

SLEEPING SOUNDLY: AN OSTEOPATHIC APPROACH TO INSOMNIA IN AN ADOLESCENT

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ARIZONA COLLEGE OF OSTEOPATHIC MEDICINE

ATTENDING PHYSICIAN: CHRISTINA MARTIN, DO

DATE OF PATIENT EXAMS: 10/2/23– 11/28/23

STUDENT YEAR: OMS-IV

BACKGROUND: INSOMNIA DISORDER

- Characteristics
 - Dissatisfaction with sleep quantity, quality or continuity
 - Present >3 months, less likely to resolve¹
- Co-existing mental disorders and medical conditions can explain insomnia symptoms
 - Mood or Anxiety Disorders (MDD, Bipolar disorder, GAD)
 - Hyperthyroidism, sleep apnea, diabetes
 - Stress, substances (caffeine, alcohol, illicit drugs)



BACKGROUND: INSOMNIA DISORDER – MANAGEMENT

- Conservative management
 - Supplements/over-the-counter (melatonin, magnesium, diphenhydramine)
 - Sleep hygiene instructions (cool, dark, quiet room; no screens or eating before bed)
 - Cognitive behavioral therapy - Insomnia
- Medications
 - Unfavorable side effect profiles, risks of addiction, dependence
 - Not preferable for long-term use or in young patients



BACKGROUND:

INSOMNIA DISORDER – OSTEOPATHIC RESEARCH

- Limited osteopathic research suggests OMT:
 - Improves sleep quality^{2,3,4}
 - Reduces sleep latency⁵
- Evidence-Based Techniques
 - CV4
 - Cranial Lifts
 - OA Decompression
 - Rib-raising



CHIEF COMPLAINT

- Patient: B.O., 17-year-old female
- CC: “Difficulty sleeping”



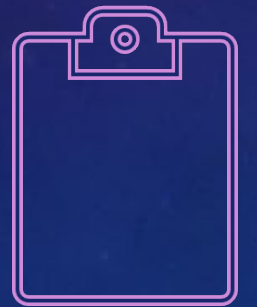
HISTORY OF PRESENT ILLNESS

- B.O. presents with **difficulty falling and staying asleep** for the **past 5 months**
- **No inciting stressful event**
- **Diphenhydramine and melatonin** provided little to no improvement in her sleep
- She reports **good sleep hygiene** and a **comfortable sleeping environment**
- **Two months ago, she was started on trazodone**
 - Now taking 50mg daily at night
 - She states that the **trazodone helps her fall asleep faster**
 - **She is still waking up after only 4-5 hours of sleep** and having difficulty staying asleep after this



REVIEW OF SYSTEMS

- General: (+) fatigue, (+) changes in sleep, (-) night sweats, fever, chills, appetite or weight change
- HEENT: (+) nasal congestion, (-) sore throat, rhinorrhea, change in vision or hearing, ear pain
- Cardiovascular: (-) chest pain, palpitations, tachycardia
- Pulmonary: (-) cough, dyspnea, wheezing
- Neuro: (-) headache, paresthesia, weakness, dizziness
- MSK: (-) muscle pain, neck pain, back pain
- Psych: (+) insomnia (-) difficulty concentrating, changes in mood or affect, anxiety, anhedonia, SI



MEDICAL HISTORY



- Past Medical History
 - Recent orthodontic work, including
 - Braces installed 10 months ago (01/2023)
 - Significant maxillary tooth movement
- Family History - Noncontributory
- Social History
 - No alcohol or caffeine consumption
 - Never smoker, never illicit drug use
 - No significant life stress

- Medications
 - Drospirenone and Ethinyl Estradiol (3mg/0.02mg) once daily
- Allergies
 - NKDA

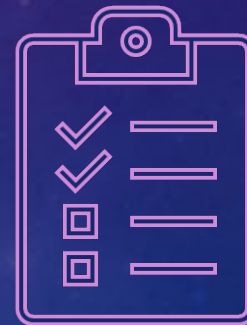
PHYSICAL EXAM

- Vitals: BP 116/70, HR 92, RR 16, O₂ 99%, Ht 5ft, 4 in, Wt 135.5lbs, BMI 23.26
- General: **Well-appearing** female in no acute distress, alert and seated comfortably on chair **with mother present** beside her
- HEENT: **Braces present on mandibular and maxillary teeth in good condition**, normocephalic, atraumatic, PERRLA, EOMI, tympanic membranes intact and pearly gray with good cone of light, pharynx without erythema or exudate, nasal mucosa pink
- Heart: RRR without murmurs, rubs or gallops, radial pulses 2+ bilaterally
- Neuro: **CNII-XII intact bilaterally**, sensation to light touch intact C5-T1 and L4-S1, DTRs 2/4 bilaterally at C5-C7, L4 and S1, muscle strength 5/5 bilaterally in upper and lower extremities
- Psych: Normal rate of speech, affect congruent with mood



SPECIAL TESTS

- **PHQ-9: Positive, total score 7** (mild depression)
 - **3 points** – “trouble falling asleep, staying asleep or sleeping too much”
 - **2 points** – “feeling tired, or having little energy”
- **GAD-7: Negative, total score 2**
 - 1 point – “felt tense muscles, felt on edge or restless, or had trouble relaxing or trouble sleeping”

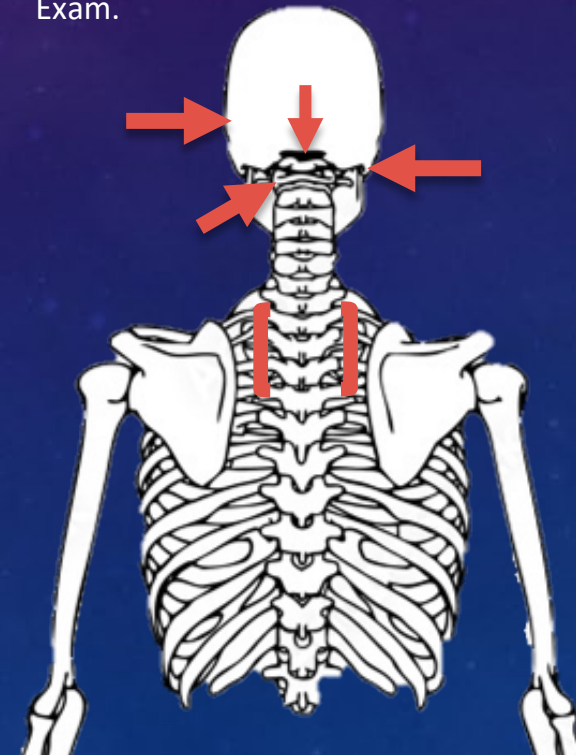


- **Insomnia Severity Index: Positive, total score 25/28** (clinical insomnia (severe)) ⁶
- **Athens Insomnia Scale: Positive, total score 15/24** (insomnia) ⁷

OSTEOPATHIC STRUCTURAL EXAM

- Cranial: **CRI** 10 cycles/min with **low vitality**, **R OM suture compression**, **L externally rotated temporal bone**, **OA ES_LR_R**
- Head: R positive medial and lateral pterygoid tenderpoint
- Cervical: **Hypertonic L suboccipital** muscles
- Thoracic: **Chronic tissue texture change T2-T4**, T6 FRS_L, T10 FRS_R
- Ribs: Rib 2 exhaled on R, Ribs 6-10 inhaled on L

Figure 1. Osteopathic Structural Exam.



Posterior human skeleton with red arrows pointing to areas of somatic dysfunction. Reproduced under Fair Use.⁸

ASSESSMENT

Differential Diagnosis

1. Insomnia secondary to
 - a) Major depressive disorder
 - b) General anxiety disorder
 - c) Bipolar disorder
 - d) Hyperthyroidism
 - e) Diabetes

Final Diagnoses

- 1. Persistent Insomnia Disorder without mental or medical comorbidity**
- 2. Somatic Dysfunction of:**
 - a) Head/Cranial**
 - b) Cervical region**
 - c) Thoracic region**

OMT PLAN & SEQUENCE



1. Balance autonomic nervous system

- Rib raising
- OA
- Suboccipital release

Photos used with patient's parent permission,
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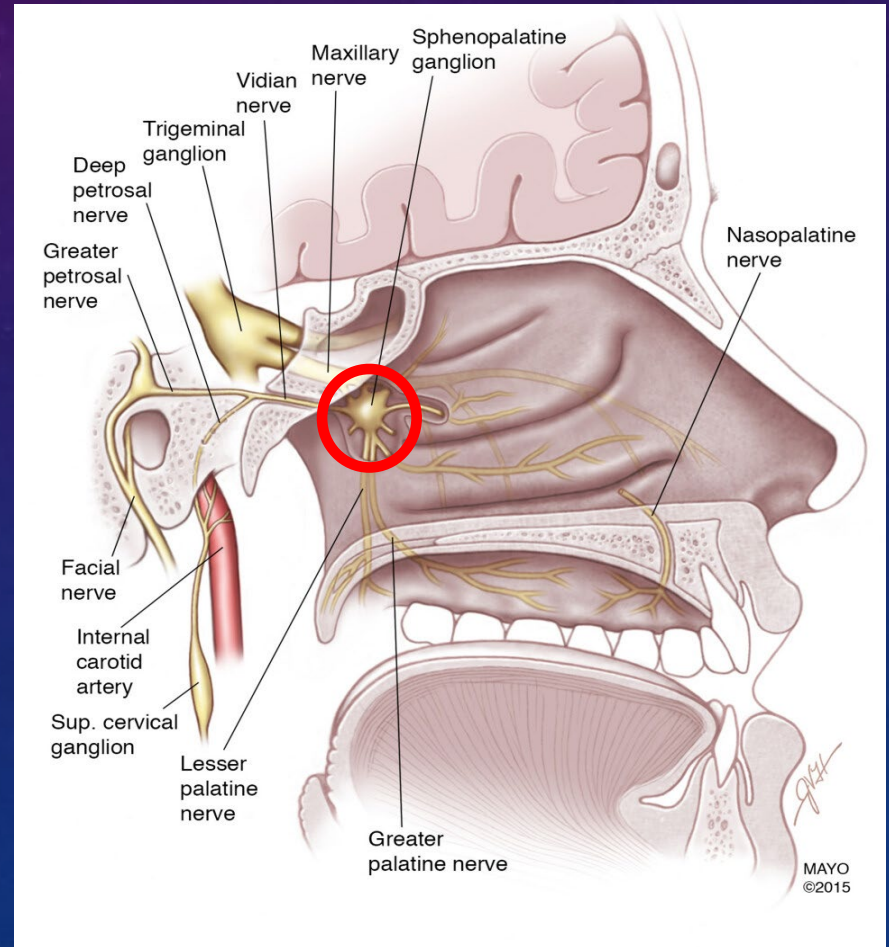
OMT PLAN & SEQUENCE



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1. Balance autonomic nervous system
 - Sphenopalatine ganglion release

Figure 2: Sphenopalatine Ganglion Anatomy.



Sagittal view drawing through the nasopharynx demonstrates the sphenopalatine ganglion and its direct connections. Copyright 2015.⁹

OMT PLAN & SEQUENCE (CONTINUED)

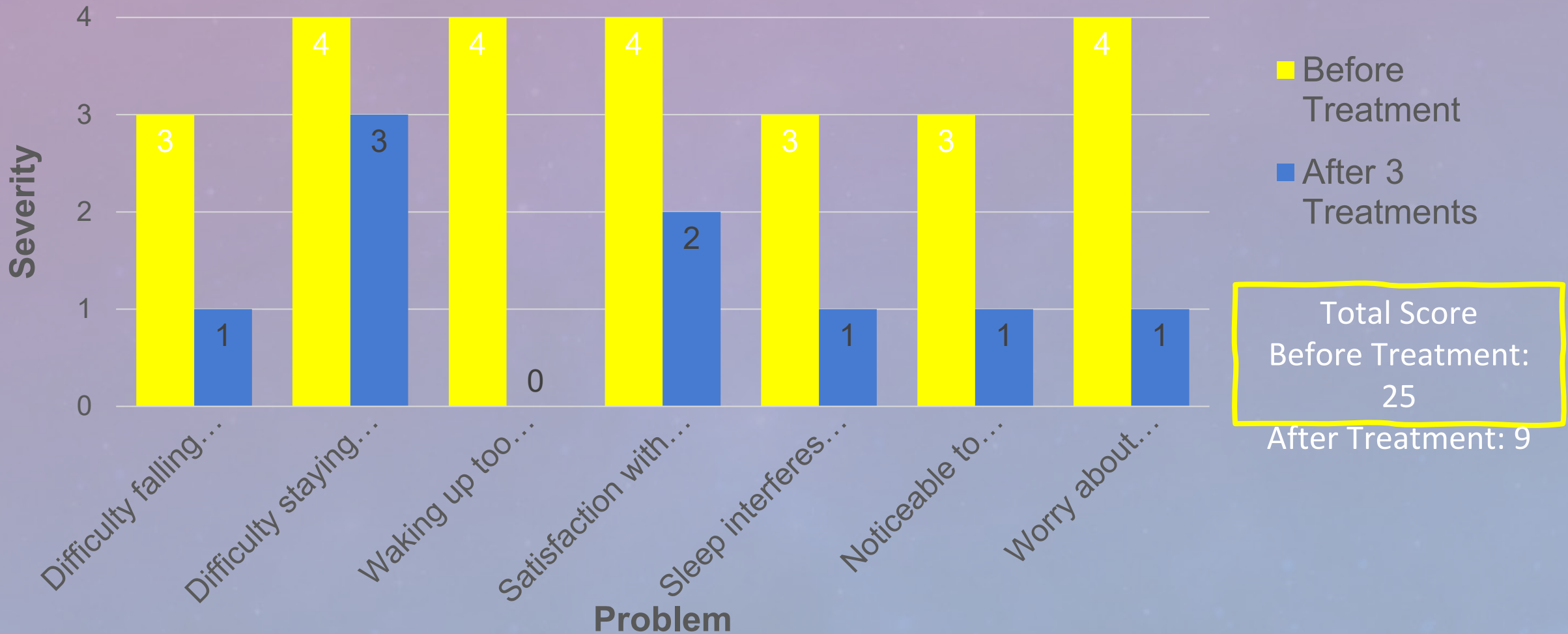


2. Restore cranial environment

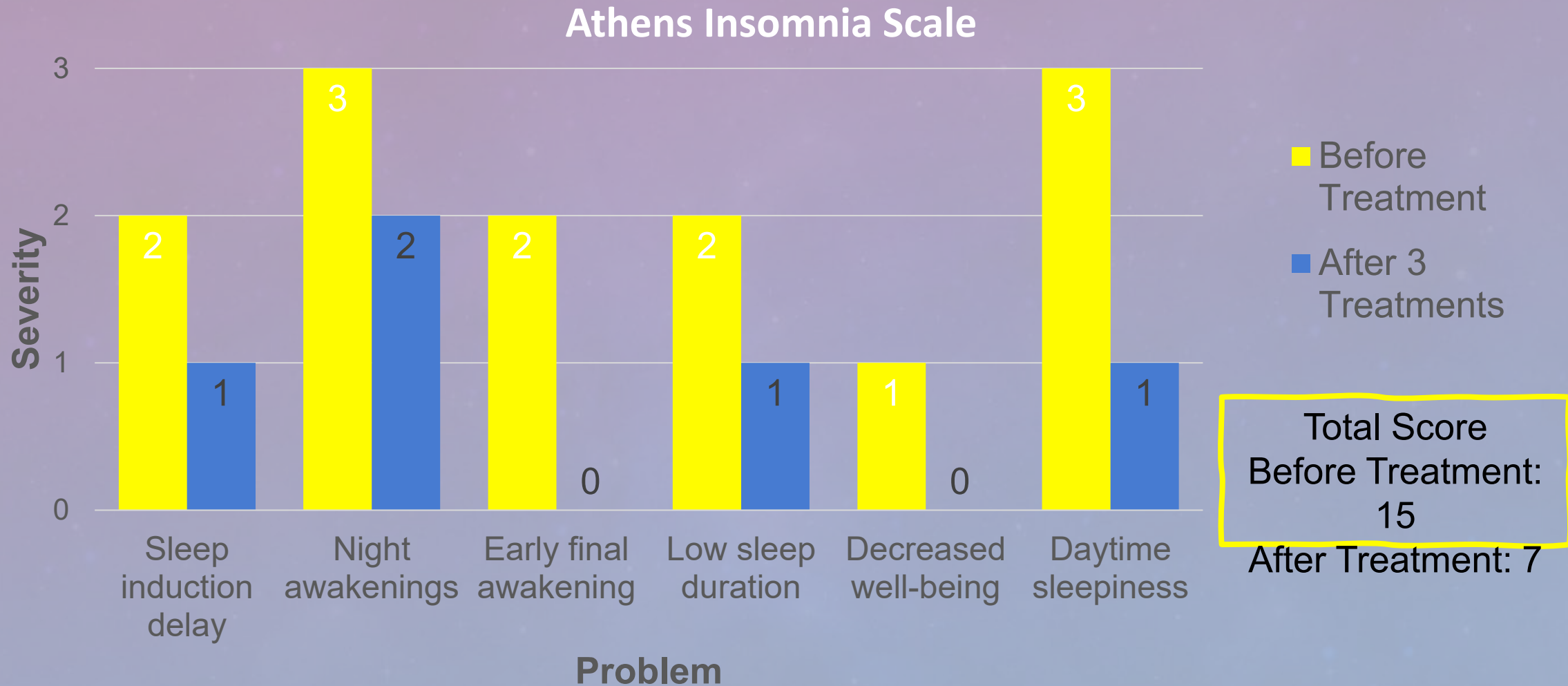
- Cranial bone motion
 - Balanced membranous tension
 - Temporal rocking
 - OM suture decompression
- Dural tension
 - Myodural bridge myofascial release
- Flow of CSF
 - Compression of the fourth ventricle

OUTCOME MEASURE 1: INSOMNIA SEVERITY INDEX

Insomnia Severity Index

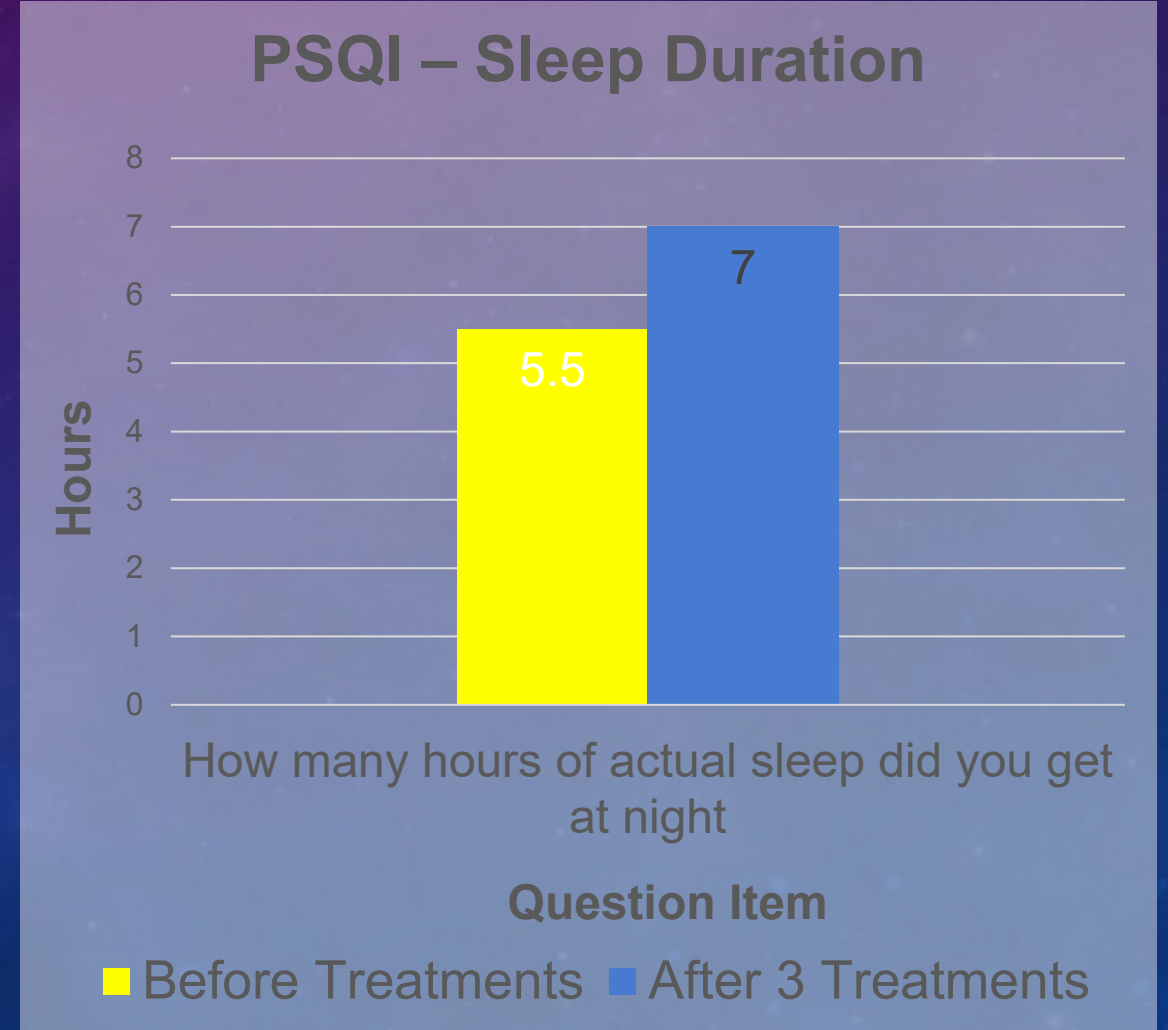
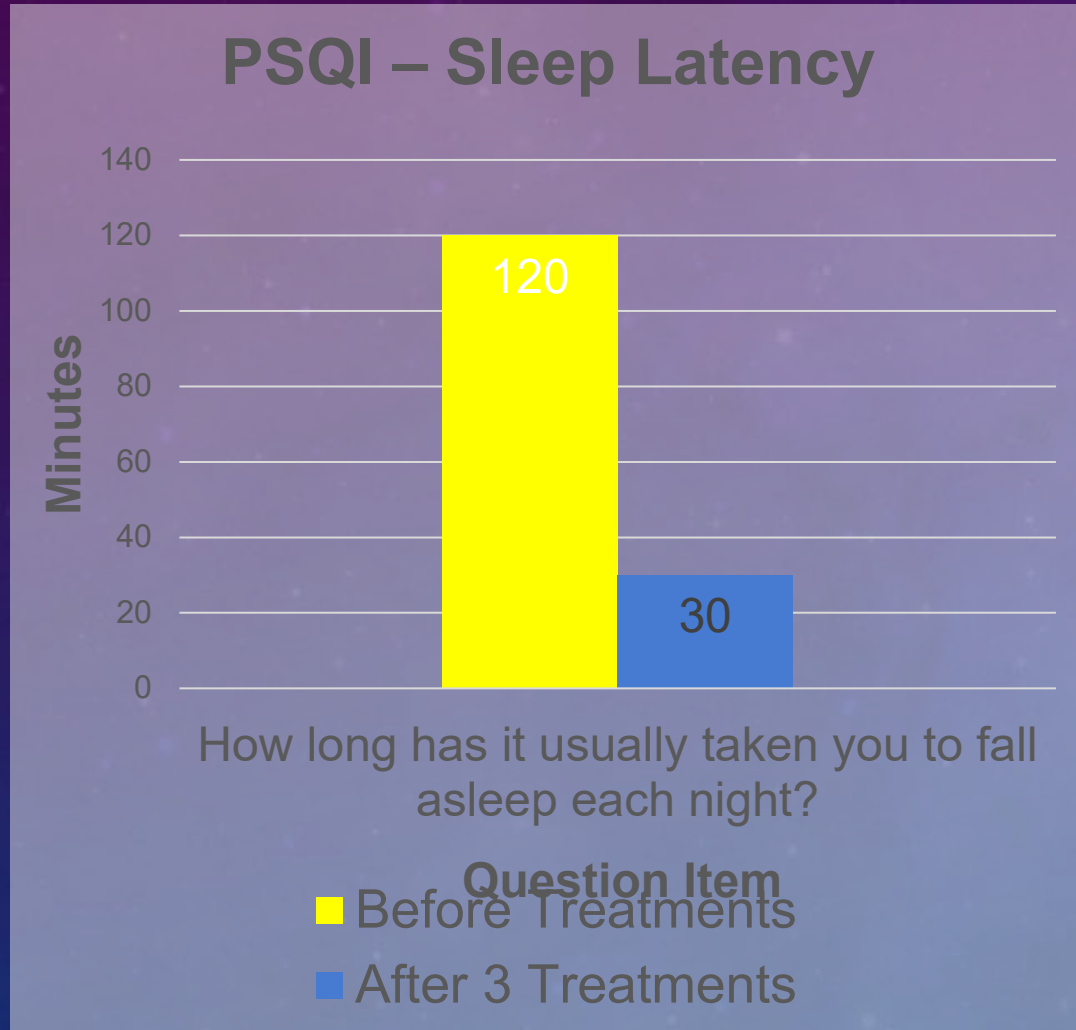


OUTCOME MEASURE 2: ATHENS INSOMNIA SCALE

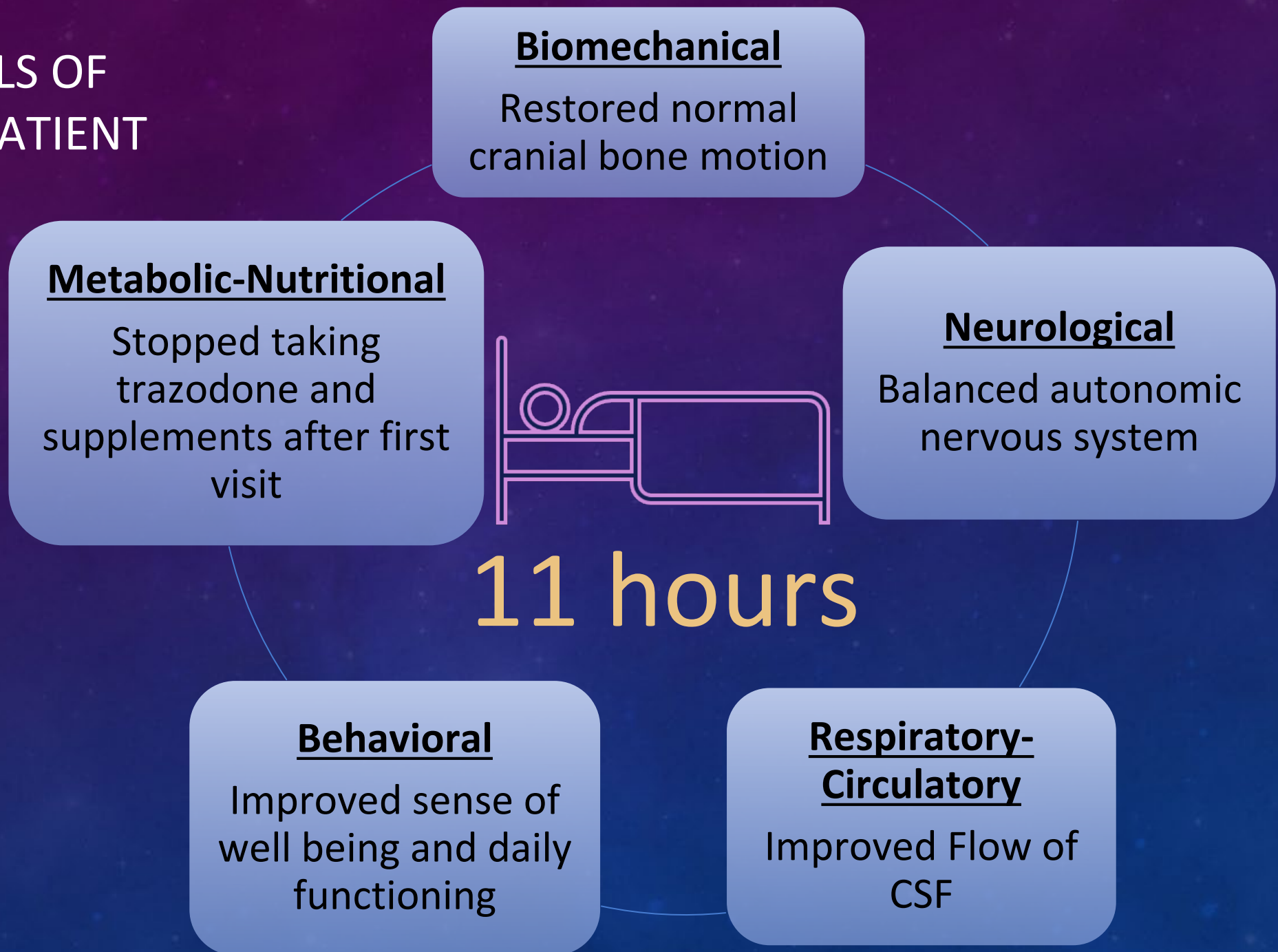


OUTCOME MEASURE 3: PITTSBURGH SLEEP QUALITY INDEX

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CONCLUSION:
THE FIVE MODELS OF
OSTEOPATHIC PATIENT
CARE¹¹



THANK YOU!

OUR PATIENT, B.O.

CHRISTINA MARTIN, DO

EREN URAL, DO

FELLOW AZCOM OMM SCHOLARS

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December 6, 2023

Christina Martin, DO
Clinical Assistant Professor, AZCOM

Dear Dr. Martin:

On behalf of the Glendale IRB, I have reviewed your request for a determination of non-human subjects research for your project, "Sleeping Soundly: An Osteopathic Approach to Insomnia in a Minor." As presented in the Request for Determination, this project does not meet the definition of human subjects research as defined in 45 CFR 46.102. Further review by the IRB is not required.

If the nature of the project changes due to the use of additional data or study procedures that may change this determination, please contact the IRB before implementing those changes. Good luck with your project.

Kind regards,

A handwritten signature in black ink that reads "Kate Jansen Ph.D.".

Kate Jansen, Ph.D.
Chair, Glendale Midwestern University Institutional Review Board

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