Water is essential for life and access to clean drinking water is a necessity for good health. Water reacts with minerals in the soil and rocks. Surface and ground water may contain many different dissolved substances. Fluoride ion exhibits unique properties as its concentration in optimum dose in drinking water is advantageous to health and if the concentration exceeds the limit, this affects the health. High fluoride concentration in the ground water and surface water in many parts of the world is a cause of great concern.

Small amounts of fluoride is beneficial as it is believed to impart stability to bone and enamel, thereby preventing dental carries and osteoporosis to some extent but exposure to fluoride beyond the recommended level for longer duration in drinking water leads to destruction of enamel of teeth and causes a number of conditions referred to as fluorosis.

Drinking water is responsible for endemic fluorosis in certain developing countries like India, Israel, China, Australia, Syria, Thailand and Morocco and also in developed countries like Japan, Canada and USA. Fluorosis is endemic in many states in India.

In the present investigation to observe the effect of sodium fluoride on mammalian model albino mice, an attempt was made to extrapolate to human beings.

Vitamin C is highly water soluble and solution can be oxidised by atmospheric oxygen to give an equilibrium mixture of ascorbic and dehydro ascorbic acids. Vitamin C has important anti-oxidant properties, and protects cells against oxidative stress. Vitamin C has a number of biochemical roles in the body. It is a strong reducing agent and antioxidant, which is important in preventing the damaging effects of free radicals. Vitamin C is an enzyme co-factor for many biochemical reactions, especially those involving oxidations, such as the synthesis of hydroxyproline from proline for collagen biosynthesis, mono-oxygenases, dioxygenases and mixed function oxygenases. It is important in the synthesis and stabilisation of neurotransmitters and carnitine and increases the gastrointestinal absorption of non-haem iron by reducing ferric to ferrous iron.
This thesis is composed of five chapters. The first chapter comprises the fluorosis endemic survey area. The second chapter deals with changes in some biochemical parameters. The third chapter deals with energy metabolism. The fourth chapter deals with alterations in hematological profiles. The fifth chapter deals with histopathological changes by light microscopy and also transmission of electron microscopy in different tissues of albino mice and recovery was also observed with vit. C in all parameters.

The author remains hopeful that the present study would contribute useful information to the existing knowledge on subchronic levels of fluoride 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.