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## **Improving Speech Intelligibility, Mastication, and Quality of Life in Patients with Trismus**

**Presenter:** Megan Nosol, M.S., M.S.Ed., CCC-SLP

**Moderated by:**  
Amy Hansen, M.A., CCC-SLP, Managing Editor, SpeechPathology.com

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<p><b>Trismus Intervention: Improving Intelligibility, Mastication, and Quality of Life in Adults with Trismus</b></p>	<p>Presented by</p> <p>Megan Nosol, M.S., M.S.Ed., CCC-SLP</p> <p>November 30, 2015</p>
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## WEBINAR OBJECTIVES

Participants of this webinar will be able to:

- 1) Describe how to identify patients who have mild, moderate, and severe trismus.
- 2) Describe how to evaluate patients with trismus using effective assessment tools.
- 3) Describe how to design progressive, therapeutic trismus programs.

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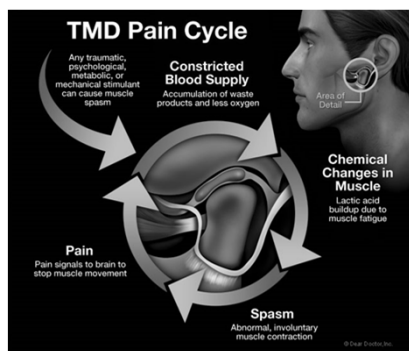
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## "I HAVE TMJ."




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## DEFINING TRISMUS

- From Greek "trismos"
- 35-40 mm
- Damage or fibrosis of the Temporal-Mandibular Joint musculature




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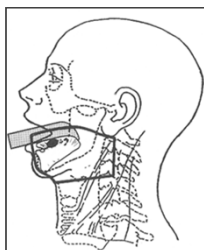
## THE MANY NAMES OF TRISMUS

- Lock-Jaw
- TMJ (Temporal-Mandibular-Joint)
- TMD (Temporal-Mandibular Disorder)
- Limited Mouth Opening
- Jaw Hypomobility

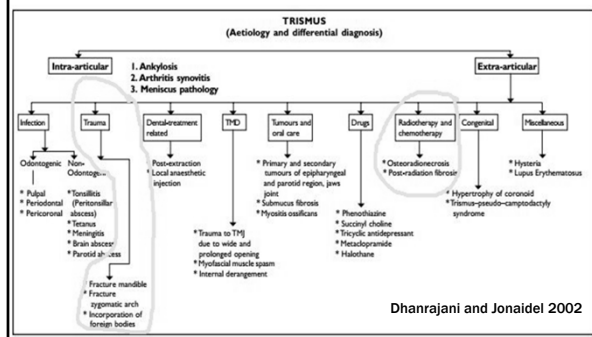


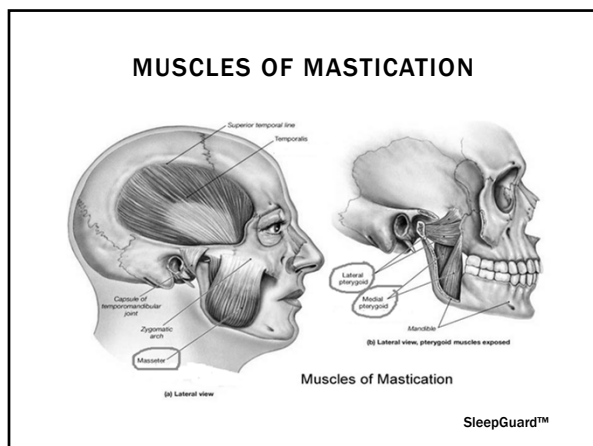
## ETIOLOGIES OF TRISMUS

- Infection
- CNS Disorders
- Trauma
- Poor Oral Habits
- Surgery
- Psychogenic
- Pharmacology
- Radiation



## TRISMUS PATIENTS






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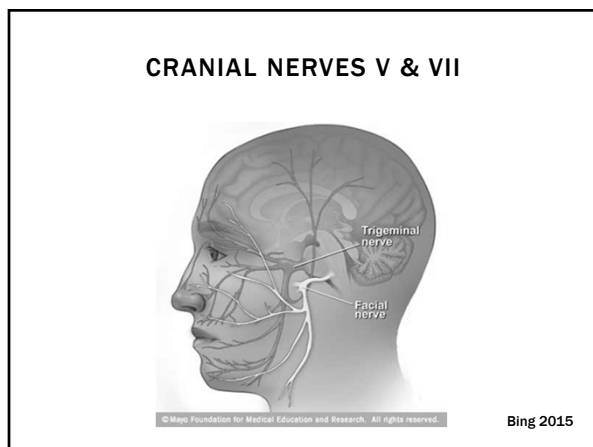
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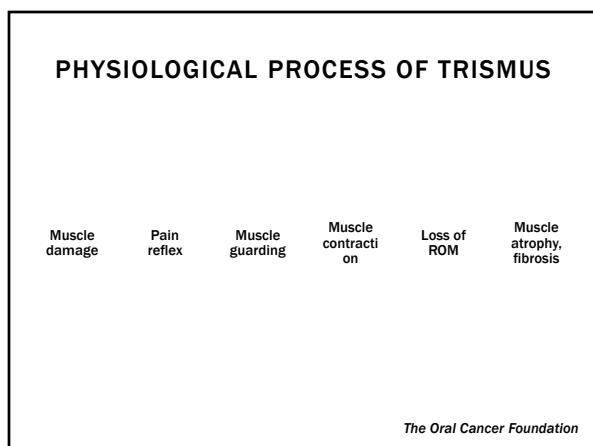
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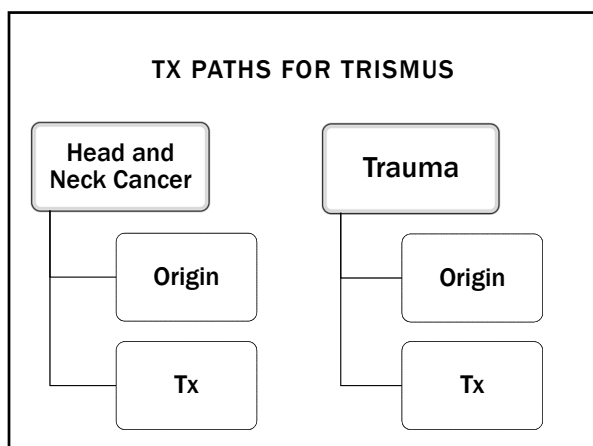
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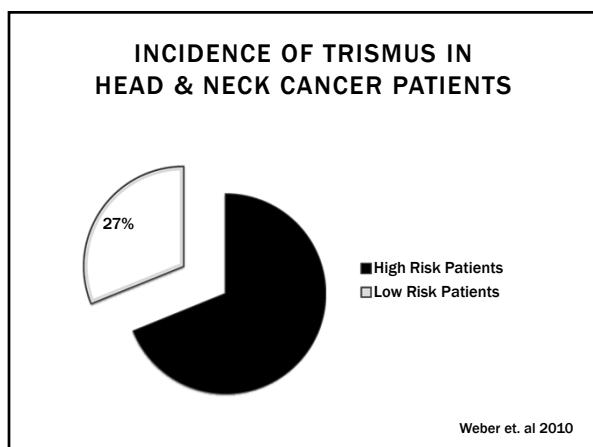
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**BIOLOGICAL EFFECTS OF RADIATION**

According to the U.S. Nuclear Regulatory Commission (September 2015), radiation may result in three outcomes:

- (1) Self-repair
- (2) Cell replacement
- (3) Biophysical change

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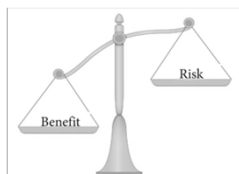
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### RADIATION FIBROSIS SYNDROME (RFS)

- Progressive
- Late complication
- Type of radiation treatment matters



Penn Medicine Abramson Cancer Center 2014

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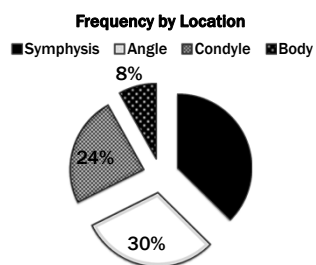
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### INCIDENCES OF MANDIBULAR FRACTURES



Jung et. al 2014

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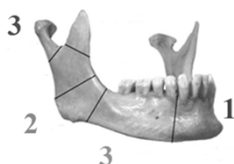
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### TRAUMA-RELATED TRISMUS

- Atrophy
- Prognosis
- Treatment Course
- Home Tx Plan




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### EFFECTS OF TRISMUS: TX JUSTIFICATION

- Oral Hygiene
- Pain
- Mastication
- Swallowing
- Speech Intelligibility
- Quality of Life

National Cancer Institute at NIH 2012

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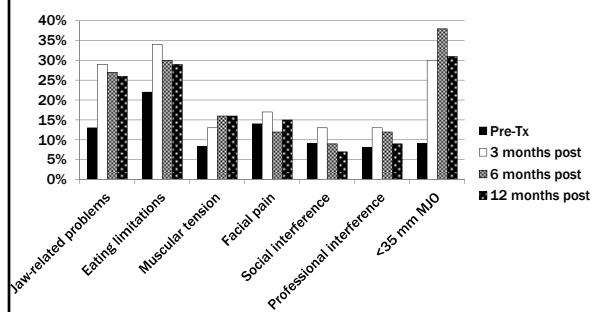
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### EFFECTS OF TRISMUS: 104 HN CANCER PATIENTS




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**“Oral health and problems with opening mouth has been pointed out as predictors of survival in head and neck cancer.”**

**-Nina Pauli, M.D. 2015**




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### EVALUATION OF TRISMUS

- Origin
- Measurement
- Swallowing
- Intelligibility
- Quality of Life




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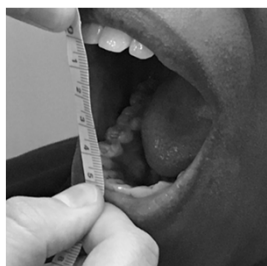
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### MEASURING MAXIMAL JAW OPENING




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### DIAGNOSING TRISMUS: TRISMUS PROFILE SCALE

Severity Level:	Measurement:	Number of Fingers:
Normal	>40 mm	+3 fingers
Mild	30-35 mm	2-3 fingers
Moderate	15-30 mm	1-2 fingers
Severe	<15 mm	<1 finger

Dijkstra et. al 2005

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### TX DIAGNOSES FOR TRISMUS

Mastication impairment?

- ICD-10- R13.11 (Dysphagia, oral phase)

Speech intelligibility?

- ICD-10-R47.89 (Other speech disturbance)




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### TREATING TRISMUS: WHERE DO YOU BEGIN?

Is patient a good candidate for trismus tx?

- ✓ Cognitively intact
- ✓ MD's clearance
- ✓ No open oral wounds
- ✓ Dentures or teeth

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### WHEN TO TREAT TRISMUS?




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### SAMPLE TX GOALS

Patient will consume 50% diet of mech soft consistency without overt s/sx of oral fatigue during 2 consecutive daily meals.

Patient will adequately demonstrate rotary chew with 8/10 bites of mech pureed consistency and report minimal discomfort.

While reading the "Grandfather Passage" to 3 unfamiliar listeners, patient will be 100% intelligible as confirmed by unfamiliar listeners using a rating scale.

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### PREPARE THE PATIENT




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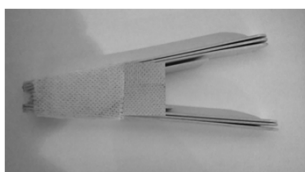
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### CASE STUDY: HOWARD

- 73 y.o. male
- Oral cancer
- MJO
- Motivation
- Pitfalls
- Follow-up




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## CASE STUDY: JAKE

- 38 y.o. Male
- Mandibular Surgery
- Co-Morbidities
- Initial MJO
- Home Tx
- Motivation



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## DEVELOPING A TRISMUS TX PROGRAM

- Objectives
- Measurement
- Independence
- Progressive



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## MEASUREMENT RECORD

[illegible]

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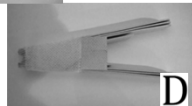
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## EXERCISE JOURNAL

Date	Initial Measurement	AM Reps/Sets/Time	PM Reps/Sets/Time	Final Measurement
3/27/15	15 mm	5/4/30s.	5/6/40s.	17 mm
3/28/15	15 mm	10/4/30s.	10/4/30sec.	18 mm
3/29/15	16 mm	10/4/40s.	10/2/40s.	17 mm
3/30/15	15.5 mm	10/5/30s.	10/4/45s.	18 mm
3/31/15	16 mm	10/5/45s.	10/5/45s.	19 mm

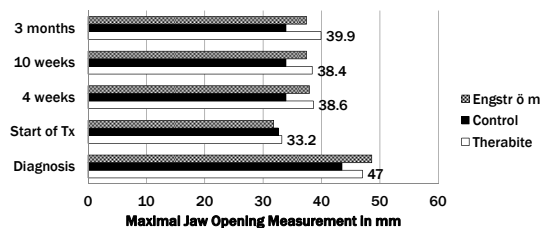
## PASSIVE JAW STRETCHING (PSJ) DEVICES



- A- Therabite®
- B- OraStretch Press®
- C- Dynasplint®
- D- Wooden Gator

## SELECTION OF DEVICES

Impact of Structured Trismus Tx Programs on 50 H&N Cancer Patients



Pauli et al. 2014

### ACTIVE JAW STRETCHING (AJS)

- Vertical Chew v. Rotary Chew
- Hierarchy of Tools
- Progressive



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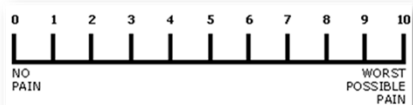
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### TX WITH JAW STRETCHING EXERCISES

- Measure
- Mirror
- Demo
- Assess
- Modify



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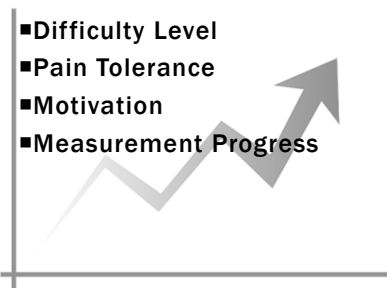
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### DETERMINATION OF REPS/SETS

- Difficulty Level
- Pain Tolerance
- Motivation
- Measurement Progress



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## HOME TX PLAN

- Home Program
- Independence
- Challenge
- 3 x Daily



**MOTIVATION**

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## SAMPLE HOME TRISMUS TX PROGRAM

### Exercise Regimen

#### Chewy Tube

Day	Number of Sets (3 times daily)	Number of Repetitions	"On" Time	Break Time
Monday	5	NA	1:30 minute	30 seconds
Tuesday	5	NA	1 minute	30 seconds
Wednesday	6	NA	45 seconds	30 seconds
Thursday	5	NA	1:30 minute	30 seconds
Friday	5	NA	1 minute	30 seconds
Saturday	6	NA	1 minute	30 seconds
Sunday	2	NA	1 minute	30 seconds

#### Wooden Gater

Day	Number of Sets (3 times daily)	Number of Repetitions	"On" Time	Break Time
Monday	3	10	1:30 minute	30 seconds
Tuesday	3	10	1 minute	30 seconds
Wednesday	3	10	1:30 seconds	30 seconds
Thursday	3	10	1:30 minute	30 seconds
Friday	3	10	1 minute	30 seconds
Saturday	3	10	1 minute	30 seconds
Sunday	2	10	1 minute	30 seconds

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## WORDS OF CAUTION




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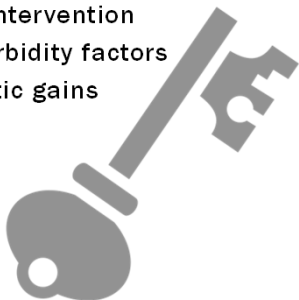
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### WHAT TO EXPECT WITH TX

- Early intervention
- Co-morbidity factors
- Realistic gains




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### PITFALLS

"Motivation is the art of getting people to do what you want them to do because they want to do it."  
 –Dwight D. Eisenhower

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### TAKE-HOME MESSAGES

- Origin
- Early intervention
- Red Flags
- Preparation
- Measurements
- Progressive therapy
- Home tx program
- Motivation




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## QUESTIONS?

[megan.nosol@yahoo.com](mailto:megan.nosol@yahoo.com)

[www.SpeechTherapyToolbox.com](http://www.SpeechTherapyToolbox.com)

## REFERENCES

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