

Oxygen treatment beneficial in diabetes-prone mice

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(HealthDay) -- Hyperbaric oxygen treatment of a preclinical diabetes mouse model reduces the incidence of diabetes and preserves insulin-producing β -cells, according to a study published online May 7 in *Diabetes*.

Gaetano Faleo, Ph.D., from the University of Miami, and colleagues examined the effect of one hour of daily hyperbaric oxygen therapy with 100 percent oxygen on the development of autoimmune diabetes in nonobese diabetic mice.

The researchers found that the incidence of cyclophosphamide-induced diabetes fell from 85.3 to 48 percent. The incidence of spontaneous diabetes dropped from 85 percent in controls to 65 percent in treated mice. In mice with prediabetes, treatment with hyperbaric oxygen was associated with reduced insulinitis, reduced T-cell proliferation in vitro,

elevated CD62L expression in T-lymphocytes, decreased costimulation markers (CD40, DC80, and CD86), and major histocompatibility complex class II expression in dendritic cells. However, hyperbaric oxygen was less effective once autoimmunity was established. Compared with controls, hyperbaric oxygen therapy reduced apoptosis and increased proliferation of [insulin](#)+ cells.

"Hyperbaric oxygen therapy reduces autoimmune [diabetes](#) incidence in nonobese diabetic mice via increased resting T-lymphocytes and reduced activation of dendritic cells with preservation of β -cell mass resulting from decreased apoptosis and increased proliferation," Faleo and colleagues conclude.

Several authors disclosed financial ties to Converge Biotech Inc., which partially funded the study.

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