

Assessing Nutritional Needs of Patients Diagnosed with Temporomandibular Disorders (TMD) and/or Sleep-Related Breathing Disorders

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Background

TMJ & Sleep Therapy Centre of Cleveland opened their doors in 2018 to provide an integrated approach to treating sleep-related breathing and pain disorders. Treatment plans may include: orthotics to correct problems associated with pain in the head, face, jaw, and neck, FDA approved oral airway appliances for Sleep Apnea, orthopedic orthodontics for pediatric OSA and proper development. Each patient is recognized as a unique individual and treatment is tailored to fit the patients' specific needs.

- **Sleep Apnea** is defined as the absence of breathing during sleep.
- **Obstructive Sleep Apnea (OSA)** is a form of repetitious suffocation occurring during sleep. A common reason for this medical condition is a poorly positioned jaw and/or tongue.
- **TMD** are disorders of the jaw, muscles, temporomandibular joints, and the nerves associated with chronic facial pain.
- **TMJ pain and dysfunctions** are often symptoms of a greater problem affecting the body; in absence of acute injury to the head or face, a primary cause of jaw problems is frequently related to the body not getting enough oxygen during sleep.

Population

Participants included both active treatment and post treatment patients at TMJ & Sleep Therapy Centre of Cleveland, who have been diagnosed with TMD and/or sleep-related breathing disorders.

Learning Objectives

1. **Evaluate** nutritional needs of the target population.
2. **Analyze** data collected through chosen methodology.
3. **Understand** and **utilize** collected data to determine an evidence-based baseline nutrition plan to address the needs of the target population.

Activities

- Literature review on TMD and sleep disorder pathologies.
- Reviewed literature on evidence-based nutrition and lifestyle interventions to reduce systemic inflammation.
- Researched existing nutrition assessments and designed a questionnaire, that is population specific, to be utilized for data collection.
- Attended team meetings and check-ins.
- Observed extensive new patient evaluations and TMD diagnosis.
- Participated in new patient examinations, reevaluations, and post treatment visits.
- Compiled other relevant data from existing patient records.
- Conducted one-on-one nutrition consultations in office with patients.

Deliverables

- Written report on findings & baseline dietary plan.
- Statistical infographics of dataset.
- Amended questionnaire for nutritional assessment of future patients.



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Methods

1. Literature review of existing research surrounding the topic.
2. Devised a Nutritional Needs Assessment for data collection.
3. Compiled data from TMJ & Sleep Therapy Centre's existing New Patient Questionnaire. This data included patients' Chief Complaints, Daytime & Nighttime Epworth Sleepiness scores, and Patient Health Questionnaire/General Anxiety Disorder (PHQ/GAD) scores.
4. Held one-on-one nutrition consultations, utilizing the devised survey to guide conversation with patients and gather necessary data.
5. Data analysis and interpretation.

Results

A total of 35 participants were surveyed using the Nutritional Assessment Questionnaire. The **full results report** with infographics can be accessed by scanning the QR-code.

- Chief Complaints, Epworth Sleepiness Scale, PHQ/GAD scores (Table 1).
- Common comorbidities in the survey population include migraines, anxiety, depression, chronic fatigue, acid reflux, muscle aches, muscle fatigue, muscle spasms, and sinus problems (Figure 1).
- 44% of the surveyed population gets less than the recommended amount of sleep each night (Figure 2).
- 75% of surveyed participants do not feel rested upon waking (Figure 3).
- 50% of the surveyed population has difficulty falling asleep, 3 or more nights per week (Figure 4).
- 61.6% of the surveyed population has difficulty staying asleep, 3 or more nights per week (Figure 5).
- 80.8% of the surveyed population has not previously received a nutrition consultation with a healthcare professional (Figure 6).
- 57.7% of surveyed population are currently taking one or more dietary supplements. The most common are magnesium, vitamin D, and a multivitamin (Figure 7).
- 66.7% of surveyed participants currently do not read food labels (Figure 9).

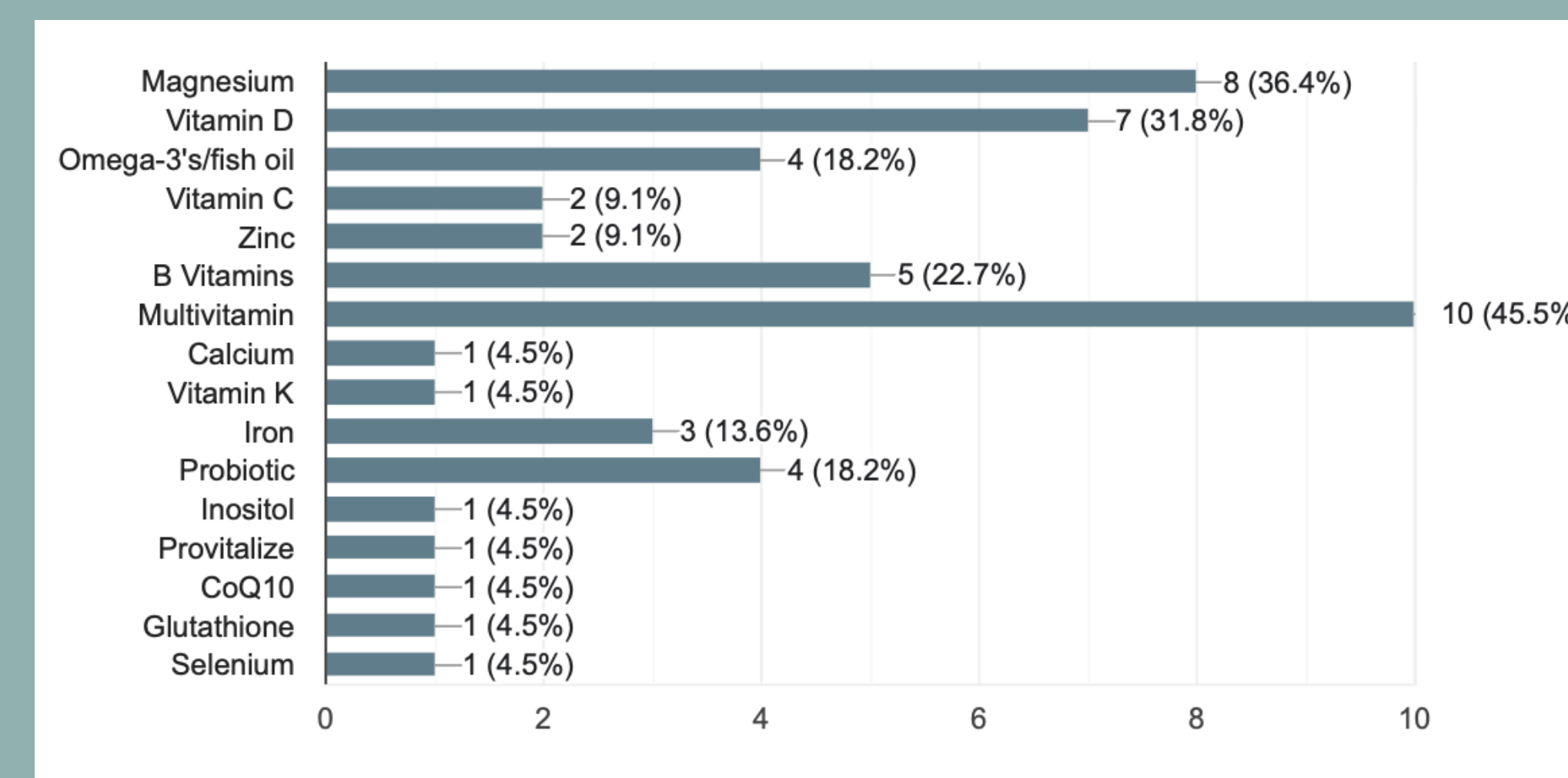


Figure 7. Variety of dietary supplements currently being consumed.

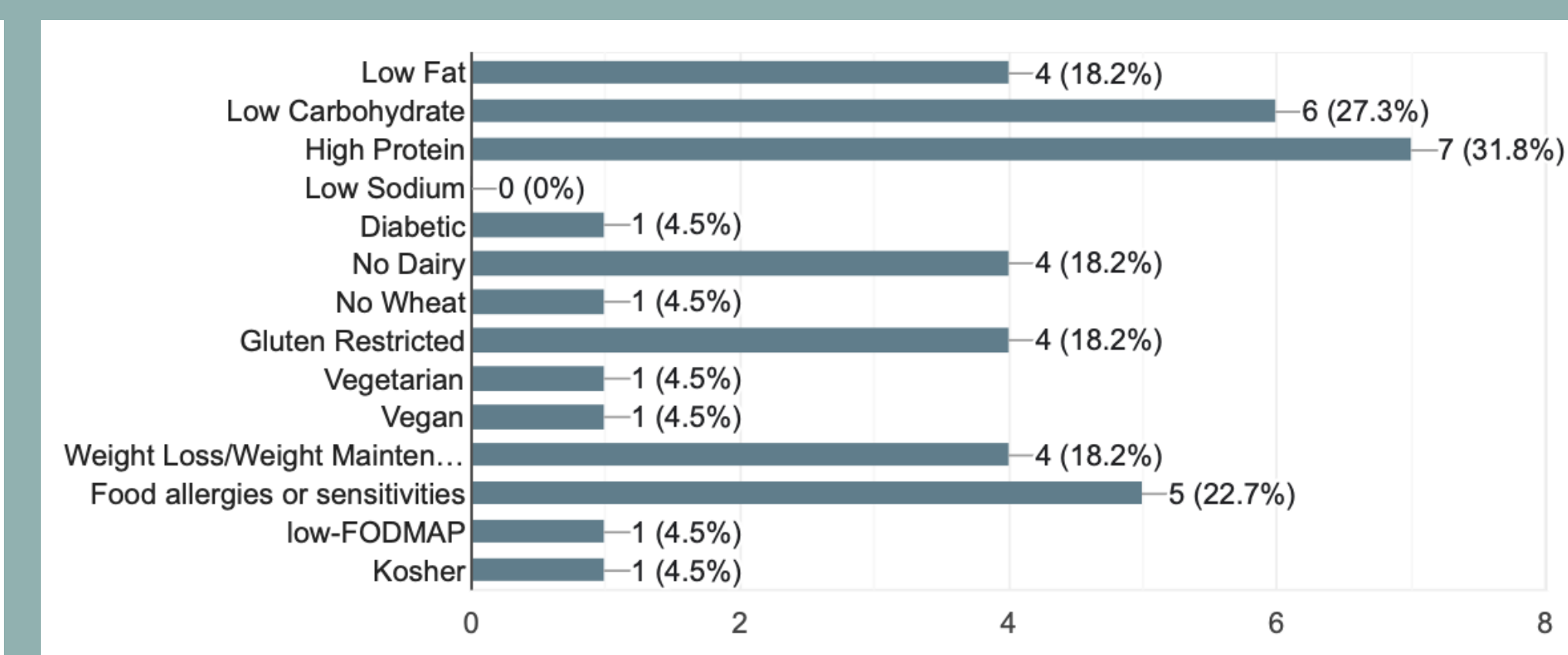


Figure 8. Current dietary regimens followed prior to starting treatment.

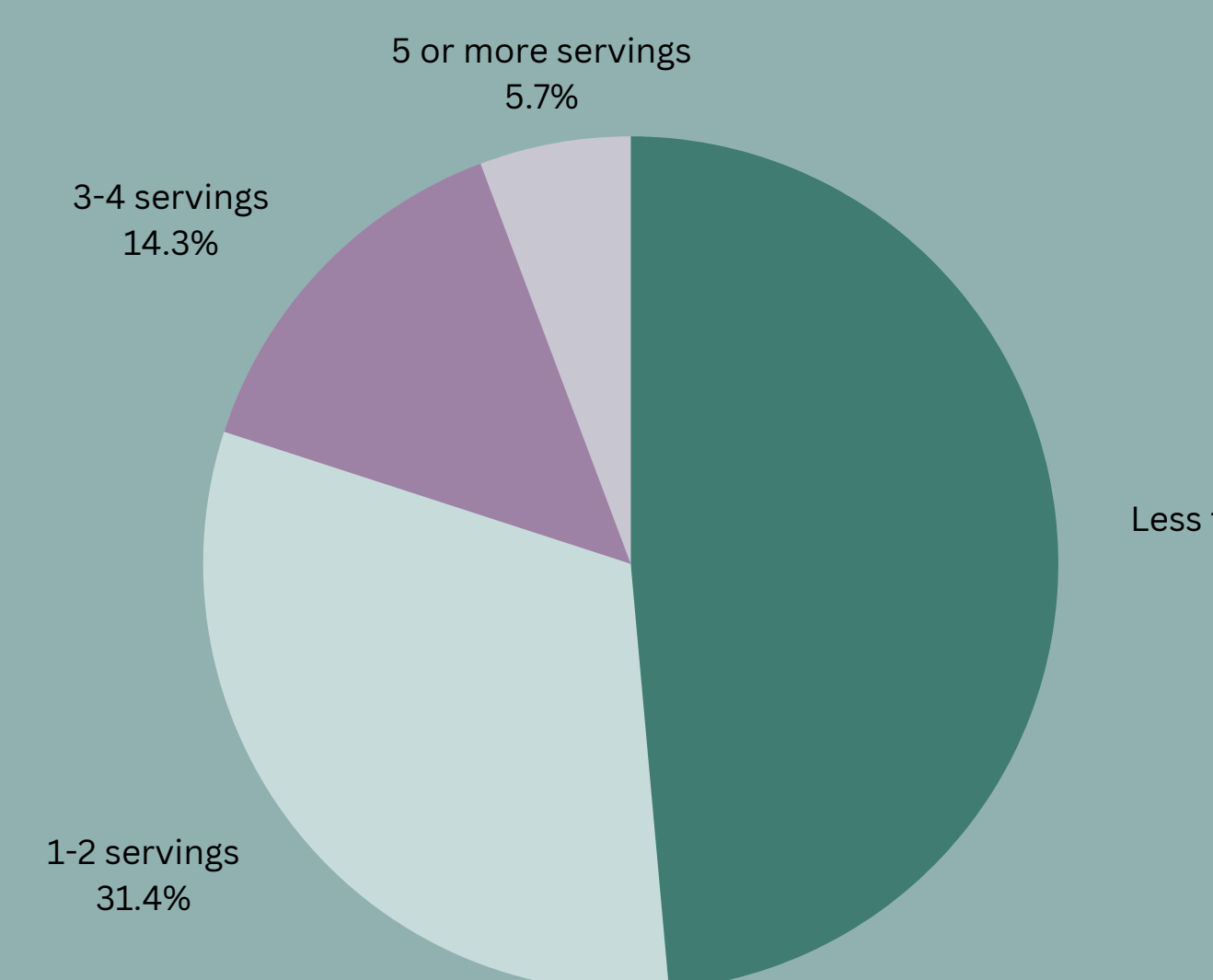
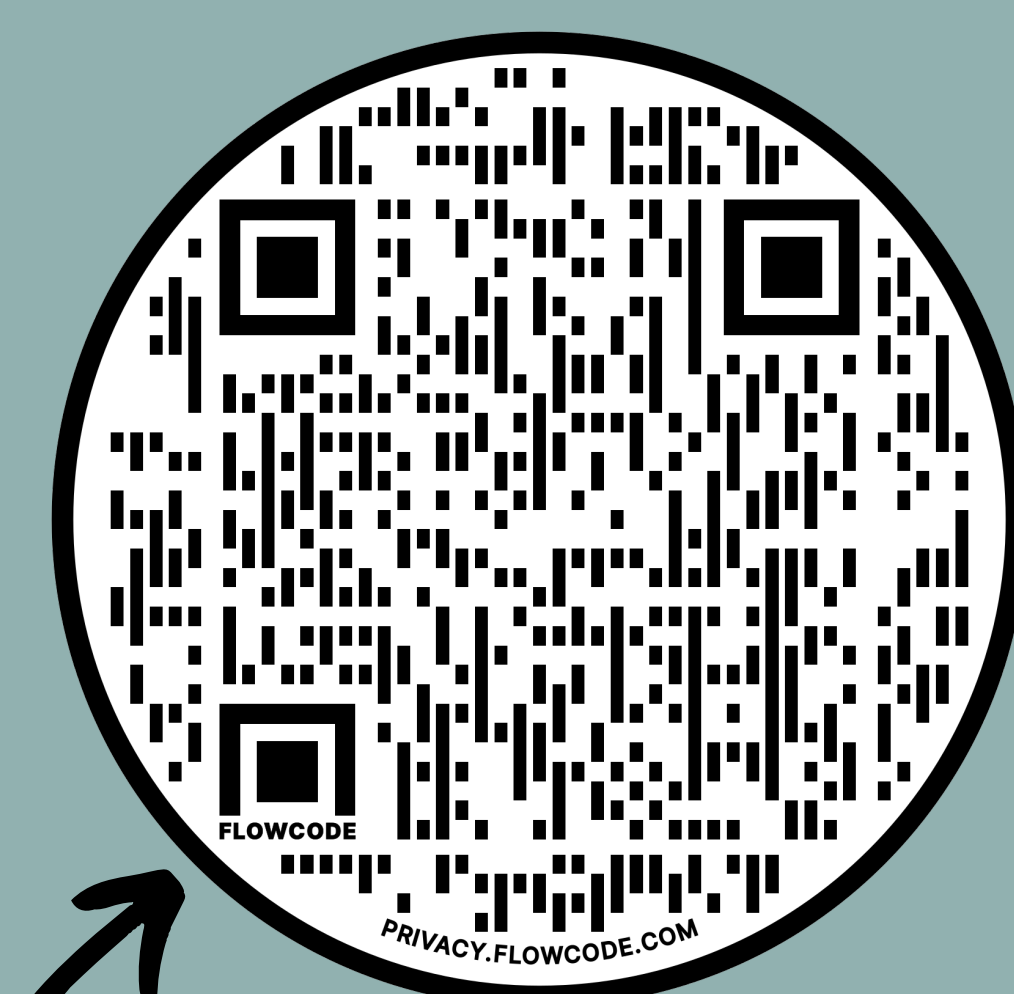


Figure 9. Average daily vegetable consumption.

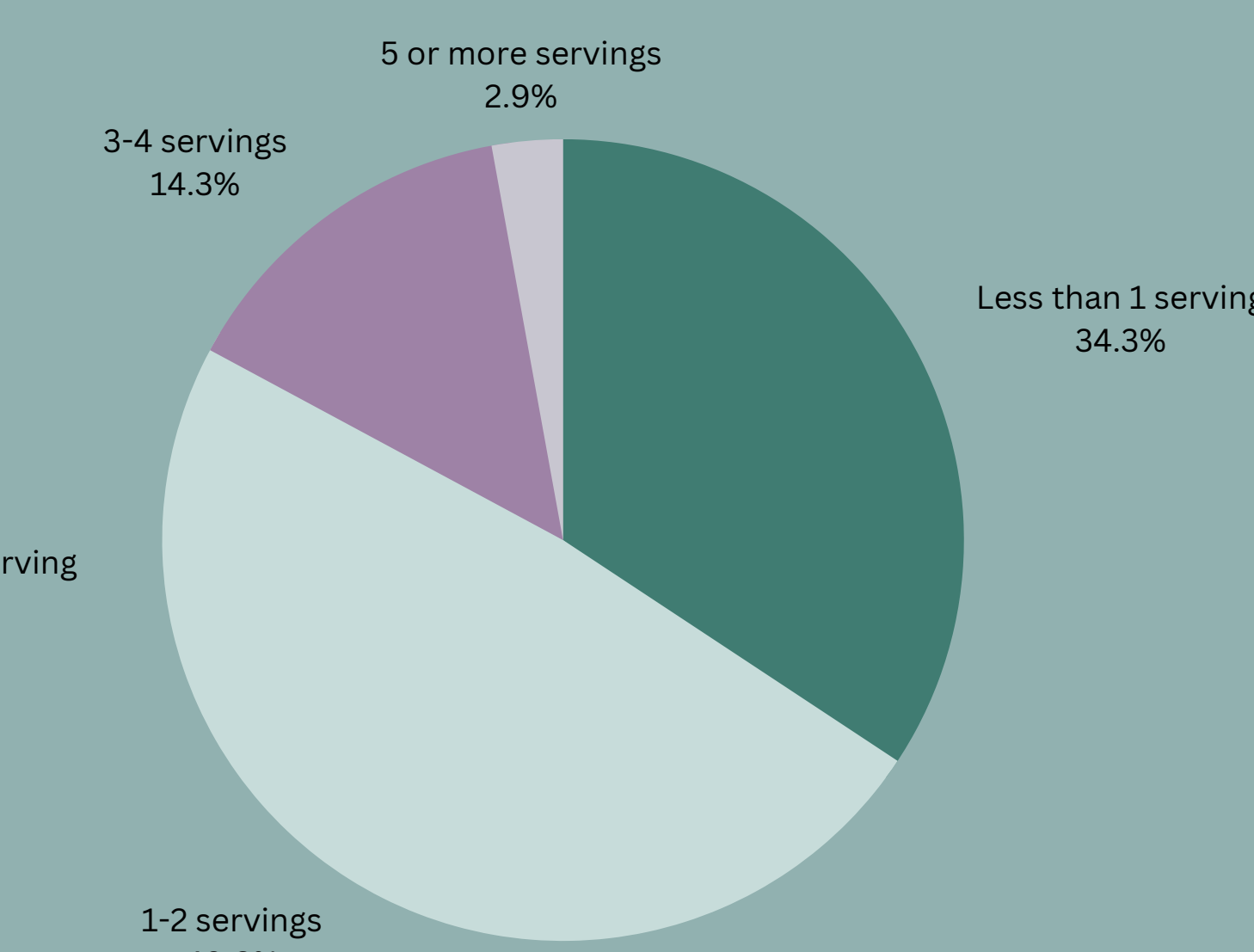


Figure 10. Average daily fruit consumption.

Conclusions

- Surveyed participants' sleep quality is less than optimal.
- Surveyed participants' daily fruit and vegetable intake is less than optimal.
- Surveyed participants' average daily exercise is less than optimal.
- Anti-inflammatory baseline dietary approach would be beneficial for the target population.
- Supplementation would be beneficial to the target population, as they currently have higher nutrient needs.
- Patients currently taking dietary supplements would benefit from a personalized regimen based on current symptoms.
- Select patients may require further individualization of the dietary plan. This may include food sensitivity testing, nutrient testing, and more.

Lessons Learned

- Improved skills in data collection through in person, one-on-one, patient consultations.
- Studied current dietary behaviors in the target population and became aware of common barriers to healthy behaviors.
- Acquired a deeper understanding of the impact of TMD and sleep-related breathing disorders on quality of life in the target population.
- Obtained a proficient understanding of the benefit of reducing systemic inflammation through diet and lifestyle, particularly in the target population.
- Gained experience in the development of a baseline nutrition plan from a dataset.

Public Health Implications

- This investigation supports a correlation between TMD, sleep-breathing disorders, and systemic inflammation in our population.
- This project demonstrates the potential for additional assessments to be conducted in the future and further elaborations upon the dietary plan based on individual needs.
- This project supports the need for further one-on-one nutrition coaching throughout treatment duration.
- This project demonstrates potential for further intervention in a group setting.
- This investigation supports the need for incorporation of nutrition into the treatment of chronic conditions.
- This project supports the need for healthcare to shift focus to preventative care and root cause identification.
- There is limited awareness surrounding existing alternatives for the treatment of sleep apnea, other than a CPAP.

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- Deliverables
- Full Results Section
- References



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