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In This Issue of *Diabetes Care*

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Lifestyle Modification Reduces Health Care Utilization, Drugs, and Costs

Although terminated early due to futility related to its primary end point, new findings from the Look AHEAD (Action for Health in Diabetes) study show that diabetic participants who were randomized to the intensive lifestyle intervention (ILI) arm (weight loss and increased physical activity) used less health care services, took fewer medications, and incurred lower costs over 10 years relative to their counterparts who were randomized to diabetes support and education (DSE). From 2001 to 2004, Look AHEAD randomized more than 5,100 obese or overweight adults with type 2 diabetes to either ILI or DSE and followed them for 10 years with a primary focus on a composite cardiovascular end point. In addition to ascertaining clinical data, researchers also collected information on health care utilization and costs. This information included data on hospitalizations, outpatient care, rehabilitation, home care, medications, and costs associated with use of these resources. Despite the widely publicized null findings for Look AHEAD's composite cardiovascular disease (CVD) end point, a report in this issue of *Diabetes Care* (p. 2548) indicates that relative to people in the DSE group, those allocated to ILI had 11% fewer hospitalizations each year, and among people who were hospitalized, those in the ILI arm had a 15% reduction in length of stay. Further, the ILI group had a 6% reduction in the number of prescribed medications, most of which was associated with reduced use of drugs for diabetes, lipids, and hypertension. The decreased use of health care resources in the ILI group—driven mostly by fewer hospitalizations and lower use of medications—was associated with cost savings of nearly \$5,300 per person over the 10 years of follow-up. Notably, there were no differences in use of outpatient services between the study groups, and cost savings were most pronounced among participants without existing CVD. Although these findings support the idea that lifestyle modification results in long-term cost savings in certain areas and among key diabetes subgroups, policy makers and others may view these savings in the context of the relatively high costs associated with delivering the intervention itself. — *Helaine E. Resnick, PhD, MPH*

Espeland et al. Impact of an intensive lifestyle intervention on use and cost of medical services among overweight and obese adults with type 2 diabetes: The Action for Health in Diabetes. *Diabetes Care* 2014;37:2548–2556

DPPos Data Support Aggressive Treatment of Prediabetes

New data from the Diabetes Prevention Program (DPP) Outcomes Study (DPPos) suggest that achievement of normal glucose regulation (NGR) among people with prediabetes may be particularly beneficial for cardiovascular risk reduction. Although diabetes is widely considered to be a cardiovascular disease (CVD) risk equivalent, multiple short-term studies have failed to show a direct relationship between reduction in glucose levels and favorable CVD outcomes. Data in this issue of *Diabetes Care* (p. 2622) may add to our understanding of this complex dynamic. In the new report, Framingham risk scores were calculated each year among DPP participants in three groups: those who regressed to NGR, those who remained with prediabetes throughout the study, and those who developed diabetes during follow-up. In addition to examining 10-year CVD risk scores, investigators also studied individual CVD risk factors and medication use in an effort to understand changing risk score patterns over time. An intriguing finding was that 10-year CVD risk was highest (16.2%) among people with prediabetes, followed by those who reverted to NGR (15.5%), and those who ultimately went on to develop diabetes during follow-up (14.4%). Among people with prediabetes, CVD risk was highest in the first year of the study, but it decreased over time. Conversely, among people who went on to develop diabetes, CVD risk was lowest in the first year, but increased over time. The overall effect of changes in CVD risk scores over time across the groups was a near convergence in risk at the end of the study period. Further analyses showed that, in large part, the reduction in CVD risk among people with prediabetes was due to increased medical treatment of CVD risk factors such as lipids and blood pressure. Although the investigators acknowledge that the new study has some key limitations, their findings not only suggest that prediabetes is an important step in the natural history of CVD but also indicate that aggressive treatment of CVD risk factors and/or glucose may be particularly useful for reducing CVD risk in this group. — *Helaine E. Resnick, PhD, MPH*

Perreault et al. Regression from prediabetes to normal glucose regulation is associated with reduction in cardiovascular risk: results from the Diabetes Prevention Program Outcomes Study. *Diabetes Care* 2014;37:2622–2631

Expert Forum Offers Insight on Safety of Six Diabetes Drug Classes

This issue of the journal features a summary of findings from a *Diabetes Care* Editors' Expert Forum (p. 2647) that was convened in June 2013 to review evidence concerning six classes of diabetes drugs that are commonly prescribed after lifestyle and metformin fail to achieve desired glycemic goals. The findings of this nine-member panel respond in part to the availability of a number of new antidiabetes agents and in the context of the panel's belief that "the ideal antihyperglycemic agent would be easy to administer, unlikely to cause symptomatic side effects that pose barriers to adherence, inexpensive, reliably efficacious, and safe." Against this backdrop, the group summarizes safety information on a variety of old and new agents including insulin, sulfonylureas (SUs), thiazolidinediones, glucagon-like peptide-1 receptor agonists, dipeptidyl peptidase-4 inhibitors, and sodium glucose cotransporter 2 inhibitors. The panel's global finding was that when used appropriately, all drug classes had wide safety margins. Further, the group emphasized that drugs like insulin and SUs—which have been in use for considerable periods of time—can be incorporated into initial prescribing algorithms because of the wealth of available information related to their safety and efficacy. However, the authors stress that because these drugs may not meet the needs of all patients, one or more of the newer agents are often introduced at some point in the course of treatment. Unlike the older drugs, long-term safety data on the newer agents are not yet available, and the balance of risks and benefits is still being studied. A central message from the Expert Forum concerns the idea that the choice of a specific drug to treat diabetes is less important than initiating treatment early, when therapy is most likely to have an impact on slowing the progression of glucose dysregulation. Reflecting efforts to promote a personalized approach to management that relies on a partnership between patients and providers, the new report includes a list of topics—sorted by drug class—that can be used as a platform to discuss potential therapeutic challenges and side effects. Given the availability of more drug options than ever before for the treatment of diabetes, these pointed discussions, along with early intervention, may go a long way to promoting improved glycemic control for the ever-increasing population of people with diabetes. — Helaine E. Resnick, PhD, MPH

Lifetime Cost Savings With Diabetes Prevention

Although most people would agree that preventing diabetes is a commendable goal, some have argued that from an economic point of view, diabetes prevention may not save money in the long term because by increasing life span, prevention will also increase health care costs. A report in this issue of *Diabetes Care* (p. 2557) provides evidence against this argument. The new research from the Centers for Disease Control and Prevention used two nationally representative data sources to study lifetime medical costs among people with and without diabetes. Researchers used the Medical Expenditure Panel Survey to quantify medical costs paid by diabetic and nondiabetic people living in the community. This information was then linked to data from the National Health Interview Surveys, which provided data on the year of diabetes diagnosis among people reporting diabetes. To understand whether diabetes prevention would result in cost savings over the life span, the investigators calculated average yearly medical costs for people with diabetes. The data were used to derive comparable cost estimates for nondiabetic people, and these estimates were adjusted for known differences in survival between people with and without diabetes. The health care cost estimates were analyzed in relation to published survival data for diabetic and nondiabetic people to generate lifetime costs for the two groups. The researchers found that among both men and women, and across all ages at diagnosis, people with diabetes had significantly greater lifetime medical expenditures than their nondiabetic counterparts. Not surprisingly, excess lifetime costs increased as age at diabetes diagnosis decreased. Over the life course, people who are diagnosed with diabetes at the age of 40 years will accrue an average of \$124,600 more in health care costs than a similar nondiabetic person—a difference that drops to about \$36,000 when diabetes is diagnosed at age 65 years. These data support the idea that if the cost of diabetes prevention is relatively low, prevention would save money over the long term, even among people who are diagnosed at older ages. Given that diabetes is particularly prevalent among people aged ≥ 65 years, these findings have obvious implications for Medicare and public policy. — Helaine E. Resnick, PhD, MPH

Cefalu et al. Beyond metformin: safety considerations in the decision-making process for selecting a second medication for type 2 diabetes management: reflections from a *Diabetes Care* Editors' Expert Forum. *Diabetes Care* 2014;37:2647–2659