Chapter 2
AIMS AND RELEVANCE OF THE STUDY
AIMS AND RELEVANCE OF THE STUDY

1. To study the levels of psychophysiological arousal related to yoga breathing practices with nostril manipulation based on recordings of autonomic and respiratory variables before, during, and after the practices.

2. To assess the effects of breathing through a specific nostril on neural generators along the auditory pathway based on middle latency auditory evoked potentials.

There are two main parts to this study. The first part examined the effects of yoga breathing through a specific nostril on measures of psychophysiological arousal. The second part of the study attempted to understand which neural areas were influenced by these practices based on recordings of evoked potentials.

Understanding levels of psychophysiological arousal is of increasing importance today. Even within the physiological range of functioning there is evidence that people who are exposed to higher levels of mental stress have a high level of psychophysiological arousal which is greater than what is desirable. Hence there is an increasing interest in understanding whether there are techniques which individuals can learn to practice to reduce their levels of arousal. Apart from this there are a number of ailments in which it is recognized that the psychological status plays an important part. In several of these disorders it has also been found that there are shifts in the autonomic balance. Hence it is important to recognize non-pharmacological methods which can modify the autonomic balance.
In this connection understanding the physiological effects of these yoga breathing practices on autonomic and respiratory variables as indicators of psychophysiological arousal is of considerable importance today.

The other part of the study was concerned with changes in components of middle latency auditory evoked potentials during the yoga breathing practices. If one can understand whether a specific practice influences a particular part of the brain, this would help in a better understanding of the yoga practices as well as add to the knowledge of how brain functions can change by consciously regulated breathing. In addition the evoked potentials were recorded from scalp sites over the right and left cerebral hemispheres. Hence information about whether breathing through a specific nostril could influence either of the cerebral hemispheres selectively would be expected to be useful in the management of conditions in which the functions of a particular hemisphere are disturbed as in manic depressive psychosis (Flor-Henry, 1983) or obsessive compulsive disorder (Shannahoff-Khalsa, 1999).