

Physiotherapy in the Treatment of the Asthmatic and Emphysematous Patient

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In the treatment of Medical Chest conditions by Physiotherapy, the need for expiratory breathing is becoming more and more widely recognised. Particularly is this so in the treatment of the asthmatic, emphysematous and bronchitic group, and it is this type of patient that I would like to discuss. Our aims of treatment fall into 3 main headings:

1. To obtain relaxation
2. To promote breathing control
3. To develop good posture and balance

As we know the causes of asthma are often most complex and for that reason the whole person and personality must be considered, not just the patient's chest. Our approach must, therefore, bear this in mind.

The patient should be treated in a calm, unhurried atmosphere and the Physiotherapist requires immense patience, realising that it may take weeks for the patient to learn to use his lower chest and diaphragm correctly. The bad breathing habits of years cannot be corrected in a few easy lessons.

The first few treatments should be individual whenever possible, as thoroughness in teaching the fundamentals of correct breathing are of the utmost importance. A great part of the successful treatment of asthma also depends on gaining the confidence and co-operation of the patient. To this end the patient should be encouraged to talk to his Physiotherapist, and in this way he can get some of his frustrations and troubles aired, and out of his system, which is often of the greatest assistance in getting him to relax.

Time must also be taken in explaining the correct method of using his chest and diaphragm and in getting to understand the purpose of the exercises. So in the first lesson, if one only manages to explain Diaphragmatic Breathing and emphasise that when he masters this control he has the remedy for helping his breathlessness in his own hands, one has achieved a lot.

In normal respiration the active phase is the **inspiratory** one, but in **abnormal respiratory** function—as in asthma—one must make **expiration** the active phase—to counteract the asthmatic's tendency to overbreath in. This involves making the patient conscious of using his lower chest and assisting in the piston action of the diaphragm, and learning to control his upper chest.

On X-ray screening in an untrained asthmatic the diaphragm is usually contracted, (flattened) low in the chest, and moving little. In a trained asthmatic the diaphragm will be found to be moving freely at a higher level in the chest.

The patient must, therefore, be taught to realise that though we teach him exercises—and see that he understands them—it is up to him to practise them until he has mastered them, and be aware that by so doing he has the remedy in his own hands. He must also be made aware that he may have to do a little practice daily for the rest of his life.

It is best for the patient to practise when he is free of wheeziness, and always before he goes to sleep and, if possible, first thing in the mornings.

Occasionally the new patient gets depressed as he seems to be more wheezy and coughs more at the start of his exercises. It should be explained to him that this is natural as he is using his chest more and, therefore, loosening the mucus in the bronchial tubes. Once this is cleared he will feel better and make progress.

The essential points to be considered in the treatment of the asthmatic and emphysematous patient are as follows:

1. **The Nasal Passages** should be kept clear, the assistance of the E.N.T. surgeons being called in if necessary.
2. **Control of the Chest** should be taught with thoroughness, patience and attention to detail. The patient must not be made to feel stupid if he is slow to grasp what is

required—after all that is why he has come for treatment to be taught how to use his chest correctly.

Even to obtain "dropping" of the upper part of the chest on expiration may be difficult, as so often the shoulders are held high and the accessory muscles of inspiration are tightened. If this is taught with a sigh out to begin with, it can help the patient to realise what is required. The side-lying position with the body well rotated forward is also of great benefit in teaching relaxation of the upper chest—and control of the lower chest—emphasising throughout the activity of the expiratory phase and allowing gravity to assist in the relaxation of the abdominal muscles on inspiration.



INSPIRATION



EXPIRATION

3. **General Relaxation** should be taught to every patient individually so that they really understand what Relaxation is; these patients are often so tense that they cannot appreciate true relaxation. The Physiotherapist should, therefore, demonstrate the difference between tension and relaxation. One way to do this is to allow the patient to support the operator's arm which is held stiffly at first, but then gradually relaxed so that the patient becomes aware of the increase of weight of the arm as it is relaxed. The patient should be in lying, with a pillow under the head, one under each arm with elbow flexed and fingers over edge of pillow and another pillow under the knees. Thus the body is entirely supported. The patient is then encouraged to concentrate on the large muscle groups in turn—thinking down to them and telling them to "let go" always as the patient breathes out. The patient should try to have half an hour's relaxation practice every day at a convenient and regular time, until gradually a habit of controlled relaxation is mastered.

4. When **Diaphragmatic Control** is understood and the patient is beginning to do it properly, then localised one sided Basal Breathing can be started, the aim in this case being to get maximum use and mobility of each lung base and so eventually develop the fullest use of the bases of both lungs. Later a belt can be used when practising, as this allows greater relaxation of the muscles of the shoulder girdle, and the patient can assess his own progress as he performs his localised breathing exercises sitting in front of a mirror.

In any scheme of exercises for this type of patient, simple swinging, mobilising and relaxing exercises should be included. Once the actual function of correct breathing control has been mastered, it is then important to proceed to encourage the patient to greater activity, while still maintaining control of his breathing at all times.

The first step is in posture correction, in seeing that the patient does not stand slumped down into his pelvis with his weight heavily on his heels, but rather that the weight of his body is carried slightly forward from his ankles, the main weight being taken towards the fore part of the feet. The back straight and a plumb line dropped from the shoulders should fall centrally through the hip joints. The shoulders should be held loosely with the scapulae comfortably controlled. This position allows the free use of the patient's lower chest and diaphragm.

The next step is to teach the patient to co-ordinate his breathing with the actual steps he takes while walking. This is started slowly, the patient breathes out as he drops his chest and tightens his abdominal muscles to a slow count of 2. He then relaxes the lower chest and abdomen on i count as he allows the air to come in, thus making the expiratory phase double the length of the inspiratory one. The patient then starts marking time, 2 steps to breathe out and 1 to breathe in. This is progressed to walking to the same rhythm and finally to stair climbing or walking uphill.

It is important to supervise the chest movements at this stage, as so often the patient tends to return to the old habit of upperchest breathing when any extra exertion is required. It is best for the Physiotherapist to walk beside the patient with her hands placed lightly on the patient's lower ribs, while she ascertains that the patient is carrying out her instructions correctly, and developing the correct breathing rhythm.

This question of rhythm plays a great part in the life of every one of us, and one wonders if the disturbance of rhythm is not the root cause of many of our troubles. In the asthmatic and emphysematous patient the breathing rhythm has been lost, and with this loss of rhythm the patient becomes more and more tense and less able to relax. So with these patients it is most important to concentrate on restoring their sense of rhythm by whatever means is available. Rhythmical exercises should always be used, and when available music has been found to be of the greatest benefit.

Once the patient realises what is required of him and as he becomes able to synchronise his breathing with his walking then, as long as his breathing and rhythm are maintained, the actual number of steps he takes can be increased to suit the individual. This can be 3 steps to breathe out, and 2 steps to breathe in, or 4 steps to breathe out and 3 steps to breathe in, according to the individual and his normal walking pace. It is wiser to keep to the original pattern of 2 out and 1 in, when the patient has to make extra effort as in stair climbing and walking up hills.

In the case of the younger patient or one less seriously affected he can be progressed to running skipping, etc., at first with consciously controlled breathing, but gradually the control should become automatic and the patient should be able to return to a life of normal activity.

All the patients should be encouraged to try to ABORT any attacks of breathlessness by practising their controlled breathing as soon as they have the slightest feeling of tightness or shortness of breath. Once an attack has been successfully prevented it is most encouraging to see how the patient's outlook is improved, his self-confidence returns, and how much more relaxed he becomes.

References:

"Release from Nervous Tension" by Fink.

"Physiotherapy for Chest Diseases" by J. M. Reed, M.C.S.P.

Illustrations:

"Physiotherapy for Medical & Surgical Thoracic Conditions"—from Brompton Hospital Booklet.

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