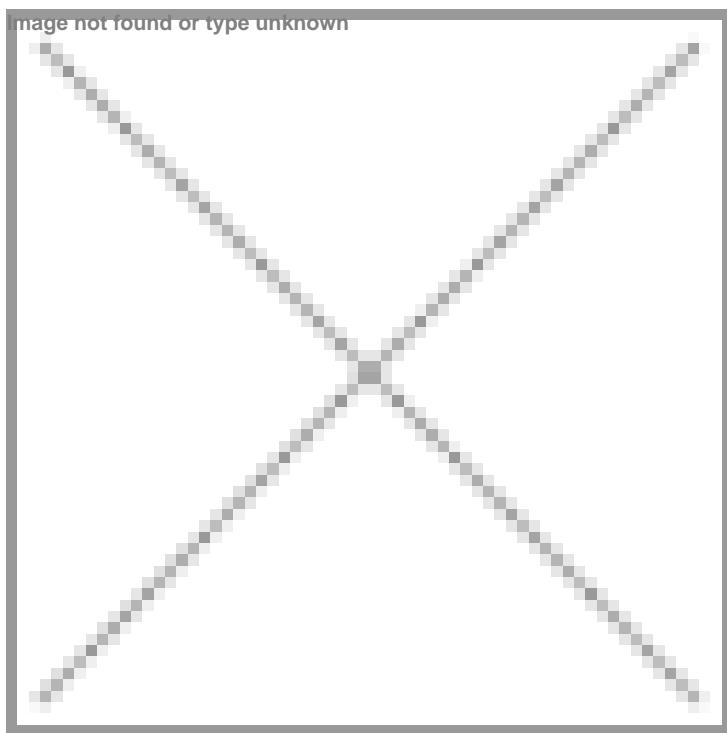# Molecular Signature might hold key to predict and early detect chronic diseases

12 February 2024 | Views | By Sushant Kumar, Founder, Genefitletics

Technology empower healthcare practitioners to understand the pathogenic processes involved in onset & progression of a range of chronic diseases

When it comes to chronic diseases we are living in the dark ages. In the 13th century, 1/3rd of the world's population died of plague. People were unaware what caused this epidemic & blamed it to bad luck & some kind of mystery.

Today Chronic Diseases have the same fate. 41 million people lose their lives to chronic diseases every year which is just the tip of the iceberg.What happens prior to death is the years & decades of suffering not only for the patient but their family members as well.

Chronic diseases are still considered a mystery or an outcome to bad luck or bad genes. Well it is not bad luck or genes, there is some changes in biology & chemistry going on inside human body which is still not being understood

Over the last few decades, millions of rupees have been spent on building point of care diagnostics (& pharmaceuticals) which churns out millions of bytes of healthcare delivery data.

Current gaps in healthcare delivery data

Most health decisions which healthcare practitioners take are driven by insights derived from healthcare delivery data & data points collected from these point of care diagnostic investigations to manage existing health conditions such as Type 2 diabetes, Chronic Kidney Disease, Obesity, Cardiovascular diseases, PCOS, Cancer & make them more bearable

But unfortunately, these data points from plasma level investigations/standard blood works lack precision on multiple fronts.

-It does not speak well of the pathogenic process/molecules that trigger onset & progression of chronic diseases.

-These data sets, commonly referred to healthcare delivery data, lacks capability to go deep down to molecular level to understand the root cause of an existing health conditions

-These data sets never give a picture of functions of microbiome, thereby missing out decoding 99% of our biology

-Healthcare delivery or point of care diagnostic data cannot identify asymptomatic/hard to detect signals underlying chronic diseases & we wait for these signals to be converted into symptoms. In turn, these symptoms show up in your blood works & our healthcare practitioners just end up just managing them

The unaddressed data points, including 99% of microbial genes as well as phenotype & longitudinal data, forms part of a huge data warehouse with petabytes of molecular data. It is impossible for any human being- including healthcare practitioners, nutritionists & doctors to decode these huge mammoth data sets.

Up till now healthcare practitioners, they never had access to molecular & cellular data & exponential technologies till now at their disposal to decipher them.

Unravelling exponential technologies to collect & mine petabytes of molecular data sets

Time is on our side now. We have all tech stack in place to collect these vital molecular data sets, process them & analyse them to make sense of this data in order to find out which specific molecules are making /gonna make you develop a disease which were never identified by conventional diagnostic tests.

We at Genefitletics, a consumer biotech company, on the back of its consumer system biology platform- PROTEBA, has built Industry's first translational science platform for healthcare practitioners.

The platform encompasses Next Generation Sequencing thet collects & isolates 100 million bytes of molecular data from sequencing saliva(oral microbiome) & Faeces (gut microbiome); Cloud Computing that processes these molecular data sets & match it with functions of genes using its proprietary bioinformatics algorithm, thereby translating into genes expression data sets; and Machine Learning that uses its proprietary machine learning models to measure, analyse & combine various gene expression data sets. These gene expression combinations are scored & transformed into various biochemical pathways, reflecting functions of the microbiome at molecular level. Since each score is associated with a specific biological function, it is correlated with specific areas of health such as oral health, heart health, metabolic health, digestive health & more

Sushant Kumar, Founder, Genefitletics