

Buzzworthy: Exclusive Updates on Research and Advances from OneGuild Insiders

Advancing Chronic DFU Therapy: Promising Post-Market Studies

Dr. Adam L. Isaac from the Foot & Ankle Specialists of the Mid-Atlantic is exploring innovative treatments like ProgenaMatrix, Mirragen, and Debritom+ in post-market studies for chronic DFUs.

- He is steering a phase 2 study, unraveling the potential of a **mesenchymal stem cell patch** to **transform the landscape of chronic DFU therapy**.

Breaking Ground in Diabetes Care: NYU Langone Health Pioneers 'The Carville Approach' to Prevent Lower Extremity Amputations

Drs. Frank Ross and Louis Iannuzzi from NYU Langone Health are pioneering an innovative project, aiming to develop an innovative medical office method for offloading. Despite facing uphill struggles in finding the right expertise to help develop the prototype, their commitment to progress remains unwavering.

An active project of the team is to champion the use of total contact casting in their clinic to **mitigate the risk of lower extremity amputation**.

- Termed 'The Carville Approach', **they find that this method, considered the 'gold standard'** for treating Diabetic Foot Ulcers (DFUs) is underutilized in the USA. Their data shows a 85% healing rate for DFUs.

Last fall, **Drs. Jason Zhang and Frank Ross presented this data at the Eastern Vascular Society's national meeting**. They will present these findings this March at the Society for Clinical Vascular Surgery (lecture M51 at SCVS 2024).

An update on titles: Dr. Ross has now been appointed as Clinical Professor of Surgery as of January 23rd, 2023.

[Further reading on contact casting](#)

ADRIANA C. PANAYI, MD, PHD: After earning our Peter Sheehan Young Innovator Award in Tissue Regeneration and Limb Preservation in 2022 ([listen to her presentation here](#)), Dr. Panayi, now at BG Klinik Ludwigshafen, University of Heidelberg, has established a **STATE-OF-THE-ART LAB** dedicated to chronic wound healing.

Dr. Panayi is part of a research study about 'How the diabetes drug Metformin prevents bone loss in postmenopausal mice'. [Read more](#)

Additionally, she has become a member of the Board of the European Tissue Repair Society, and in Spring 2024, she is scheduled to present at the Wound Healing Society Congress.

-- **An update on titles and awards:** Dr. Panayi was honored with the Paul Ehrlich Rising Star in Wound Healing Award by the Wound Healing Foundation.

Insider Insights: Dr. Alexander Fanaroff's Advocacy Unveiled – Geographical Imbalances, ARC Act, and the Future of Diabetes Care

Advocating for Change: Dr. Alexander Fanaroff's Bold Move

In a powerful collaboration with the Society of Cardiovascular Angiography & Interventions (SCAI) and the Association of Black Cardiologists, Dr. Alexander Fanaroff of Penn Medicine recently took center stage at a Congressional briefing. His mission: to **advocate for the Amputation Reduction Compassion (ARC) Congress Act of 2023**.

Case in Point: The ARC Act of 2023

Introduced on June 21, 2023, the ARC Act is **poised to reshape peripheral artery disease (PAD) care**. **Driven by a commitment to accessibility**, the bill proposes comprehensive coverage of PAD screening test under Medicare and Medicaid for at-risk individuals. No-cost sharing ensures that these crucial screenings are within reach for all. But the ARC Act is not just about coverage – it envisions educational programs, a new payment model, and Medicare quality measures, all strategically crafted to minimize amputations linked to PAD.

Why It Matters: Geographical Imbalances in Amputation Rates

Dr. Fanaroff's advocacy extends beyond legislation, shining a spotlight on geographical imbalances in amputation rates. This critical issue underscores **disparities in healthcare access and resources**, urging a closer look at preventive measure, improved infrastructure, and targeted interventions. **The journey towards equity in healthcare** takes center stage, and Dr. Fanaroff's efforts emphasize the urgency of addressing these disparities.

Intriguing Insights: Unveiling the forgotten heroes of medical breakthroughs

Explore the untold stories behind groundbreaking discoveries in the world of medicine

In this edition, we shine a spotlight on the 'forgotten' Aberdeen-educated man who played a

crucial role in the discovery of insulin. Uncover the hidden narratives that have shaped the landscape of healthcare and celebrate the unsung heroes of scientific milestones. [Read the full story](#)

In The Know: Taking Stock of Global Diabetes News Driving The Day

Drug Screen Points Toward Novel Diabetes Treatments

Brief Overview: Researchers at Weill Cornell Medicine have **uncovered a potential game-changer in diabetes treatment**. Their discovery revolves around a drug initially explored for cancer therapy, AZD7762, which has shown **remarkable promise in stimulating insulin secretion** in pancreatic beta cells.

Key Findings:

- Through meticulous drug screening, researchers identified AZD7762 as a potent stimulator of insulin secretion, a vital process in managing type 2 diabetes.
- The study sheds light on a previously unknown mechanism for insulin regulation, offering fresh insights into diabetes pathophysiology.
- AZD7762's efficacy in increasing glucose-mediated insulin secretion was validated across multiple tests involving human and non-human pancreatic cells, as well as various mouse models of type 2 diabetes.

Impact:

- **The discovery of AZD7762's potential in diabetes treatment marks a significant leap forward in addressing a global health challenge.**
- If harnessed effectively, AZD7762 could complement existing therapies, offering new avenues for managing diabetes and reducing associated complications.

Conclusion: **This breakthrough discovery not only uncovers a novel approach to diabetes treatment** but also underscores the importance of continued research in uncovering new therapeutic targets. **AZD7762's potential to improve insulin secretion** holds promise for enhancing the quality of life for millions living with diabetes, heralding a new era in diabetes management strategies. [Read more](#)

A Breath of Fresh Air Keeps Drug-Producing Cells Alive Longer

Brief Overview: Northwestern University researchers have developed the "electrocatalytic on-site oxygenator" (ecO₂), a pioneering device aimed at sustaining cells within implantable "living pharmacies." By producing oxygen directly at the site, the ecO₂ device prolongs cell viability, potentially enhancing outcomes in cell-based therapies.

Key Findings:

- The ecO₂ device utilizes water-splitting technology, powered by electricity, to produce oxygen within the implant, essential for cell survival and therapeutic production.
- In vitro experiments demonstrated that the ecO₂ device maintained cell viability (70-80%) for close to a month under low oxygen conditions, outperforming control conditions significantly.
- Collaborative efforts between Northwestern University and Carnegie Mellon University have led to the development of the ecO₂ device, combining expertise in biomedical engineering and materials science.

Impact:

- The ecO2 device holds promise for various cell-based therapies, including tissue regeneration, drug delivery, and augmenting natural healing processes, potentially benefiting patients with conditions like obesity, diabetes, and cancer.
- Its ability to sustain densely packed cells in hypoxic conditions offers potential advancements in treatment efficacy and patient care.

Conclusion: The development of the ecO2 device represents a **significant breakthrough in sustaining cells for cell-based therapies**, potentially transforming disease treatment paradigms. By ensuring prolonged cell viability and therapeutic production, **this innovation opens new avenues** for improving treatment outcomes and addressing critical healthcare challenges. [Read more](#)

Ground-breaking Discovery Could Pave the Way for New Therapies to Prevent Cardiovascular Disease and Stroke

Brief Overview: Researchers at the University of Leicester have unveiled a groundbreaking discovery elucidating the mechanism by which dietary cholesterol is absorbed into cells, offering new opportunities for therapeutic intervention in preventing cardiovascular disease and stroke.

Key Findings:

- The research, recently published in Science, identifies two proteins, Aster B and Aster C, crucial for transporting dietary cholesterol from the cell membrane of intestinal cells to the internal compartment for modification before circulation.
- **This discovery presents new avenues for therapeutic intervention to regulate cholesterol uptake, potentially complementing existing therapies and saving lives.**
- The study received funding from the Leducq Foundation, highlighting the collaborative effort in understanding cholesterol transport mechanisms.

Impact:

- Understanding cholesterol absorption mechanisms could lead to targeted interventions to mitigate the risk of cardiovascular disease and stroke, two leading causes of morbidity and mortality worldwide.
- The identification of potential drug targets offers hope for the development of novel therapies to manage cholesterol levels and reduce the burden of cardiovascular diseases.

Conclusion: The groundbreaking discovery of cholesterol absorption mechanisms **represents a significant advancement in cardiovascular research**. With further exploration and drug development, **targeted interventions could offer effective strategies for preventing cardiovascular disease and stroke**, ultimately improving global public health outcomes. [Read more](#)

Behind The Scenes: Uncovering Cutting-Edge Diabetes Research Beyond Scientific Journals

Design of sponge-like chitosan wound dressing with immobilized bacteriophages for promoting healing of bacterially infected wounds

In this study from Belarus, the researchers developed a chitosan sponge-like wound dressing loaded with a broad-host spectrum Escherichia phage BIM BV-67, demonstrating potent antimicrobial properties. The dressing, composed of safe and biocompatible materials, inhibited E. coli growth effectively in vitro and retained bactericidal activity for 12 weeks. In vivo testing

revealed a significant reduction in E. coli cells and accelerated wound surface regeneration in infected rats compared to control groups. **This technology presents a promising platform** for producing wound dressings with immobilized bacteriophages, potentially advancing phage therapy in wound management against diverse pathogens. [Read more](#)

Smart Bandages with Integrated Sensors for Real-Time Monitoring of Wound Inflammation and Infection

In this study from Iraq, researchers have made significant strides in transforming wound care by developing fiber Bragg grating (FBG) fiber optic sensors for smart bandages. These sensors, integrated directly into the bandage material, offer real-time monitoring of crucial wound parameters such as temperature, moisture, and pressure. The proposed FBG sensor, featuring a gold-coated layer optimized for chronic wound interaction, exhibits a response of approximately 34.95 pm/°C within the temperature range of 37.3 to 37.9°C. With a high sensitivity of 4.37 GHz, variations in beat frequency provide valuable insights into the sensor's response, making FBGs a promising advancement for intelligent and proactive wound care solutions. [Read more](#)

Impact of diabetic retinopathy on all-cause and cause-specific mortality in diabetics: National Health and Nutrition Examination Survey, 2005 to 2008

In this study from China, the authors examined the impact of diabetic retinopathy (DR) severity on mortality among older adults with diabetes in the US using recent NHANES data. Analyzing 1077 participants representing over 3 million diabetic individuals, the research utilized various regression models and propensity score matching. Findings revealed that DR was associated with increased all-cause, cardiovascular disease (CVD), and diabetes mellitus (DM)-specific mortality rates, consistently observed even after propensity score matching. Notably, mild and moderate to severe non-proliferative DR significantly elevated the risk of all-cause and CVD-specific mortality, while any presence of DR was linked to heightened DM-specific mortality. **These results underscore DR as an independent risk factor** for mortality in elderly diabetic patients and suggest its potential as a predictive indicator for ongoing vascular monitoring in diabetes management. [Read more](#)

DNA methylation is associated with oxidative stress and genomic deregulation in diabetes mellitus

In this study from India, the author looked at how diabetes affects our genes and causes stress in our cells. They focused on specific DNA parts called retrotransposons, which can change in people with diabetes. By studying cells exposed to high glucose levels and diabetic mice, they found that certain retrotransposons were more active, suggesting changes in their DNA. They also **found that genes related to diabetes complications** were also affected, showing changes in their DNA. Interestingly, when they treated these cells with certain substances, they were able to reverse some of these changes, suggesting potential new treatments for diabetes-related complications. Overall, this study shows how diabetes can mess with our genes and stress our cells out, leading to complications. [Read more](#)

Omentin-1: A Potential Biomarker and therapeutic agent for Diabetic Chronic Kidney Disease

In this study from India, researchers investigated the potential of omentin-1 as a biomarker and therapeutic agent for diabetic chronic kidney disease (CKD). They examined 60 individuals with diabetic kidney disease alongside 60 healthy subjects, collecting various data including serum biomarkers and kidney function indicators. **The study revealed significantly lower levels of omentin-1** in individuals with kidney disease compared to the healthy group, while markers of inflammation were higher in those with kidney disease. Notably, omentin-1 levels correlated positively with kidney function, suggesting its potential as a biomarker for inflammation and kidney health in diabetic CKD. These findings underscore omentin-1 as a promising candidate for diagnosis and management of diabetic kidney disease. [Read more](#)

The relationship between the occurrence of asthma and diabetes

In this study from Damascus Hospital, the relationship between asthma occurrence and diabetes was investigated. Researchers examined 100 diabetic patients and compared them to 100 healthy individuals without diabetes. Various parameters, including lung function tests, were analyzed. **Results showed that diabetic patients had lower lung function** compared to non-diabetic individuals, with worse outcomes in those with uncontrolled blood sugar and longer duration of diabetes. Additionally, patients with type 1 diabetes exhibited lower lung function. These findings suggest that diabetes affects lung function and increases the risk of asthma development, particularly with prolonged duration and poor blood sugar control. [Read more](#)

Indigenous Indian Guggul extract augments saxagliptin effect against diabetes-induced complications

In this study from India, the authors examined the interaction between saxagliptin (SAXA) and guggul extract (GE) in managing type 2 diabetes mellitus. Concomitant SAXA and GE administration more effectively restored elevated blood glucose and biochemical parameters than individual use. **The combination treatment showed better mitigation of induced diabetes-related tissue damage**, including hepatic, renal, and pancreatic tissues. Additionally, CYP3A11 mRNA expression levels were reduced to non-diabetic levels with the combination therapy. Molecular docking studies predicted improved interaction between CYP3A4 and the bioactive component of GE, guggulsterone E-Z (G E&Z), supporting their coexistence at different binding sites. The synergistic interactions of GE and SAXA enhanced the restoration of tissue damage and CYP3A11 mRNA expression levels in diabetes-induced conditions. [Read more](#)

Advancing Healthcare: Clinical Trials, FDA Drug Approvals, And FDA Device Approvals

CLINICAL TRIALS

[Effect of Tropicamide 0.5% vs Tropicamide 1% on Intraocular Pressure of Diabetic Patients](#)
Iran | Completed | Recruiting

[Efficacy and Safety of Madalena Association in the Treatment of Type II Diabetes Mellitus](#)
Brazil | Active | Not yet recruiting

[A Study of Insulin Degludec/Insulin Aspart Biosimilar \(22011\) Compared With Insulin Degludec/Insulin Aspart\(Ryzodeg\) in Participants With Type 2 Diabetes in China](#)
China | Submitted | Not yet recruiting

FDA DRUG APPROVALS

[Jesduvroq \(Press Release\)](#)

FDA approved February 1, 2023

To treat anemia caused by chronic kidney disease for adults on dialysis for at least four months

FDA DEVICE APPROVALS AND 510(k) CLEARANCES

--- [Cork Medical VERSA Negative Pressure Wound System \(VCMPP-100\) by Cork Medical](#)
FDA cleared December 2023

Indication for use: The Device is indicated for management of chronic, acute, traumatic, subacute and dehisced wounds, partial-thickness burns, ulcers (such as diabetic or pressure), flaps and grafts.

--- [iCast Covered Stent System by Atrium Medical Corporation](#)

FDA approved March 22, 2023

Indication for use: The iCast Covered Stent System is intended to treat narrowed blood

vessels that supply blood to the pelvis and legs (iliac arteries). The system includes two parts: a small, spiral tube (stent) made of stainless steel wrapped in a polymer (ePTFE) and a delivery catheter.

--- **Lava Liquid Embolic System by BlackSwan Vascular, Inc.**

FDA approved April 4, 2023

Indication for use: The Lava Liquid Embolic System is used to stop severe bleeding (arterial bleeding or hemorrhage) in the blood vessels of the torso, arms, legs, hands, and feet (peripheral blood vessels). The system also includes particles that can be seen under fluoroscopy imaging when inside the body.

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