Lead is considered the most widely distributed toxic metal due to its many uses in industries. A wide variety of population were at risk of occupational exposure and lead is suspected to be a human carcinogen.

Current major sources of lead pollution include iron, steel and nonferrous metal production, the fuel and power and chemical sectors. Lead exposure is generally well controlled in the major lead using industries such as melting and battery manufacture. However, there are still industries particularly demolition industry where clinical lead poisoning occasionally still occurs.

Lead continues to accumulate in our bodies, lead creates wide spread damage. Its chronic toxicity has been implicated in a sweeping range of physical, mental and emotional disorders.

Lead inhibits the utilization of iron and the biosynthesis of heme, thus causing anemia. Lead may displace metals from enzymes, there by causing their inactivation.

Lead causes oxidative stress by inducing the generation of reactive oxygen species by reducing the antioxidant cell defense systems by depleting glutathione, by inhibiting sulphydryl dependent enzymes, by interfering with some essential metals needed for antioxidant enzyme activities.
and/or by increasing cell susceptibility to oxidative attack by altering the membrane integrity and fatty acid composition.

Reactive oxygen species (ROS) are an entire class of highly reactive molecules, derived from the metabolism of oxygen. ROS, including superoxide radicals, hydroxyl radicals, and hydrogen peroxide are often generated as byproducts of biological reactions or from exogenous factors.

The cellular free radical scavengers and antioxidant enzymes normally protects the cell from toxic effect of ROS which include glutathione (GSH) and GSH dependent antioxidant scavenging systems viz., glutathione reductase, glutathione peroxidase, glutathione-s-transferase and GSH independent antioxidant enzymes viz., superoxide dismutase and catalase. Kidney is more prone to the lead toxicity. It is one of the major organ where lead accumulate. Exposure to high levels of lead leads to adverse effects on renal function, chronic accumulation of lead in the body eventually leads to impairment in renal function.

Since ancient times, ginger has been used as medicinal plant and in dishes, has antioxidant promoting activity and also itself consist of antioxidants and vitamin C. The antioxidant promoting activity is very essential as a remedial for lead induced oxidative stress.

In present study, it was evaluated that the lead induced oxidative stress in kidneys and healing power of ginger extract against oxidative stress. There was no dose differences
in lead nitrate and also in ginger extract. And also, only important antioxidants activities were analyzed.

In further studies, animals exposed for longer duration and different doses of ginger extract need to be used. Taking more number of tissues such as brain, muscle, liver, bone and all important antioxidant enzymes activities have to be carried out. And also, there is need to carry out the accumulation studies with lead exposed and ginger extract treated animals.