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**What Makes Exercise Physiology Great**

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***Can Exercise Physiologists Create Themselves?*** *Yes, of course. It is no different from other well known healthcare professions. The key is this: Exercise physiologists must provide a mechanism for their professionalism to come into being. That mechanism is ASEP! Then, all they need to do is support the organization.*

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**XERCISE** PHYSIOLOGISTS are not fitness professionals, although they are expected to know a lot about fitness. They are healthcare professionals. While I will add to this thinking later in this article, first, it is important to clear up another point. That is, I am certain that it isn’t correct to refer to the fitness instructor and the personal trainer as a professional in same sense that professional and professionalism is used in physical therapy, nursing, or exercise physiology. Neither the fitness instructor nor the person trainer belongs to a profession. Exercise physiologists are required to demonstrate personal and/or professional behaviors and characteristics of a healthcare professional while this is not the case with the fitness instructor and/or personal trainer.

Excuse me you may say, but personal trainers [1] “…correct your exercise form where you may not notice flaws to help you avoid injury…” Or, you may say, really good trainers “…evaluate your strengths and weaknesses and take into account your limitations and help you work around them.” Please appreciate that I don’t have anything personally against “personal trainers,” except to state the facts as I see them. To notice a flaw in one’s posture while exercising to prevent an injury is a good thing and evaluating a client’s strengths and weaknesses is also good, but neither is the definition of a healthcare professional.

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| Perhaps, it is true that academic exercise physiologists should be cautioned against inductive reasoning. That exercise science has always been around is no guarantee that it will continue. The belief that it will is based on the assumption that “things don’t change” or, stated somewhat differently, “the course of nature continues always uniformly the same.” But what is the justification for this assumption? My point is that is not correct to assume that exercise science is a necessary consequence of the exercise physiologist’s path to professionalism. |

While it is true that the meaning of professionalism has been debated for decades, the characteristics of a profession are rather clear by now. For example, personal training does not have a body of specialized knowledge that belongs exclusively to personal trainers. On the other hand, exercise physiologists have spent decades using the scientific method to enlarge their body of knowledge that undergirds mind- body health and well-being.

Even though the number of exercise physiology majors in colleges and universities throughout the United States is small by comparison to exercise science, kinesiology, or human performance, they do nonetheless exist, and a handful is accredited by the *American Society of Exercise Physiologists* (ASEP). In time the number of such programs by degree title and ASEP accreditation will increase. As to personal training, I am not impressed with the somewhat popular idea that institutions of higher education should offer a personal training major. In other words, it seems to me that it is not reasonable to conclude that trainers are likely to make a sustainable salary in the public sector and, therefore, such a degree program would be a meaningless waste of time and financial resources.

This thinking isn’t true for exercise physiology as a recognized healthcare profession [2, 3]. Exercise physiology is certainly a much boarder academic area of study and application to the real world problems than is personal training. After all, the subject of healthcare is multidimensional and complex, involving mind and body considerations and not just lifting weights [4-7]. Also, in regards to this point, that’s why the ASEP leaders created the first-ever exercise physiology code of ethics [8], accreditation [9], board certification [10], and scope of practice [11]. These 21st century additions to the exercise physiologists’ thinking represent critical standards previously established for professions. The standards do not exist for occupations, such as personal training. Also, it is more than reasonable to conclude that personal training is not considered a lifetime career commitment as is the case with physical therapy, nursing, and exercise physiology.

While personal trainers may demonstrate an altruistic (i.e., service to the public) behavior and dedication, which is one criterion among numerous others for professions, so do members of many other occupations. And yet, it is clear that ASEP exercise physiologists understand they have a serious commitment and service to the public sector. This is why the ASEP leadership expects college teachers to engage students in more than the teaching of just the typical exercise physiology content [12]. Yes, of course, it is important that students understand the physiology of exercise, including but limited to the following:

* Time-dependent energy sources
* Structure and function of muscles
* Metabolic, cardiovascular, and respiratory responses to exercise
* Fuel utilization during exercise
* Effects of diet and training on fuel utilization
* Physiology of steady-state work
* Maximal aerobic power
* Effects of endurance training and detraining on physiological responses of males and females, and
* Cardiovascular responses to isometric exercise and weight lifting.

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| *It seems we are force to concede that everyday thinking and conclusions arrived at inductively are never absolutely secure.* |

However, it is also very critical that exercise physiology students are provided a solid college/university ASEP accredited education in sports biomechanics, applied anatomy, physiological assessment, psychophysiology, sports nutrition, ECG and graded exercise testing, scientific research, critical thinking, and advanced courses in cardiovascular physiology. Then, too, even though it is less clear than the areas just identified, there is a growing body of evidence that shows mind-body medicine, including the role of spirituality in healthcare [13] helps to reduce cardiovascular mortality rates. Understandably, this thinking is likely to influence those who use exercise for a healthier lifestyle. In fact, to increase the probability of being successful in changing behavior, exercise physiologists are encouraged to provide their clients the opportunity to express their spirituality. It is inevitable that the integration of spirituality and regular exercise will become a primary intervention in lowering the prevalence of cardiovascular risk factors.

While exercise physiologists are academically prepared to discuss in a proper way the role of nutrition in sports and health, too often personal trainers offer nutrition advice to their clients when they probably shouldn't do so [14]. In fact, it is also important that exercise physiologists do not cross the fine line between speaking about nutritional issues and engaging the dietitian’s practice. Fortunately, given their formal academic education, more than likely the exercise physiologist knows what the limits should be. That is, they have been educated regarding when to refer their clients to a dietitian. This expectation doesn’t exist with personal trainers.

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| *Yesterday, it occurred to me that with the beginning another day there is hope of something better, where we truly fit the notion of “be-coming” that which we envision.* |

Just as a client would not be expected to seek advice from the exercise physiologist regarding the latest drugs to lower elevated blood pressure, the exercise physiologist understands this point and would suggest to the client to locate the right authority to discuss appropriate medications. Why, because such a conversation would be outside the scope of professional practice for exercise physiologists. Likewise, it would be inappropriate for a personal trainer to argue on behalf of a specific nutritional supplement or a drug prescription for high blood pressure. Yet, it is commonly recognized that many trainers promote all kinds of sports supplements and nutritional practices. Clearly, it is a mistake to do so. Even the *American Council on Exercise* (ACE), one of the leading fitness organizations that certify personal trainers, states that [14]:  "…if you are not a registered dietician or healthcare professional, you should avoid making specific recommendations and refer your client to a registered dietician or physician."

Also, in regards to “supplements,” Reents [14] points out that ACE has adopted a firm stance on the subject. For example, the ACE “Position Statement on Nutritional Supplements” states that, "It is the position of the *American Council on Exercise* that it is outside the defined scope of practice of a fitness professional to recommend, prescribe, sell, or supply nutritional supplements to clients." The ASEP Leadership couldn’t agree more with ACE’s position. Whether it is the personal trainer or the exercise physiologist, neither should promote the use of performance enhancers. Simply state, cheating in sports threatens the integrity of the person and/or the sport itself.

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| Many people have the image of ACSM or some similar organization as a sort of leader in exercise physiology. Unfortunately, this simple picture, while highly compelling to some, makes little sense. As is true with 95% of the healthcare professions, they have their own profession-specific organization. |

Unfortunately, the use of performance enhancing supplements has been around for a long time. Perhaps, to help with this problem, the *National Strength and Condition Association* initiated a certification specifically for personal trainer (NSCA-CPT). The idea behind the certification was to upgrade the one-on-one work with clients in health/fitness clubs, wellness centers, schools, and clients' homes. The exam evaluates the candidate’s knowledge and skills that are believed necessary to successfully train both active and sedentary physically healthy individuals, as well as individuals with special needs [15].

However, when one takes the time to read content of the NSCA-CPT website [15], it is troubling. For example, “Personal trainers with specialized expertise may also be involved in training clients with orthopedic, cardiovascular, and other chronic conditions. Although no formal post-secondary course work is required, candidates are expected to have a good knowledge of biomechanical concepts, training adaptations, anatomy, exercise physiology, program design guidelines and current position papers pertaining to special populations. To qualify to register for the NSCA-CPT exam, you must be at least 18 years old and have a high school diploma or equivalent.” Honestly, then, is it even possible or appropriate to use the word “professional” in the same breath with the words, personal trainer? The short answer is “NO” not under any circumstances when all that is required to sit for the CPT exam is a high school diploma.

If that doesn’t get under your skin, then, think about the fact that the *International Sports Science Association* (ISSA) in Carpinteria, CA has certified “…180,000 fitness professionals…” worldwide by way of home study and online personal training courses of which the average ISSA student completes the certification in 10 weeks [16]. Wow, to learn everything that is necessary to safely apply all that which undergirds physical activity and exercise into the model of modern cardiovascular health in just slightly over 2 months in a huge feat. Just think, the time period to earn the “personal trainer” tile is essentially one-half of one semester compared to the average of 8 semesters that college students study to thoroughly grasp the risk factors that associate with an increased susceptibility to cardiovascular disease, the psychophysiology of regular exercise, the role of type, intensity, frequency, duration, and volume of exercise and how they contribute to a safe exercise prescription, not to mention the academic content and hands-on laboratory skills acquired from studying 6 to 8 core-related semester-long exercise physiology courses.

What is the incentive to go the way of personal trainer certification rather than a college degree? Time and expense (tuition fees in particular) are the obvious issues. Why go to college for an average of 4 years to graduate into a personal trainer job versus several months of study and, then, go right to work? *Health Care Pathways* [17] indicates that, “On the pay side of things, personal trainers can expect to be well compensated for their services. Of the nearly 228,000 professionals surveyed in 2009 by the Bureau of Labor Statistics, the average hourly wage stood at $16.99, with an annual take-home of just over $35,000. Those just getting their start in the field will earn a bit less, generally just around the $10 per hour mark. But after a few years of service, the pay scale can climb all the way to $29-plus per hour, or over $60,000 annually.”

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| Undaunted by the lack of support of the academic exercise physiologists, the ASEP leaders conceive of a far more powerful organization working specifically on behalf of all exercise physiologists. |

Okay, what then? That’s a lot of so-called professionals surveyed and the salary of just over $35,000 sounds pretty good. Is it? No, it isn’t good for three reasons. First, the thousands of non-college graduates compete against the college graduates. The overall effect is a decrease in the salaries of the credible exercise physiologists by the misguided thinkers who compare them to personal trainers. Second, the general annual salary for new full time personal trainers is likely to be closer to $20,000 in fitness clubs or $10 to $12 an hour without major health benefits. Third, the failure of society and healthcare professionals such as the physical therapist, nurse, and dietitian (who are licensed) to recognize board certified exercise physiologists as credible healthcare professionals and not as personal trainers translates into an unnecessarily prolonged professionalization of exercise physiology.

Just when you thought that’s about the end of the story, you stumble upon the Medical Fitness Specialist (MFS) Certification Program developed and promoted by the *International Fitness Professionals Association* [18]. The IFPA marketing strategy is that there are many personal trainers with skills to train the “normal” healthy market, but not enough to work safely and effectively with clients who are medically restricted when it comes to exercise. The program is marketed to provide MFS candidates with “…the knowledge, skills and abilities to safely and effectively utilize the IFPA Personal Training System, Phases, Protocols and all 10 IFPA Components of Fitness to effect healthy, positive changes in their clients. In effect, it will provide effective treatments and protocols for the treatment, care and prevention of over 65 chronic disease and disabilities that commonly afflict our people.” All at an online product price of $1199.00 and, apparently, the IFPA product-driven certification does not require the candidate to be educated or have experience in fitness, health, and/or teaching clients.

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| The only strange thing about the American Society of Exercise Physiology organization is that it is so late in “**be-coming**” the Society of professional exercise physiologists. |

Certainly, more can be said on this subject but, perhaps, enough has been said at this point. The bottom line is that personal trainers are not the equivalent of being an exercise physiologist. They should not be considered part of a “profession” of personal trainers and yet, there can’t be any question that exercise physiologists do in fact represent the profession of exercise physiology. But, to be absolutely fair with this thinking, although exercise is medicine, the exercise physiologist’s prescriptive use of exercise to help avoid or correct for cardiovascular risk factors for heart disease and other life-threatening conditions (depression, diabetes, obesity, hypertension, cancer, and so forth) does not mean that exercise physiologists are medical doctors. Yes, they are healthcare professionals but, here again there are huge educational, hands-on, and clinical experiences that distinguish the two professionals from each other. While this point is obvious to exercise physiologists and society, the mistaken idea that personal trainers constitute a profession or that what they do is the equivalent of the scientific base that undergirds exercise physiology isn’t. It should be.

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