



*Spring 2021 Progress Update*

## The Fleischer Institute for Diabetes and Metabolism



**FLEISCHER  
INSTITUTE**  
for Diabetes & Metabolism

Montefiore | **EINSTEIN**  
Albert Einstein College of Medicine

This past year has been a true test of the strength of our nation—and our world—as the COVID-19 crisis touched every aspect of our communities. The Fleischer Institute for Diabetes and Metabolism at Montefiore and Einstein—situated in the Bronx, the nation’s early epicenter of the pandemic—was no exception. While our faculty, our patients, and their families faced great obstacles, we worked to combat the crisis by coming together in inspiring ways. The following pages provide a brief update on our response to the COVID-19 pandemic as well as additional highlights on The Fleischer Institute’s recent progress in advancing diabetes research and clinical care.

None of this work would be possible without your support. On behalf of our patients and the communities we serve, thank you for standing with us in furthering Dr. Norman Fleischer’s legacy and in enabling The Fleischer Institute to continue leading the way in transformative diabetes care.

Sincerely,

**Yaron Tomer, MD**

Anita and Jack Saltz Chair in Diabetes Research  
Professor and Chair, Department of Medicine  
Professor, Department of Microbiology and Immunology  
*Montefiore and Einstein*

Header image: Faculty at The Fleischer Institute treat both adult and pediatric patients with diabetes, helping them navigate the difficult lifestyle changes demanded by the disease. Photo taken pre-pandemic.

## OUR RESPONSE TO THE COVID-19 PANDEMIC

In a recent *U.S. News and World Report* opinion piece, Philip O. Ozuah, MD, PhD, Montefiore Medicine's President and CEO, shared that diabetes was a complication in half of our health system's 2,250 COVID-19-related deaths. Furthermore, Montefiore physicians observed that 40 percent of people hospitalized with the virus had either type 1 or type 2 diabetes, making them not only more vulnerable to serious complications from the virus, but worsening diabetes outcomes such as dangerous blood sugar fluctuations and ketoacidosis. Researchers and physicians within The Fleischer Institute used their access to this immense amount of diverse patient data to drive our understanding into how COVID-19 and diabetes interact—ultimately, helping to set the standard for national protocols on diabetes care. Examples include:

- Endocrinologists at The Fleischer Institute are now contributing to a **nationwide population health surveillance study of people with type 1 diabetes** who tested positive for COVID-19. The investigation follows patients' progress to assess any resulting long-term changes to their diabetes outcomes.

- Following the virus's initial peak in New York City, Fleischer Institute faculty began a **national dialogue on instituting the use of continuous glucose monitors** (CGMs) in the inpatient setting to decrease the number of finger sticks needed for patients in the hospitals—in turn, reducing nurse contact and personal protective equipment (PPE) use when supplies were low nationwide.

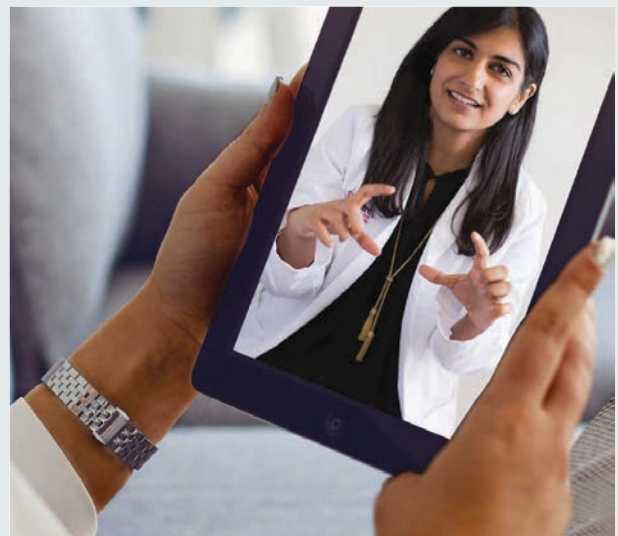
- Montefiore and Einstein became the lead site in a multisite trial with Massachusetts General Hospital, Emory University, and the University of Colorado to **test the efficacy of a new diabetic ketoacidosis protocol** in another effort to reduce nurse contact and preserve PPE while treating patients with diabetes. Rolled out in early April 2020, the new protocol now has a presence on both the American Diabetes Association website and UpToDate—the premiere online medical textbook used today.

- In an effort led by first author Shivani Agarwal, MD, MPH, Assistant Professor of Medicine and Director of the Supporting Emerging Adults with Diabetes (SEAD) Program at The Fleischer Institute, Montefiore and Einstein faculty published a study in *Diabetes Care*, which **examined the risk factors for mortality in hospitalized patients with diabetes and COVID-19**.

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Shivani Agarwal, MD, MPH, conducts a telemedicine visit with a patient.

## DIABETES & COVID-19 BY THE NUMBERS

**10%+** The percent of adults living in the Bronx who receive a diabetes diagnosis—a harmful underlying condition for COVID-19 risk.

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**50% HIGHER** The death rate for patients with diabetes compared to those without diabetes.

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**50%** The percent of Montefiore Health System's 2,250 COVID-19-related deaths in which diabetes was a factor.

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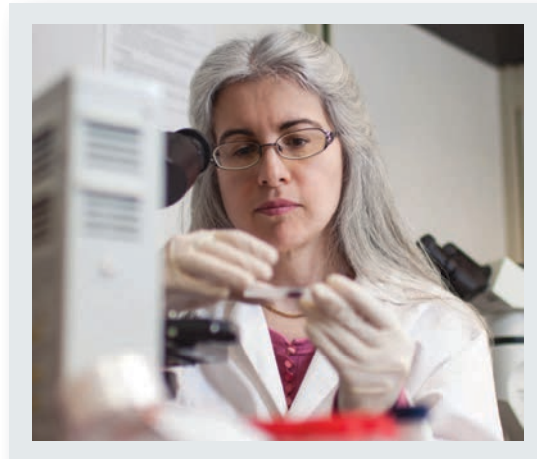
**40%** The percent of people hospitalized with the virus who had either type 1 or type 2 diabetes, as observed by Montefiore physicians.

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## RESEARCH PROGRESS AND CLINICAL CARE

In the Summer / Fall 2020 issue of *Einstein* magazine, we were proud to highlight The Fleischer Institute in two distinct features—one on Montefiore and Einstein's work in type 1 diabetes and the other within *Motivations*, the Office of Development and Alumni Relations' dedicated section within the magazine, which focused on how philanthropy advances these robust efforts. The stories spotlighted the following key advancements in diabetes research and clinical care, which generous friends like you have helped propel:



Teresa DiLorenzo, PhD, is developing an immunotherapy approach to target the cells responsible for causing type 1 diabetes.

- Jeffrey Gonzalez, PhD, Professor of Medicine and of Epidemiology and Population Health,

has undertaken a study using **smartphone apps and CGMs to track how stress and mood affect blood glucose levels**. The app allows patients to enter information related to their moods several times a day, which can directly correlate to blood glucose levels.

- Despite increased awareness of the negative psychosocial aspects of the disease—termed “diabetes distress”—psychological support is rarely a component of disease management plans. The Fleischer Institute is working to overturn the status quo through the **addition of mental health professionals across our diabetes clinics and increased telehealth services for patients**. SEAD also provides psychological counseling services for young adults with type 1 diabetes transitioning to adulthood, including peer support groups and a yearly group retreat.

- Yaron Tomer, MD, Anita and Jack Saltz Chair in Diabetes Research, Professor and Chair of Medicine and Professor of Microbiology and Immunology, is **researching preventative measures against type 1 diabetes**, including short-circuiting instructions that direct T cells known as CD4+ cells to target the pancreas—ultimately, causing the disease's onset.

■ Working with colleagues at the Einstein-Mount Sinai Diabetes Research Center, Dr. Tomer is also pursuing a **novel strategy to find peptide drugs that block antigen-presenting cells (APCs)**—immune cells that instruct T cells to attack the body’s own cells and tissues—which lead to autoimmune diseases. Using computer modeling to screen thousands of potential compounds, the team found one highly promising candidate that has shown encouraging results in inactivating APCs in both mice and human patients with type 1 diabetes.

■ Teresa DiLorenzo, PhD, Professor of Microbiology and Immunology, Professor of Medicine, and Diane Belfer, Cypres & Endelson Families Faculty Scholar in Diabetes Research, and Steven Almo, PhD, Professor and Chair of Biochemistry, Professor of Physiology and Biophysics, and the Wollowick Family Foundation Chair in Multiple Sclerosis and Immunology, are **developing an immunotherapy approach that holds promise in targeting CD8+ T cells with programming to attack insulin-producing cells in the pancreas**—a tactic that would prevent serious side effects by targeting only harmful cells with autoimmune potential.

■ The Fleischer Institute is planning to **open a comprehensive weight-loss program and obesity research center** to address the correlation and complications of obesity and type 2 diabetes.

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## WITH GRATITUDE

Your generosity is all the more essential as we defeat the COVID-19 crisis and define the next phase of human health. Because of your philanthropy, Fleischer Institute faculty can continue finding effective solutions to diseases that impact our community health and that of communities around the world. Thank you for the essential role you play in driving this important work.

For more information about your impact and how to continue supporting The Fleischer Institute, please be in touch.

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*“Before he passed, Dr. Fleischer and I had a vision to create a comprehensive center for diabetes research and care in the Bronx, where these services are desperately needed. I am so proud of the accomplishments of The Fleischer Institute, now in its fourth year of operation, and so grateful to its many generous supporters. I look forward to our continued work—together—to reach more patients and improve their care.”*

David K. Bloomgarden, MD, FACE  
Endocrinology & Metabolism

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