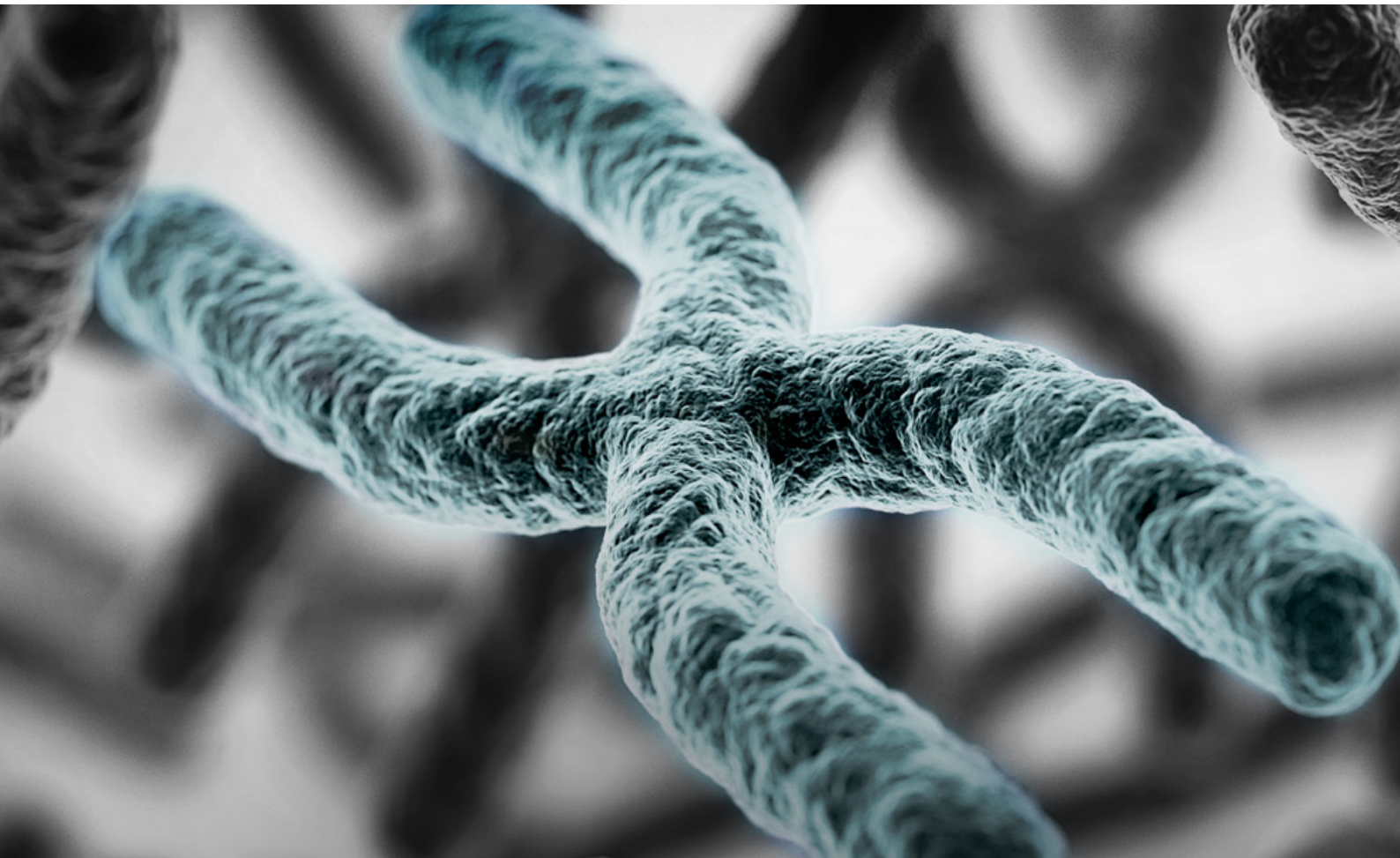


mānuka

**Translational Nutrigenomics Course**  
Evidence-Based Clinical Practice



A microscopic view of several bacteria, with one in the center highlighted in a vibrant teal color. The other bacteria are in grayscale, creating a sense of depth and focus on the central organism.

# TRANSLATIONAL NUTRIGENOMICS Course

## Evidence-Based Clinical Practice

### What our students are saying

“I am taking more notes now and using PubMed more than I ever have! I have thoroughly enjoyed the course so far. I admire the way you have built up the requisite knowledge base and resuscitated the internal scientist that is in every health care provider. I often have to remember, “oh yeah, I was a biochemistry major in college”. It is especially irksome when I have to meet with a pharmaceutical rep and they provide me with their spoon-fed interpretation of preselected studies.” - Rachael Gonzalez MD, USA

“The Translational Nutrigenomic course from Manuka Science provides a template to tap into the complexities of nutrigenetics and nutrigenomics with a focus on clinical relevance.” - Dr Sanjeev Sharma Psychiatrist, Australia

“I am a firm believer in Nutrigenomics and your course has made it possible for me to go into more depth of knowledge of what I am doing, to better understand the concepts of nutrition-gene interactions in order to better explain to my patients and help them achieve better health.” - Dr Joseph Soh MD, Singapore

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### Understanding Translational Nutrigenomics

The field of nutrigenomics represents the cutting edge of nutritional science. Absent from the current conversation, however, is the critical translation between genotype, nutritional biochemistry, gene expression, biomarker tests, and personalised nutrition advice, all of which needs to be expressed to the patient. Genes are only the first step in examining the biochemistry and physiology of an individual, but how those genes are expressed influences an individual's susceptibility to health or disease. In essence, without translation, we are merely providing more nutrition advice. In this Translational Nutrigenomics course, we explore many of the areas of Nutrigenomics and Nutrigenetics that have found their way into commercial nutrigenetic tests. The course uses evidence-based literature to critically examine what is needed to translate the nutrigenomics conversation for the client, potentially providing practice-ready tools to translate this conversation to the dinner plate.

## Why this course is different

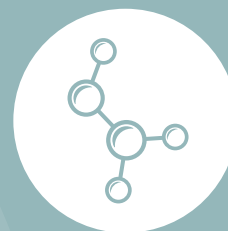
There are other online nutrigenomics courses being offered, however, this course is unique in that it integrates the three pillars of:



**NUTRITIONAL  
BIOCHEMISTRY**



**NUTRIGENETICS**  
(genetic variation)

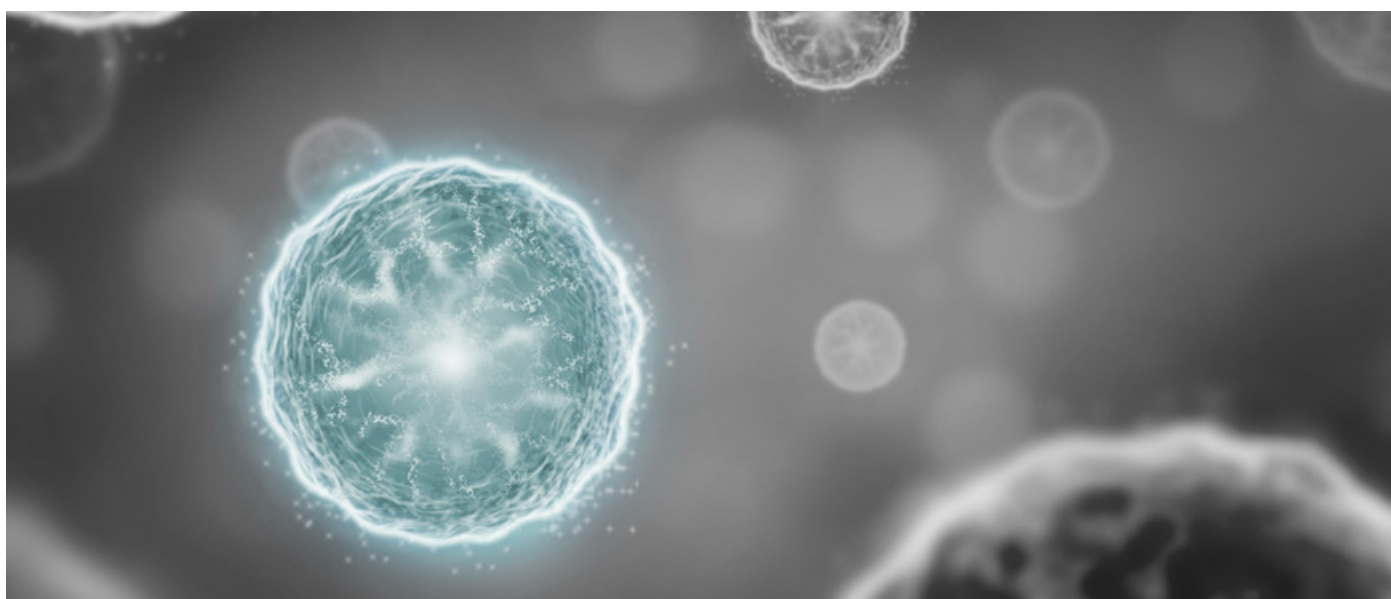


**NUTRIGENOMICS**  
(how nutrients impact gene  
expression)

Many courses focus only on methylation, while others look only at SNPs. This course is different in that we aim to **'FUTURE PROOF'** our students. This lies in providing students with the skills needed to continue researching and learning in such a rapidly-evolving field. We do this by teaching key biochemical and genomic principles, providing evidence-based research to support our teachings, as well as providing the skills required to interpret and keep abreast of new developments as the science unfolds. This ability to critically interpret evidence-based research empowers practitioners to be able to independently construct dietary recommendations based on nutrigenetic results, the underlying biochemistry and its nutrigenomic impact.

## Offered by Manuka Science

MANUKA was founded to provide a global platform for the provision of progressive, cutting-edge, and credible nutrigenomic education. Health care professionals are overwhelmed with unmanageable amounts of nutrition information emanating from the media, self-professed experts and countless journal articles, books and conferences. Manuka's instructors and Scientific Advisory Board comprises a team of international nutrition academics and dietitians with expertise and experience in Human Genetics, Molecular Biology, Nutritional Genomics, Dietetics, Functional Medicine, Nutritional Biochemistry, Exercise Physiology, Sports Genetics, Food Systems and Culinary Genomics.





## Instructors



Dr Yael Joffe RD PhD

In the rapidly-evolving disciplines of Nutrigenomics and Nutrigenetics, Dr Yael Joffe is acknowledged globally as an expert in the field. From her background as a dietitian, she obtained her PhD from the University of Cape Town, exploring the genetics and nutrition of obesity in South African women. She is highly sought-after as a speaker for conferences and workshops, tailoring her presentations to the needs of clinicians. She has co-authored *It's not just your Genes*, has published on nutrigenomics in peer-reviewed journals and has been involved in the development and supervision of nutrigenomics courses around the world. Dr Joffe is currently an Adjunct Professor, teaching Nutrigenomics at Rutgers University.



Christine Houghton B.Sc.(Biochem.), R.Nutr., PhD

Following many years in private practice as a registered nutritionist, Christine Houghton is currently engaged in doctoral research at the University of Queensland Australia, where her focus is on broccoli-derived phytochemicals with significant nutrigenomic potential. She is an accomplished writer and an engaging speaker whose evidence-supported presentations challenge accepted but often-outdated paradigms. Her forte lies in taking complex biochemical concepts and translating their essence into concepts relevant to the needs of practising clinicians. She is the author of *Switched On – Harnessing the Power of Nutrigenomics to Optimise Your Health* and a number of peer-reviewed publications.



## Who is the course designed for?

This course is designed for health practitioners, educators and scientists. Practitioners including dietitians, medical doctors, specialist doctors, naturopaths, psychologists, nurses, nutritionists, chiropractors, acupuncturists, and other health professionals will gain the knowledge and research skills required to integrate cutting edge nutrigenetics and nutrigenomics into individualised client solutions.



## How it works

The course is self-paced. You can start at any time in any time zone and go as slowly or as quickly as you like. At any time during and after the course you will be able to access the modules for revision. In addition, throughout the modules you will receive SNP SUMMARY PAGES detailing the SNPs most commonly found in commercial tests and you will be able to download all the accompanying reading materials.



## How long does it take?

How long will depend a great deal on time available and your current knowledge and experience. There are 9 modules and we recommend you spend between 5 - 10 hours a week. This way each module may take between 2 - 4 weeks. The course may take anything from 4 to 9 months. You should aim to finish the course within 18 months.



## What certificate will I receive?

You will receive a certificate from Manuka Science upon completion of your final assessment



## Online help

At any time you will be able to communicate via email with your instructors. In addition, a private Facebook group provides a platform for students to share experiences and post questions for the instructors and each other.



## Nutrigenomics as a good business opportunity

For many practitioners, Nutrigenomics is already driving their private practices and GP referrals. Many genetic testing companies keep a list of all practitioners who have completed training (many such companies insist on training as a prerequisite for access to their testing process) and use it for referrals. Clients, as well as many new medical and health companies, are looking for practitioners who are adequately qualified in translating evidence-based nutrigenomic research.

# PART ONE: FOUNDATIONAL PRINCIPLES

## Genetics, Nutritional Biochemistry and Nutrigenomics

### Module 1

#### Chromosomal and Molecular Genetics, Epigenetics, and an Overview of Nutrigenomics

In this module we explore chromosomal and molecular genetics, and the exciting area of epigenetics and how it interacts with nutrition. The last part of this module will be an overview of nutrigenomics, understanding genetic variation and gene expression, and learning to differentiate between nutrigenetics and nutrigenomics.

Instructor **Dr Yael Joffe**

### Module 2

#### Biochemistry As You Wish You'd Learned It

This module takes complex biochemical concepts and simplifies them to the needs of the clinician. The first part of this module describes the biochemical story underpinning a number of the key genes we will be introducing in this course. In the second part, we will be addressing the various ways in which nutrients play an integral part in these biochemical pathways.

Instructor **Christine Houghton**

# PART TWO: TRANSLATIONAL NUTRIGENOMICS

## Connecting Nutrigenomic Results to Clinical Practice

### Module 3

#### Nutrigenetics of Food Responsiveness

Gene variations can be useful for understanding an individual's response to a certain food or nutrient. This module explores gene variants that alter food responsiveness. Why one individual can drink coffee right up to bed-time and still sleep soundly comes back to our genes.

Instructor **Dr Yael Joffe**

### Module 4

#### Interactive Pathways In Cellular Defences - Inflammation and Detoxification-associated Genes

Module 4 explores the biochemical processes underpinning the development of inflammatory diseases in general. Although diseases like asthma, psoriasis and osteoarthritis present very differently, they are all underpinned by the oxidative stress-inflammation couple. We will explore these and other gene variants that are associated with the inflammatory and detoxification processes.

Instructor **Christine Houghton**

### Module 5

#### The Genetics of Weight Management and Obesity

This module explores the contribution of genetics to the susceptibility of becoming obese, but also why individuals respond differently to weight management interventions. You will also learn about the many factors that contribute to obesity such as sleep, behaviour, appetite and satiety, thermogenesis and exercise responsiveness.

Instructor **Dr Yael Joffe**

## Module 6

### Nutrigenomics and Nutrigenetics in Chronic Disease

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In this module you will understand why individuals with certain genotypes are predisposed to particular health abnormalities. Our focus is on cardiovascular disease, and type 2 diabetes as common diseases for which particular gene variants significantly impact cellular function. We will also review diet-gene interactions that impact processes that contribute the development of other chronic diseases.

Instructor **Christine Houghton**

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## PART THREE: CLINICAL APPLICATION

### Preparing for Practice

## Module 7

### Ethical Issues and Behavioural Change in Nutrigenomic Testing

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As nutrigenetic testing becomes more affordable and available, it is important that equal attention is paid to the ethical, legal, and social aspects of nutrigenomics testing. In addition, you will understand how genetic tests differ and how this impacts the way you will interact with a client.

Instructor **Dr Yael Joffe**

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## Module 8

### Supplement Decision-Making for the Nutrigenomics Clinician

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Our goal is to select an appropriate nutritional intervention to favourably modify the expression of a gene or compensate for the presence of a gene variant in a patient's genomic profile. Such interventions may take the form of foods or supplements or a combination of these. This module introduces you to the process required to critically review a supplement formulation to determine its potential as an effective intervention.

Instructor **Christine Houghton**

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## Module 9

### Evaluating and Using Commercial Genetic Tests in Practice

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We will give you guidelines on how to evaluate commercial genetic tests, utilizing the principles of scientific and clinical utility. Furthermore, we will provide you with a set of criteria to evaluate individual gene variants for clinical usefulness. The second part of this module will introduce you to the idea of 3-3-3, this was developed by Dr Joffe to help practitioners manage the nutrigenetic results they receive back from the lab.

Instructor **Dr Yael Joffe**

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## Assessment

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At the completion of each module, students are required to answer a series of multiple-choice questions in order to proceed to the next module.

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## Final Assignment

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A comprehensive case study assignment at the end of the course will provide the grade for the course. Students will be required to have their own (appropriate) nutrigenetic test profile done in order to complete the assignment. The assignment will be based on this profile and will involve evaluating the genotype and constructing appropriate dietary, lifestyle and supplement recommendations.



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