The Essentials of Sport and Exercise Nutrition

CERTIFICATION MANUAL

By **John Berardi, PhD; Ryan Andrews, MS, MA, RD**

www.precisionnutrition.com

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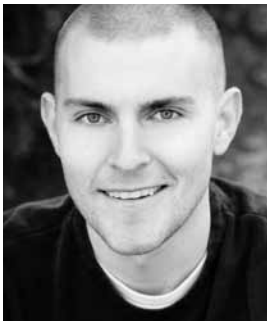
About the Authors

Dr. John Berardi has been recognized as one of the top exercise nutrition experts in the world. His work has been published in numerous textbooks, peer-reviewed academic journals, and countless popular exercise and nutrition books and magazines.

Dr. Berardi has worked with over 50,000 clients in over 100 countries through his company, Precision Nutrition. These clients range from recreational exercisers to elite athletes, and include the Cleveland Browns, the Toronto Maple Leafs, the Texas Longhorns, world champion UFC fighters, and Olympic athletes, including the Canadian Olympic ski teams, bobsleigh and skeleton racers, and speed skaters.

No stranger to elite athletics himself, Dr. Berardi has competed at a high level in football, track and field, rugby, and powerlifting. He is a former Jr. Mr. USA bodybuilding champion.

In addition to this work, Dr. Berardi is active in two important, not-for-profit organizations devoted to providing healthy food for those in need: the Healthy Food Bank and *Spezzatino* magazine.



Ryan Andrews is a world-leading educator in the fields of Exercise Science and Nutrition. Apart from having earned nearly every accreditation available (Registered Dietician, Certified Strength and Conditioning Specialist, two Masters degrees, and more), Ryan was a nationally ranked competitive bodybuilder from 1996-2001.

He's also an expert coach who has trained and worked at the Johns Hopkins Weight Management Center, one of the most recognized and awarded research institutions in the world. He's also the Director of Education for Precision Nutrition, Inc., overseeing the Precision Nutrition Lean Eating Coaching Program, a coaching initiative that works with more than 2,000 clients every year.

In his spare time, Ryan volunteers with a host of non-profit organizations to help promote a sustainable future.

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PREFACE:

HOW TO USE THIS TEXT

Students usually wonder whether what they learn in school can be applied to the "real world." When the heck will they ever really need to know the cosine of a right angle, or Kepler's laws of planetary motion? When they're 40-year-old accountants, will they need to remember the Krebs cycle and the enzyme responsible for forming citrate?

I know this well. As a student, I asked those questions too. Now that I'm the teacher, it's time for me to be frank with my students. Will you ever need to know this again? Probably not. My students will probably never need to know cosines again, unless they become engineers. They'll probably never concern themselves with the laws of planetary motion again, unless they go to work for NASA. And they'll probably never need to discuss the Krebs cycle – ever. Unless they sign up for this certification, that is.

If you'll never need this information in the "real world", then why should you learn it? Good question. The typical answer – something along the lines of: "It'll make you a smarter, well-rounded person" – isn't all that inspiring. Thus, I usually respond with: "Well, very few of you know what you're going to be 'when you grow up.' Heck, I don't even know and some might argue – others not – that I'm already 'grown up.' You'd better get exposed to everything that's out there now. Further, and call me crazy, some of this info might actually be *interesting* to you. You might just decide to go down this career path because of it."

I know, I know. You're still not convinced. Yet I think it makes a lot of sense. This basic information – math, physics, biology, etc. – may not seem relevant to your life right now. But you just never know what career path you'll be on or what hobbies you'll develop as you roll down the road of life. If you'd told me 15 years ago that I'd earn a PhD studying the biochemistry of nutrition, I'd have said you were nuts. But here I am, writing this manual and studying nutritional biochemistry. So act like a Boy Scout, folks, and be prepared for anything.

That said, some instructors (hopefully not me) can strip the fun right out of learning. Many of them simply recite or expect you to regurgitate facts or foundational information. Often this information lacks any practical application. It's no wonder that students get lost and uninterested. There's little to spark their imagination. That's when they start wondering whether they'll need to know things.

I often wonder what would happen if these instructors came up with some really applied stuff instead. For example, instead of just describing, defining, and deducing the mathematical formulae Kepler used, why not create a NASA mission out of the exercise? Launch a hypothetical space craft into orbit, bound for Mars! Then, using Kepler's laws, chart your course so that you connect with Mars at the right time and place. That'd probably be fun, even with all the math. As you can see in this example, the foundational knowledge is still critical. You'd have to know Kepler's laws before firing up the rocket engines. Yet there's now a reason to get excited about the information – you're going to Mars!

In this course, I'll provide a lot of foundational knowledge (information about your cells, your digestion and absorption, your energy transfer processes, your metabolic controls, and more) and a lot of applied knowledge (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 more). By the end of this course, I expect you to understand how the body works, how to troubleshoot based on physiological considerations, how to intelligently discuss a host of nutritional issues, and how to convince your clients that you have a deep knowledge of the subjects with which you're helping them. You'll need this basic science so that you can do your job properly, in the "real world." However, thankfully, we won't just stop at the science. This certification course is split up into two units so that we can cover both nutritional science (Unit 1) and the art of nutritional coaching and practice (Unit 2).

UNIT 1 COVERS ALL THE SCIENCE YOU'LL NEED TO UNDERSTAND THINGS LIKE:

- 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

UNIT 2 COVERS ALL THE HANDS-ON, PRACTICAL KNOWLEDGE YOU'LL NEED TO UNDERSTAND THINGS LIKE:

- What it means to be a good coach
- How to prepare for clients
- How to interact with different personalities
- Which questionnaires and assessments are most valuable
- 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

That may seem like a lot to learn. Don't get overwhelmed. We've included tools to enhance your learning experience as you work your way through the two units. Look for things like:

CHAPTER OBJECTIVES

Each chapter contains clear objectives at the beginning. This will give you goals before you even start reading. It'll also help you review and self-test before the fateful exam time.

CHAPTER SUMMARIES

At the end of each chapter, we'll clearly summarize the most important points made in the chapter. These will confirm that you've learned what was outlined in the objectives, and provide another excellent tool for exam review.

KEY TERMS

At the beginning of each chapter, we'll list a number of key terms used in that chapter. The first time one of these key terms appears in the text it'll be highlighted and a definition will be provided in the margin. These terms will also appear in a glossary at the end of the manual. Familiarize yourself with each key term, because you'll likely see it again (you know, like, at exam time).

CASE STUDIES

Most chapters end with relevant case studies. These will give you "real-life" examples of applied performance nutrition. Each story describes a client's nutritional challenges and then provides practical solutions to illustrate how these challenges can be overcome.

REFERENCES

At the end of the manual, we'll provide a comprehensive list of textbooks and studies used to create this certification. If you're interested in learning more about performance nutrition, you can look up and read more of this primary source literature.

RECOMMENDED READING AND RESOURCES

No single manual or course can ever be sufficient if your goal is to master a subject. Therefore, at the end of the manual, we provide you with a host of additional resources that we think you'll benefit from exploring.

Along with worrying about "real-world" application, if you're anything like I was as a student, you'll be wondering two things as you begin this course: Am I going to pass the exam? And is this actually going to make me a better fitness professional? We'll provide you with all the learning tools necessary to help you pass the exam with flying colors. (Of course, you still have to study. Sorry.) As for the second question: If you master both the basic science (Unit 1) and the applied art (Unit 2), you'll emerge as a highly trained fitness professional who has the knowledge to back up what you're recommending, as well as a fool-proof system to deliver outstanding, reproducible results. Feel like a trip to Mars? Let's get started!