

# 綜合痙攣治療服務 之 ITB療法



屯門醫院 腦神經外科

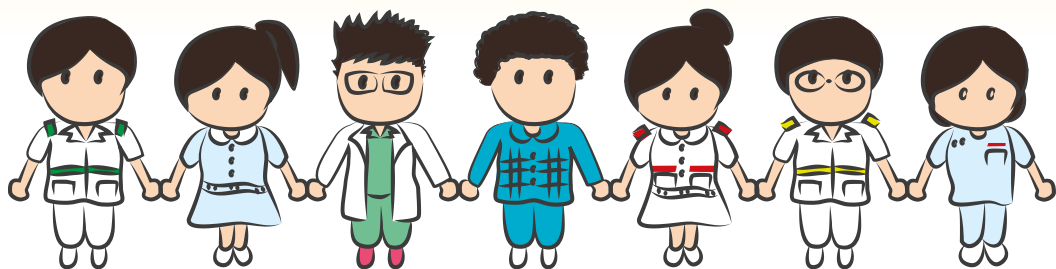


屯 門 醫 院  
Tuen Mun Hospital



# 我們的目標：

腦麻痺、腦受損和脊椎神經受損的病人，在康復過程中往往會出現不同程度的肌肉痙攣等問題，而嚴重痙攣的患者因為肌肉過度僵硬或繃緊，更會演變成永久性的肌肉攣縮，影響手腳活動和日常生活，需要長期依賴別人照顧。因此“新界西腦神經外科復康團隊”會根據個別病人的需要，給予合適的治療，使病患者重獲新生。



## 什麼是脊髓腔內巴氯芬輸注 (ITB) 療法？

- ITB 療法於 1992 年，已被美國食品藥物管理局批准用於治療重度痙攣。
- 以手術植入輸液藥泵和導管於體內，並配以藥物程控儀，可精確地將微量巴氯芬 (Baclofen) 注入脊椎腔內，比較口服巴氯芬，其好處是減少用藥的份量，及減少藥物帶來的副作用，更有效地緩解嚴重痙攣。

## 口服巴氯芬與脊髓腔內巴氯芬輸注療法的比較

巴氯芬	藥物於脊髓硬膜內運作	藥物劑量	藥物輸送	緩和痙攣症狀	副作用
口服	間接	大	不靈活	效用相對低	相對高
脊髓腔內	直接	少	連續，有彈性	效用顯著	相對低

## 脊髓腔內巴氯芬輸注療法帶來的優點：

- 減輕疼痛
- 增加舒適度
- 改善肢體定位和步態
- 減少肌肉痙攣和陣攣
- 提升自我照顧能力如穿衣和個人衛生
- 提高生活質素



## 脊髓腔內巴氯芬 (ITB) 療法的配件

植入輸液藥泵



植入導管



藥物：巴氯芬



藥物程控儀



## 手術介紹

連接導管植入  
於脊髓腔中

藥泵 (<200 公克)  
置入側腹部皮下

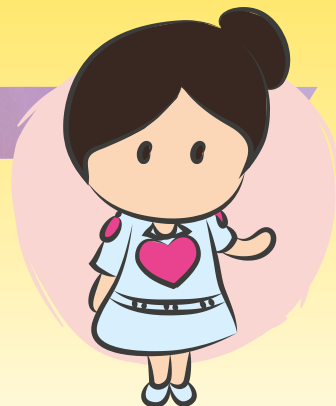
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1. 手術日禁食
2. 全身麻醉，需時二至三小時不等
3. 手術部位有兩個小切口（側腹部和背部）
4. 藥泵置入側腹部皮下，經與藥泵相連的一條細軟管，將藥物輸送到有脊髓液的脊髓腔中

## 手術後照顧篇

- 保持傷口乾爽
- 術後數天不能洗澡
- 術後需平臥三天
- 需配戴特製腰封為期 6 至 8 週
- 需服用抗生素以預防傷口感染
- 如傷口附近有紅腫或疼痛，請通知醫護人員
- 待傷口癒合後，植入藥泵的部位便無需特殊照顧
- 術後 6 至 8 週內避免劇烈運動



## 出院後照顧篇（須定期覆診）

- 藥泵需要定期補充藥物，需準時覆診
- 覆診頻率依藥物劑量而定，可能是數週至數月
- 醫護人員會檢查藥泵功能和檢查電池電量
- 電池電量約可持續 5-7 年
- 補充新藥所花費的時間約 35-45 分鐘，也不會疼痛
- 覆診可能包括物理治療或職業治療，通常在術後六至八星期開始
- 如有任何不尋常症狀，請立刻告知你的醫療團隊

## 藥物和手術可能引致的風險

### 藥物（巴氯芬）最常出現的副作用：

- 肌肉鬆弛
- 頭痛，暈眩
- 胃部不適
- 嗜睡
- 嘔吐



### 手術的風險

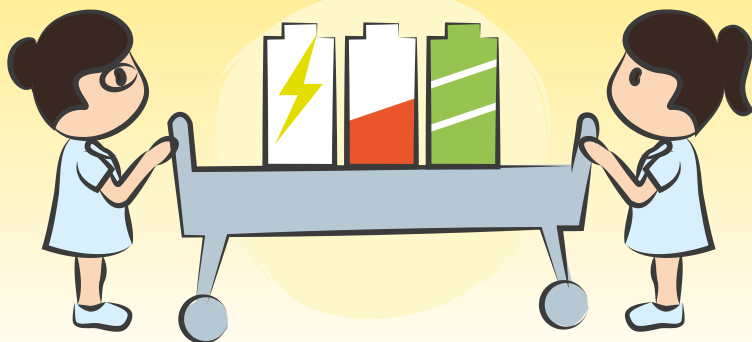
- 疼痛，麻痺，無力或癱瘓（由於神經損傷罕見）
- 腦脊液滲漏
- 出血 / 損傷血管
- 感染

### 藥泵和導管的風險

- 藥泵或導管內移；或通過皮膚侵蝕
- 導管滲漏，撕裂，扭結或斷開導致劑量不足或缺乏藥物輸注
- 藥泵失靈導致藥物過量或劑量不足

## 藥泵失靈引致藥物（巴氯芬）過量的徵兆

- 困倦
- 頭暈
- 痙攣
- 低溫症
- 頭昏眼花
- 呼吸困難
- 喪失意識與昏迷等症狀



## 藥泵失靈引致藥物（巴氯芬）劑量不足的徵兆

- 痙攣頻率增加或復發
- 皮膚發癢
- 頭昏眼花
- 低血壓
- 刺痛感

## 突然停止脊椎腔內輸注巴氯芬的徵兆

- 發高燒
- 神志混亂
- 肌肉僵硬
- 器官衰竭和死亡

## 藥泵警訊知多少

每一個藥泵都配有警示系統，包括緊急警訊和非緊急警訊，以警告患者是否有問題發生，若出現請立即通知醫護人員，並確定問題所在。

警訊	非緊急警訊	緊急警訊
鳴聲	一次嗶聲	連續二次伊嗶聲
原因	儲藥量過低 電池電量過低 藥泵記憶錯誤	空儲藥量 電池電量耗盡 緊急藥泵記憶錯誤 藥泵已停止運轉 48 小時以上

## 病患者日常生活注意事項：

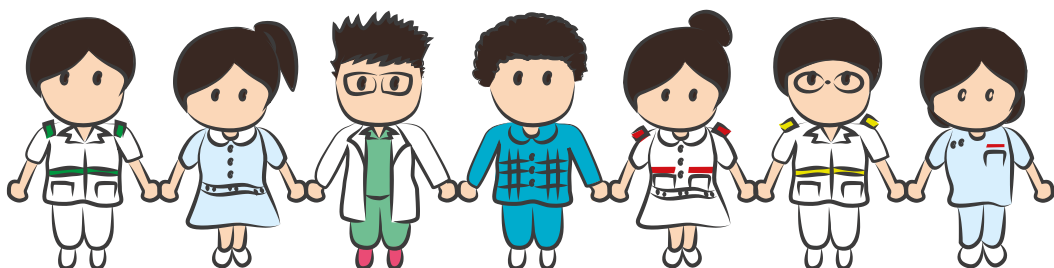
- 在正常情況下，藥泵不會受日常生活中所使用的家電用品（如微波爐，手提電話）所影響
- 請隨身攜帶患者身份卡和識別證
- 如計劃外遊，請通知醫生確認藥泵有足夠的藥量
- 為維持藥物的份量和治療，請依期覆診，填補新藥
- 當接受磁力共振檢查前，請聯絡醫生，磁力共振會令藥泵暫停運作
- 和心臟起搏器一樣，患者去逝後需請醫護人員把藥泵從身體取出
- 防竊 / 安全偵查器並不會影響藥泵運作，但是藥泵可能會啟動機場或商場的金屬探測器，所以你需要隨時攜帶患者識別卡



## Our goal:

Patients with cerebral palsy, brain and spinal cord injury damage often suffer from different degrees of muscle spasm during the progress of rehabilitation. Severe spasticity can also lead to permanent muscle shortening or soft tissue contracture. It can limit the functional use of the upper and lower limbs and impair a range of daily activities. It also increases the physical burden of the caregiver.

The Spasticity Management Program in NTWC offers an individualized treatment plan, tailored to the patient's specific needs. The ultimate goal of the treatment is to help them return to their normal life.



## What is ITB (Intrathecal Baclofen) Therapy?

- ITB therapy has already acquired FDA approval for the treatment of severe spasticity since 1992.
- ITB Therapy for the management of severe spasticity uses an implantable infusion system to deliver precise amount of baclofen directly to the intrathecal space via a surgically implanted infusion pump and catheter.
- Compared to oral baclofen, ITB requires a much lower dose of baclofen to produce greater reductions in spasticity, with significantly fewer side effects.

## Oral Baclofen vs ITB

Baclofen	Drug in contact with the spinal cord	Drug dosage	Drug delivery	Relieve spasticity	Size effect
Oral	Indirect	Large	Not flexible	Less effective	Greater
ITB	Direct	Small	Continuous, flexible	More effective	Fewer

## Benefits of ITB Therapy:

- Reduce pain
- Increase comfort
- Reduce spasticity and spasm
- Improve limb positioning and gait pattern
- Facilitate improvement in self-care activities such as dressing and hygiene
- Improve quality of life



## Components of Intrathecal Baclofen pump

SynchroMed II  
pump



Intrathecal  
catheter



Lioresal®  
Intrathecal



Clinician  
programmer



## ITB surgery

Catheter inserted  
into spinal column

Pump (weight <200g)  
implanted in the  
abdomen below the skin  
layer

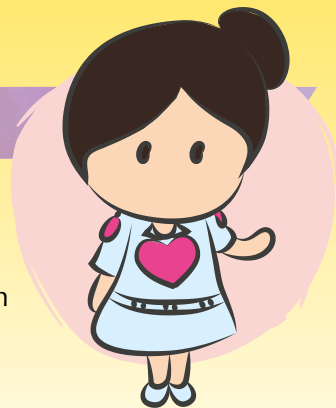
spinal column



1. Nil by mouth prior to the surgery.
2. Procedure usually takes two to three hours under general anesthesia.
3. Two incision sites (abdomen and back).
4. Place the pump under the skin of the abdomen with a catheter (tiny tube) that goes to the spinal cord. The medicine (Baclofen) passes from the pump through a catheter into the intrathecal space. This space is filled with fluid.

## Post-op wound care

- Do not shower
- Keep your incisions dry
- Lie flat for up to three days after pump implantation
- Wear an abdominal binder for 6 to 8 weeks
- Systemic antibiotics prophylaxis
- Alert your clinicians immediately if you develop redness or swelling around the incisions
- Avoid vigorous activities for 6 to 8 weeks after surgery



## Follow-Up Care

- Need regular follow up for baclofen refill
- Frequency depends on baclofen dosage, varies from weeks to months
- Pump function and battery are regularly checked
- Pump battery usually lasts 5 to 7 years
- A refill appointment lasts 35 to 45 minutes and is painless
- Follow-up may include participating in physical and/or occupational therapy
- Therapy usually begins 6 to 8 weeks after your pump has been implanted
- Make sure your clinician is called right away if you experience any of these symptoms

## Potential side effects of the medication and Device Complications

### Common side effects of the Baclofen

- Weakness
- Sleepiness
- Vomiting
- Headache
- Dizziness
- Gastro-intestinal disturbance



### Risks of the Surgery

- Pain, numbness, weakness or paralysis due to nerve damage (rare)
- Cerebrospinal fluid leakage
- Bleeding/injury to blood vessels
- Infections

### Potential Device Complication

- Catheter or pump moving within the body or eroding through the skin
- Leakage, tearing, kinking, or disconnection of the catheter resulting in underdose or lack of medication infusion
- Pump failure leading to overdose or underdose of medication

**Pump failure may cause an overdose of intrathecal baclofen.  
The signs and symptoms include:**

- Drowsiness
- Lightheadedness
- Dizziness
- Difficulty breathing
- Seizure
- Loss of consciousness or coma
- Abnormally low body temperature



**Pump failure may cause an underdose of intrathecal baclofen.  
The signs and symptoms include:**

- Increase or return of spasticity
- Itching
- Low blood pressure
- Lightheadedness
- Tingling sensation

**Rapid or abrupt withdrawal from intrathecal baclofen lead to serious side effects :**

- High fever
- Confusion
- Muscles stiffness
- Organ failure and death

## Baclofen pump alarm

Each baclofen pump includes alarms designed to alert you to important situations. It includes two types of alarms - critical and noncritical. Notify:

Type	Noncritical alarm	Critical alarm
Alarm	Single-tone (1-beep) alarm	Dual-tone (2-beep) alarm
Reasons	<ul style="list-style-type: none"><li>• low medication and it is time for a refill</li><li>• the pump needs to be replaced due to low battery</li><li>• there is a noncritical pump memory error</li></ul>	<ul style="list-style-type: none"><li>• running out of medication</li><li>• pump runs out of battery and stops working</li><li>• the motor inside the pump stops</li><li>• the pump has stopped for more than 48 hours</li><li>• memory error</li></ul>

### Important notes for patients:

- In normal situations, the pump will not be interfered by household electrical appliances such as microwave or cell phone
- Keep the patient identification card and emergency card with you all the time
- If you plan to travel, inform your doctor so that your pump has enough medicine
- To maintain medicine adequacy, please follow up as scheduled to refill medicine
- Contact doctor before performing MRI for it will temporarily stop the pump operation
- Like pace-maker, the pump should be taken out of the body if the patient passes away
- The pump will not be affected by the security system or metal detection alarm. However, the metal case around your pump could set off the security alarms at airports or malls. Therefore please bring along with your ID card

鳴謝

新界西醫院聯網病人啟力基金



資料提供：Medtronic



# Implanted Device Identification Card



The bearer of this card has an implanted  
**Medtronic SynchroMed II infusion pump**

*An infusion system which provides intrathecal Baclofen delivery  
for the treatment of severe spasticity*

For Medical Questions Contact Your Physician



屯門醫院  
Tuen Mun Hospital

# Implanted Device Identification Card



If medical questions or emergency call:

**Department of Neurosurgery**

**Tuen Mun Hospital, NTWC**

**Dr LAW HY**

**Dr Wong ST**

**Nurse coordinator: Ms Cheung LF**

**Tel: 2468 5111**



**新界西·醫院聯網**  
New Territories West Cluster