

Positioning of a hemiplegic with High Tone

The information provided in this handout is to help you understand the general and specific aspects regarding hypotonia in a person with stroke.

Content of this handout is extracted from national and international stroke organizations, peer reviewed scientific research articles.

If you or your family members have questions after reading this handout, please contact your doctor and or therapist in-charge.



What is positioning and what is its significance?

Positioning is a therapeutic method of supporting your limbs (arm and leg), trunk and body to prevent complications, and achieve optimal recovery. Positioning is a component of recommended rehabilitation strategies.



When you are affected by stroke, you might lose control of one side of your body depending on the side of damage happened to the brain. Damage to the brain also may lead to reduced sensation of body parts, and increased sensitivity of stretch reflexes. All these may cause abnormal tone in your muscles of the affected side of your body.



Abnormal tone may be manifested as low tone in the initial stages (1 – 6 weeks) after stroke, which may turn to high tone in later stages. High tone in the muscles may vary from individual to individual depending on the extent of brain damage. Increase in tone in your muscles means you can start initiating active movements.



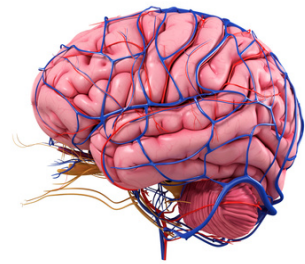
What is positioning and what is its significance? (continued)

To complete a successful movement, two things must happen:

1. The muscles that initiate the movement must contract.
2. The muscles opposite to those initiating the movement must relax.



The brain is in charge of coordinating these movements. It makes sure the muscle groups do not accidentally conflict with each other.



After a stroke, the affected side of your brain may not be able to send the correct signals to the muscle groups. As a result, abnormal patterns can occur.

For example:

- In the arm – your shoulder rotates inwards, elbow and wrist curled up (flexion pattern).
- In the leg – your hip and knee is fixed in a straightened position, with ankle pointed downwards.



What is positioning and what is its significance? (continued)

It is best to minimise these incidental stretch reflexes and maintain the normal length of your arm and leg muscles with appropriate positioning when you are at rest.



Practice of correct and recommended positioning techniques will help reduce the risk of muscle tightness, developing contractures, pressure ulcers, and joint pain.



What are the aims of these positions?

The important aims of appropriate positioning include:

- 1 Providing comfort
- 2 Modulation of muscle tone
- 3 Experiencing normal posture
- 4 Preventing muscle tightness and contracture
- 5 Maintain skeleton alignment, thereby preventing damage to the joints of affected limbs

What positions are recommended for me?

During the early stages of your recovery from stroke, you will be on medication as prescribed by your doctor. Apart from your therapy sessions, you will be resting either in the bed or on chair. During these resting periods, it is highly recommended that your trunk, and limbs are appropriately positioned and supported.

While it is hard to maintain one position for a longer period of time, following are mostly recommended positions:

- 1 Side lying on the non-hemiplegic side
- 2 Sitting in an armchair/wheelchair
- 3 Supine lying or lying on your back
- 4 Half lying
- 5 High sitting

What are the important things to look out for in these positions?

It may be difficult for you to maintain these positions by yourself. You may need help from nursing / therapy staff, your own family members or helper. You may also need sufficient support from pillows or cushions to maintain these positions.

Side-lying

- Scapular protraction
- Head in neutral
- Hip flexion
- Arm supported on pillow
- Lower limb supported on pillow



Supine

- Head supported on pillow
- Trunk straight
- Scapular protraction
- Arm supported on pillow at 45 degrees from trunk, with elbow and forearm straight, wrist neutral
- Leg supported by pillow at the side, with knee slightly bent.
- Ankles with Feet in neutral position



What are the important things to look out for in these positions?

Half Lying/High Sitting

- Head in midline
- Trunk symmetrical
- Scapular protraction
- Arm supported on pillow at 45 degrees from trunk, with elbow and forearm straight, wrist neutral
- Leg supported by pillow at the side, with knee slightly bent.
- Ankles with Feet in neutral position



Sitting in armchair/wheelchair

- Spine straight and trunk symmetrical
- Equal weight bearing left and right buttocks
- Hip and knee flexion 90 degrees
- Head directly above pelvis
- Ankles with Feet in neutral position



It is recommended that you need to change positions every 1.5 to 2 hours to prevent complications. Please seek suggestions from your therapist, if you have any specific requirements for the modifications of recommended positions.

Contributed by Physiotherapy, Rehabilitation, Allied Health Services

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Information shared is accurate as of April 2024 and subject to revision without prior notice.



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