

## Practice Name:

## Clinical Standards: Motility Testing

**Description and Purpose:** Motility testing assesses eye muscle function, alignment, and movement to detect issues like double vision, focusing difficulty, and misalignments.

**Equipment:** Occluder

**Estimated Time to Complete:** 2 – 3 minutes

### Requirements:

Glasses	<i>Off</i>
Lights	<i>Off</i>
Test	<i>Both</i>
Anesthetic	<i>No</i>

**Contraindications to Performing this Test:** Cognitive impairment, trauma

## Testing Process:

### Versions:

Assess the movement of both eyes simultaneously in response to stimuli in six cardinal positions of gaze.

#### 1. Preparation

- Ensure the patient is comfortably seated and able to focus on a target.
- Hold the target at eye level, approximately 12-16 inches away from the patient's eyes.

#### 2. Instructions to the patient

- Keep both eyes open and focus on the target.
- Move only their eyes and not their head.

#### 3. Testing Procedure

- Move the target in a smooth motion to each of the six cardinal positions of gaze (up, down, left, right, and diagonal directions).
- Observe both eyes as they track the target in each direction.

#### 4. Assessment

- Check that both eyes move symmetrically and smoothly in all directions.
- Record the range of motion for each direction of gaze.
- Note if there is any abnormality, such as overaction, underaction, or limitation in movement, and specify which eye is affected.

#### 5. Documentation

- Mark the results as either "Normal (Full Range of Motion)" or describe the abnormality (e.g., "under-action of the left eye in upward gaze").

### Ductions:

Assess the movement of each eye individually and detect abnormal eye movements.

#### 1. Preparation

- Ensure the patient is comfortably seated and able to focus on a target.

- Hold the target at eye level, approximately 12-16 inches away from the patient's eyes.

**2. Instructions to the patient**

- Cover one eye and focus on the target.
- Move only the uncovered eye and not their head.

**3. Testing Procedure**

- Move the target in a smooth motion to each of the six cardinal positions of gaze (up, down, left, right, and diagonal directions).
- Observe the uncovered eye as it tracks the target in each direction.

**4. Assessment**

- Check that the covered eye remains fixed while the uncovered eye moves smoothly in all directions.
- Record the range of motion for each direction of gaze.
- Note if there is any abnormality, such as overaction, underaction, or limitation in movement, and specify which eye is affected.

**5. Repeat with the fellow eye**

- Uncover the previously covered eye and cover the other eye.
- Repeat the procedure to assess the second eye's movement in all directions.

**6. Documentation**

- Mark the results as either "Normal (Full Range of Motion)" or describe the abnormality (e.g., "under-action of the left eye in upward gaze").

**Cover – Uncover:**

Detect the presence of a tropia (manifest strabismus) by observing eye movement when one eye is covered and uncovered.

**1. Preparation**

- Ensure the patient is comfortably seated and able to focus on a distance target.
- Have the patient fixate on the target.

**2. Instructions to the patient**

- Cover one eye and focus on the target.
- Move only the uncovered eye and not their head.

**3. Testing Procedure**

- Cover one eye with a hand or occluder.
- Observe the uncovered eye for any movement as it attempts to re-establish fixation on the target.

**4. Assessment**

- If the uncovered eye does not move, it is considered normal.
- If the uncovered eye moves to pick up fixation, this indicates the presence of a tropia in the uncovered.

**5. Repeat with the fellow eye**

- Uncover the previously covered eye and cover the other eye.
- Repeat the procedure to assess the second eye.

**6. Documentation**

- Record the results as either "Normal" or "Tropia" and the affected eye (specifying the direction and which eye is affected, e.g., "Left eye, exotropia").

### **Cross – Cover:**

Detect the presence of a tropia (manifest strabismus) by observing eye movement when one eye is covered and uncovered.

#### **1. Preparation**

- Ensure the patient is comfortably seated and able to focus on a distance target.
- Have the patient fixate on the target.

#### **2. Testing Procedure**

- Cover one eye with a hand or occluder.
- Observe the uncovered eye for any movement as it attempts to re-establish fixation on the target.

#### **3. Assessment**

- If the uncovered eye does not move, it is considered normal.
- If the uncovered eye moves to pick up fixation, this indicates the presence of phoria.
- Optionally, prisms can be used to correct or measure the extent of the phoria.

### **Common Errors to Avoid:**

- **Improper Head Movement:**  
Allowing or not correcting the patient if they move their head instead of just their eyes during testing.
- **Rushing Through the Test.**  
Moving the target too quickly or not giving the patient enough time to focus and follow the target.
- **Incomplete Testing.**  
Skipping or inadequately performing one or more of the cardinal positions of gaze or failing to alternate properly between eyes in cover tests.

### **Troubleshooting/Maximizing Accurate Results:**

- **Use a neutral or colored target to help patients track movement more easily.**
- **Ensure the patient's head remains still to isolate eye movements from head movements.**
- **Test smooth pursuit and saccades to detect subtle neurological or muscle issues.**
- **Check for nystagmus during extreme eye positions to identify vestibular or neurological problems.**
- **Perform the test with corrective lenses if the patient wears them to assess true eye movement.**

### **Resources:**

- [\*Ophthalmic Medical Assisting - Chapter 8 – Optics and Refractive States of the Eye \(pp. 110 – 111\)\*](#)
- [Mastering the Art of Assessing Extraocular Muscle Movement \[Video\]](#)
- [Strabismus Simulator - American Academy of Ophthalmology](#)