

Personalised genomics for healthy lifestyle and wellness

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Abstract

Our genome is a roadmap to health and wellness. Human genomics data demonstrated a significant impact in the diagnosis of a wide range of diseases or treatment for specific types of cancer. Advances in genomics and bioinformatics technologies have given us the opportunity to peer into our genetic futures in ways we might never have imagined. The present work illustrates the current sequencing- and genotyping-based services offered by commercial providers to generate personal genome and wellness profiles. The services offered fall into various categories namely fitness, health and performance; allergy and healthy diet; side-effects of some drugs; talent and skills as well as susceptibility to non-inherited life-threatening diseases. Upon submission of an online order to a service provider, a Saliva Collection Kit will be posted directly to the consumer. The kit offers an easy, convenient and safe method for the collection, stabilization, transportation, and storage of saliva samples. This direct-to-consumer (DTC) service use cells found in the saliva to obtain the required DNA for analysis. Each customer will finally receive a personalised report with straightforward, genetically tailored recommendations for optimizing their lifestyle and well-being. DNAKU is a local initiative by the Malaysia Genome Institute (MGI) of the National Institutes of Biotechnology Malaysia providing services for Malaysian newborns, children, and adults. This initiative utilises high throughput, next-generation genotyping array and an in-house built bioinformatics pipeline for a large scale data analysis. This presentation will also cover on the challenges and possible solutions regarding wellness and lifestyle genomics including the lack of accuracy and clarity of information over which specific genes or variants are being tested; consent, privacy and ownership of the personal genomic data; lack of universally accepted guidelines and legislation; availability of extensive genetic counseling and psychological support to families for the interpretation of the genetic data and availability of interventions that could be initiated as early as possible that would reduce morbidity or mortality. Genomic information can be a powerful tool and would allow consumers to make informed health decisions and personal lifestyle choices that will improve their quality of life.

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