

Message from the Director



As the Director of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), I am pleased to present this annual compendium highlighting the research efforts and programs supported by the Institute. The NIDDK has a broad research responsibility, which includes some of the most common, debilitating, and costly conditions affecting Americans. These conditions include diabetes and other endocrine and metabolic diseases, such as cystic fibrosis; liver disease and other digestive diseases, such as inflammatory bowel diseases; nutritional disorders and obesity; kidney diseases, such as polycystic kidney disease; urologic diseases and conditions, such as interstitial cystitis/painful bladder syndrome; and hematologic diseases, such as Cooley's anemia.

The 12th edition of this report illustrates recent NIDDK-supported scientific advances, such as:

- Identification of genetic variants associated with body fat percentage, body fat distribution, and body mass index
- Successful replacement of defective urethral tissue in children with new, functional urethras engineered using biodegradable scaffolds and cells from patients
- Discovery that a naturally produced compound can improve metabolic defects in mouse models of insulin resistance
- Demonstration that the combination of two drugs, pegylated interferon and ribavirin, more effectively treats hepatitis C infection in children
- Demonstration that the hormone hepcidin reduces the toxic buildup of iron in tissues and organs and improves anemia in rodent models of beta-thalassemia
- Discovery that vitamin E helps diminish severe nonalcoholic fatty liver disease in some children
- Discovery of genetic variants associated with increased risk for inflammatory bowel diseases
- Finding that the drug abatacept can slow disease progression in people with new-onset type 1 diabetes
- Identification of a compound that protects cells from the abnormal antibody responsible for Graves' disease

This report also includes personal stories of patients. A woman with chronic pancreatitis describes the challenges of managing her painful disease while maintaining an active life as a mother and radio show host. A youth explains the daily effort required to manage type 1 diabetes, and how he raises awareness for continued research toward a cure for this disease. A man shares his experience participating in an observational study to understand the long-term health consequences of acute kidney injury.

The NIDDK is continuing efforts to ensure that knowledge gained from its research advances is disseminated to health care providers, patients, and the general public. Such efforts include the Institute's education programs, the National Diabetes Education Program and the National Kidney Disease Education Program. Additionally, the Weight-control Information Network, the National Diabetes Information Clearinghouse, the National Digestive Diseases Information Clearinghouse, and the National Kidney and Urologic Diseases Information Clearinghouse develop and distribute

science-based information on diseases and disorders within the NIDDK mission. Several hundred brochures, fact sheets, and publications are available in printed format and on the NIDDK web-site so that they are readily available for patients, health care providers, and the public. I invite you to visit the web-site at www.niddk.nih.gov

This report reflects only a fraction of the immense body of research performed by basic scientists, clinical investigators, and patient volunteers. We remain committed to translating their efforts into improvements in the health and quality of life of all people.



Griffin P. Rodgers, M.D., M.A.C.P.

Director

National Institute of Diabetes and Digestive and Kidney Diseases

National Institutes of Health

U.S. Department of Health and Human Services

The efforts featured in this publication reflect the core mission of the NIDDK, including the Director's guiding principles:

- Maintain a vigorous investigator-initiated research portfolio
- Support pivotal clinical studies and trials
- Preserve a stable pool of talented new investigators
- Foster exceptional research training and mentoring opportunities
- Ensure knowledge dissemination through outreach and communications



Scan the QR code with your mobile device to link to the NIDDK web-site at www.niddk.nih.gov