1. The impact of diabetes mellitus on collagen and lysosomal enzymes of the skin and lungs were investigated in mature albino rats.

2. Diabetes was induced by administration of a single dose of alloxan (120 mg/kg body weight) intraperitoneally. Age matched controls were injected distilled water only intraperitoneally.

3. Diabetes was confirmed by estimating the level of blood glucose.

4. Diabetes resulted in a significant decrease in body weight.

5. Alloxan-diabetes markedly reduced the concentration of dermal collagen. While it profoundly increased the pulmonary collagen concentration.

6. Regarding the lysosomal enzymes of the diabetic rat skin there was a significant increase in all the enzymes studied in the present investigation viz., α and β-galactosidases and glucosidases, acid phosphatases and aryl sulfatases.

7. The activities of these enzymes except aryl sulfatase were inhibited due to diabetes in the lungs. The activity of aryl sulfatase was unaltered.

8. In conclusion, it may be suggested that alloxan, induced diabetes mellitus leads to differential effects on the skin and lungs.