Title of Intervention: Long-term lifestyle intervention program for people with impaired glucose tolerance

Intervention Strategies: Individual Education, Supportive Relationships, Group Education

Purpose of the Intervention: To improve glucose tolerance and lipid levels in people with persistent impaired glucose tolerance (IGT) or non-insulin dependent diabetes mellitus (NIDDM)

Population: Adults aged 18-79 years who presented with persistent conditions associated with IGT and NIDDM

Setting: Clinic and community places in Dunedin, New Zealand; health care facility-based, community-based

Partners: Laboratory, health care facilities

Intervention Description:

- Individual Education: Dietary advice was tailored to individuals' preferences and circumstances after consideration of a food diary. Ways to increase the consumption of soluble fiber and to decrease the consumption of saturated fat were emphasized. Recipes, along with food samples, were provided to give practical assistance to participants.
- Supportive Relationships: Participants were contacted by the research team by phone at least once between the 3-month oral glucose tolerance tests (OGTT) to provide support and information.
- Group Education: At each OGTT, a group discussion was conducted. Participants had the opportunity to practice skills such as label reading and to discuss a wide variety of topics including the basics of NIDDM, the interpretation of blood results, stress management, barriers to changing dietary and exercise habits, coping in social situations, health beliefs and goal setting. Videos as well as written material, displays and pictures were used in the sessions. To increase physical activity, participants were invited to attend weekly, one-hour sessions at the Physical Education Program for Sedentary Adults.

Theory: Health Belief Model, Social Cognitive Theory

Resources Required:

- Staff/Volunteers: Instructors, laboratory technicians
- Training: Not mentioned
- Technology: Not mentioned
- Space: Classroom and activity space
- Budget: Not mentioned
- Intervention: Materials for group education sessions, tailored advice, recipes, food, oral glucose tolerance tests
- Evaluation: Laboratory materials to test blood samples, diaries

Evaluation:

- Design: Quasi-experimental
- Methods and Measures:
    - Clinical measures that were collected and interpreted included body mass index, blood pressure, plasma total cholesterol, HDL cholesterol, LDL cholesterol, triglycerides, fasting and 2-hour serum insulin and hemoglobin A_1C levels.
    - Demographic and physical activity information was collected through a questionnaire and diary, respectively.
    - A 4-day food diary was used to assess nutrient intake.

Outcomes:

- Short Term Impact: Not measured
- Long Term Impact: Both men and women reduced their total energy intake, decreasing the percentage of energy intake from total and saturated fat and increasing the percentage of energy from carbohydrates and protein. In the NIDDM group, there was a clinically significant decrease in mean

fasting and two-hour glucose level at 3 months. There were statistically significant improvements in insulin, total cholesterol, LDL and triglyceride levels (IGT group only) as well as blood pressure (NIDDM only).

Maintenance: Not mentioned

Lessons Learned: An intervention program focusing on diet and physical activity in those with IGT can result in dietary change, weight loss and improved glucose tolerance. Screening for IGT in those at high risk for developing NIDDM and offering those with persistent IGT a lifestyle intervention program could help reduce the progression of IGT to NIDDM.

Citation(s):
Bourn DM, Mann JI, McSkimming BJ, Waldron MA, Wishart JD. Impaired glucose tolerance and NIDDM: does a lifestyle intervention program have an effect? Diabetes Care. Nov 1994;17(11):1311-1319.