Precision Medicine
Enabling targeted treatment for Type II Diabetes Patients

THE AYASDI IMPACT

Mount Sinai used the Ayasdi Platform to analyze over 11,000 patient medical records paired with genetic data - the largest pairing of multi-modal data to date. Mount Sinai was able to discover breakthrough insights that will dramatically impact how Type 2 Diabetes patients are diagnosed and treated.

Ayasdi discovered that Type II Diabetes is not a singular disease: it is comprised of three distinct sub-groups with three distinct sets of complicating factors. This breakthrough in Precision Medicine can lead to more effective treatment protocols and better patient outcomes for all Type II Diabetes patients.

THE PROBLEM

Precision medicine refers to a physician’s ability to specifically diagnose a patient’s condition and then utilize targeted treatments to positively impact the course of the treatment. The biggest barrier in advancing precision medicine is the absence of adequate tools to classify complex subgroups of patients.

Clinicians today often rely on a classification system based on signs and symptoms, without a clear view of the molecular and genetic basis of the disease. Diabetes patients are stratified into two groups – Type I and Type II, without acknowledging the patient’s unique genetic variations that may influence the outcome of diagnosis and treatment. Despite the rich data available, clinical insights remain locked behind the size and complexity of the data.

THE SOLUTION

Researchers at Mt. Sinai pulled patient profiles with data from electronic medical records and genomic screening. Ayasdi was able to analyze more than 500 clinical data points and more than 200,000 genomic markers that defined each patient’s unique genetic profile.

The visualization on the right represents patients with Type II diabetes. The coloring in this figure shows that there were comorbid conditions in diabetes patients, creating different subgroups. This indicates that Diabetes diagnoses are not just between Type I and Type II—there are in fact multiple “Types” of diabetes that can manifest in a given patient.