**BIOMARKERS OF THE FUTURE: METABOLOMIC PREDICTORS OF CARDIOMETABOLIC DISEASE**

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By providing information on the diversity of small molecule metabolites in biological systems, current era metabolomics now offer the potential to comprehensively integrate data on both the intrinsic and extrinsic exposures that contribute to complex diseases such as cardiovascular disease (CVD). Targeted metabolomics methods have already been used to identify novel molecular markers of CVD risk, including branched chain amino acids, select unsaturated lipid species, and trimethyl-N-oxide. Early studies have also discovered metabolite correlates of cardiometabolic traits in addition to intriguing links between dietary intake, patterns of gut microbial activity, and CVD risk. As metabolomics technologies continue to develop, the scope and throughput with which small molecule profiling can be performed is increasing – and prospects for further discovery are rapidly growing. Current challenges facing the field include: bioinformatics approaches needed to handle high-throughput untargeted metabolomics data, strategies for identifying the biochemical structure and functional role of novel metabolites, and methods for determining the true clinical relevance of metabolites observed in association with CVD outcomes. Progress made in addressing these challenges will allow metabolomics approaches the potent to substantially transform diagnostics and therapeutics in cardiovascular medicine.