Advocating for Diversity in Diabetes Research

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In support of Diabetes Awareness Month, we acknowledge the more than 37 million Americans and more than 422 million individuals worldwide who live with diabetes and the implications that this diagnosis has on overall health and well-being[1]. Americans with diabetes incur average medical costs of $13,700 per individual per year while the total spending on direct medical costs amounts to $237 billion and an additional $90 billion associated with lost productivity[2]. Diabetes is the costliest chronic condition in the United States[1]. The risk of developing diabetes is higher for certain racial and ethnic groups in the United States[3]. The risk of disease for Black non-Hispanic adults is 1.6 times higher than that of White non-Hispanic adults, while American Indian or Alaska Native adults have the highest reported risk and are 2.0 times more likely than White non-Hispanic adults to be diagnosed with diabetes (T1DM, T2DM)[3,4].

Data Sources: National Diabetes Statistics Report, 2022 [9,10], Haw et al. [11]

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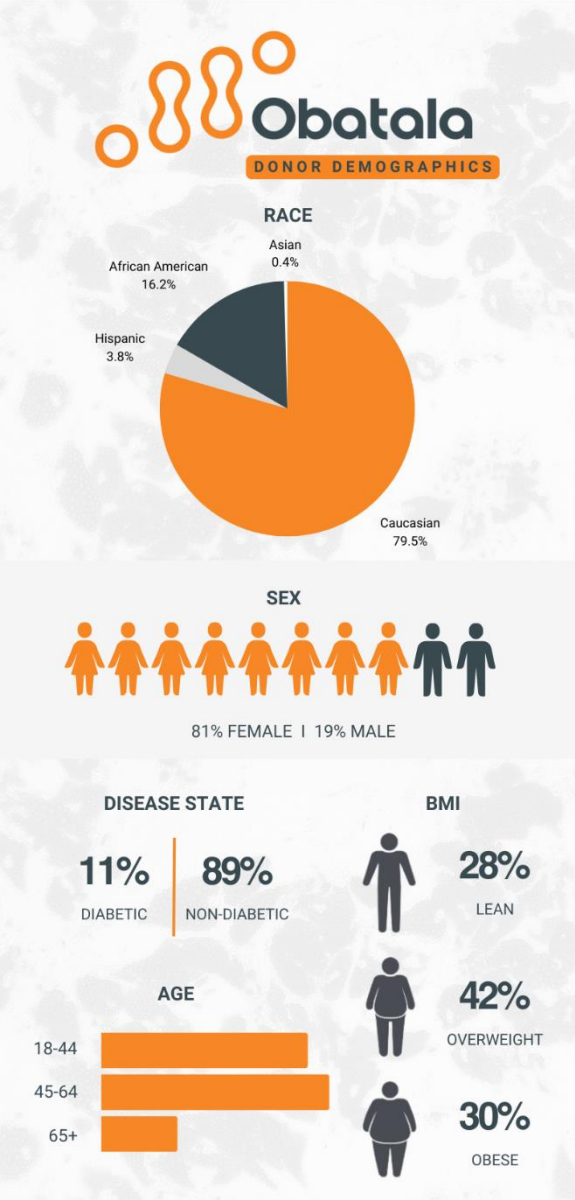

Further stratifying the impacts of this disease, decades of population-level data has revealed that socioeconomic status is a strong predictor of diabetes disease onset as well as progression and mortality in children and adults with diabetes (T1DM, T2DM)[5]. We celebrate the numerous medical advancements and novel treatment options available in 2023 for patients living with diabetes, while also acknowledging that more solutions are needed for those who are disproportionately impacted by this disease.

Improving representation of racial and ethnic minorities in diabetic models for preclinical studies and inclusion in clinical trials can increase the success rate in drug development, ensuring the safety and efficacy of novel therapies and reducing the billion-dollar economic impact of this disease[6]. Obatala Sciences™ is uniquely positioned to provide biomaterials for research reflective of these diverse populations. From our home in the Gulf South region, our mission is to drive diversity in research through our biobank of human adult stem cells for which we retain donor demographic information and disease status. These samples are critical to informing clinical research aims in the preclinical phase and enabling researchers to consider racial and ethnic diversity earlier in the drug development pipeline.

The expertise of Obatala Sciences™ in the field of metabolic disease research has enabled the development of humanized 3D adipose tissue models for in vitro studies[7]. Our models provide a more functionally relevant baseline for the study of diseases for which adipose plays a functional or dysfunctional role, such as in the case of adipose hypertrophy, diabetes, and various forms of associated cancers[8]. These human-derived 3D adipose tissue constructs provide a flexible platform for drug testing and are compatible with experimental endpoints such as imaging, flow cytometry, genetic analysis,

inflammatory profiling, and functional assays (glucose uptake, lipolysis, and adipokine secretion)[7].

Advancements in preclinical models for diabetes can help to elucidate mechanisms of action for safer, more efficacious therapeutics for patients who are traditionally underrepresented at the clinical trial stage. Such technologies have the potential to make significantly positive downstream effects on metabolic disease research and drug development.

For more information about Obatala Sciences ObaCell® Fat-on-a-Chip models for diabetes research, reach out to one of our research scientists or visit our website:
www.obatalasciences.com/obacell

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