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## **SPASMODIC TORTICOLLIS OR CERVICAL DYSTONIA**

GUIDE FOR FUNCTIONAL RETRAINING  
PRODUCED BY L'HOPITAL SAINTE-ANNE  
CENTRE RAYMOND GARCIN

This guide on retraining was produced for the benefit of the Ligue Française contre la Dystonie

Translator's note: This translation covers the exercise section (pp. 9–20) of the original pamphlet which is available online at <http://perso.orange.fr/jeanpierre.gadbois/fasciculekinebleton.pdf>

## **WHAT ARE THE GOALS OF RETRAINING OF ST?**

You have one kind of ST. The retraining for it is specific. The retraining is different from that of other forms of torticollis, in particular, those whose cause has its origin in the vertebrae.

In your case the exercises presented here have the following goals

- to maintain the flexibility of the spinal column and the cervical muscles.
- to diminish the intensity of the spasms
- to achieve the voluntary control, then the automatic control of the correct head position
- and, if you have pain, to alleviate the pain

Which requires:

1 – learning to contract the muscles that correct your ST.

It is up to your doctor or physical therapist to tell you which muscles you must strengthen in order to alleviate your ST by marking the list below (circle RIGHT or LEFT):

the RIGHT or LEFT sternocleidomastoid muscle (SCM)

the RIGHT or LEFT splenius capitis muscle (SC)

the RIGHT or LEFT trapezius muscle

other muscles

2 – repeating the contraction of these muscles

3 – learning how to hold your head in a straight and stable position voluntarily

4 – to succeed in maintaining a correct head position in everyday activities

## **WHAT ARE THE EFFECTIVE TECHNIQUES IN RETRAINING OF ST?**

- manual exercises to relax the cervical area
- active corrective exercises monitored by a physical therapist and repeated at home
- electrical stimulation of the correcting muscles
- controlling spasms using biofeedback machines
- retraining in a swimming pool
- relaxation
- when there is pain. using ultra-sound, heating pads

### **ARE ALL RETRAINING TECHNIQUES RECOMMENDED FOR THE TREATMENT OF ST?**

The following techniques are not recommended in the treatment of your dystonia. Their sphere of use is quite different. In your case they are ineffective or even harmful.

Among the techniques that should be avoided are the following:

- massage of the cervical region , especially the spasmodic muscles
- mechanical traction of the cervical region
- manipulation of the vertebrae
- wearing a cervical collar
- certain analgesic physical therapies such as infra-red or lasers

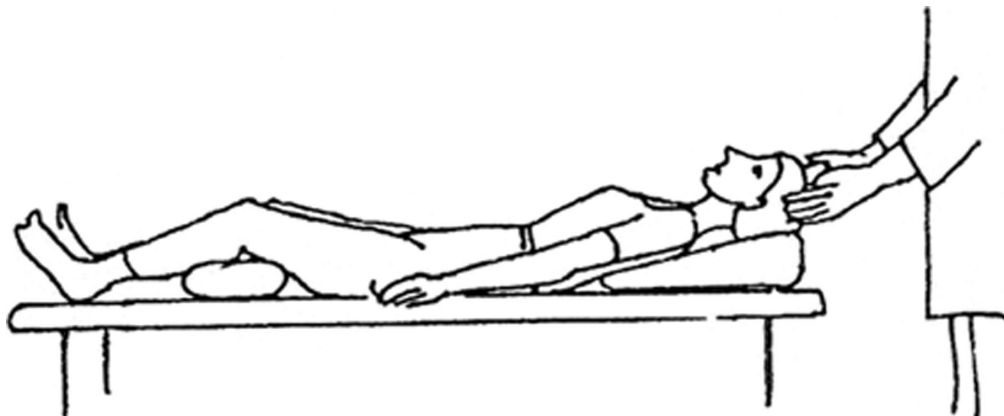
### **WHAT CAN PHYSICAL THERAPY TREATMENT DO FOR YOU?**

The physical therapy treatment of ST is long, it often lasts many months, it must be regular—one or two times per week.

During the sessions, your physical therapist seeks:

- to maintain the range of the different movements of the cervical column by using gentle, manual positioning
- to stretch each of the muscles causing ST
- to stimulate and guide the contraction of the muscles that correct the position of the head
- to relax localized muscular tension using muscle relaxing rolling movements and gentle manual traction of the cervical region
- to correct compensatory curvatures of the vertebrae that may exist at the thoracic or lumbar level
- to check the perfect execution of the exercises that you practice at home and then modify the program according to the development of your ST

The appropriate position for relaxation of the muscles during retraining sessions (with the exception of certain types of retrocollis).



## EXERCISES TO PRACTICE AT HOME

How to choose the exercises appropriate for your ST.

With the supervision of your doctor or physical therapist, you should indicate for each exercise if the movement is recommended or not recommended for your type of torticollis.

Example of what is not recommended — if the exercise is not appropriate for your case

If the movement is recommended for you, you should note which side it should be performed on: for example, if you should turn your head to the right, circle RIGHT, if you should turn your head to the left, circle LEFT

N.B.: Each case of ST is individual. There may be local or generalized conditions that counter indicate doing one or more of the following exercises. The medical team in charge of the treatment of your ST is there to advise you.

## HOW TO DO THESE EXERCISES AT HOME

*The effectiveness of retraining is linked:*

on the one hand, to the **quality** of execution of the exercises. This requires that your physical therapist should monitor each of the exercises that are to be performed at home.

And on the other, the **quantity** of work. The more that is demanded of the correcting muscles, the greater the hope that they will function normally again

You must absolutely follow a certain number of recommendations:

The exercises must be done several times a day. Each one of them is to be repeated for 10 to 15 minutes.

They should be done slowly. The correcting positions should be held for 6 to 8 seconds. Between each repetition there must be a period of rest as least as long as the period of exercise.

It is useful to stand in front of a mirror in order to obtain the best possible correction.

Be careful: the cervical region is a fragile zone, don't be rough with it.

Any exercise that aggravates the spasms or triggers pain while it is being done or in the minutes following is either done improperly or is counter indicated. It should be corrected (and done properly) or abandoned. Point it out to your physical therapist.

At no time should an exercise reproduce the posture of ST.

The exercises in this brochure are given as examples. With the consent of your physical therapist, you can substitute others that are more appropriate for you case.

## SEATED EXERCISES

### 1 – ROTATIONAL TORTICOLLIS

**Reminder: none of the following exercises should lead you to turn your head towards the side of your ST.** The group of exercises in this chapter has as a goal the execution of a rotation of the head in the opposite direction of where it turns spontaneously. If your ST is to the right, the rotation is to be made to the left. If your ST is to the left, the rotation is to be made to the right.

### Rotation with hands behind your head

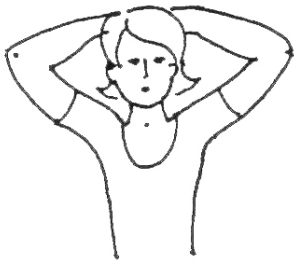
This exercise consists of turning your head completely in the direction opposite your ST, fingers crossed behind your head at the occipital bone. Throughout the duration of this exercise, the bust and arms remain immobile. Only your head turns.

Exercise: Recommended

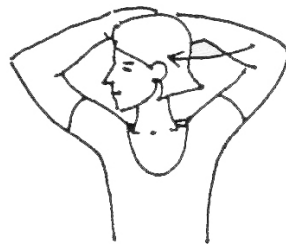
Not recommended

Rotation to be made to the: Right

Left



Resting position



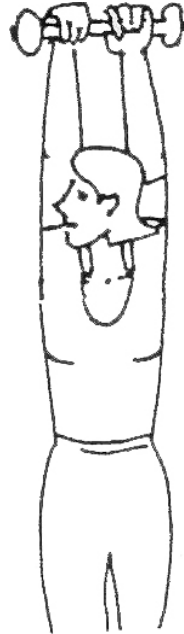
Execution of the exercise

### Cervical rotation with extension

This exercise consists of raising your arms above your head, your hands holding a light weight of about 2 pounds (1kg) while at the same time turning your head in the in the correcting direction. The goal is the extension of the whole spinal column, accompanied by a correction of ST.



Resting position



Execution of the exercise

Exercise: Recommended

Not recommended

Rotation to be made to the: Right

Left

### **Cervical rotation with shoulders in a fixed position**

This exercise consists of moving your head into the correcting position while at the same time keeping the bust straight and the shoulders lowered by holding a stick in your hands.

Exercise: Recommended

Not recommended

Rotation to be made to the: Right

Left



Resting position



Execution of the exercise

### **Cervical rotation and correction of the asymmetry of the shoulders**

This exercise consists of correcting the discrepancy in the height of the shoulders, while at the same time working against the ST. To do this, you raise your arm on the side of your lower shoulder and you lower the other arm. During this movement of the arms, your head turns to the side that corrects the ST. This exercise is more effective if the arms are rotated inward.

Exercise: Recommended

Not recommended

Rotation to be made to the: Right

Left

Raising the: Right arm

Left arm

(There are no diagrams for this exercise.)

### Exercise for maintaining a static, stable head position

If your ST is accompanied by a head tremor, train yourself to keep it immobile even if it is only for a few seconds. In order to do this, you can use the sensory trick that stabilizes your ST. When your head stops moving, remove your hand and then maintain this immobility for as long as possible. In order to achieve better control of the spasm you can perform this exercise in front of a mirror.

Exercise: Recommended

Not recommended



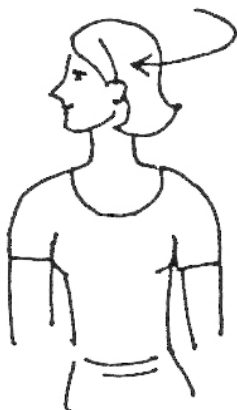
N.B. It is possible to use a biofeedback machine in order to learn how to conquer the spasm. As you improve, you can eliminate the help of your hand or the biofeedback machine and strive to maintain the stability of your head at all times.

### 2. – LATERALCOLLIS (TILTS)

Caution: do not confuse rotation with a tilt. It is not uncommon that ST involves a rotation to one side and a tilt to the other

Rotation is responsible for torticollis

Tilting is responsible for lateralcollis



Right rotation



Left tilt



Your type of ST requires that the following exercises be performed with a tilt to the RIGHT, to the LEFT (circle one)

### Relaxing a lateral tilt

This exercise has as its goal the stretching the cervical muscles that determine the pathological tilted posture. It consists of bringing the head into a correcting position with the help of one's hand. In order to avoid compensating by raising your shoulder, keep the opposite hand on the crosspiece of the chair. Important: cervical traction must be done slowly without jerks or sudden movements.



Resting position



Execution of the exercise

### Active correction of a lateral tilt

The goal of this exercise is to strengthen the muscles that correct the pathological cervical tilt. It consists of tilting the head towards the correct position while at the same time reversing the asymmetry in the height of the shoulders. To do this, raise the arm on the side of your lower shoulder and lower the other arm. The exercise is more effective if the arms are rotated inward.

Exercise: Recommended

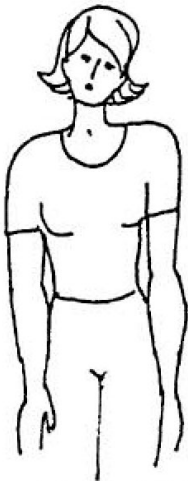
Not recommended

Head should tilt to the: Right

Left

Raised arm: Right

Left



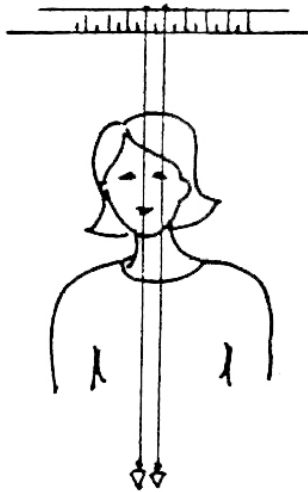
Resting position



Execution of the exercise

### 3. – HORIZONTAL DISPLACEMENTS OF THE HEAD

The disorder frequently causes a displacement of the axis of symmetry of the head compared to the axis of symmetry of the body.

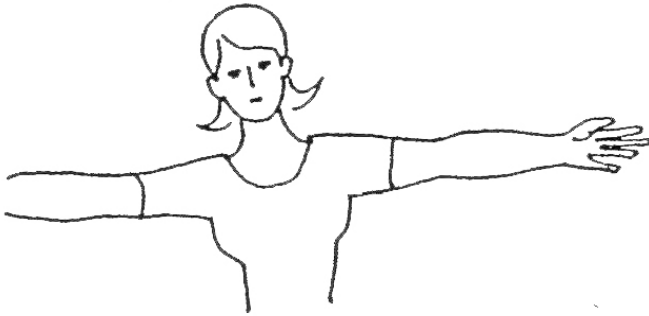


The displacement of the head can be measured with a ruler and two strings weighted with lead. One string is placed along the axis of symmetry of the face, the other along the axis of symmetry of the body. Then it is only a question of reading on the ruler the number of inches or centimeters of displacement.

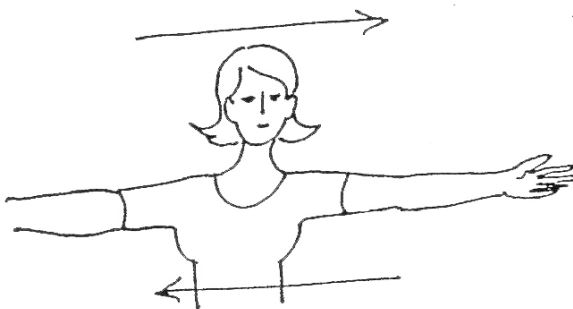
The purpose of this exercise is to move the head into the position opposite that of the displacement. To do this, one need only move the head and body in opposite directions. This movement is easier to do when the arms are stretched out horizontally. When you have improved, you can do this exercise with your arms at your sides. In order to achieve better control of the correction, you can do this exercise in front of a mirror.

Exercise: Recommended

Not recommended



Resting position



Execution of the exercise

## EXERCISES IN A LYING POSITION

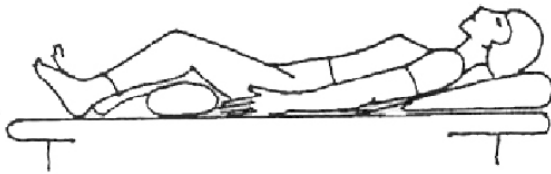
### 1. – ON YOUR BACK

#### Direct flexion of the neck

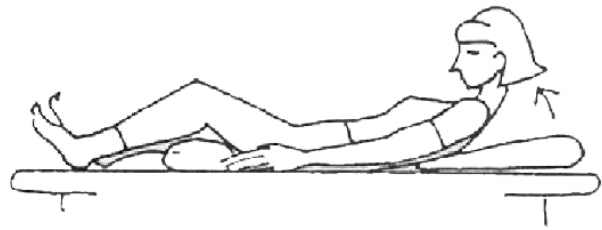
The goal of this exercise is to correct **retrocollis**. It consists of bring the chin towards the sternum, by rounding the cervical column and while avoiding any rotation of the head.

Exercise: Recommended

Not recommended



Resting position



Execution of the exercise

#### Flexion with cervical rotation

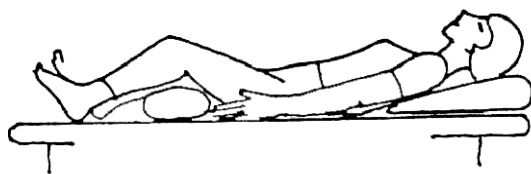
The goal of this exercise is to strengthen the sternocleidomastoid muscle (SCM) that corrects your ST. It consists of bringing the chin towards the sternum as in the previous exercise, then turning your head in the direction away from your ST.

Exercise: Recommended

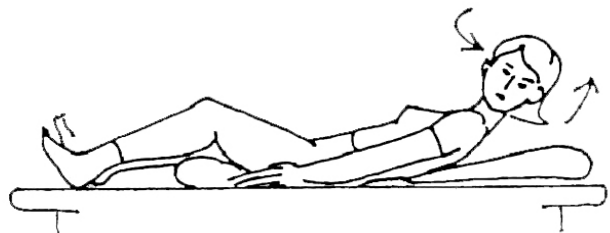
Not recommended

Rotation to the: Right

Left



Resting position



Execution of the exercise

N.B. This exercise can be done with the help of an electrical muscle stimulating machine with the electrodes placed on the sternocleidomastoid muscle that corrects the ST. The sternocleidomastoid muscle causes a cervical rotation on the other side. Thus the right sternocleidomastoid causes the head to turn to the left. In your case it is the RIGHT / LEFT (circle one) sternocleidomastoid that must be stimulated. It is possible to rent the electrical stimulators.

## 2° – EXERCISES WHILE ON YOUR STOMACH

If pressing the back of your head against the bed increases the spasms, the corrective exercises should be done lying on your stomach.

### Cervical rotation

In a relaxed position, rest your head on the table, resting on the cheek turned in the opposite direction of your ST. In your case your face is turned to the: Right

Left

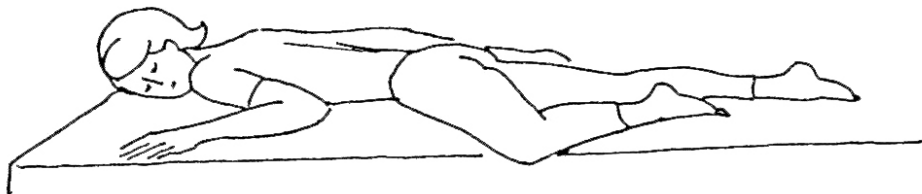
The arms are placed so that the one on the side with your face is bent and you can see your hand. The other arm is extended down along your body. To execute this exercise, you must raise your head from the bed and increase the correcting rotation of the neck

Exercise: Recommended

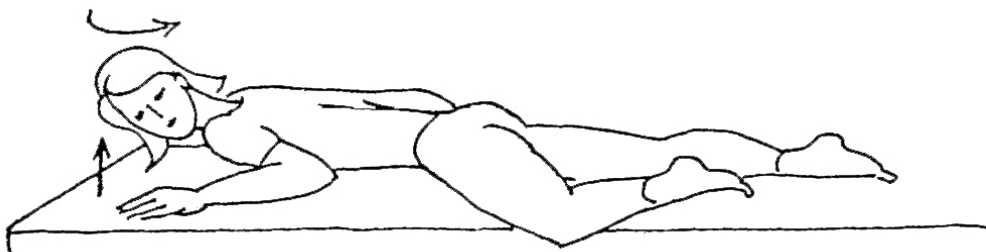
Not recommended

Rotation to the: Right

Left



Resting position



Execution of the exercise

N.B. This position is often good for going to sleep when cervical spasms disrupt the process of falling asleep.

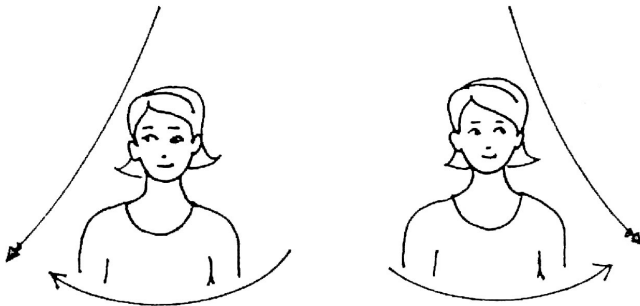
## COORDINATION EXERCISES

### 1. – COORDINATION OF THE EYES AND-NECK

The goal of this exercise is to keep the head stable and in a neutral position while at the same time moving the eyes. It consists of having your eyes follow a swinging object while avoiding any sign of ST.

Exercise: Recommended

Not recommended



### 2. – COORDINATION OF THE NECK AND SHOULDERS

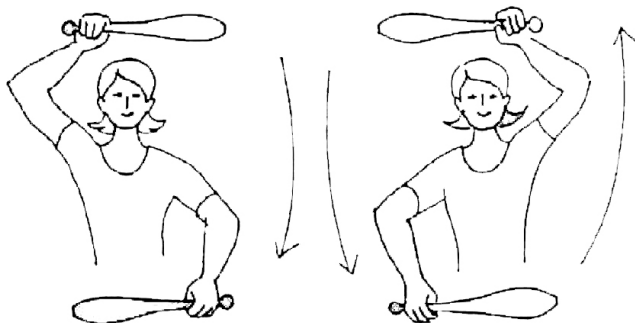
The goal of this exercise is to keep the head stable and in a neutral position, while at the same time moving your arms.

#### Exercise with clubs

Keeping the head stable and in a neutral position, alternately raise and lower your left and right hands holding gymnastic clubs

Exercise: Recommended

Not recommended

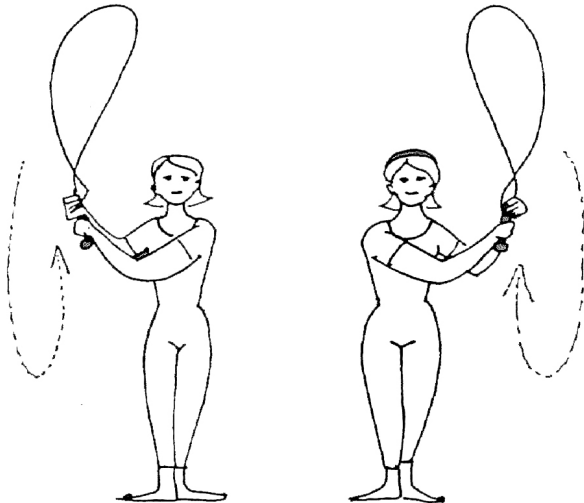


### **Exercise with a jump rope**

While the head is kept in a stable position, swing a jump rope to the right and left of the body.

Exercise: Recommended

Not recommended



### **3. – COORDINATION OF THE NECK AND THE REST OF THE BODY**

The goal of these exercises is to keep the head stable and in a neutral position while doing activities with the whole body.

#### **Exercise: marching in place**

While keeping the head stable and in a neutral position, march in place exaggerating the height of the knees and the arm swing.

#### **Exercise: walking**

Keep the head stable while walking. This exercise is easier to do while controlling the position of the head by looking in a mirror placed in front of you.

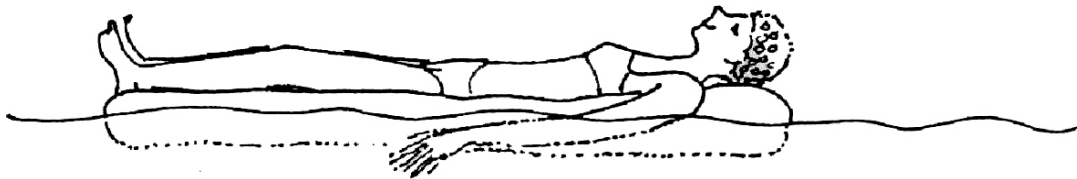
Caution: if the spasm reappears while walking, avoid holding your head with your hand, rather strive to maintain the correction using only the cervical muscles.



## WHAT ARE THE WAYS OF COMPLETING RETRAINING?

### 1. - *Exercises in a swimming pool*

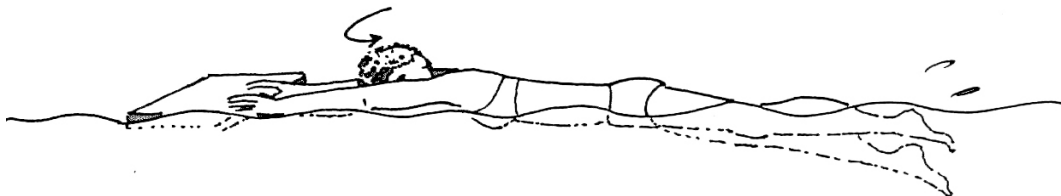
The benefits of retraining are increased by exercises done in water at about 95°F (33°C) which allows for relaxation of the muscles without making physical activity exhausting. After you have gotten settled comfortably on an air mattress, your physical therapist can do movements that correct the cervical spine, while benefiting from the relaxation caused by the warm water.



You can also do exercises by reversing the fixed points of the muscles. Thus, instead of correcting your head relative to your body, you correct your body relative to your head. For example, if you suffer from a right rotation, you keep your head in a fixed position and you strive to turn your bust to the right (which ends up being the same as keeping your bust in a fixed position and turning your head to the left). This exercise allows one to increase the control of the activity of the correcting muscles.

Take advantage of the pool for doing swimming exercises such as:

- swimming on your back corrects retrocollis
- the kicking of the crawl on your stomach, your arms stretched out holding a board, your head turned in the correcting position
- side stroke, provided you turn your head in the correcting position



Caution: if you have significant retrocollis, swimming on your stomach with strokes such as the breast stroke are not recommended, because they increase the curvature of the cervical spine.

## 2. – **Biofeedback**

Biofeedback consists of installing probes or electrodes around the neck of machines that register the muscular activity and then reproduce it in the form of an audible signal (like a series of beeps) or in a visual signal (such as the movement of a lighted pointer on a graduated scale).

These signals change according to the amount of contraction of the muscles. With this machine, you can learn to reinforce the activity of the sternocleidomastoid that corrects your ST and reduce the activity of the sternocleidomastoid that is responsible for the spasm.

## 3. – **Electrical muscle stimulators**

This consists of using machines that emit low frequency current that stimulates the contraction of the correcting muscles. The current is regulated in such a way that the period of contraction is about 6 to 8 seconds and the period of relaxation is approximately double that. The beginning and the end of the contraction happen progressively in order to avoid jerks. By repeating these stimulations 2 to 3 times, for 15 to 20 minutes per day, you strengthen the action of the correcting muscles.

Generally speaking, it is the sternocleidomastoid that corrects the rotation that one must stimulate. Thus, for a right, rotational torticollis, the stimulation is used on the right sternocleidomastoid.

N.B. Some biofeedback and electrical stimulation machines are portable and make possible home treatment. They can be rented or bought.

## **HOW TO ORGANISE ONE'S DAILY LIFE SO AS NOT TO AGGRAVATE ST**

### ***What one must not do:***

*You must keep yourself from:*

- adopting the posture of torticollis
- wearing a cervical collar
- holding your head with your hand
- carrying a shoulder strap bag on the shoulder of the side of your head rotation
- staying closed up at home
- giving up your social and professional activities.

N.B. Some forms of ST are aggravated by pressure on the back of the head. If this is true for you, it is best to avoid it.

***What one must do****At home you must:*

- devote at least a half hour each day to your exercises
- when you are seated, settle yourself comfortably in a chair, your head leaning on the back, arms resting on the armrests, keeping your head in the correct position when you watch TV or read the newspaper
- For sleeping, settle yourself as comfortably as possible and get rid of pillows. Torticollis disappears almost completely while you are sleeping.

However, if the spasms increase when you try to fall asleep, lie down on your stomach, your head turned in the correction direction (i.e. in the direction opposite your ST) in order to try to fall asleep.

*At work you must:*

- Arrange your work area so that you need to turn your head in the correcting position
- Try to place the ear piece of the telephone on the side opposite your ST.
- If your spasms get worse in public, do not hesitate to talk about your disorder. By dispelling the curiosity of others, you make relationships easier.
- Avoid staying in a fixed position in public. Activity, natural movement mask in part head jerks.
- Place your visitor on the side that will correct your torticollis.