



## Defense Health Agency (DHA) Clinical Communities Speaker Series

### June 2022 CCSS: Enhancing Primary Care: Refining Proficiencies to Improve Patient Outcomes

#### S05: A Lifestyle Medicine Approach to Diabetes Reversal through Nutrition

##### Resource List

The proliferation in the rate of diagnosis of obesity and type 2 diabetes mellitus continues unabated, with current recommendations for primary lifestyle changes (i.e. modification to dietary patterns) having a limited impact in reducing the incidence of these metabolic diseases. Part of the reason for the failure to alter nutritional practices is that current dietary recommendations may be unrealistic for the majority of adults. Indeed, round-the-clock access to energy-dense, nutrient-poor food makes long-term changes to dietary habits challenging. Hence, there is urgent need for innovations in the delivery of evidence-based diet interventions to rescue some of the deleterious effects on circadian biology induced by our modern-day lifestyle. With the growing appreciation that the duration over which food is consumed during a day has profound effects on numerous physiological and metabolic processes, the article [Chrono-nutrition for the prevention and treatment of obesity and type 2 diabetes: from mice to men](#) (2020) discusses dietary protocols that modify the timing of food intake to deliberately alter the feeding fasting cycle.

The [Centers for Disease Control and Prevention \(CDC\)](#) (2022) has developed an interactive guide for those interested in preventing type 2 diabetes. The CDC outlines several additional resources and tips including, shedding just 5% of your weight can help reverse prediabetes. You may not be able to lose 5% of your body weight, but by eating differently and being more active, you may be able to lower your HbA1C. There are options to be successful.

Precision nutrition aims to prevent and manage chronic diseases by tailoring dietary interventions or recommendations to one or a combination of an individual's genetic background, metabolic profile, and environmental exposures. Recent advances in genomics, metabolomics, and gut microbiome technologies have offered opportunities as well as challenges in the use of precision nutrition to prevent and manage type 2 diabetes. Nutrigenomics studies within the article, [Precision nutrition for prevention and management of type 2 diabetes](#) (2018) have identified genetic variants that influence intake and metabolism of specific nutrients and predict individuals' variability in response to dietary interventions. Metabolomics has revealed metabolomics fingerprints of food and nutrient consumption and uncovered new metabolic pathways that are potentially modified by diet. Dietary interventions have been successful in altering abundance, composition, and activity of gut microbiota that are relevant for food metabolism and glycemic control. In addition, mobile apps and wearable devices facilitate real-time assessment of dietary intake and provide feedback which can improve glycemic control and diabetes management.

The [World Health Organization](#) (2022) noted the starting point for living well with diabetes is an early diagnosis. The longer a person lives with undiagnosed and untreated diabetes, the worse their health outcomes are likely to be. Easy access to basic diagnostics, such as blood glucose testing, should therefore be available in primary health care settings. Patients will need periodic specialist assessment or treatment for complications. A series of cost-effective interventions can improve patient outcomes, regardless of what type of diabetes they may have. These interventions include blood glucose control, through a combination of diet, physical activity and, if necessary, medication; control of blood pressure and lipids to reduce cardiovascular risk and other complications; and regular screening for damage to the eyes, kidneys and feet, to facilitate early treatment.



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### References

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