Trace elements play an important role in biological processes both as essential compounds and toxins. Selenium has been shown unequivocally to be of nutritional importance to mammals as well as other animals in minute quantities. It is very much a typical example of toxicity essentially paradox because it demonstrates the properties of nutritional toxicological perspective and consequently gives rise to questions about the toxicity to essential dietary minerals.

Selenium is only needed in very small amounts, but it is essential for animal life. So many studies proved that several selenium compounds reduced the incidence of prostate, colorectal and lung cancer. The mother’s milk, which contains a beneficial enzyme (glutathione peroxidase), offers some protection to the child. Because glutathione peroxidase contains selenium as an integral component and capable of reducing lipid hydroperoxides and hydrogen peroxide. Researchers believe that selenium may be important in HIV disease because of its role in the immune system and as an antioxidant, may be needed for the replication of the HIV virus, which could deplete host levels of selenium. Thus a higher proportion of selenium intoxication appears to be due to the lack of knowledge, indifferent attitudes and unsafe practice.

The findings are presented in six Chapters. The first chapter comprises the toxicity evaluation and determination of sublethal dose. The second chapter pertains to energy metabolism during selenite toxicity. The third Chapter deals with the detoxification enzymatic systems of toxic selenium. The fourth chapter elucidates the haematological changes during sodium selenite toxicity. The fifth chapter contains the teratological changes during sodium selenite toxicity. The sixth chapter comprises the sperm changes and histopathological changes of toxic selenium.

The present study has been attempted to establish in mice a sublethal concentration of selenium that is essential for adequate nutrition and does not interfere with clinical parameters in chronic studies. The author remains hopeful that the present study would contribute useful information to the existing knowledge on selenium toxicity. The author remains pardonable for any error which may have crept in due to oversight and for any investigative lacunae which are due to limitations in facilities and infrastructure.