



The Essentials of Sport and Exercise Nutrition

THIRD EDITION

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As an elite nutrition coach and exercise physiologist, Dr. Berardi has worked with over 50,000 clients in over 100 countries, including Olympic gold medalists, world champion UFC fighters, and professional sports teams. He is also an advisor to Apple, Equinox, Nike, and Titleist.

Dr. Berardi was recently selected as one of the 20 smartest coaches in the world and one of the 100 most influential people in fitness.



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Through writing, coaching, speaking, teaching, and curriculum development, Krista has galvanized thousands of clients to transform their health and fitness for the better, and is guiding a new generation of fitness professionals to a higher level of success and satisfaction.

Krista is the author of several books, dozens of popular articles, and many academic publications. She also inspires readers at her groundbreaking women's weight training website, Stumptuous.com.



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A highly respected coach who has been a part of the Precision Nutrition team since 2007, Ryan's body of work includes an impressive number of articles, presentations, books, and certification manuals on the topics of eating, exercise and health.

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As Precision Nutrition's Director of Performance Nutrition, Brian contributes to ground-breaking research, education and curriculum development at PN, where he is also an esteemed coach.

Brian shares his expertise on a global scale by presenting at conferences around the world, serving as a nutrition consultant for pro sports teams such as the San Antonio Spurs, Brooklyn Nets, and Cleveland Browns, coaching professional and Olympic athletes, and writing for popular publications including Precision Nutrition.



Camille DePutter is an author, speaker, and communications consultant with a rich portfolio of experience in marketing, public relations, and storytelling.

Camille received her HBA in English from the University of Toronto and trained at the Humber School for Writers. An advisor to Precision Nutrition, Camille lends her communication expertise to Precision Nutrition publications, course materials and marketing content.

As a consultant, Camille has helped dozens of top brands and business leaders refine their messaging and improve their customer relationships. Her work has been published extensively in popular websites, magazines and newspapers.

Camille writes for the *Precision Nutrition Encyclopedia of Food* and is a frequent contributor to the Precision Nutrition blog. She is also the author of the workbook *Share Your Story*, and self-publishes at camilledeputter.com.



Dr. Helen Kollias is a researcher and L1 Certification advisor at PN. She is also a regular content contributor to the blog, where she uses her witty and articulate writing style to make complex science accessible and entertaining.

Helen holds a PhD in Molecular Biology from York University, specializing in the area of muscle development and regeneration, and a Master's degree in Exercise Physiology and Biochemistry from the University of Waterloo. She has also held research positions at some of the most prestigious institutions in the world, including John Hopkins University and Toronto's Hospital for Sick Children.

Outside the lab, Helen has played and coached varsity soccer, and has been involved in fitness and weight training for almost two decades. She also has two daughters with whom she wants to share her joy of inquiry and experimentation, but above all, she wants to teach them resilience, bravery, and grit.



The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every receipt and invoice should be properly filed and indexed for easy retrieval. This is particularly crucial for businesses that deal with a large volume of transactions or those in highly regulated industries.

The second part of the document provides a detailed overview of the various types of financial statements that a company must prepare. These include the balance sheet, the income statement, and the cash flow statement. Each of these statements provides a different perspective on the company's financial health and performance over a specific period.

The third part of the document focuses on the process of auditing. It explains the role of an external auditor and the steps involved in conducting an audit. This includes the selection of samples, the examination of supporting documents, and the preparation of an audit report. The document also discusses the importance of internal controls in preventing errors and fraud.

The fourth part of the document addresses the issue of tax compliance. It outlines the various tax obligations that a company may have, including income tax, sales tax, and property tax. It also provides guidance on how to ensure that all taxes are paid on time and in full, and how to take advantage of available tax deductions and credits.

The fifth and final part of the document discusses the importance of financial forecasting. It explains how a company can use historical data and market trends to predict its future financial performance. This information is essential for making strategic decisions and for securing financing from investors and lenders.

Table of contents

INTRODUCTION

Preface: How to use this text	6
Nutrition: The big picture	11
Case study	31

UNIT 1

Nutritional science 35

CHAPTER 1

Cells	37
-------	----

CHAPTER 2

Through the GI tract	57
Case study	91

CHAPTER 3

Energy transformation & metabolism	93
Case study	125

CHAPTER 4

Energy balance in the body	127
Case study 1	153
Case study 2	155

CHAPTER 5

Aerobic & anaerobic metabolism	157
Case study	177

CHAPTER 6

Macronutrients	179
Case study	220

CHAPTER 7

Micronutrients	223
Case study	258

CHAPTER 8

Water and fluid balance	261
Case study	285

UNIT 2

Nutritional practice 287

CHAPTER 9

What it means to be a good coach	289
Case study	309

CHAPTER 10

The PN Coaching methodology	311
Case study	340

CHAPTER 11

Working with nutritional levels	343
Case study	364

CHAPTER 12

Working with Level 1 clients	367
Case study	415

CHAPTER 13

Working with Level 2 clients	417
Case study	461

CHAPTER 14

Working with Level 3 clients	463
Case study	500

CHAPTER 15

Special scenarios	503
-------------------	-----

CHAPTER 16

Business 101 for fitness & nutrition pros	555
--	-----

CHAPTER 17

Continuing ed for the coach	573
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GLOSSARY AND INDEX OF KEY TERMS	589
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REFERENCES	600
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PREFACE

How to use this text

When faced with new information, students usually wonder one thing:

“WILL I EVER NEED TO KNOW THIS IN THE REAL WORLD?”

Whether it's the cosine of an angle, Kepler's laws of planetary motion, or the enzyme responsible for forming citrate, students' most common questions about what they're learning are:

“Will this be on the test?”

“Will I ever need to know this again in my life?”

We, the authors, know these questions well. We've asked them ourselves, most often during our own high school, undergraduate, and graduate studies.

So now, as instructors living in the “real world”, we'd like to level with you: Probably not.

Unless you become an engineer, you probably won't need the cosine stuff. Unless you go to work for NASA, you can probably forget Kepler. And the Krebs cycle? Well, you won't need that unless you teach biochemistry.

SO WHY LEARN ALL THIS INFORMATION?

Well, most of us don't know what we want to be when we grow up. Work (and life) is full of surprises.

You never know what career path you'll follow, or what hobbies you'll take up.

Be prepared for anything. Learn as much foundational knowledge as possible. Now you have options.

But there's another, more inspiring, reason for learning this stuff.

It's actually kinda interesting. It helps explain your world. And makes you super-fun at parties.

In fact, when you really dig into this knowledge, you might just change what you want to do for a living because of it.

WHAT THIS MEANS

In this program, we'll provide a lot of foundational knowledge.

We give you more details below.

This foundational knowledge — about stuff like cells, digestion, metabolism and whatnot — can feel a little heavy at times. Especially if you're new to this material. Or you're a practical, hands-on kind of person who would rather spend more time doing than reading.

Hang in there.

The payoff comes in the second unit, where that foundational information gets applied.

We'll give you case studies. Strategies for working with real-world clients. Questionnaires and assessments to use with your clients. Psychological strategies for getting clients excited about working with you. And all kinds of other fun things.

Even if you'll never use the more theoretical material we teach you, you'll still need to know the science to apply it under "test conditions" — in other words, when you're sitting across from a client.

By the end of this course, we expect you to understand:

- how the body works;
- how to apply that knowledge to working with clients;
- how to assess, monitor, and revise client programs;
- how to communicate your knowledge effectively; and
- how to get your clients on board with your nutrition plans and programs — hopefully feeling just as inspired as you about making progress and changing their nutrition habits.

How the Level 1 Certification program is organized

This certification course is split up into two units.

UNIT 1: NUTRITION SCIENCE

In Unit 1, we'll go through all the nutrition information you'll need to know, such as:

- How and why your cells work the way they do
- How carbohydrates, **fats**, vitamins, minerals, and other **nutrients** interact with your cells
- How food becomes energy for maintenance functions, physical work, and repair
- How your body balances out the food you eat with the work it does
- How exercise affects nutritional needs and how nutrition affects exercise

FATS

Also known as triglycerides. Derived from glycerol and three fatty acids.

UNIT 2: NUTRITIONAL PRACTICE

In Unit 2, we'll introduce you to how to coach, including:

- What it means to be a good coach
- How to prepare for clients
- How to interact with different clients
- How to assess clients
- How to know which approaches are best for which clients
- How to meet clients where they are (not where you want them to be)
- How to keep clients progressing from day one until they reach their goals

NUTRIENTS

Biochemical substances used by the body that must be supplied in adequate amounts from the diet.

Other learning tools

Throughout the textbook, look for things like:

CHAPTER OBJECTIVES

Each chapter contains clear objectives at the beginning. This will tell you what to focus on, and give you goals before you even start reading.

CHAPTER SUMMARIES

At the end of each chapter, we'll summarize the most important points from that chapter. These will confirm that you've learned what really matters, and give you another handy tool for review.

CHAPTER QUIZZES

At the end of each chapter, we'll give you your quiz. No waiting until the end of the program to cram and regurgitate. One chapter, one quiz.

Quizzes contain a mix of multiple choice and true / false-style questions.

You can find your quiz on your coaching homepage online at my.precisionnutrition.com.

KEY TERMS

The first time a key term appears in the text, it is highlighted and a definition provided in the margin. Familiarize yourself with each key term.

CASE STUDIES

Most chapters end with relevant case studies. These give you “real-life” examples of applied nutrition.

Each story describes a client's nutrition challenges, then provides practical solutions to work through these challenges.

REFERENCES

We'll provide a comprehensive list of references used to create this certification. If you're interested in learning more about nutrition and health, you can look up and read more of this primary source literature.

RECOMMENDED READING AND RESOURCES

Excited to learn more? We hope you are.

Throughout the text and on your coaching homepage online, we suggest more material to read and explore.

How to focus your learning

Just like coaching or training, learning should be focused and systematic, with a clear purpose.

Here are some ways to stay on track and on target with your Level 1 journey.

LEARN WHAT YOU NEED TO LEARN

You know your own learning style. (And if you don't, now's a great time to discover it.) Help yourself succeed by building a system that suits you.

Use as many ways of processing the material as possible: reading, writing, thinking and reflecting, listening, watching, talking about the material, drawing maps and flowcharts of ideas, etc.

We suggest completing one chapter per week as follows:

1. Read the chapter. (textbook)
2. Watch the video. (online)
3. Answer the workbook questions. (study guide)
4. Review the FAQs. (online)
5. Take the chapter quiz. (online)

Access the online course at my.precisionnutrition.com

Set up a **weekly** self-study schedule so you get into a routine. Consistency and structure **will** help you move forward steadily and confidently.

However, **while** we suggest one chapter per **week**, the program is completely self-paced. Our online learning management system allows you to move as quickly or slowly through the material as you like.

One chapter a day, one chapter a **week**, one chapter a month, one chapter a **year**; it's completely up to you. However you choose to do it, take charge of your own learning process and set yourself up for success.

FOCUS ON KEY CONCEPTS

As the scientists **working** on the 1999 Mars lander mission found out **when** their precious spacecraft **wandered** off into oblivion because they mixed up imperial and metric measurements, details are important.

But details usually aren't the most important things in this program. You don't have to memorize entire chapters, nor usually recall minute details (such as the exact body density equation by Jackson & Pollock).

As long as you learn the concepts and study as we recommend, you have a great chance of doing **well** on the quizzes.

Plus, you'll **always** have your text available for reference. If you get stumped during a quiz or a client interaction, you can always look things up.

It's more important to **know** how to think. **How** to learn. **How** to connect ideas.

And to understand **why** things are important (and **how** they relate to one another) than to recall specific details. (Unless detail memorization is your thing. Then go for it.)

What to look forward to

If you **show** up consistently, ready to learn and grow, and if you **engage** with this material using all the learning methods that **work** best for you, then this course **will** make you a better coach.

Seek to master both the basic science (Unit 1) and the applied art of coaching (Unit 2).

If you do, you'll finish this program as a highly trained professional **with** the knowledge to support your recommendations; the ability to communicate them effectively and **well**; and a foolproof system for delivering outstanding, reproducible results.

Let's get started.

Acknowledgements

It's really important to us that everyone who helped bring this major project to completion is recognized for their work. Because, as we all know, nothing **worth** doing can be done alone. To this end **we'd** like to thank Paul Bradbury, Rachael Bell, Phil Caravaggio, Al Cimino, Alwyn Cosgrove, Alison Dungey PhD, Georgie Fear MS RD, Carmelo Galati RGD, Jonathan Goodman, Sean Greeley, Mariane Heroux PhD, Timothy Jones, Bedros Keuilian, Helen Kollias PhD, Sarah Maughan MS, Bob Moesta, John Nadalin, Spencer Nadolsky DO, Tom Nikkola BA, Eric Noreen PhD, Prasanna Paul, Alex Picot-Annand MS, Pat Rigsby, Francisca Ruff, m.c. schraefel PhD, Chris Spiek, Bryan Walsh ND, and Erin Weiss-Trainor.