Yoga & Stroke

How yoga can help those who have had a stroke

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Yoga & Stroke

How yoga can help those who have had a stroke

1. Introduction

The onset of a stroke can be so sudden and devastating to the person concerned. I have known a number of people who have had strokes and, for some, the recovery has been fairly quick, whilst others it is still ongoing and a very slow process.

Recently I had someone who suffered a stroke attended my taught yoga classes and whilst he has done remarkably well in his recovery, I realized that he needed more therapeutic guidance using yoga to increase his limb functionality and his mental confidence. Also the asanas of a taught yoga class are not really always applicable such a person as many require a high degree of balance which is not within his means - even moving to the floor is very tricky, even though his recovery has been extremely good to date.

One other aspect really struck home to me was that even though he has had a stroke, he was still overweight and has not really changed his lifestyle.

Therefore, attending the Indea Yoga Advanced Training, it made me realize that the holistic approach that yoga offers using the body, mind and breath can really help him.

Recent research has shown that stroke sufferers have a significant increase in their mobility but most particularly their mental state transformed dramatically, and this in turn aids a change in lifestyle to reduce the further onset of more strokes and better mobility as they engage asanas with positive mind.
2. Different types of strokes

1) **Ischemic stroke (caused by blood clots)**
   Pronounced: i-sck-ee-mic

   Ischemic stroke occurs as a result of an obstruction within a blood vessel supplying blood to the brain – a blood clot. It accounts for 87 percent of all stroke cases. Whilst blood clotting can be beneficial to the body, for instance to stop bleeding, blood clots in a stroke cut off the valuable blood flow in arteries.

   There are two ways an ischemic stroke can occur:

   **a) Embolic Stroke**

   If a blood clot forms somewhere in the body (usually the heart) it can travel through the bloodstream to your brain. Once in your brain, the clot travels to a blood vessel that's too small for it to pass through. It gets stuck there and stops blood from getting through. These kinds of strokes are called embolic strokes.
b) Thrombotic Stroke

As the blood flows through the arteries, it may leave behind cholesterol-laden 'plaques' that stick to the inner wall of the artery. Over time, these plaques can increase in size and narrow or block the artery and stop blood getting through. In the case of stroke, the plaques most often affect the major arteries in the neck taking blood to the brain. Strokes caused in this way are called thrombotic strokes.
2) Hemorrhagic stroke (caused by ruptured blood vessels that cause brain bleeding)

Hemorrhagic stroke occurs when a weakened blood vessel ruptures. Two types of weakened blood vessels usually cause hemorrhagic stroke: aneurysms and arteriovenous malformations (AVMs). But the most common cause of hemorrhagic stroke is uncontrolled hypertension (high blood pressure).
3) Transient ischemic attack (TIA) (a “mini-stroke,” caused by a temporary blood clot)

TIA (transient ischemic attack) is caused by a temporary clot. Often called a “mini stroke”, these warning strokes should be taken very seriously.
3. Symptoms of a stroke

The signs and symptoms of a stroke often develop quickly. However, they can develop over hours or even days.

The type of symptoms depends on the type of stroke and the area of the brain that’s affected. How long symptoms last and how severe they are vary among different people.

A headache may occur if the stroke is caused by bleeding in the brain. The headache:

- Starts suddenly and may be severe
- May be worse when you are lying flat
- Wakes you the person from sleep
- Gets worse when you change positions or when you bend, strain, or cough

Other symptoms depend on how severe the stroke is and what part of the brain is affected. Symptoms may include:

- Change in alertness (including sleepiness, unconsciousness, and coma)
- Changes in hearing
- Changes in taste
- Changes that affect touch and the ability to feel pain, pressure, or different temperatures
- Clumsiness
- Confusion or loss of memory
- Difficulty swallowing
- Difficulty writing or reading
- Dizziness or abnormal feeling of movement (vertigo)
- Eyesight problems, such as decreased vision, double vision, or total loss of vision
- Lack of control over the bladder or bowels
- Loss of balance
- Loss of coordination
- Muscle weakness in the face, arm, or leg (usually just on one side)
• Numbness or tingling on one side of the body
• Personality, mood, or emotional changes
• Trouble speaking or understanding others who are speaking
• Trouble walking

4. How to diagnose a stroke

A doctor will diagnose a stroke based on the signs and symptoms, medical history, a physical examination, and test results.

The doctor will want to find out the type of stroke the person has had, its cause, the part of the brain that’s affected, and whether you have bleeding in the brain.

If you have had a transient ischemic attack (TIA), he or she will look for its cause to help prevent a future stroke.

1. Initial Medical History and Physical Exam

A doctor will ask the patient or a family member about the risk factors for stroke. Examples of risk factors include high blood pressure, smoking, obesity, heart disease, and a personal or family history of stroke. The doctor also will ask about the signs and symptoms and when they began.

The doctor will then give a physical examination. During the physical exam, the doctor will check your mental alertness and your coordination and balance and numbness or weakness in your face, arms, and legs. Also the doctor will check for any confusion and speech problems and not able to see properly.

The doctor will look for signs of carotid artery disease, a common cause of ischemic stroke. He or she will listen to the carotid arteries with a stethoscope. A whooshing sound called a bruit (broo-E) may suggest changed or reduced blood flow due to plaque buildup in the carotid arteries.

2. Diagnostic Tests and Procedures
Your doctor may recommend one or more of the following tests to diagnose a stroke or TIA.

**a) Brain Computed Tomography (CT)**

A brain computed tomography scan, or brain CT scan, is a painless test that uses x rays to take clear, detailed pictures of the brain. This test often is done right after a stroke is suspected.

A brain CT scan can show bleeding in the brain or damage to the brain cells from a stroke. The test also can show other brain conditions that may be causing the symptoms.

**b) Magnetic Resonance Imaging (MRI)**

Magnetic resonance imaging (MRI) uses magnets and radio waves to create pictures of the organs and structures in your body. This test can detect changes in brain tissue and damage to brain cells from a stroke.

Most MRI machines are large, tube-shaped magnets. When you lie inside an MRI machine, the magnetic field temporarily realigns hydrogen atoms in the body.

**c) Computed Tomography Arteriogram and Magnetic Resonance Arteriogram**

A CT arteriogram (CTA) and magnetic resonance arteriogram (MRA) can show the large blood vessels in the brain. These tests may give a more information about the site of a blood clot and the flow of blood through the brain.
d) **Carotid Ultrasound**

Carotid ultrasound is a painless and harmless test that uses sound waves to create pictures of the insides of the carotid arteries. These arteries supply oxygen-rich blood to the brain.

Carotid ultrasound shows whether plaque has narrowed or blocked the carotid arteries.

A carotid ultrasound test may include a Doppler ultrasound. Doppler ultrasound is a special test that shows the speed and direction of blood moving through your blood vessels.

e) **Carotid Angiography**

Carotid angiography is a test that uses dye and special x rays to show the insides of the carotid arteries.

For this test, a small tube called a catheter is put into an artery, usually in the groin. The tube is then moved up into one of your carotid arteries.

A substance called contrast dye will be injected into the carotid artery. This dye helps make the artery visible on x-ray pictures.

f) **Heart Tests**

**EKG (Electrocardiogram)**

An EKG is a simple, painless test that records the heart's electrical activity. The test shows how fast the heart is beating and its rhythm (steady or irregular). An EKG also records the strength and timing of electrical signals as they pass through each part of
the heart.

An EKG can help detect heart problems that may have led to a stroke. For example, the test can help diagnose atrial fibrillation or a previous heart attack.

**Echocardiography**

Echocardiography, or echo, is a painless test that uses sound waves to create pictures of your heart.

The test gives information about the size and shape of your heart and how well your heart's chambers and valves are working.

Echo can detect possible blood clots inside the heart and problems with the aorta. The aorta is the main artery that carries oxygen-rich blood from your heart to all parts of the body.

f) **Blood Tests**

Blood tests to help diagnose a stroke.

A blood glucose test measures the amount of glucose (sugar) in the blood. Low blood glucose levels may cause symptoms similar to those of a stroke.

A platelet count measures the number of platelets in the blood. Blood platelets are cell fragments that help the blood clot. Abnormal platelet levels may be a sign of a bleeding disorder (not enough clotting) or a thrombotic disorder (too much clotting).

The doctor also may recommend blood tests to measure how long it takes for the blood to clot. Two tests that may be used are called PT and PTT tests. These tests show whether your blood is clotting normally.

5. **Complications of a stroke**

Some people experience very few complications whilst others experience a large number depending on the severity of the stroke and how quickly the patient received medical
It is important to realize that a stroke can damage the brain's ability to communicate with the rest of the body. Because a stroke will typically damage only certain areas of the brain, resulting complications tend to be clustered - whatever part of the body or body function that the damaged part of the brain controls will be affected. This could mean loss of muscle control of one side of the body, a loss of the muscles that control speech, or other muscle groupings. A stroke may also affect the area of the brain that controls a particular cognitive skill, such as memory or mood stability.

Some of the most common complications of stroke are:

1. **Brain edema**

   Swelling of the brain after a stroke.

2. **Infections**

   Stroke patients are at risk of infections, particularly those affecting the chest and urinary tract. Pneumonia is a big problem causing breathing problems. Common swallowing problems after stroke can sometimes result in things 'going down the wrong pipe', leading to aspiration pneumonia. Stroke patients are prone to urinary retention which increases the risk of urinary tract infections.

3. **Loss of Muscle Control or Paralysis**

   During a stroke, parts of the brain lose significant or all blood flow, depriving those sections of oxygen, and sometimes causing long-lasting or even permanent damage. Because specific areas of the brain control certain muscles in the body, muscle damage in a stroke is often clustered in specific muscle groups. For example, it is common among stroke victim to lose muscle control or become paralyzed on only one side of the body, while the other stays 100 percent functional. The face is a common area affected by stroke—it is fairly common that a stroke victim becomes paralyzed on one side of his or her face.
4. **Bladder control and bowel control affected.**

The loss of urinary continence is fairly common immediately after a stroke and the ability to control the bladder and bowel.

5. **Seizures**

There is abnormal electrical activity in the brain which can cause convulsions.

6. **Depression**

Continuing on after experiencing a stroke—particularly one with severe physical and cognitive consequences—can be extremely difficult. A stroke victim may not be able to do many of the things they are used to doing, including going to work at their old job. Serious medical traumas like stroke can also put a huge strain on relationships, affecting the stroke victim and his or her family, friends, and loved ones. As a result, it is fairly common for someone who suffered a stroke to have a worsened mood, and, in some cases, to become afflicted with clinical depression.

7. **Bedsores**

Pressure ulcers that result from decreased ability to move and pressure on areas of the body because of immobility.

8. **Limb contractures**

Shortened muscles in an arm or leg from reduced range of motion or lack of exercise.

9. **Shoulder pain**

From lack of support of an arm due to weakness or paralysis. This usually is caused when the affected arm hangs resulting in pulling of the arm on the shoulder.

10. **Deep venous thrombosis**

Blood clots form in veins of the legs because of immobility from stroke.
11. Speech Problems

Stroke often affects the areas of the brain responsible for controlling the muscles in your face, including those muscles used for speaking. It is also possible for a stroke to affect areas of the brain that control memory function, leading to stroke victims having trouble finding the right words for how they are feeling, a condition called aphasia. In many cases, a speech therapist can help with these problems.

12. Swallowing Difficulties

If the stroke impacted areas of the brain that control the muscles in your neck, you may have trouble swallowing afterward. This could also include accidentally breathing food into your airway, a condition known as aspiration.

13. Cognitive Impairments

As a stroke affects the brain, it's common that people have problems with memory afterwards. This could include memory loss, difficulty remembering recent events, or even difficulty understanding concepts they were familiar with before the stroke.

14. Pain

Pain can also accompany a stroke. Numbness and pain can also alternate in the same area as the brain is having difficulty communicating with nerves in a certain area.

15. Loss of Independence

Physical impairments may require someone with a stroke to need physical assistance in daily tasks, such as cooking, cleaning, and other chores. They also may require assistant devices, such as a cane or wheelchair.

16. Personality and Mood Changes

Because a stroke can damage parts of the brain that affect mood control and personality, stroke survivors will often appear slightly different, temperamentally, than before their
stroke. A typical person may seem to have a shorter temper, or a normally thoughtful person may become forgetful or withdrawn. It is important to remain patient and calm with someone following a stroke.

17. Shortened Life Span

Statistics show a person who suffered one or more strokes during his or her life runs a significantly higher chance of death when compared with the rest of the population. Stroke typically affects adults over the age of 65. Those who experience their stroke before that age have a better chance of survival.

18. Falls and accidents

Weakness, sensory impairment, incoordination, imbalance and visual problems predispose the patient to accidents and falls.

6. How to manage and treat a stoke patient with practice of yoga.

There are some limited studies on the treatment of strokes through yoga so significant long-term affects have not really been monitored. There is however one currently one being run in Australia. However in these smaller short-term studies, which are listed in the Bibliography, it has been found that yoga can help with breath, strength, balance and flexibility. The most marked improvement though in one study was that the overall wellbeing of the patients was notably improved. As these were short-term studies, experiencing overall wellbeing, in my opinion, will aid with their future recovery over the long term as the attitude of the mind is incredibly important to get the body functioning again. Also many stroke patients suffer from depression - yoga can substantially help with this.

Depending on the severity of the stroke, prior to yoga, patients will probably need to start with the following.

Physical therapy -- Teaches walking, sitting, lying down, and switching from one type of movement to another. This should start the first day after a stroke.
**Occupational therapy** -- To relearn eating, drinking, swallowing, dressing, bathing, cooking, reading, writing, and toileting.

**Speech therapy** -- To relearn language and communication skills. Often, non-verbal alternatives are encouraged until speech returns.

**Psychological/psychiatric therapy** -- To help relieve some mental and emotional stresses (such as depression) that often accompany a stroke. These feelings may be due to the location of the brain damage itself or may be a reaction to the stroke.

In severe cases, this often requires relearning everything one does. Because part of the brain can be damaged, the patient has to reprogramme the surrounding area of the brain to pick up the duties the stroked area use to preform. The restoration of cognitive function following stroke most likely occurs by neural adaptations in the surrounding brain tissue that allow it to take over the function of lost neurons.

Not much is known about the specifics of how cognitive function is restored, however most likely what is happening amounts to a re-routing of information processing functions into healthy brain tissue.

This reprogramming is immensely tiring for a patient as physically and mentally much work is involved. During the initial stages this will be very stressful and the patient will sleep a lot. Please remember when you are doing a yoga therapy programme that any movement involves much more effort mentally and physically than an able-bodied person.

A yoga teacher who had a stoke described her experience: ‘All this was so exhausting. To get ready in the morning, with help, took about 40 minutes. I would be so tired a 1-2 hour nap was next.’

However, these therapies are expensive and only will generally happen on a relatively short term basis.

Yoga can provide a continued integrated recovery programme for a stoke patient and a balanced therapy programme will include the following.
Pranayama

Just think when if you have a stroke, you are no longer able to control parts of your body or movements. The mind almost loses touch with the body. Strokes can rewire the brain, causing the link from the brain to the body’s movements to be broken. Teaching a patient mindful, focused breathing exercises can help a person reconnect, lose their fears and overcome depression related to their inability to move certain parts of the body.

Pranayama also helps us to clear our mind, calm ourselves, and balance the oxygen and carbon dioxide balance in our bodies. With our practice we learn how to breathe deeply and completely fill our lungs with air. We learn how to exhale slowly and enjoy the release. We practice utilizing our breath to breathe in and out of our postures.

Breath is the essential part of the mind and body coordination so breathing becomes essential for a stroke patient.

Nadi Shodhana is great pranayama to use for developing right and left side breathing and slowly balancing the paralyzed side of the body.

**Important:** Patients should avoid kumbhaka in the initial stages.

Mudras

Mudras provide an amazing way to calm the mind and at the same help stroke patients focus on meditation and on the areas of paralysis.

Mudras such as the Vayu and Hridaya/Apanvayu mudras are particularly good for people who have had a stroke. People who become apprehensive very often, those with high and low blood pressure, those who pant while in a crowd or in a fight or while doing any
strenuous work, those who generally experience pain in the heart or those who have even had a stroke should practice this regularly. It is even beneficial in stomach related problems. Mind should be in silence and at peace when practising these mudras.

Other mudras are mentioned in the lesson plan.

**Chanting**

Chanting can be highly effective for a stroke patient in allowing them to feel the vibration/resonance throughout the body, helping with their speech function and also balancing the left and right sides (Ida and Pingala).

In the initial stages chanting A-U-M throughout the different related regions of the body will give stroke patients an awareness into those areas of the body which require the mind to focus, in order to make the neural connection. Likewise chanting So-Ham helps to improve breath and gain in concentration.

**Meditation**

Following on from breath work, meditation can help to relax the mind and cause the onset of another stroke or heart attack.

In a 2012 study African-Americans with heart disease who practiced Transcendental Meditation regularly were 48 percent less likely to have a heart attack or stroke or die compared with African-Americans who attended a health education class over more than five years.

From this study, Dr. Stein said. “Meditation is a way of allowing you to come to balance in your life,” Dr. Stein said. “It can also help you to sleep better, which is a very important restorative part of physical health.”

For a stroke patient, meditation practice can be extremely useful because with a stroke, there is no definitive prognosis for recovery. Everyone is different because there are so many variables involved – this can be very worrying for such a person. The calming of meditation is essential.

**This is very important:** Owing to the neurological disconnection to the body, it is important for the person to think through the postures. This is a kind of meditation on where the body
should be. Close eyes, if possible, and imagine the posture slowly unfolding eg with the mind imagine the arm lifting from the side of the body. Encourage them to think through the alignment from the toes to the head.

As meditation improves Yoga Nidra focusing on the limb(s) that have been affected and Prana Vidya imagining the prana entering the particular limbs affected.

After the yoga, get them to visualize the process of going into as many times as possible – they might do this while they are lying in bed at night.

**Strength**

Strength-building in stroke recovery is essential, especially where paralysis was involved. The affected as well as the unaffected areas benefit from strength building. In the initial stages the unaffected side can help with compensation of the weakened side and help with assistance of mobility of the weakened side.

From a study contacted in 2009, Jocelyn E. Harris stated: ‘There is evidence that strength training can improve upper-limb strength and function without increasing tone or pain in individuals with stroke.’

And in a study for The New Zealand Journal of Physiotherapy showed that ‘The research evidence indicates that strength training increases strength and has potential to improve function in people with stroke.’

**Flexibility**

Posture often suffers in a person recovering from a stroke. Extension poses for affected areas are most successful when keeping movement to one plane at a time and flow in and out
rather than holding for extended periods. This helps reduce spasticity (involuntary muscle contraction).

**Balance**

Balance poses, especially if paralysis was involved, should include props for support. Walking meditation alongside a wall is an example of a focused, supported movement that includes body awareness and balance practice.

Stroke patients will often topple over and other injuries may occur as a result. Therefore it is important that they learn to build confidence in very basic standing postures.

**Lifestyle change**

Within the therapy, the yoga teacher can help the patient to understand the benefits of lifestyle changes. Eating healthier, losing or managing weight, reducing salt, saturated fat or more regular physical activity are to be encouraged. Healthy eating habits will help with lowering cholesterol levels. For instance, according to the Lahey Hospital and Medical Center, a study of more than 2,500 people who drank diet soda daily showed they had a 61 percent increased risk of cardiovascular problems compared to those who drank no soda.

Through all the yoga techniques above including pranayama and meditation, patients will develop a natural mindfulness towards food so that the senses do not become the motivating influence to eating. Through this, they will become more able to quit smoking or any other addiction associated with their stroke.

As the stroke patients practices yoga for longer, we should help the patient to let go of the past ad the worries about the future. Right HERE, right NOW, is where life happens. You miss out on life if the here & now, the present moment, is consumed with regrets of the past or worries of the future.

**Precautions and teaching suggestions**

**Don’t push to hard**

As with all yoga practitioners a stroke patient should not push their body beyond its limits. They should not stretch or bend to the point at which your muscles hurt, or you may injure yourself.
Gradual start

Frustration can easily set in for a stroke patient because the poor brain/body connection and therefore it is important to build confidence in the initial stages. Asanas such as Savansana (if they can get the floor) or seated poses in a chair may be the first steps of a long journey. Tadasana may be even difficult for some. Focus on floor stretches, meditation and breathing exercises.

Inversions

Students who have had a stroke should avoid inversions, which cause the blood to flow to the brain. Inversions can result in dizziness or fainting. In patients who already have a disrupted equilibrium, these poses should be avoided. Common inversions to avoid include Adho Mukha Svanasana, Uttansana, Halasana, Savangasana, etc.

Neck Twists and movement

It is best to avoid too much movement of the neck as this can cut off supply of blood to the head. When certain asanas require this, then, get them to face forward or keep their head in a neutral comfortable position.

Falling

Postures that require balance can be extremely difficult for stroke patients. Use the wall or a sturdy chair for additional support for standing postures or pillow/block for seated postures. Some patients may require to do postures seated in a chair initially.

Be adaptable

You will have to adapt the practice each time so according to their abilities, the nature of paralysis and how they are feeling on a particular day.

Teacher assistance
The teacher should always assist and be at hand in case the patient topples. There must be support at hand all the time.

Class Schedule

Each stroke patient will come with completely different needs depending on how the stroke affected their body and the previous therapies they would have received post the stroke. It is therefore important to tailor the programme to their needs. I have therefore divided the programme into various modules. Depending on the development, exercises can be omitted or added from the next module. However, I would recommend doing the first therapy session so that you can, as a teacher build up a profile of the person. Also it is important for the teacher to be very gentle in the initial stages as stroke patients will naturally tense up if there is any fear of falling or frustration. It is important the stroke patient builds confidence with the teacher.

Module 1

1. Savasana – focusing on breathing. Initially, they just mindfully focus on their breath moving in and out through their nose. The patient should be encouraged to breath deeper and prolonged. In more advanced classes you can work on full yogic breathing.

2. Joint movements (Depending on the balance, these can be done standing (near a wall), on a chair or in Danasana (with back next to the wall). You can include the following:

   - Toes movement
   - Ankle rotation
   - Knee rotation (for seated and standing)
   - Waist rotation (for standing only)
   - Finger movement
   - Wrist rotation
   - Elbow movement
   - Shoulder rotation
   - Neck movement (very gentle as strong neck movements can restrict blood to the brain – avoid up and down movements.)
   - Moving from Tadasana into Shitali tadasana (only if standing)
In the initial stages the teacher may actually have to help the rotation of the affected limb(s) to get the undamaged part of the brain to start to take control of the movement.

3. Tadasasa (if they are able to stand without falling, Shitali Tadasana (if there are standing issues), Dandasana (if find these two are too difficult at this stage. The wall can be used.)

4. Mindful walking (the patient walks across the room very slowing, placing heal first then lifting off from the toe, with the full foot and balance on the floor at one stage. This is done with the assistance of the teacher.)

5. Pranayama – Nadi Shodhana

Can be done seated in a chair or against the wall in Dandasana.

(As there will be an imbalance between right and left side after a stroke, pranayama is of great benefit. If one of their arms is not functioning properly, they can use the other hand to practice the nasaki mudra. Otherwise the can mindfuly imagine the air inhaling and exhaling through left and right nostrils. Keep it gentle and rhythmical. Keep it based on their ability – it may be very very basic with simple visualization.

Very important: No kumbhaka as this is dangerous for a stoke patient)

6. Meditation

Bring breath back to normal and first week just focus on the breath in and out and keep the flow as natural as possible and to get them back to being calm and relaxed.

7. Chanting

End with chanting A-U-M as follows:

A-kāra (9 times) Focus on the lower part of the body – hips to toes. Feel the vibration.

U-kāra (9 times) Focus on the middle – shoulders to stomach. Feel the vibration

MA-kāra (9 times) Focus on the neck and head. Feel the vibration when chanting.

Then A-U-M is chanting from the toes through to the head 9 times.
This exercise can be practised three times a day. Chanting is good for stroke patients as some of the speech function may be lost due to paralysis, and increases awareness in the areas of lost functionality.

Module 2

1. Savasana – focusing on full yogic breathing

2. Joint movements as before, adding more if possible.

3. Therapy series.

   - Hands in and out breathing (feet can be apart if balance is a problem or chair/Dandasana as before)
   - Vagra Swasa - Tiger breathing (only if they are able to get to the floor)
   - Shashankasana
   - Makarasana
   - Setu Bhandasa breathing (depending on ability it can be just a contraction of the buttocks)
   - Pavanamutasana Kriya breathing (for the weak side, gentle assistance will have to be given to the leg into the chest.)
   - Jatara Parivartanasana (Again assistance can be given to get the body to roll to each side)

4. Savasana

5. Pranayama – Kapalabhati

Can be done in a chair, back against wall in Dandasana or in Savasana.

5. Meditation

Yoga Nidra: Focus on the affect limbs during mediation this week bringing the consciousness and prana into the specific area. If for instance the left side is affected, they focus their attention on that area by breathing in through the finger tips and out through the feet. The need to imagine the prana flowing in through this region.

Depending of the severity of the stroke, Hridaya Mudra may be used to calm and focus the mind.
6. Chanting

SO-HAM can be chanted externally and then internally to increase meditative awareness.

Following weeks

A combination of the following can be used depending on the development and gradually add the more challenging asanas:

1. Bhujanasana breathing
2. Shalabasana breathing (Eka Pada)
3. Urdhva Hasta Dandasana
4. Paschimottananasana
5. Baddha Konasana
6. Rocking (good for stretching out the spine and releasing tension)
7. Simhagarjanasana (good for voice and tongue development)
8. Adha kati chakrasana (this lengthening of the side body opens the intercostals and encourages lateral movement - flexibility.)
9. Utthita Hasta Padasana (arm can touch wall)
10. Utthita Parsva Padasana
11. Verabhadrasana A & B (the two previous postures will give you a guide weather they are ready for Verabhadrasana which is good pose for balance and strength as their confidence develops. A chair or assistance the teacher can help to build confidence.)
12. Tadasana and Parvatansana (against a wall with feet apart if necessary)
13. Utkatasana
14. Upavishta Konasana
15. Trikonasana (performed near a wall)
16. Twists such as the basic Marichyasana C and Jataraparivartanasana (twists help balance the energy flow in the spine with necessary modifications.)

Pranayama
Nadi shodana (great for balancing left and right sides – Ida and Pingala)

Brahmari

Shitali (beautiful cooling breath)

**Mudras**

Yoni Mudra and Bhairavamudra (good for left and right hemispheres of the brain)

Hridaya Mudra (exceptionally good for the heart and ischemic heart disease. Increased heart functionality will help with even blood flow)

Shambhavi Mudra (to calm the mind)

Aswini Mudra (sometimes people who have a stroke have problems with their bowel control. Practising this mudra will help with strengthening this area.

Vajoroli/Sahajoli Mudra (This helps the uro-genital system and helps with incontinence in this area which many who have a stroke may have problems with.)

Mula Bandha (is fantastic to start practising lightly throughout the practice)

**Concluding thoughts**

In a case history of a particular patient being treated for a stroke, Dr. Swami Shankardevananda Saraswati state the following: “Initially a program of deep relaxation and simple asanas was commenced. After three days she noticed immediate improvement, especially from the deep relaxation. This allowed her to gain left sided body perception. However, this image was like one reflected from a mirror. Using asanas such as pawanmuktasana, shakti bandhas and gentle pranayama she has now regained real feeling in her left little toe and left buttock.”
Jacqueline Boychuk is a passionate yoga teacher from the Niagara area. Despite the rough road, she has overcome her limitations from a stroke with her love of yoga and belief that her willpower would see her through.

She says: ‘I am happy to say I HAVE MY LIFE BACK! I am teaching yoga again and I am so grateful.

My recovery took over 3 months. I was told with the severity of my stroke, where I was in June to where I am now is remarkable. My physiotherapist and Dr’s attribute my recovery, in large part, to my years of yoga practice.

I still have issues such as fatigue and weakness on my right side. But they are manageable. And isn’t that what life is about?

Managing life and your energies so you can live fully in the PRESENT MOMENT.’
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