



## Nutrition and Health

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# A holistic approach to diabetes prevention and management

Land-grant universities play a crucial role in addressing diabetes. Their work helps individuals and families adopt healthier lifestyles, manage diabetes effectively and prevent complications. Extension programs provide evidence-based nutrition education, promote physical activity and support access to affordable, healthy food. Research is driving innovations in diabetes prevention and management. By combining scientific expertise with local engagement, land-grant universities empower communities to reduce the prevalence and impact of diabetes, improving public health and quality of life nationwide.

### Here are a few examples of that work:

- Researchers in **Ohio** explored the potential of nitric oxide (NO) therapy to inhibit or prevent diabetes by reducing oxidative stress in pancreatic beta cells. Preliminary results show that NO treatment can decrease markers of oxidative stress and inflammatory cytokines, suggesting that NO or NO donors could be effective in lowering blood sugar levels in diabetic patients. *Central State University Research*. See [full statement](#).
- **Arizona** expanded access to the Diabetes Prevention Program, offering it in both English and Spanish in person and remotely. Participants have achieved an average weight loss of 10.5 pounds and a 0.2% decrease in blood sugar levels, with retention rates more than double the national average. *University of Arizona Cooperative Extension; Smith Lever (3b&c), Other*. See [full statement](#).
- **Tennessee** Extension professionals trained 274 certified leaders to deliver self-management programs for chronic conditions such as diabetes. These programs resulted in significant health improvements

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## landgrantimpacts.org

The National Land-grant Impacts Database (NIDB) documents the individual and collective impacts of the national Land-grant University System of joint research, education and Extension. Much of this work is supported by capacity and competitive funds through the USDA's National Institute of Food and Agriculture.

This document was prepared by the NIDB communications team. The Association of Public and Land-grant Universities' Board on Agriculture Assembly manages the NIDB.

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with 86% reporting better overall health, 82% increasing their exercise and 72% having fewer doctor or emergency room visits six months after completing the courses. *University of Tennessee Extension; Other USDA Capacity – Extension*. See [full statement](#).

- Extension programs in **Ohio** provide personalized support and self-management practices to individuals with diabetes or pre-diabetes and their families. Reported benefits include weight loss, better diet and medicine management, increased exercise and improved overall health. One participant achieved diabetes remission, improving her living situation. *Central State University Extension; 1890 Extension*. See [full statement](#).
- **South Dakota** focuses on self-management by training community health workers to lead workshops and expand access to diabetes education. The program has shown promising results in improving health metrics such as A1C levels, BMI, weight and glucose control, while also enhancing participants' confidence in managing their health. *South Dakota State University Extension; Smith-Lever (3b&c)*. See [full statement](#).