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The ultimate quantified self: A digital physical examination for precision medicine

Mark Punyanitya and **Girish Srinivasan**
PhenoMx Inc., USA

The time has come where imaging biomarkers are gaining acceptance beyond tumor quantification for Oncology. This session will cover the creation of a Digital Physical Examination to directly measure major vital organs & tissues, from a whole body perspective, based on non-invasive imaging for a wide range of conditions and diseases beyond Oncology. With increasing focus on genomic, metabolomic, and molecular quantification of the human body for use in precision medicine, the development of diagnostics, therapeutics, and monitoring of disease progression/treatment takes on a greater role for more effective outcomes. The majority of advances have not included the phenotype, or observable characteristics of an individual resulting from the interaction of its genotype with the environment. Biomarkers provide researchers and clinicians with useful measurements that allow for earlier diagnosis before a patient begins to show signs of symptoms, and also quantitatively show that a treatment is performing effectively. Technology is now available to measure multiple vital organs & tissues for an integrated exam using non-invasive imaging to acquire data, automation algorithms to quantify images, & AI to develop predictive analytics. A Software-as-a-Service platform enables scalable access to the latest imaging technology, and support for legacy scanners, while improving accuracy, precision, and standardization across imaging facilities.

mark@phenomx.co