

Sleep twatching

ASEAN SLEEP TECHNOLOGY NEWSLETTER NEWS / OPINIONS / INSIGHTS

SINGAPORE SLEEPWAKE CENTRE

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Interview with SG
Sleepwake Centre on
Adult patient hook up
for Level 1 Sleep Study

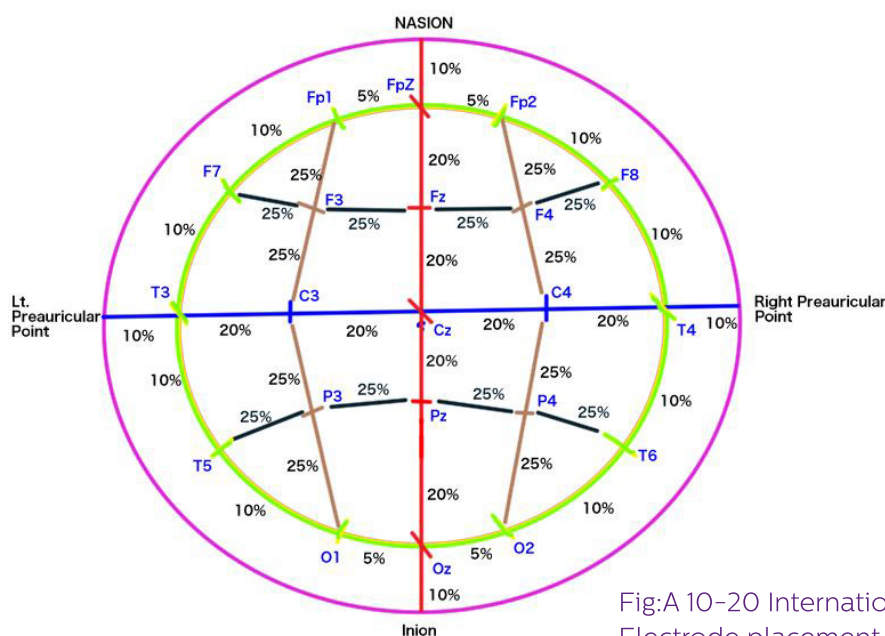


Fig:A 10-20 International EEG Electrode placement System

Neuro Parameters - Record EEG, EOG, EMG- Required for Sleep Staging and Scoring Arousals. EEG, EOG and Chin EMG is also recorded during MSLT and MWT in addition to ECG.

A. ElectroEncephalography (EEG) -

Electrodes are placed following 10-20 International EEG electrode placement System

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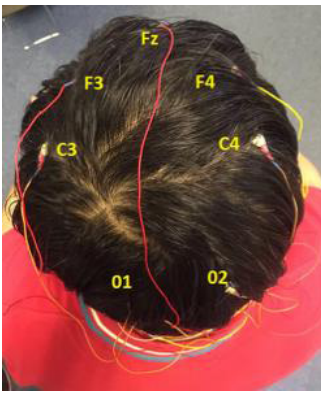


Fig:1

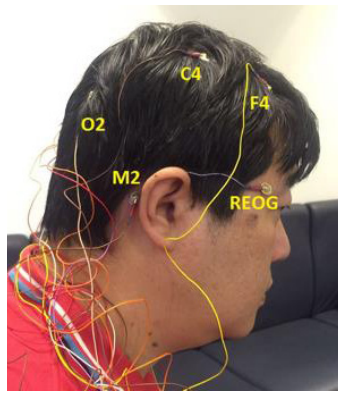


Fig:2

Recommended Leads for Sleep

EEG– F4-M1, C4-M1, O2-M1 (Fig:1 and Fig:2)

Backup Leads– F3-M2, C3-M2, O1-M2 (Fig:1)

M1 and M2 are Reference leads – Placed on left and right Mastoid process behind ear respectively (Fig:2)



Fig:3



Fig:4

B. Electrooculogram (EOG) (Fig:3)

Right Electrooculogram (REOG). Also called E2
Left Electrooculogram (LEOG). Also called E1
REOG is placed 1cm above outer canthus
LEOG is placed 1cm below outer canthus
Referenced to M2. (E1-M2 & E2-M2)

C. Chin Electromyogram (EMG) (Fig: 4)

one electrode is placed in the midline 1 cm above the inferior edge of the mandible;
one electrode placed 2 cm below the inferior edge and 2 cm to the left of the midline;
one electrode placed 2cm below the inferior edge and 2 cm to the right of the midline.



Fig:5

Thermistor - Used to score Apnea



Fig:6

Pressure Transducer Cannula - Used to score hypopnea

Respiratory Parameters – Measure Airflow, Respiratory Effort, Snore, Oxygen Saturation. Home Sleep Testing (HST) measure Respiratory parameters only or Respiratory parameters plus ECG.

A. Airflow – Measured using both Thermistor (Fig: 5)

and Pressure Transducer (Fig:6) in Level 1 Sleep study. In HST you can use either Thermistor or Pressure Transducer.

During CPAP/BiPAP titration airflow is measured from PAP machine and we do not place Thermistor and Pressure transducer cannula under the mask.



Fig:7
Thoracic and Abdominal belts and
Body Position sensor (Red Arrow)



Fig:8
Snore sensor

B. Respiratory Effort – Two Belts (Fig: 7), one on Thorax at nipple level and One on abdomen at naval level. Belts use Respiratory Inductance Plethysmography (RIP) technology. In HST only one belt is acceptable.

C. Snore Sensor (Fig: 8) – The snore sensor is placed over the trachea or on the side of the neck and secured with tape. In HST, snoring is recorded by pressure transducer cannula.



Fig:9
Finger Pulse
Oximeter probe

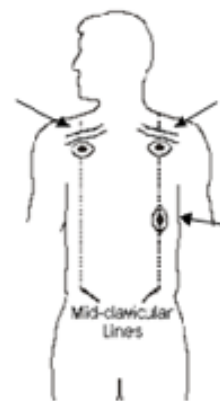


Fig:10
ECG Electrode
placement

D. Oxygen Saturation (Fig: 9) –
Finger pulse Oximeter probe.

Cardiac Parameters Electrocardiogram (ECG) (Fig: 10) –

Recorded from lead-II. Two electrodes placed 2cm below left and right clavicle and one electrode on lower rib cage in midclavicular line.



Fig:11
Leg EMG Electrodes

Leg EMG (Fig: 11)– Two electrodes are placed longitudinally on the anterior tibialis muscle of each leg 2-3 cm apart and secured with tape to record each leg activity separately.



MOHAMAD DZULKARNEAN MOHAMAD HANIFFA

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Personal Opinions of Sleep Technologist

I started my career as Medical Laboratory Technologist in International Islamic University Malaysia (IIUM) performing EEG testing and then moved to Sunway Medical Centre and Universiti Teknologi Mara to start my career as Sleep Technologist from 2005-2012. I am currently working at Subang Jaya Medical Centre as a Senior Technologist managing one PSG lab.

1 Why do you decide to become a sleep technologist?

Sleep technologist was considered a new profession 10yrs back. I decided to become a sleep technologist because of my interest in sleep disorders and sleep related issues. I also enjoy working at night and Sleep tech duty schedule perfectly suits me. Also the ability to correctly identify a sleep disorder and treat it gives immense job satisfaction that has kept me going all these years. The patient's feedback on how their life has changed after treatment has always been a very happy moment in my career.

2 What is the most challenging aspect of your profession?

I think performing Split Night study or to be specific, performing the PAP titration study in the second half of the night is the most challenging aspect of my profession. The patients sometimes cannot tolerate the CPAP titration in the second half of the night and sometimes we have to make them comfortable and understand about therapy in the middle of the night to continue with titration.

3 What is the biggest change in profession since you began?

In 2005, many Malaysians use to think that snoring is common and a sign of deep sleep. Very few of them had heard about sleep apnea. Now more people are aware and have more knowledge with sleep apnea. Accessing the information over internet on smart phones have really helped to increase the awareness about Sleep Apnea.

4 What factors do you think influence patient adherence to CPAP?

In my experience, following factors influence patient adherence to CPAP -

1. Size of CPAP machines
2. Ease of use of CPAP machines at home and while travelling
3. Experience with choosing the mask to be used with CPAP.

5 What factors tend to influence patients choice of mask?

In my experience if patient is breathing through the mouth during day time or having dentures Oro-nasal mask will be a common choice. However, I found most of the time the nasal mask is the most preferred mask by the patients especially when they are first introduced to CPAP. Some of them may also like to use Nasal Pillow mask which looks simpler and allow them to move their body around more easily than a nasal mask. Another useful factor/ technique to choose the right mask and improve CPAP adherence is to let the patient try the mask and CPAP for at least one week at home. Giving sufficient trial period will ease decision making after they have experienced the mask, CPAP pressure and type/ brand of the CPAP machine that best fit their needs and comfort.

Sleep watching past issues

To access the past issues of sleep watching, please go to the below webpage www.philips.com.sg/healthcare-consumer/sleep-apnea/resources#sleep-physicians-newsletters

Sleep watching

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