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12/20/74

Mrs Ford / Dr L.

CARE OF THE BACK

*Miss
Mrs*



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INTRODUCTION

Strain or fatigue can produce pain in any joint or muscle. Rest or relaxation of that region results in relief from the strain. In most areas of the body, rest is a simple matter of not using the part, but in the spine, strain and fatigue can occur while "doing nothing," such as lying or sitting down. This is why the back has earned such a bad reputation with the patient and the doctor. In this manual the authors point out specific things done by the average person which result in fatigue and subsequent pain in the back or neck.

It is also pointed out how the ordinary painful low back due to postural strain can be relieved by simply observing Nature's laws of function of the spine. Relief depends upon following each recommendation carefully. It is quite important that each step be understood thoroughly. After reading this pamphlet and trying to follow all of the recommendations, ask your attending physician any questions which may arise.



It is true that most patients with back or neck pain drive themselves beyond their endurance until they suffer from general fatigue. Unfortunately, this general fatigue produces nervous energy and tension instead of making the subject sleepy. This nervous tension drives the patient on to greater endeavor, resulting in more fatigue, and the cycle continues with more pain as the result. Not only is it necessary to learn how to rest the spine, but the correction of this general fatigue is equally important. So long as pain in the spine exists, adequate rest is essential.

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FIG. 1. Normal back.



FIG. 2. Swayback (lordosis).



FIG. 3. Stoop (kyphosis) in upper back results in secondary sway (lordosis) in lower back.



FIG. 4. X-ray picture of a normal lower back.

FIG. 5. This drawing illustrates the mechanical problem of the spine. As you can see, blocks placed one directly upon the other are strong and will support a great weight. When in a curve, tense guy wires are necessary for them to carry the weight without falling.

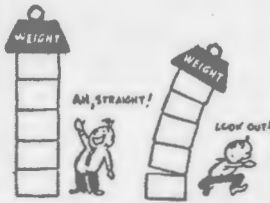


FIG. 6. X-ray picture of a severe swayback or lordosis. Note poor mechanical support.

PAIN IN THE LOWER BACK

Low back pain is a very common complaint and is due chiefly to the manner in which this area of the body is constructed. The spine must support the weight of the body, yet be able to bend or twist in any direction. Most of this motion occurs in the lower back and the neck. Also, the curve of the neck and the lower back is reversed, and this poor mechanical situation causes these two areas to be especially susceptible to strain, fatigue and pain. As an arm held out to the side too long becomes painful from fatigue, so the back becomes painful as it grows tired.



Some persons have more than the average degree of reversed curve in the lower back. This condition known as swayback (lordosis) is illustrated in Figures 2 and 3. A person with a sway back is unusually susceptible to strain or low back pain. A back of this type occasionally becomes severely disabled and is subject to an injury in which the cartilage cushion between the vertebrae becomes displaced ("ruptured disk"), causing a very painful catch in the lower back ("lumbago") or pain to radiate down the back of the leg ("sciatica"). Between attacks, the back may be chronically sore and stiff and is subject to numerous attacks of acute pain ("unstable lumbosacral joint"). The pain may be felt only in the back of the hip ("sacro-iliac") or may be referred into the tail bone ("coccygodynia"). Occasionally it is necessary to use surgery to treat backs of this type, but even with surgery it remains necessary to protect the back from strain. In most instances conservative management is effective in eliminating the painful back.

PAIN IN THE NECK

The neck is probably strained more frequently than the lower back. In addition to discomfort or "cricks" in the neck, headaches or dizziness may result when the neck is fatigued beyond its endurance (cervical tension syndrome). Pain may also be felt in the face, the scalp, the shoulder, the arm or the chest.

Involvement of the neck frequently indicates that there is an associated nervous tension which goes along with being too tired to the point of being keyed up instead of sleepy. Persons with this type of nervousness have to learn soon or late that there is a limit to their endurance and that if they go beyond a certain point of fatigue, these neck, head and arm reactions will take place.

Conscientious endeavor or an exaggerated sense of responsibility must be controlled. Life's situations provoking grief, resentment, guilt, anger or other emotional reactions may initiate or aggravate these nervous and muscular tension states.

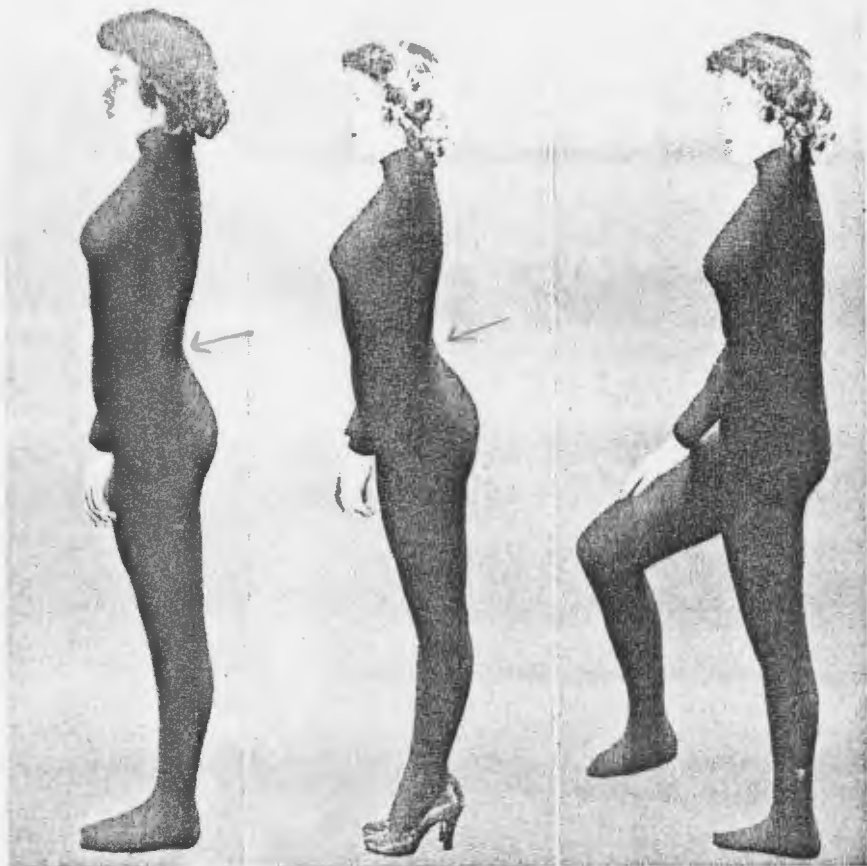


FIG. 7. Ordinary standing increases the swayback.

FIG. 8. High heels further increase sway in the back.

FIG. 9. Placing one foot on a stool flexes the hip and the knee, relieving swayback.

CONTRIBUTORY CAUSES OF THE PAINFUL SPINE

Unaccustomed use of the low back can also serve to bring about pain, as playing hopscotch for the first time can cause the legs to be sore and stiff for several days. It is not during the exercise that this soreness occurs but in the following several days. In addition to simple strain, fatigue or injuries may cause a spine to be painful.

Conditions such as arthritis or rheumatism can weaken and inflame the back structures. Likewise, a lack of calcium, proteins, vitamins and other essential nutrients may produce fatigability, rendering the back susceptible to strain. Infections, lack of activity (pregnancy, weight gain, abdominal surgery) or a

period of time in bed weaken the back structures, and strain may follow resumption of activities.

The disease that causes some aging persons to develop a stoop in their upper back (osteoporosis or porous bone) is one of the most frequently encountered conditions which allows a back to give way. The reversed curve in the lower back increases as the upper spine slumps forward. One of the chief causes of osteoporosis is the menopause. This accounts for the number of women whose back trouble starts or becomes worse after the menopause. It also accounts for the fact that over 80 per cent of the broken hips and stooped backs in the aging occur in women.

TREATMENT

To correct a situation of this nature, it is first necessary to correct the underlying disease and at the same time to reduce the strain. After this, special exercises must be employed which restore the strength to the weakened muscles and ligaments, or "guy wires" to the back. A blacksmith's arm is strong because he uses it.

The correction of the underlying disease which may have weakened the bones or the joint structures is a responsibility of the physician. As yet, some of these diseases have unknown causes, and the treatment is inadequate, but, on the whole, most of them can be corrected with measures now at hand.

The avoidance of further strain is the responsibility of the patient and, if proper healing is to occur, must be diligently carried out. If a toe is stubbed repeatedly and if the nail is torn loose each time, Nature is unable to heal it. Ordinary standing, sitting, or lying in bed can strain the spine if not done properly, and it is necessary to know how to avoid straining the back under all circumstances.

Since it is the swayed (lordotic) position of the lower back and forward-thrust positions of the neck that cause most strains, avoidance of positions or motions which increase the reversed curves is absolutely necessary.

DO'S AND DON'TS

The ordinary occupational strains which must be avoided are as follows:

1. *Ordinary standing* (Figs. 7, 8, 9). After prolonged standing in one position, it is impossible to keep the low back or the hips from sagging forward. This results in a strain and accounts for a great many backaches or lumbago attacks. To forestall this, one of the hips must be flexed. This is accomplished by placing a foot on a stool or a step. So long as one or both hips are flexed the low back does not strain forward (Fig. 9).



2. Never lean forward without bending the knees. Such action produces two harmful effects: stretching the sciatic nerve, which is painful if the nerve is inflamed, and, more important, as you straighten up from the bent forward position, the low back arches in, causing severe strain. If the hips (knees) are slightly flexed, one can assume the upright position without arching the back, thereby saving the strain (Figs. 10 and 11).



3. Never lift anything above the level of the elbows. One can easily lift an object off the floor by bending the knees and the hips without causing too much damage, but as the object is pushed up higher than the waist, it is impossible to do it without arching in the back. Otherwise, you would be pulled forward. This arching in causes the strain in this type of lifting (Fig. 12).



4. Never sleep on your abdomen. As the body is heavier than the shoulders or the lower extremities, it sags into the bed, arching the back (Fig. 13). This arching can be partially relieved by flexing one hip with the thighs drawn upward, but this still results in considerable twisting or torsion of the spine and should be avoided (Fig. 14).

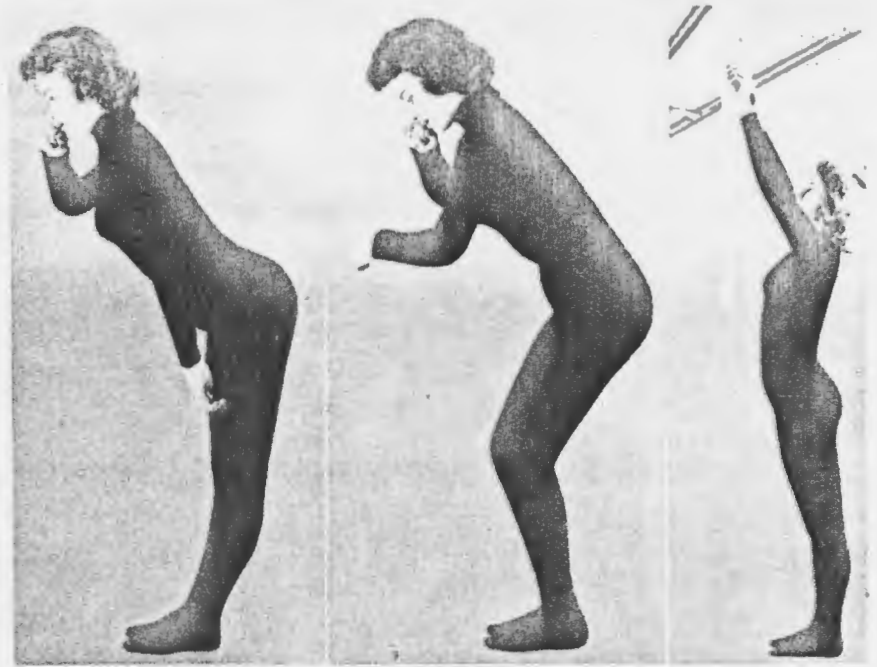


FIG. 10. Leaning forward with the knees straight increases swayback.

FIG. 11. Bending knees when leaning forward relieves swayback.

FIG. 12. Lifting object above level of waist or reaching upward produces increase in swayback.

SLEEPING HABITS Good and Bad

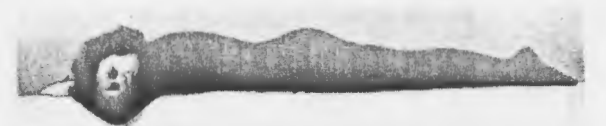


FIG. 13. Sleeping on abdomen increases swayback and twists the neck and should not be done.

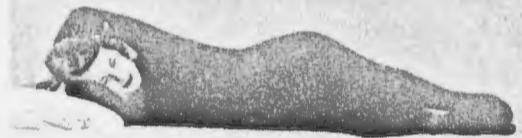


FIG. 14. The hip flexed in this position does not relieve swayback.



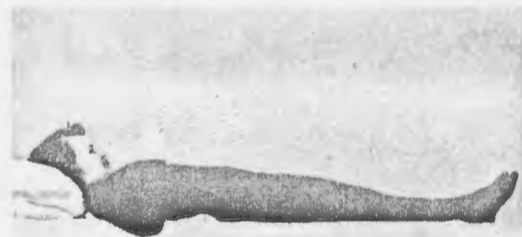
INCORRECT

FIG. 15. Lying flat on the back increases the swayback. Leg aching may also result.



INCORRECT

FIG. 16. Lying on one's side is good for the back, but with face resting on the arm, the circulation may be altered, causing numbness, tingling, burning pain in the arm.



INCORRECT

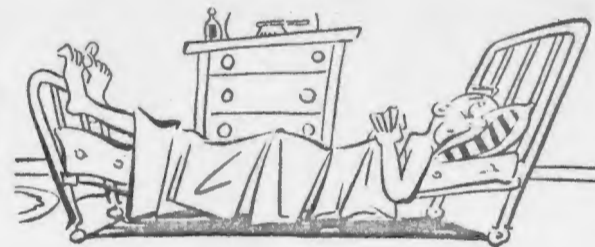
FIG. 18. A high pillow under the neck thrusts the head and the neck forward and may result in painful head, neck, shoulders and arms. It is a frequent cause of headaches, dizziness, shoulder and arm pain.



INCORRECT

FIG. 20. Lying with the arm over the head may cut off circulation and result in a painful arm with numbness, burning and tingling.

Much of the pain occurring in the neck and the low back, with resulting pains in the arms and the legs, is caused by improper sleeping habits.



CORRECT

FIG. 17. Lying on one's side with hips and knees bent relieves the swayback. This is one of the proper ways to sleep.



CORRECT

FIG. 19. Lift under the knees relieves the swayback when lying on the back. This is an excellent way to sleep.



CORRECT

FIG. 21. Placing an 8-inch deck under the lower end of the mattress will make a permanent method of flexing the knees and the hips. It also prevents lying on the abdomen.



SITTING AND STANDING



FIG. 22. Sitting in a chair that is too high increases the swayback. The knees are lower than the hips.

FIG. 23. The above photographs show the importance of having the seat close to the pedals when driving a car. The object is to avoid the sway or the curve in the lower back and keep the knees higher than the hips. Handling a truck or tractor makes this impossible.



FIG. 24. Various methods are used to relieve the swayed back and the thrust-forward head. This is best accomplished by keeping the knees higher than the hips and supporting the arms. Arms resting on the chair offer support to the shoulders and the upper back.



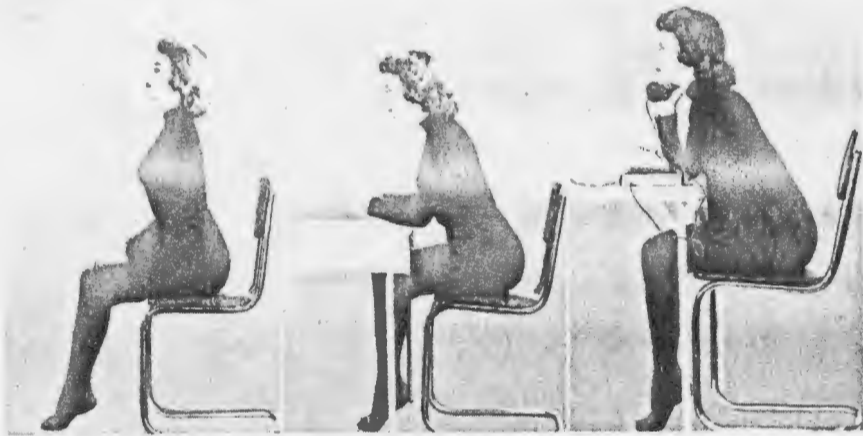


FIG. 25. Thrusting neck and head forward with chin tilted up, may result in headache, dizziness, or neck, shoulder and arm pain. Avoid these positions.

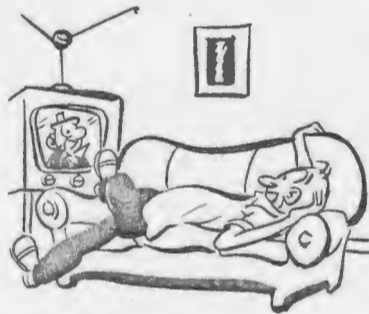
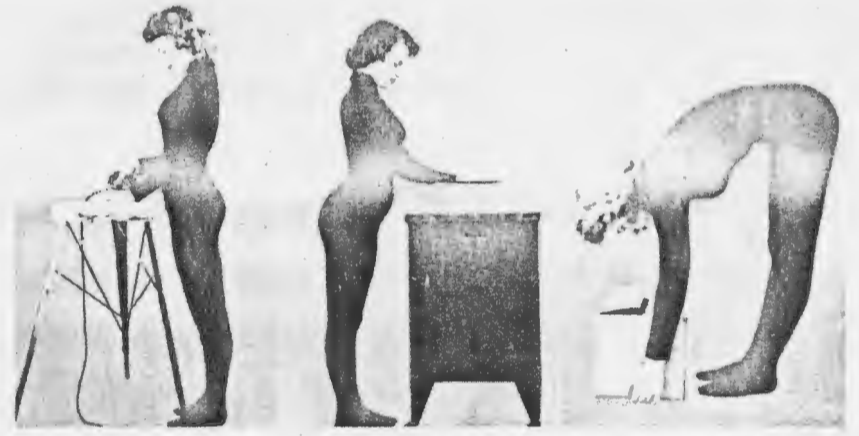


FIG. 26. Various postural attitudes which thrust the neck forward and result in neck strain. Avoid these positions.



INCORRECT

INCORRECT

INCORRECT

FIG. 27. Photographs above show the improper way to stand while doing various tasks. Strain not only results from improper posture but is also caused by pursuing any endeavor beyond your endurance.



FIG. 28. As the photographs below illustrate, bending the knee or the hip reduces swayback.

CORRECT

CORRECT

CORRECT



METHODS TO CORRECT A SWAYED BACK

Part of the objective of exercising is to improve one's posture. Everyone cannot correct completely a swayed back posture of long standing, but most people can help to do so. These photographs show a simple home test of swayback and methods of correcting it.



The above illustrations demonstrate how various household occupations produce swayback and thereby a painful back.

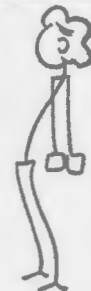


FIG. 29. The photographs demonstrate methods by which the lower back may be flattened.



A. Back up to a smooth vertical surface with the heels against the wall and try to touch it with as much of your body as possible.

B. If your back is arched, "sit" against the wall as shown and slowly inch up to your full height. One hand may be partly behind your back and the other on your abdomen to detect when your pelvis starts to roll forward. When it does, hold it.



C. Position to be attained with pelvis rolled backward, abdominal muscles tight, but-tocks "tucked under" and head well balanced. Walk around the room and back to the wall and see how well you hold this position.



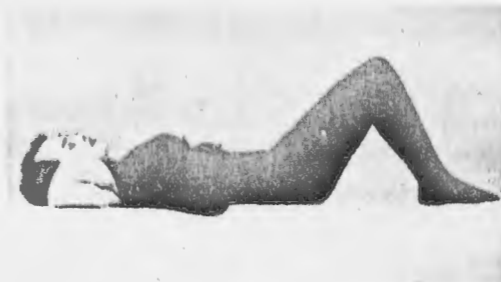
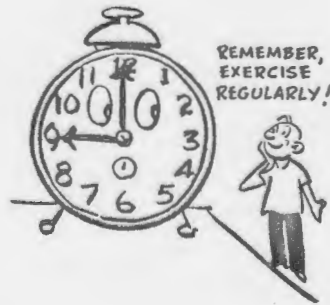
EXERCISES FOR THE BACK



Much of the pain resulting from low back strain is due to fatigue or tiring of the muscles. The blacksmith's arm is strong because he uses it; therefore, exercises must be used to prevent the back from tiring too quickly. In most instances of back strain, the postural balance is disturbed because certain muscles (abdominal muscles) become weakened. These exercises are designed to strengthen the stomach muscles and stretch the contracted back muscles. The exercises are started slowly and are increased gradually. They should be done two or three times daily. An exercise which produces some pain while doing it is all right, but if severe pain results and, more important, lasts for several days, reduce the number of times that you do the exercises.

DIRECTIONS

Exercise.....times daily.
 Start with exercises.....
 Add exercises.....after
weeks or as tolerated.



18

FIG. 30. This is the starting position of all exercises. Knees and hips bent with back flat against the surface. The neck should be comfortably supported. Do all exercises very slowly.

FIG. 31. Exercise 1. Take a deep breath, expanding the chest as much as possible, exhale slowly, allowing the chest to return to its normal position. Keep the back and neck flat. Repeat this deep breathing exercise very slowly five or six times.



FIG. 32. Exercise 2. Draw one knee up to the chest, bring it up tight with the hands, then return it slowly to the original position. Do not allow the knee to straighten out. Next, draw the other knee up to the chest, then return it to the original position (keeping knee bent). Repeat with each leg from 10 to 20 times.



FIG. 33. Exercise 3. Draw both knees to the chest, then grasp the knees with the hands, drawing the knees as near to the chest as possible. This can be repeated 5 or 6 times. It is well to hold the knees pressed against the chest for 25 seconds each time. Before raising the knees, tighten the abdominal muscles and hold the back flat.



FIG. 34. Exercise 4. Draw one knee to the chest, then straighten that knee, pointing the leg upward as far as possible, flex knees and return to original position. Alternate with the opposite leg, repeating this cycle 4 or 5 times.



19

METHODS TO RELIEVE BACK AND NECK STRAIN



FIG. 35. Exercise 5. Do not start this exercise until the others have been done for 3 or 4 weeks. Draw both knees to the chest, then straighten both, pointing the feet upward; return to original position. This can be repeated 3 or 4 times.



FIG. 36. Exercise 6. This exercise cannot be done by all patients and should not be started until the other exercises have been done for several weeks. Pull up to the sitting position, keeping the knees flexed at all times. This exercise can be facilitated by having someone hold the feet to the floor.



FIG. 37. This position is the ideal one to relieve back strain and leg ache. The platform under the legs should be high enough to exert a mild upward lift on the hips. A pillow or something soft should be under the legs. Remain in this position until maximum relief has been obtained. This requires from 5 to 25 minutes and can be repeated several times daily.

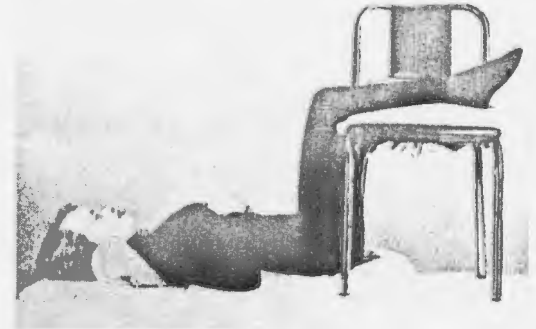


FIG. 38. Illustrates how low back strain or sciatica is treated conservatively in a hospital. Note that the hips lie on the far side of the V made by the hospital bed. The corset around the hips is attached to ropes and weights which cause a traction or stretching of the lower back with the hips and the knees bent. If you can arrange your bed like this at home, it would be helpful. In some instances the traction apparatus could also be applied at home.

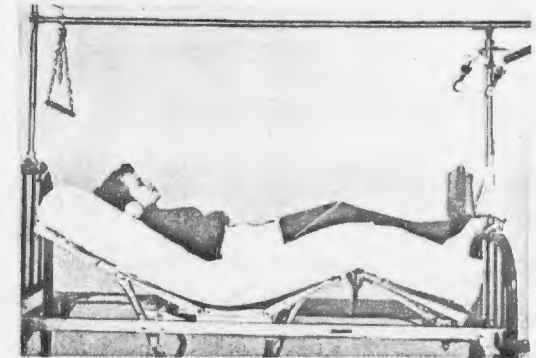
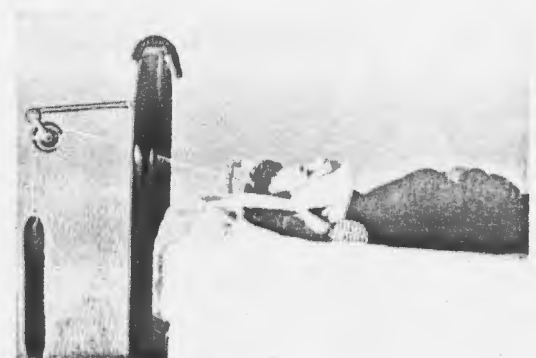


FIG. 39. Illustrates the best method of relieving neck strain (headaches, neck, shoulder and arm pain). Ordinarily, from 4 to 8 pounds of weight is used. It is necessary when applying traction to the neck that the chin be pointing down toward the chest and never stretched with the chin pointing upward. Use a small rolled pillow or towel 3 or 4 inches in diameter under the neck. The time and the frequency of the traction used varies from 15 to 30 minutes. Longer periods may be recommended by your physician.



SUMMARY

1. Avoid swayback at all times.
2. When doing anything which requires standing, place one foot on a stool or a step and shift the weight from one foot to another.
3. When sitting, keep one or both knees higher than the hips. Cross the legs or place the feet on a stool, keeping the knees bent. Select a chair with arms to prevent neck strain.
4. When lying, keep knees and hips bent. This means that you cannot lie on your abdomen; and when on your back, a lift must be under the knees.
5. To prevent neck strain, avoid forward-thrust ("spectator's attitude") positions of the head and the neck. This rules out reading in bed; sleeping on a high pillow; playing cards, sewing, or even sitting in a chair without arms. Television must not be viewed from the lying-down position or when slumped.
6. As a measure to improve the sway in the back, exercises to strengthen the abdominal muscles are helpful. These exercises also stretch the contracted back muscles.
7. Follow your physician's instructions, which are designed to correct deficiencies or diseases of the bones and the supporting muscles.
8. Do not go beyond your endurance. Rest when tired, but sufficient general exercise must be taken to prevent weakness from lack of use.
9. General exercise is important, as it prevents weakness from lack of use.