

## 腦電生理檢查

- ◆ 神經傳電檢查(NCT)
- ◆ 肌電圖(EMG)
- ◆ 體感誘發過程(SEP)
- ◆ 腦干聽覺誘發電位(BAEP)
- ◆ 視覺誘發電位(VEP)

### 簡介

腦電生理檢查是無侵害性，能準確地診斷中樞神經及周圍神經系統，有助醫生訂立有效的醫療方案。

### 準備工作

- ◆ 接受神經電檢查及肌電圖檢查的病人，為方便測試肘關節以下手足部位，檢查當日請穿着寬鬆衣服，切勿塗上潤膚膏
- ◆ 接受體感誘發電位、腦干聽覺誘發電位及腦干聽覺誘發電位檢查的病人，檢查當日要洗頭，切勿塗上護髮或美髮劑

### 神經傳電檢查(NCT)

- ◆ 目的是觀察周圍神經受損的程度，例如麻木、無力及失調

- ◆ 醫生用電極在皮上放出千萬份之幾秒(1-100mA)的電流刺激神經肌肉，引起輕微的肌肉跳動及不適
- ◆ 檢查需時約一小時

### 肌電圖檢查(EMG)

- ◆ 目的是觀察肌肉失調是否與周圍神經系統的疾病有關
- ◆ 醫生用一頭很細的無菌電極針插入肌肉，記錄肌肉內自發或運力時發出的電流
- ◆ 雖然檢查會引起一定程度的痛楚，但不宜用局部麻醉
- ◆ 檢查需時約半小時

### 體感誘發電位(SEP)

- ◆ 目的是測試中樞神經系統內脊髓，腦干，和丘腦以上投射束的體感傳遞功能及為病灶定位，包括神經根受壓症狀，頸脊椎骨肥腫病等
- ◆ 用一些電極放在頭部，頸部，背部，記錄受刺激的四肢中樞神經個別區域的電反應

- ◆ 檢查需時約一至兩小時

### 腦干聽覺誘發電位(BAEP)

- ◆ 目的是檢查內耳神經和腦干裡聽覺途徑是否正常。有助診斷聽覺失敏及為腦干病灶定位
- ◆ 病人可從耳筒聽到高頻率的卡答聲。通過貼著頭部上的表皮電極，記錄其反應
- ◆ 檢查需時約一小時

### 視覺誘發電位(VEP)

- ◆ 目的是測試視覺神經系統是否正常
- ◆ 病人須注視著閃光燈或電視機螢幕上的圖案，通過頭上的電極記錄分析視覺系統的反應。如視力有問題，須帶備適當眼鏡
- ◆ 檢查需時約一小時

如有任何查詢，請聯絡你的主診醫生


以上資料由瑪麗醫院內科部提供。



瑪麗醫院  
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## NEUROPHYSIOLOGICAL TESTS

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# NEUROPHYSIOLOGICAL TESTS

- ◆ Nerve Conduction Test (NCT)
- ◆ Electromyography (EMG)
- ◆ Somatosensory Evoked Potential Study (SEP)
- ◆ Brainstem Auditory Evoked Potential Study (BAEP)
- ◆ Visual Evoked Potential Study (VEP)

## Introduction

Neurophysiological tests are noninvasive studies on the functions of both the peripheral nervous system ( NCT, EMG) and central (EPs) nervous systems. The tests are important for your physician to formulate a more effective treatment plan.

## Preparation

- ◆ You should expose your arms up to the elbow and legs from knee downwards during the tests on NCT and EMG. Please wear loose clothes. Do not apply moisturizer the morning before the test
- ◆ Do not apply hair cream, oil, tonic or gel after shampoo the night or the morning before the tests on SEP, BAEP and VEP

## Nerve Conduction Test ( NCT)

- ◆ This test is for neuropathy (a condition that presents with numbness, weakness and incoordination)
- ◆ A small dose of electric current (1-100mA) is charged to the target nerve
- ◆ This will result in a muscle jerk with mild discomfort
- ◆ This test lasts about one hour

## Electromyography (EMG)

- ◆ This test is for investigation of muscle disorders, or to look for evidence of muscle involvement in peripheral nerve diseases
- ◆ A small sterilized electrode will be inserted into the target muscle to record the electrical activity at rest and during voluntary activation
- ◆ This test is associated with limited pain and local anaesthesia cannot be applied
- ◆ The procedure will last for about 30 min

## Somatosensory Evoked Potential (SEP) Study

- ◆ This test studies the conductive pathways within both the central nervous system and peripheral nerve systems to find out abnormalities of various regions such as nerve plexus, spinal cord, brain stem, or cerebrum
- ◆ It can also provide information on the level of root or cord compression in condition like arthritis of the neck
- ◆ Several electrodes will be placed on the head, neck and the back to record the electrical activities following peripheral nerve stimulation
- ◆ The study will last for 1-2 hours

## Brainstem Auditory Evoked Potential Study (BAEP)

- ◆ This test studies the nerves responsible for hearing and the pathways in the brainstem
- ◆ During the test, the patient will receive high frequency clicking sounds through a headphone while the

electrical activity will be recorded through the surface electrodes placed on the forehead

- ◆ This study will last for one hour

## Visual Evoked Potential Study (VEP)

- ◆ This test is to assess the nerves responsible for vision and their effects  
The patient will be presented with a checkerboard pattern or flickering light while the electrical activities will be recorded from the surface electrodes placed on the forehead
- ◆ Please bring along your spectacles or corrective lens for testing of your visual acuity
- ◆ The procedure usually lasts for one hour.

Should you have any queries, please consult your doctor-in-charge

Information provided by Department of Medicine, Queen Mary Hospital.