



## 長期臥床病人的復健—被動運動(英文)

# Rehabilitation for Long-Term Bedridden Patients - Passive Exercises

### 一、什麼是被動運動

#### What are passive exercises?

指病人因心智狀況改變、疾病因素而完全無法自行移動身體，或於自行活動關節時會增加疲憊、疼痛進而影響生命徵象，需借助外在力量(他人或機械)的協助，來預防關節攣縮的形成或惡化。

It involves the external assistance (some other persons or machinery) to prevent the patients from formation or aggravation of joint contracture resulted from completely being unable to voluntarily move the body due to mental changes or illness or any vital sign may be affected by increased fatigue or pain when voluntarily moving joints.

### 二、被動運動的目的

#### Purpose for passive exercises

- (一) 維持關節的活動範圍及維持肌肉彈性。  
Maintain movement range of joints and keep elasticity of muscles.
- (二) 維持全身血液循環，預防血栓。  
Maintain blood circulation in overall body, preventing thrombosis.
- (三) 保存關節與軟組織的完整，預防攣縮、畸形。  
Preserve the integrity of joints and soft tissues, preventing joint contracture or deformity.
- (四) 減緩疼痛。  
Relieve pains.

### 三、被動運動的禁忌與限制

#### Contraindications and restrictions for passive exercises

- (一) 肌肉、肌腱、韌帶有急性損傷情形時。  
Acute damage occurred in muscles, tendons or ligaments.
- (二) 未完全癒合的骨折處關節。  
Joints related to incompletely healed-up bone fracture.
- (三) 手術後初期的肌肉、肌腱、韌帶、關節與皮膚處。  
Early postoperative sites including muscles, tendons, ligaments, joints and skin.

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(四) 深部靜脈栓塞的肢體。

The limb with deep vein thrombosis.

#### 四、執行被動運動的注意事項

##### Precautions in performing passive exercises

(一) 活動前、後都應檢視皮膚外觀及關節有無紅、腫、熱、痛等異常情形。

Examine any abnormality in skin appearance such as redness, swelling, heat, or pain exhibited before and after performing exercises.

(二) 保持病人活動肢體的部位靠近操作者，以避免不必要的拉扯。

Keep the site of patient's limb performing exercises close to the operator to avoid any unnecessary pulling or dragging.

(三) 每一關節的活動，以病人不感覺痛或關節稍緊為原則，並應在關節的最大正常角度範圍內，以防進一步傷害。

Movement of each joint is basically performed not to cause any pain or slightly tight joint of the patient, and should be restricted within range of maximally normal angle of the joint to prevent further damage.

(四) 活動之肢體前後關節應有適當的支托，以免造成關節的牽拉或受傷。

Anterior and posterior joints of the limb in motion should be appropriately supported to prevent the joint dragged or damaged.

(五) 關節活動應包括全身的四肢關節，由身體的近端漸至遠端，大關節漸至小關節，執行頻率為每日至少2回，每個關節活動重覆5次。

Joint exercises should include all joints of four limbs, from proximal to distal and from large joints gradually to small joints, keeping to perform twice a day, repeating the exercise 5 times for each joint.

(六) 執行關節活動時，應輕緩、速度一致、平順有節奏，一次以一個關節活動為限。

Gently and slowly perform a joint exercise with a constant speed and smooth rhythm, performing the exercise for one joint at one time.

(七) 每操作完一個動作，應使關節回到自然狀態下的排列位置。

After one exercise completed, make the joint returning to the naturally arranged position.

(八) 非出血性中風或無外傷病人，住院後3~5天，在病況平穩的情形下，對病人無法主動活動之肢體及關節，應儘早執行關節的被動運動。

Under stable illness conditions of the patient with non-hemorrhagic stroke or without trauma within 3 to 5 days after admission, passive exercises for joints should be performed earliest possible on patient's limbs and joints unable to voluntarily move.

(九) 手術後病人欲施行床上運動者，以不影響傷口及骨折部位癒合為宜，並勿牽扯到引流管。

In doing exercises on the bed for postoperative patients, preferably not to affect healing-up of the wound and fracture site, avoiding dragging of the drain.

(十) 被動運動無法避免肌肉萎縮、無法增加肌力及耐力，或達到自主性運動的血液循環範圍。

Passive exercises are unable to prevent muscular atrophy or increase muscular strength or endurance, neither to achieve the same range of blood circulation as active exercises do.

(十一) 被動運動的方法與步驟請參見下圖，若有任何問題，可向復健科醫師、物理治療師、職能治療師或醫護人員諮詢。

Please refer to the following figures for measures and procedures of passive exercises, asking for answers from physiatrists, physical therapists, occupational therapists or medical staff in case of any question.

### ◆ 肩部運動 Shoulder exercises



1. 將手臂向上舉保持手肘伸展到頭邊，手臂放下回覆到身體側邊

Lift the arm upward and keep the elbow extended beside the head, putting down the arm returning beside the body.

2. 手臂貼床面往外水平打開，伸展手臂側舉至耳朵旁

Horizontally open the arm outward along bed surface, laterally lifting the arm stretched beside the ear.

3. 抬高手臂移至對側，抬手越過前胸碰觸對側上臂

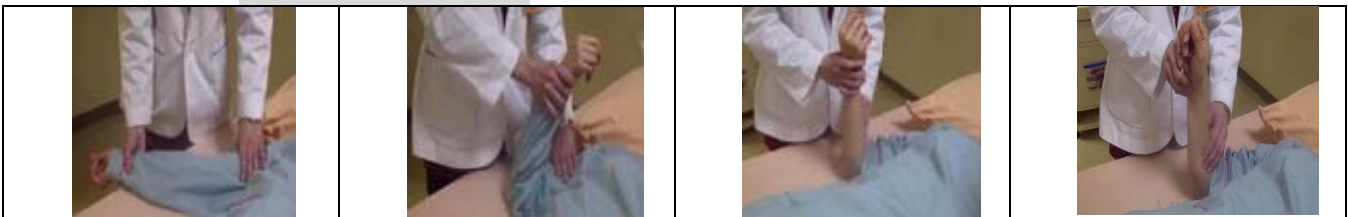
Lift the arm and move to the other side, lifting the hand crossing over the chest touching upper arm of the other side.



4. 上臂貼住床面手肘彎曲 90 度，前臂上舉、再回覆到身體側邊

Keep upper arm flat on the bed surface with the elbow flexed to 90 degrees, lifting forearm upward and then returning beside the body.

#### ◆ 手肘運動 Elbow exercises



1. 一手托住肘部一手握住腕關節作肘部伸展、彎曲運動

Support the elbow with one hand and hold wrist joint with the other hand, doing exercises of elbow stretch and flexion.

2. 手肘彎曲 90 度，將手掌轉向臉的方向，再將手掌轉向腳的方向

Elbow flexed to 90 degrees, turning the palm facing the face, then turning the palm facing the foot direction.

#### ◆ 手腕運動 Wrist exercises



1. 一手握住腕關節，握拳手腕彎曲，再將手指伸直，手腕向後彎

Hold wrist joint with one hand, flexing the wrist with clenched fist, then strengthening the fingers and flexing the wrist backward.

2. 手腕上、下、左、右繞圈

Circularly wind the wrist upward, downward, leftward and rightward.

3. 手指握拳，手指伸直、拇指打開

Clench a fist with fingers, then straightening fingers with the thumb reached out.

### ◆ 腿部運動 Leg exercises



1. 手扶大腿與腳踝做往上彎曲與伸直動作

Perform exercises of upward flexion and straightening with the leg and ankle supported by both hands.

2. 大腿水平外展 45 度及大腿內收動作

Horizontally extend the thigh outward to 45 degrees, returning the thigh inward.

3. 一手放在膝上一手拖住腳後跟作小腿往內轉、外轉動作

Put one hand on the knee, performing exercises of internal rotation and external rotation for the lower leg with the heel supported by the other hand.

### ◆ 足部運動 Foot exercises



1. 手扶腳背屈曲腳底板往上翹、及往下壓

Raise the sole upward and press it downward with flexed instep supported by the hand.

2. 一手握住腳踝一手握住腳掌，內翻腳掌、及外轉腳掌

Perform internal inversion and external rotation of the sole with one hand holding the ankle and the other hand holding the sole.

3. 將腳趾彎向足背方向及彎向腳底方向動作

Perform exercises of toes flexion toward the instep and flexion toward the sole.

### 參考資料 Reference

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李美誼、楊鈞涵、林克隆、陳世銘、陳姝希 (2018) · 悠樂手和彈性繃帶對中風病人執行上肢被動運動的手溫和心跳變異率之影響 · 台灣復健醫學雜誌, 46 (2), 81-89。



NIH Medical Rehabilitation Coordinating Committee. (2017). National Institutes of Health research plan on rehabilitation. *Physical Therapy*, 97(4), 404-407.

### 護理指導評值 Nursing guidance evaluation

#### ◎是非題

1. ( ) 被動運動可以維持全身血液循環，預防血栓？  
Passive exercises may maintain blood circulation in overall body, preventing thrombosis?
2. ( ) 執行被動運動須保持病人活動肢體的部位靠近操作者？  
The site of patient's limb performing passive exercises shall be kept closed to the operator?
3. ( ) 未完全癒合的骨折處關節，勿隨意執行被動運動？  
Never arbitrarily perform passive exercises for joints related to incompletely healed-up bone fracture?

#### ◎選擇題

4. ( ) 關節活動應包括全身的四肢關節，由身體的(1)近端漸至遠端；(2)遠端漸至近端；(3)哪一端開始均可以。  
Joint motions should include all joints of four limbs, from its (1) proximal to distal end; (2) distal to proximal end; (3) either end may be started with.
5. ( ) 執行關節活動時，應輕緩、速度一致、平順有節奏，一次(1)以一個關節活動為限；(2)以二個關節活動為限；(3)無限制活動幾個關節。  
Gently and slowly perform a joint motion with a constant speed and smooth rhythm, performing at one time for (1) one joint motion maximally; (2) two joint motions maximally; (3) no restriction on the number of joint in motion.
6. ( ) 關節活動執行頻率為(1)每日至少 2 回；(2)每日一次即可；(3)無限制活動幾個關節。  
Keep the performing frequency of joint motions (1) at least twice a day; (2) once a day would be enough; (3) no restriction on the number of joint in motion.

(答對5-6題⇒完全了解；答對3-4題⇒部分了解；答對1-2題⇒完全不瞭解)

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