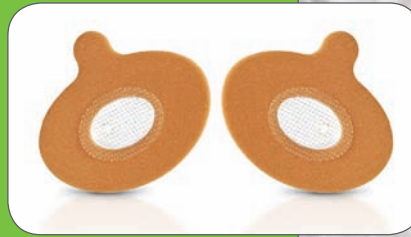


# Case Study



## Treating Obstructive Sleep Apnea (OSA) using Home Sleep Testing and Provent® Sleep Apnea Therapy

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Dr. Berland's expertise is in the diagnosis and treatment of patients with sleep-related breathing disorders. In his capacity as Medical Director of Ultimate Health Sleep Disorders Center and founding director of the North Shore Pulmonary Associates Sleep Apnea Program, he has read thousands of sleep studies (nocturnal polysomnography) and treated thousands of patients with sleep-breathing disorders.

### INTRODUCTION

Patient MT is a high-functioning 75 year-old, 216 lb. woman who presented with chronic fatigue and loud snoring which was bothersome to family and friends. She was subsequently diagnosed with moderate-to-severe OSA, and also has a history of hyperlipidemia, hyperthyroidism and non-insulin dependent diabetes.

### HISTORY: DIAGNOSIS AND PRIOR TREATMENT

MT presented with loud snoring and excessive daytime sleepiness in August 2004 and underwent nocturnal polysomnography that confirmed moderate-to-severe OSA with an AHI of 30 and 61 while supine. Over the next several years, she tried various treatment options including:

- > CPAP therapy
- > Two different mandibular advancement devices and
- > Lifestyle changes such as diet modification, exercise and weight loss

She discontinued usage of CPAP therapy, which she found intolerable, and was only partially responsive to oral appliances with which she also struggled. She had some benefit from her lifestyle changes; however she ultimately regained weight.

In October 2008, home sleep testing with the Watch-PAT™ Portable Sleep Apnea Diagnostic System was performed and confirmed moderate OSA with an AHI of 26.6. (See Figure 1.)

### ABOUT PROVENT THERAPY

Provent Therapy is a disposable, nightly-use, prescription device that incorporates a novel Micro-Valve design that is placed over the nostrils and secured with hypoallergenic adhesive. It is indicated for the treatment of obstructive sleep apnea (OSA) and works across mild, moderate, and severe OSA.

**PROVENT®**  
sleep apnea therapy

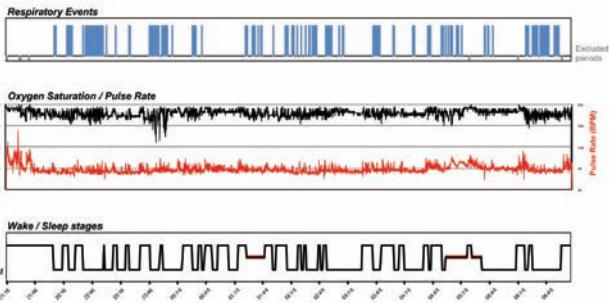
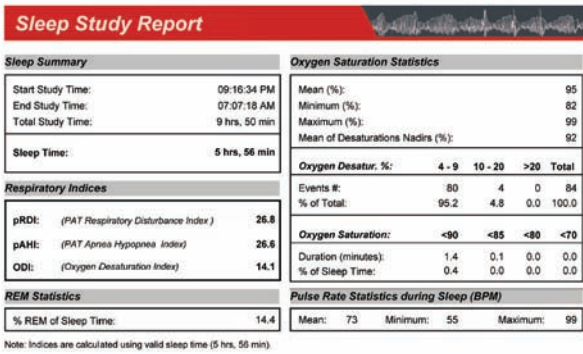


Figure 1. Diagnostic Sleep Study Report October 2008

Diffuse respiratory events and sawtooth oximetry pattern are consistent with OSA in addition to significant sleep fragmentation. No positional or snoring data is available for this study.

## NEW TREATMENT APPROACH

In July 2009, MT, weighing 225 lbs., continued to present with loud snoring, daytime sleepiness and inability to tolerate earlier treatment alternatives. She inquired about new options. She was prescribed Provent Sleep Apnea Therapy and underwent home sleep testing with a Watch-PAT™ 100 Polysomnography System to immediately confirm treatment efficacy. (See Figure 2.)

MT experienced a nearly complete resolution of respiratory events and snoring while non-supine and a marked improvement in sleep continuity. She also reported feeling more energized.

She continues to use Provent Therapy on a nightly basis. She believes that it fits her home life as well as her active lifestyle which includes travel, dog-sledding, zip-lining and other adventures.

## SUMMARY

This study highlights an example of Provent Therapy becoming the mainstay treatment for a patient who has failed traditional OSA treatment options. Efficacy with the Provent Device was demonstrated immediately after trial of the device using home monitoring with the Watch-PAT 100 System and patient's subjective response. Her initial AHI of 26.6 was reduced to 6.9 and the fatigue and snoring were resolved. Adjunctive diet and exercise programs continue to be recommended as well as non-supine positioning.



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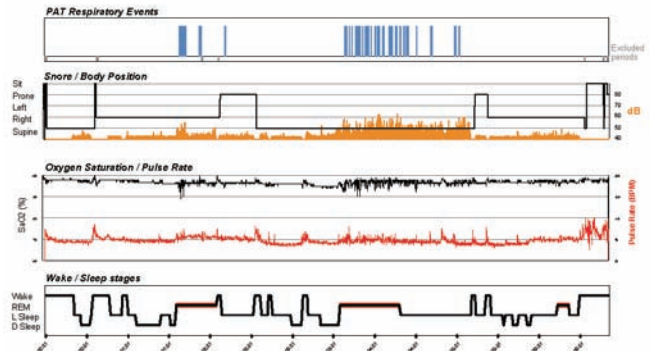
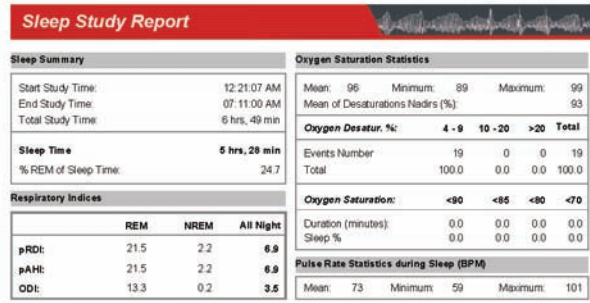


Figure 2. Sleep Study Report July 2009 using Provent Device

Fewer respiratory events, improved oximetry and improved sleep continuity are observed while on Provent Therapy. Almost complete elimination of sleep-disordered breathing is observed in non supine sleeping position.