In a recent study, restricting dietary fat led to body fat loss at a rate 68 percent higher than cutting the same number of carbohydrate calories when adults with obesity ate strictly controlled diets. Carb restriction lowered production of the fat-regulating hormone insulin and increased fat burning as expected, whereas fat restriction had no observed changes in insulin production or fat burning. The research was conducted at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), part of the National Institutes of Health. Results were published August 13 in Cell Metabolism.

"Compared to the reduced-fat diet, the reduced-carb diet was particularly effective at lowering insulin secretion and increasing fat burning, resulting in significant body fat loss," said Kevin Hall, Ph.D., NIDDK senior investigator and lead study author. "But interestingly, study participants lost even more body fat during the fat-restricted diet, as it resulted in a greater imbalance between the fat eaten and fat burned. These findings counter the theory that body fat loss necessarily requires decreasing insulin, thereby increasing the release of stored fat from fat tissue and increasing the amount of fat burned by the body."

The researchers studied 19 non-diabetic men and women with obesity in the Metabolic Clinical Research Unit at the NIH Clinical Center in Bethesda, Maryland. Participants stayed in the unit 24 hours per day for two extended visits, eating the same food and doing the same activities. For the first five days of each visit they ate a baseline balanced diet. Then for six days, they were fed diets containing 30 percent fewer calories, achieved by cutting either only total carbs or total fat from the baseline diet, while eating the same amount of protein. They switched diets during the second visit.

The researchers had previously simulated the study with a math model of human metabolism, whose body fat predictions matched the data later collected in the study. When simulating what might happen over longer periods, the model predicted relatively small differences in body fat loss with widely varying ratios of carbs to fat. Those results suggest the body may eventually minimize differences in body fat loss when diets have the same number of calories. More research is needed to assess the physiological effects of fat and carb reduction in the long term.

Continued on Page 6.

"These findings counter the theory that body fat loss necessarily requires decreasing insulin."

SPECIAL POINTS OF INTEREST:

- Patient Advisory Committee (p. 2)
- 21st Century Cures Passes House (p. 4)
UPDATES FROM NCATS

NCATS has announced it will spearhead the second phase of several NIH ExRNA Communication program projects to test and validate exRNA molecules for their potential as disease biomarkers and treatments. The first phase of these NCATS projects focused on discovery and feasibility. The NCATS projects are funded by the NIH Common Fund.

For more information, please click here.

Through the Accelerated Clinical Trial Agreement (ACTA) initiative, working group members supported in part through NCATS’ Clinical and Translational Science Awards (CTSA) Program have developed two new standard agreements to expand clinicians’ toolboxes: a Contract Research Organization (CRO) ACTA and a CRO Accelerated Confidential Disclosure Agreement. These standardized documents can greatly reduce contracting delays associated with CRO-managed, industry-sponsored, multisite study initiation.

These agreements are intended to shorten the contract negotiation time for industry or federally sponsored multisite studies and are the result of the ACTA initiative, which seeks to reduce clinical trial contracting delays by developing efficient contract models for multisite trials. The documents address issues such as recruitment, record retention, patient safety, the Health Insurance Portability and Accountability Act and confidentiality, patient billing, limit of liability, data use, and intellectual property.

For more information about the ACTA initiative, please click here.

JOINT MEETING BETWEEN NCATS & CURES ACCELERATION NETWORK REVIEW BOARD

The National Center for Advancing Translational Sciences (NCATS) Advisory Council and the Cures Acceleration Network (CAN) Review Board have held two joint meetings in recent months, on June 18 and September 3.

In the June 18 meeting, topics discussed included early-, mid-, and late-stage translational innovation highlights, as well as a discussion on discovering new therapeutic uses for existing molecules. Several concept clearances, including for R&D contract support for NCATS translational Sciences, small business translational science innovation award program, and NCATS exploratory clinical trials for small business were discussed. A policy and legislative update was also given.

On the September 3 meeting, topics discussed at the meeting included ExVivo female reproductive tract integration in a 3-D microphysiologic system. Concept clearances for drug repurposing process innovation program, translational research informatics and operations support, and bioethics research in miomedical and translational science were also discussed.

For more information on the June 18 meeting, please click here. For more information on the September 3 meeting, please click here.

PATIENT ADVISORY COMMITTEE

On September 18, 2015, the FDA announced the Patient Engagement Advisory Committee (PEAC).

The Committee will provide advice to the Commissioner or designee on complex issues relating to medical devices, the regulation of devices, and their use by patients. It will give FDA the opportunity to obtain expertise on various patient-related topics, with the goal of improving communication of benefits and risks and increasing integration of patient perspectives into the regulatory process.

The Committee may consider topics such as: Agency guidance and policies, clinical trial or registry design, patient preference study design, benefit-risk determinations, device labeling, unmet clinical needs, available alternatives, patient reported outcomes and device-related quality of life or health status issues, and other patient-related topics.

The PEAC represents a new and exciting opportunity to foster patient partnerships with FDA, and it complements other efforts at FDA to bring the patient into the medical device regulatory process.

This includes studies to evaluate patient preferences in medical devices and a recently published draft guidance on patient preference information for PMAs, HDE applications, de novo requests, and inclusion in device labeling that describes how patient tolerance for risk and perspective on benefit, in addition to clinical data and other information, may be considered in FDA’s assessment of the benefit-risk profile of certain devices.

For more information, please click here.
**NIDDK FUNDING ANNOUNCEMENTS**

PAR-15-346—[Time-Sensitive Obesity Policy and Program Evaluation](#)—September 14, 2018

PAR-15-306—[Lymphatics in Health and Disease in the Digestive System, Kidney, and Urinary Tract](#)—September 8, 2018

PAR-15-161—[Pilot and Feasibility Clinical Research Grants in Kidney Diseases](#)—May 8, 2018

PA-14-055—[Lead Optimization and Pre-Clinical Development of Therapeutic Candidates for Diseases of Interest to the NIDDK](#)—January 8, 2017


PA-15-049—[Underactive Bladder in Aging](#)—January 8, 2018

For more information or to find more funding opportunities, please click [here](#).

**NEW TECHNOLOGIES AVAILABLE FOR LICENSING FROM THE NIH OFFICE OF TECHNOLOGY TRANSFER**

**N-Acetyl Mannosamine as a Therapeutic Agent**

N-Acetyl Mannosamine is a precursor for the synthesis of sugar molecules known as sialic acids which play an important role in specific biological processes such as cellular adhesion, cellular communication and signal transduction. Lack of sialic acids also play an important role in disease processes such as cancer, inflammation and immunity.

This invention relates to methods of administering N-Acetyl Mannosamine or its derivative (to produce sialic acid in patients who are deficient in the sugar molecule) to treat muscular atrophy including hereditary inclusion body myopathy (HIBM) and distal myopathy with rimmed vacuoles (Nonaka myopathy). Certain kidney conditions such as those arising from hyposialytion of kidney membranes may be treated by this method as well.

**Therapeutic for Sickle Cell Disease and Beta Thalassemias**

Sickle-cell disease and beta thalassemia are among the most common hereditary blood disorders in the world. It has been shown that patients exhibit less severe symptoms of these disorders when they produce unusually high levels of fetal hemoglobin (HbF). HbF production, which normally shuts off after birth, has been considered as a viable treatment because of inability to form hemoglobin aggregates within red blood cells responsible for painful episodes in patients. Researchers at the National Institute of Diabetes and Digestive and Kidney Diseases have identified a method of regulating the expression of fetal hemoglobin in adult red blood cells. The lead inventor and colleagues have developed novel expression vectors designed to reactivate production of HbF proteins through increased erythroid-specific expression of Lin28 or decreased expression of Let-7 microRNAs. This technology could lead to development of multiple types of therapeutics that ameliorate or eliminate the pathologies associated with human sickle-cell anemia and beta thalassemia.

To learn more about these technologies and to find others available for licensing, please click [here](#).

**PATIENT ORGANIZATION EVENTS**

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**HOUSE PASSES 21ST CENTURY CURES ACT**

On July 10, the House of Representatives passed the 21st Century Cures Act. In response, BIO President and CEO Jim Greenwood released a statement applauding the House for its passage.

“We praise the House of Representatives for today’s vote to pass 21st Century Cures legislation that recognizes the critical link between research, development, and reimbursement to expedite the delivery of breakthrough treatments and cures to patients suffering from life-threatening and debilitating diseases.

“This bill represents forward-looking public policies that sustain scientific discovery and promote biomedical advancement. The future of medicine will harness 21st century scientific tools, advancements in molecular biology, and novel bioinformatics to develop and improve upon therapies that can prevent, diagnose, and treat all stages of disease. This landmark legislation would lay the groundwork for transforming patient care by encouraging innovative approaches to drug discovery, development and delivery.

“The legislation prioritizes placing patients at the center of the drug development process, which we believe will help spur the development of therapies for the most prevalent conditions, as well as encourage development of treatments focused on unmet medical needs. Together with numerous patient groups, we strongly support establishing a framework for incorporating patient views into the development and regulatory review processes in a more structured and transparent way with respect to both patient input for benefit-risk assessments and use of patient experience data in regulatory decision-making.”

To read the full statement, please click [here](#).

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**BIO JOINS CORPORATE GOVERNANCE COALITION FOR INVESTOR VALUE**

On July 2, BIO joined with several business groups to found the Corporate Governance Coalition for Investor Value (CGCIV), a coalition of trade associations dedicated to commonsense corporate governance policies. BIO members are impacted by corporate governance, accounting, and securities policy, and the CGCIV will work to ensure a favorable policy environment for capital formation and small business growth. The coalition’s goals include reducing the role of proxy advisory firms in the corporate governance process, moving the SEC away from one-size-fits-all regulations, and promoting long-term shareholder value rather than short-term decision-making. BIO has joined the Coalition’s first letter to the SEC, on its recent Pay Versus Performance proposal.

To read the CGCIV’s mission statement and goals, click [here](#). To read its Pay Versus Performance comment letter, click [here](#).

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**BIO STATEMENT ON NOMINATION OF DR. ROBERT CALIFF AS FDA COMMISSIONER**

BIO President and CEO Jim Greenwood released the following statement commending President Barack Obama for his nomination of Dr. Robert Califf as Commissioner of the Food and Drug Administration:

“BIO is encouraged by the nomination of Dr. Califf as the next Commissioner of Food and Drugs and we urge the Senate to consider his confirmation as soon as possible. Dr. Califf is a respected cardiologist and clinical trial expert with a firm understanding of the challenges and opportunities of 21st century medicine. The FDA deserves a strong, confirmed Commissioner to effectively fulfill its expanding obligations and maintain appropriate standards for the safety and effectiveness of advanced therapies.

“The Administration’s commitment to stable leadership at FDA will help the Agency keep pace with the rapidly evolving science of drug development, and recruit and retain world-class scientists and medical reviewers.

“We look forward to working with the next Commissioner and the Congress to ensure that the FDA has the resources necessary to protect America’s patients and consumers.”

For more information, and to read President Obama’s release on Dr. Robert Califf’s nomination, please click [here](#).
SENATE FINANCE COMMITTEE APPROVES R&D CREDIT REFORM FOR PRE-REVENUE BUSINESSES

On July 21, the Senate Finance Committee approved the Innovators Job Creation Act (S. 455), sponsored by Sens. Chris Coons (D-DE), Pat Roberts (R-KS), and Chuck Schumer (D-NY). The bill would allow pre-revenue small businesses to claim the R&D tax credit against their payroll tax obligations, broadening the scope of the credit and supporting research at emerging companies.

Under current law, the R&D credit can only be claimed against a company’s corporate income tax liability. However, many early-stage innovators are not yet profitable and thus do not owe corporate tax – meaning that their R&D credits go unused. The Innovators Job Creation Act would allow companies to apply the R&D credit to their employer-side payroll tax, which all companies pay regardless of profitability.

The bill would apply to small businesses with gross receipts of less than $5 million per year, and the credit would be capped at $250,000. To learn more about S. 455, click here.

SENATE FINANCE WORKING GROUPS ISSUE TAX REFORM REPORTS

In early 2015, Senate Finance Committee Chair Orrin Hatch (R-UT) and Ranking Member Ron Wyden (D-OR) established five working groups to examine sections of the tax code in an effort to generate ideas for tax reform. The working groups, to which BIO submitted comments this spring, issued their reports on July 7. Proposals and issues important to BIO were included in both the Business Income Tax and International Tax working group reports. In particular, BIO’s R&D Partnership Structures proposal, as included in the Start-up Jobs & Innovation Act (S. 341) and the COMPETE Act (S. 537), was highlighted by the Business Income Tax working group as a potential approach to incentivize small business innovation. The reports also highlight various proposals related to making the R&D Credit permanent, implementing an Innovation Box, lowering the corporate tax rate, and other ideas that could impact BIO members.

All five working group reports can be accessed here.

BIO SUBMITS COMMENT ON SEC DISCLOSURE EFFECTIVENESS PROJECT

The SEC’s Division of Corporation Finance has been undertaking a Disclosure Effectiveness project for the last year. The goal of the project is to examine the existing public company disclosure regime, particularly as it exists under Regulations S-K and S-X and Forms 10-K, 10-Q, and 8-K, and identify areas and items that would benefit from reform. Specifically, SEC staff are looking for ways to reduce, scale, or eliminate duplicative, overlapping, outdated, or unnecessary reporting requirements. BIO submitted comment to the Division of Corporation Finance on July 15, applauding the SEC for its work on this important project. BIO’s letter highlights the need for disclosure reform that will reduce capital diversion at resource-intensive small companies. In particular, BIO advocates for a new small company definition to govern which companies are eligible for certain exemptions and allowances. The letter supports changes to the smaller reporting company and non-accelerated filer definitions that would add a revenue test to the definitions and increase the public float ceiling for eligibility, ensuring a reduced reporting burden for emerging biotech companies.

To read BIO’s Disclosure Effectiveness comment letter, click here.

NEPH/ENDO/METABOLISM/GASTRO-FOCUSED LEGISLATION

H.R. 3381—Childhood Cancer STAR Act
To maximize discovery, and accelerate development and availability, of promising childhood cancer treatments, and for other purposes.
  
  Sponsor: Rep. Michael McCaul (R-TX)
  Status: Referred to the House Subcommittee on Health

S. 804—Medicare CGM Access Act of 2015
This bill amends title XVIII (Medicare) of the Social Security Act to provide Medicare coverage of continuous glucose monitoring (CGM) devices furnished to a CGM qualified individual.
  
  Sponsor: Sen. Susan Collins (R-ME)
  Status: Referred to the Committee on Finance
In September, BIO called on biopharmaceutical, business development, life sciences and policy experts to submit thought-provoking and timely proposals for sessions and speakers at the 2016 BIO International Convention. BIO 2016 will be held June 6-9, 2016 in San Francisco, California.

The BIO 2016 program will address a wide variety of topics relevant for the biopharmaceutical industry and related sectors, including healthcare, intellectual property, environmental issues, business development, cross disciplinary issues, and more. Prospective session organizers are encouraged to submit comprehensive proposals with suggestions for panelists. Preference will be given to session proposals that foster interaction. BIO is inviting all prospective speakers to submit their credentials during the BIO 2016 Call for Sessions & Speakers. Upon completion of the proposal review process, the BIO 2016 Program Committee will evaluate submitted speakers’ expertise. Qualified speakers will be considered to fill remaining slots in their knowledge area. Note: Proposal submissions will be given priority in the review process. To be considered submit your name, bio, and focus area of your expertise.

The session proposal guide, sample proposal form, list of potential topic areas and more can be found here.

NIIDDK STUDY FINDS CUTTING DIETARY FAT REDUCES BODY FAT MORE THAN CUTTING CARBS (CONT. FROM PAGE 1)

“This NIH study provides invaluable evidence on how different types of calories affect metabolism and body composition,” said NIDDK Director Griffin P. Rodgers, M.D. “The more we learn about the complicated topic of weight loss, the better we can find ways to help people manage their health.”

More than two-thirds of American adults are overweight or obese. Maintaining a healthy weight can help prevent complications related to overweight and obesity such as heart disease, type 2 diabetes and certain types of cancer, some of the leading causes of preventable death.

“Our data tell us that when it comes to body fat loss, not all diet calories are exactly equal,” Hall said. “But the real world is more complicated than a research lab, and if you have obesity and want to lose weight, it may be more important to consider which type of diet you’ll be most likely to stick to over time.”

The NIDDK, a component of the NIH, conducts and supports research on diabetes and other endocrine and metabolic diseases; digestive diseases, nutrition and obesity; and kidney, urologic and hematologic diseases. Spanning the full spectrum of medicine and afflicting people of all ages and ethnic groups, these diseases encompass some of the most common, severe and disabling conditions affecting Americans.

To read more, please click here.