

# Shoulder Pain After Stroke

Pain in the shoulder is one of the post stroke complications. As many as up to 80% of the patients with stroke develop pain in their shoulder.

This may limit your ability to use your affected arm for daily activities such as eating, drinking, showering, combing hair, dressing. Constant pain in the shoulder may be frustrating and may even limit your participation in therapy activities. This booklet aims to educate you and those around you how shoulder pain happens, what causes it, and what you can do to prevent shoulder pain from happening.



## Understanding your shoulder joint

- The shoulder is the biggest joint in your arm formed by a ball shaped head of humerus (arm bone) and saucer shaped fossa (socket) of your shoulder blade (scapula).



- Stability of the shoulder joint is largely maintained by superficial and deep muscles that surround the shoulder joint and those that cross the scapula or shoulder blade.
- These muscles help to maintain the alignment of the ball and the socket during the wide range of movements that your arm can make.
- There is a constant re-alignment of socket by rotation of the scapula during the arm movements, especially when your arm moves beyond the level of shoulder, for example, washing / combing your hair.

## What happens to your shoulder after a stroke?

Stroke leads to weakness or low tone of your shoulder muscles in the initial stages, increased tone, called spasticity in later stages. You may have difficulties with sensation or feeling of your arm. All these impairments, in addition to the effects of gravity, interferes with movement and postural control.

Abnormal muscle tone combined with gravitational pull, leads to loss of alignment of bones that form your shoulder joint. This misalignment may cause head of humerus to move out of place from socket (subluxation), leading to stretch on the surrounding muscles, ligaments and soft tissues.

The loss of trunk control and associated flexed posture commonly seen in patients after severe stroke, especially when sitting, further contributes to subluxation by adversely influencing the resting angle of the scapula.

## What happens to your shoulder after a stroke?

There can be accidental cause of trauma to your shoulder muscles and tissues around the joint when conducting normal activities such as bed mobility, showering, dressing, transfers to chair etc. Incorrect movement, improper positioning of the arm or poor handling of your affected arm by yourself, your family members and or medical staff (example – under arm assistance for standing, walking, pulling the arm) may cause trauma.



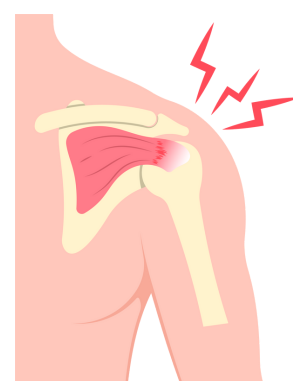
The trauma may also be associated with rehabilitation interventions, especially when attempting auto-assisted, repeated exercises during which the you may pull your hemiplegic arm through a range of motion against gravity with the unaffected hand.



## What causes your shoulder pain?

Resulting trauma to the shoulder joint muscles and soft tissues is associated with development of pathological conditions such as adhesive capsulitis, bursitis, rotator-cuff tendon tears, leading to stiff or frozen shoulder.

Apart from the physical damage to the tissues, the stroke itself may cause abnormal neuropathic pain condition called central post stroke pain, where the brain now perceives pain in abnormal manner.



## **How does this shoulder pain affect you?**

- You may have difficulties sleeping.
- Constant pain arising from the tissue damage may limit your participation in therapy sessions.
- You may further develop complications such as – low mood, depression, anxiety, shoulder hand syndrome.
- All this may affect your daily functional activities.

## **What can you do to prevent shoulder pain?**

During your stay in the hospital, you need to immediately notify the nurse, occupational therapist, physiotherapist or doctor to help you.

While reporting to our medical staff, you need to provide the following information –

- When do you get the pain?
- Is there a specific position or movement that gives you more pain?
- Is there a specific position that makes you feel better?
- How long does the pain last?

## **How to prevent shoulder pain?**

If your shoulder pain is because of improper positioning, poor handling, or injury to the muscles or soft tissues around the shoulder joint, it is possible to prevent future recurrence of the pain.

Following recommendations may help prevent the shoulder pain.

- You need to be mindful of your impairments (muscle weakness, reduced sensation, misalignment of your joint, abnormal tone and posture) while doing your regular functional movements and activities.
- Using proper handling techniques (NO pulling of affected arm)
- Appropriate positioning regimes to have the weight of the arm supported (refer to the pictures)
- Wearing arm sling to prevent subluxation during transfers, but removal of arm sling at rest

## Shoulder Positioning and Handling

### Wearing of arm sling

Thumb supported in the loop to prevent the arm from sliding out.

The length can be adjusted with the velcro, ensuring that the arm is 90 degrees.

Arm in a sling during ambulation to prevent it from dangling, however removed at rest to prevent stiffness



### Lying on the back

Head: Placed in neutral aligned to body.

Pillow/ towel roll tucked under head.

Shoulder: Supported by pillows

Elbow, wrist: straightened, resting on pillow

Hip: Pillow to prevent turning out of the hips



### Lying on unaffected shoulder

Head: Placed in line with the body

Shoulder: shoulder blades to be slightly forward

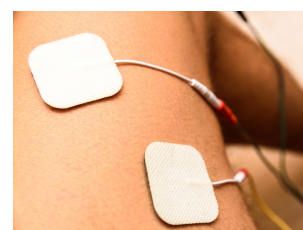
Elbow, wrist: straightened, resting on pillow



## How is shoulder pain treated?

Treatment of the shoulder pain includes a range of measures including:

- Adherence to the preventive measures
- Medication as prescribed by the doctor to reduce pain and inflammation
- Electrical stimulation of the shoulder muscles – your therapist may discuss the possibility of application based on your sensation and pain tolerance
- Electrotherapy – stimulating your superficial nerves using a TENS machine may help reduce pain in some instances – please discuss with your therapist.
- Exercises to strengthen your shoulder muscles and to prevent shoulder joint stiffness.
- Gentle mobilisation of your joint, muscle stretching
- Modifying the activities to suit your impairments to allow sufficient rest and reduce irritation.



Contributed by Physiotherapy, Rehabilitation, Allied Health Services

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