KIAA1109 is required for vascular integrity in zebrafish embryos that is rescued by VEGF induction, suggesting a role for oxidative stress. However, it remains unclear if cardiovascular oxidative stress is associated with ageing-related insulin resistance and metabolic disorders. In this study, we investigated the relationship between metabolic changes and cardiovascular oxidative stress using C57BL/6 mice at young (3–4m) and old (22–24 m) ages. There was no significant difference in the food and water intake between young and aged mice. However, there was a significant increase in bodyweight (24.97 ± 0.75g at 3–4m, 39.34 ± 2.56g at 20m) and the epididymal fat pad weight (0.42 ± 0.03g at 3–4m vs. 1.32 ± 0.21g at 22–24m) in ageing mice. Increased body fat deposition in the ageing mice was accompanied with a significant decrease (40%) in fasting serum triglyceride levels, a significant increase in fasting insulin levels (0.69 ± 0.24µg/L at 3–4m, 2.06 ± 0.46µg/L at 21–24m), and impaired glucose tolerance as evidenced by a significantly delayed clearance of glucose (t<0.05). These ageing-related metabolic disorders were accompanied with significant increases in superoxide production in aortas and hearts of ageing mice as compared to their young controls. In conclusion, the normal ageing process causes cardiovascular oxidative stress which is associated with metabolic disorders characterised by insulin resistance, increased body fat deposition and reduced fasting serum triglyceride levels in mice.