Study Directly Ties Caloric Intake to Inflammation

Researchers at the Icahn School of Medicine at Mount Sinai, using sophisticated, single-cell technology, have isolated the molecular underpinning that explains why short-term fasting and a low-calorie diet are beneficial to people with inflammatory and autoimmune diseases, such as atherosclerosis and rheumatoid arthritis. Until now, the connection between reduced caloric intake and improved health has been a widely held but poorly understood hypothesis that has captured the public’s attention as high-profile celebrities attest to the success of frequent fasting.

In the new study, published in the August 22, 2019, issue of Cell, the researchers, led by Miriam Merad, MD, PhD, Director of the Precision Immunology Institute at the Icahn School of Medicine at Mount Sinai, were able to describe how dietary intake actually controls the quality and quantity of monocytes—a particular group of white blood cells.

The scientists found a direct link between the amount of glucose and protein in the body and the number of circulating monocytes. These white blood cells, likened to military “reserve forces,” respond to inflammatory stimuli and also play a major role in metabolic equilibrium, growth, and other processes. When digestible carbohydrates, protein, and fat were removed from the diet, the investigators found the pool of circulating monocytes decreased. Importantly, the size of the monocyte pool that was circulating in the blood depended upon the amount of carbohydrates ingested.

Inflammation

Food

Fast

Energy

AMPK

PPARα

Injury/
Infection

CCL2

monocyte

Inflammation

Monocytes are highly inflammatory immune cells that can cause serious tissue damage,” says Dr. Merad. “We have seen more of these...

Finding of Distress in Detained Immigrant Children

Mount Sinai researchers have found that children being held in an immigration detention center experienced high levels of mental health distress, with 44 percent demonstrating at least one significant emotional or behavioral symptom. The report was the first large, empirical study examining the mental health of children in U.S. immigration detention, says its Principal Investigator, Craig L. Katz, MD, Clinical Professor of Psychiatry, Global Health, and Medical Education, Icahn School of Medicine at Mount Sinai.

“Perhaps our findings should not really be a surprise,” says Dr. Katz, who considers the study a valuable baseline for further research. “Kids who had been previously separated from their parents had higher rates of emotional problems, compared to those who were always detained with a parent. And the detained children overall had higher rates of distress compared to the general population in the United States.” A team from Mount Sinai spent two months in summer 2018 at a detention center in the Southwestern United States, speaking to women and children, most of...

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A Highly Visible Mount Sinai Presence at US Open

Tennis players and tennis lovers who attended the 2019 US Open Tennis Championships in Flushing Meadows, Queens, saw a highly visible Mount Sinai presence—on the courts, and beyond—during the three-week Fan Week and Tournament experience in August and September. Icahn School of Medicine at Mount Sinai physicians, staff, and volunteers all helped to showcase the Mount Sinai Health System’s role as the event’s Official Medical Services Provider.

**Physicians from the Icahn School of Medicine at Mount Sinai**—including, from left, Melissa Leber, MD; Alexis Chiang Colvin, MD; James Gladstone, MD; and Carlos Benitez, MD, far right, were part of the US Open Player Medical Services team, providing medical expertise courtside. Dr. Colvin, Associate Director of Sports Medicine in the Leni and Peter W. May Department of Orthopedic Surgery, is also the Chief Medical Officer of the US Open and team physician to the US Fed Cup team. Dr. Gladstone is Chief of Sports Medicine for the Health System, and team physician to the US Davis Cup team. Dr. Benitez, Director of Musculoskeletal Imaging at Mount Sinai West and Mount Sinai St. Luke’s, oversaw radiologists who provided onsite diagnostic ultrasound and portable X-ray examinations to players. Dr. Leber is Assistant Professor of Orthopedics, and Emergency Medicine. Joining them courtside were Leesa M. Galatz, MD, Mount Sinai Professor in Orthopedics, and Chair of Orthopedic Surgery; and Michael R. Hausman, MD, Robert K. Lippman Professor of Orthopedic Surgery.

On Arthur Ashe Kids’ Day, Mount Sinai hosted the “Mount Sinai Get Fit and Play” court, which offered physical and fun activities for young tennis enthusiasts, including 7-year-old Tyler Panetis, and distributed 1,300 cooling towels to those who worked up a sweat on a hot and sunny day.

**New this year**—and a popular offering for patrons—were two kiosks, prominently placed on the grounds of the Billie Jean King National Tennis Center. They were staffed with Mount Sinai volunteers who handed out custom-labeled sunscreen and hand sanitizers. Over the course of three weeks, 91 volunteers distributed 58,000 1-oz bottles of branded sunscreen and 10,000 hand sanitizers to grateful fans.

Also at the US Open were 28 patients from the Department of Rehabilitation and Human Performance, who watched the US Open Wheelchair Competition, two of whom joined Richard “Woody” Wood, Outreach Program Coordinator for the Department, center, for a snapshot.

**Six buses**—brightly wrapped in a Mount Sinai logo and US Open banner—stood out amid the New York City traffic as they shuttled US Open players, staff, and other credential-holders between Manhattan and Flushing Meadows.
Complex Coronary Cases Webcast Marks Its 10th Year

The 10th anniversary of Complex Coronary Cases (CCC)—a live webcast that is viewed monthly by more than 10,000 physicians in 154 countries—was recently celebrated by Samin K. Sharma, MD, Director of Clinical and Interventional Cardiology at The Mount Sinai Hospital, and Anandi Lal Sharma Professor of Medicine in Cardiology, and Annapoorna S. Kini, MD, Director of the Cardiac Catheterization Laboratory, and the Zena and Michael A. Wiener Professor of Medicine.

During the webcasts, performed on the third Tuesday of each month, viewers are guided through a complex procedure by Dr. Kini and Dr. Sharma, who are leaders in percutaneous coronary intervention (PCI), also known as angioplasty, which opens blocked arteries and restores normal blood flow to the heart. Participants are actively engaged and encouraged to ask questions during the webcast.

“The overall goal of CCC Live Cases is to offer, to as many people as possible, unparalleled insight and training techniques in the complexities that physicians come across in the field of interventional cardiology,” Dr. Sharma said.

The anniversary webcast in June featured its 120th case, a 75-year-old man with angina and significant narrowing and calcium deposits in the right coronary artery. Dr. Kini performed a successful PCI procedure, reducing the calcific deposits by atherectomy and inserting a drug-eluting stent. The webcast was moderated by another founder of CCC Live Cases, Sameer Mehta, MD, a leading interventionalist and Chairman of the Lumen Foundation in Miami. Three other leaders in the field were guests: C. Michael Gibson, MD, Professor of Medicine at Harvard Medical School; Ron Waksman, MD, Clinical Professor of Medicine (Cardiology) at Georgetown University, and Editor-in-Chief of the journal Cardiovascular Revascularization Medicine; and Habib Samady, MD, Professor of Medicine, Emory University School of Medicine, and Chief of Interventional Cardiology, Emory University Hospitals.

Dr. Kini said, “I am very proud that, because of the global reach of this educational program, we have been able to teach interventionalists all around the world how to tackle complex cases in a simple way.” The program has expanded to offer live monthly webcasts on structural heart interventions and peripheral interventions. To see all live and archived cases, go to www.ccclivecases.org.

Finding of Distress in Detained Immigrant Children (continued from page 1)

whom had fled Honduras, Guatemala, or El Salvador. The study was published in June 2019 in Social Science and Medicine.

The mothers told stories of escaping gang violence or domestic violence in their home countries, where government and police officials often turned a blind eye. The team interviewed 425 women about their eldest child, using the Parent-Report Strengths and Difficulties Questionnaire, a tool widely used for child mental health assessments by clinicians and researchers. Among those 425 children, 32 percent had elevated scores for emotional problems, and the rate was 49 percent for those who had previously been separated from their parent. A subset of 150 children who were age 9 or older also completed the UCLA Post-Traumatic Stress Disorder Reaction Index (PTSD-R1). In that group, 17 percent had a probable diagnosis of PTSD, compared with 4.7 percent in the general population of U.S. children.

“Children with emotional distress showed symptoms like wanting to cry all the time; problems with conduct, such as fighting with other kids or having temper tantrums; and peer problems like not having a lot of friends or only wanting to interact with adults," says Sarah MacLean, lead author of the study and a third-year medical student at the Icahn School of Medicine, who was part of the field team. "The children with symptoms of PTSD reported having flashbacks or nightmares about a trauma, feeling depressed or sad."

Dr. Katz hopes to expand on the research, which had certain limitations. The subjects were a "convenience sample," meaning they were the families who were accessible for interviews in the center's visitation trailer, as opposed to a randomly selected sample. Because of the setting, some mothers completed the forms in their child's presence, which may have influenced their responses. The study also could not pinpoint the cause of the children's distress, whether it was detention, or the journey to the U.S. border, or the violence they faced in their home countries, says Dr. Katz, who is also an Associate Director of the Mount Sinai Human Rights Program. Regardless of the cause, the study concluded that the children "would benefit from culturally responsive and trauma-informed mental health care."

Despite their higher rates of emotional distress, 98 percent of the children had normal scores on the “prosocial” scale, which included being considerate of others’ feelings and volunteering to help others. The team found signs of hope and humanity at the center, a broad expanse of trailers surrounded by a barbed wire fence. One boy from Honduras drew a picture and shyly presented it to Priscilla O. Agyeman, MPH, a co-author of the study and a research coordinator in the Division of Liver Diseases, Icahn School of Medicine. She intends to keep the drawing forever. “The picture gave me a bittersweet message,” Ms. Agyeman says, “that a little boy can do the things any other kid would do, laughing and playing, even in an otherwise very sad environment.”
Mount Sinai Queens Celebrates Anniversary and Staff

Mount Sinai Queens recently marked 20 years of delivering high-quality health care to Queens residents, hosting jubilant hospital-wide celebrations that spotlighted its transformation from a small community hospital into a world-class institution since it joined The Mount Sinai Hospital in 1999. As part of the festivities, Mount Sinai leadership honored outstanding hospital staff and FDNY-EMS partners for providing skilled and compassionate patient care and service, every day.

Today, its six-story, 140,000-square-foot, $180 million Pavilion is home to Mount Sinai Doctors, new operating rooms and an interventional radiology suite, the Stavros Niarchos Foundation Emergency Department, and more, serving as a beacon of health care excellence in the borough.

Norma Calame, Director, Human Resources, center, and Carol Moutaftsis, Administrative Manager, Human Resources, far right, celebrated with honorees that included, from left: Nelson Barayuga, MT, Assistant Director, Laboratory (Team of the Year); Daniella Stephen, MPH, MSN, RN, CPHQ, Clinical Program Manager, Nursing Quality (Service Excellence); Hakima Aouchiche, MD, Critical Care Medicine (Physician of the Year); Roseller Tagupa, MT, Director, Laboratory (Team of the Year); and Anthony Auditore, MNST, RN, NE-BC, Nurse Manager, Hemodialysis and 3 East (Manager of the Year).

Mount Sinai Queens Executive Director Caryn A. Schwab with Employee of the Year Rashid Larry, RT, Lead CT Technician, Radiology.

Study Directly Ties Caloric Intake to Inflammation (continued from page 1)

monocytes in blood circulation as Western-style eating habits have been adopted by increasing numbers of people around the world. Now that we have a better understanding of what is driving this incidence, we can work to treat it more effectively.”

Stefan Jordan, PhD, the study’s first author and a postdoctoral fellow in the Department of Oncological Sciences at the Icahn School of Medicine at Mount Sinai, says, “There is enormous potential in investigating the anti-inflammatory effects of fasting, considering the broad spectrum of diseases that are caused by chronic inflammation. Our discoveries could lay the groundwork for novel treatments in the future.”

Indeed, chronic diseases such as type 2 diabetes, metabolic syndrome, and cardiovascular disease are believed to be mostly caused by chronic inflammation. According to a study by the RAND Corp., 60 percent of Americans had at least one chronic condition and 42 percent had multiple chronic conditions as of 2014, the last year for which this data was available. In 2018, the Milken Institute released a report that stated the most common chronic diseases cost the U.S. economy more than $1 trillion annually.

One of the study’s important findings was that short-term fasting did not compromise the body’s ability to protect itself from acute infections or repair tissue, whereas starvation for 48 hours prior to infection did compromise the body’s antimicrobial immunity and ability to repair tissue.

Another finding by Dr. Merad and her team was that by activating a key cellular pathway in the liver, AMPK, they were able to regulate the number of monocytes regardless of caloric intake. “Targeting liver energy sensors could be an innovative strategy for the prevention and treatment of chronic inflammatory and autoimmune diseases,” says Dr. Merad.
**Advancing Plastic and Reconstructive Surgical Care**

The Derfner-Lieberman Family Center for Plastic and Reconstructive Surgery was officially unveiled Tuesday, July 30, at a ribbon-cutting held at the May Center for Mount Sinai Doctors. The facility was made possible through a $6 million gift from Jay Lieberman, trustee of the Derfner Foundation and member of the Department of Surgery Advisory Board. Featuring first-of-its-kind technology, each of the nine modern private patient exam rooms is equipped with a 55-inch touchscreen Microsoft HUB computer, allowing for a more comprehensive and interactive review of presurgical planning; better visualization of anticipated surgical results following reconstructive surgery for a cancer diagnosis, an accident, or gender-affirming procedures; and a more enhanced consultation experience for the patient and the surgeon.

**A Day of Remembrance for 9/11**

The 18th anniversary of the World Trade Center attacks was solemnly observed on Wednesday, September 11, at Stern Auditorium, in an event led by Michael A. Crane, MD, MPH, Director of the World Trade Center Health Program Clinical Center of Excellence at the Icahn School of Medicine at Mount Sinai. More than 22,000 responders are being treated at Mount Sinai’s Center, which is the largest in the Program. At the event, about a dozen staff teams presented videos about their roles in caring for 9/11 patients, in fields such as clinical care, billing, data management, and claims certification.

Speakers included Manish Arora, PhD, MPH, the Edith J. Baerwald Professor of Environmental Medicine and Public Health, Icahn School of Medicine at Mount Sinai; and the Rev. James Hayes, MA, MDiv, a chaplain for The Mount Sinai Hospital, who was there when the towers fell and spent the next year ministering at the site. “You are a blessing to every first responder and every person who spent time at Ground Zero,” Father Hayes told the attendees. “You provide us with respect and hope.”

**“Superhero” Team at Disability Pride Parade**

Whether they walked, rolled, ran, or strolled, the Sinai Superheroes enjoyed the fifth annual Disability Pride Parade on a beautiful July day in Manhattan. About 20 staff, patients, family members, and friends wore either a blue or magenta cape, emblazoned with the Mount Sinai logo and the word “Superheroes.” One Mount Sinai patient drove his custom Polaris Slingshot three-wheel motorcycle, which resembles the Batmobile and went perfectly with the team’s theme. “This is a great way to celebrate diversity, love, acceptance, and inclusion,” says an organizer of the team, Clarisse Quirit, Recreational Therapist, Department of Rehabilitation and Human Performance, The Mount Sinai Hospital. “Each person overcomes challenges and continues to persevere and inspire; that makes them superheroes.”
**register now**

8th Annual **SINAI**nno**vations**

**Leading a New Era of Discovery**

**Theme: Artificial Intelligence**
Join international thought leaders as they discuss the explosive growth of artificial intelligence in health care. Sessions and lectures will include the role of artificial intelligence in imaging, robotics, and medical decision-making.

**Tuesday, October 15 – Wednesday, October 16**
Annenberg, Stern Auditorium
https://inside.mountsinai.org/sinainnovations/

Registration is free but required.

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**The Diversity Innovation Hub**
The Office for Diversity and Inclusion
Patricia S. Levinson Center for Multicultural and Community Affairs

Meet entrepreneurs from health care research, technology, and community start-ups to explore the convergence of diversity and innovation and the power of innovation to transform health care and local communities.

**Monday, October 14**
1:30 pm
Hess Center for Science and Medicine
Davis Conference Center

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**Careers & Connections 2019**
A **SINAI**nno**vations** Event

Join us for a fireside chat and two panel discussions, and informal networking, which connects trainees in the life sciences with industry professionals.

**Tuesday, October 15**
3 - 7 pm
Hess Center for Science and Medicine

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**Diversity Issues In Neuroscience**
The Friedman Brain Institute’s “Diversity in Neuroscience” lecture series will honor the legacy of the late Ben Barres, MD, PhD, a groundbreaking neurobiologist whose passion for science and belief in equality made him one of the most celebrated scientists of his era. The event is co-sponsored by Women in Science and Medicine. The Twitter hashtag is #DiverseBrains. For more information, email sarah.montgomery@icahn.mssm.edu or sandra.masur@mssm.edu.

**Monday, October 7**
5 - 6:15 pm
Hess Center for Science and Medicine
Davis Auditorium

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**Research Resources Fair**
The Dean’s CoREs and Research Resources Program is hosting its Annual Research Resources Fair. The event will feature Icahn School of Medicine at Mount Sinai CoREs, departmental and institute/center research facilities, as well as external partners to showcase research resources available to the School of Medicine researcher community. Facility personnel will be onsite to discuss research projects and facility capabilities. For more information, please contact shekhar.patil@mssm.edu.

**Tuesday, October 8**
11 am - 2 pm
Annenberg, Guggenheim Pavilion

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**Mount Sinai Transformation Update**

For the most recent updates on Mount Sinai’s downtown transformation, please go to:
http://www.mountsinai.org/locations/downtown

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The Mount Sinai Health System complies with applicable Federal civil rights laws and does not discriminate, exclude, or treat people differently on the basis of race, color, national origin, age, religion, disability, sex, sexual orientation, gender identity, or gender expression.