

# Exhibit D-1: Expanded Patient Case Study (1 of 5)

## Application for Diplomate, American Board of Craniofacial Dental Sleep Medicine



Candidate Name:	[REDACTED]
Date:	11/15/2013
Patient Name (or code):	DRG2421
Date Treatment Began:	5/23/2012 (in our office)
Date Treatment Ended:	1/9/2013 (with annual follow-ups thereafter)

AMERICAN BOARD OF  
CRANIOFACIAL DENTAL SLEEP MEDICINE  
12100 Sunset Hills Road, Suite 130  
Reston, VA  
20190  
USA  
Phone: 800-322-8651 or 703-234-4142  
Fax: 703-435-4390  
www.abcdsm-us.org

Patient records for expanded case studies must include documentation of the diagnosis of a sleep disorder by a board-certified physician (MD, DO or PhD) plus pre- and post-treatment PSGs, and encompass treatment to completion of said patients by the candidate.

The purpose of the Expanded Patient Case Studies is to establish to the satisfaction of the ABCDSM Examination Committee the candidate's ability, proficiency and exceptional skill in a broad spectrum of treatment procedures, which are encompassed within the scope of Craniofacial Dental Sleep Medicine practice.

### **Typed Case Study Summary/Overview**

(i.e., patient's chief complaint, history of present illness, pertinent past dental/medical history, clinical and radiographic examination findings, diagnosis, treatment results and case disposition. The specific FDA-approved appliance used in treatment must be identified and the rationale for its selection must be provided. (Note: Cases involving the use of appliances that are not FDA-approved shall not be accepted.)

### **Dental/Medical History**

(i.e., a thorough review of the patient's past and current history)

### **Clinical Examination Results**

(i.e, the patient's chief complaint, clinical signs and symptoms, a description of the patient's general condition at the inception of treatment, etc.)

### **Pre-Treatment PSG**

(i.e., a laboratory or home sleep study, read and scored by a board-certified sleep physician, with clear documentation of the diagnosis)

### **Pre-Treatment Diagnostic Images**

- a. CBCT, panoramic or full mouth series
- b. Three (3) intraoral images of the patient's occlusion: 1 anterior view, 1 right lateral view plus 1 left lateral view
- c. Photographs of casts/study models as follows:
  - 1 photograph of full upper and lower casts/study models
  - 3 pre-treatment photographs of articulated models in centric occlusion: 1 anterior view, 1 right lateral view, plus 1 left lateral view
  - 3 pre-treatment photographs of casts/study models with bite registration in place: 1 anterior view, 1 right lateral view, plus 1 left lateral view
- d. A photo of the patient's bite registration on articulated casts/models
- e. One (1) anterior view of the patient's dentition with the appliance properly fitted and placed.

**Exhibit D-1: Expanded Patient Case Study (1 of 5)**  
*Application for Diplomate,  
American Board of Craniofacial Dental Sleep Medicine*

Print Form



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Date:	11/15/2013

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**Treatment Plan**

(i.e., a recommended plan of treatment with alternative plans as appropriate)

**Clinical Procedures**

(i.e., a presentation of the clinical procedures for the case)

**Post-Treatment PSG**

(i.e., a laboratory or home sleep study, read and scored by a board-certified sleep physician)

**Documentation of Follow-Up Appointments**

(at least 3 follow-up appointments, the last of which must be at least 3 months after the date of appliance calibration and delivery)

**General Documentation**

(typewritten documentation should be clear and precise; the quality of imaging and other data must be sufficient to derive the information recorded)

## I. Case Study Summary/Overview

A 50-year old married Caucasian male living in [REDACTED]. My initial encounter with the patient was an evaluation on April 2, 2012. The patient was referred by his dentist, Dr. [REDACTED] [REDACTED], for an alternative to his CPAP machine for the treatment of sleep apnea. He had another appliance made by another dentist that was broken and determined to be un-repairable. He never had a PSG titration study with this appliance. We also received an Rx for an oral appliance from the patient's primary care physician, Dr. [REDACTED] [REDACTED].

**Chief Complaints:** CPAP intolerance due to mask leaks, inability to get the mask to fit properly, noise disturbing sleep and/or bed partner's sleep, CPAP restricted movements during sleep and cumbersome. The patient also had complaints of fatigue and his jaw and tooth alignment has changed due to the cracking appliance.

## II. Dental/Medical History

**History of Present Illness:** The patient indicated that he presently has nasal allergies and sleep apnea. He takes Concerta for ADHD, Hydrocholorthiazide<sup>3</sup> for blood pressure and Niaspan for cholesterol. According to a PSG report and findings done at [REDACTED] [REDACTED] Hospital on 1/25/2006, the patient was diagnosed by a sleep physician with sleep apnea. He had an AHI of 45.8/hr. His lowest oxygen saturation was 73%, and he spent 33% of total sleep time under 90%. His ESS score completed on 3/30/12 was 4.

**Past Medical History:** The patient denies any significant past medical history. The patient stated he had nasal surgery, tonsillectomy, uvulectomy, ganglion cyst on his left hand and mesh put in his abdomen.

*See also:      **Appendix A: Sleep Questionnaire**  
                  **Appendix B: Medical History Questionnaire***

## III. Clinical (and Radiographic) Examination Results

The patient's blood pressure was initially 137/82, pulse 93, temperature 97.9, neck measurement 18 inches, and a BMI of 36.02. Oral examination revealed a scalloped tongue and missing tooth #30. The patient has an overbite of 0 and an overjet of -4. He has a Class III Division 1 dental relationship on the right and left. There was a lack of posterior contact and no anterior contact. The patient had open contact between teeth 18-19, 19-20, 20-21, 21-22, 26-27, and 27-28. Airway evaluation revealed a scalloped tongue

### **III. Clinical Examination Results (*continued*)**

and a level III (high) tongue. His swallow is forced. A Mallampati airway inspection showed a Class III airway. The tonsils were absent. Patient's uvula was absent. Manual palpation revealed muscles and facial anatomical structures were within normal limits. Clinical and palpation examination revealed crepitus upon closing on the right and crepitus upon opening on the right. Mandibular range of motion measurements revealed maximum interincisal opening of 54 mm, maximum protrusive of 15 mm, left lateral excursion of 11 mm, right lateral excursion of 10 mm, deflection to left of 2 mm and 20CEJ. Jaw measurements have been noted in professional literature as a 42-52 mm average opening and average lateral measurements of 9-11 mm. Rhinometer nasal screening indicated that both the left and right side are restricted. Nasal spray improved, but did not normalize the nasal airway. Pharyngometer airway screening indicated that the stability of his airway has more collapse than most people. The size of his airway is a little small. The best position would be 6mm 4mm anterior (this is his normal bite). We will test him at this position and bring him forward if needed and as well as open him more vertically if needed. The pano was within normal limits.

*See also: Appendix C: History/Exam/Workup*

### **IV. Pre-Treatment PSG**

**Diagnosis:** Per overnight polysomnography on January 25, 2006:

1. Sleep Apnea
  - Sleep Efficiency: 87%
  - AHI: 45.8 (58/hr on his back)
  - Lowest O2: 73%; 33% TST <90%

*See also: Appendix D: Pre-Treatment PSG*

### **V. Pre-Treatment Diagnostic Images**

See *Appendix E: Pre-Treatment Diagnostic Images* for:

- Study Models
- Study Models with Bite Registration
- Clinical Patient Photos

## VI. Treatment Plan

Initial therapy was with a CPAP. He received an oral appliance from another dentist, but the appliance was a couple of years old and was starting to crack and break. It was also altering his bite. The patient did not tolerate the CPAP due to mask leaks, inability to get the mask to fit properly, noise disturbing sleep and/or bed partner's sleep, CPAP restricted movements during sleep and cumbersome. The patient experiences more apneic events while lying on his back. He may benefit from sleep positional therapy and we discussed this with him. We discussed the risk of not treating sleep apnea and explained the advances and disadvantages for all treatment options. We discussed that although we will first recommend non-surgical options for treatment, it is possible that some patient's may still benefit from palatal or nasal surgery.

Oral appliance therapy was initiated on 5/23/12. We reviewed with the patient how to titrate the appliance at home and explained how to complete morning exercises so patient's posterior teeth continue to fit together. The device was subjectively titrated over the next few months at which he indicated he was wearing the appliance every night, it was comfortable, he was satisfied with the appliance, his energy level is improved, he is sleep better, his sleep partner initially heard a little snoring, but this did go away after the appliance was titrated more, he wakes up feeling refreshed and he does not have morning headaches. On 5/30/12 we left a message for the patient to let us know how he was doing with the appliance and he returned our call on 6/1/12. He stated that he felt like the bottom part of the appliance was getting loose. On 6/4/12 we saw the patient for his fit issue. The appliance was tightened and the patient left feeling comfortable with the fit.

After insertion of the appliance, the patient did 5 home sleep screenings to assess the effectiveness of the appliance. He was also seen for 4 follow up visits. The patient had a home sleep screening done on 8/23/12, which showed that his apnea is worse on his back and the test showed that he was virtually on his back the whole time. The patient confirmed that he generally sleeps on his back, so we recommend a positional therapy device. This was delivered on 9/27/12 and he did another home sleep screening on 10/4/12 with the appliance and the positional device. The results showed that his sleep apnea was cleared and his oxygen looked great too. There was some snoring noted. We recommended trying Afrin nasal spray for a couple of days or using breath right strips. If neither one of these worked, we could try to close his mouth using an oral shield. We monitored him again on 11/08/12 and his sleep partner said that he wasn't really snoring. At this point, we sent the patient for a PSG oral appliance titration study.

A PSG oral appliance titration was performed on December 17, 2012. With the positional device combined with the oral appliance with 12 advancements there was an AHI of 1.4/hr and the lowest oxygen saturation was 90%. The patient was seen again on 1/9/13 to go over the PSG results.

The treatment plan agreed upon by me, the sleep physician and the patient is to continue oral appliance therapy at the final level of adjustment with the positional device. The

## **VI. Treatment Plan (*continued*)**

patient is scheduled for a 6-month follow up to re-evaluate the appliance, where we will most likely perform another home sleep screening or PSG with the appliance. The patient will then be scheduled annually once a year. If there are any changes or problems in the meantime, the patient was instructed to contact our office. An end of treatment letter was sent to the patient's primary care physician informing them of their successful treatment.

## **VII. Clinical Procedures**

*See also: "Clinical (and Radiographic) Examination Results" and "Treatment Plan," above plus Appendix G: Clinical Notes.*

Oral appliance therapy was initiated on 5/23/12. There were various oral appliance designs that were acceptable to treat this patient's OSA. I selected the Herbst appliance because it allows for more mandibular movement and allows more room for his tongue. It is FDA approved and research supports its effectiveness.

We reviewed with the patient how to titrate the appliance at home and explained how to complete morning exercises so patient's posterior teeth continue to fit together. The device was subjectively titrated over the next few months at which he indicated he was wearing the appliance every night, it was comfortable, he was satisfied with the appliance, his energy level is improved, he is sleep better, his sleep partner initially heard a little snoring, but this did go away after the appliance was titrated more, he wakes up feeling refreshed and he does not have morning headaches.

On 5/30/12 we left a message for the patient to let us know how he was doing with the appliance and he returned our call on 6/1/12. He stated that he felt like the bottom part of the appliance was getting loose. On 6/4/12 we saw the patient for his fit issue.

After insertion of the appliance, the patient did 5 home sleep screenings to assess the effectiveness of the appliance. He was also seen for 4 follow up visits.

The patient had a home sleep screening done on 8/23/12, which showed that his apnea is worse on his back and the test showed that he was virtually on his back the whole time. The patient confirmed that he generally sleeps on his back, so we recommend a positional therapy device. This was delivered on 9/27/12 and he did another home sleep screening on 10/4/12 with the appliance and the positional device.

## **VII. Clinical Procedures** *(continued)*

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A PSG oral appliance titration was performed on December 17, 2012. With the positional device combined with the oral appliance with 12 advancements there was an AHI of 1.4/hr and the lowest oxygen saturation was 90%. The patient was seen again on 1/9/13 to go over the PSG results.

The patient is scheduled for a 6-month follow up to re-evaluate the appliance, where we will most likely perform another home sleep screening or PSG with the appliance.

As noted we will monitor the appliance again in 6 months and then annually once a year after that. Future considerations will be for compliance, changes in the level of OSA, patient comfort, and need for further titration of the device. We will continue to keep the patient's physician informed of his treatment and if there is a need for further overnight effectiveness evaluations.

*See also: Appendix G: Clinical Notes*

## **VIII. Post-Treatment PSG**

A PSG oral appliance titration was performed on December 17, 2012. With the positional device combined with the oral appliance with 12 advancements there was an AHI of 1.4/hr and the lowest oxygen saturation was 90%. The patient was seen again on 1/9/13 to go over the PSG results.

*See Appendix F: Oral Appliance Titration Study*

## **IX. Documentation of Follow-Up Appointments**

A Herbst appliance was delivered on 5/23/12.

*See Appendix G: Clinical Notes, 6/1/2-13 – 10/4/2013* for documentation of follow-up appointments, including completed Progress Questionnaires and MediByte studies.

**IX. Documentation of Follow-Up Appointments** *(continued)*

As noted, we will monitor the appliance again in 6 months and then annually once a year after that. Future considerations will be for compliance, changes in the level of OSA, patient comfort, and need for further titration of the device. We will continue to keep the patient's physician informed of his treatment and if there is a need for further overnight effectiveness evaluations.

**X. General Documentation**

Future considerations will be for compliance, changes in the level of OSA, patient comfort, and need for further titration of the device.

We will continue to keep the patient's physician informed of his treatment and if there is a need for further overnight effectiveness evaluations.



**APPENDIX A:**  
**SLEEP QUESTIONNAIRE/MEDICAL HISTORY**

**Appendix A:  
Sleep Questionnaire/Medical History (page 1 of 3)**

Version: SLPQV2

**Sleep Consultation**

OFFICE USE  
Patient ID: [REDACTED]

NAME: [REDACTED]

CURRENT DATE: 3/29/2012

DATE OF BIRTH: [REDACTED]

MALE

FEMALE

Patient presents	
Referring Physician:	Contact ID:

**WHAT ARE THE CHIEF COMPLAINTS FOR WHICH YOU ARE SEEKING TREATMENT?**

Please **number** your complaints with #1 being the most severe, #2 the next most severe, etc.

Number

#1 = the most severe symptom

5 CPAP intolerance *02*

Difficulty falling asleep

14 Fatigue *23*

Frequent heavy snoring

Frequent heavy snoring which affects the sleep of others

Insomnia

Gasping when waking up

Nighttime choking spells

Number

#1 = the most severe symptom

Significant daytime drowsiness

Sleepiness while driving

Witnessed apneic events

Morning Headache

Leg movements/Restless legs

Teeth Grinding

Limited Mouth Opening

Other: Write In

*1* My Oral Appliance is Cracking and It has changed my alignment.

**Epworth Sleep Questionnaire**

How likely are you to doze off or fall asleep in the following situations?

No chance of dozing	Slight chance of dozing	Moderate chance of dozing	High chance of dozing	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sitting and reading
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Watching TV
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sitting inactive in public place (e.g. a theater or a meeting)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	As a passenger in a car for an hour without a break

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**Appendix A:  
Sleep Questionnaire/Medical History (page 2 of 3)**

### Epworth Sleep Questionnaire

How likely are you to doze off or fall asleep in the following situations?

No chance of dozing	Slight chance of dozing	Moderate chance of dozing	High chance of dozing	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lying down to rest in the afternoon when circumstances permit
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sitting and talking to someone
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sitting quietly after a lunch without alcohol
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	In a car, while stopped for a few minutes in traffic

### CPAP Intolerance (Continuous Positive Airway Pressure device)

If you have attempted treatment with a CPAP device, but could not tolerate it please fill in this section:

<input checked="" type="checkbox"/> Mask leaks	<input checked="" type="checkbox"/> CPAP restricted movements during sleep	<input type="checkbox"/> An unconscious need to remove the CPAP
<input checked="" type="checkbox"/> Inability to get the mask to fit properly	<input type="checkbox"/> CPAP does not seem to be effective	<input type="checkbox"/> Does not resolve symptoms
<input type="checkbox"/> Discomfort from headgear	<input type="checkbox"/> Pressure on the upper lip causing tooth related problems	<input type="checkbox"/> Noisy
<input type="checkbox"/> Disturbed or interrupted sleep	<input type="checkbox"/> Latex allergy	<input checked="" type="checkbox"/> Cumbersome
<input checked="" type="checkbox"/> Noise disturbing sleep and/or bed partner's sleep	<input type="checkbox"/> Claustrophobic associations	

Other

<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

### Other Therapy Attempts

include:

<input type="checkbox"/> Dieting	<input checked="" type="checkbox"/> CPAP
<input type="checkbox"/> Weight loss	<input type="checkbox"/> BiPAP
<input type="checkbox"/> Surgery (Uvuloplasty)	<input checked="" type="checkbox"/> Uvulectomy (but continues to have symptoms)
<input checked="" type="checkbox"/> Surgery (Uvulectomy)	<input type="checkbox"/> Uvuloplasty (but continues to have symptoms)
<input type="checkbox"/> Pillar procedure	
<input type="checkbox"/> Smoking cessation	

### History Of Treatment

Practitioner's Name	Specialty	Treatment	Approximate Date
<input type="text"/>	MaxoFacial	Gave me Oral Appliance	2.5 years ago
<input type="text"/>	Heart	Had me tested for Sleep Apenia and received CPAP	2007
<input type="text"/>	General Practioner	<input type="text"/>	Yearly
Military Doctor	ENT	Uvoplasty and straightened Diviated Septum	2002
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Appendix A:  
Sleep Questionnaire/Medical History (page 3 of 3)**

<b>History Of Treatment</b>			
Practitioner's Name	Specialty	Treatment	Approximate Date

<b>Patient Signature</b>	
<small>I authorize the release of a full report of examination findings, diagnosis, treatment program etc., to any referring or treating dentist or physician. I additionally authorize the release of any medical information to insurance companies or for legal documentation to process claims. I understand that I am responsible for all charges for treatment to me regardless of insurance coverage.</small>	
Patient Signature:	Date: <u>03/14/2012</u>
<small>I certify that the medical history information is complete and accurate.</small>	
Patient Signature:	Date: <u>2 Apr 2012</u>

**APPENDIX B:**  
**PHYSICAL EXAMINATION**

**Appendix B:  
Medical History (page 1 of 3)**

**Medical History Questionnaire**

OFFICE USE  
Patient ID: [REDACTED]

NAME: [REDACTED]

FORM DATE: 3/29/2012 12:00:00 AM

DATE OF BIRTH: [REDACTED]

**Allergens**

- |                                             |                                            |                                         |
|---------------------------------------------|--------------------------------------------|-----------------------------------------|
| <input type="checkbox"/> No known allergens | <input type="checkbox"/> Iodine            | <input type="checkbox"/> Plastic        |
| <input type="checkbox"/> Antibiotics        | <input type="checkbox"/> Latex             | <input type="checkbox"/> Sedatives      |
| <input type="checkbox"/> Aspirin            | <input type="checkbox"/> Local anesthetics | <input type="checkbox"/> Sleeping pills |
| <input type="checkbox"/> Barbiturates       | <input type="checkbox"/> Metals            | <input type="checkbox"/> Sulfa drugs    |
| <input type="checkbox"/> Codeine            | <input type="checkbox"/> Penicillin        |                                         |

Pfenagren  
Dust & Dust Mites

**Current Medications**

Medicine	Dosage/Frequency	Reason
Concerta		ADHD
Hydrochlorothiazide		Blood pressure
Niaspan		Cholesterol

Other

**Medical History**

Significant Medical Condition	Current		Date / Note	Significant Medical Condition	Current		Date / Note
	Never	Past			Never	Past	
<input type="checkbox"/> Acid reflux	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/> Bruising easily	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Anemia	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/> Cancer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Arteriosclerosis	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/> Chemotherapy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Arthritis	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/> Chronic fatigue	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Asthma	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/> Chronic pain	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Autoimmune disorder	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/> COPD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Bleeding easily	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/> Depression	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Blood pressure - High	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/> Diabetes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Blood pressure - Low	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/> Difficulty sleeping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

**Appendix B:  
Medical History (page 2 of 3)**

Medical History								
Significant	Medical Condition	Current		Date / Note	Significant	Medical Condition	Current	
		Never	Past				Never	Past
<input type="checkbox"/>	Dizziness	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Muscular dystrophy	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Emphysema	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Nasal allergies	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Epilepsy	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Neuralgia	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Fibromyalgia	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Mood disorder	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Glaucoma	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Osteoarthritis	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Gout	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Osteoporosis	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Heart attack	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Parkinson's disease	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Heart disorder	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Pregnancy	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Heart murmur	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Psychiatric care	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Heart pacemaker	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Radiation treatment	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Heart valve replacement	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Rheumatic fever	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Hemophilia	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Rheumatoid arthritis	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Hepatitis	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Sinus problems	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Hypoglycemia	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Sleep apnea	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Immune system disorder	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Stroke	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Kidney problems	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Tendency for ear infections	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Liver disease	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Thyroid disorder	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Meniere's disease	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Tuberculosis	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Ischemic heart disease (reduced blood supply)	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Tumors	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Mitral valve prolapse	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Urinary disorders	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Multiple sclerosis	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Prior orthodontic treatment	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other								
	Medical Condition	Current	Past	Date / Note	Medical Condition	Current	Past	Date / Note
<input type="checkbox"/>	ADHD	<input type="checkbox"/>	<input type="checkbox"/>					

Confidential Medical History								
Significant	Medical Condition	Current		Date / Note	Significant	Medical Condition	Current	
		Never	Past				Never	Past
<input type="checkbox"/>	Recreational drugs	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
<input type="checkbox"/>	HIV/AIDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>					

**Appendix B:  
Medical History (page 3 of 3)**

<b>Surgical Operations</b>		
<input type="checkbox"/> Appendectomy <input type="checkbox"/> Back <input type="checkbox"/> Ear <input type="checkbox"/> Gallbladder Other <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-top: 5px;">Ganglian Cyst Left Hand</div>	<input type="checkbox"/> Heart <input type="checkbox"/> Hernia repair <input type="checkbox"/> Lung <input checked="" type="checkbox"/> Nasal	<input type="checkbox"/> Thyroid <input checked="" type="checkbox"/> Tonsillectomy <input checked="" type="checkbox"/> Uvulectomy <input type="checkbox"/> Periodontal <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-top: 5px; margin-left: auto;">Mesh put in abdomen</div>

<b>Family History</b>		
Has any member of your family (parent, sibling, or grandparent) had:		
<input checked="" type="checkbox"/> Cancer <input type="checkbox"/> Heart disease <input checked="" type="checkbox"/> Diabetes <input checked="" type="checkbox"/> High blood pressure	<input checked="" type="checkbox"/> Stroke <input type="checkbox"/> Sleep disorder <input checked="" type="checkbox"/> Obesity <input type="checkbox"/> Thyroid disorder	<input checked="" type="checkbox"/> Father snores <input type="checkbox"/> Mother snores <input type="checkbox"/> Father has sleep apnea <input type="checkbox"/> Mother has sleep apnea

<b>Social History</b>		
Patient's Occupation: <span style="border: 1px solid black; padding: 2px;">Government Contractor</span>	Employer: <span style="border: 1px solid black; padding: 2px;">SAIC</span>	
Tobacco Use: Cigarettes <input checked="" type="checkbox"/> Never smoked	<input type="checkbox"/> Current smoker	<input type="checkbox"/> Quit
	# of packs per day: <span style="border: 1px solid black; padding: 2px;">0</span>	When did you quit? <div style="border: 1px solid black; width: 100px; height: 20px;"></div>
	# of years: <span style="border: 1px solid black; padding: 2px;">0</span>	
Other tobacco: <input type="checkbox"/> Pipe <input type="checkbox"/> Cigar <input type="checkbox"/> Snuff <input type="checkbox"/> Chew		
Alcohol Use: Do you drink alcohol? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, # of drinks per week: <span style="border: 1px solid black; padding: 2px;">1</span>		
Caffeine Intake: <input type="checkbox"/> None <input checked="" type="checkbox"/> Coffee/Tea/Soda # of cups per day: <span style="border: 1px solid black; padding: 2px;">1</span>		
Additional: <input type="checkbox"/> Regular exercise		

<b>Patient Signature</b>	
I authorize the release of a full report of examination findings, diagnosis, treatment program etc., to any referring or treating dentist or physician. I additionally authorize the release of any medical information to insurance companies or for legal documentation to process claims. I understand that I am responsible for all charges for treatment to me regardless of insurance coverage.	
Patient Signature: <span style="background-color: black; color: black;">[REDACTED]</span>	Date: <span style="border: 1px solid black; padding: 2px;">2/4/2012</span>
I certify that the medical history information is complete and accurate.	
Patient Signature: <span style="background-color: black; color: black;">[REDACTED]</span>	Date: <span style="border: 1px solid black; padding: 2px;">2/4/2012</span>



**APPENDIX C:**  
**HISTORY/EXAM/WORKUP**

# History/Exam/Workup

OFFICE USE  
Patient ID: [REDACTED]

NAME: [REDACTED]

CURRENT DATE: 4/2/2012

DATE OF BIRTH: [REDACTED]

MALE

FEMALE

## Vital Data

Blood Pressure

Pulse

Neck Measurement (inches)

Temperature

Other

## Body Mass Index

Height  Feet  Inches Weight (lbs.)  BMI (From computer screen)

## Adjusted Neck Circumference

Neck measurement in inches  Or centimeters

The Patient:  has hypertension (+4)  
 is a habitual snorer (+3)  
 is reported to choke or gasp most nights (+3)

Score:   
(From computer screen)

## Oral Examination Revealed:

Within Normal Limits

Scalloped tongue

Overbite

Bruxism

Overjet

Missing teeth # (specify)

Other

## Dental Relationship

RIGHT

LEFT

Class	Division
<input type="checkbox"/> I (Normal)	<input checked="" type="checkbox"/> 1
<input type="checkbox"/> II (Retrognathic) (Retruded lower jaw)	<input type="checkbox"/> 2
<input checked="" type="checkbox"/> III (Prognathic) (Protruded lower jaw)	

Class	Division
<input type="checkbox"/> I (Normal)	<input checked="" type="checkbox"/> 1
<input type="checkbox"/> II (Retrognathic) (Retruded lower jaw)	<input type="checkbox"/> 2
<input checked="" type="checkbox"/> III (Prognathic) (Protruded lower jaw)	

Additional Note: Lack of posterior contact. No anterior contact.

## Inter-Proximal Contact Prior to Oral Appliance Therapy




Complete the following sentences as needed. Example: "The patient had no contact between teeth 1 and 2 and 7 and 8."

The patient had	open	contact between teeth	18-19, 19-20, 20-21, 21-22, 26-27, 27-28
The patient had	very open	contact between teeth	
The patient had	open	contact between teeth	

### Airway Evaluation

Examination of the tongue showed:

- |                                                     |                                   |                                               |
|-----------------------------------------------------|-----------------------------------|-----------------------------------------------|
| <input type="checkbox"/> Ankyloglossia (tongue-tie) | <input type="checkbox"/> Enlarged | <input checked="" type="checkbox"/> Scalloped |
| <input type="checkbox"/> Coated                     | <input type="checkbox"/> Reddened | <input type="checkbox"/> Tongue thrust        |

		
<input type="checkbox"/> Low	<input type="checkbox"/> Median	<input checked="" type="checkbox"/> High
Top of tongue at the occlusal plane	Top of tongue moderately above occlusal plane	Top of tongue markedly above the occlusal plane

Within Normal Limits    Other

### Swallow is:






Forced                       Reversed                       Lateral  
 Other    Within Normal Limits

### Mallampati Classification

			
<input type="checkbox"/> Class I	<input type="checkbox"/> Class II	<input checked="" type="checkbox"/> Class III	<input type="checkbox"/> Class IV

### Tonsils

Absent                       Obstructive                       Purulent  
 Present

				
<input checked="" type="checkbox"/> Grade 0	<input type="checkbox"/> Grade 1	<input type="checkbox"/> Grade 2	<input type="checkbox"/> Grade 3	<input type="checkbox"/> Grade 4

Other

### Uvula

Elongated                       Enlarged  
 Absent                       Obstructs airway  
 Edematous

**Uvula**

Within Normal Limits

Other

**Soft Palate**

Firm  Redundant pharyngeal tissue

Loss of tone

Obstructs airway

Within Normal Limits

Other

**Tori**

A small torus was present on maxilla  A small mandibular torus was present

A moderate maxillary torus was present  A moderate mandibular torus was present

A large torus was present on maxilla  A large mandibular torus was present

**Muscle Palpation**

0: No Tenderness      1: Mild Tenderness      2: Moderate Pain      3: Severe Pain

Left		Right			Left		Right		
0	1	2	3		0	1	2	3	
0	1	2	3	TMJ lateral palpation	0	1	2	3	Pterygoids
0	1	2	3	TMJ posterior palpation	0	1	2	3	Lateral Pterygoids
0	1	2	3	Anterior Temporalis	0	1	2	3	Temporal Tendon
0	1	2	3	Middle Temporalis	0	1	2	3	Splenius Capitis
0	1	2	3	Posterior Temporalis					
0	1	2	3	Masseter					

Within Normal Limits

**Joint Evaluation**

Examination Type

Doppler

Clinical

Palpation

Computerized sonography

<input type="checkbox"/> L <input checked="" type="checkbox"/> R <input type="checkbox"/> B	Crepitus upon closing	
<input type="checkbox"/> L <input checked="" type="checkbox"/> R <input type="checkbox"/> B	Crepitus upon opening	
<input type="checkbox"/> L <input type="checkbox"/> R <input type="checkbox"/> B	Early closing click	<input type="checkbox"/> L <input type="checkbox"/> R <input type="checkbox"/> B
<input type="checkbox"/> L <input type="checkbox"/> R <input type="checkbox"/> B	Early opening click	<input type="checkbox"/> L <input type="checkbox"/> R <input type="checkbox"/> B
<input type="checkbox"/> L <input type="checkbox"/> R <input type="checkbox"/> B	Late closing click	<input type="checkbox"/> L <input type="checkbox"/> R <input type="checkbox"/> B
<input type="checkbox"/> L <input type="checkbox"/> R <input type="checkbox"/> B	Late opening click	
<input type="checkbox"/> L <input type="checkbox"/> R <input type="checkbox"/> B	Lateral click	
<input type="checkbox"/> L <input type="checkbox"/> R <input type="checkbox"/> B	Middle closing click	
<input type="checkbox"/> L <input type="checkbox"/> R <input type="checkbox"/> B	Middle opening click	
<input type="checkbox"/> L <input type="checkbox"/> R <input type="checkbox"/> B	No reproducible click	

Cotton Rolls:

No Change

Diminishes sound

Eliminates sound

---

Jaw A/P:

Yes  No       Diminishes sound

Yes  No       Eliminates sound

## Joint Evaluation

Within Normal Limits

Other Items

## Range of Motion

54

mm Maximum interincisal opening

2

mm Deflection to left

15

mm Maximum protrusive

mm Deflection to right

11

mm Left lateral excursion

Normal mandibular midline

10

mm Right lateral excursion

Normal maxillary midline

mm Deviation to left

20

CEJ/Shim

mm Deviation to right

Within Normal Limits

## General (Constitutional)

Yes  No

Well developed

Yes  No

Well nourished

Yes  No

Acute distress

Communications/voice quality

Other

Within Normal Limits

## Head and Face

Yes  No

Sinus tenderness

Yes  No

Salivary glands within normal limits

Yes  No

Scars, lesions, masses

Other

Patient has a scar on his chin.

Within Normal Limits

## Eyes

Yes  No

PERRLA (pupils are equal, round, reactive to light and accommodation)

Yes  No

Motility/gaze unremarkable

Other

Within Normal Limits

## Neck

Yes  No

Scars, lesions, masses

### Neck

Yes  No Symmetry/tracheal position unremarkable

Yes  No Thyroid tenderness, enlargement, masses

Other

Within Normal Limits

### Ears, Nose, Throat, and Mouth

Yes  No Scars, lesions, masses

Other

Within Normal Limits

### Neurologic

Yes  No Mood/affect (without depression, anxiety, agitation)

Other

Within Normal Limits

### Diagnostic Records

Completed Recommended

Diagnostic Study Models (CPT 99070)

Sleep study, unattended (CPT 95806)

Sleep study - attended (CPT 95807)

CT reconstruction (CPT 76376)

Photographic documentation

Completed Recommended

Panorex (CPT 70355)

TMJ Tomography (CPT 76100)

Pharyngometer (CPT 92520)

Rhinometer (CPT 92512)

Other Completed Items

Other Recommended Items

### Sleep Disordered Breathing Assessment

1.  My clinical impression based on

Findings from review of

medical history/ROS

the sleep study

Oral screening

The diagnosis given by

Other:

Rx for Dental Appliance on File

Oral examination (today)

2.  is that the patient is a candidate for oral appliance therapy (OAT) for:

are consistent with the diagnosis of

- |                                                                                                           |                                                                           |
|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Obstructive sleep apnea (Sleep study or medically diagnosed) (327.23) | <input type="checkbox"/> Upper Airway Resistance Syndrome (UARS) (780.57) |
| <input type="checkbox"/> Idiopathic insomnia                                                              | <input type="checkbox"/> Primary snorer (786.09)                          |
| <input type="checkbox"/> Hypersomnia due to sleep apnea (780.53)                                          | <input type="checkbox"/> Sleep related bruxism (327.53)                   |
| <input type="checkbox"/> Hypersomnia, unspecified (780.54)                                                | <input type="checkbox"/> Suspected obstructive sleep apnea (no ICD)       |
| <input type="checkbox"/> Insomnia due to sleep apnea (780.51)                                             | <input type="checkbox"/> Hypoxemia                                        |
| <input type="checkbox"/> Sleep apnea/sleep related breathing disorder, unspecified (327.20)               | <input type="checkbox"/> Hypertension (V81.1)                             |
| <input type="checkbox"/> Sleep apnea, other, unspecified (780.57)                                         | <input type="checkbox"/> Diabetes                                         |
| <input type="checkbox"/> Daytime hypersomnolence (780.54)                                                 |                                                                           |

3.  is that the patient is NOT a candidate for oral appliance therapy (OAT)

- |                                                                                                   |                                                                                                                 |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> There is insufficient dentition                                          | <input type="checkbox"/> The patient decided against oral appliance therapy and would like to try other options |
| <input type="checkbox"/> The obstructive sleep apnea may be too severe for oral appliance therapy |                                                                                                                 |
| <input type="checkbox"/> The patient decided against oral appliance therapy                       |                                                                                                                 |

**Other Items**

- |                                                              |                                                        |
|--------------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> Facial myalgia (729.1)              | <input type="checkbox"/> Periodontal disorder (523.30) |
| <input type="checkbox"/> Cephalgia (784.0)                   | <input type="checkbox"/> Dental disorder (521.00)      |
| <input type="checkbox"/> Temporomandibular disorder (524.60) |                                                        |
| <input type="checkbox"/> TMJ pain (524.62)                   |                                                        |

## Today's Procedures

### Impression Taken

Impression taken for fabrication of

- TAP 3 TL WITHOUT STOPS
- Herbst
- Tap 3 10 mm E/E
- Herbst
- TAP 3
- Full Breath
- Tap 3
- Full Breath
- Respire Blue Series (Hard)
- TAP 3
- Tap-1
- Silent Night
- Suad
- SomnoMed
- EMA
- Tap-3
- Dorsal

### Type of Impression

- Upper
- Upper and Lower
- Lower
- Other (specify)

sideways

\_\_\_\_\_

### George Gauge

George Gauge was set

### George Gauge Readings

Retrusive reading  mm (a positive number)

Protrusive reading  mm (a negative number)

Range (difference)  mm

Initial therapeutic George Gauge setting set at  mm

Other

\_\_\_\_\_

Photos taken of pretreatment occlusion

## Additional Procedures Performed

CPT Code	Description	Optional Modifier Code



## Treatment Plan

- Delivery of oral appliance:
- TAP 3 TL WITHOUT STOPS
  - Herbst
  - Tap 3 10 mm E/E
  - Herbst
  - TAP 3
  - Full Breath
  - Tap 3
  - Full Breath
  - Respire Blue Series (Hard)
  - TAP 3
  - Tap-1
  - Silent Night
  - Suad
  - SomnoMed
  - EMA
  - Tap-3
  - Dorsal
  -
- Advance one half turn as comfort allows
  - Advance one half turn until snoring and EDS have resolved
- Accommodate to appliance at zero half turns for several days

**Other**

--	--

## Sentences for Plan

- The patient will consider oral appliance therapy and will call to schedule an appointment to proceed if he wishes to pursue treatment
- I have recommended that [REDACTED] see you for an evaluation regarding the suspected OSA (obstructive sleep apnea).
- [REDACTED] would like to pursue treatment with a mandibular repositioning device and will return to my office soon for records and impressions for the placement of the appliance.
- [REDACTED] will complete a home unattended sleep study to assess possible obstructive sleep apnea. We will confirm the treatment plan after the test results have been reviewed.
- [REDACTED] was encouraged to try CPAP (and possibly a different mask set-up) again prior to considering oral appliance therapy and patient will contact your office to schedule an appointment.
- The patient will have dental restorative treatment completed before pursuing oral appliance therapy.
- [REDACTED] was encouraged to try CPAP (and possibly a different mask set-up) again prior to considering oral appliance therapy and will return to see me if the CPAP is still not tolerable.
- [REDACTED] will complete an attended sleep study to assess possible obstructive sleep apnea. We will confirm the treatment plan after the test results have been reviewed.
- The patient was advised to have a cpap titration attended sleep study to verify the effectiveness of their cpap.
- It was recommended that [REDACTED] complete either an attended or a home unattended sleep study to assess possible obstructive sleep apnea. He will let us know what he decides, and then we will confirm the treatment plan after the test results have been reviewed.
- [REDACTED] has decided to continue with his CPAP.
- I have recommended that [REDACTED] try breathe right strips across his lips to see if this will alleviate the snoring to his satisfaction.
- I have recommended that the patient have a complete dental check up prior to pursuing oral appliance therapy.

**APPENDIX D:  
PRE-TREATMENT PSG**

Appendix D: Pre-Treatment PSG (page 1 of 3)

Pt Name: [REDACTED] MRN: [REDACTED] Sleep Study Results Report  
 Pt ID: [REDACTED] Acct No: [REDACTED]  
 DOB: [REDACTED] Age/Sex: 49Y/M  
 Adm DTime: 01/25/2006 20:00 Atn Dr: Doctor, Not On Staff  
 Nurse Sta: [REDACTED] Rm/Bed: [REDACTED]  
 Dx: [REDACTED]  
 Airg: Phenergan

4/02/12  
2:10

Order Name: [REDACTED] Observation DTime: 01/31/2006 06:21  
 Result Name: Sleep Study Result Status: Preliminary Result

Name: [REDACTED]  
 MRN: [REDACTED]  
 Patient #: [REDACTED]  
 DOB: [REDACTED]  
 Room #: [REDACTED]  
 Adm Date: 01/25/2006  
 Physician: [REDACTED]  
 Referring Phy: [REDACTED]



SLEEP AND MEDICAL HISTORY

SLEEP STUDY

This 43-year-old male, 5 foot 7, 240 pounds had a sleep test as he stops breathing at night.

METHODS

The patient underwent an attended nocturnal study. Two central and two occipital EEG leads were utilized. Two EOG leads were applied. Nasal and oral air flow was measured by thermistor. Submental EMG was applied. Respiratory effort was measured by belt strain gauges to the chest and abdomen. Oxygen saturation was measured by pulse oximetry. Cardiac rhythm was measured by one ECG channel. Lower extremity limb movements were measured with motion sensors.

The entire record was scored manually. Sleep stages were scored according to Rechtschaffen and Kales. Obstructive apneas were scored if respiratory effort was demonstrated with complete absence of air flow for 10 seconds. Central apneas were scored if respiratory effort was absent in conjunction with a complete absence of air flow for 10 seconds. Obstructive hypopneas were scored if there was a perceptible decrease in air flow accompanied either by an arousal or by a desaturation of 4%. Arousal were scored according to AASM criteria. PLM's were scored according to AASM criteria.

RESULTS

Sleep Latency and Architecture

He spent 7.4 hours in bed. Sleep efficiency 87%. Arousal index 45 per hour. His total arousals 291 per hour.

Respiratory Parameters

Total apneas 137, total hypopneas 157, total events 294. Apnea/Hypopnea Index 45.9 per hour composed of 24.4 hypopneas, 21.3 apneas. Desaturation index 35 per hour. The lowest O2 saturation 73% during the test. His O2 saturations greater than 85% for 65% of the evening. It is between 80 and 85% for 33% of the evening. His Apnea/Hypopnea Index is 58 on his back, 12 on his side. He spent 74% of the time on his back and 26% on his side.

Cardiac Rhythm

The cardiac average heart rate was in the 70s.

[REDACTED]

[REDACTED]

Rm/Bed:

Appendix D: Pre-Treatment PSG (page 2 of 3)

Pt Name: [REDACTED] Sleep Study Results Report  
 Pt ID: [REDACTED]  
 DOB: [REDACTED] MRN: [REDACTED]  
 Adm DTime: 01/25/2006 20:00 Acct No: [REDACTED]  
 Nurse Sta: Age/Sex: 49Y/M  
 Dx: Attn Dr: Doctor, Not On Staff  
 A1rg: Phenergan Rm/Bed: [REDACTED]

4/08/12  
2:10

Order Name: [REDACTED]  
 Result Name: Sleep Study  
 Observation Dtime: 01/31/2006 06:21  
 Result Status: Preliminary Result

Name: [REDACTED]  
 MRN: [REDACTED]  
 Patient #: [REDACTED]  
 DOB: [REDACTED]  
 Room #: [REDACTED]  
 Adm Date: 01/25/2006  
 Physician: [REDACTED]  
 Referring Phy: [REDACTED]



SLEEP AND MEDICAL HISTORY

SLEEP STUDY

This 49-year-old male, 5 foot 7, 240 pounds had a sleep test as he stops breathing at night.

METHODS

The patient underwent an attended nocturnal study. Two central and two occipital EEG leads were utilized. Two ECG leads were applied. Nasal and oral air flow was measured by thermalistor. Submental EMG was applied. Respiratory effort was measured by belt strain gauges to the chest and abdomen. Oxygen saturation was measured by pulse oximetry. Cardiac rhythm was measured by one ECG channel. Lower extremity limb movements were measured with motion sensors.

The entire record was scored manually. Sleep stages were scored according to Rechtschaffen and Kales. Obstructive apneas were scored if respiratory effort was demonstrated with complete absence of air flow for 10 seconds. Central apneas were scored if respiratory effort was absent in conjunction with a complete absence of air flow for 10 seconds. Obstructive hypopneas were scored if there was a perceptible decrease in air flow accompanied either by an arousal or by a desaturation of 4%. Arousal were scored according to AASM criteria. PLM's were scored according to AASM criteria.

RESULTS

Sleep Latency and Architecture

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Respiratory Parameters

Total apneas 137, total hypopneas 157, total events 294. Apnea/Hypopnea Index 45.9 per hour composed of 24.4 hypopneas, 21.3 apneas. Desaturation index 35 per hour. The lowest O2 saturation 73% during the test. His O2 saturations greater than 90% for 65% of the evening. It is between 80 and 90% for 33% of the evening. His Apnea/Hypopnea Index is 58 on his back, 12 on his side. He spent 74% of the time on his back and 26% on his side.

Cardiac Rhythm

The cardiac average heart rate was in the 70s.

Rm/Bed: [REDACTED]

Appendix D: Pre-Treatment PSG (page 3 of 3)

Pt Name: [REDACTED] Sleep Study Results Report  
 Pt ID: [REDACTED] MRN: [REDACTED]  
 DOB: [REDACTED] Acct No: [REDACTED]  
 Adm DTime: 01/25/2006 20:00 Age/Sex: 49Y/M  
 Nurse Sta: Atn Dr: Doctor, Not On Staff  
 Dx: Rm/Bed:  
 Alrg: Phenergan

Order Name:  
 Result Name: Sleep Study Observation Dtime: 01/31/2006 06:21  
Result Status: Preliminary Result

EEG  
 The EEG was normal.  
 Periodic Limb Movements  
 Periodic limb movements 4 per hour.  
 Positive Pressure Titration  
 CPAP was titrated from 4 cm up to 12 cm. He cannot be cleared secondary to nasal congestion and problems tolerating the mask.

IMPRESSION  
 Axis A Sleep apnea  
 Axis B Polysomnography with CPAP titration

RECOMMENDATIONS  
 I would let the patient know his sleep apnea is worse on his back, therefore I would have him sleep elevated in bed at a 45 degree angle or use a wedge pillow. I would have him come back for a second sleep test for CPAP titration. He could not be cleared the night of the test. One could have him on auto CPAP at home from a home health company until he comes back for a second sleep test. I would recommend that he be treated very vigorously medically and/or surgically to decrease his nasal congestion as with his nasal congestion he had problems tolerating the mask plus it was more difficult to try to relieve his apneas, therefore I would treat his nasal congestion whether it is due to rhinitis or anatomical problem. I would treat this very vigorously before he comes back for a second sleep test for CPAP titration. Other treatment options may be considered if he is not a CPAP candidate.

D: 01/30/2006 1:51 P / Job: 001933000  
 T: 01/31/2006 6:21 A / srl Doc: 1657930  
 cc: [REDACTED]

Comments

Result Comments:

Requisition Comments:

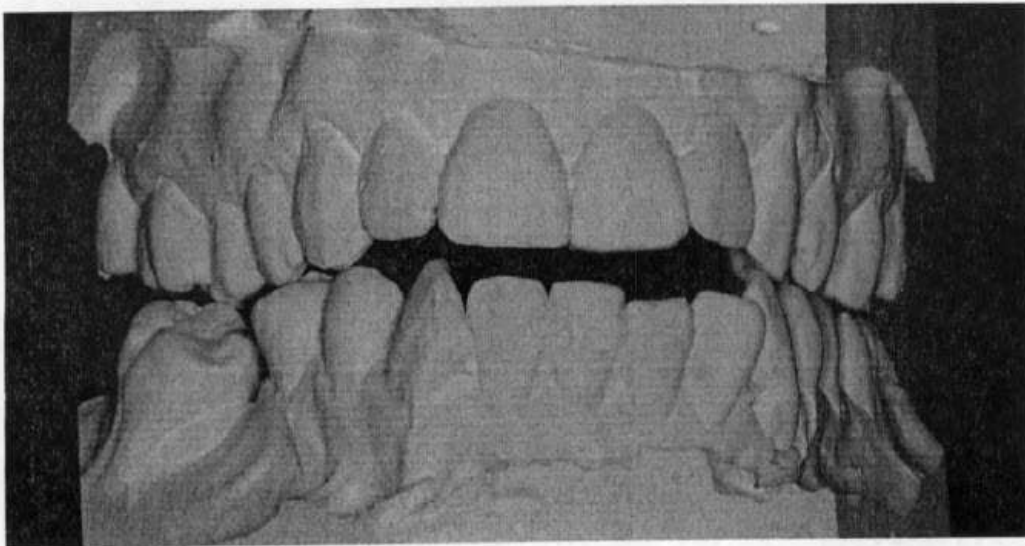
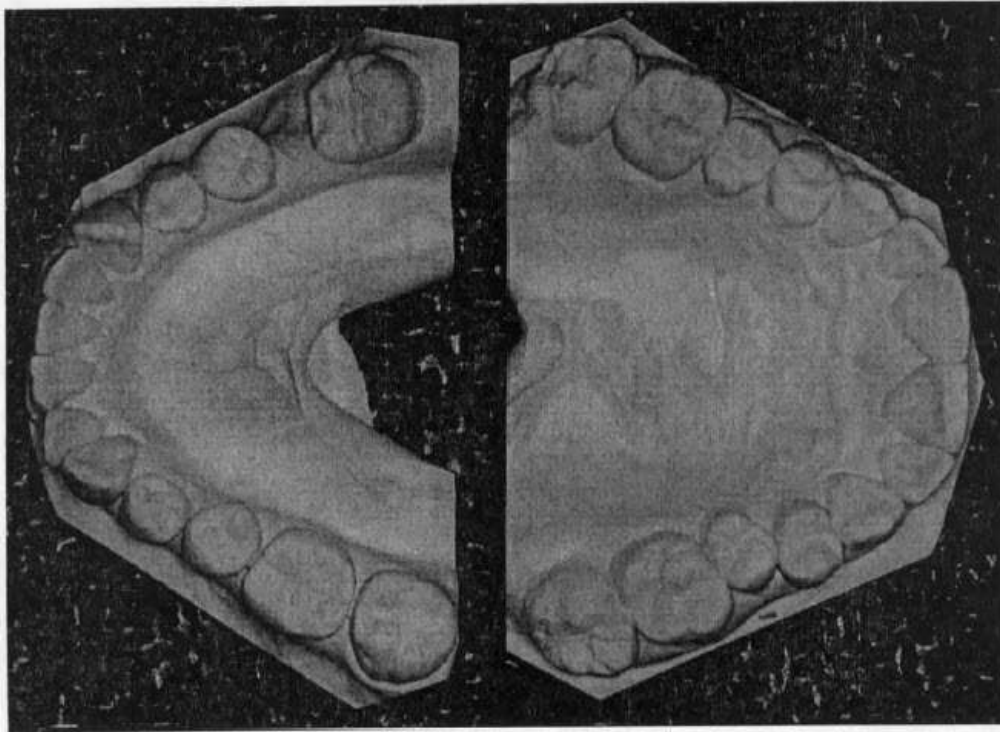
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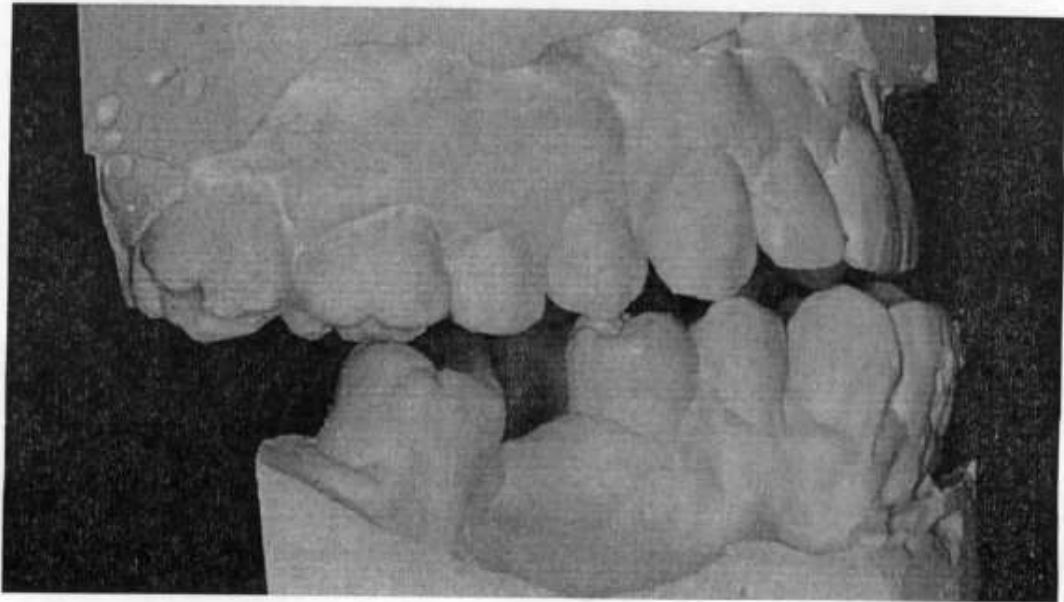
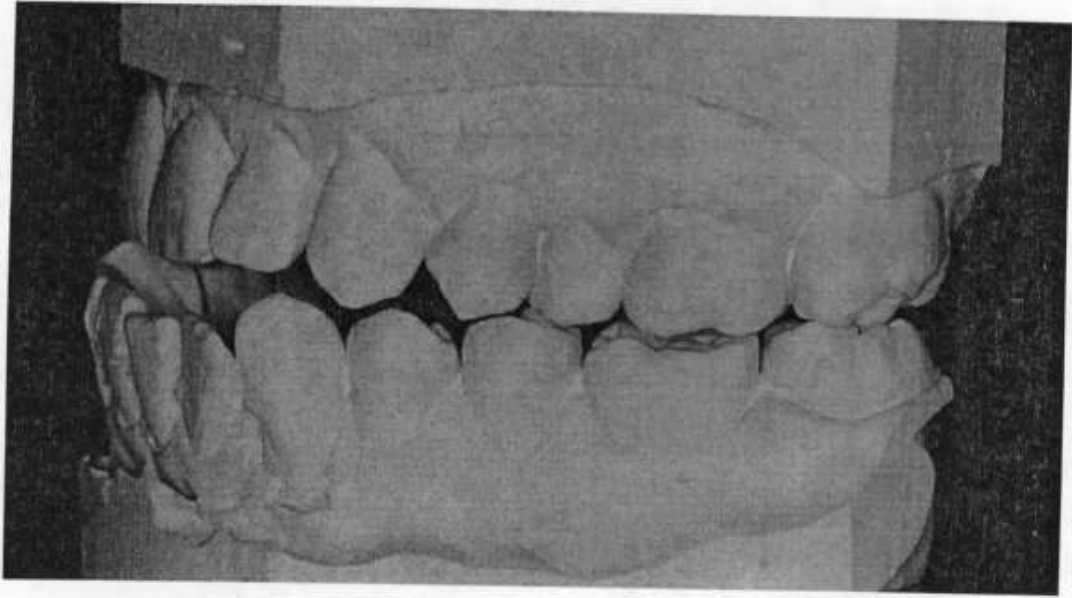
**APPENDIX E:  
PRE-TREATMENT DIAGNOSTIC IMAGES**

**Study Models**

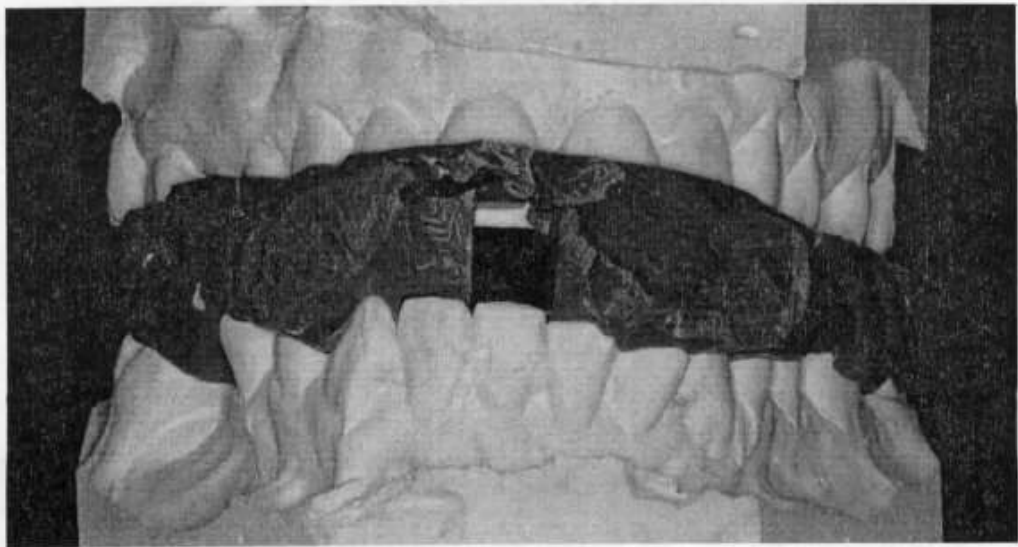
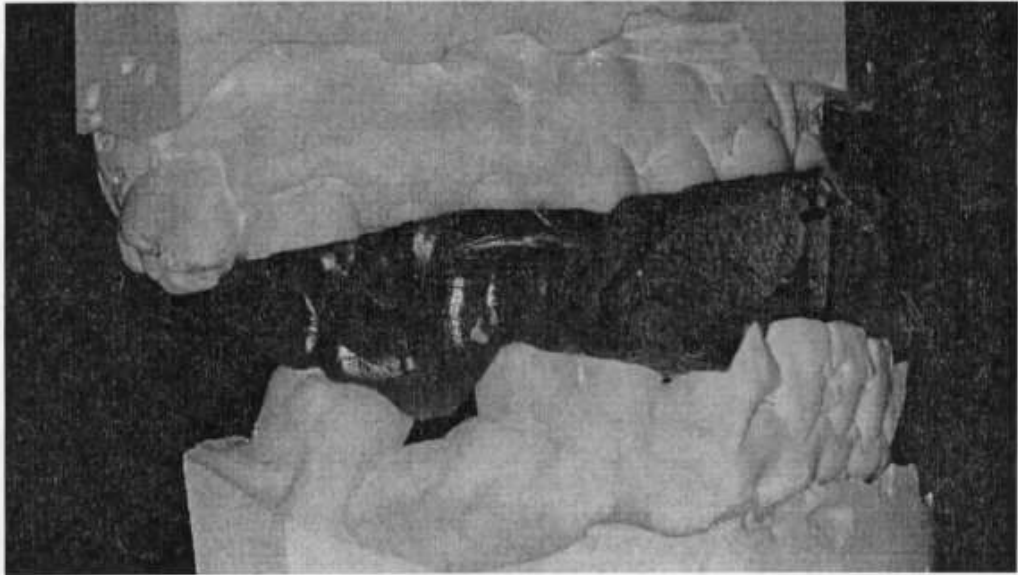
**Study Models with Bite Registration**

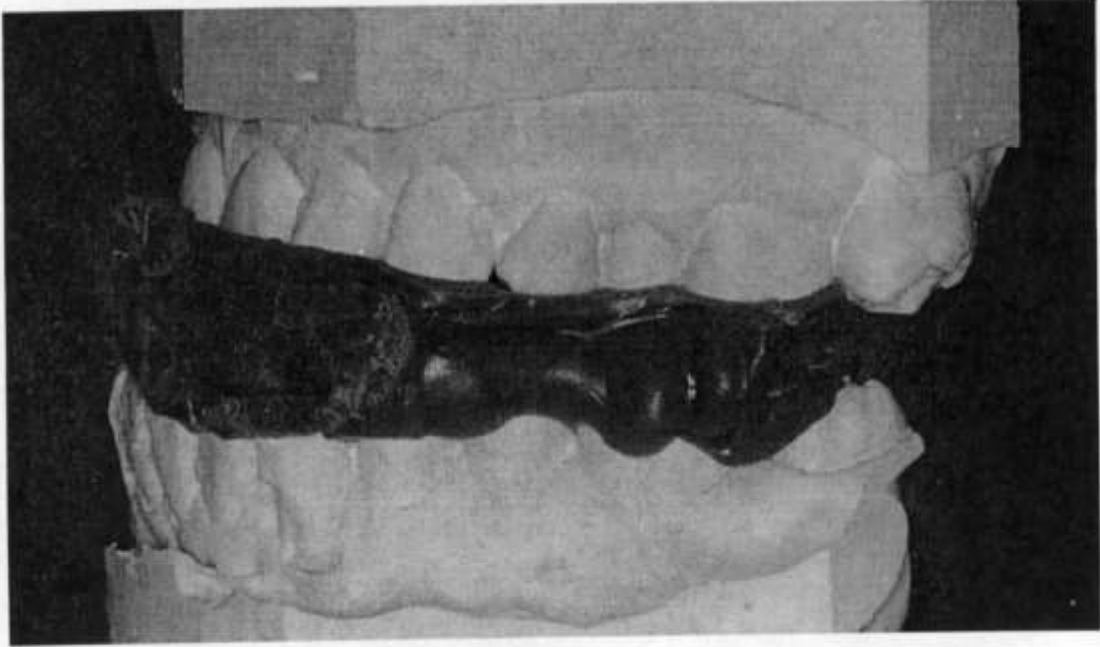
**Clinical Patient Photos**

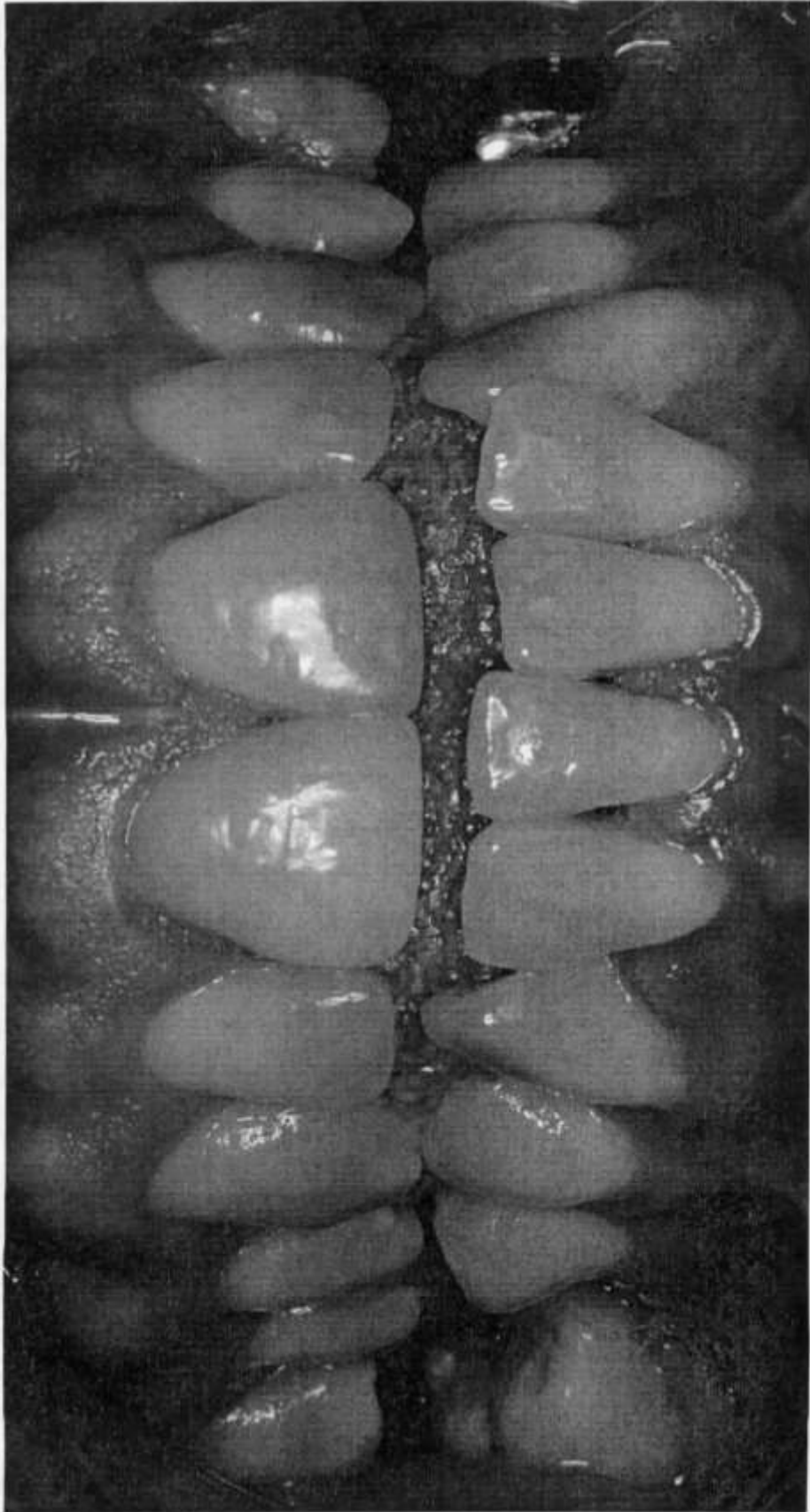


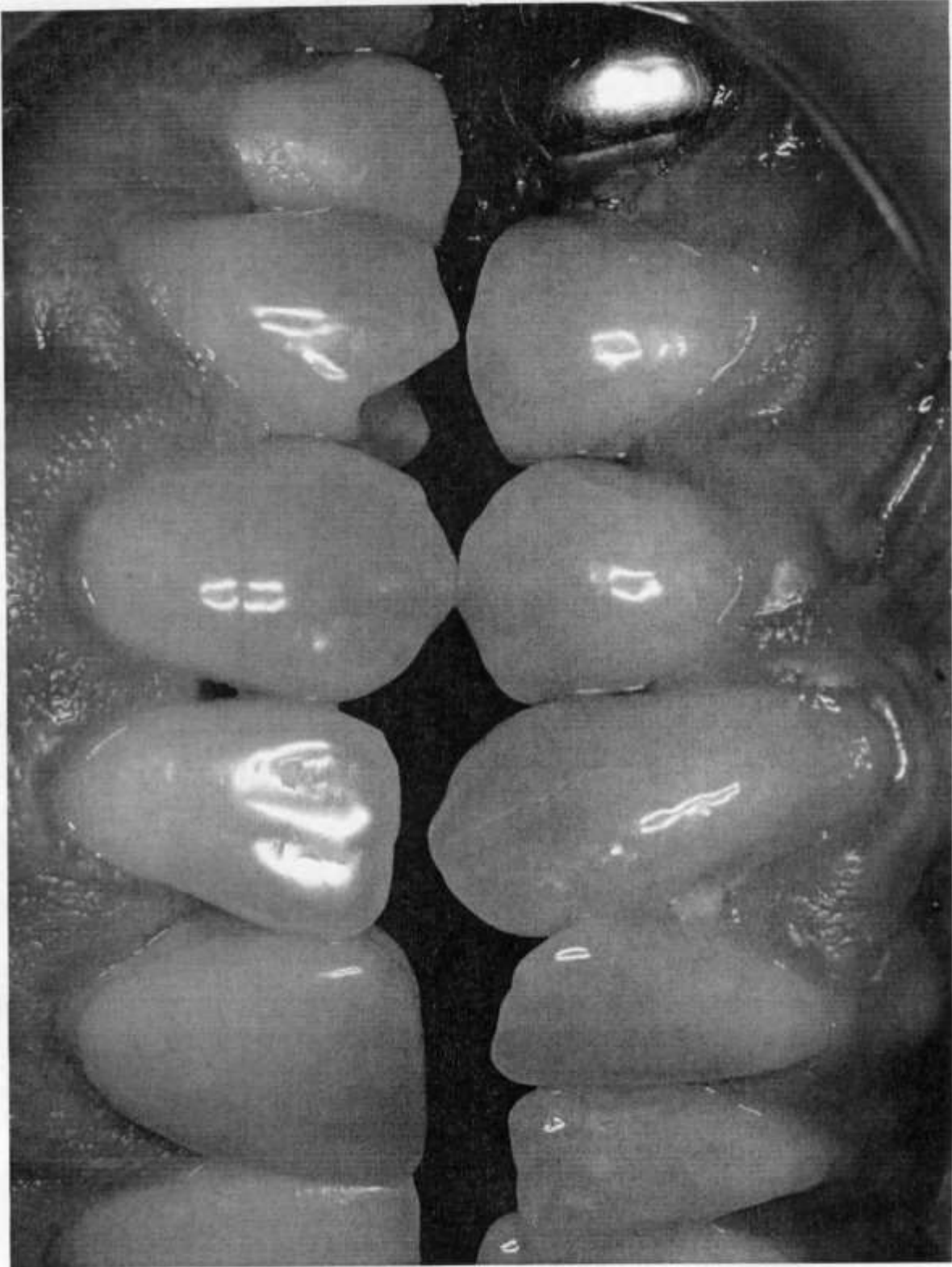


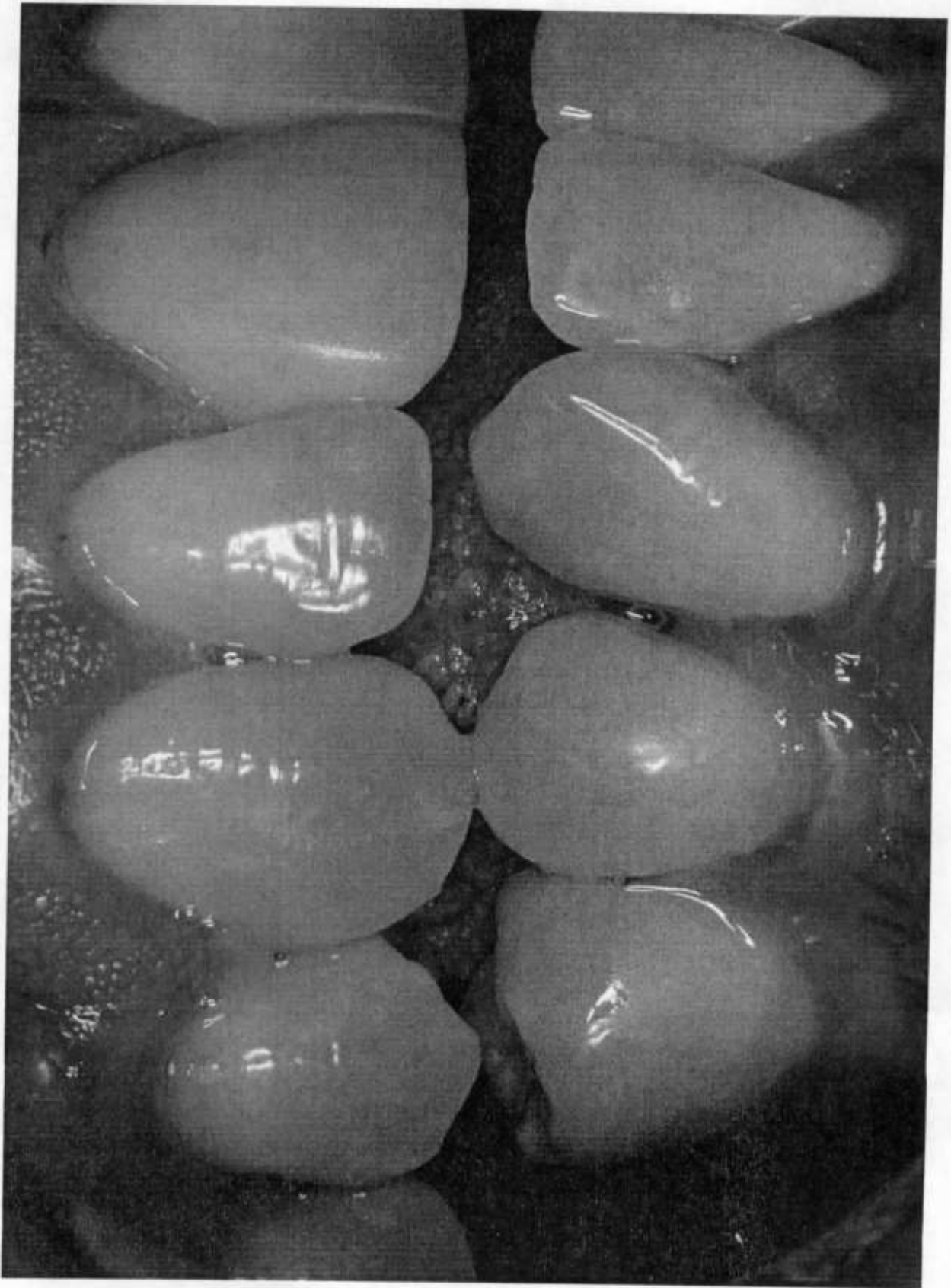














**APPENDIX F:**  
**ORAL APPLIANCE TITRATION STUDY**

[REDACTED]

December 18, 2012

[REDACTED]  
11919 Grant Street, #140  
Omaha, NE 68164

RE: [REDACTED]  
[REDACTED]

Dear Dr. [REDACTED]

[REDACTED] underwent a sleep evaluation at [REDACTED] on the evening of December 17, 2012 with a history of sleep apnea diagnosed by an outside polysomnography and CPAP intolerance, plus hypertension comorbidity.

He slept in the right lateral decubitus position with his positional device and control of breakthrough snoring and snoring arousals controlled with a HERBST appliance titration. There were mild periodic leg movements of sleep during the first half of the study and suggestion of hypersomnolence with decreased sleep latency going to bed one hour earlier than his usual bedtime, plus alpha intrusion with 6.8 spontaneous arousals per hour as can be seen in chronic fatigue or chronic pain conditions.

Due to CPAP intolerance, I would agree with a HERBST appliance with 12 advancements on each side combined with a positional device for non-supine sleep which controlled respiratory events with adequate oxygenation.

Sincerely,

[REDACTED]

dd: 12/18/2012  
dt: 12/18/2012





Sleep Study Interpretation

Patient: [Redacted]  
Date: 12/17/2012

Med Rec. # [Redacted]  
DOB: [Redacted]

**REVIEW OF QUESTIONNAIRE:** This is a patient who has a history of sleep apnea diagnosed by an outside polysomnography, plus hypertension and CPAP intolerance undergoing a mandibular advancement device titration study.

**SLEEP ARCHITECTURE FINDINGS:** The patient went to bed one hour earlier than his usual bedtime with a sleep latency of 3.9 minutes and a REM latency of 82 minutes. There were 4 REM cycles, 13.8% of total sleep time. Slow wave sleep was seen during the first third of the sleep evaluation with alpha delta waves 11.1% of total sleep time. Stage 2, 73.7% of total sleep time with alpha intrusion and associated 6.8 spontaneous arousals per hour. Stage 1, 1.4% of total sleep time with a sleep efficiency of 93.7%.

**CARDIOPULMONARY FINDINGS:** The patient slept in the right lateral decubitus position throughout the night with a positional device in place. A HERBST mandibular advancement device was advanced 4 turns on each side 3 separate times to clear mild snoring and snoring related arousals. Oxygenation was added throughout the night. There was mild periodic leg movements of sleep that were more prominent during the first half of the study and heart rhythm was normal sinus rhythm.

**IMPRESSION:**

1. Sleep apnea diagnosed by an outside polysomnography controlled with a HERBST appliance and positional device.
2. Mild periodic leg movements of sleep were more prominent during the first half of the study.
3. Suggestion of hypersomnolence with a decreased sleep latency despite one hour earlier bedtime and alpha intrusion with 6.8 spontaneous arousals per hour as can be seen in chronic fatigue or chronic pain conditions.

**RECOMMENDATIONS:** Due to CPAP intolerance, a HERBST appliance 12 advancements each side combined with a positional device for non-supine sleep which cleared respiratory events with adequate oxygenation.



dd: 12/18/2012  
dt: 12/18/2012



Patient : [REDACTED]  
 Ordering MD : [REDACTED]  
 Scoring Tech : [REDACTED]

Med Rec. # [REDACTED]  
 Date : 12/17/2012  
 DOB : [REDACTED]  
 Height : 67.0 inches  
 Neck Size : 19.5 inches  
 Weight : 230.0 lbs  
 BMI : 36.0lb/in<sup>2</sup>

Night time Medication none  
 Pertinent Medical History OSA

Lights Off	10:48:28 PM	Lights On	5:42:03 AM	Total Recording Time:	413.6 min.
WASO		22.9 min.		Total Sleep Time:	387.5 min.
Stage N1	1.4%	5.5 min.		Sleep Latency:	3.2 min.
Stage N2	73.7%	285.5 min.		REM Latency:	82.0 min.
Stage N3	11.1%	43.0 min.		Sleep Efficiency(TST/TIB):	93.7%
Stage REM	13.8%	53.5 min.			

Total Resp Events:	7	W/Mandibular Advancement Device Titrated
Total NREM Obst Apneas:	0	AHI
Total NREM Central Apneas:	0	
Total REM Obst Apneas:	0	
Total REM Central Apneas:	0	
Total NREM Hypopneas:	0	Baseline SaO2: 94.5%
Total REM Hypopneas:	1	Low SaO2: 90.0%
Total REM Central Hypopneas:	0	
Total NREM Central Hypopneas:	0	
RERAS:	0	

12 Turns  
1.4/hr

Arousals	Resp. Count	Resp. Index	Spont Count	Spont Index	Snore Count	Snore Index	Total Count	Total Index
TST	1	0.2	44	6.8	47	7.3	93	14.4

\* EEG Arousal activity not associated with Respiratory or PLM events.

Limb Movements (by sleep stage)	LM w/ Arousals		LM w/o Arousals		Total LMs	
	Count	Index	Count	Index	Count	Index
Total Sleep Time:	1	0.2	133	20.6	134	20.7

Cardiovascular

NSR Avg HR 78.9 BPM

Tech Notes:

Pt. admitted for Herbst appliance titration. Prepped for study in usual manner. Pt. reports increased nasal congestion worse than usual. Appliance inserted by patient at HS, slept with positional device to sleep in lateral position. Appliance titrated per protocol 12 advancements on each side for snoring and events. Pt. reported no jaw pain.



**ADULT PSG/CPAP REPORT.**

Patient Name: [REDACTED]

Subject Code: [REDACTED]

Study Date: 12/17/2012

Patient Name: [REDACTED]			
Sex:	Male	Study Date:	12/17/2012
D.O.B.:	[REDACTED]	Subject Code:	[REDACTED]
Age:	50	Referring Physician:	[REDACTED]
Height:	67.0 in	Sleep Specialist:	
Weight:	230.0 lbs	Recording Tech:	mr
B.M.I.:	36.0	Scoring Tech:	MRossI RRT

**MEDICATIONS:**  
none

**RECORDING / COLLECTION NOTES:**

Pt. admitted for Herbst appliance titration. Prepped for study in usual manner. Pt. reports increased nasal congestion worse than usual. Appliance inserted by patient at HS. slept with positional device to sleep in lateral position. Appliance titrated per protocol 12 advancements on each side for snoring and events. Pt. reported no jaw pain.  
HR NSR

**SCORING / ANALYSIS NOTES:**

Hypopnea Rule:	4A
Stage Scored by:	TECH
Hypoventilation:	NO
Cheyne-Stokes Breathing:	NO
Arrhythmias:	YES



**ADULT PSG/CPAP REPORT**

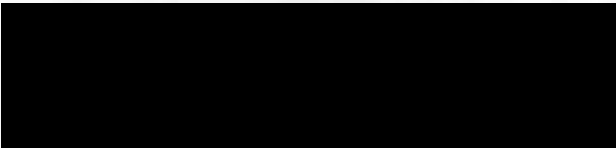
Patient Name: [REDACTED]

Subject Code: [REDACTED]

Study Date: 12/17/2012

**Channel Information Chart**

Channel Input Label	Channel Name	Channel Type	Frequency
A (Amp 1)	Airflow	AirFlow	32
B (Amp 1)	Nasal Pressure	Nasal Canula	32
E (Amp 1)	Chest	Chest	32
F (Amp 1)	Abdomen	Abdomen	32
G (Amp 1)	Snore	Snore	256
1 (Amp 1)	M1	EEG,A1,CZ	256
2 (Amp 1)	M2	EEG,A2,CZ	256
3 (Amp 1)	C3	EEG,C3,CZ	256
4 (Amp 1)	C4	EEG,C4,CZ	256
5 (Amp 1)	O1	EEG,O1,CZ	256
6 (Amp 1)	O2	EEG,O2,CZ	256
7 (Amp 1)	F3	EEG,F3,CZ	256
8 (Amp 1)	F4	EEG,F4,CZ	256
9 (Amp 1)	EMG1	EMG,Left	256
10 (Amp 1)	EMG2	EMG,Right	256
11 (Amp 1)	EMG3	EMG,Submental	256
13 (Amp 1)	ECG1	EKG,Left	256
14 (Amp 1)	ECG2	EKG,Right	256
15 (Amp 1)	L-Leg1	Legs,Left,1	256
16 (Amp 1)	L-Leg2	Legs,Left,2	256
17 (Amp 1)	R-Leg1	Legs,Right,1	256
18 (Amp 1)	R-Leg2	Legs,Right,2	256
21 (Amp 1)	E1	Ocular,Left	256
22 (Amp 1)	E2	Ocular,Right	256
SpO2 (Amp 1)	SaO2	SaO2	16
Pulse (Amp 1)	Pulse	Pulse	16
DC X2 (Box 1)	CPAP Flow	CPAP (Flow)	32
DC X3 (Box 1)	CPAP Pressure	CPAP (Pressure)	4
DC X4 (Box 1)	CPAP Leak	CPAP (Leak)	4



**ADULT PSG/CPAP REPORT**

Patient Name: [REDACTED]

Subject Code: [REDACTED]

Study Date: 12/17/2012

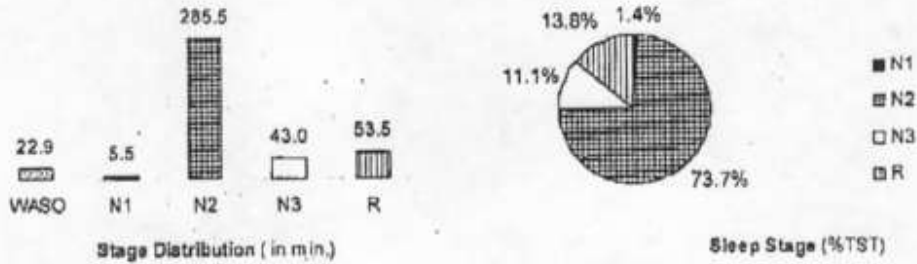
**Sleep Architecture**

Lights out clock time (hr:min): 10:48 PM  
Lights on clock time (hr:min): 5:42 AM

Total Recording Time (TRT): 413.6  
Sleep Period Time (SPT): 410.4  
Total Sleep Time (TST): 387.5  
Sleep Efficiency: 93.7%

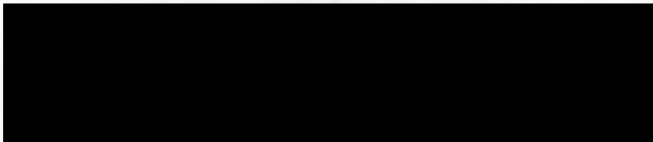
Sleep latency (SL): 3.2  
Total Stage Changes (after sleep onset): 74  
Awakenings (after sleep onset): 13  
WASO (min.): 22.9

REM Periods: 4  
REM Latency: 82.0  
REM Latency (less Wake time): 76.5



Sleep Stage	Latency (min)
N1:	0.0
N2:	0.5
N3:	13.0
R:	82.0

Stage Latency = 0.0 denotes start of sleep.



**ADULT PSG/CPAP REPORT**

Patient Name: [REDACTED]

Subject Code: [REDACTED]

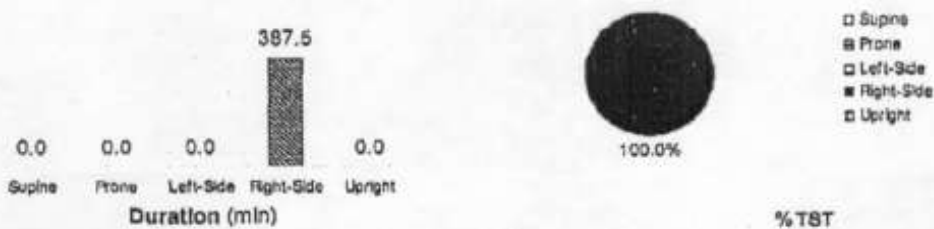
Study Date: 12/17/2012

RESPIRATORY EVENTS	Con. Apneas	Obs. Apneas	Mxd. Apneas	Hypopneas	Total Apneas	Apnea+ Hypopnea	RERA	All Resp. Events *
Count:	0	0	0	7	0	7	0	7
Index (events / hr.):	0.0	0.0	0.0	1.1	0.0	1.1	0.0	1.1
Mean Duration (sec.):	N/A	N/A	N/A	10.0	N/A	10.0	N/A	10.0
Longest Event (sec.):	N/A	N/A	N/A	10.0	N/A	10.0	N/A	10.0
REM Count:	0	0	0	1	0	1	0	1
Non-REM Count:	0	0	0	6	0	6	0	6
REM Index:	0.0	0.0	0.0	1.1	0.0	1.1	0.0	1.1
Non-REM Index:	0.0	0.0	0.0	1.1	0.0	1.1	0.0	1.1

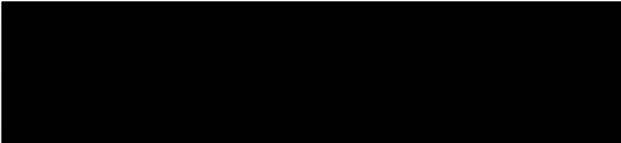
\* Note: Does not contain Cheyne Stokes Breathing, Hypoventilation, or Periodic Breathing.

RESPIRATORY EVENTS (by Body-Position)	Supine Sleep		Prone Sleep		Left-Side Sleep		Right-Side Sleep		Upright Sleep	
	Count	Index	Count	Index	Count	Index	Count	Index	Count	Index
Duration (min:sec):	0.0		0.0		0.0		387.5		0.0	
Obstructive Apneas:	N/A	N/A	N/A	N/A	N/A	N/A	0	0.0	N/A	N/A
Central Apneas:	N/A	N/A	N/A	N/A	N/A	N/A	0	0.0	N/A	N/A
Mixed Apneas:	N/A	N/A	N/A	N/A	N/A	N/A	0	0.0	N/A	N/A
Hypopneas:	N/A	N/A	N/A	N/A	N/A	N/A	7	1.1	N/A	N/A
RERAs:	N/A	N/A	N/A	N/A	N/A	N/A	0	0.0	N/A	N/A
Total*:	N/A	N/A	N/A	N/A	N/A	N/A	7	1.1	N/A	N/A

\* Note: Does not contain Cheyne Stokes Breathing, Hypoventilation, or Periodic Breathing.



**BODY-POSITION RESULTS**



**ADULT PSG/CPAP REPORT**

Patient Name: [REDACTED]

Subject Code: [REDACTED]

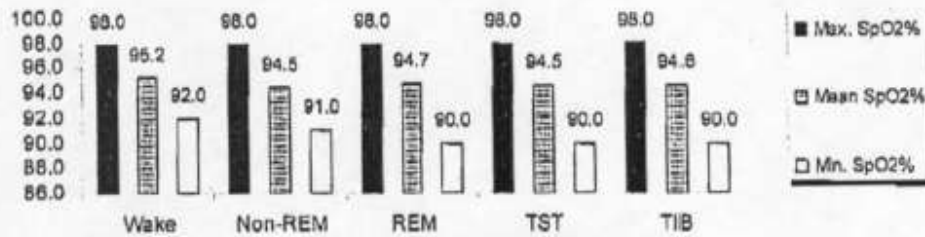
Study Date: 12/17/2012

AROUSALS	Resp. Count	Resp. Index	Spontaneous Count*	Spontaneous Index*	Total Count	Total Index
Total Sleep Time:	1	0.2	44	6.8	46	7.1
Non-REM	1	0.2	41	7.4	43	7.7
REM:	0	0.0	3	3.4	3	3.4

\* EEG Arousal activity not associated with Respiratory or PLM events.

LIMB MOVEMENTS (by sleep stage)	LM w/ Arousals		LM w/o Arousals		Total LMs		PLM Series	
	Count	Index	Count	Index	Count	Index	Count	Index
Total Sleep Time:	1	0.2	6	0.8	6	0.9	0	0.0
N1:	0	0.0	0	0.0	0	0.0	0	0.0
N2:	0	0.0	3	0.6	3	0.6	0	0.0
N3:	1	1.4	2	2.6	3	4.2	0	0.0
R:	0	0.0	0	0.0	0	0.0	0	0.0

OXYGEN DESATURATION EVENTS	Count	Index
Total Sleep Time:	0	0.0
Wake (after sleep onset):	0	0.0
Non-REM:	0	0.0
REM:	0	0.0
Total Recording Time:	0	0.0



Oximetry Trend Graph

**ADULT PSG/CPAP REPORT**

Patient Name: [REDACTED]

Subject Code: [REDACTED]

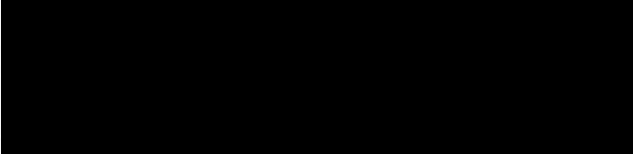
Study Date: 12/17/2012

OXYGEN SATURATION	Wake	Non-REM	REM	TST	TIB
Max. SpO2%:	98.0	98.0	98.0	98.0	98.0
Mean SpO2%:	95.2	94.5	94.7	94.5	94.6
Min. SpO2%:	92.0	91.0	90.0	90.0	90.0
SpO2% <= 88% (min.)	0.0	0.0	0.0	0.0	0.0
% Time In range					
90 - 100%:	100.0%	100.0%	99.6%	99.9%	99.9%
80 - 89%:	0.0%	0.0%	0.4%	0.1%	0.1%
70 - 79%:	0.0%	0.0%	0.0%	0.0%	0.0%
60 - 69%:	0.0%	0.0%	0.0%	0.0%	0.0%
50 - 59%:	0.0%	0.0%	0.0%	0.0%	0.0%
< 50%:	0.0%	0.0%	0.0%	0.0%	0.0%
% Artifact / Bad Data:	0.0%	0.0%	0.0%	0.0%	0.0%

HEART RATE RESULTS	Wake	Non-REM	REM	TST	TIB
Max. HR (bpm):	114.0	105.0	102.0	105.0	114.0
Mean HR (bpm):	84.3	76.6	78.0	76.8	77.3
Min. HR (bpm):	63.0	62.0	57.0	57.0	57.0
% Time In range					
> 100 (bpm):	8.4%	0.1%	0.1%	0.1%	0.5%
90 - 100 (bpm):	27.7%	1.3%	2.6%	1.5%	3.1%
80 - 89 (bpm):	26.4%	33.8%	48.1%	35.8%	35.2%
70 - 79 (bpm):	27.9%	36.2%	21.3%	34.2%	33.8%
60 - 69 (bpm):	11.5%	28.6%	27.4%	28.4%	27.3%
50 - 59 (bpm):	0.0%	0.0%	0.6%	0.1%	0.1%
< 50 (bpm):	0.0%	0.0%	0.0%	0.0%	0.0%
% Artifact / Bad Data:	0.0%	0.0%	0.0%	0.0%	0.0%

CARDIAC EVENTS	Brady.	Asystole	Tachy.	Narrow Complex Tachy.	Wide Complex Tachy.	Atrial Fibrillation	Accel.	Decel.
Count:	0	0	2	0	0	0	0	0
Shortest Event (min:sec):	N/A	N/A	0:10	N/A	N/A	N/A	N/A	N/A
Longest Event (min:sec):	N/A	N/A	0:58	N/A	N/A	N/A	N/A	N/A
Sum Duration (min:sec):	0:00	0:00	1:08	0:00	0:00	0:00	0:00	0:00
Absolute Max Rate (bpm):	N/A	N/A	115.5	N/A	N/A	N/A	N/A	N/A
Absolute Min. Rate (bpm):	N/A	N/A	69.1	N/A	N/A	N/A	N/A	N/A





**ADULT PSG/CPAP REPORT**

Patient Name: [REDACTED]

Subject Code: [REDACTED]

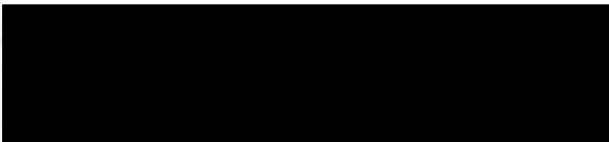
Study Date: 12/17/2012

**MAD TITRATION CHART**

Treatment Level	DURATION			RESPIRATORY								OXIMETRY			
	Total (min.)	REM (min.)	NREM (min.)	Cent. Apnea	Obs. Apnea	Mxd. Apnea	Hypopnea	A + H Total	AHI	RERA	Resp * Total	RDI *	Max. SpO2%	Mean SpO2%	Min SpO2%
TX 0	40.8	0.0	33.0	0	0	0	0	0	0.0	0	0	0.0	97.0	94.4	92.1
TX 4	122.8	11.0	106.0	0	0	0	1	1	0.5	0	1	0.5	98.0	94.0	91.1
TX 8	117.5	16.0	94.0	0	0	0	3	3	1.6	0	3	1.6	98.0	94.8	92.1
TX 12	132.9	26.0	100.0	0	0	0	3	3	1.4	0	3	1.4	98.0	94.9	90.1

**Treatment**

- 0 Presentation
- 1 4 turns
- 2 4 turns
- 3 4 turns
- 4 4 turns



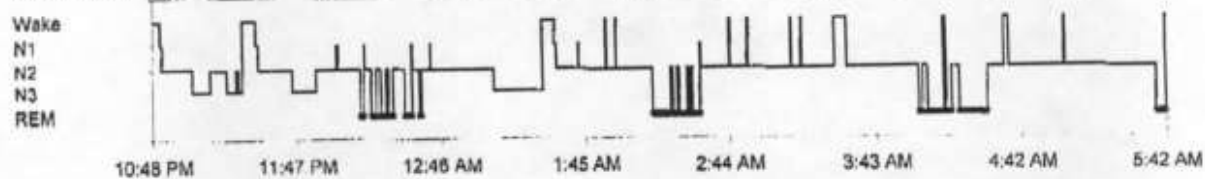
**ADULT PSG/CPAP REPORT**

Patient Name: [REDACTED]

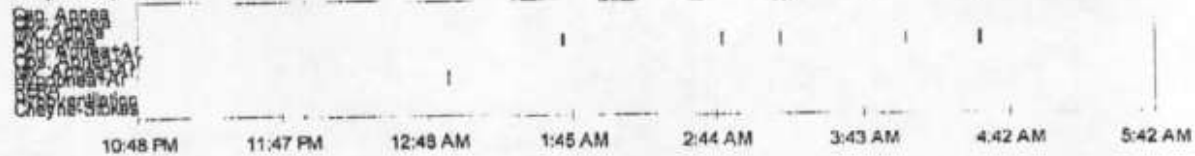
Subject Code: [REDACTED]

Study Date: 12/17/2012

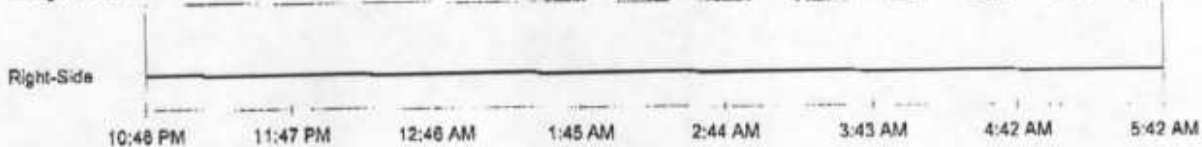
**Hypnogram**



**Respiratory Events**



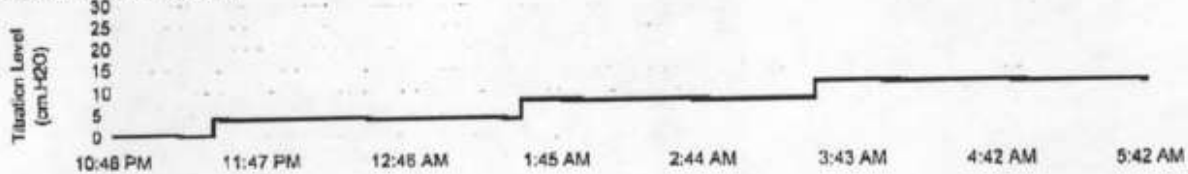
**Body Position**



**Limb Movement Events**



**CPAP / BiLevel (IPAP / EPAP)**



**APPENDIX G:  
DOCUMENTATION OF FOLLOW-UP APPOINTMENTS  
(CLINICAL NOTES)**

DATE: 1/0/2013

### Clinical Notes

Page #: 2

4/2/2012 - 4/2/2012

All Providers

Patient: [REDACTED]

Note Created On: 4/2/2012 3:17:03 PM

4/2/2012 6:32:48 PM DDS1 (Continued)

PATIENT PRESENTS FOR SLEEP EXAM:  
PT. WAS ACCOMPANIED BY: NO ONE

PATIENT HAS A TAP 3 APPLIANCE ABOUT 8 MM VERTICAL, THAT WAS PROVIDED BY DR. WEE. HE HAS NEVER HAD I PSG TITRATED, HE IS NOW ABOUT 4-6 MM CLASS THREE, PT THINKS HE WAS ABOUT END TO END INCISALLY PRIOR TO STARTING TREATMENT ORIGINALLY. THE PRESENT ORAL APPLIANCE IS BROKEN IN THE METAL ATTACHMENT AREA, AND IS UNREPAIRABLE.

SEE PATIENT QUESTIONNAIRE AND EXAM RESULTS IN CUSTOM DENTAL WRITER SOFTWARE.

PATIENT HAS TRIED CPAP AND COULD NOT TOLERATE IT DUE TO: MASK LEAKS, INABILITY TO GET THE MASK TO FIT PROPERLY, NOISE DISTURBING SLEEP AND/OR BED PARTNER'S SLEEP, CPAP RESTRICTED MOVEMENTS DURING SLEEP, CUMBERSOME.

REVIEWED SLEEP STUDY RESULTS WITH PATIENT PER THE STUDY  
AHI= 45.8/HR  
ON BACK IT IS 58/HR  
SLEEP EFFICIENCY: 87%  
LOW O2: 73% 33%<90  
CPAP PRESSURE: 12CM

PATIENT EXPERIENCES MORE APNEIC EVENTS WHILE LYING ON BACK. PATIENT MAY BENEFIT FROM SLEEP POSITIONAL THERAPY. DISCUSSED POSITIONAL THERAPY.

EXPLAINED THAT TO DECREASE SNORING WITH AN ORAL APPLIANCE TIME MUST ALSO BE ALLOWED FOR THROAT TISSUES TO HEAL.

DISCUSSED THE RISKS OF NOT TREATING SLEEP APNEA. REVIEWED [REDACTED] BROCHURE; DEFINITIONS OF APNEA AND SURGICAL OPTIONS. EXPLAINED ADVANTAGES AND DISADVANTAGES OF ALL OPTIONS.

DISCUSSED THAT ALTHOUGH WE WILL FIRST RECOMMEND NON-SURGICAL OPTIONS FOR TX, IT'S POSSIBLE THAT SOME PATIENTS MAY STILL BENEFIT FROM PALATAL OR NASAL SURGERY.

SNORE: PATIENT DOES NOT SNORE DUE TO UVULA SURGERY

PATIENT'S CHIEF COMPLAINTS: #1 MY ORAL APPLIANCE IS CRACKING AND IT HAS CHANGE MY JAW AND TOOTH ALIGNMENT, #2 CPAP INTOLERANCE, #3 FATIGUE.

VITALS: BP: 137/92 PULSE: 93 TEMP: 97.9

NECK MEASUREMENT: 18 INCHES

ROM: OPEN 54 MM WITH PAIN, 45 MM WITH NO PAIN, LEFT LATERAL EXCURSION 11 MM, RIGHT LATERAL EXCURSION 10 MM, PROTRUSIVE 15 MM, OVERJET -4 MM, OVERBITE 0 MM, CEJ (9-24) = 20 MM, DEFLECTION TO THE LEFT 2 MM

COMPLIMENTARY NASAL SCREENING INDICATES: BOTH LEFT AND RIGHT SIDE ARE RESTRICTED. AFTER NASAL SPRAY IMPROVED, BUT DID NOT NORMALIZE.

COMPLIMENTARY AIRWAY SCREENING INDICATES: THE STABILITY OF HIS AIRWAY HAS MORE COLLAPSE THEN MOST PEOPLE. THE SIZE OF HIS AIRWAY IS A LITTLE SMALL. THE BEST POSITION PER DR. ROUBAL WOULD BE 6 MM 4 MM ANTERIOR THIS IS HIS NORMAL BITE. WE WILL TEST HIM AT THIS POSITION AND CAN BRING HIM FORWARD IF NEED TO AS WELL AS OPEN VERTICALLY TO 16 MM IF NEEDED TO.

DISCUSSED APPLIANCE OPTIONS: HERBST WITH VARIFLEX LINER. 6 MM 4 MM ANTERIOR. WE WILL TEST HIM AT THIS POSITION AND CAN BRING HIM FORWARD IF NEED TO AS WELL AS OPEN VERTICALLY TO 16 MM IF NEEDED TO

ESS: 4

**CLINICAL NOTE: 4/2/2012 (page 2 of 2)**

DATE: 4/2/2012

**Clinical Notes**

Page #: 3

4/2/2012 - 4/2/2012  
All Providers

Patient: FRANK T. PHILIP

4/2/2012 3:32:49 PM DDS1 (Continued) Note Created On: 4/2/2012 3:17:03 PM

INITIAL CLINICAL IMPRESSION: SLEEP APNEA

RECOMMENDED NEXT TREATMENT: SLEEP RECORDS WITHOUT TM JOINT IMAGES PLUS ORTHODONTIC PHOTOS.

DR [REDACTED] SPENT 30 TOTAL MINUTES FACE TO FACE TIME WITH THE PATIENT:  
20 MINUTES SPENT COUNSELING AND COORDINATING CARE REGARDING ALL OF THE ABOVE.

NEXT APPT.: WILL CALL AFTER WE PRE AUTH RECORDS AND APPLIANCE

ABOVE NOTES SCRIBED BY: [REDACTED]  
ABOVE NOTES APPROVED AND SIGNED BY: [REDACTED]

SENT E-MAIL TO [REDACTED] TO START PRE-AUTH FOR SLEEP REC. AND APPL..... [REDACTED]

----- Signed on Monday, April 02, 2012 by [REDACTED] -----

**CLINICAL NOTE: 5/1/2012**

DATE: 1/6/2013

**Clinical Notes**  
5/1/2012 - 5/1/2012  
All Providers  
Patient: [REDACTED]

Page #: 1

---

Patient: [REDACTED]  
Birthdate: [REDACTED]  
[REDACTED]

SS#: [REDACTED]  
Chart #: [REDACTED]

Note Created On: 5/1/2012 5:59:01 PM

PATIENT PRESENTS FOR SLEEP RECORDS:

IMAGES: PANO--WNL

1 UPPER IMPRESSION, 1 LOWER IMPRESSION

RHINOMETER TESTING INDICATES: BOTH LEFT AND RIGHT SIDE ARE RESTRICTED. AFTER NASAL SPRAY IMPROVED, BUT DID NOT NORMALIZE.

PHARYNGOMETER TESTING INDICATES: THE STABILITY OF HIS AIRWAY HAS MORE COLLAPSE THEN MOST PEOPLE. THE SIZE OF HIS AIRWAY IS A LITTLE SMALL. THE BEST POSITION PER DR. [REDACTED] WOULD BE 6 MM 4 MM ANTERIOR THIS IS HIS NORMAL BITE. WE WILL TEST HIM AT THIS POSITION AND CAN BRING HIM FORWARD IF NEED TO AS WELL AS OPEN VERTICALLY TO 16 MM IF NEEDED TO.

BITE TAKEN AT: 6MM 4MM CLASS III

INTRA-ORAL PHOTOS:  
RETRACTED FRONTAL, RIGHT AND LEFT.

SLEEP CONSENT SIGNED: SEE FILE

ASSESSMENT: SLEEP APNEA

NEXT APPT.: FIT HERBST ON 5-23-12 @ 9:00 AM

ABOVE NOTES SCRIBED BY: [REDACTED]  
ABOVE NOTES APPROVED BY: [REDACTED]  
----- Signed on Wednesday, May 02, 2012 by [REDACTED] -----

CLINICAL NOTE: 5/23/2012

Date: 1/8/2013	<b>Clinical Notes</b>	Page #: 1
	5/23/2012 - 5/23/2012	
	All Providers	
	Patient: FRANK T. PHILIP	
Patient: [REDACTED]		SS#: [REDACTED]
Birthdate: [REDACTED]		Chart #: [REDACTED]
[REDACTED] 5/23/2012 5:59:18 PM [REDACTED]		Note Created On: 5/23/2012 10:01:55 AM

PATIENT PRESENTS FOR DELIVERY OF SLEEP APPLIANCE:

APPLIANCE TYPE: HERBST  
APPLIANCE WAS INSPECTED BY DR [REDACTED]

LAB: [REDACTED]

PATIENT GIVEN ADVANCEMENT LOG AND REVIEWED INSTRUCTIONS.  
STARTING POSITION: 6MM 4MM CLASS III  
FORWARD FROM ZERO: RIGHT - 15      LEFT - 17  
ADVANCEMENTS NEEDED: 0 UNLESS NEEDED

REVIEWED WITH PATIENT HOW TO TITRATE APPLIANCE AT HOME.

FIT AND ADJUSTED AM ALIGNER TO PT. NATURAL BITING POSITION.

EXPLAINED HOW TO COMPLETE MORNING EXERCISES SO PATIENT'S POSTERIOR TEETH CONTINUE TO FIT TOGETHER.

PATIENT WAS COMFORTABLE WITH PLACING AND REMOVING APPLIANCE BEFORE LEAVING THE OFFICE.

GAVE PT. THEIR MODELS TO KEEP AND WAS ADVISED THAT IF WE NEED THEM IN THE FUTURE THERE WILL BE A CHARGE IF THEY DON'T HAVE THEM ANY LONGER.

REVIEWED WEAR AND CARE INSTRUCTIONS VERBALLY AND PATIENT GIVEN WRITTEN INSTRUCTIONS.

ASSESSMENT: SLEEP APNEA

NEXT VISIT: HERBST CHECK ON 6-20-12 @ 4:30 PM

ABOVE NOTES SCRIBED BY: [REDACTED]  
ABOVE NOTES APPROVED AND SIGNED BY: [REDACTED]  
----- Signed on Wednesday, May 23, 2012 by [REDACTED] -----

**CLINICAL NOTE: 5/30/2012**

Date: 1/8/2013

**Clinical Notes**

Page #: 1

5/30/2012 - 5/30/2012

All Providers

Patient: FRANK T. PHILIP

Patient: FRANK T. PHILIP

SS#: [REDACTED]

Birthdate: [REDACTED]

Chart #: [REDACTED]

5/30/2012 9:57:00 AM DD

Note Created On: 5/30/2012 9:56:01 AM

LM. SEEING HOW PT. IS DOING WITH HIS NEW APPL.





**CLINICAL NOTE: 6/1/2012**

Date: 1/8/2013	<b>Clinical Notes</b>	Page #: 1
	6/1/2012 - 6/1/2012	
	All Providers	
	Patient: FRANK T. PHILLEN	
Patient: FRANK T. PHILLEN		SS#: 654-16-0527
Birthdate: 6/1/1952		Chart #: 65420110
6/1/2012 9:58:01 AM DDS	Note Created On: 6/1/2012 9:57:34 AM	
PT SAYS THAT HE HAS BEEN ADJUSTING HIS APPLIANCE AND THE BOTTOM PART FEELS LIKE ITS GETTING LOOSE. SCHEDULED A FIT ISSUE FOR 6/4/12 AT 3:30PM. [REDACTED]		

**CLINICAL NOTE: 6/4/2012**

<b>Clinical Notes</b>		Page #: 1
6/4/2012 - 6/4/2012 All Providers		
Patient: <b>FRANK J. PHILLEN</b>		
Patient: <b>FRANK J. PHILLEN</b>		SS#: <b>04-19-0507</b>
Birthdate: <b>1/1/1960</b>		Chart #: <b>210016</b>
<b>6/4/2012 3:49:36 PM DDS</b>	<b>Note Created On: 6/4/2012 3:43:40 PM</b>	
PT. PRESENTS FOR A FIT ISSUE. HE STATES THAT HE HAS NOTICED THAT THE LOWER TRAY OF HIS HERBST HAS GOTTEN SLIGHTLY LOOSE ON HIM. TIGHTENED IT FOR HIM AND HE SAID THAT IT FELT COMFORTABLE. HE THEN TOLD ME THAT IT WASN'T ACTUALLY POPPING OFF. I TOLD HIM THAT AS LONG AS IT IS NOT COMING OFF DURING THE NIGHT AND IS NOT BOTHERING HIM, IT DOESN'T HAVE TO BE SUPER TIGHT.		
ASSESSMENT: SLEEP APNEA		
N.V. 6-20-12 @ 4:30 IST HERBST CHECK		
ABOVE NOTES SCRIBED BY: <b>█</b>		
ABOVE NOTES APPROVED AND SIGNED BY: <b>█</b>		

**CLINICAL NOTE & PROGRESS QUESTIONNAIRE: 6/20/2012**

(page 1 of 2)

**Clinical Notes** Page #: 1  
6/20/2012 - 6/20/2012  
All Providers  
Patient: **BLANK T. PHILLEN**

---

Patient: **██████████** SS#: **██████████**  
Birthdate: **██████████** Chart #: **██████████**  
**6/20/2012 4:52:37 PM DRS** Note Created On: 6/20/2012 4:52:37 PM

PATIENT PRESENTS FOR SLEEP APPLIANCE CHECK:  
APPL. TYPE: HERBST AT 6 MM VERT, 4-5 MM ANT. THIS IS AN OA THAT REPLACED AN OLD OA FROM DR **██████████**.

TOOK PHOTO WITH THE APPL IN PLACE.

PATIENT HAS BEEN WEARING SLEEP APPLIANCE SINCE: 5-23-12  
DO YOU WEAR THE APPLIANCE EVERY NIGHT? YES  
WHEN PATIENT WEARS IT, IT IS COMFORTABLE.  
HOW IS PATIENT DOING WITH THE APPL.: SATISFIED  
PATIENT'S ENERGY LEVEL IS: IMPROVED  
PATIENT IS SLEEPING: WELL  
SLEEPING PARTNER: HEARS SOME SNORING, THIS IS GETTING BETTER  
PATIENT WAKES UP FEELING: REFRESHED  
PATIENT DOES/DOES NOT HAVE MORNING HEADACHES.

PATIENT'S ADVANCEMENT LOG HISTORY SINCE LAST VISIT:  
AT LEAST 6 HE SAID  
HE IS AT 23 ADV ON THE RIGHT AND 22 ADV. ON THE LEFT SIDE. ( THESE ARE FORWARD FROM ZERO)

ASSESSMENT: SLEEP APNEA

DR **██████████** SPENT 15 TOTAL MINUTES FACE TO FACE TIME WITH THE PATIENT:  
15 MINUTES SPENT COUNSELING AND COORDINATING CARE REGARDING ALL OF THE ABOVE.

DR **██████████** TALKED TO HIM ABOUT BEING READY TO DO A SCREENING NOW WITH THIS APPL. IN TO SEE HOW IT IS WORKING. HE IS TO LEAVE THE APPL. IN ITS CURRENT POSITION UNTIL WE DO THIS SCREEN.

FINANCIALS: **██████████**  
CHECK LEDGER: **██████████**

NEXT VISIT: 7-2-12 @ 4:45 PULSE OX IN CURRENT POSITION.

ABOVE NOTES SCRIBED BY: **██████████**  
ABOVE NOTES APPROVED AND SIGNED BY: **██████████**

----- Signed on Wednesday, June 20, 2012 by **██████████** -----

CLINICAL NOTE & PROGRESS QUESTIONNAIRE: 6/20/2012

(page 2 of 2)

Progress Questionnaire Oral Appliance Therapy

Patient Name: [REDACTED]

Date: 6-20-12

Insertion date: 5-23-12

Appliance Design: Herbst

Material: Acrylic

Hook: N/A

Do you wear the appliance every night?  yes  no

When you wear it, it is:  comfortable  uncomfortable

How are you doing with the appliance?  satisfied  not satisfied

Your energy level is:  improved  unchanged

You are sleeping:  better  well  about the same  worse

Your sleeping partner:  does not hear any snoring  hears some snoring getting better

You wake up feeling:  refreshed  unrefreshed

You:  have morning headaches  do not have morning headaches

NOTES: has been adjusting for the snoring

FOR OFFICE USE:

ADVANCES COMPLETED: 6

CLINICAL JAW POSITION: 4-5mm ant.

ADV. LEFT IN ASSEMBLY: 21

6mm Vertical

21 @ 23  
4 @ 22

**CLINICAL NOTE & MEDIBYTE JR. REPORT: 7/2/2012**

(page 1 of 2)

Date: 1/8/2013	<b>Clinical Notes</b>	Page #: 1
	7/2/2012 - 7/2/2013	
	All Providers	
	Patient: [REDACTED]	
Patient: [REDACTED]		SS#: [REDACTED]
Birthdate: [REDACTED]		Chart #: [REDACTED]
[REDACTED]		
	Note Created On: 7/2/2012 5:22:57 PM	
PATIENT PRESENTS FOR SLEEP SCREENING: ONE NIGHT MONITORING CURRENT POSITION		
PT PICKED UP MEDIBYTE UNIT # 3 PT SIGNED DAMAGE CONSENT FORM, AND GAVE INSTRUCTIONS ON HOW TO USE.		
PT. WAS INSTRUCTED TO KEEP THE NASAL CANULA FOR FUTURE SCREENINGS. IF THEY DO NOT HAVE IT WHEN NEEDED IN THE FUTURE THERE WILL BE A CHARGE FOR A NEW ONE.		
PATIENT INSTRUCTED HOW TO POSITION THE MONITOR BEFORE HE GOES TO BED THIS EVENING.		
WAS STUDY DONE WITH APPLIANCE: YES WAS STUDY DONE WITH CPAP: NO WAS STUDY DONE WITH POSITIONAL THERAPY: NO		
APPLIANCE TYPE: HERBST 6 MM ADVANCEMENTS LEFT IN APPLIANCE: 25+ CLINICAL JAW POSITION: DID NOT BRING HIS OA WITH HIM. PATIENT STATES HE HAS 23 LEFT AND 22 RIGHT.		
ASSESSMENT: SLEEP APNEA		
NEXT APPT.: 7-3-2012 RETURN MEDIBYTE		
ABOVE NOTES SCRIBED BY: [REDACTED]		
ABOVE NOTES APPROVED AND SIGNED BY: [REDACTED]		
----- Signed on Monday, July 02, 2012 by [REDACTED] -----		

CLINICAL NOTE & MEDIBYTE JR. REPORT: 7/2/2012

(page 2 of 2)

MediByte™ Jr. Report

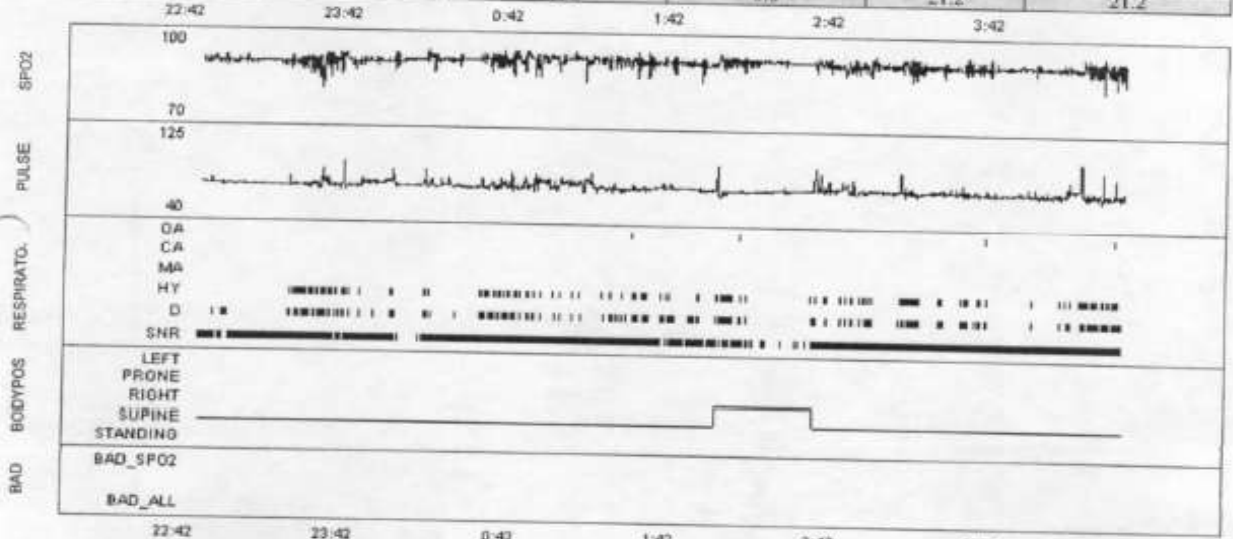
Unattended HST Summary Report

Patient Name:	[REDACTED]	Patient ID:	[REDACTED]
Date of Birth:	[REDACTED]	Chart Code:	[REDACTED]
Weight:	228.0 lbs	Study Date:	07/02/12
Height:	5' 7"	Age:	0
BMI:	35.9	Neck Circumference:	0"
Waist: 0"	Hips: 0"	Waist-Hip Ratio:	0.00
Sex:	Male	Referring Physician:	

Comments:

Total Recording Time(TRT): 345.4 minutes						Cardiac					
Respiratory and Snoring Events	Total#	Index	Duration (sec.)			Avg HR:	70.7	Min HR:	59.0	Max HR:	109.0
			Mean	Min	Max						
Central Apneas	0	0.0	0.0	0.0	0.0	Oximetry					
Obstructive Apneas	4	0.7	13.2	11.1	15.7	Mean SpO2	92.7%				
Mixed Apneas	0	0.0	0.0	0.0	0.0	Min SpO2	80.0%				
Hypopneas	143	24.8	24.7	10.0	107.2	Max SpO2	98.0%				
Apnea + Hypopnea	147	25.5	24.4	10.0	107.2	SpO2 Range		%	Minutes		
						90-100 %	96.4%	332.9			
						80-89 %	3.6%	12.5			
						70-79 %	0.0%	0.0			
						60-69%	0.0%	0.0			
						50-59%	0.0%	0.0			
						< 50 %	0.0%	0.0			
Desaturations	170	29.5	30.8	8.3	167.0						
Snoring	2908	505.1	0.6	0.2	2.2						

Body Position	Supine	Prone	Left Side	Right Side	Total Non Supine
% Time in Position	89.4%	0.0%	0.0%	10.6%	10.6%
Snoring events	2866	0	0	42	42
Apnea + Hypopnea events	134	0	0	13	13
Apnea + Hypopnea Index	26.0	0.0	0.0	21.2	21.2



Total Recording Time: 345.4 minutes

Patient	Apnea-Hypopnea Index	Severe	Moderate	Mild	Normal
[REDACTED]	25.5	>30	15 to 30	5 to 15	<5

\*Respiratory events are defined in the Assisted Scoring User Settings and in the User Guide. Final clinical decisions and degree of accuracy are the sole responsibility of the clinician using this software.

**CLINICAL NOTES: 7/17/2012 and 8/2/2012**

**Note Created On: 7/17/2012 10:40:42 AM**

LM FOR PATIENT TO CALL OFFICE FOR SLEEP MONITORING PER [REDACTED]

AHI: 25.5  
LOW O2:80%3.6%TST<90

HERBST 6 MM

GREAT IMPROVEMENTS! ADV A TOTAL OF 10 PER SIDE AND DO ANOTHER MONITORING. ADV ONCE EVERY OTHER DAY IF JAW SORENESS OR DISCOMFORT THEN ADV ONCE EVERY 3-5 DAYS, THEN RE MONITOR.

NEXT APPT: SCHEDULE MONITORING 3 WEEKS OUT AND APPT WITH [REDACTED]

SACMA

**Note Created On: 7/17/2012 4:30:03 PM**

PT WAS RETURNING PHONE CALL FOR TESTS RESULTS. I WENT OVER THEM WITH HIM AND GAVE HIM INSTRUCTIONS TO ADVANCE HIS APPL, AND SCHEDULED HIM TO SEE [REDACTED] AND DO ANOTHER SLEEP SCREENING.

NEXT VISIT: 8/3/2012 AT 430PM. CMP

**Note Created On: 8/2/2012 4:45:31 PM**

CLINICAL NOTE: 8/2/2012

**Clinical Notes**

Page #: 2

All Providers  
Patient: [REDACTED]

8/2/2012 6:34:55 PM DDBT (Continued) Note Created On: 8/2/2012 4:45:31 PM

PATIENT PRESENTS FOR SLEEP APPLIANCE CHECK:  
APPL. TYPE: HERBST

PT STARTED ABOUT 4 - 5 MM ANTERIOR BECAUSE OF A PREVIOUS APPLIANCE. NOT USING CPAP FOR YEARS

PT ADVANCED 10 ADVANCEMENTS SINCE LAST APPT.

PATIENT HAS BEEN WEARING SLEEP APPLIANCE SINCE: 5-23-12  
DO YOU WEAR THE APPLIANCE EVERY NIGHT? YES  
WHEN PATIENT WEARS IT, IT IS COMFORTABLE.  
HOW IS PATIENT DOING WITH THE APPL.: SATISFIED  
PATIENT'S ENERGY LEVEL IS: IMPROVED  
PATIENT IS SLEEPING: WELL  
SLEEPING PARTNER: DOES NOT HEAR ANY SNORING  
PATIENT WAKES UP FEELING: REFRESHED  
PATIENT DOES NOT HAVE MORNING HEADACHES.

PATIENT'S ADVANCEMENT LOG HISTORY SINCE LAST VISIT: 10  
CLINICAL JAW POSITION: 6MM 7 MM ANTERIOR

PATIENT PRESENTS FOR SLEEP MONITORING:

ONE NIGHT MONITORING AT CURRENT POSITION

PT PICKED UP MEDIBYTE  
UNIT # 5  
PT SIGNED DAMAGE CONSENT FORM, AND GAVE INSTRUCTIONS ON HOW TO USE.

PT. HAS CANULA.

PATIENT INSTRUCTED HOW TO POSITION THE MONITOR BEFORE HE GOES TO BED THIS EVENING.

WAS STUDY DONE WITH APPLIANCE: YES  
WAS STUDY DONE WITH CPAP: NO  
WAS STUDY DONE WITH POSITIONAL THERAPY: NO

APPLIANCE TYPE: HERBST  
ADVANCEMENTS LEFT IN APPLIANCE: ? 8  
CLINICAL JAW POSITION: 6MM 7MM ANTERIOR

ASSESSMENT: SLEEP APNEA

[REDACTED] SPENT 15 TOTAL MINUTES FACE TO FACE TIME WITH THE PATIENT: 15 MINUTES SPENT COUNSELING AND COORDINATING CARE REGARDING ALL OF THE ABOVE.

FINANCIALS: [REDACTED]  
CHECK LEDGER: [REDACTED]

NEXT VISIT: RETURN SLEEP MONITOR ON 8-3-12 @

ABOVE NOTES SCRIBED BY: [REDACTED]  
ABOVE NOTES APPROVED AND SIGNED BY: [REDACTED]  
----- Signed on Thursday, August 02, 2012 by [REDACTED] -----



PROGRESS QUESTIONNAIRE: 8/2/2012

Progress Questionnaire Oral Appliance Therapy

Patient Name: [REDACTED]

Date: 8-2-12

Insertion date: 5-23-12

Appliance Design: Herbst

Material: Acrylic

Hook: N/A

Do you wear the appliance every night?

yes  
 no

When you wear it, it is:

comfortable  
 uncomfortable

How are you doing with the appliance?

satisfied  not satisfied

Your energy level is:

improved  unchanged

You are sleeping:

better  about the same  
 well  worse

Your sleeping partner:

does not hear any snoring  
 hears some snoring

You wake up feeling:

refreshed  unrefreshed

You:

have morning headaches  
 do not have morning headaches

NOTES:

He started about 4-5mm Class 3  
because of a previous appliance.  
not using cpap for years

FOR OFFICE USE:

ADVANCES COMPLETED: 10

CLINICAL JAW POSITION: 6mm 7mm Anterior

ADV. LEFT IN ASSEMBLY: 2, 8

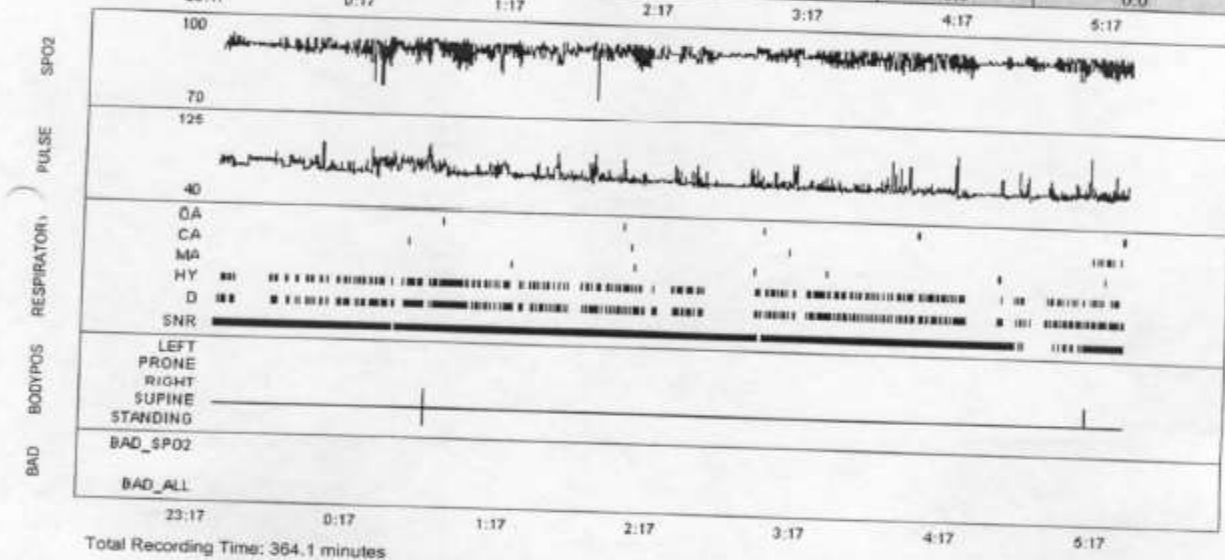
## MediByte™ Jr. Report

### Unattended HST Summary Report

Patient Name:		[REDACTED]		Patient ID:		[REDACTED]	
Date of Birth:		[REDACTED]		Chart Code:		[REDACTED]	
Weight:		228.0 lbs		Study Date:		08/02/12	
Height:		5' 7"		Age:		0	
BMI:		35.9		Neck Circumference:		0"	
Waist: 0"		Hip: 0"		Waist-Hip Ratio:		0.00	
Sex:		Male		Referring Physician:			

Total Recording Time (TRT): 364.1 minutes										
Respiratory and Snoring Events	Total#	Index	Duration (sec.)			Cardiac				
			Mean	Min	Max	Avg HR:	Min HR:	Max HR:		
Central Apneas	11	1.8	23.9	11.6	33.0	67.6	54.0	109.0		
Obstructive Apneas	8	1.3	16.7	10.1	25.3					
Mixed Apneas	7	1.2	22.2	16.5	25.9					
Hypopneas	226	37.2	35.8	10.0	115.0					
Apnea + Hypopnea	252	41.5	34.3	10.0	115.0					
Oximetry										
		Mean SpO2		93.4%						
		Min SpO2		73.0%						
		Max SpO2		98.0%						
		SpO2 Range		%		Minutes				
		90-100 %		95.3%		346.9				
		80-89 %		4.5%		16.3				
		70-79 %		0.2%		0.9				
		60-69%		0.0%		0.0				
		< 50 %		0.0%		0.0				
Resaturations	266	43.8	39.4	11.4	137.4					
Snoring	3504	577.5	0.7	0.2	2.8					

Body Position	Supine	Prone	Left Side	Right Side	Total Non Supine
% Time in Position	99.8%	0.0%	0.0%	0.1%	0.1%
Snoring events	3496	0	0	3	3
Apnea + Hypopnea events	252	0	0	0	0
Apnea + Hypopnea Index	41.6	0.0	0.0	0.0	0.0



Total Recording Time: 364.1 minutes

Patient	Apnea-Hypopnea Index				
	Severe	Moderate	Mild	Normal	
[REDACTED]	>30	15 to 30	5 to 15	<5	41.5

\*Respiratory events are defined in the Actual Scoring User Settings and in the User Guide. Final clinical decisions and degree of accuracy are the sole responsibility of the clinician using this software.  
Powered by BRAEBON®

CLINICAL NOTE: 8/7/2012

Date: 1/8/2013	<b>Clinical Notes</b>	Page #: 1
	8/7/2012 - 8/7/2012	
	All Providers	
	Patient: [REDACTED]	
Patient: [REDACTED]		SS#: [REDACTED]
Birthdate: [REDACTED]		Chart #: [REDACTED]
[REDACTED] 8/15/2012 10:43:42 AM [REDACTED]	Note Created On: 8/7/2012 2:23:30 PM	
LM. FOR PT. TO CALL US BACK TO GO OVER HIS MONITORING RESULTS.		
PER [REDACTED]		
ALL SUPINE!		
AHI: 41.5/HR		
LOW O2: 73% - 4.&% TST < 90		
HE GOT WORSE WITH THE ADVANCEMENTS. [REDACTED] WANTS TO DO A NEW 2 NIGHT MONITOR.		
NIGHT 1= 4 ADV. OUT		
NIGHT 2= 4 MORE ADV. OUT		
THEN HE IS TO LEAVE ALL THOSE OUT UNTIL [REDACTED] TALKS TO HIM.		
* MAKE SURE TO LET GIVE THIS TO [REDACTED] ASAP AFTER HE DOES THE MONITOR SO HE CAN REVIEW IT AND CALL HIM WITH THE INSTRUCTIONS ON WHETHER OR NOT THE ADJ. ARE GOING TO BE IN OR OUT.		
N.V. NEEDS TO BE A 2 NIGHT APPL. MONITOR: NIGHT 1= 4 ADV. OUT, NIGHT 2 4 MORE OUT.		
[REDACTED]		

CLINICAL NOTE: 8/23/2012

**Clinical Notes**

Page #: 4

All Providers

Patient: FRANK J. PHILEN

8/23/2012 5:03:43 PM DUST (Continued)

Note Created On: 8/23/2012 5:03:43 PM

PATIENT PRESENTS FOR SLEEP MONITORING:

2 NIGHT SLEEP MONITORING -- 1ST NIGHT TAKE 4 TURNS OUT AND 2ND NIGHT TAKE 4 MORE TURNS OUT. I INSTRUCTED PT TO LEAVE THE TURNS OUT UNTIL OTHERWISE INSTRUCTED

PT PICKED UP SLEEP MONITORING  
UNIT # 5  
PT SIGNED DAMAGE CONSENT FORM, AND GAVE INSTRUCTIONS ON HOW TO USE.

PT. HAS NASAL CANULA

PATIENT INSTRUCTED HOW TO POSITION THE MONITOR BEFORE HE GOES TO BED THIS EVENING.

WAS STUDY DONE WITH APPLIANCE: YES  
WAS STUDY DONE WITH CPAP: NO  
WAS STUDY DONE WITH POSITIONAL THERAPY: NO

APPLIANCE TYPE: HERBST  
ADVANCEMENTS LEFT IN APPLIANCE: 10+  
CLINICAL JAW POSITION: 7MM ANTERIOR

ASSESSMENT: SLEEP APNEA

NEXT APPT.: PT RETURN SLEEP MONITORING CALL PT WITH RESULTS.

ABOVE NOTES SCRIBED BY: [REDACTED]  
ABOVE NOTES APPROVED AND SIGNED BY: [REDACTED]  
----- Signed on Thursday, August 23, 2012 by [REDACTED] -----

**MEDIBYTE JR**  
 HST + INTERPRETATION REPORT

**PATIENT** [REDACTED]  
 Patient ID: [REDACTED]  
 Study Date: 08/23/12 (MM/DD/YY)  
 Date of Birth: [REDACTED]  
 Age: 50  
 Sex: Male  
 Height: 5' 7" (170 cm)  
 Weight: 228.0 lbs  
 BMI: 35.9  
 Waist-Hip Ratio: 0.00 (W: 0", H: 0")

**AHI: 36.8**

Severe >30  
 Moderate 16-30  
 Mild 5-15  
 Normal <5

**RDI: 46.8**

Chart Code: [REDACTED]  
 Referring Physician:  
 Total Recording  
 Time: 275.7 minutes



**HOME SLEEP APNEA TESTING DEVICE**

The MediByte Jr\*, a 6-channel Type 3 home sleep respiratory recorder, was used to evaluate sleep-disordered breathing. The following parameters were recorded for a duration of 275.7 minutes: Snoring (high frequency vibrations in airflow), oronasal pressure Airflow, RIP Chest Effort, SpO2, Pulse Rate, Body Position, and User Events.

*Note: Respiratory events were scored using the following rules. Apneic events required a 90% or more reduction in airflow, Hypopneic events required a 30% reduction in airflow along with an accompanying 4% oxygen desaturation.*

**COMMENTS**

OXIMETRY	SpO <sub>2</sub> Range	
	%	Minutes
98-100 %	0.1%	0.3
96-97 %	7.3%	20.2
94-95%	30.4%	83.8
92-93 %	52.1%	143.6
90-91 %	7.2%	19.9
90-100 %	97.2%	267.8
80-89 %	2.8%	7.7
70-79 %	0.0%	0.0
60-69 %	0.0%	0.0
50-59 %	0.0%	0.0
< 50%	0.0%	0.1

Desaturations $\geq 4\%$	Total	Index	
	137	29.8	
	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>
SpO <sub>2</sub> (%)	93.2	82.0	98.0
Pulse (BPM)	62.4	51.0	95.0

*\*Respiratory events are defined in the Assisted Scoring User Settings and in the User Guide. Final clinical decisions and degree of accuracy are the sole responsibility of the clinician using this software.*

**MEDI BYTE JR**  
 HST + INTERPRETATION REPORT

PATIENT [REDACTED]

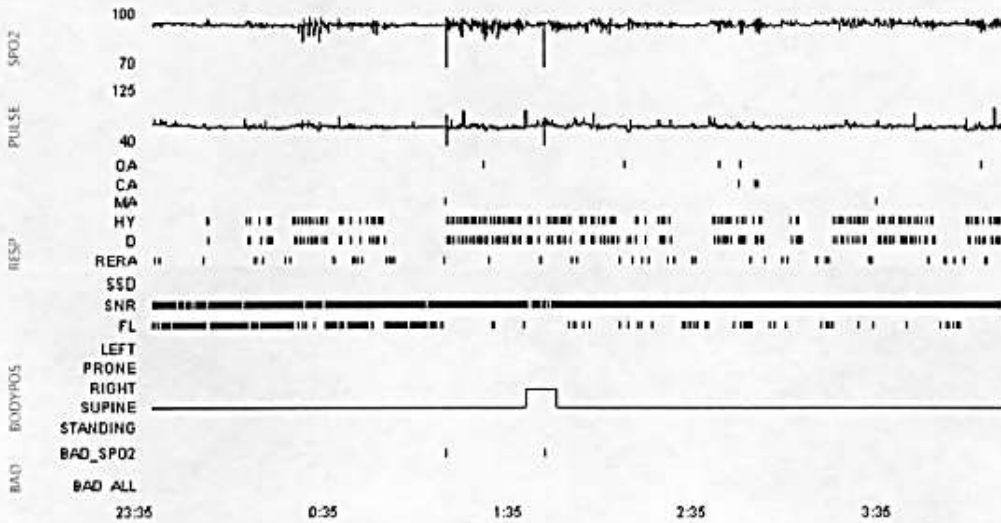
Patient ID: [REDACTED]

Study Date: 08/23/12 (MM/DD/YY)

RESPIRATORY	Total	Index	Mean	Duration (sec.)	
				Min.	Max.
Central Apneas	3	0.7	18.7	15.7	22.1
Obstructive Apneas	5	1.1	23.6	18.8	27.8
Mixed Apneas	2	0.4	17.2	14.3	20.0
Hypopneas	159	34.6	33.4	10.4	102.9
Apnea + Hypopnea	169	36.8	32.7	10.4	102.9
Snoring	2174	473.1	0.7	0.2	2.6
Desaturations	137	29.8	38.8	6.3	178.3
RERAs	46	10.0	33.0	11.7	103.9

**EVENTS BY BODY POSITION**

	Supine	Non-Supine	Right	Left	Prone
% Time in Position	96.6%	3.4%	3.4%	0.0%	0.0%
Snoring Events	2145	29	29	0	0
Apneas + Hypopneas	161	8	8	0	0
Apnea + Hypopnea Index	36.3	51.7	51.7	0.0	0.0



\*Respiratory events are defined in the Assisted Scoring User Settings and in the User Guide. Final clinical decisions and degree of accuracy are the sole responsibility of the clinician using this software.

**MEDIBYTE JR**  
 HST + INTERPRETATION REPORT

**PATIENT** [REDACTED]

Patient ID: [REDACTED]  
 Study Date: **08/23/12 (MM/DD/YY)**  
 Date of Birth: [REDACTED]

**AHI 36.8**

Severe >30  
 Moderate 15-30  
 Mild 5-15  
 Normal <5

Age **50**  
 Sex **Male**  
 Height **5' 7" (170 cm)**  
 Weight **228.0 lbs**  
 BMI **35.9**

Chart Code: [REDACTED]  
 Referring Physician

Total Recording Time **275.7 minutes**

ESS: **1**

The MediByte Jr. a Home Sleep Testing device (HST) was utilized. The data was obtained from the following recorded parameters: Airflow (by oral/nasal pressure transducer), Oxygen Saturation and Pulse (by Pulse Oximetry), Chest Respiratory Effort (by RIP technology) and body position (by accelerometer). All Respiratory Events were scored using the AASM rules of 90% or more airflow reduction for apnea events and 30% or more airflow reduction with accompanying 4% oxygen desaturation.

**DIAGNOSTIC IMPRESSION**

Indications for Study: **Select Appropriate diagnosis**

Respiratory Events:      Number of Obstructive Apneas:            **5**  
                                          Number of Mixed Apneas:                    **2**  
                                          Number of Central Apneas:                 **3**  
                                          Number of Hypopneas:                      **159**

The Patient was supine for 275.7 min. with a supine RDI of 36.3; non-supine for 275.7 min. with a non-supine RDI of 51.7.

Oximetry:                    Desaturation Index:                            **29.8**  
                                          Min. 82.0%, Mean 93.2%, Max. 98.0%  
                                          Time below 88%: **2.6 min**

Snoring:                      Mild in intensity

Heart Rate:                    Min 51.0 bpm, Max 95.0 bpm

AHI Diagnosis:                The study showed **NORMAL <5** respiratory events per hour of total study time. Positional influence was a contributing factor to the respiratory events.

**RECOMMENDATIONS**

1. Sleep hygiene measures; assess factors that may improve sleep quality.
2. Behavioral therapy such as: positional therapy (avoid supine position while asleep, weight reduction/management.
3. Advise against the use of alcohol or sedatives (these substances can increase the frequency/severity of respiratory disturbances of sleep and worsen excessive daytime sleepiness.
4. Consider Mandibular Advancement Device (MAD) or CPAP followed by Home Sleep Testing (HST) along with CPAP.
5. Advise patient against participating in potentially dangerous activities while drowsy as such activity like operating a motor vehicle or heavy equipment may put oneself or others in danger.
6. Advise the patient of the long-term consequences of sleep apnea if left untreated and the need for treatment and follow up by a professional medical provider.

\*\*\* HST cannot diagnose all sleep disturbances, therefore if this test is negative for Sleep Apnea and your clinical evaluation suggests otherwise please refer to a facility study\*\*\*

Please pull down to sign            (mm/dd/yy)

Note: Form protected using password "braebon"

\*Respiratory events are defined in the Assisted Scoring User Settings and in the User Guide. Final clinical decisions and degree of accuracy are the sole responsibility of the clinician using this software.



**MEDIBYTE JR**  
HST + INTERPRETATION REPORT

PATIENT [REDACTED]

Patient ID [REDACTED]

Study Date: 08/24/12 (MM/DD/YY)

Date of Birth: [REDACTED]

Age: 50

Sex: Male

Height: 5' 7" (170 cm)

Weight: 227.0 lbs

BMI: 35.8

Waist-Hip Ratio: 0.00 (W: 0", H: 0')

AHI: 47.7

RDI: 53.9

Chart Code: [REDACTED]

Referring Physician:

Total Recording

Time: 436.7 minutes

Severe >30  
Moderate 15-30  
Mild 5-15  
Normal <5



HOME SLEEP APNEA TESTING DEVICE

The MediByte Jr®, a 6-channel Type 3 home sleep respiratory recorder, was used to evaluate sleep-disordered breathing. The following parameters were recorded for a duration of 436.7 minutes: Snoring (high frequency vibrations in airflow), oronasal pressure Airflow, RIP Chest Effort, SpO<sub>2</sub>, Pulse Rate, Body Position, and User Events.

*Note: Respiratory events were scored using the following rules: Apneic events required a 90% or more reduction in airflow. Hypopneic events required a 30% reduction in airflow along with an accompanying 4% oxygen desaturation.*

COMMENTS

OXIMETRY	SpO <sub>2</sub> Range		Desaturations ≥4%	Total	Index	
	%	Minutes				
98-100 %	0.7%	2.9				
96-97 %	10.1%	43.6				
94-95%	28.7%	124.2				
92-93 %	36.3%	157.0				
90-91 %	14.6%	63.2				
90-100 %	90.4%	390.9				
80-89 %	9.5%	41.1				
70-79 %	0.0%	0.0				
60-69 %	0.0%	0.0				
50-59 %	0.0%	0.0				
< 50%	0.1%	0.3				
				301	41.4	
			SpO <sub>2</sub> (%)	Mean 92.7	Min. 81.0	Max. 98.0
			Pulse (BPM)	62.9	52.0	97.0

\*Respiratory events are defined in the Assisted Scoring User Settings and in the User Guide. Final clinical decisions and degree of accuracy are the sole responsibility of the clinician using this software.



**MEDI BYTE JR**  
 HST + INTERPRETATION REPORT

PATIENT [REDACTED]

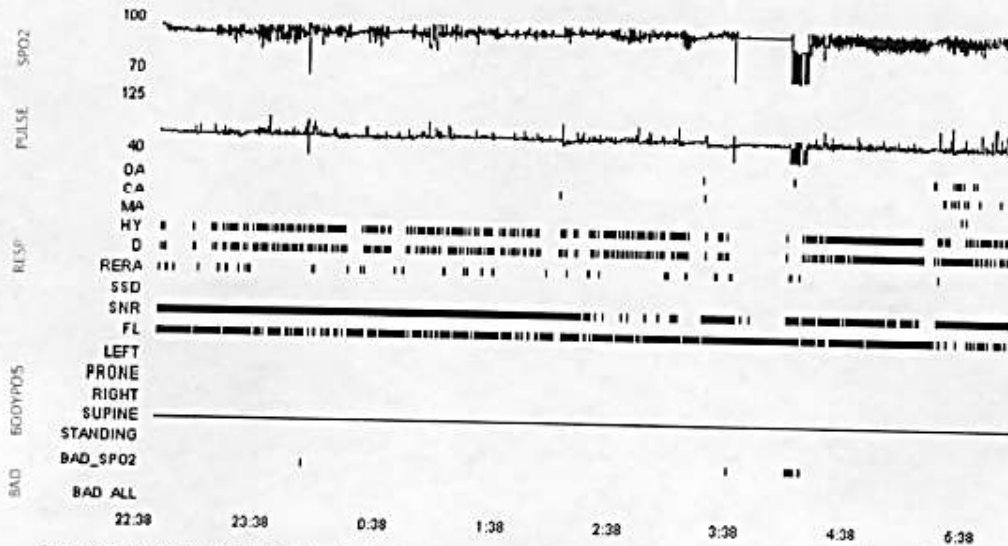
Patient ID: [REDACTED]

Study Date: 08/24/12 (MM/DD/YY)

RESPIRATORY	Total	Index	Mean	Duration (sec.)	
				Min.	Max.
Central Apneas	11	1.5	22.9	15.6	29.4
Obstructive Apneas	10	1.4	32.9	12.5	104.6
Mixed Apneas	2	0.3	28.9	24.0	33.9
Hypopneas	324	44.5	35.1	10.1	135.4
Apnea + Hypopnea	347	47.7	34.7	10.1	135.4
Snoring	3209	440.9	0.7	0.2	2.8
Desaturations	301	41.4	39.2	7.3	264.2
RERAs	45	6.2	33.2	10.7	77.5

**EVENTS BY BODY POSITION**

	Supine	Non-Supine	Right	Left	Prone
% Time in Position	100.0%	0.0%	0.0%	0.0%	0.0%
Snoring Events	3209	0	0	0	0
Apneas + Hypopneas	347	0	0	0	0
Apnea + Hypopnea Index	47.7	0.0	0.0	0.0	0.0



\*Respiratory events are defined in the Assisted Scoring User Settings and in the User Guide. Final clinical decisions and degree of accuracy are the sole responsibility of the clinician using this software.

MEDI BYTE JR  
HST + INTERPRETATION REPORT

PATIENT

Patient ID: [REDACTED]  
Study Date: 08/24/12 (MM/DD/YY)  
Date of Birth: [REDACTED]  
Age: 50  
Sex: Male  
Height: 5' 7" (170 cm)  
Weight: 227.0 lbs  
BMI: 35.8  
ESS: 1

AHI 47.7

Severe >30  
Moderate 15-30  
Mild 5-15  
Normal <5

Chart Code: [REDACTED]  
Referring Physician: [REDACTED]  
Total Recording Time: 436.7 minutes

The MediByte Jr. a Home Sleep Testing device (HST) was utilized. The data was obtained from the following recorded parameters: Airflow (by oral/nasal pressure transducer), Oxygen Saturation and Pulse (by Pulse Oximetry), Chest Respiratory Effort (by RIP technology) and body position (by accelerometer). All Respiratory Events were scored using the AASM rules of 90% or more airflow reduction for apnea events and 30% or more airflow reduction with accompanying 4% oxygen desaturation.

DIAGNOSTIC IMPRESSION

Indications for Study: Select Appropriate diagnosis

Respiratory Events: Number of Obstructive Apneas: 10  
Number of Mixed Apneas: 2  
Number of Central Apneas: 11  
Number of Hypopneas: 324

The Patient was supine for 436.7 min. with a supine RDI of 47.7; non-supine for 436.7 min. with a non-supine RDI of 0.0.

Oximetry: Desaturation Index: 41.4  
Min. 81.0%, Mean 92.7%, Max. 98.0%  
Time below 88%: 16.5 min

Snoring: Mild in intensity

Heart Rate: Min 52.0 bpm, Max 97.0 bpm

AHI Diagnosis: The study showed NORMAL <5 respiratory events per hour of total study time. Positional influence was a contributing factor to the respiratory events.

RECOMMENDATIONS

1. Sleep hygiene measures; assess factors that may improve sleep quality.
2. Behavioral therapy such as: positional therapy (avoid supine position while asleep, weight reduction/management.
3. Advise against the use of alcohol or sedatives (these substances can increase the frequency/severity of respiratory disturbances of sleep and worsen excessive daytime sleepiness.
4. Consider Mandibular Advancement Device (MAD) or CPAP followed by Home Sleep Testing (HST) along with CPAP.
5. Advise patient against participating in potentially dangerous activities while drowsy as such activity like operating a motor vehicle or heavy equipment may put oneself or others in danger.
6. Advise the patient of the long-term consequences of sleep apnea if left untreated and the need for treatment and follow up by a professional medical provider.

\*\*\* HST cannot diagnose all sleep disturbances, therefore if this test is negative for Sleep Apnea and your clinical evaluation suggests otherwise please refer to a facility study\*\*\*

Please pull down to sign (mm/dd/yy)

Note: Form protected using password "braebon"

\*Respiratory events are defined in the Assisted Scoring User Settings and in the User Guide. Final clinical decisions and degree of accuracy are the sole responsibility of the clinician using this software.



**CLINICAL NOTES: 9/12/12 and 9/25/12**

9/12/2012 2:30:21 PM [REDACTED] Note Created On: 9/12/2012 2:31:25 PM  
LM. FOR PT. TO CALL US BACK TO GO OVER HIS SLEEP MONITOR RESULTS WITH HIM.  
PER [REDACTED]  
AHI: 36.8/HR  
LOW O2: 32% - 2.8% TST < 90

WE NEED TO HAVE HIM TAKE OUT THE 2 ADV. PER SIDE. HE IS REALLY BAD ON HIS BACK AND VIRTUALLY THE WHOLE TIME WAS ON HIS BACK. IF HE DOESN'T HAVE TO SLEEP ON HIS BACK, WE NEED TO TRY A POSITIONAL DEVICE. (\$95.00) THEN RE MONITOR.

N.V. SHOULD BE, DELIVERING A POSITIONAL DEVICE AND THEN SCHED. IN ABOUT 1 WEEK FOR AN APPL. MONITOR.

[REDACTED]

9/25/2012 9:41:23 AM [REDACTED] Note Created On: 9/25/2012 9:40:34 AM  
PT CALLED AND I WENT OVER HIS SLEEP SCREENING RESULTS WITH HIM. HE SAID THAT HE DOES SLEEP ON HIS BACK MOST OF THE TIME, BUT HE WAS OK WITH TRYING SLEEP POSITIONAL THERAPY. SCHEDULED THIS FOR HIM.

NEXT APPT: 9/27/12 AT 4PM FOR SLEEP POSITIONAL THERAPY

[REDACTED]

**CLINICAL NOTE: 9/27/12**

**Clinical Notes** Page #: 1  
9/27/2012 - 9/27/2012  
All Providers  
Patient: [REDACTED]

---

Patient: [REDACTED] SS#: [REDACTED]  
Birthdate: [REDACTED] Chart #: [REDACTED]

9/27/2012 3:27:49 PM [REDACTED] Note Created On: 9/27/2012 4:19:27 PM

PATIENT PRESENTED TODAY FOR A POSITIONAL DEVICE.

I FITTED THE POSITIONAL DEVICE AND SHOWED HIM HOW TO WEAR. I SCHEDULED HIM ANOTHER APPLIANCE MONITORING DEVICE FOR ONE WEEK. WILL TEST HIM WITH DEVICE AND APPLIANCE.

ASSESSMENT: SLEEP APNEA

FINANCIALS: [REDACTED]  
CHECK LEDGER: [REDACTED]

COLLECTED \$97.00  
NEXT VISIT: 10/4/12 @ 4:30 P.M. FOR APPLIANCE MONITORING DEVICE WITH POSITIONAL DEVICE AND APPLIANCE.  
ABOVE NOTES SCRIBED BY: [REDACTED]  
ABOVE NOTES APPROVED AND SIGNED BY: [REDACTED]

----- Signed on Sunday, September 30, 2012 by [REDACTED] -----

**CLINICAL NOTE: 10/4/12**

<b>Clinical Notes</b>		Page #: 1
10/4/2012 - 10/4/2012		
All Providers		
Patient: [REDACTED]		
<hr/>		
Patient: [REDACTED]		SS#: [REDACTED]
Birthdate: [REDACTED]		Chart #: [REDACTED]
[REDACTED] 10/4/2012 4:43:54 PM DDS	Note Created On: 10/4/2012 4:38:39 PM	
PATIENT PRESENTS FOR APPLIANCE MONITORING: ONE NIGHT MONITOR IN CURRENT POSITION WITH POSITIONAL DEVICE.		
PT PICKED UP APPLIANCE MONITORING DEVICE. PT STATES THAT HE PUT 2 ADV IN LAST NIGHT BECAUSE HE HASN'T BEEN ABLE TO SLEEP WELL. HE HAS ALSO BEEN SNORING A LOT WHILE ON HIS BACK.		
UNIT # 5		
PT SIGNED DAMAGE CONSENT FORM, AND GAVE INSTRUCTIONS ON HOW TO USE.		
PT. WAS INSTRUCTED TO KEEP THE NASAL CANULA FOR FUTURE SCREENINGS. IF THEY DO NOT HAVE IT WHEN NEEDED IN THE FUTURE THERE WILL BE A CHARGE FOR A NEW ONE.		
PATIENT INSTRUCTED HOW TO POSITION THE MONITOR BEFORE HE GOES TO BED THIS EVENING.		
WAS STUDY DONE WITH APPLIANCE: YES		
WAS STUDY DONE WITH CPAP: NO		
WAS STUDY DONE WITH POSITIONAL THERAPY: YES		
APPLIANCE TYPE: HERBST		
ADVANCEMENTS LEFT IN APPLIANCE: 10+		
CLINICAL JAW POSITION: 6 MM 4 MM ANT		
ASSESSMENT: SLEEP APNEA		
NEXT APPT.: 10-5-12 @ 8:00 TO RETURN MONITOR.		
ABOVE NOTES SCRIBED BY: [REDACTED]		
ABOVE NOTES APPROVED AND SIGNED BY: [REDACTED]		

**MEDIBYTE JR. REPORT: 10/4/2012**  
 (page 1 of 3)

**MEDIBYTE JR**

HST - INTERPRETATION REPORT

**PATIENT** [REDACTED]

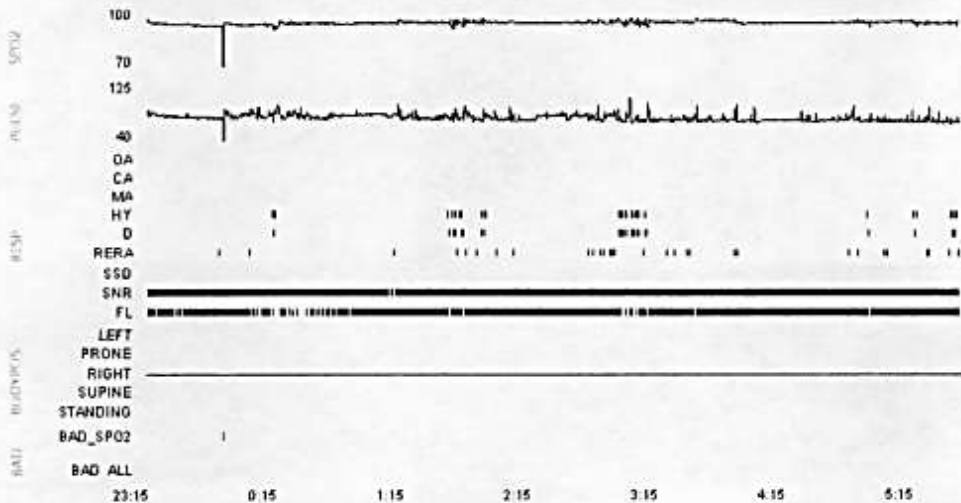
Patient ID [REDACTED]

Study Date: 10/04/12 (MM/DD/YY)

RESPIRATORY	Total	Index	Mean	Duration (sec.)	
				Min.	Max.
Central Apneas	0	0.0	0.0	0.0	0.0
Obstructive Apneas	0	0.0	0.0	0.0	0.0
Mixed Apneas	0	0.0	0.0	0.0	0.0
Hypopneas	27	4.2	43.1	10.1	135.9
Apnea - Hypopnea	27	4.2	43.1	10.1	135.9
Snoring	4123	648.1	1.0	0.2	2.4
Desaturations	18	2.8	70.5	14.5	192.6
RERAs	29	4.6	43.5	10.7	100.6

**EVENTS BY BODY POSITION**

	Supine	Non-Supine	Right	Left	Prone
% Time in Position	0.0%	100.0%	100.0%	0.0%	0.0%
Snoring Events	0	4123	4123	0	0
Apneas - Hypopneas	0	27	27	0	0
Apnea - Hypopnea Index	0.0	4.2	4.2	0.0	0.0



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**BRAEBON**  
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**MEDIBYTE JR**  
HST + INTERPRETATION REPORT

PATIENT [REDACTED]

Patient ID: [REDACTED]  
Study Date: 10/04/12 (MM/DD/YY)

AHI 4.2

Severe >30  
Moderate 15-30  
Mild 5-15  
Normal <5

Date of Birth: [REDACTED]

Age 50  
Sex Male  
Height 5' 7" (170 cm)  
Weight 234.0 lbs  
BMI 36.9

Chart Code: [REDACTED]  
Referring Physician: [REDACTED]

Total Recording Time: 381.7 minutes

ESS 1

The MediByte Jr. a Home Sleep Testing device (HST) was utilized. The data was obtained from the following recorded parameters: Airflow (by oral/nasal pressure transducer), Oxygen Saturation and Pulse (by Pulse Oximetry), Chest Respiratory Effort (by RIP technology) and body position (by accelerometer). All Respiratory Events were scored using the AASM rules of 90% or more airflow reduction for apnea events and 30% or more airflow reduction with accompanying 4% oxygen desaturation.

**DIAGNOSTIC IMPRESSION**

Indications for Study: Select Appropriate diagnosis

Respiratory Events:  
Number of Obstructive Apneas: 0  
Number of Mixed Apneas: 0  
Number of Central Apneas: 0  
Number of Hypopneas: 27

The Patient was supine for 381.7 min. with a supine RDI of 0.0; non-supine for 381.7 min. with a non-supine RDI of 4.2.

Oximetry:  
Desaturation Index: 2.8  
Min. 90.0%, Mean 94.7%, Max. 98.0%  
Time below 88%: 0.0 min

Snoring: Mild in intensity  
Heart Rate: Min 61.0 bpm, Max 106.0 bpm

AHI Diagnosis: The study showed NORMAL <5 respiratory events per hour of total study time. Positional influence was a contributing factor to the respiratory events.

**RECOMMENDATIONS**

1. Sleep hygiene measures; assess factors that may improve sleep quality.
  2. Behavioral therapy such as: positional therapy (avoid supine position while asleep, weight reduction/management.
  3. Advise against the use of alcohol or sedatives (these substances can increase the frequency/severity of respiratory disturbances of sleep and worsen excessive daytime sleepiness.
  4. Consider Mandibular Advancement Device (MAD) or CPAP followed by Home Sleep Testing (HST) along with CPAP.
  5. Advise patient against participating in potentially dangerous activities while drowsy as such activity like operating a motor vehicle or heavy equipment may put oneself or others in danger.
  6. Advise the patient of the long-term consequences of sleep apnea if left untreated and the need for treatment and follow up by a professional medical provider.
- \*\*\* HST cannot diagnose all sleep disturbances, therefore if this test is negative for Sleep Apnea and your clinical evaluation suggests otherwise please refer to a facility study\*\*\*

Please pull down to sign (mm/dd/yy)

Note: Form protected using password "braebon"

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**CLINICAL NOTE: 10/25/12**

HILLY FRANK 000131062199-32322

Encounter DOS: 10/25/2012

Patient: [Redacted] (Male)  
[Redacted]  
[Redacted]

Provider: [Redacted]  
Location: [Redacted]

Referred By: [Redacted]  
Primary Ins: [Redacted]

Date of Service: 10/25/2012

**Subjective**

**Chief Complaint:**

**Follow Up : Progress - Oral Appliance**

This patient presents for an oral sleep appliance check. Dr. [Redacted] talked to patient about trying to use Afrin nasal spray for a couple days to see if this helps his snoring. If this doesn't help, he will then try using a breath right strip to see if this helps. If neither one of these things help we may need to close his mouth off. We would need to make an oral shield for him to close his mouth. Dr. [Redacted] wants to re monitor him in a couple weeks to see how things are going. Appliance currently being used is Herbst. Patient has been wearing the appliance since 5/23/2012. This patient admits to wearing the oral sleep appliance every night. This appliance is comfortable for this patient. Patient is Satisfied with the appliance. Patient is currently sleeping better with the appliance. In the morning, the patient wakes up feeling refreshed. This patient feels their energy level has increased since using the oral appliance. This patient denies morning headaches. Sleeping partner hears snoring. 0 advancements have been completed since last visit. Many advancements are left in assembly. Clinical jaw position is 4mm ant. Appliance vertical is 6mm.

**Assessment**

**Diagnosis**

32723 Sleep Apnea, Obstructive

**Plan**

**Procedures**

99214 Office/outpatient Visit Est (1 UN)

**Care Plan**

**Plan : Plan**

Dr. [Redacted] wants to see him back in a couple weeks to remonitor him with a medi byte.

**Time : Time**

Doctor spent 30 total minutes face to face time with the patient, 30 minutes spent counseling and coordinating care.

11/06/2012 08:11:25

Electronically Signed and Reviewed by [Redacted]

**CLINICAL NOTE: 11/8/12**  
**(page 1 of 2)**

Patient: [REDACTED] (Male)  
Referred By: [REDACTED]  
Primary Ins: [REDACTED]

Provider: [REDACTED]  
Location: [REDACTED]  
Date of Service: 11/08/2012

Encounter DOS: 11/08/2012

**Subjective**

**Chief Complaint:**

**Follow Up: Screening Question**

Question	Answer	Comments
Patient presents for	Appliance monitoring	
Device used	Medibyte	
Unit number	Dag 1	
Signed damage consent form	Yes	
Instructed on how to use	Yes	
Instructed how to position device before going to bed	Yes	
Study done with an appliance	Yes	
Study done with CPAP	No	
Study done with positional therapy	Yes	He will be wearing his positional device.
Appliance type	Herbst	
Advancements left in appliance		Patient did not bring his appliance with him. So, I am unsure of his jaw position or advancements left.

**Objective**

**Physical Exam**

11/09/2012 08:41:21  
Electronically Signed and Reviewed by [REDACTED]



**CLINICAL NOTE: 11/8/12**  
**(page 2 of 2)**

Encounter DOS: 11/08/2012

**Follow Up: Screening Question**

**Comments**

Patient presents for	Appliance monitoring	1 night medibyte in current position with appliance and positional device.
Device used	Medibyte	
Unit number	Dag 1	
Signed damage consent form	Yes	
Instructed on how to use	Yes	
Instructed how to position device before going to bed	Yes	
Study done with an appliance	Yes	
Study done with CPAP	No	
Study done with positional therapy	Yes	He will be wearing his positional device.
Appliance type	Herbst	
Advancements left in appliance		Patient did not bring his appliance with him. So, I am unsure of his jaw position or advancements left.

**Assessment**

**Diagnosis**

32723 Sleep Apnea, Obstructive

**Plan**

**Care Plan**

**Plan : Plan**

Will return medibyte on Monday. We will call him with the results.

**MEDIBYTE JR. REPORT: 11/9/2012**  
 (page 1 of 3)

**MEDI BYTE JR**  
 HST + INTERPRETATION REPORT

PATIENT **PHILEN, FRANK**

Patient ID: **[REDACTED]**

Study Date: 11/09/12 (MM/DD/YY)

Date of Birth: **[REDACTED]**

Age: 50

Sex: Male

Height: 5' 7" (170 cm)

Weight: 230.0 lbs

BMI: 36.2

Waist-Hip Ratio: 0.00 (W: 0", H: 0")

AHI: **21.1**

Severe >30  
 Moderate 15-30  
 Mild 5-15  
 Normal <5

Chart Code: **[REDACTED]**  
 Referring Physician:  
 Total Recording Time: 404.4 minutes



**HOME SLEEP APNEA TESTING DEVICE**

The MediByte Jr®, a 6-channel Type 3 home sleep respiratory recorder, was used to evaluate sleep-disordered breathing. The following parameters were recorded for a duration of 404.4 minutes: Snoring (high frequency vibrations in airflow), oronasal pressure Airflow, RIP Chest Effort, SpO2, Pulse Rate, Body Position, and User Events.

*Note: Respiratory events were scored using the following rules: Apneic events required a 90% or more reduction in airflow. Hypopneic events required a 30% reduction in airflow along with an accompanying 4% oxygen desaturation.*

**COMMENTS**

**OXIMETRY**

	SpO <sub>2</sub> Range	
	%	Minutes
98-100 %	0.9%	3.5
96-97 %	11.6%	46.8
94-95%	62.5%	252.6
92-93 %	22.2%	89.8
90-91 %	2.0%	8.3
90-100 %	99.2%	401.0
80-89 %	0.8%	3.4
70-79 %	0.0%	0.0
60-69 %	0.0%	0.0
50-59 %	0.0%	0.0
< 50%	0.0%	0.0

	Total	Index	
Desaturations >4%	114	16.9	
	Mean	Min.	Max.
SpO <sub>2</sub> (%)	94.1	82.0	98.0
Pulse (BPM)	77.6	57.0	108.0

*\*Respiratory events are defined in the Assisted Scoring User Settings and in the User Guide. Final clinical decisions and degree of accuracy are the sole responsibility of the clinician using this software.*

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**MEDIBYTE JR**  
 HST + INTERPRETATION REPORT

PATIENT [REDACTED]

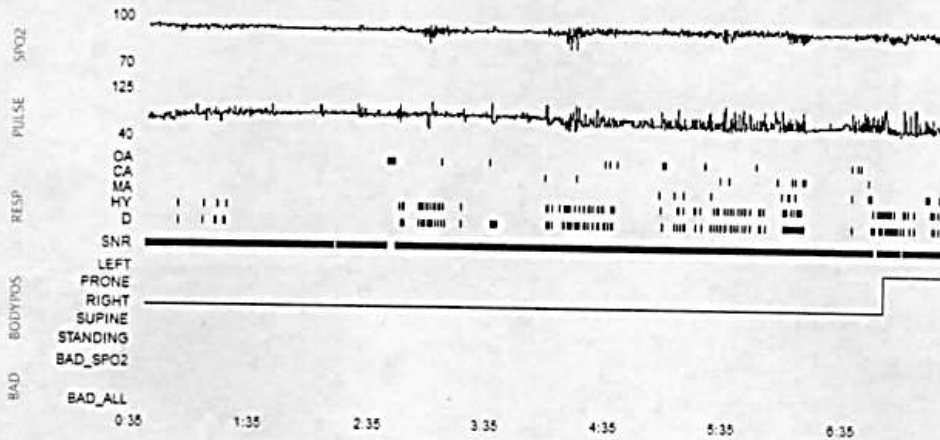
Patient ID: [REDACTED]

Study Date: 11/09/12 (MM/DD/YY)

RESPIRATORY	Total	Index	Mean	Duration (sec.)	
				Min.	Max.
Central Apneas	11	1.6	21.4	13.5	42.6
Obstructive Apneas	15	2.2	34.5	10.0	299.0
Mixed Apneas	17	2.5	20.4	15.9	36.5
Hypopneas	99	14.7	32.9	10.2	99.0
Apnea - Hypopnea	142	21.1	30.7	10.0	299.0
Snoring	3407	505.5	0.8	0.2	3.6
Desaturations	114	16.9	43.1	10.4	268.4
RERAs	0	0.0	0.0	0.0	0.0

**EVENTS BY BODY POSITION**

	Supine	Non-Supine	Right	Left	Prone
% Time in Position	0.0%	100.0%	92.4%	7.6%	0.0%
Snoring Events	0	3407	3242	165	0
Apneas + Hypopneas	0	142	120	22	0
Apnea + Hypopnea Index	0.0	21.1	19.3	42.8	0.0



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**BRAEBON**  
 For Today's Business of Sleep™

HST + INTERPRETATION REPORT **MEDIBYTE JR**

**PATIENT** [REDACTED]  
Patient ID: [REDACTED]  
Study Date: 11/09/12 (MM/DD/YY)  
Date of Birth: [REDACTED]  
Age: 50  
Sex: Male  
Height: 5' 7" (170 cm)  
Weight: 230.0 lbs  
BMI: 36.2  
ESS: 1

AHI 21.1

Severe >30  
Moderate 15-30  
Mild 5-15  
Normal <5

Chart Code: [REDACTED]  
Referring Physician: [REDACTED]  
Total Recording Time: 404.4 minutes

The MediByte Jr. a Home Sleep Testing device (HST) was utilized. The data was obtained from the following recorded parameters: Airflow (by oral/nasal pressure transducer), Oxygen Saturation and Pulse (by Pulse Oximetry), Chest Respiratory Effort (by RIP technology) and body position (by accelerometer). All Respiratory Events were scored using the AASM rules of 90% or more airflow reduction for apnea events and 30% or more airflow reduction with accompanying 4% oxygen desaturation.

**DIAGNOSTIC IMPRESSION**

Indications for Study: Select Appropriate diagnosis

Respiratory Events:      Number of Obstructive Apneas:      15  
                                         Number of Mixed Apneas:                      17  
                                         Number of Central Apneas:                    11  
                                         Number of Hypopneas:                        99

The Patient was supine for 404.4 min. with a supine RDI of 0.0; non-supine for 404.4 min. with a non-supine RDI of 21.1.

Oximetry:      Desaturation Index:      16.9  
                                 Min. 82.0%, Mean 94.1%, Max. 98.0%  
                                 Time below 88%: 1.4 min

Snoring:      Mild in intensity

Heart Rate:      Min 57.0 bpm, Max 108.0 bpm

AHI Diagnosis:      The study showed NORMAL <5 respiratory events per hour of total study time. Positional influence was a contributing factor to the respiratory events.

**RECOMMENDATIONS**

1. Sleep hygiene measures; assess factors that may improve sleep quality.
2. Behavioral therapy such as: positional therapy (avoid supine position while asleep, weight reduction/management).
3. Advise against the use of alcohol or sedatives (these substances can increase the frequency/severity of respiratory disturbances of sleep and worsen excessive daytime sleepiness).
4. Consider Mandibular Advancement Device (MAD) or CPAP followed by Home Sleep Testing (HST) along with CPAP.
5. Advise patient against participating in potentially dangerous activities while drowsy as such activity like operating a motor vehicle or heavy equipment may put oneself or others in danger.
6. Advise the patient of the long-term consequences of sleep apnea if left untreated and the need for treatment and follow up by a professional medical provider.

\*\*\* HST cannot diagnose all sleep disturbances, therefore if this test is negative for Sleep Apnea and your clinical evaluation suggests otherwise please refer to a facility study\*\*\*

Please pull down to sign (mm/dd/yy)

Note: Form protected using password "braebon"

\*Respiratory events are defined in the Assisted Scoring User Settings and in the User Guide. Final clinical decisions and degree of accuracy are the sole responsibility of the clinician using this software.



CLINICAL NOTE: 11/12/12

Date: 1/8/2013	<b>Clinical Notes</b>	Page #: 1
	11/12/2012 - 11/12/2012	
	All Providers	
	Patient: FRANK T. PHILEN	
Patient: FRANK T. PHILEN		SS#: [REDACTED]
Birthdate: 6/11/1959		Chart #: [REDACTED]
11/12/2012 1:47:15 PM [REDACTED]	Note Created On: 11/12/2012 1:46:43 PM	
Lm. for patient to call us back.		
Per Dr [REDACTED]		
AHI: 21.1/hr		
Low O2: 82% - 0.8% TST < 50		
I was calling him after his appliance monitor. Dr.Roubal wants to know if he is snoring. We will relay this and go from there.		
[REDACTED]		
11/12/2012 4:48:07 PM [REDACTED]	Note Created On: 11/12/2012 4:48:07 PM	
Patient called back and I asked about snoring. He said that his wife said that he wasn't really snoring. He did wear his positional device the night of this appl. monitor. He has in the past used a nasal spray for snoring but not for the monitor. Dr. [REDACTED] asked if he was okay with going in for a PSG titration. He was fine with this. We are going to send him to [REDACTED]. He will have his positional device with him and is aware that they will have to wake him up to adjust the appl. [REDACTED]		

**CLINICAL NOTE: 1/9/13**  
**(page 1 of 2)**

Encounter DOS: 01/09/2013

Patient: [REDACTED] (Male)      Provider: [REDACTED]  
Location: [REDACTED]

Referred By: [REDACTED]      Date of Service: 01/09/2013

Primary Ins: [REDACTED]

**Subjective**

**Chief Complaint:**  
**Note:**

Pt presents today to go over PSG study results with Dr. [REDACTED].  
PSG Review for OA and titration. The sleep center put in 12 total.  
AHI: 1.4/hr  
Low O2: 90% 0% TST

**Follow Up: Progress - Oral Appliance**

Question		Comments
Reason for visit	Appliance monitoring	Dr. [REDACTED] will be going over PSG Study results with pt.
Type of appliance	Herbst	
Appliance Use Since	4/23/2012	
Advancement completed since last visit	12	From the Sleep Lab.
Advancements left in assembly	Many	
Clinical jaw position	2-3 MM anterior	
Vertical	6 MM	

**Objective**

**Physical Exam**

**Follow Up: Progress - Oral Appliance**

Question		Comments
Reason for visit	Appliance monitoring	Dr. [REDACTED] will be going over PSG Study results with pt.
Type of appliance	Herbst	
Appliance Use Since	4/23/2012	
Advancement completed since last visit	12	From the Sleep Lab.
Advancements left in assembly	Many	
Clinical jaw position	2-3 MM anterior	
Vertical	6 MM	

**Assessment**

**Diagnosis**

32723 Sleep Apnea, Obstructive

**CLINICAL NOTE: 1/9/13**  
**(page 2 of 2)**

Encounter DOS: 01/09/2013

**Plan**

**Procedures**

99214 Office/outpatient Visit Est (1 UN)

**Care Plan**

**Plan : Plan**

He will be returning in 6 months for a 6 month check. AO.

**Time : Time**

Doctor spent 25 total minutes face to face time with the patient, 25 minutes spent counseling and coordinating care.