Reporting from the field; how epigenetics, genomics, big data and predictive analysis technology are impacting the everyday practice of healthcare providers

As healthcare providers, we are trained to treat the symptoms and causes of disease. This may involve prescribing medications or surgically intervening to aid that process. We study the anatomy and physiology of both brain and body, together with the disease process and the drugs we need to prescribe in our endeavor to do that. Our approach is traditionally reactive rather than proactive. Oftentimes, we are too late in our attempts to impede or halt an illness. Prevention is something we advocate but not heavily invest in. This is primarily because we are traditionally trained in the principles of evidence-based factual medicine and prevention had largely been perceived as anecdotal. There is however a shift in this attitude, which is mainly patient-driven. In this age of technology and the wide availability of information, there is an increasing awareness that fire-fighting is no longer sufficient, particularly from the “at-risk” population who’s only available resource was disease-screening aimed at early-detection rather than arresting/ reversing the disease process. Patients are no longer satisfied with waiting to become ill for intervention to take place. The principles of epigenetics teach us that disease causation is multi-factorial; therefore, preventative measures should take into account risks that are specific to an individual. The design of a personalized risk assessment tool to institute successful preventive measures is becoming paramount. To be effective, the acquisition of data encompassing not only familial history and personal medical history but early-life stressors, acquired personal habits, life-style choices and diet should become part of the everyday medical practice since their modulation is key to prevention. The processing of this data, not just for research and education but to produce technological predictive tools tailored to the individual is what our patients are calling for.

Biography

Alyssa Alabassi is a British entrepreneur and UK trained and qualified practicing surgeon with extensive knowledge of the various layers of the health system in UK. She worked in an Advanced Computation Laboratory at Cancer Research UK devising IT solution for connected and integrated care pathways. She chaired international business meetings on Big Data, Population Based Solutions, Predictive Analysis and Connected Objects. Her research interest is in Breast Cancer and Familial Breast Disease and has successfully setup prevention clinics for patients at high risk of developing breast cancer.

alyssa.alabassi@gmail.com