BOARD REVIEW COURSE

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Oral Appliance Titration

(10% of examination)
Key points: Oral Appliance Titration

• Custom made devices are superior to OTC types of oral appliances
• Generally speaking, research regarding OA titration references a starting point of 60% and reaches 70-85% at endpoint
• What is the quality of OAT research?
• The position of the condyle within the TMJ fossa while wearing oral appliances is within physiologic limits and short of maximal opening
Key points: Oral Appliance Titration

• What evidence supports oral appliance use?

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<th>Recommendation Grades</th>
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<td>Randomized well-designed trials with low-alpha &amp; low-beta errors*</td>
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Key points: Oral Appliance Titration

• Subjective vs. objective titration
• Supine-dependent OSA does not predict success with OAT*
• By what mechanisms do OA improve snoring and obstructive sleep apnea?
• Do patients use OA in the treatment of snoring and obstructive sleep apnea in the short and long term?
Key points: Oral Appliance Titration

• Custom made devices are superior to “boil and bite” types of oral appliances
• Most Studies show that the end point of titration may not be the maximal position
• It remains unclear whether there is a direct dose response of progressive titration and AHI improvement
PSG Titration of Oral Appliances

- RCMP (Tsai 2004) PPV=90%
- Almeida and Parker
- Krishnan and Collup 2008

- Trial device: EMA-T lowered AHI in 43%, no prediction of custom OA efficacy

Kuna 2006
PSG Titration of Oral Appliances

“Pump you up”

The objective of our study was to assess the feasibility of progressive mandibular advancement during sleep without arousing the patient by means of hydraulic propulsion of the mandibular arch of the DA.

Petelle 2002
Summary: OAT Titration Techniques

• GOOD: subjective assessments
• BETTER: HST-guided titration 65%
• BEST: add PSG titration (30% more) 95%

Almeida 2009
In the diagram shown, what anatomical region is described as ③?

A. Hypopharynx
B. Oropharynx
C. Nasopharynx
D. Adenoidal area
Which of the following is not reported in the literature regarding side effects of Oral appliances?

A. An increase in mandibular advancement was correlated with a decrease in RDI
B. There is greater efficacy with appliances with 75% advancement compared with 50% advancement
C. Orthodontic changes were related to OA design or mandibular advancement
D. changes in overbite may be reduced with a smaller vertical opening of the appliance
Which of the following would not likely introduce a weakness into research results?

A. Recruiting patients for the study who have failed other therapies
B. Randomly selecting subjects who are referred to the dentist for an oral appliance
C. Recruiting subjects on a consecutive basis
D. Not accounting for drop outs in the final analysis of data
Which of the following has not been used to assess sleepiness as an outcome of therapy?

A. Epworth Sleepiness Scale
B. The ARES questionnaire
C. Visual analogue scale
D. The Multiple Sleep Latency Test (MSLT)
E. The Maintenance of Wakefulness test (MWT)
In one study by Vanderveeken, a thermoplastic device was compared to the custom fitted MRD. Which of the following was not a conclusion regarding trial devices in this study?

A. The non-custom device was 50% as effective as the custom fitted device
B. The primary reason for failure of the non-custom was lack of retention
C. 2/3 of the non-custom failure were successful when crossed over to the custom device
D. The chief disadvantage of the non-custom is that the degree of protrusion is uncertain
E. Failure of the non-custom was strongly associated with bulk and lack of tongue space
In studies performed between 1995 and 2006, which of the following has been reported:

A. Protrusion endpoints fall into a range of 50-85% of maximum range of motion

B. MRDs set at 85% reduced the AHI to < 10 and had a 52% success rate

C. When the MRD was set at 50% of maximum protrusion, the AHI was reduced to < 10 in 1/3 of patients

D. More side effects were found with greater protrusion
The experimental design shown describes

A. A level I or II study design
B. A level III study design
C. A level IV study design
D. A patient “blinded” study design
According to the Study, “Oral Appliances for Snoring and Obstructive Sleep Apnea: A Review,” (Ferguson) Which is not true?

A. Treatment adherence is 57% of nights at 1 year.
B. The mechanism of OA therapy is best related to upper airway change in size
C. OAs are less efficacious in reducing AHI when compared to CPAP
D. OAs are used more than CPAP
E. OA outcomes are comparable to upper airway surgery in many studies
According to adherence studies showing both subjective and objective monitoring (one study used a novel intra-oral compliance monitor) researchers found all of the following to be true, except:

A. Patients averaged 6.8 hours of use per night
B. Objective data is in the same range as the patient self-reported hours of use
C. Compliant patients had fewer complication associated with bite change
D. Reported rates of adherence with the MRA were similar to the reported adherence rates with CPAP in 2 of the crossover studies
When compared to custom MRD, prefabricated (boil and bite) appliances are inferior based on all of the following, except:

A. Loss of retention
B. Predicting a response to oral appliances prior to custom fabrication
C. Correct jaw positioning
D. Reduction of snoring from baseline
Remote controlled mandibular repositioners during PSG are *highly* predictive of response to MRD therapy

A. True
B. False
The table to the right demonstrates the utility of laboratory titration of Oral Appliances. Which of the following is true?

A. Additional Laboratory PSG titration is not helpful in improving outcome
B. HST fails to successfully treat the majority of patients in this study
C. This study does not support the need for oral appliance PSG titration
D. Differences in severity of baseline OSA should not impact the decision to perform final PSG titration of MRDs