

DEPARTMENT OF ORAL MEDICINE
OROFACIAL PAIN RESEARCH GROUP

RESEARCH DIAGNOSTIC CRITERIA FOR TEMPOROMANDIBULAR DISORDERS

AXIS I: CLINICAL PHYSICAL EXAMINATION FORMS AND SPECIFICATIONS

INSTRUCTIONS FOR SCORING AND ASSESSMENT

AXIS II: BIOBEHAVIORAL QUESTIONNAIRES INSTRUCTIONS FOR SCORING AND ASSESSMENT

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INTRODUCTION

The RDC/TMD booklet is an updated version of the original publication of the RDC/TMD and been prepared to allow clinical researchers to have access to the most current version of the RDC/TMD.

The RDC/TMD booklet contains all the information needed to:

1. administer, score and obtain an RDC/TMD Axis I clinical diagnosis
2. administer, score and derive an RDC/TMD Axis II assessment of mandibular function, psychological status and level of TMD-related psychosocial disability*

The RDC/TMD is understood to represent a “work-in-progress” with significant research effort continuously devoted to improving its reliability, validity and clinical utility.

**Note: The RDC/TMD Axis II portion of this Booklet contains modest corrections/clarifications from the original publication for scoring templates and for methods of scoring the Depression and Non-Specific Physical Symptoms Scales as well as guides for assessing depression and a summarization based on these scales of the SCL-90.*

RESEARCH DIAGNOSTIC CRITERIA
FOR TEMPOROMANDIBULAR DISORDERS

 Part 1

ADMINISTERING THE RDC

HISTORY QUESTIONNAIRE

ID# _____

Date: ___ ___ / ___ ___ / ___ ___

Please read each question and respond accordingly. For each of the questions below circle only one response.

1. Would you say your health in general is excellent, very good, good, fair or poor?

Excellent	1
Very good	2
Good	3
Fair	4
Poor	5

2. Would you say your oral health in general is excellent, very good, good, fair or poor?

Excellent	1
Very good	2
Good	3
Fair	4
Poor	5

3. Have you had pain in the face, jaw, temple, in front of the ear or in the ear in the past month?

No	0
Yes	1

[If no pain in the past month, SKIP to question 14]

If Yes,

4.a. How many years ago did your facial pain begin for the first time?

___ ___ years

[If one year ago or more SKIP to question 5] [If less than one year ago, code 00]

4.b. How many months ago did your facial pain begin for the first time?

_____ months

5. Is your facial pain persistent, recurrent or was it only a one-time problem?

Persistent	1
Recurrent	2
One-Time	3

6. Have you ever gone to a physician, dentist, chiropractor or other health professional for facial ache or pain?

No	1
Yes, in the last six months	2
Yes, more than six months ago	3

Research Diagnostic Criteria

7. How would you rate your facial pain on a 0 to 10 scale at the present time, that is right now, where 0 is "no pain" and 10 is "pain as bad as could be"?

No pain												Pain as bad as could be
0	1	2	3	4	5	6	7	8	9	10		

8. In the past six months, how intense was your worst pain rated on a 0 to 10 scale where 0 is "no pain" and 10 is "pain as bad as could be"?

No pain												Pain as bad as could be
0	1	2	3	4	5	6	7	8	9	10		

9. In the past six months, on the average, how intense was your pain rated on a 0 to 10 scale where 0 is "no pain" and 10 is "pain as bad as could be"? [That is, your usual pain at times you were experiencing pain].

No pain												Pain as bad as could be
0	1	2	3	4	5	6	7	8	9	10		

10. About how many days in the last six months have you been kept from your usual activities (work, school or housework) because of facial pain?

DAYS

11. In the past six months, how much has facial pain interfered with your daily activities rated on a 0 to 10 scale where 0 is "no interference" and 10 is "unable to carry on any activities"?

No Interference												Unable To Carry On Any Activities
0	1	2	3	4	5	6	7	8	9	10		

12. In the past six months, how much has facial pain changed your ability to take part in recreational, social and family activities where 0 is "no interference " and 10 is "extreme change"?

No Interference												Unable To Carry On Any Activities
0	1	2	3	4	5	6	7	8	9	10		

13. In the past six months, how much has facial pain changed your ability to work including housework) where 0 is "no interference " and 10 is "extreme change"?

No Interference												Unable To Carry On Any Activities
0	1	2	3	4	5	6	7	8	9	10		

Research Diagnostic Criteria

- | | | | |
|-------|---|-----|---|
| 14.a. | Have you ever had your jaw lock or catch so that it won't open all the way? | No | 0 |
| | | Yes | 1 |

[If no problem opening all the way, SKIP to question 15]

If Yes,

- | | | | |
|-------|---|-----|---|
| 14.b. | Was this limitation in jaw opening severe enough to interfere with your ability to eat? | No | 0 |
| | | Yes | 1 |

- | | | | | | | | | | |
|-----|----|--|-----|---|--|----|---|-----|---|
| 15. | a. | Does your jaw click or pop when you open or close your mouth or when chewing? | No | 0 | | d. | During the day, do you grind your teeth or clench your jaw? | No | 0 |
| | | | Yes | 1 | | | | Yes | 1 |
| | b. | Does your jaw make a grating or grinding noise when it opens and closes or when chewing? | No | 0 | | e. | Does your jaw ache or feel stiff when you wake up in the morning? | No | 0 |
| | | | Yes | 1 | | | | Yes | 1 |
| | c. | Have you been told, or do you notice that you grind your teeth or clench your jaw while sleeping at night? | No | 0 | | f. | Do you have noises or ringing in your ears? | No | 0 |
| | | | Yes | 1 | | | | Yes | 1 |
| | | | | | | g. | Does your bite feel uncomfortable or unusual? | No | 0 |
| | | | | | | | | Yes | 1 |

- | | | | |
|-------|---|-----|---|
| 16.a. | Do you have rheumatoid arthritis, lupus, or other systemic arthritic disease? | No | 0 |
| | | Yes | 1 |

- | | | | |
|-------|---|-----|---|
| 16.b. | Do you know of anyone in your family who has had any of these diseases? | No | 0 |
| | | Yes | 1 |

- | | | | |
|-------|---|-----|---|
| 16.c. | Have you had or do you have any swollen or painful joint(s) other than the joints close to your ears (TMJ)? | No | 0 |
| | | Yes | 1 |

[If no swollen or painful joints, SKIP to question 17.a.]

If Yes,

- | | | | |
|-------|---|-----|---|
| 16.d. | Is this a persistent pain which you have had for at least one year? | No | 0 |
| | | Yes | 1 |

- | | | | |
|-------|---|-----|---|
| 17.a. | Have you had a recent injury to your face or jaw? | No | 0 |
| | | Yes | 1 |

[If no recent injuries, SKIP to question 18]

If Yes,

- | | | | |
|-------|--|-----|---|
| 17.b. | Did you have jaw pain before the injury? | No | 0 |
| | | Yes | 1 |

- | | | | |
|-----|--|-----|---|
| 18. | During the last six months have you had a problem with headaches or migraines? | No | 0 |
| | | Yes | 1 |

Research Diagnostic Criteria

19. What activities does your present jaw problem prevent or limit you from doing?

a. Chewing	No	0	g. Sexual activity	No	0
	Yes	1		Yes	1
b. Drinking	No	0	h. Cleaning teeth or face	No	0
	Yes	1		Yes	1
c. Exercising	No	0	i. Yawning	No	0
	Yes	1		Yes	1
d. Eating hard foods	No	0	j. Swallowing	No	0
	Yes	1		Yes	1
e. Eating soft foods	No	0	k. Talking	No	0
	Yes	1		Yes	1
f. Smiling/laughing	No	0	l. Having your usual facial appearance	No	0
	Yes	1		Yes	1

20. In the last month, how much have you been distressed by. . .

	<u>Not At All</u>	<u>A Little Bit</u>	<u>Moderately</u>	<u>Quite A Bit</u>	<u>Extremely</u>
a. Headaches	0	1	2	3	4
b. Loss of sexual interest or pleasure	0	1	2	3	4
c. Faintness or dizziness	0	1	2	3	4
d. Pains in the heart or chest	0	1	2	3	4
e. Feeling low in energy or slowed down	0	1	2	3	4
f. Thoughts of death or dying	0	1	2	3	4
g. Poor appetite	0	1	2	3	4
h. Crying easily	0	1	2	3	4
i. Blaming yourself for things	0	1	2	3	4
j. Pains in the lower back	0	1	2	3	4
k. Feeling lonely	0	1	2	3	4
l. Feeling blue	0	1	2	3	4
m. Worrying too much about things	0	1	2	3	4
n. Feeling no interest in things	0	1	2	3	4
o. Nausea or upset stomach	0	1	2	3	4
p. Soreness of your muscles	0	1	2	3	4
q. Trouble falling asleep	0	1	2	3	4
r. Trouble getting your breath	0	1	2	3	4
s. Hot or cold spells	0	1	2	3	4
t. Numbness or tingling in parts of your body	0	1	2	3	4
u. A lump in your throat	0	1	2	3	4
v. Feeling hopeless about the future	0	1	2	3	4
w. Feeling weak in parts of your body	0	1	2	3	4
x. Heavy feelings in your arms or legs	0	1	2	3	4
y. Thoughts of ending your life	0	1	2	3	4
z. Overeating	0	1	2	3	4
aa. Awakenings in the early morning	0	1	2	3	4

Research Diagnostic Criteria

- | | <u>Not At
All</u> | <u>A Little
Bit</u> | <u>Moder-
ately</u> | <u>Quite
A Bit</u> | <u>Ex-
tremely</u> |
|---|-----------------------|-------------------------|-------------------------|------------------------|------------------------|
| bb. Sleep that is restless or disturbed | 0 | 1 | 2 | 3 | 4 |
| cc. Feeling everything is an effort | 0 | 1 | 2 | 3 | 4 |
| dd. Feelings of worthlessness | 0 | 1 | 2 | 3 | 4 |
| ee. Feeling of being caught or trapped | 0 | 1 | 2 | 3 | 4 |
| ff. Feelings of guilt | 0 | 1 | 2 | 3 | 4 |
21. How good a job do you feel you are doing in taking care of your health overall?
- | | |
|-----------|---|
| Excellent | 1 |
| Very good | 2 |
| Good | 3 |
| Fair | 4 |
| Poor | 5 |
22. How good a job do you feel you are doing in taking care of your oral health?
- | | |
|-----------|---|
| Excellent | 1 |
| Very good | 2 |
| Good | 3 |
| Fair | 4 |
| Poor | 5 |
23. When were you born? Month ___ ___ Day ___ ___ Year ___ ___
24. Are you male or female?
- | | |
|--------|---|
| Male | 1 |
| Female | 2 |
25. Which of the following groups best represent your race?
- | | |
|----------------------------------|---|
| Aleut, Eskimo or American Indian | 1 |
| Asian or Pacific Islander | 2 |
| Black | 3 |
| White | 4 |
| Other | 5 |
| (please specify) _____ | |
26. Are any of these groups your national origin or ancestry?
- | | | | |
|------------------|---|----------------------|---|
| Puerto Rican | 1 | Chicano | 5 |
| Cuban | 2 | Other Latin American | 6 |
| Mexican/Mexicano | 3 | Other Spanish | 7 |
| Mexican American | 4 | None of the above | 8 |
27. What is the highest grade or year of regular school that you have completed?
- | | | | | | | | | |
|---------------------------------|----|----|----|----|----|-----|---|---|
| Never attended or Kindergarten: | 00 | | | | | | | |
| Elementary School: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| High School: | 9 | 10 | 11 | 12 | | | | |
| College: | 13 | 14 | 15 | 16 | 17 | 18+ | | |

Research Diagnostic Criteria

28. During the past 2 weeks, did you work at a job or business not counting work around the house (include unpaid work in the family farm/business)?

Yes 1
No 2

29. Are you married, widowed, divorced, separated or never been married?

Married-spouse in household 1
Married-spouse not in household 2
Widowed 3
Divorced 4
Separated 5
Never Married 6

30. Which of the following best represents your total combined household income during the past 12 months?

___ \$0-\$14,999 ___ \$25,000-\$34,999 ___ \$50,000 or more
___ \$15,000-\$24,999 ___ \$35,000-\$49,999

31. What is your USA 5 digit zip code or your International Area Code? ___ ___ ___ ___ ___

~~5.~~ 6. Joint Sounds (palpation)

		<u>RIGHT</u>	<u>LEFT</u>
a.	Opening	None 0	0
		Click 1	1
		Coarse Crepitus 2	2
		Fine Crepitus 3	3

Measurement of Opening Click _____mm _____mm

b.	Closing	None 0	0
		Click 1	1
		Coarse Crepitus 2	2
		Fine Crepitus 3	3

Measurement of Closing Click _____mm _____mm

c.	Reciprocal click eliminated on protrusive opening	No 0	0
		Yes 1	1
		NA 8	8

~~6.~~ 7. Excursions

		<u>MUSCLE PAIN</u>				<u>JOINT PAIN</u>			
		<u>None</u>	<u>Right</u>	<u>Left</u>	<u>Both</u>	<u>None</u>	<u>Right</u>	<u>Left</u>	<u>Both</u>
a.	Right Lateral Excursion _____mm	0	1	2	3	0	1	2	3
b.	Left Lateral Excursion _____mm	0	1	2	3	0	1	2	3
c.	Protrusion _____mm	0	1	2	3	0	1	2	3
		RIGHT				LEFT		NA	
d.	Midline Deviation _____mm					1		2 8	

7. 8. Joint Sounds on Excursions

Right Sounds:

	<u>None</u>	<u>Click</u>	<u>Coarse Crepitus</u>	<u>Fine Crepitus</u>
Excursion Right	0	1	2	3
Excursion Left	0	1	2	3
Protrusion	0	1	2	3

Left Sounds:

	<u>None</u>	<u>Coarse Click</u>	<u>Fine Crepitus</u>	<u>Crepitus</u>
Excursion Right	0	1	2	3
Excursion Left	0	1	2	3
Protrusion	0	1	2	3

DIRECTIONS, ITEMS 8-10

The examiner will be palpating (touching) different areas of your face, head and neck. We would like you to indicate if you do not feel pain or just feel pressure (0), or pain (1-3). Please rate how much pain you feel for each of the palpations according to the scale below. Circle the number that corresponds to the amount of pain you feel. We would like you to make a separate rating for both the right and left palpations.

0 = No Pain/Pressure Only

1 = Mild Pain

2 = Moderate Pain

3 = Severe Pain

Research Diagnostic Criteria

8. 9. Extraoral muscle pain with palpation:

	<u>RIGHT</u>	<u>LEFT</u>
a. Temporalis (posterior) "Back of temple"	0 1 2 3	0 1 2 3
b. Temporalis (middle) "Middle of temple"	0 1 2 3	0 1 2 3
c. Temporalis (anterior) "Front of temple"	0 1 2 3	0 1 2 3
d. Masseter (superior) "Cheek/under cheekbone"	0 1 2 3	0 1 2 3
e. Masseter (middle) "Cheek/side of face"	0 1 2 3	0 1 2 3
f. Masseter (inferior) "Cheek/jawline"	0 1 2 3	0 1 2 3
g. Posterior mandibular region (Stylohyoid/posterior digastric region) "Jaw/throat region"	0 1 2 3	0 1 2 3
h. Submandibular region (Medial pterygoid/Suprahyoid/anterior digastric region) "Under chin"	0 1 2 3	0 1 2 3

9. 10. Joint pain with palpation:

	<u>RIGHT</u>	<u>LEFT</u>
a. Lateral pole "outside"	0 1 2 3	0 1 2 3
b. Posterior attachment "inside ear"	0 1 2 3	0 1 2 3

10. 11. Intraoral muscle pain with palpation:

	<u>RIGHT</u>	<u>LEFT</u>
a. Lateral pterygoid area "Behind upper molars"	0 1 2 3	0 1 2 3
b. Tendon of temporalis "Tendon"	0 1 2 3	0 1 2 3

FOR TEMPOROMANDIBULAR DISORDERS

Part 2

CLINICAL EXAMINATION SPECIFICATIONS

RESEARCH DIAGNOSTIC CRITERIA FOR TMD Specifications for Clinical Examination

A. GENERAL DIRECTIONS FOR EXAMINATION

1. All questionnaire and examination items need to be completed unless the subject refuses or is unable to cooperate. In this case, write "SR" (subject refuses) in large block letters adjacent to the examination item and note why the subject refuses or cannot do item.
2. All measurements will be conducted with the jaw muscles in a passive state, unless the examination specifies otherwise. The joints and muscles should not receive additional weight or pressure at any time.
3. All millimeter recordings will be done as single or double digits. If a double-digit reading is only one digit, precede with a lead zero. If a measurement is between two millimeter markings, record the lesser value.
4. Subjects will sit in chairs at approximately a 90-degree angle to the examiner.
5. Examiners will wear gloves at all times.
6. Subjects with replacement prostheses will be examined with the prostheses in their mouth except if it is necessary to remove these for observing the mucosa and gingiva and performing intraoral palpations. Bite plates and other appliances that do not replace teeth are to be removed for the examination.
7. If the subject has a beard, a neck brace or any other potential physical barrier that may interfere with muscle or TMJ palpation, indicate this.
8. Conduct the examination procedures in the order on the form and record all measurements in the appropriate places on the specified form.
9. Items 4.d, Vertical incisal overlap, and 6.d, Midline deviation, are included so corrections to measurements in items 4 and 6, respectively, can be done to determine actual values of openings and excursions. For items 4.a through 4.c, the amount of vertical incisor overlap (4.d) should be added to each of these measurements to determine the actual amount of opening. For items 6.a and 6.b, if midline deviation (6.d) is greater than 0, this measurement should be added to one side of the lateral excursion and subtracted from the other side.

For example: If a subject has a 2-mm deviation to the right, then subtract 2 mm from the value given to the right lateral excursion and add 2 mm to the value given to the left lateral excursion.

Note: Because the research diagnostic criteria require self-report of pain location (examination items 1 and 2), verified by the examiner, these items have been moved from the questionnaire to the examination. This will allow the examiner the opportunity to reliably confirm the type and location of pain.

B. EXAMINATION

1. Circle the appropriate answer. If the subject indicates midline pain score as "Both."
2. Circle the appropriate answer. If it is unclear to the examiner whether the subject is indicating a joint or muscle, press on the area as lightly as possible to correctly identify the anatomic site. For example, if the subject indicates pain in the joint, but the examiner identifies the location as muscle, the examiner's findings are those which are recorded.
3. *Opening Pattern.* General Instruction: Ask the subject to position the mandible in a comfortable position. ("Place your mouth in a comfortable position with your teeth lightly touching.") Place your thumb under the subject's lower lip so that the lip reveals the lower teeth. This will facilitate observing midline deviation. Ask the subject to open the mouth as wide as possible, even if he/she feels pain. ("I'd like you to open your mouth as wide as you can, even if it's a little painful.") If the degree of deviation is unclear, then use a millimeter ruler held vertically between the maxillary and mandibular incisor embrasures (or mark mandibular incisor if midlines do not match) as a guide. Ask the subject to open three times. If the subject exhibits more than one opening pattern then ask the subject to repeat the three openings and score according to the following criteria (*note:* only opening pattern is assessed).

- a. *Straight*. If there is no perceptible deviation upon opening.
 - b. *Lateral Deviation to Right or Left*. For deviations that are visually perceptible to one side at maximum opening, determine which side of the subject's face the deviation goes towards and record accordingly.
 - c. *Corrected Deviation ("S" Deviation)*. The subject exhibits a perceptible deviation to the right or left but corrects to the midline before or upon reaching the maximum unassisted mandibular opening.
 - d. *Other*. The subject exhibits jerky opening (not smooth or continuous) or has an opening other than those provided; indicate this and the type of deviation. If the subject has more than one opening pattern, use this category and write "more than one."
4. *Vertical Range of Motion of Mandible*. If the subject is wearing a denture or partial and it is loose, compress it against the ridge for all opening measurements.
- a. *Unassisted (Mandibular) Opening Without Pain*
 - i. *Obtaining Measurement*. Ask the subject to place the mandible in a comfortable position. ("Place your mouth in a comfortable position.") Ask the subject to open the mouth as far as possible (unassisted), without feeling any pain. ("I would like for you to open as wide as you can without feeling any pain.") Place the edge of the millimeter ruler at the incisal edge of the maxillary central incisor that is the most vertically oriented and measure vertically to the labioincisal edge of the opposing mandibular incisor; record this measurement. Indicate on the form which maxillary incisor was chosen. If the subject did not open at least 30 mm, to insure understanding, repeat the opening. If the second opening still does not produce more than a 30-mm opening, record the measurement.
 - b. *Maximum Unassisted (Mandibular) Opening*
 - i. *Obtaining Measurement*. Ask the subject to place the mandible in a comfortable position. ("Place your mouth in a comfortable position.") Then ask the subject to open the mouth as wide as possible, even if he/she feels pain. ("I would like for you to open your mouth as wide as you can, even if it's a little uncomfortable.") Place the edge of the millimeter ruler at the incisal edge of the maxillary central incisor that is the most vertically oriented and measure vertically to the labioincisal edge of the opposing mandibular incisor; record this measurement.
 - ii. *Pain*. Ask the subject if he/she felt pain on maximum unassisted opening. ("When you opened this time, did you have any pain?") Record whether or not they had pain, and the location. The location is scored in two ways: by left and/or right side and specifically whether or not the pain is in the joint. Two entries are required for items 4.b and 4.c to assess pain: record side of pain as "None" (0), "Right" (1), "Left" (2) or "Both" (3). Also record if pain in the joint is "Present" (1) or "Absent" (0). If the subject had no pain, circle "NA" (9) for location. If he/she indicates pressure or tightness, score as "None."
 - c. *Maximum Assisted (Mandibular) Opening*
 - i. *Obtaining Measurement*. Ask the subject to position the mandible in a comfortable position. ("Place your mouth in a comfortable position.") Ask the subject to open the mouth as wide as possible, even if he/she feels pain. ("I would like for you to open your mouth as wide as you can, even if it's a little uncomfortable.") After the subject has opened this wide, place your thumb on the subject's maxillary central incisors, and cross your index finger over to the subject's mandibular central incisors. From this position you will gain the leverage necessary to force the subject's mouth open wider. Use moderate pressure, but do not forcefully open the mouth wider. ("I am checking to see if I can push your mouth open a little further and I will stop if you raise your hand.") Measure from labioincisal edge of the same maxillary central incisor as before to the labioincisal edge of the mandibular incisor with the millimeter ruler; record the measurement.
 - ii. *Pain*. Record whether or not the subject felt pain and the location. ("Did you feel any pain when I tried to open your mouth wider with my fingers?") Score pain locations as in maximum unassisted opening. If they indicated feeling pressure or tightness, score as "None."
 - d. *Vertical Incisal Overlap*. Ask the patient to close the teeth completely together. With a pen or fingernail, mark the line where the incisal edge of the same maxillary central incisor used before

for measurements overlaps the mandibular incisor. Measure the distance from the mandibular incisal edge to the marked line and record the measurement.

5. *Temporomandibular Joint Sounds on Palpation for Vertical Range of Motion.*

General Instructions: Subjects will indicate the presence or absence of sounds; if present, the examiners will score the *type* of sound observed.

Place left index finger over the subject's right TMJ and the right index finger over the subject's left TMJ (preauricular area). The pad of the right finger is placed anterior to the tragus of the ear. Ask the subject to slowly open as wide as possible, even if it causes pain. Each closure should bring the teeth completely together in maximum intercuspation. Ask the subject: "While I have my fingers over your joint, I would like you to slowly open as wide as you can and then slowly close until your teeth are completely together." Ask the subject to open and close 3 times. Record the action/sound that the joint produces, on opening or closing as detected by palpation and as defined below.

a. *Definition of sounds*

0 = *None*.

1 = *Click*. A distinct sound, of brief and very limited duration, with a clear beginning and end, which usually sounds like a "click." Circle this item only if the click is reproducible on two of three openings/closings.

2 = *Coarse Crepitus*. A sound that is continuous, over a longer period of jaw movement. It is not brief like a click or pop; the sound may make overlapping continuous noises. This sound is not muffled; it is the noise of bone grinding against bone, or like a stone grinding against another stone.

3 = *Fine Crepitus*. Fine crepitus is a fine grating sound that is continuous over a longer period of jaw movement on opening or closing. It is not brief like a click; the sound may make overlapping continuous sounds. It may be described as a rubbing or crackling sound on a rough surface.

b. *Scoring of clicking sounds*. While many of the following types of sounds are not pertinent to specific diagnostic criteria, this exhaustive list of definitions is provided in order to better delineate how the sound types required to meet RDC may differ from other sounds.

i. *Reproducible Opening Click*. If upon opening and closing from maximum intercuspation, a click is noted on two of three opening movements, record as positive for opening click.

ii. *Reproducible Closing Click*. A click present on two of three closing mandibular movements.

iii. *Reproducible Reciprocal Click*. This sound is determined by the millimeter measurement of opening and closing clicks and the elimination of both clicks when the subject opens and closes from a protruded position. With the millimeter ruler, measure the interincisal distance at which the first opening and closing clicks are heard. Measure from labioincisal embrasure of the maxillary central identified in 4 to the labioincisal embrasure of the opposing mandibular incisor. If the clicking ceases and therefore is not measurable, leave the ___ ___'s unfilled. (Computer analyses will then indicate this is not a reciprocal click; even though a click *had* been present, it did not *continue* to be present.) Assess elimination of clicks on protrusive opening by asking the subject first to maximally protrude. Next ask the subject to open and close from this protruded jaw position. The opening and closing click will normally be eliminated. Circle "Yes" (1) if the click can be eliminated if the jaw is opened and closed in a protruded or more anterior jaw position. If the click is not eliminated, circle "No" (0). If the subject lacks either a reproducible opening click or a reproducible closing click, circle "NA" (9).

iv. *Non-Reproducible Click (Do Not Score)*. A nonreproducible click is present if the sound is only demonstrated periodically during opening or closing; it cannot be reproduced on at least two of three full mandibular movements. More than one sound can be circled overall for Opening (a) and Closing (b). If none (0) is circled, no other responses can be circled.

6. *Mandibular Excursive Movements*

a. *Right Lateral Excursion*

i. *Obtaining Measurement*. Ask subject to open slightly and move the mandible as far as possible to the right, even if it is uncomfortable. If necessary, repeat the movement. (*Example:* "Move

your jaw as far as possible towards the right, even if it is uncomfortable, and move your jaw back to its normal position. Move your jaw back towards the right again.") With the teeth slightly separated, use a millimeter ruler to measure from the labioincisal embrasure between the maxillary centrals to the labioincisal embrasure of the mandibular incisors; record this measurement.

- ii. *Pain.* Ask the subject if he/she had pain. Record whether or not the subject felt pain and the location. The location is scored in two ways: by left and/or right side and specifically whether or not the pain is in the joint. Two entries are required for items 6.a through 6.c to assess pain: record side of pain as "None" (0), "Right" (1), "Left" (2), or "Both" (3). Also record if pain in the joint is "Present" (1) or "Absent" (0). If the subject indicated feeling pressure or tightness, score as "None."

b. *Left Lateral Excursion*

- i. *Obtaining Measurement.* Ask the subject to move the mandible as far as possible to the other side (left). ("I would like you to now move your jaw as far as possible towards the other side and back to its normal position.") Record this measurement in the same manner as right excursion.
- ii. *Pain.* Ask the subject if he/she had pain. Record whether or not the subject felt pain and the location. ("Did you feel any pain when you moved to the side?") Score pain locations as in right lateral excursion. If the subject indicated feeling pressure or tightness, score as "None."

c. *Protrusion*

- i. *Obtaining Measurement.* Ask the subject to open slightly and protrude the mandible. ("Slide your jaw straight out in front of you as far as you can, even if it is uncomfortable.") If the subject has a deep overbite, ask him/her to open wider so he/she can protrude without getting interference from the maxillary incisors.
- ii. *Pain.* Ask the subject if he/she had pain. Record whether or not the subject felt pain and the location. ("Did you feel any pain when you moved your jaw forward?") Score pain locations as in right lateral excursion. If the subject indicated feeling pressure or tightness, score as "None."

- d. *Midline Deviation.* If the incisal embrasures of the maxillary and mandibular incisors do not line up vertically, determine the horizontal difference between the two while the subject is biting together. Measure in millimeters how far the mandibular embrasure is from the maxillary embrasure and on which side of the subject the mandibular embrasure is located. If the midline deviation is less than 1 mm, or there is no deviation, enter "00."

7. *Temporomandibular Joint Sounds on Palpation for Lateral Excursions and Protrusion*

Ask the subject to move to the right, to the left, and protrude (see 6).

- a. *Definition of Sounds.* Refer to item 5.

b. *Scoring of Clicking Sounds.*

- i. *Reproducible Laterotrusive and Protrusive Click.* Occurs when the TMJ displays a click with two of three lateral movements or protrusion of the mandible respectively.
- ii. *Nonreproducible Laterotrusive and Protrusive Clicks.* A nonreproducible click is present if the click is only demonstrated periodically during laterotrusion movements or protrusion but cannot be reproduced on at least two of three movements. Do not score.

C. GENERAL INSTRUCTION FOR MUSCLE AND JOINT PALPATION FOR TENDERNESS

1. Examining the muscles and joint capsules for tenderness requires that you press on a specific site using the fingertips of the index and third fingers or the spade-like pad of the distal phalanx of the index finger only with standardized pressure, as follows: palpations will be done with 2 lbs of pressure for extraoral muscles (1 lb of pressure in the Posterior Mandibular Region and Submandibular Region), 1 lb of pressure on the joints and intraoral muscles. Palpate the muscles while using the opposite hand to brace the head to provide stability. The subject's mandible should be in a resting position, without the teeth touching. Palpate while muscles are in a passive state. As needed, have the subject lightly clench and relax to identify and to insure palpation of the correct muscle site. ("I'm going to press on

some muscles. I would like for you to clench your teeth together gently and then relax and have your teeth slightly apart from each other.") First locate the site of palpation using the landmarks described and then press. Because the site of maximum tenderness may vary from subject to subject and is localized, it is important to press in multiple areas in the region specified to determine if tenderness exists. Before beginning the palpations, say: "In the next part of the exam, we'd like you to record whether you feel pain or pressure when I palpate or press on certain parts of your head and face." Ask the subject to determine if the palpation hurts (painful) or if he/she just feels pressure. If it hurts, ask the subject to indicate if the pain is mild, moderate, or severe. Record any equivocal response or the report of pressure only as "No Pain."

2. *Description of Specific Extraoral Muscle Sites (2 lbs digital pressure) *(1 lb of digital pressure)*

- a. *Temporalis (Posterior)*. Palpate posterior fibers behind the ears to directly above the ears. Ask the subject to clench and then relax to help identify muscle. Walk fingers towards the subject's face (medially) to the anterior border of the ear.
- b. *Temporalis (Middle)*. Palpate fibers in the depression about 4-5 cm lateral to the lateral border of the eyebrow.
- c. *Temporalis (Anterior)*. Palpate fibers over the infratemporal fossa, immediately above the zygomatic process. Ask the subject to clench and relax to help identify muscle.
- d. *Origin of Masseter*. Ask the subject to first clench then relax and observe masseter for location. Palpate the origin of the muscle beginning in the area 1 cm immediately in front of the TMJ and immediately below the zygomatic arch, and palpate anteriorly to the border of the muscle.
- e. *Body of the Masseter*. Start just below the zygomatic process at the anterior border of the muscle. Palpate from here down and back to the angle of the mandible across a surface area about two fingers wide.
- f. *Insertion of the Masseter*. Palpate the area 1 cm superior and anterior to the angle of the mandible.
- *g. *Posterior Mandibular Region (Stylohyoid / Posterior Digastric)*. Ask the subject to tip the head back a little. Locate the area between the insertion of the SCM and the posterior border of the mandible. Place finger so it is going medially and upwards (and not on the mandible). Palpate the area immediately medial and posterior to the angle of the mandible.
- *h. *Submandibular Region (Medial Pterygoid, Suprahyoid, Anterior Digastric)*. Locate the site under the mandible at a point 2 cm anterior to the angle of the mandible. Palpate superiorly, pulling toward the mandible. If a subject has a lot of pain in this area, try to determine if the subject is reporting muscle or nodular pain. If it is nodes, indicate on the exam form.

3. *Description of Specific Joint Palpation Sites (1 lb digital pressure)*

- a. *Lateral Pole*. Place index finger just anterior to the tragus of the ear and over the subject's TMJ. Ask the subject to open slightly until the examiner feels the lateral pole of the condyle translated forward. Use 1 lb pressure on the side that is being palpated, supporting the head with the opposite hand.
- b. *Posterior Attachment*. This site can be palpated intrameatally. Place tips of the right little finger into the subject's left external meatus and the tip of the left little finger into the subject's right external meatus. Point the fingertips towards the examiner and ask subject to slightly open the mouth (or wide open if necessary) to make sure the joint movement is felt with the fingertips. Place firm pressure on the right side and then the left side while the subject's teeth are completely together.

(Change examination gloves.)

4. *Description of Specific Intraoral Palpation Sites (1 lb digital pressure)*

Explain to the subject that you will now be palpating the inside of the mouth: ("Now I am going to palpate around the inside of your mouth. While I do these palpations I would like you to keep your jaw in a relaxed position.")

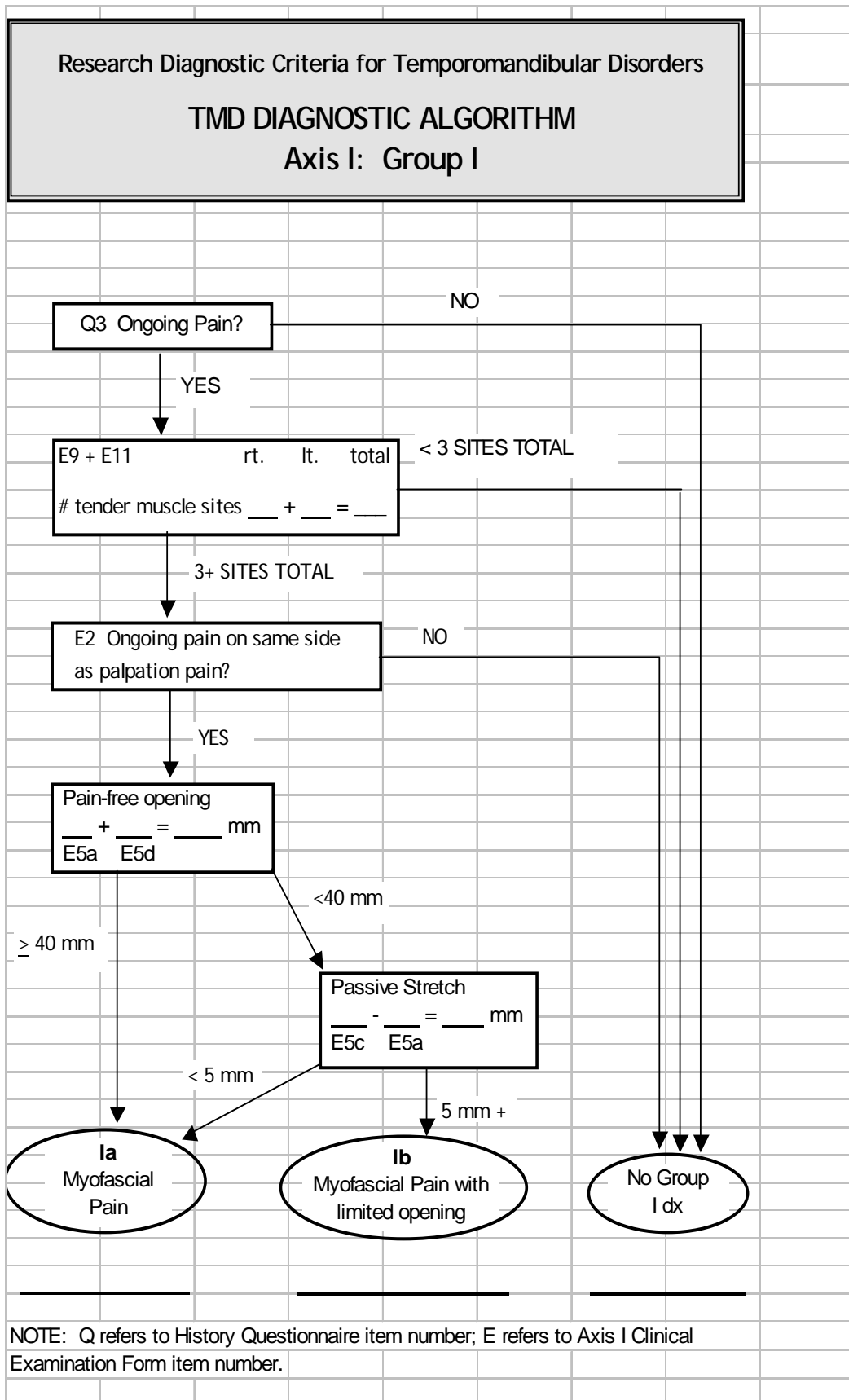
- a. *Lateral Pterygoid Area*. Before palpating, make sure the fingernail of the index finger is trimmed to avoid false positives. Ask the subject to open the mouth and move the jaw to the side that is being examined. ("Move your jaw towards this hand.") Place the index finger on lateral side of

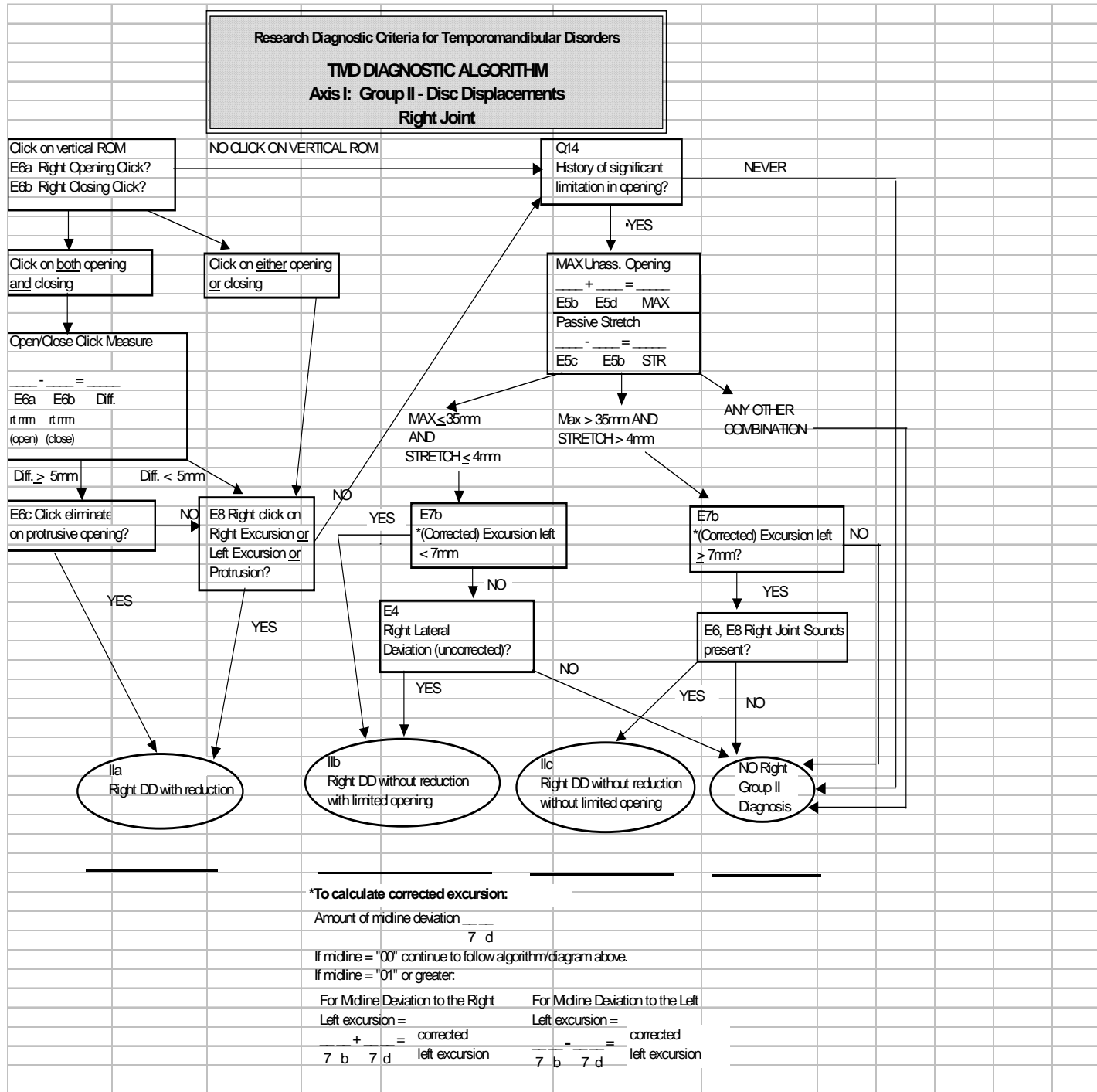
alveolar ridge above the right maxillary molars. Move finger distally, upward, and medial to palpate. If the index finger is too large, use the little finger (5th digit).

- b. *Tendon of Temporalis*. After completing the lateral pterygoid, rotate your index finger laterally near the coronoid process, ask the subject to open slightly, and move your index finger up the anterior ridge of the coronoid process. Palpate on the most superior aspect of the process. *Note:* If it is difficult to determine in some subjects if they are feeling pain in the lateral pterygoid or the tendon of the temporalis, rotate and palpate with the index finger medially then laterally. If there is still difficulty, the lateral pterygoid is usually the more tender of the two

Part 3

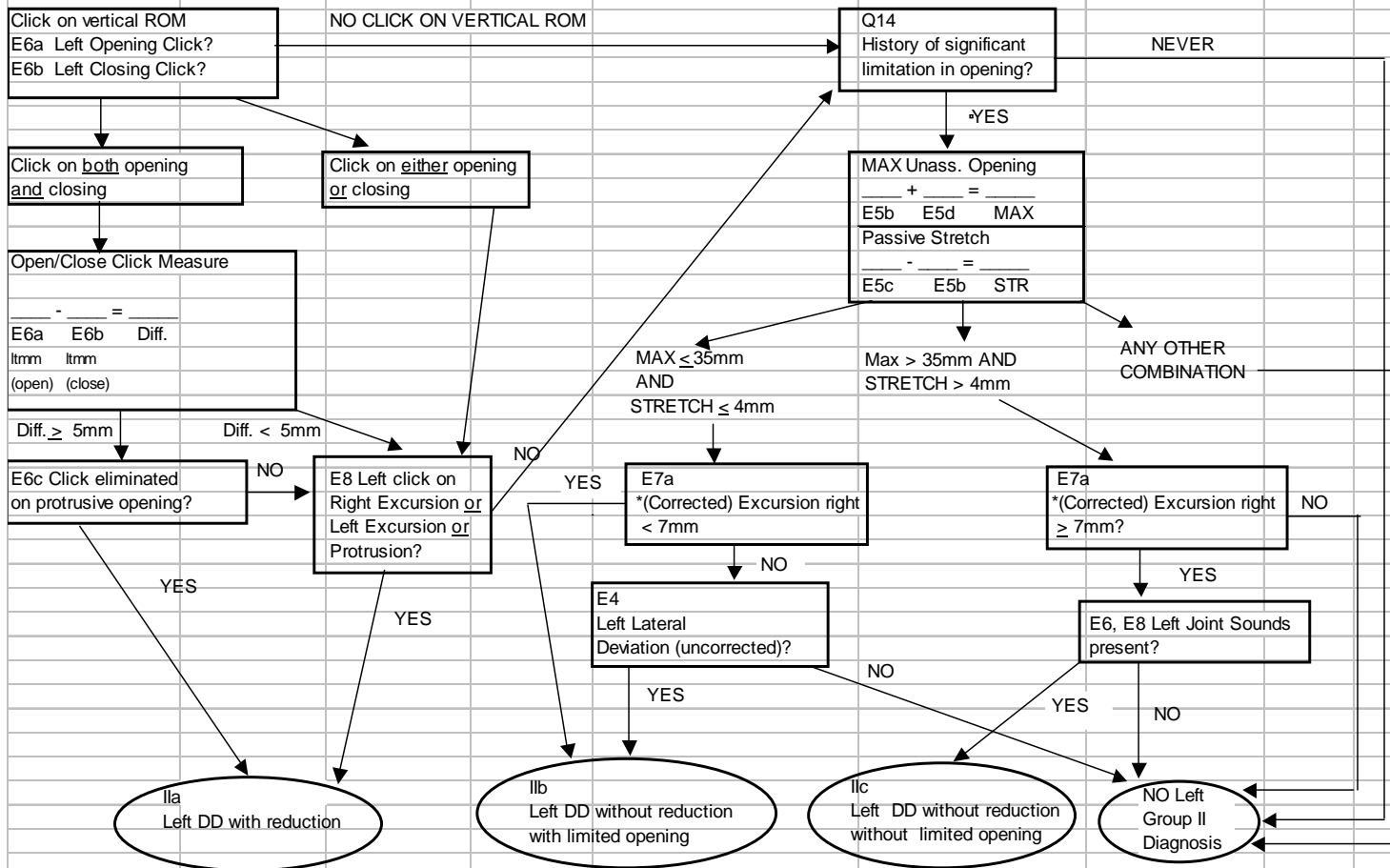
SCORING THE RDC





Research Diagnostic Criteria

Research Diagnostic Criteria for Temporomandibular Disorders
TMD DIAGNOSTIC ALGORITHM
Axis I: Group II - Disc Displacements
Left Joint



***To calculate corrected excursion:**

Amount of midline deviation $\frac{\quad}{7} - \frac{\quad}{d}$

If midline = "00" continue to follow algorithm/diagram above.

If midline = "01" or greater:

For Midline Deviation to the Right
 Right excursion = $\frac{\quad}{7} - \frac{\quad}{d} = \text{corrected right excursion}$

For Midline Deviation to the Left
 Right excursion = $\frac{\quad}{7} + \frac{\quad}{d} = \text{corrected right excursion}$

Research Diagnostic Criteria for Temporomandibular Disorders
TMD DIAGNOSTIC ALGORITHM
Axis I: Group III - Other Joint Conditions
Right Joint

Palpation Pain:
 E10a OR E10b Right joint pain on palpation

Pain Report:
 E3 Ongoing pain in right joint?
 OR
 E5b, E5c Pain in right joint on opening?
 OR
 E7a, E7b Right joint pain on excursion?

BOTH Palpation Pain
 AND
 Pain Report

NEITHER Palpation Pain
 NOR
 Pain Report

EITHER
 Palpation Pain
 OR Pain Report,
 but not both

E6a, b; 8
 Any coarse crepitus in right
 joint during **any** movement?

E6a, b; 8
 Any coarse crepitus in
 right joint during **any**
 movement?

NO

YES

YES

NO

IIIa. Right
 Arthralgia

IIIb. Right
 Osteoarthritis

IIIc. Right
 Osteoarthrosis

No Right Group III
 Diagnosis

Research Diagnostic Criteria for Temporomandibular Disorders

TMD DIAGNOSTIC ALGORITHM

**Axis I: Group III - Other Joint Conditions
Left Joint**

Palpation Pain:
E10a OR E10b Left joint pain on palpation

Pain Report:
E3 Ongoing pain in left joint?
OR
E5b, E5c Pain in left joint on opening?
OR
E7a, E7b Left joint pain on excursion?

BOTH Palpation Pain
AND
Pain Report

NEITHER Palpation Pain
NOR
Pain Report

EITHER Palpation
Pain OR Pain
Report, but not
both

E6a, b; 8
Any coarse crepitus in left
joint during **any** movement?

E6a, b; 8
Any coarse crepitus in
left joint during **any**
movement?

NO

YES

YES

NO

IIIa. Left
Arthralgia

IIIb. Left
Osteoarthritis

IIIc. Left
Osteoarthrosis

No Left Group III
Diagnosis



AXIS II: SCORING PROTOCOL FOR GRADED CHRONIC PAIN

ID# _____

Date: ___ ___ / ___ ___ / ___ ___

ANY TMD PAIN REPORTED IN THE PRIOR MONTH? (*History Questionnaire, Question 3*)

If NO, Graded Chronic Pain (GCP)= 0

If YES, Continue

CHARACTERISTIC PAIN INTENSITY (CPI): (*GCP Scale, Questions 7, 8, and 9*) Calculate as follows:

$$\text{CPI} = \frac{\text{_____}}{\text{(Question \#7.)}} + \frac{\text{_____}}{\text{(Question \#8.)}} + \frac{\text{_____}}{\text{(Question \#9.)}} = \text{_____} \text{ divided by } 3 = \text{_____} \times 10 = \boxed{\text{_____}}$$

DISABILITY POINTS:

Disability Days: (*GCP Scale, Question 10*)

Disability Score: (*GCP Scale, Questions 11,12,and 13*)

Number of Disability Days = $\frac{\text{_____}}{\text{(Question \#10.)}}$

$\frac{\text{_____}}{\text{(Question \#11.)}} + \frac{\text{_____}}{\text{(Question \#12.)}} + \frac{\text{_____}}{\text{(Question \#13.)}} = \text{_____}$

divided by 3 = _____

x 10 = _____.

0-6 days = **0** Disability Points

7-14 days = **1** Disability Point

15-30 days = **2** Disability Points

31+ days = **3** Disability Points

Score of **0-29** = **0** Disability Points

Score of **30-49** = **1** Disability Point

Score of **50-69** = **2** Disability Points

Score of **70+** = **3** Disability Points

$\frac{\text{_____}}{\text{(Points for Disability Days)}} + \frac{\text{_____}}{\text{(Points for Disability Score)}} = \boxed{\text{_____}} \text{ (DISABILITY POINTS)}$

CHRONIC PAIN GRADE CLASSIFICATION:

Grade 0 No TMD pain in prior 6 months

Low Disability

Grade I *Low Intensity* Characteristic Pain Intensity < 50, and less than 3 Disability Points

Grade II *High Intensity* Characteristic Pain Intensity ≥ 50, and less than 3 Disability Points

High Disability

Grade III *Moderately Limiting* 3 to 4 Disability Points, regardless of Characteristic Pain Intensity

Grade IV *Severely Limiting* 5 to 6 Disability Points regardless of Characteristic Pain Intensity

AXIS II: SCORING THE SCALE ITEMS

1. Count items answered. Enter "Total Items" below in the third column. If this number of "Total Items" is less than the minimum number indicated in the first column, the scale cannot be scored and should be recorded as "missing."
2. Add up the item score for all items answered: Not at all=0; A little bit=1; Moderately=2; Quite a bit=3; Extremely=4. Enter "Total Score" below.
3. Divide score obtained by the total number of items answered. Enter "Scale Score" below.
4. Use guide below to classify patient on each scale.

	<u>Minimum Number</u>	<u>Total Score</u>	[divided by]	<u>Total Items</u>	[equals]	<u>Scale Score</u>
Depression:	(12)	<input type="text"/>	÷	<input type="text"/>	=	<input type="text"/>
Nonspecific physical symptoms (pain items included):	(8)	<input type="text"/>	÷	<input type="text"/>	=	<input type="text"/>
Nonspecific physical symptoms (pain items excluded):	(5)		÷		=	