Physical exercise have been recognised as one of the important metabolic stresses on the animals and humans. Exercise physiology is the most modern branch with a therapeutic value, because metabolic modulations are induced towards rectification of various disorders in the body. In comparison to vast literature on the effect of physical exercises on the somatic components of the body, negligible information is available on the genitalia and reproductive performance of animals and humans. A number of contrasting and conflicting reports are existing in literature pertaining to the effects of physical exercises on the animal and human reproduction. In a number of cases irregularities were introduced into the sexual cycles of animals and humans due to prolonged physical exercises as in the case of athletes. However, some reports do exist stating that menstrual disorders were rectified due to the application of physical exercises. However, there is no comprehensive information on the later part of the events of reproduction. The analysis of plasma hormones also revealed the gonadotropin insufficiency with low estrogens and existence of hyperprolactinemic conditions in the animals and humans subjected to physical exercises. In view of these modulations, physical exercises can be considered as a powerful tool to develop model animals with hypogonadotropinism and hyperprolactinemia, without introducing any exogenous factor. Under
such conditions attempts can be made to regulate the fertility of animals and humans through the mediation of physical exercises. In view of these reasons a humble attempt has been made to make efforts to bring out the modulations at reproductive physiology of the rats under the impact of physical exercises. The prolactin concentration in the body of exercised animals was modulated to induce hyper and hypoprolactinemia in them. Attempts have been made to relate the reproductive performance of animals towards modulations in the endogenous prolactin levels during the course of exercise. Since the dopamine levels of the brain are known to be depleted during exercise and thereby releasing inhibition on the hypophysial lactotrophs, which in turn triggers the events of prolactin secretion. Thus dopamine levels in the brain and prolactin concentration in circulation are being modulated due to induction of physical exercises. Hence under such conditions it will be interesting to study the mechanisms related to reproduction of animals and humans. The author tried her level best to plan, execute and systematically analyse the effects of physical exercises ranging from anatomical to tissue metabolism to molecular organization of the reproductive system in the albino rats. The author could successfully explain various mechanisms related to reproduction and physical exercises. The information thus procured in the present project may form a nucleus for the projection into further studies towards applied aspects for tracing out the therapeutic value of physical
exercises. The author will be fully satisfied if this project could stimulate further research in this direction, which culminate as a powerful tool towards fertility regulation in animals as well as humans.