

**OLIVE VIEW-UCLA MEDICAL CENTER  
RESPIRATORY CARE SERVICES – SLEEP MEDICINE  
POLICY & PROCEDURE**

**NUMBER: 9084  
VERSION: 1**

**SUBJECT/TITLE: MSLT PROTOCOL**

**POLICY:** The sleep center performs MSLTs in accordance with AASM Practice Parameters. MSLTs must be ordered or approved by a sleep staff physician. MSLTs must always follow all-night polysomnography. The MSLT is indicated as part of the evaluation of patients with suspected narcolepsy to confirm the diagnosis. The MSLT may be indicated as part of the evaluation of patients with suspected idiopathic hypersomnia to help differentiate idiopathic hypersomnia from narcolepsy.

**PURPOSE:** The MSLT is intended to measure sleep tendency under standardized conditions in the absence of external alert factors. A standard MSLT protocol that is consistent with AASM practice parameters ensures consistency and allows comparisons of results with published data and with data generated by other sleep programs.

**DEPARTMENTS: RESPIRATORY CARE SERVICES**

**DEFINITIONS: MSLT-MULTIPLE SLEEP LATENCY TEST**

**PROCEDURE: GENERAL DESCRIPTION:**

- 1.0 The MSLT must be performed immediately following polysomnography recorded during the individual's major sleep period.
  - 1.1 The initial nap opportunity begins about 1.5 to 3 hours after the patient has awakened from the all-night sleep study.
- 2.0 The use of MSLT to support a diagnosis of narcolepsy is suspect if TotalSleepTime on the prior night sleep is less than 6 hours.
- 3.0 The test should not be performed after a split-night study (combination of diagnostic and therapeutic studies in a single night).
- 4.0 Sleep logs may be obtained for 1 week prior to the MSLT to assess sleep-wake schedules.
- 5.0 Throughout the day no caffeine or stimulant medications are permitted and unusual exposures to bright sunlight should be avoided.
- 6.0 Standardization of test conditions is critical for obtaining valid results. Sleep rooms should be dark and quiet during testing. Room temperature should be set based on the patient's comfort level.
- 7.0 The MSLT consists of 5 nap opportunities given 2 hours apart. 7.1 A shorter 4-nap test maybe

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performed but this test is not reliable for the diagnosis of narcolepsy unless at least two SOREMPs have occurred.

- 7.2 Five nap opportunities must be performed for mean sleep latency if no SOREMPs or one SOREMP occurred in the first four naps.
- 8.0 Between naps the patient is kept out of bed and is visually monitored to ensure that no napping occurs. In each nap opportunity, the patient is told to try to fall asleep.
- 9.0 The patient is given 20 minutes to fall asleep. If the patient falls asleep in 20 minutes or less, he or she is monitored for 15 minutes (clock time) from sleep onset before ending the test.
- 10.0 The MSLT is recorded with standard polysomnography using the following montage:
  - 10.1 REOG, LEOG, chin EMG, EEG (C3-A2 or C4-A1), EEG (O1-A2 O2-A1) and EKG
- 11.0 The mean sleep latency is determined across all naps. Sleep latency is defined as the time from lights out to the first epoch of any state of sleep scored according to the AASM Manual for the Scoring of Sleep and Associated Events: Rules, Terminology and Technical Specifications.
- 12.0 Sleep technologists who perform MSLT should be experienced in conducting the test.
- 13.0 Stimulants, stimulant-like medications, and REM suppressing medications should ideally be stopped 2 weeks before MSLT. Use of the patient's other usual medications should be thoughtfully planned by the sleep clinician before MSLT testing so that undesired influences by the stimulating or sedating properties of the medications are minimized. Drug screening may be indicated to ensure that sleepiness on the MSLT is not pharmacologically induced. Drug screening is usually performed on the morning of the MSLT but its timing and the circumstances of the testing may be modified by the clinician.

**Details of Procedure:**

- 1.0 After completion of the polysomnograms, airflow, chest respiration belts, oximeters probe and leg EMG leads are removed.
- 2.0 After rising from the polysomnograms, the patient should dress in street clothes.
- 3.0 Prior to each nap the patient should be asked if they need to use the bathroom or need comfort adjustments.
- 4.0 The patient is given a light breakfast at least 1 hour prior to the first nap opportunity, and a lite lunch immediately after the end of the second nap opportunity.
- 5.0 The MSLT procedure should be explained to the patient.
- 6.0 Between naps the patient should be out of bed and should be under continuous visual monitoring by technicians to ensure that no napping occurs.
- 7.0 Patients are not allowed to consume caffeine during the day and should avoid exposure to bright sunlight.
- 8.0 The first page of the MSLT is labeled with the following information:
  - 8.1 Patient name
  - 8.2 Patient identification number
  - 8.3 MSLT
  - 8.4 Room number
  - 8.5 Date of test
  - 8.6 Patient date of birth
  - 8.7 Ordering physician
  - 8.8 Initials of technologist performing study

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8.9 Montage for the MSLT:

Channel #	Parameter	Derivation	Sensitivity	Low filter	High filter
1	REOG	REOG/M1	7 uv/mm	0.3	35
2	LEOG	LEOG/M2	7 uv/mm	0.3	35
3	Chin EMG	Chin EMG	3 uv/mm	10	100
4	EEG	F3/M2 and C4/M1	7 uv/mm	0.3	35
5	EEG	C3/M2and C4M1	7 uv/mm	0.3	35
6	EEG	O2/M1 and O1M2	7 uv/mm	0.3	35
7	EKG	EKG	variable	0.3	70

9.0 A 50-microvolt standard calibration is performed for all recording channels.

10.0 The electrodes are visually inspected for good adherence, and any loose electrodes are replaced.

11.0 An impedance check is performed, and any electrodes >10,000 ohms are replaced and rechecked.

12.0 Patient is placed in bed at naptime and equipment is plugged in.

13.0 Technologist starts polygraph or computer and makes adjustments in tracing. When tracing is acceptable, technologist performs the following patient biocalibrations:

13.1 Eyes open for 30 seconds

13.2 Eyes closed for 30 seconds

13.3 Moving eyes only, look right

13.4 Moving eyes only, look left

13.5 Moving eyes only, look up

13.6 Moving eyes only, look down

13.7 Blink several times

13.8 Swallow

13.9 Grit teeth

14.0 Inform patient that the nap has begun with the following statement: "Relax and let yourself fall asleep. I will let you know when the nap is over."

15.0 Label the "lights out" page with the following information:

15.1 Lights out and time

15.2 Patient sleep position

16.0 Document any changes made in sensitivity or filter settings, as well as patient position and behavior during the study.

17.0 The test is ended after 20 minutes if no sleep occurs. If sleep does occur, the test is ended 15 minutes after the first 30 second epoch of scored sleep according to the criteria of the **AASM Manual for the Scoring of Sleep and Associated Events: Rules, Terminology and Technical Specifications**.

18.0 On the "lights on" page, label the following information:

18.1 Lights on and time

18.2 Post-test machine calibrations

18.3 Standard 50-microvolt calibrations

19.0 Knock and enter patient's room, disconnect jack box from head of bed and have patient get out of

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bed. Inform patient that he or she must stay out of bed and awake until the start of the next nap at approximately (time).

- 20.0 If there are at least two REM onsets, then a 5th nap does not have to be performed; however, this may lead to a less precise mean sleep latency. Patients tested with nasal CPAP during the previous all-night sleep study are tested with CPAP during the naps, although air flow is not measured.

**End of Study:**

- 1.0 At the end of the last nap, turn off polygraph or exit computer.
- 2.0 Gently remove all sensors from patient. Take care to avoid irritation of patient’s skin.
- 3.0 Carefully soak each electrode site with warm water until the electrode lifts away from the patient’s skin.
- 4.0 Ensure that all paste residue has been removed by using a wet washcloth on the skin and hair until all electrodes have been removed.

**After the Polysomnogram:**

- 1.0 Carefully sort wires and group them together by lengths and application sites.
- 2.0 Remove any remaining tape, wash electrodes with hot water, rinse and wipe with a disposable germicidal cloth.
- 3.0 Inspect wires at this time to ensure their integrity.
- 4.0 Return any equipment and all cleaned and disinfected wires to the storage area for future use.

**General Cleanup Checklist:**

- 1.0 Discard all used tape, collars, gauze, etc.
- 2.0 Return patient preparation kit to appropriate area.
- 3.0 Stock patient preparation kit as needed.
- 4.0 If CPAP and/or oxygen equipment was used, remove and empty humidifier, connecting tubing, nasal cannula, and any other equipment and place in designated “dirty equipment area” for cleaning and disinfecting.
- 5.0 Discard disposable equipment such as the nasal cannula or disposable oximeter probe.
- 6.0 Remove any lint from CPAP equipment filter.
- 7.0 Environmental services will clean the room.

**Scoring:**

- 1.0 Sleep stage scoring is based on **the AASM Manual for the Scoring of Sleep and Associated Events: Rules, Terminology and Technical Specifications**. The sleep latency is determined from lights out to the first scored epoch of any stage of sleep. Stage R latency is scored from sleep onset to the first epoch of stage R.
- 2.0 MSLT latencies are based on **the International Classification of Sleep Disorders, 2nd ed.**

References:	
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