

It is estimated that diabetes currently affects 246 million people worldwide and is expected to claim 380 million by 2025. According to Division Chief Derek LeRoith, MD, PhD, Lillian and Henry M. Stratton Professor of Endocrinology, this global projection is reflected locally by the increasing number of patients treated by the Division who are newly diagnosed with diabetes or who may be suffering from the many common comorbidities of the disease.

THE HILDA & J. LESTER GABRILOVE

Division of Endocrinology, Diabetes & Bone Disease

Dr. LeRoith, former head of the Diabetes Branch of the National Institute of Diabetes and Digestive and Kidney Diseases, initiated creation of the Diabetes Center at Mount Sinai. “Our goal is to be a renowned, comprehensive inpatient and outpatient diabetes center,” said Dr. LeRoith. “To do so, we are improving diabetes management throughout the hospital. We are increasing training and education regarding diabetes management for all care providers—especially housestaff—as well as providing a seamless continuum of care between the inpatient and outpatient experiences.”

To attain these goals, Dr. LeRoith has focused on building a strong core team of diabetes professionals who provide direct care to patients, counsel groups and individuals regarding nutrition, educate patients and community members at risk for diabetes, and work with care providers throughout the Mount Sinai community to improve management of diabetic patients being treated for comorbidities.

A strong research program centered on increasing understanding of disease and developing new treatments is essential for the provision of cutting-edge patient care. With the highly regarded work of Dr. LeRoith, as well as Assistant Professors Christoph Buettner, MD, Helen Looker, PhD, and Shoshana Yakar, PhD, the Division already possesses very strong basic science and epidemiology programs in metabolic disorders, including type 2 diabetes and obesity.

Looking toward the future, Dr. LeRoith plans to recruit faculty who will enhance these efforts and strengthen the Division’s clinical research program. Research in these areas will also be expanded as part of the newly established Institute for Metabolic Disorders (see page 23 for more information on this and other new research institutes).



The following highlights from the past year are a few of the many reasons why the Hilda and J. Lester Gabrilove Division of Endocrinology, Diabetes and Bone Disease has established itself as a leader in research, education, and patient care in diabetes and metabolic disorders.

- Dr. Yakar received two grants from the National Institute of Arthritis and Musculoskeletal and Skin Diseases to study the role of serum insulin-like growth factor-1 (IGF-1) in bone biology. The grant will support studies involving two mouse models developed by Dr. Yakar and colleagues of serum IGF-1 deficiency and skeletal parameters *in vivo*.
- An editorial by Dr. Buettner titled, “Does FASing out new fat in the hypothalamus make you slim?” was published in *Cell Metabolism*. The editorial focused on a recent study showing that targeted deletion of fatty acid synthase (FAS), a key enzyme for lipogenesis, produces lean mice.
- Dr. LeRoith received a grant from the National Cancer Institute to study the increased risk of breast cancer in type 2 diabetes and the mechanisms involved.
- Dina Green, MD, Assistant Professor, published “New Therapies for Diabetes,” a discussion of the potential role of hormones secreted by the gut in diabetes treatment, in *Clinical Cornerstone*.
- Alice Levine, MD, Associate Professor, and colleagues published an article in *Cancer Research* demonstrating that androgens promote prostate cancer bone metastasis via effects on normal bone cells.
- Recognizing that the threat of lower limb amputation continues to be a severe problem for many with diabetes, the Division established a Lower Limb Diabetes Group as part of the Diabetes Center’s Education Unit.
- The Division’s fellowship curriculum, newly redesigned to reflect rigorous clinical training standards, received full five-year accreditation from the Accreditation Council for Graduate Medical Education, with the highest review score among all reviewed programs.
- One aspect of the fellowship redesign is an increased focus on multidisciplinary learning opportunities. A new conference run by the Division brings together residents and fellows from five departments to discuss cases of thyroid and parathyroid disease.

MANY NEW INITIATIVES IMPROVE DIABETIC PATIENTS’ QUALITY OF LIFE

On average, patients with diabetes experience longer hospital stays than patients without the disease. This generality applies when patients are hospitalized for a wide range of issues, which may or may not be directly related to diabetes.

Dr. LeRoith and Tracy Breen, MD, Assistant Professor and Director of the Diabetes Center are spearheading efforts to improve management of patients with diabetes throughout the hospital.

Dr. Breen led a team of diabetes experts who worked with physicians and nurses to increase knowledge regarding management of diabetes for inpatients. As a result, there has

been a significant decline in the ratio of observed vs. expected length of stay for patients with diabetes as a comorbidity (see graph page 45). In a related initiative, Dr. Breen and the diabetes team worked with medical residents to create guidelines regarding rational inpatient use of insulin by housestaff.

The Division also mounted a pilot study of an insulin drip protocol in the non-ICU setting. The study was performed on two inpatient floors. Data culled from this study suggests that the protocol achieved good glycemic control with minimal induced hypoglycemia. Based on this pilot study, the goal is to create a non-ICU insulin drip protocol for hospital-wide use.

Patients with diabetes are not forgotten once they are discharged.

It is well-known that many diabetics—especially the newly diagnosed—often experience poor glucose control without the support of their inpatient physicians and nurses. To combat this common problem, the Division developed a sophisticated system to track recently discharged patients to ensure they follow an aftercare plan that has been developed by a diabetologist specifically targeting diabetes-related comorbidities. To further assist patients with nutritional and self-care issues, the Division also hired a certified diabetes educator and nutritionist.