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Metabolic signatures in nutrition and health : short-term diet response, sexual dimorphism and hormone chronobiology

Draper, C.F.

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Author: Draper, C.F.

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The power of personalized nutrition lies in being able to conduct clinical research on healthy people while capturing metabolic markers sensitive to the impact of environmental and metabolic stressors (e.g. diet, changing sex hormones and the menstrual cycle). Using clinical biomarkers, metabolomics, and diet interventions with intake analyses, we demonstrated the metabolic impact of vegan and animal diet interventions using fasting plasma analysis after 48 hours and using postprandial plasma analysis after meals and snacks. Sexually dimorphic responses were differentiated using proteomics and pathway analyses in two larger, sex-balanced cohorts. Finally, clinical biomarker and metabolomics analyses identified metabolic subtypes across menstrual cycle phases. Although challenges with integrating -omics technology and nutrition remain, the fundamental information generated from these research studies may provide a foundation for future novel personalized nutrition strategies.



Colleen Fogarty Draper M.S., R.D. is a registered dietitian and nutrition research scientist with 27 years of cumulative experience in personalized nutrition, clinical trials research, and traditional clinical dietetics and private functional medicine practice. She is an invited lecturer in personalized nutrition, women's health and the integration of dietetics with new technology and functional medicine. Colleen has expertise in an array of health areas including metabolic health, women's health, diet challenge research, gastrointestinal health and brain health; as well as food allergies and sensitivities, pediatrics, personalized nutrition, metabolomics, genetics, development of diet intake and analysis technology and oncology.

Colleen currently works at Nestle Research in Lausanne, Switzerland while pursuing her PhD in life sciences with the Leiden Academic Centre for Drug Research (LACDR), Leiden University, Leiden, The Netherlands.



Metabolic signatures in nutrition and health

Colleen Fogarty Draper M.S., R.D.

Metabolic signatures in nutrition and health:

Short-term diet response, sexual dimorphism and hormone chronobiology



Colleen Fogarty Draper M.S., R.D.