

sleep pattern, menstrual history in women, etc.,. Observe the talk, deglutition, protrusion of the tongue etc.,.

Analysis of the *manomayam* (psychological body) is of paramount importance. We could see in the society, many people, inspite of their severe disabilities, they are determined to prove their worth and work hard and succeed in their attempts. We can also see a few people on the contrary, succumb to their problems. Girls, during their late teens are highly susceptible for psychological and emotional problems.

The way they talk and communicate their requirements, if they are able to, will tell you about their mental state. Specific attention to be given to their ability to be attentive, understanding capability, retaining capacity, coherence in analysing and verbalisation etc.,. Many of the differently abled persons may have psychological disturbances as a component of their ailment. Some others develop this psychological problems because of their disabilities. Yoga therapists should specifically look for any psychological disturbances in the students and the degree of affliction also. If we are able to ascertain this feature, we will be able institute appropriate remedial measures.

I am fully aware of the fact that I have not discussed regarding the principles of application of yoga therapy to any differently abled individual in particular. But exposure to these general principles will give the therapists an idea about what should not be missed while observing any student who is differently abled.

In the following chapter, we will take up a few ailments and study deeply how yoga therapy is applicable to such individuals.

## ***Part 2***

### ***Down's syndrome***

Down's syndrome is a genetic disorder caused when an abnormal cell division resulting in extra genetic material from chromosome 21.

Down's syndrome produces the following effects on the afflicted individuals:

- a distinct facial appearance,
- intellectual disability and
- developmental delays.
- It may be also be associated with thyroid or heart disease.

The management of Down's syndrome requires early intervention programmes with a team of therapists and special educators.

The symptoms of Down syndrome vary from person to person, and people with Down syndrome may develop different problems at different times of their lives.

## Therapeutic yoga application for individuals afflicted with Down's syndrome

### *One: Early intervention*

One of the classical features of this syndrome is **poor muscle tone**. This reduced muscle tone will retard all the developmental milestones of the child - slow to learn to turn over, sit, stand, and walk. Even though, they are late, they will eventually achieve many of these milestones. Slowly, they learn to participate in physical exercise activities like any other children. They enjoy playing with groups of children.

### **Focus: to improve the muscle tone**

When parents come to yoga therapists with small children afflicted with Down's syndrome during their developmental stage, the focus of yoga therapy is to teach certain techniques to the parents. The focus of therapy should be to improve the tone of the muscles. Tone of the muscles can be improved by carrying some weights. The parents should be suggested to play with the child by lifting and throwing some innocuous objects. The weight of the objects should be gradually increased so that the effects on the muscles will also improve. Hanging down a bar, swinging on a bar, climbing on a stairs like movements will also work on the arm muscles. To increase the tone of the leg muscles, *utkatāsana*, *ardha utkatāsana*, *ardha uttanāsana*, *vīrabhadrāsana* like movements can be selected. Jumping and dancing and balancing like activities should be included.

For such young kids, the teaching methodology is more important than the actual techniques. Many possible variations and incorporation of different improvisations should be taught to the parents. The parents should teach those techniques like a game or like a fun play. A group class like situation with other children is ideal. These children enjoy playing with other children and by doing these activities, the tone of their muscles imperceptibly will increase.

### **Vocal training**

Another important component of this syndrome is **delayed language and speech development**. To improve speech and language functions, yoga therapists should introduce appropriate chants along with the physical movements. In the beginning it is good to introduce mono syllables with opening up of the mouth, like mā, māmā, māmāmā. Later aspiration sounds like hā, hī, hū are taught. Much later reverberate sounds like rā, rī, rū are given. Once the students are ready, we can give these sounds in many combinations.

### *Two: Distinct facial appearance*

There are certain facial appearances by which Down's syndrome children can be easily identified. Some of the features are : Short neck, with excess skin at the back of the neck, flattened facial profile and nose, small head, ears, and mouth, upward slanting eyes, etc,. These facial features are so specific to this syndrome, that all affected children look almost similar. These features are genetically determined and therefore, we cannot change them through any means. But, therapeutic yoga practices, on account of their action on the *vāyu-s*, has a possibility to arrest the progression of these features in the same direction and may work in the opposite direction of the syndrome.

If we look at the features, they are all mostly on the face. Other distinct features are in the arms and hands in the form of wide, short hands with short fingers. According to yoga therapy, the *vāyu* responsible for all the facial functions and therefore for the form (form is nothing but the shadow of the function) is *Udāna vāyu*. By appropriately improving the functionality of the *Udāna vāyu*, there is a chance to work in the opposite direction of the evolution of the syndrome.

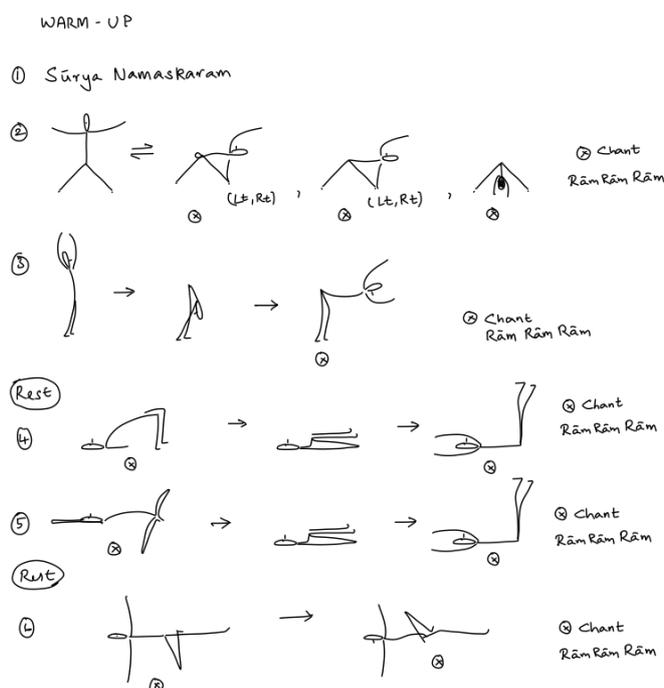
The Down's syndrome children are by nature very flexible, energetic and they love to play with other children in groups. We can make use of these attitudes and evolve a practice with a focus to improve the functional efficiency of *Udāna vāyu*. We should guard against improving the flexibility further. Therefore, the techniques should incorporate tools like stay and chant in the posture.

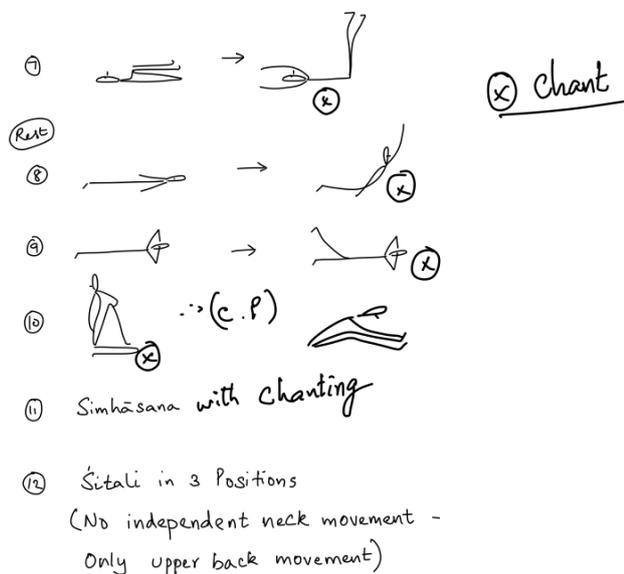
## Principles

Yoga therapists know very well that to activate the *Udāna vāyu*, all *āsana* technique that bring the effect of moving the neck upwards to the head are good. We can select some simple techniques and modify them appropriately to bring similar effects. Long inhalation and hold after inhalation should be combined along with these *āsana* techniques. Appropriate chanting should also be combined.

## Techniques

The following is an illustrative course to demonstrate how the principles can be translated into techniques. One should never forget that the following is **not** a typical course for any particular student. We should only understand the principles and the methodology of transforming the principles into practice. The actual course should be based on our study of our students in front, and each technique should be modified to suit the students who have come to yoga therapy presently.





### Three: Intellectual Symptoms

Most children with Down syndrome develop the communication skills they need. Though it might take longer for them to do so compared with other children.

There will be mild to moderate level impairment in cognitive function, thinking and learning. Short attention span, poor judgment, slow learning, impulsive behaviour are other common behavioural problems associated with this syndrome.

### Principles

To improve attention to the action the student is presently doing **chanting** is a good tool. Better still is the combination of physical movements along with chanting. To bring more attention the chanting should be modified in the pitch, tone and strength. Chant also can be modified in many ways to bring specific effects on different locations. (These techniques are elaborately discussed in my book '*MANTRA YOGA*')

Many of the stories which are depicting the characters like Krishna, Hanuman, Ganeśa, or any other such lofty characters have an everlasting impression on the tender children's mind. Children by nature are fond of hearing such stories. If the parents are taught to tell their children these stories, they have a potency to remodel their psychological components and to improve their behaviour problems. They tend to nourish these characters as their role models, tend to imitate them in their lives, especially when they are exposed to them during their tender age.

**Four: Neck**

One of the important features of this syndrome is shorter neck with excessive skin folds at the back of the neck. The misalignment in the first two cervical vertebrae is the cause for this feature. It causes overextension of the neck. This overextension may pose a serious injury to the spinal cord in some individuals.

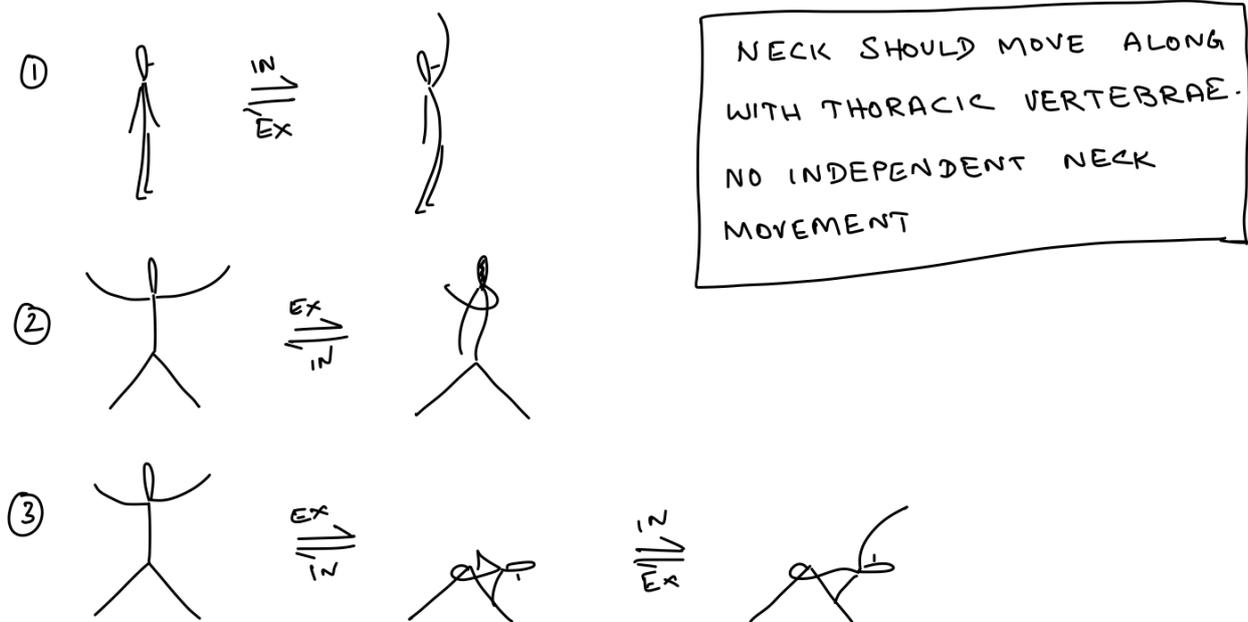
**Principles**

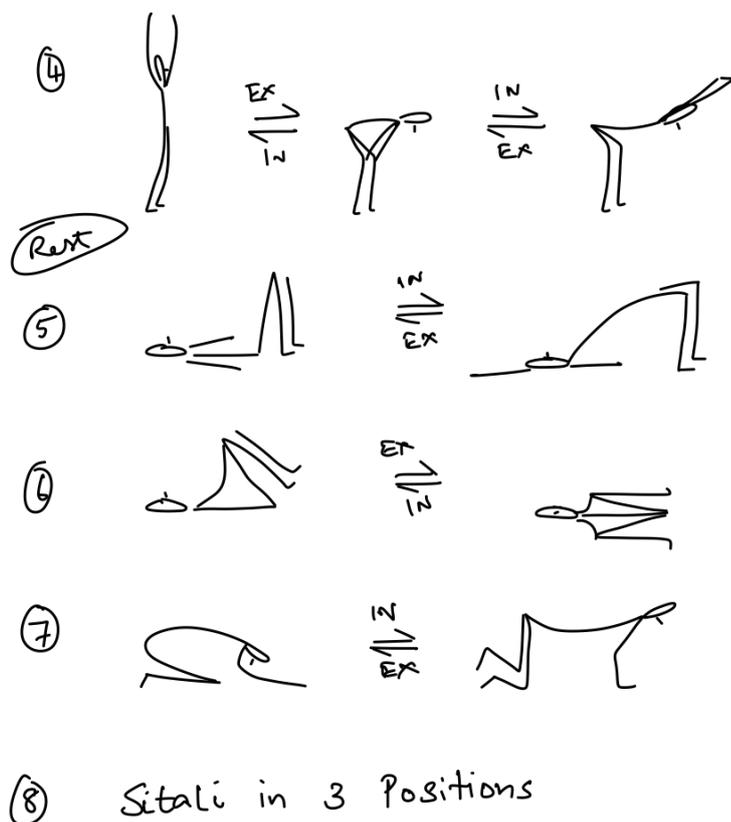
Since the essential pathology is overextension of the cervical vertebrae, our yoga techniques should not further aggravate this extension. All our techniques should bring the effect of cervical movements along with the movements of the thoracic vertebrae. Independent neck movements should be avoided. Especially the overextension of neck in the form of ustrāsana, catuspādapītham, pūrvatānāsana, matsyāsana like movements are contraindicated.

On the other hand, we need to maintain and to improve the functional efficiency of the neck region. Otherwise, some individuals are prone to develop sometimes a serious neck problems. To avoid this future complications, yoga therapists should incorporate certain techniques in their everyday practice.

An illustration of a few techniques are given below.

**Techniques**





### Five: Obesity and sleep apnoea

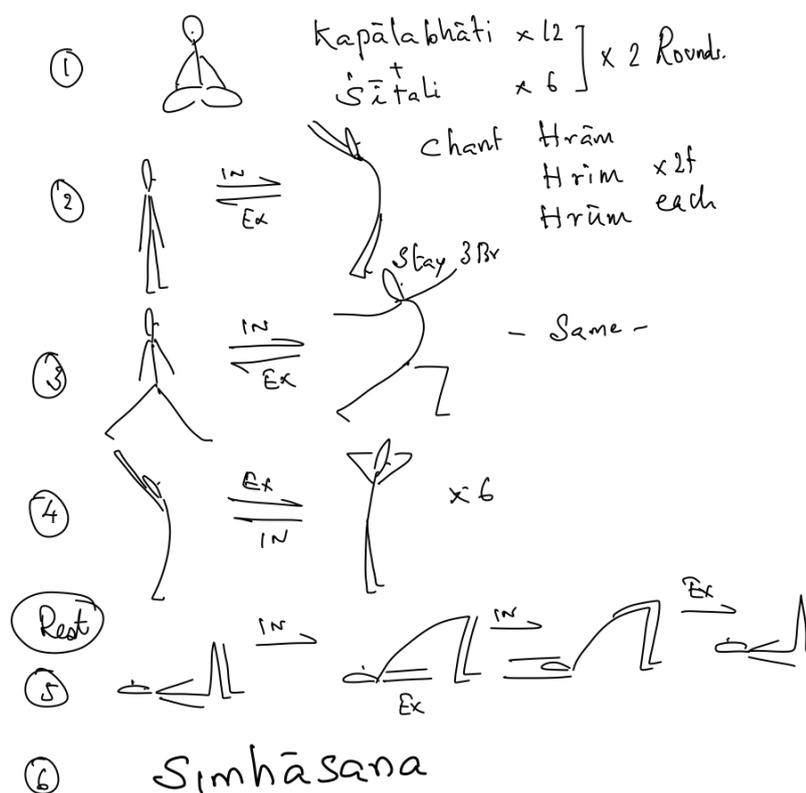
- People with Down syndrome have a greater tendency to be obese compared with the general population.
- Because of soft tissue and skeletal changes that lead to the obstruction of their airways, children and adults with Down syndrome are at greater risk of obstructive sleep apnea.

### Principles

Regular practice of the *Vinyāsa* krama of techniques, that are usually taught to children, are good enough to take care of the overweight. Along with yoga practice, such children should be encouraged to take up other physical activities like playing any sports, swimming, dancing and gymnasium.

Regarding sleep apnea condition, yoga therapists already know that they need to improve the tone of the pharyngeal muscles. We saw in our third book on principles and practice yoga therapy that overextension of the neck and chanting certain aspirating (hā, hī, hū) and reverberating (rā, rī, rū) sounds are effective. With Down's syndrome individuals, we know hyper extension of neck is contraindicated. Therefore, we need to improve the tone of the pharyngeal muscles without hyperextending the neck. Through appropriate modifications, we should be able to achieve this goal.

### Techniques



### ***Six: Associated Conditions and Disorders***

People with Down syndrome are at increased risk for a range of other health conditions, including autism spectrum disorders, problems with hormones and glands, hearing loss, vision problems, and heart abnormalities. Many also develop dementia and Alzheimer's diseases around the age of 50.

Yoga therapists should be open to the possibilities of such associated conditions and through appropriate yoga techniques, they should do something to avoid such conditions.

Down's syndrome is not a life endangering problem. Many individuals survive upto around 60 years. With regular yoga practice and through prevention of many associated comorbidity condition many such individuals can lead a good life upto around 70 years also.

### **Prevention**

Yoga therapists also should know the available ways of prevention. This understanding will enable them to recommend proper steps to be taken as a precautionary measure.

Maternal age at the time of conception is an important factor for the development of this problem. More the age, more are the chances of Down's syndrome child birth. So, early conception is a good suggestion. Secondly, certain medical investigations will tell us the possibility of such foetus in gestation, well early in pregnancy. This provides a choice for the expectant parents whether to continue or to terminate the pregnancy.