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Impact of intranasal application of nerve growth factor on the olfactory epithelium in rats with chemically induced diabetes

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Recent studies suggest that nerve growth factor (NGF) protects olfactory cells and axons from injury in vitro. Eighteen Wistar-Albino rats randomly divided into three groups: control group, diabetic group without NGF, and diabetic with NGF. Intranasal NGF (6 μg/day) was administered over a 5-day period. At the end of 30 days, the olfactory epithelium (OE) of NGF-applied diabetic rats regenerated, the epithelium thickness was significantly higher, and caspase-3 expression was not significantly different from the control. The current results demonstrate that intranasally administered NGF significantly reversed OE morphological changes in diabetes by decreasing diabetes-related cell death and inflammation.

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