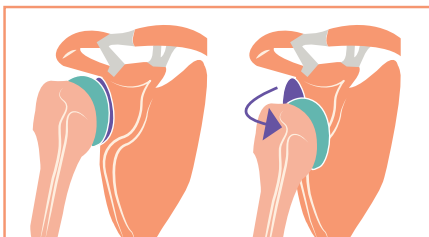# The Hemiplegic Arm and Hand After Stroke
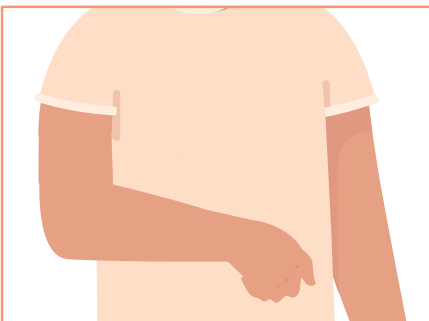
A stroke can cause weakness (hemiplegia) on the affected side. This can impact the ability to move the arm and hand, carry out functional tasks, or protect the arm from injury. Careful handling and care of the arm and hand can reduce pain and prevent complications. This is important because once it starts, pain in the arm and/or hand can become chronic and difficult to treat.

What you should know

✓ The shoulder is made up of small muscles and ligaments which support the joint. Many important nerves and blood vessels pass through it, making the shoulder, arm and hand vulnerable to injury

✓ More than half of persons with hemiplegia will experience pain in their affected arm and/or hand. Pain may occur more frequently in persons who are dependent on others for transfers. The hand is likely to develop swelling if not well supported

✓ Pain can interfere with mood, sleep, day to day activities, and overall quality of life

✓ Following a stroke the arm and hand can have altered muscle tone. Both high tone and low tone limbs can cause pain:

A **low tone** limb will feel **limp and heavy.** A low tone hemiplegic arm is at risk of overstretching or tearing weakened muscles. This may cause a partial dislocation (subluxation of the shoulder), which is not correctable.

A high tone limb will feel stiff and tight. High muscle tone can pull the arm toward the chest wall, with a bent wrist and clenched hand. It can be very difficult to move the arm or hand, and to provide care. This can contribute to:
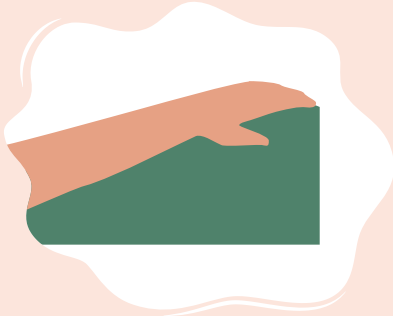
- Skin breakdown (underarm, hand)
- Difficulty in assisting with hygiene and
- dressing
- Limited range of motion (contractures)
- Shoulder pain

✓ A stroke can also cause altered sensation and perception (neglect) of the arm. As a result, a person with stroke can be unaware of the position of their arm. This can increase risk of injury. For example the arm could hang over the side of the wheelchair, injuring the shoulder as well as risking fingers getting caught in the wheel
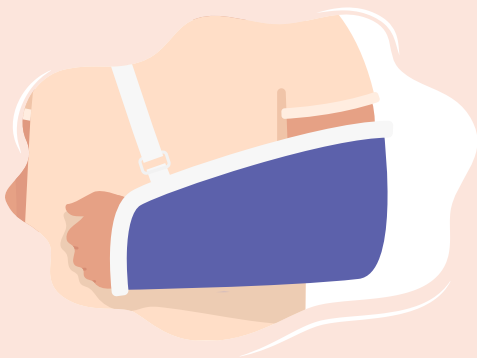
Smart Tips - **Always follow the care plan!**

Positioning	
	• Be gentle when moving the arm or hand. Avoid pulling on the limb • Ensure the affected arm and hand are always supported using pillows or other equipment when recommended in the care plan • In every position, ensure the elbow and forearm are placed away from the body. Keep the wrist straight or slightly extended and place the hand palm down with fingers open as much as possible • See Smart Tips for Positioning in Chair/Wheelchair After Stroke and Positioning in Bed After Stroke

Functional Mobility	
	• Never pull on the person's affected arm or lift from the underarm. Encourage the person to participate as much as they safely can. (See Smart Tips for Stroke Care - Mobility after Stroke and Transfers after Stroke) • When using a lifting device (e.g. floor lift, ceiling lift) ensure the affected arm is positioned inside the lift sling, and supported in front of the body • Ensure the arm is supported when the person is standing, transferring or ambulating • If recommended by a therapist, apply an arm sling to support the weight of their hemiplegic arm during mobility activities

Activities of Daily Living (ADL's)	
	• Be careful to always support the hemiplegic arm • Move the arm and hand slowly and gently. This is especially important during tasks like bathing and dressing • Monitor persons with high tone that have a clenched hand for hygiene and skin health. Look for finger nails digging in the palm (may need trimming), and cleanliness between the fingers • Do not raise the arm above shoulder level unless the person can do so themselves • Dressing rule for stroke: hemiplegic arm should be "first on; last off"

Seek extra support

✓ All team members have a role to play in caring for the affected arm and hand. Occupational Therapists and Physiotherapists are experts in hemiplegia. It may be helpful to involve them in the person's care