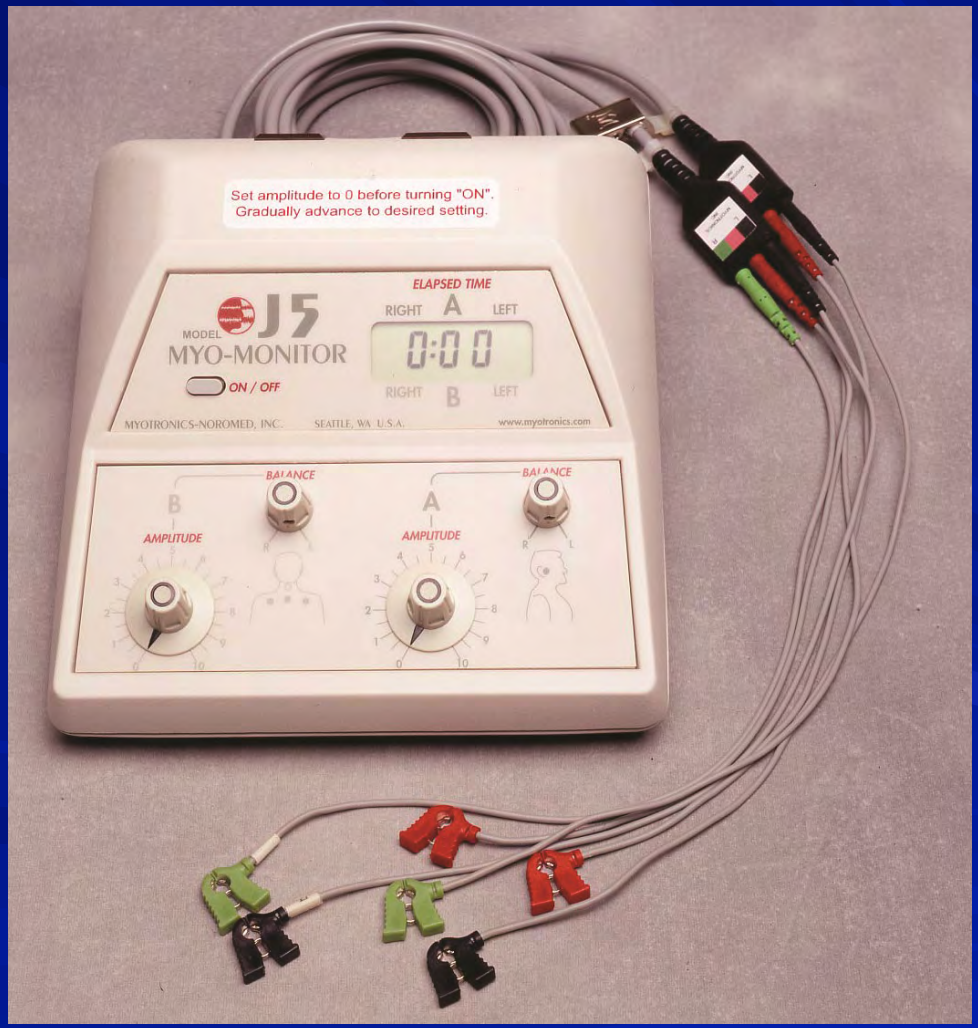
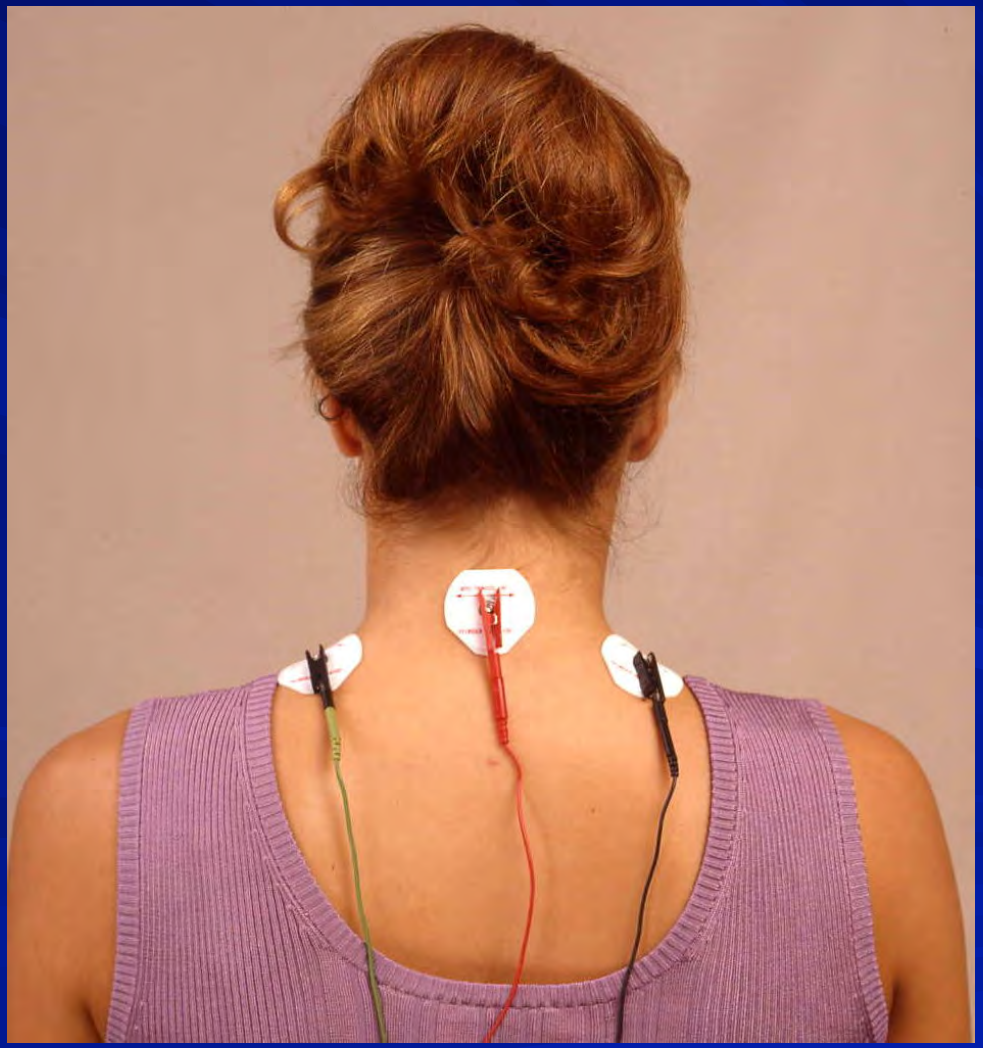
BILATERAL TENS NEUROMUSCULAR STIMULATOR
2 CHANNELS FOR CNV, CNVII
AND UPPER QUADRANT APPLICATION



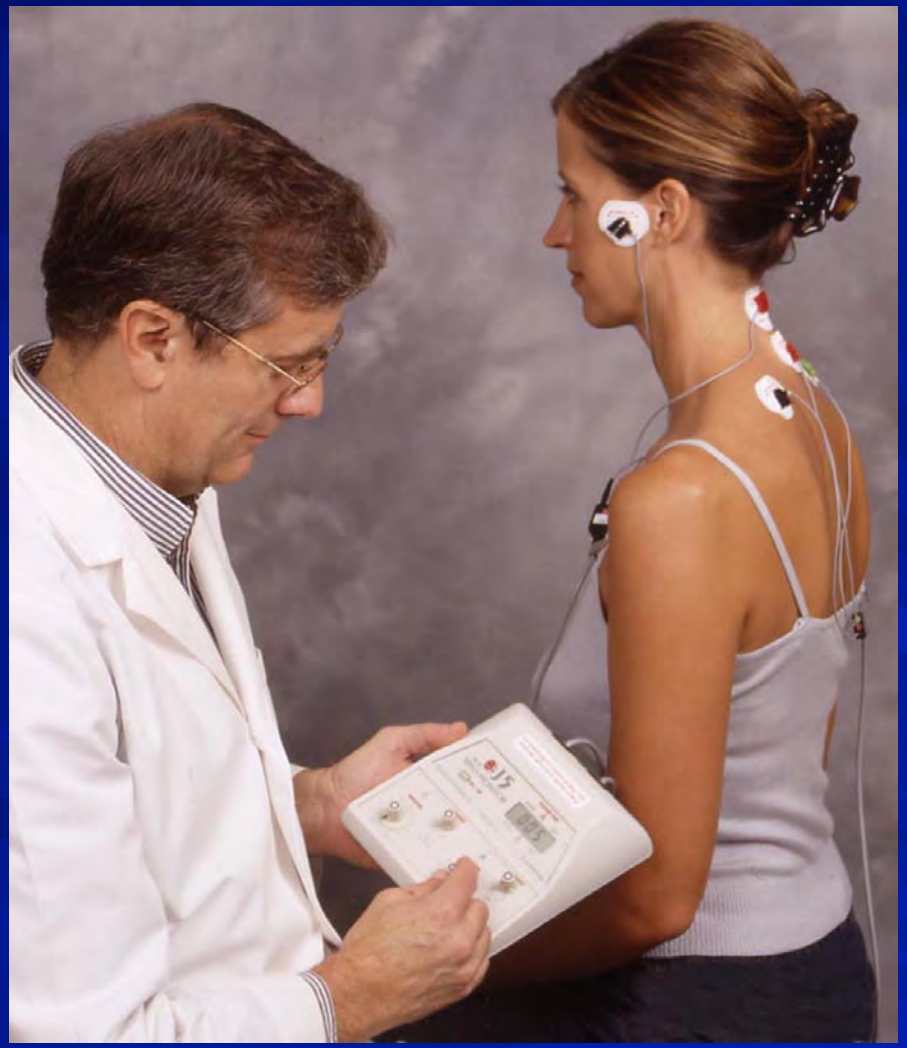
HOME TENS BILATERAL DEVICE

TENS DEVICE FOR BILATERAL STIMULATON OF CNV Division 3 AND CNVII

TENS DEVICE FOR BILATERAL STIMULATON OF UPPER QUADRANT MUSCLES

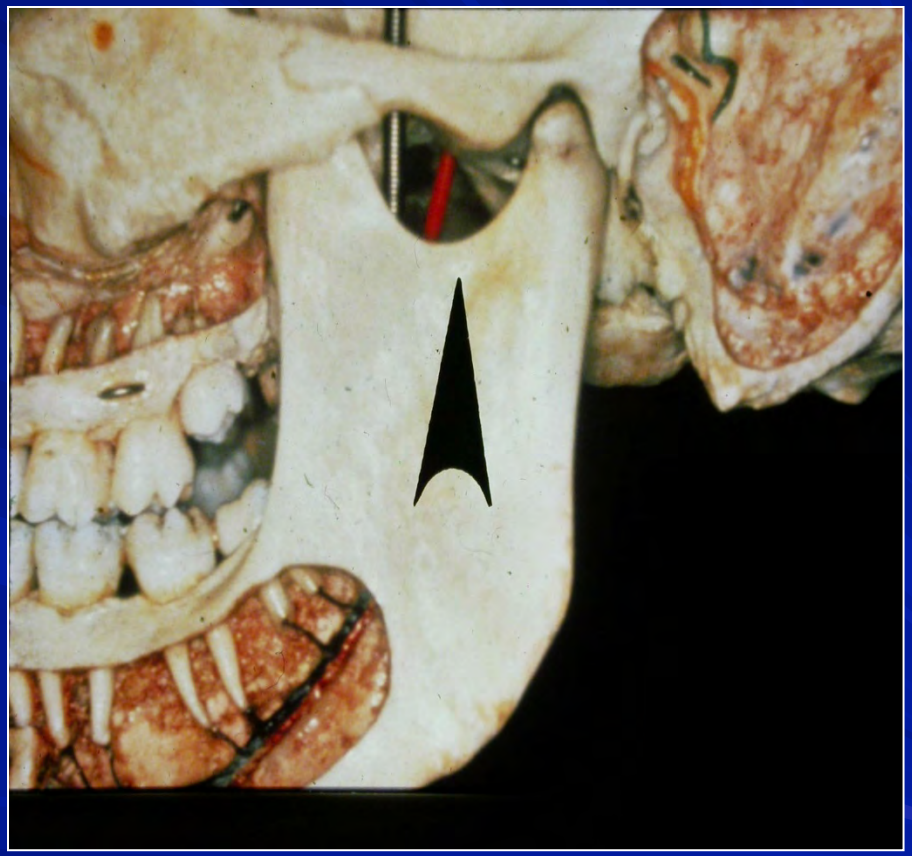


TENS DEVICE FOR BILATERAL STIMULATON OF CNV AND CNVII AND UPPER QUADRANT MUSCLES

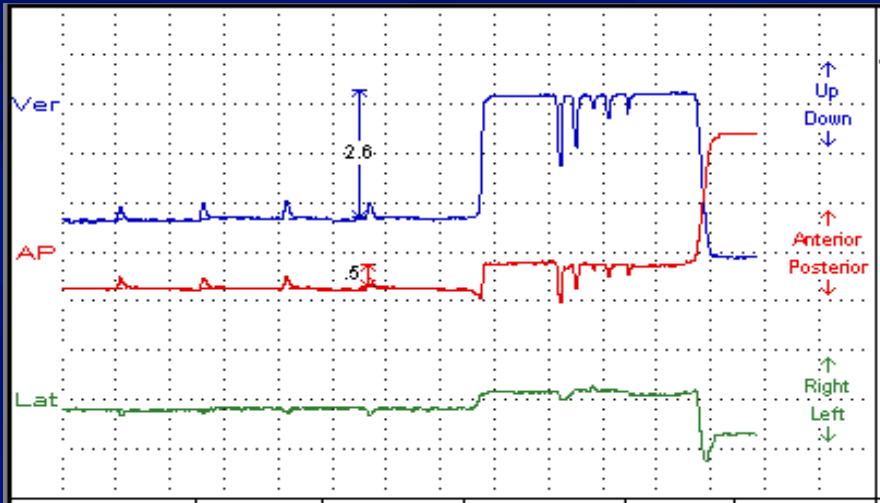


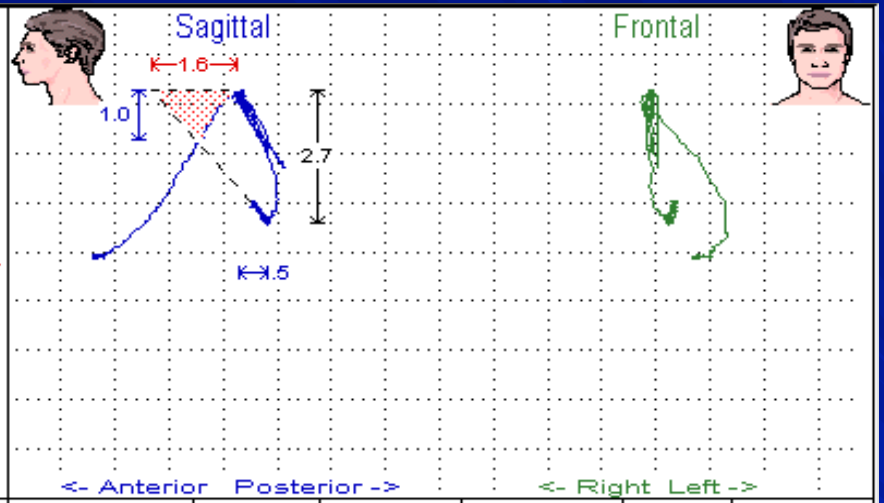
Placement of Bilateral Electrodes for Optimum Neural Stimulation

- Electrode is placed over the notch between the Coronoid Process and the TMJ for soft tissue stimulus conduction



Sweep & Sagittal / Frontal
Post TENS True Rest Position
Identification of Neuromuscular Occlusion Position

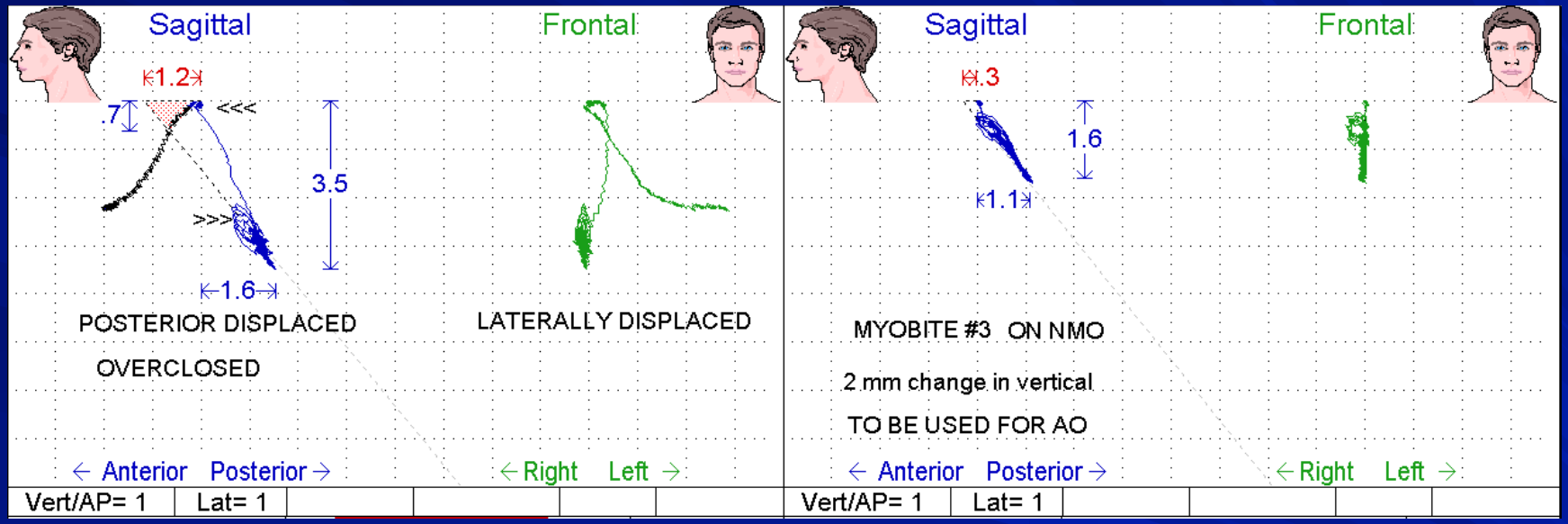




Vertical Freeway	= 2.6 mm	Rest Var.= 0.1 mm
AP Movement	= 0.5 mm Anterior	Rest Var.= 0.1 mm
Lateral Movement	= 0.4 mm Right	Rest Var.= 0.1 mm

Physiologic Rest is:
- 2.7 mm Inferior to C.O.
- 0.5 mm Posterior to C.O.
- 0.4 mm Left of C.O.

Comparison of Occlusal Positions Natural v Neuromuscular myobite



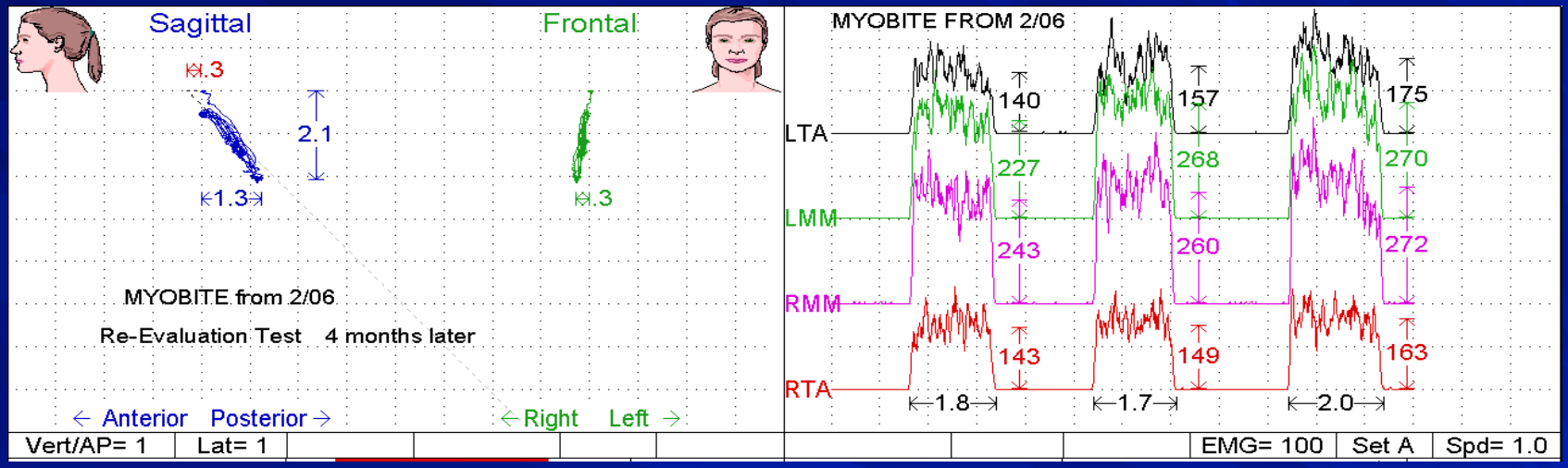
FIRST PATIENT

Natural Occlusion with severe attrition throughout both arches

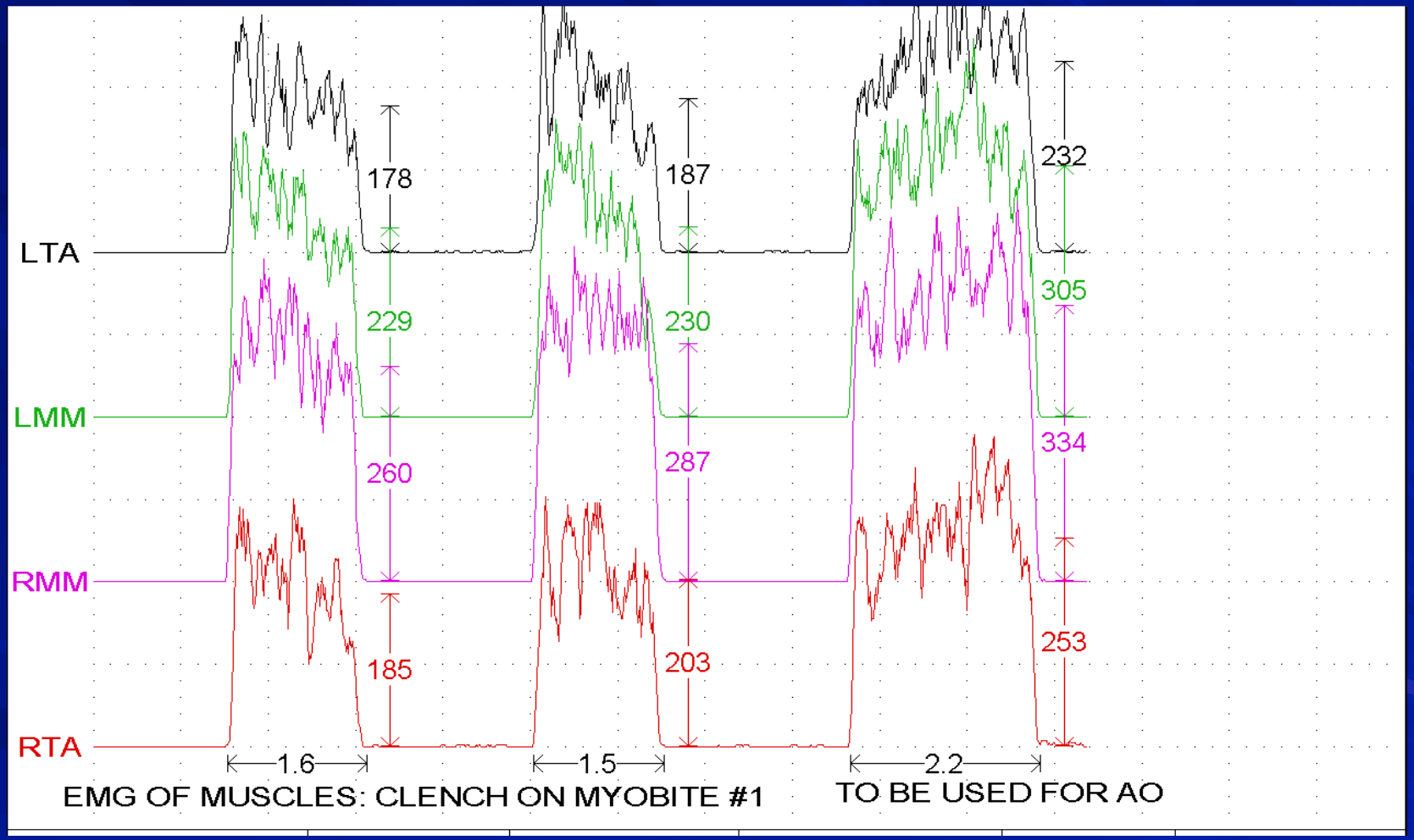
Note: Collapsed vertical dimension of occlusion

Test of Accuracy of Neuromuscular Myobite at Re-Evaluation Test

Bite position and muscle function are excellent



EMG Muscle Function
Clench on Neuromuscular Myobite
Testing accuracy of bite registration for orthosis



Articulated Casts in Neuromuscular Occlusion Relationship

Full Coverage Mandibular Orthosis Acetal Resin Material

Internal view

External view

Severely worn dentition

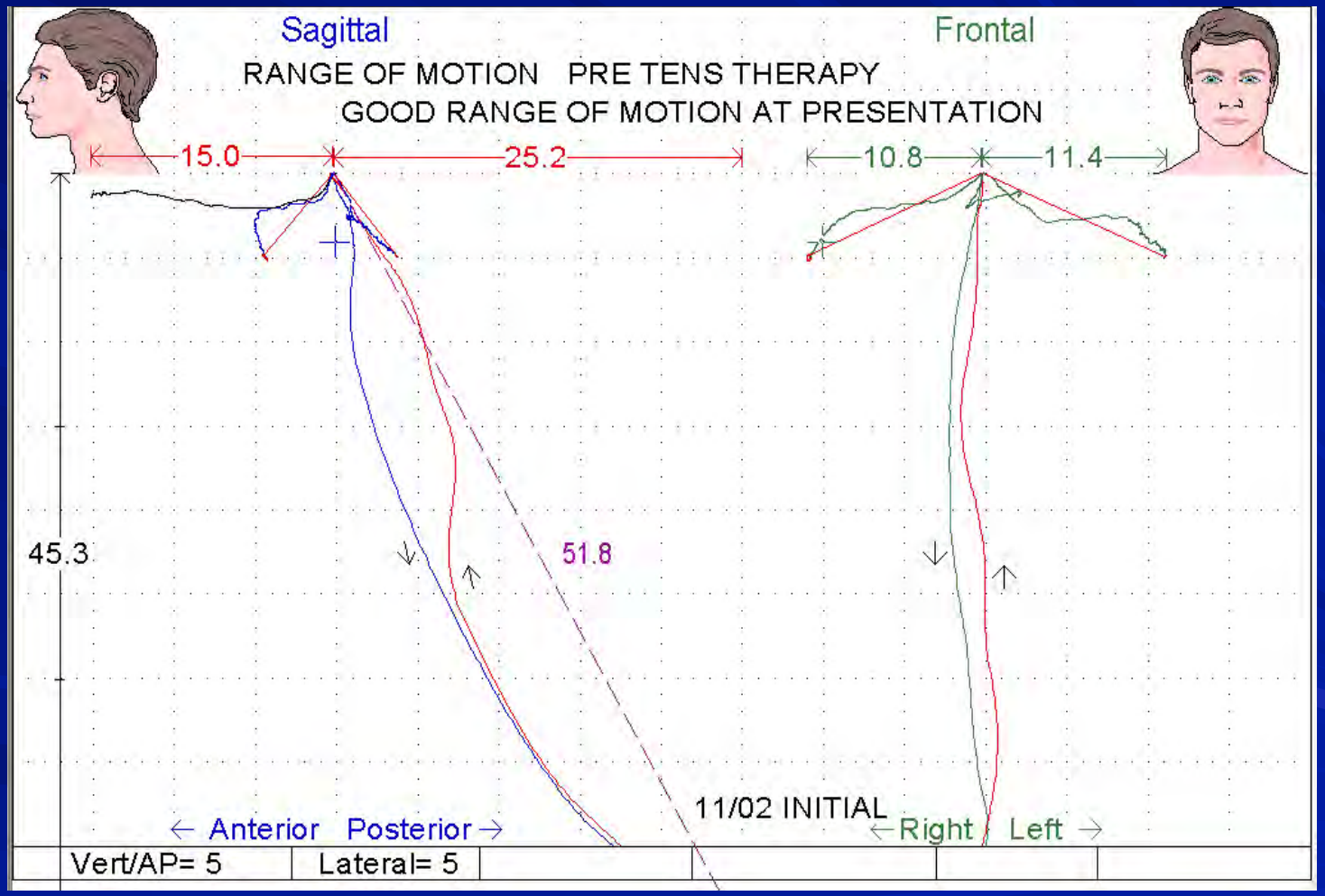
Orthosis in place

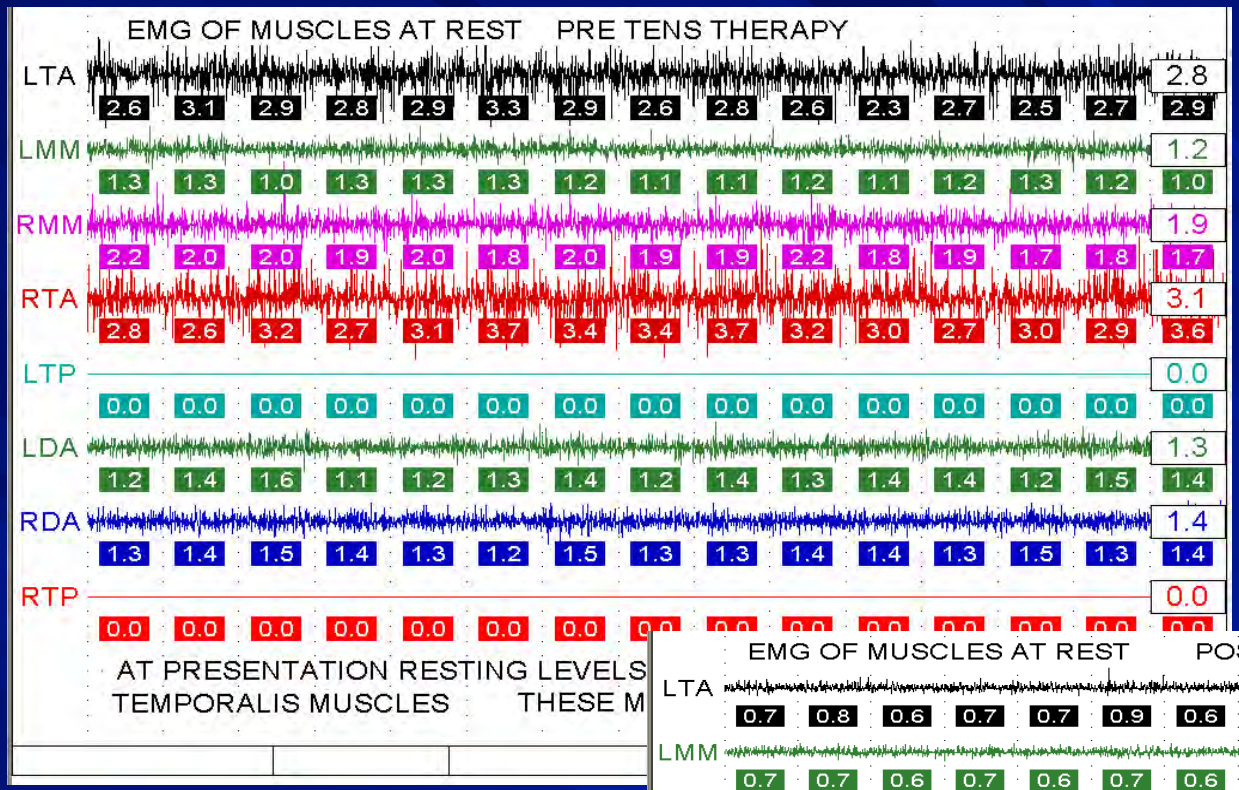
Neuromuscular Orthosis

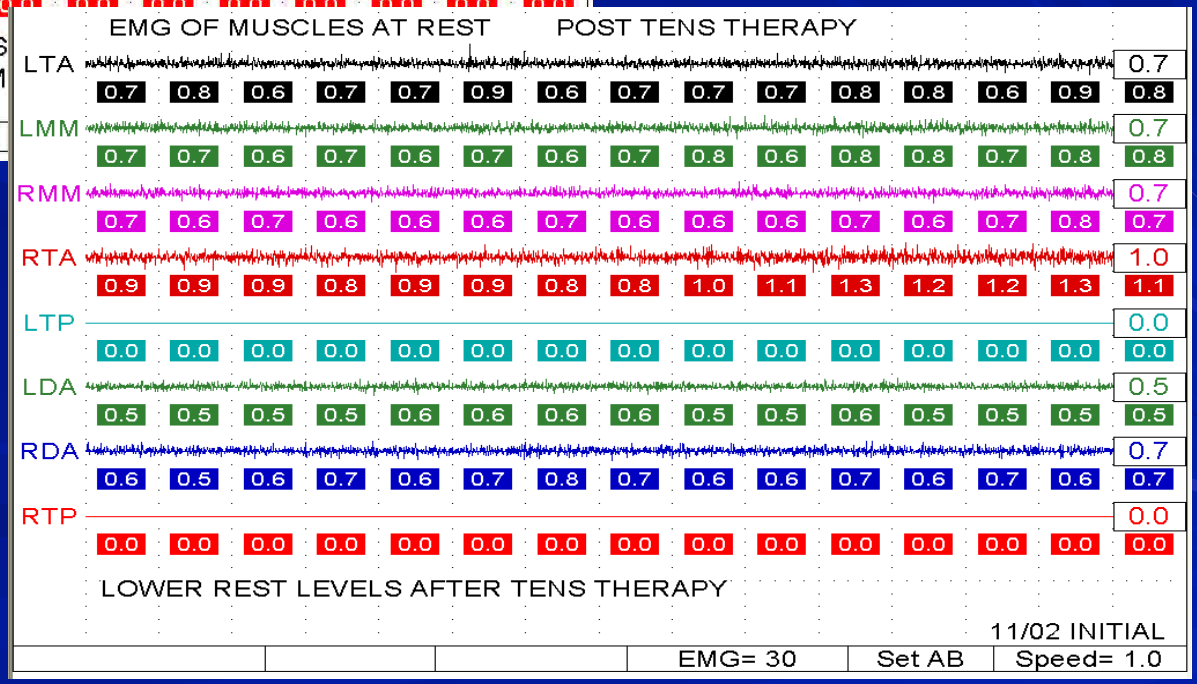
Neuromuscular Acetal Orthosis

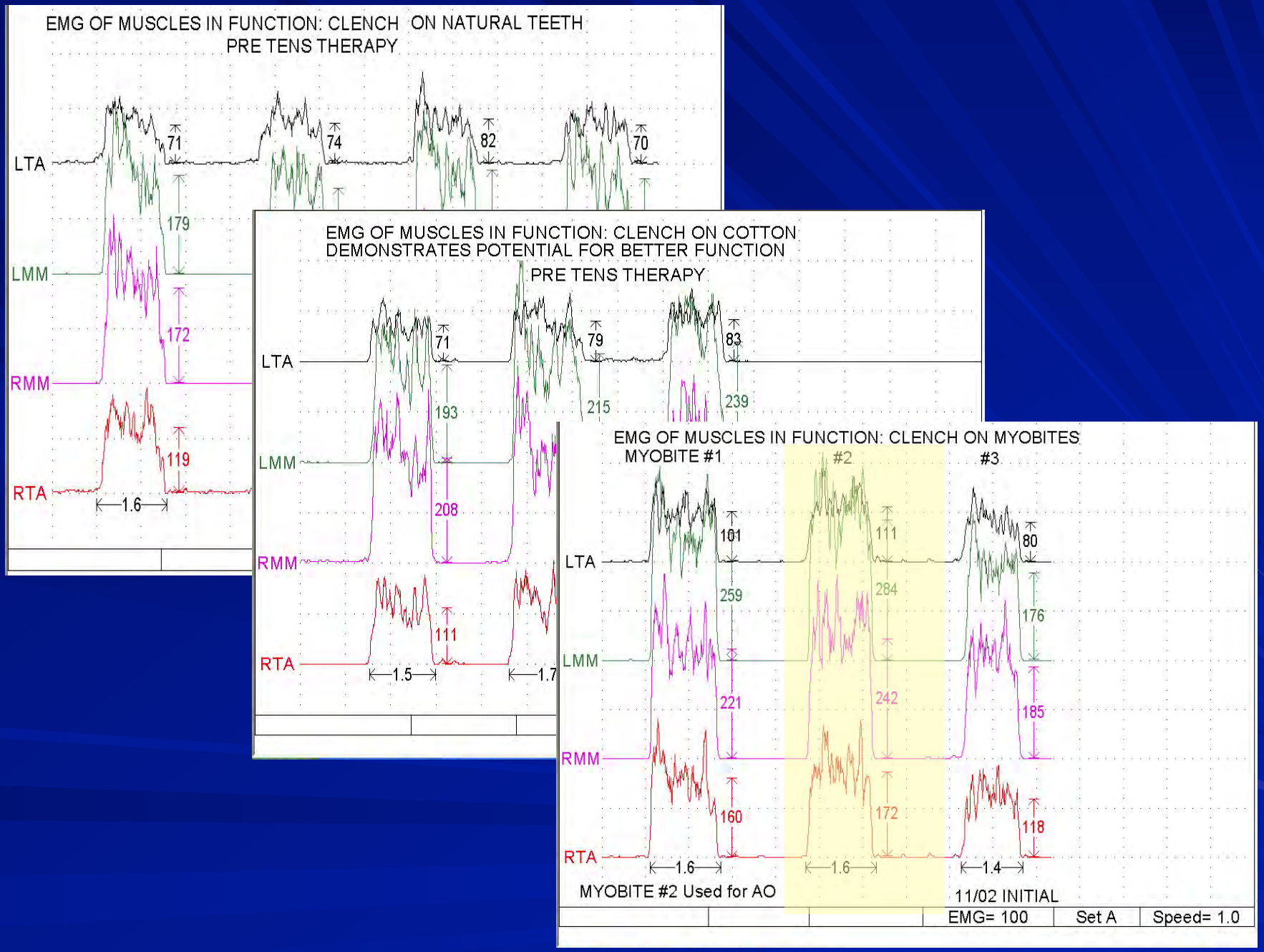
Note: Full coverage because of severe attrition throughout
Occlusal correction initially only with lower orthosis

TREATMENT OF SECOND TMD PATIENT

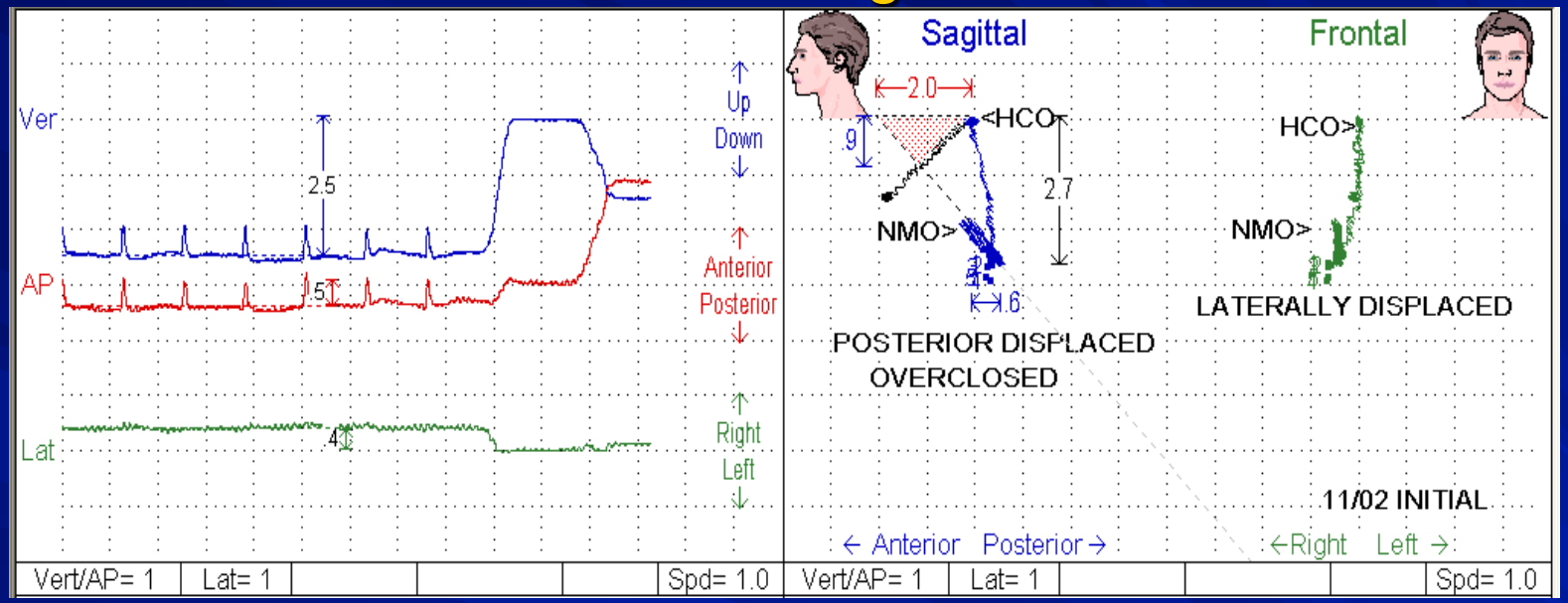


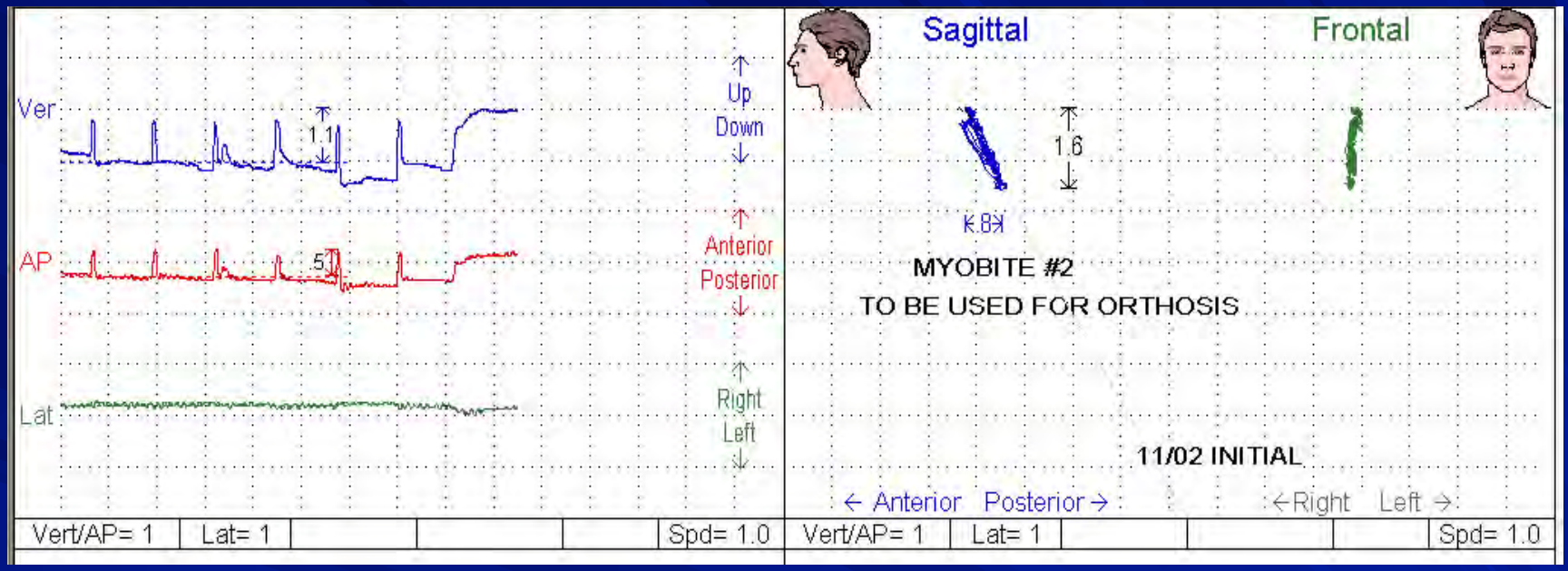

EMG OF MUSCLES AT REST PRE TENS THERAPY
LTA
2.6 3.1 2.9 2.8 2.9 3.3 2.9 2.6 2.8 2.6 2.3 2.7 2.5 2.7 2.9
2.8
LMM
1.3 1.3 1.0 1.3 1.3 1.3 1.2 1.1 1.1 1.2 1.1 1.2 1.3 1.2 1.0
1.2
RMM
2.2 2.0 2.0 1.9 2.0 1.8 2.0 1.9 1.9 2.2 1.8 1.9 1.7 1.8 1.7
1.9
RTA
2.8 2.6 3.2 2.7 3.1 3.7 3.4 3.4 3.7 3.2 3.0 2.7 3.0 2.9 3.6
3.1
LTP
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0
LDA
1.2 1.4 1.6 1.1 1.2 1.3 1.4 1.2 1.4 1.3 1.4 1.4 1.2 1.5 1.4
1.3
RDA
1.3 1.4 1.5 1.4 1.3 1.2 1.5 1.3 1.3 1.4 1.4 1.3 1.5 1.3 1.4
1.4
RTP
0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0
AT PRESENTATION RESTING LEVELS
TEMPORALIS MUSCLES THESE M


EMG OF MUSCLES AT REST POST TENS THERAPY
LTA
0.7 0.8 0.6 0.7 0.7 0.9 0.6 0.7 0.7 0.7 0.8 0.8 0.6 0.9 0.8
0.7
LMM
0.7 0.7 0.6 0.7 0.6 0.7 0.6 0.7 0.8 0.6 0.8 0.8 0.7 0.8 0.8
0.7
RMM
0.7 0.6 0.7 0.6 0.6 0.6 0.7 0.6 0.6 0.6 0.7 0.6 0.7 0.8 0.7
0.7
RTA
0.9 0.9 0.9 0.8 0.9 0.9 0.8 0.8 1.0 1.1 1.3 1.2 1.2 1.3 1.1
1.0
LTP
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0
LDA
0.5 0.5 0.5 0.5 0.6 0.6 0.6 0.6 0.5 0.5 0.6 0.5 0.5 0.5 0.5
0.5
RDA
0.6 0.5 0.6 0.7 0.6 0.7 0.8 0.7 0.6 0.6 0.7 0.6 0.7 0.6 0.7
0.7
RTP
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0
LOWER REST LEVELS AFTER TENS THERAPY
11/02 INITIAL
EMG= 30
Set AB
Speed= 1.0


EMG OF MUSCLES IN FUNCTION: CLENCH ON NATURAL TEETH
PRE TENS THERAPY
LTA
LMM
RMM
RTA
71
74
82
70
179
172
119
1.6
EMG OF MUSCLES IN FUNCTION: CLENCH ON COTTON
DEMONSTRATES POTENTIAL FOR BETTER FUNCTION
PRE TENS THERAPY
LTA
LMM
RMM
RTA
71
79
83
193
215
239
208
111
1.5
1.7
EMG OF MUSCLES IN FUNCTION: CLENCH ON MYOBITES
MYOBITE #1
#2
#3
LTA
LMM
RMM
RTA
101
111
80
259
284
176
221
242
185
160
172
118
1.6
1.6
1.4
MYOBITE #2 Used for AO
11/02 INITIAL
EMG= 100
Set A
Speed= 1.0

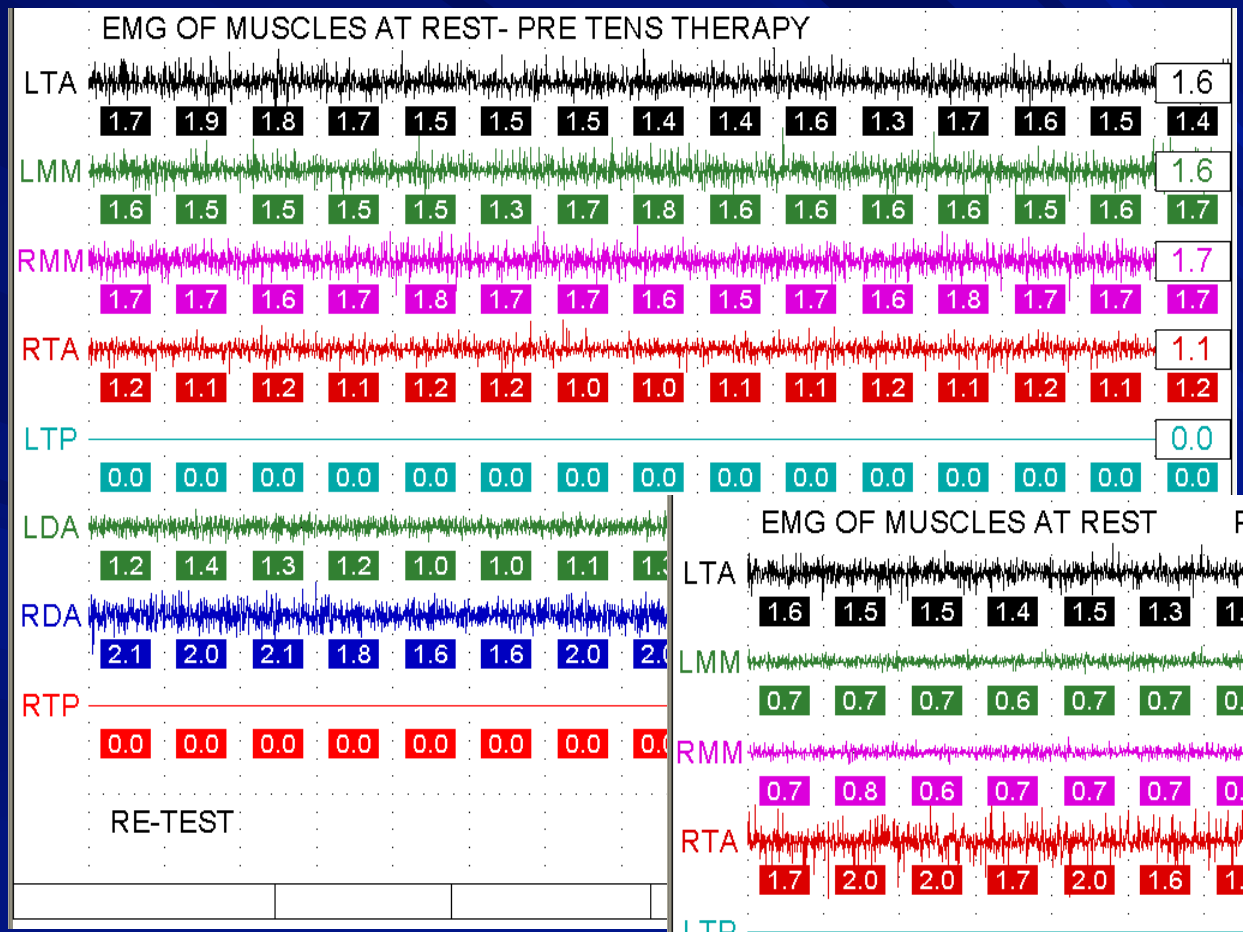
Identification of Rest Position for Selection of Neuromuscular Occlusion NMO With Jaw Tracking and EMG

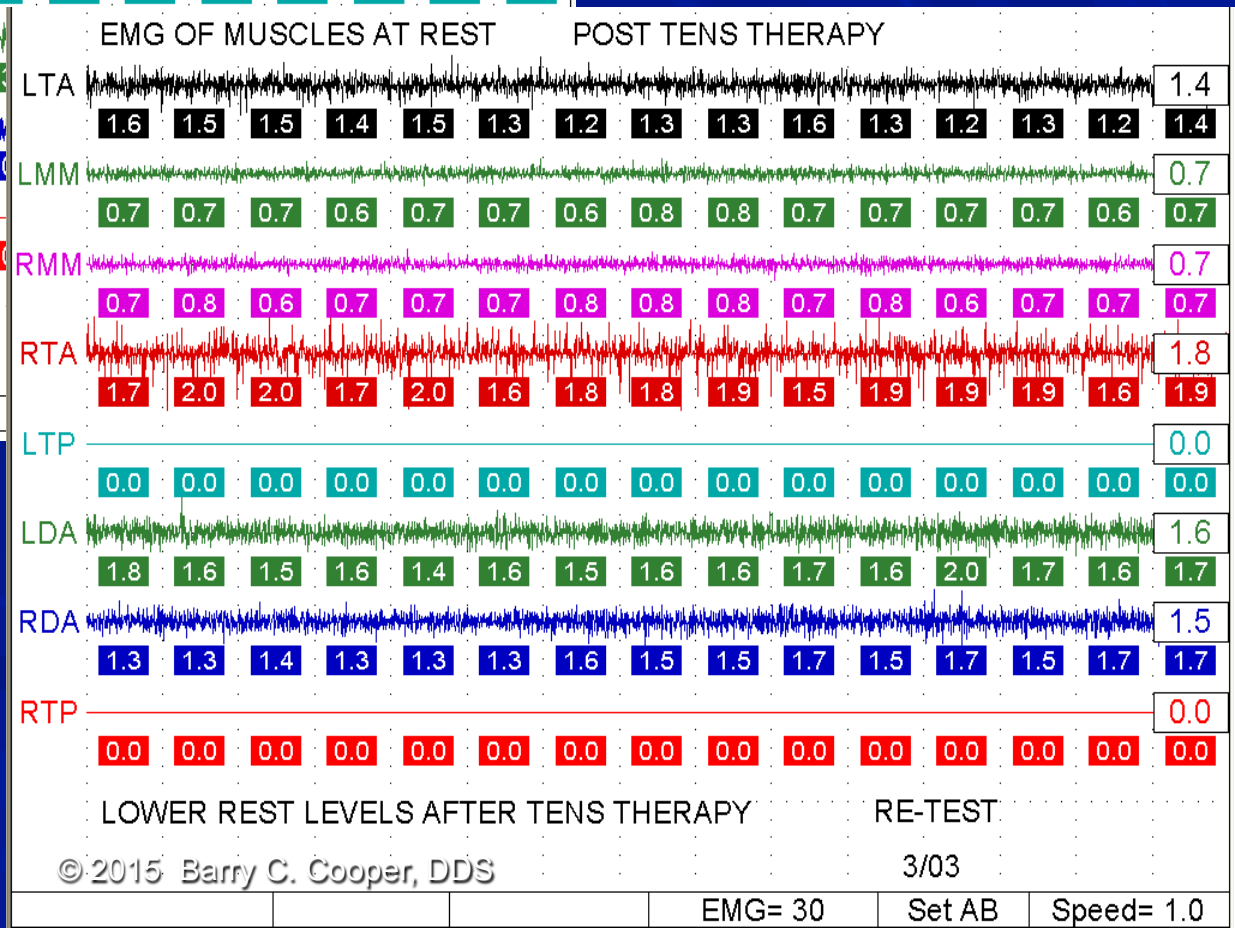




NEUROMUSCULAR BITE REGISTRATION

INITIAL RESIN NEUROMUSCULAR ORTHOSIS


EMG OF MUSCLES AT REST- PRE TENS THERAPY
LTA
1.7 1.9 1.8 1.7 1.5 1.5 1.5 1.4 1.4 1.6 1.3 1.7 1.6 1.5 1.4
1.6
LMM
1.6 1.5 1.5 1.5 1.5 1.3 1.7 1.8 1.6 1.6 1.6 1.6 1.5 1.6 1.7
1.6
RMM
1.7 1.7 1.6 1.7 1.8 1.7 1.7 1.6 1.5 1.7 1.6 1.8 1.7 1.7 1.7
1.7
RTA
1.2 1.1 1.2 1.1 1.2 1.2 1.0 1.0 1.1 1.1 1.2 1.1 1.2 1.1 1.2
1.1
LTP
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0
LDA
1.2 1.4 1.3 1.2 1.0 1.0 1.1
RDA
2.1 2.0 2.1 1.8 1.6 1.6 2.0
RTP
0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE-TEST


EMG OF MUSCLES AT REST POST TENS THERAPY
LTA
1.6 1.5 1.5 1.4 1.5 1.3 1.2 1.3 1.3 1.6 1.3 1.2 1.3 1.2 1.4
1.4
LMM
0.7 0.7 0.7 0.6 0.7 0.7 0.6 0.8 0.8 0.7 0.7 0.7 0.7 0.6 0.7
0.7
RMM
0.7 0.8 0.6 0.7 0.7 0.7 0.8 0.8 0.8 0.7 0.8 0.6 0.7 0.7 0.7
0.7
RTA
1.7 2.0 2.0 1.7 2.0 1.6 1.8 1.8 1.9 1.5 1.9 1.9 1.9 1.6 1.9
1.8
LTP
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0
LDA
1.8 1.6 1.5 1.6 1.4 1.6 1.5 1.6 1.6 1.7 1.6 2.0 1.7 1.6 1.7
1.6
RDA
1.3 1.3 1.4 1.3 1.3 1.3 1.6 1.5 1.5 1.7 1.5 1.7 1.5 1.7 1.7
1.5
RTP
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0
LOWER REST LEVELS AFTER TENS THERAPY
RE-TEST
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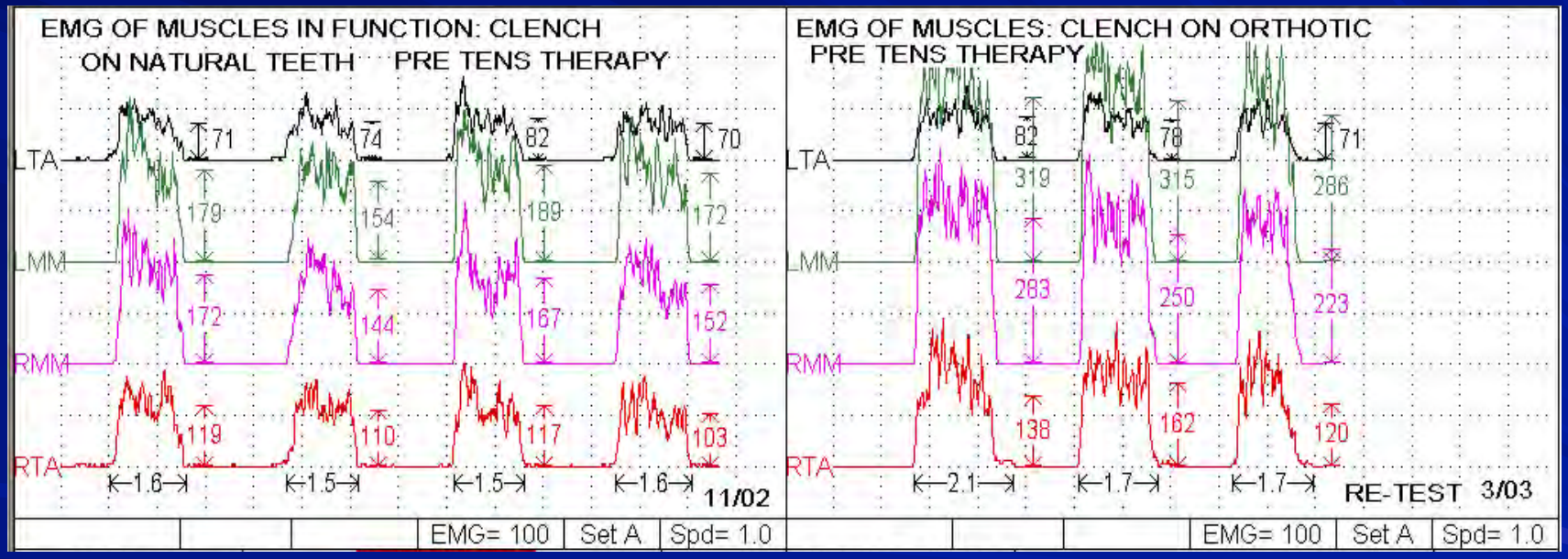
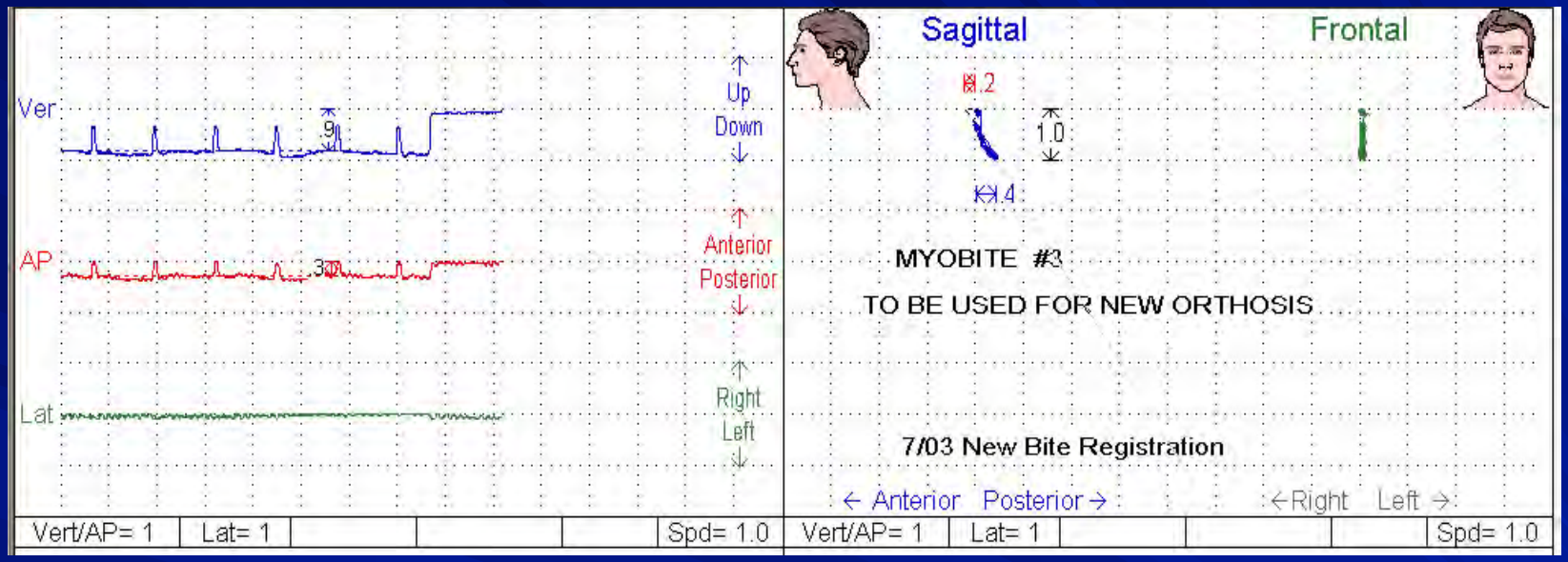
3/03
EMG= 30
Set AB
Speed= 1.0

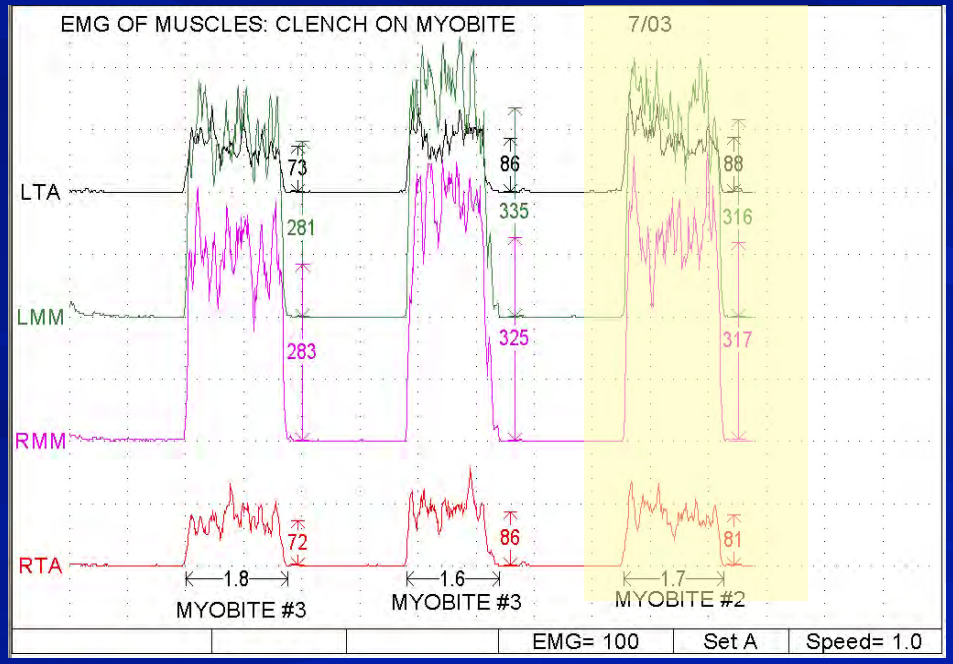
Comparison of EMG Clench Function on Natural Teeth and on NMO Orthotic

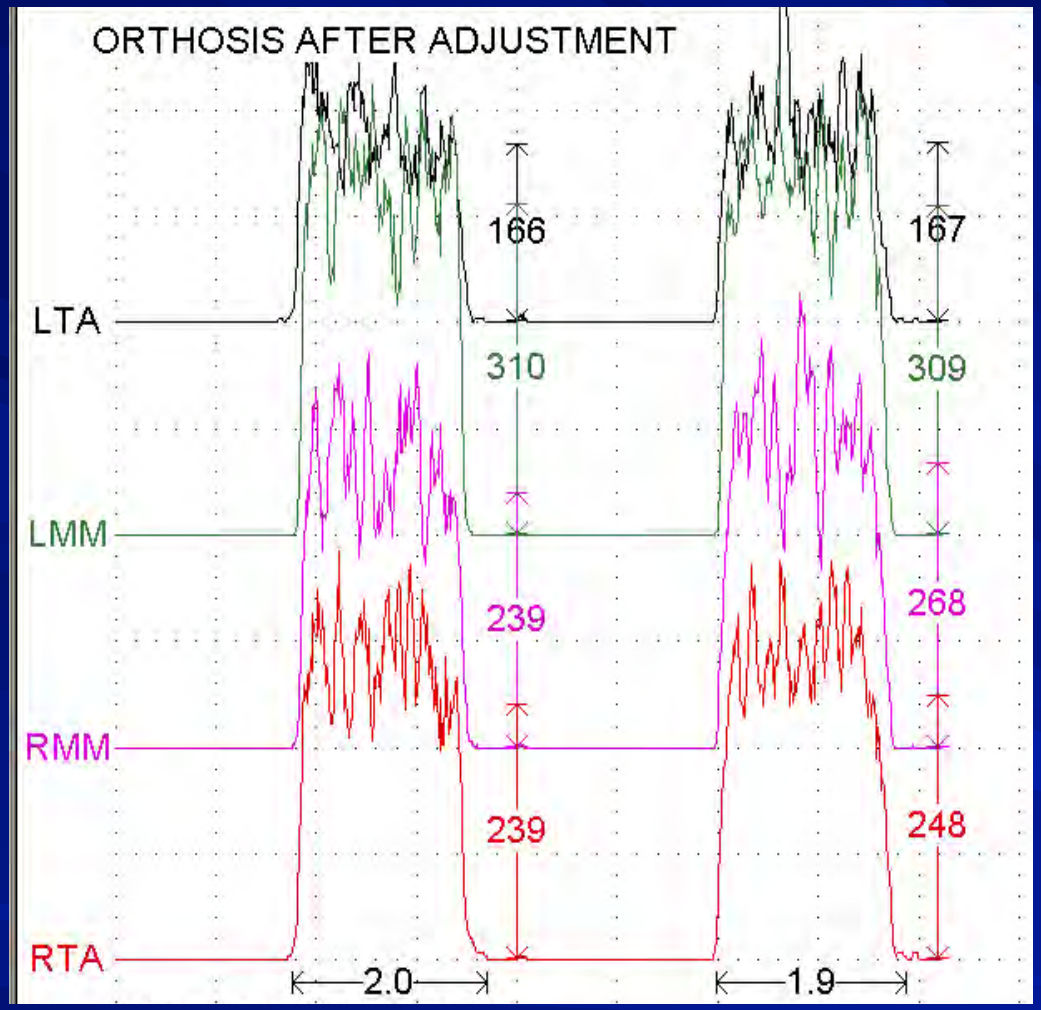
Note: Significant improvement with orthotic



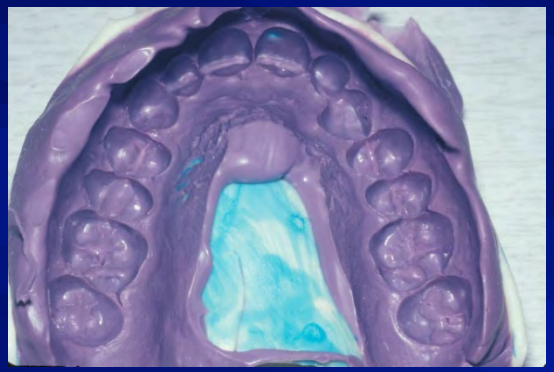
TEST OF ACCURACY OF BITE REGISTRATION






ORTHOSIS AFTER ADJUSTMENT
LTA
LMM
RMM
RTA
166
167
310
309
239
268
239
248
2.0
1.9

Laboratory Fabrication of NMO Onlays



OTHER FORMS OF LONG TERM THERAPY
REMOVABLE ORTHOSIS

LONG TERM TREATMENT WITH PORCELAIN ONLAYS

PRE RECONSTRUCTION LONG TERM NM TREATMENT

POST RECONSTRUCTION LONG TERM NM TREATMENT

PRE ORTHODONTIC LONG TERM NM TREATMENT

POST ORTHODONTIC LONG TERM NM TREATMENT