News from NIH: obesity and diabetes

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KEYWORDS

Obesity, Diabetes, Strategic plan, NIH funding

The National Institutes of Health (NIH) is engaged in several activities relevant to the theme of this journal issue, "Implementation of obesity and diabetes interventions". This column includes brief summaries of two new strategic plans for research that were released by the NIH in early 2011. Both strategic plans include research priorities relevant to translational behavioral medicine. The NIH supports a wide range of obesity and diabetes research and so only a few examples are covered in this column. The URLs for the full strategic plans are given below.

STRATEGIC PLAN FOR NIH OBESITY RESEARCH

This new strategic plan (http://www.obesityresearch.nih.gov/About/StrategicPlanforNIH_Obesity_Research_Full-Report_2011.pdf) was developed through the NIH Obesity Research Task Force with input from staff across NIH, external experts, and the public. It includes research opportunities that have emerged since the first strategic plan for NIH obesity research was published in 2004. This new strategic plan is intended to serve as a guide for advancing and accelerating research to develop new and more effective approaches to prevent and treat obesity as well as reduce the corresponding health consequences associated with obesity. Five research themes are addressed:

- Discover fundamental biological processes that regulate body weight and influence behavior
- Understand the factors that contribute to obesity and its consequences
- Design and test new interventions for achieving and maintaining a healthy weight
- Evaluate promising strategies for obesity prevention and treatment in real-world settings and diverse populations
- Harness technology and tools to advance obesity research and improve healthcare delivery

Multilevel and multidisciplinary research is recognized as essential for addressing the challenging problem of obesity. Throughout the strategic plan, there is also an emphasis on the full continuum of translational research (bench to bedside and bedside

to community and practice). Understanding the multifaceted causes of obesity and identifying novel treatment approaches remain important areas of emphasis for NIH. In this new strategic plan, there is also a correspondingly strong emphasis on research to test effective and sustainable obesity prevention and treatment approaches and to ensure effectiveness of these efforts in diverse populations and real-world settings.

The causes and contributors to obesity are varied and complex and a single explanation or treatment approach is unlikely to be sufficient. The strategic plan identifies the importance of research to understand the varying contributions and interactions of biology, behavior, social and cultural influences, and environmental factors. A better understanding of what makes individuals or subgroups more or less at risk for obesity will help researchers identify novel targets to improve prevention and treatment of obesity. The strategic plan identifies opportunities for research to improve individual treatment (e.g., behavioral, drug, or surgical), test changes in healthcare delivery, evaluate policies and/or environmental changes designed to influence diet and activity, and community-based approaches to weight management (e.g., schools, worksites, and community organizations). Additionally, cost-effective and sustainable interventions that can prevent excess weight gain and approaches to help people maintain weight loss are critically needed. The importance of conducting research that can inform policy makers at the local, regional, or national levels is recognized and the role of the NIH in supporting the uptake of research findings is highlighted.

ADVANCES AND EMERGING OPPORTUNITIES IN DIABETES RESEARCH: A STRATEGIC PLANNING REPORT OF THE DMICC

This new strategic plan was developed under the auspices of the Diabetes Mellitus Interagency Coordinating Committee (DMICC) (<http://www2.niddk.nih.gov/AboutNIDDK/ReportsAndStrategicPlanning/DiabetesPlan/PlanPosting.htm>) and shaped by input from external experts, NIH staff, and the public. The DMICC is chaired by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) but includes the membership of multiple agencies in the Department of Health and Human Services and other federal agencies that support

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Cite this as: *TBM* 2011;1:365–366
doi: 10.1007/s13142-011-0061-z

diabetes-related activities. The plan is intended to help guide federal investment in high-priority opportunities for diabetes research. It includes a wide range of topics with chapters on 11 topics:

- Genetic basis of type 1 diabetes, type 2 diabetes, obesity, and their complications
- Type 1 diabetes and autoimmunity
- The beta cell
- Type 2 diabetes as a multidimensional disease
- Obesity
- Bioengineering approaches for the development of an artificial pancreas to improve management of glycemia
- Clinical research and clinical trials
- Special needs for special populations
- Diabetes complications
- Clinical research to practice: translational research
- Resource and infrastructure needs for diabetes research.

The goal of a cure requires continued emphasis on research into the fundamental causes of diabetes. This strategic plan also emphasizes research opportunities to improve prevention, treatment, and quality of life in individuals with or at risk for diabetes. For example, the importance of improved methods for dissemination and implementation of clinical trial results is highlighted. This includes promoting translation and adoption of the Diabetes Prevention Program lifestyle intervention to prevent type 2 diabetes, testing lifestyle approaches to reduce risk for gestational diabetes, reducing clinical inertia to medication intensification, understanding barriers to adherence, and enhancing adherence to medical and lifestyle regimens. Research to reduce racial and ethnic health disparities in diabetes is also

critical including testing interventions in diverse populations and settings and identifying and addressing the potential causes of disparities. The needs of special populations are also addressed such as identifying the unique treatment needs of older individuals with diabetes, prevention of type 2 diabetes in youth, testing approaches to improve transition to adult care for adolescents and young adults with diabetes, and addressing issues related to psychiatric comorbidities (e.g., improved treatment approaches and understanding the relationship between the comorbid conditions and/or their treatments). Additionally, the importance of research addressing healthcare systems, policies, and technology is highlighted. For example, research opportunities are identified that capitalize on health information technologies to improve the delivery of care and identify trends in care at the population level. Research that improves the use of glucose management technologies (e.g., blood glucose monitors, continuous glucose monitors, and insulin pumps) is also important so individuals with diabetes, their families, and healthcare providers can use these tools to maximize and sustain glucose control over time.

Funding opportunities

The NIH welcomes research that addresses the research opportunities identified in both of these strategic plans; either investigator initiated or in response to specific funding announcements.

Obesity-related funding announcements can be found at this link: <http://www.obesityresearch.nih.gov/funding/funding.aspx>.

NIDDK funding opportunities related to diabetes can be found at this link: <http://www2.niddk.nih.gov/Funding/FundingOpportunities/>.