Chapter 7.1a

Indirect approaches to breathing regulation

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CHAPTER CONTENTS

INTRODUCTION

Breathing is largely dependent upon many factors, both physical and mental, which determine its rate, depth and shape. Given this dependency, the use for breathing regulation seems quite limited. In fact, a sceptical point of view is not uncommon and exists, for example, in the medical profession. Moreover, in some awareness schools, such as the Feldenkrais Method® (see Ch. 8.3) and the Alexander Technique, there is little or no use for breathing modification. When certain determinants are a structural cause of a particular way of breathing, then the efforts to change breathing will be barely successful and will only lead to increased strain. When such factors are of a modifiable nature (see Chs 7.1b, 7.2 and 7.3), for instance, due to increased mental or physical stress, then the attempt to change respiration may be more successful, but may still lead to increased strain: the original stress plus the effort to change breathing. This sceptical view can be countered by referring to available outcome data of breathing (see chapters in Section 7, particularly Chs 7.1b, 7.4, 7.6 and 7.7), but the argument remains valid. In this chapter we propose to consider the immediate context of breathing patterns and use it explicitly by influencing breathing indirectly, rather than attempting to impose a 'better form' of breathing.

Indirect regulation assumes that an important function of breathing is to reflect the individual's condition. It is like a mirror and is an indicator of one's physical or emotional state. From this perspective, the first thing in working with breathing is to respect this function. For instance, during physical exercise, breathing deepens to meet the increasing gas exchange requirements. When this leads to dyspnoea, indirect regulation would aim to lower the exercise intensity, or to have the subject focus on the quality of movement, whereas direct regulation would aim to confront the dyspnoea and consciously change the pattern of breathing.

There are many ways to modify breathing voluntarily, which are widely recognized and practised. Thus, there are two opposing perspectives. To deal with both points of view, both reflecting reality, instructions were developed which have been crafted to change the immediate determinants of breathing and also to change breathing indirectly, alongside direct breathing instructions (van Dixhoorn 2007). Both these direct and indirect breathing instructions include instructions for posture and focus of attention. Furthermore, it is important to leave the outcome of an instruction open, and to respect the outcome of any breathing intervention, accepting the resulting change as the best possible at the moment, rather than sticking to a preconceived idea of what optimal breathing should be. Given the multitude of determinants it is not possible to know what respiratory pattern is optimal at any given time. Finally, a basic procedure is required where the therapist tries a few approaches and carefully observes the responses. Interventions should be interrupted regularly to allow the system to process the induced changes and to observe the responses at each stage.

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SYSTEMS VIEW

Within psychophysiology, respiratory measures function mainly as dependent variables, reflecting the state of the individual. Within *applied* psychophysiology however, respiration also functions as an independent variable, a potential influence on one's state. Breathing is the only major vital function that is open to conscious awareness and modification. The individual is able to voluntarily modify breathing patterns in order to change mental or physical tension states. Thus, there is a dual relationship between breathing and the state of the system, represented in Figure 7.1a.1. The arrows from respiration towards physical or mental tension states represent the regulatory role of breathing; the arrows towards respiration represent its role as indicator. The idea is that direct, regulatory instructions for breathing are quite possible and effective, but mainly temporary, and that a lasting effectiveness resides in an influence upon the mental/physical tension state. When there is a change in that state, breathing will change in due course, by way of its indicator role, and it will be more responsive to regulatory practice. Thus, one stops the regulatory practice, observes how the system responds, and how breathing continues afterwards. The resulting change may be small, but this tends to continue because its determinants have changed. Continuous practice is not required.

This way of alternating regulatory practice and stopping it is in our view the 'basic procedure' of breathing therapy. It has several advantages. It conveys to the client the idea that breathing is variable and flexible. Contrary to what many think and expect to be taught, there is not one particular way of 'proper breathing'. Also, it conveys the idea that to notice responses and changes in breathing may already be sufficient and helpful to understand and deal with respiratory discomfort. When breathing discomfort arises, one should be attentive to the context, before one practises some counter-effective breathing tactic. Acknowledging the fact that respiration responds to emotion, posture, mental focus, imagery, etc. neutralizes the cognitive interpretation that respiratory discomfort always means that something is wrong with breathing, or the system that breathing is a part of (see Fig. 7.1a.1).

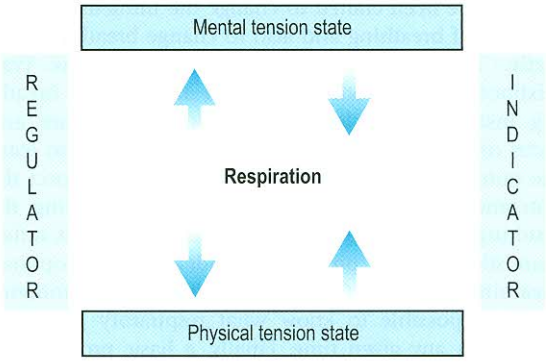

Figure 7.1a.1 Model of double relationship between respiration and its determinant. Arrows on the left: voluntarily induced changes in breathing influence physical/mental tension state. Arrows on the right: changes in physical/mental tension state influence breathing.

This model represents a systems view of respiration. It underlines the complexity of breathing instruction which should include both mental and physical components, in addition to specific instructions for breathing. One consequence of the model is that proper breathing instruction consists of two parts: one in which breathing is consciously modified or regulated and one in which this regulation is consciously stopped. This is comparable to Jacobson's procedure of Progressive Muscular Relaxation, to consciously tense a muscle in order to learn to consciously stop muscle tension (Jacobson 1938). One cannot ask the subject to stop breathing, but it is possible to stop a conscious regulatory practice. The purpose is to observe how the system responds to the regulation, and whether there is a small, but durable and stable effect on breathing after regulation has stopped. The instruction that regulates breathing is more like an invitation to the system to respond favourably, than a dominant influence. It is important to teach a specific skill to practise, but it is equally important to have the subject stop practising it.

The message to the patient is that the purpose is not to practise a particular form of breathing as much as possible, but to observe what happens after one has practised. An instruction is not a model of good breathing but it is a stimulus to the system that hopefully yields a meaningful response.

The systems view provides a context which serves as a background for the many techniques of direct breathing regulation. There is no doubt that regular practice is beneficial and often necessary. However, it is important that the practice is not too single-minded and goal-directed, but remains open to the diversity of outcomes. Such open evaluation is an important check as to whether the particular technique is still beneficial. For instance, slow, deep breathing is not natural, but is useful to practise periodically. Breathing 6–8 times a minute has a profound restorative effect on the autonomic nervous system (Bernardi et al 2001), as well as a mobilizing effect on the musculoskeletal system involved in breathing. It may also affect the mental state. Thus, to determine which effect is beneficial and relevant at the moment, it is necessary to check the outcome with an open mind. Global evaluation (subjective experiences, checklists, observable changes in posture, movement or facial expression) is preferred, but instrumental multi-channel recordings are also possible. The latter is more objective but has limited parameters.