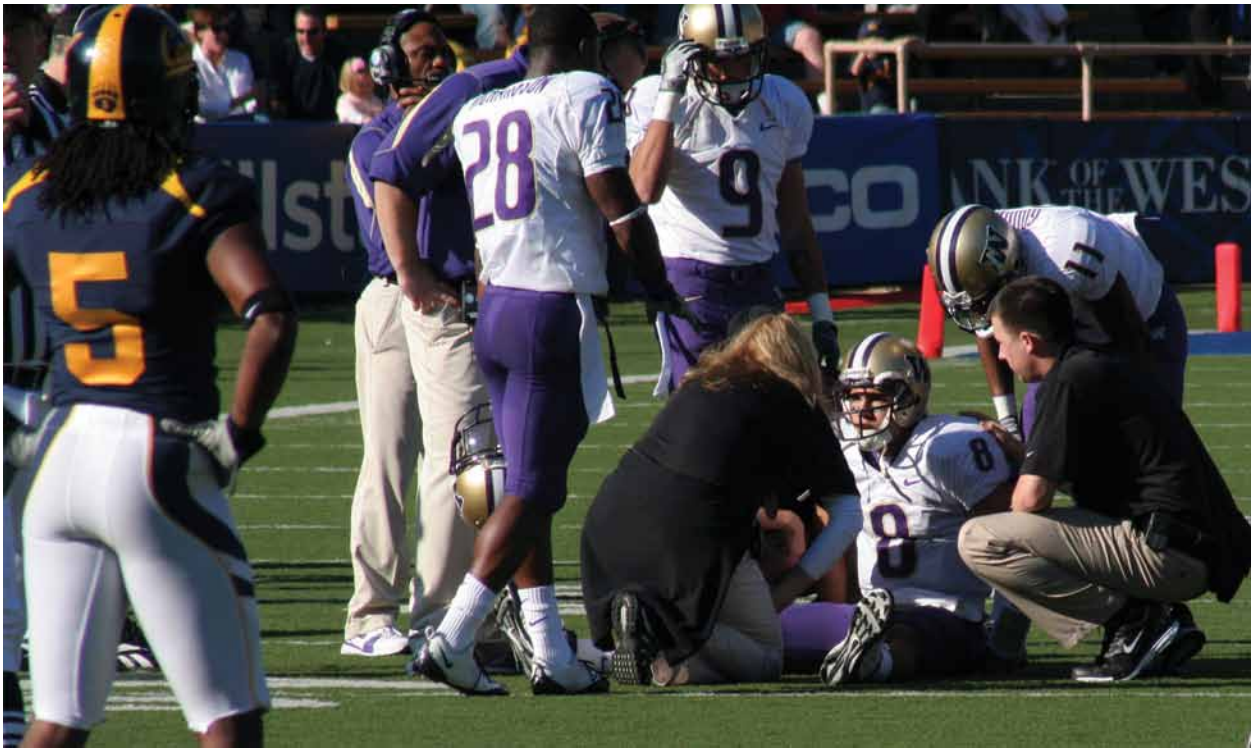
the CrossFit JOURNAL ARTICLES

Safety: For Athletes and Trainers

The benefits of exercise outweigh the risks, but planning ahead can ensure you're protected when accidents do happen. Dr. Lon Kilgore suggests some ways to insulate yourself.

Dr. Lon Kilgore



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Exercise can kill you. Really. It can.

Exercise is work. Ever heard the term "work yourself to death"? Lots of colloquialisms have a nugget of truth about them. Think of the recent cases of athletes dying in practice or competition: the NFL, high-school football, collegiate track, wrestling, lifting, gymnastics, boxing and more.

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Think of all the money we spend on "protective gear" for our kids when we sign them up to play pee-wee sports. If they were not getting ready to be confronted with potentially dangerous situations, would we be buying protective gear?

Whenever people enter a gym, training facility or sporting venue of any kind, they can be placing their lives at risk. A logical mind would immediately think, "Hey, I don't want to get hurt or die, so I won't do this."

Or would they?

The Risks

The mass consensus is that exercise is a healthy undertaking. The general population, including lawmakers and courts (this will be important later), has a preconceived notion that all exercise and sport is healthy, and that if injury occurs, someone has done something wrong. This, as a blanket statement, is of course incorrect.

As trainers, I believe it is important that the actual risks associated with training and competing are communicated to trainees, parents and everyone else who will listen. This dissemination is not intended to be alarmist in nature, but rather to be transparent to the people with whom we work.

Is it not responsible to tell a parent that a child getting ready to play soccer is about to play the most dangerous sport in the world, a sport with an injury rate on the order of seven injuries per 100 participation hours? Is it not prudent for a school system to tell parents that phys.-ed. classes usually have about one injury per 500 participant hours?

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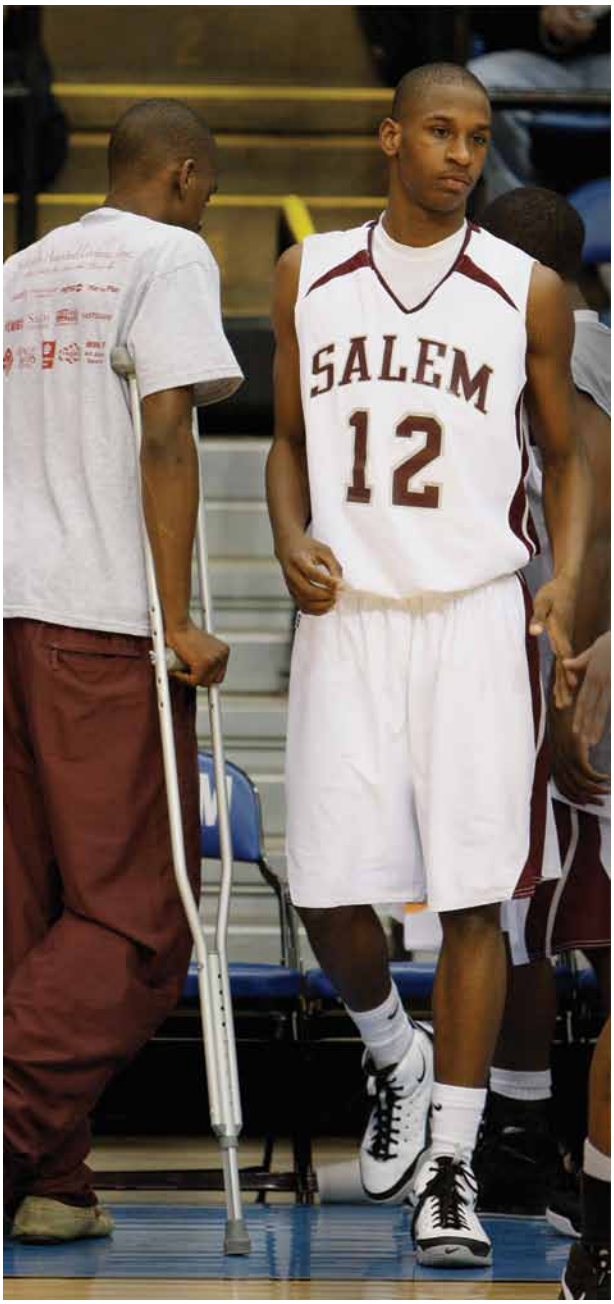

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A recent study showed that pre-screening by a physician did little to reduce injury rates—but having a doctor clear your athlete can't hurt.

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Athletes under the age of 35 die at a rate of about one per 450,000 participants each year, with approximately 75 percent of those deaths attributed to underlying cardiac pathology. Maximal exertion during exercise in healthy but non-athletic populations has a death rate from cardiac events of about one per 18,000 participants per year. The likelihood of being injured in a car in the U.S. is one in 10. The likelihood of developing one or more upper respiratory tract infections each year is one in four (these infections are the sixth leading cause of death worldwide).

There are two take-home points here:

1. Apparently being fit enough for athletics is better than being healthy (free from disease).
2. Bad things can happen to good people even if safeguards are in place.

People who are informed of the complete picture—the benefits of exercise and sport vs. the risks—will generally choose to participate anyway. The knowledge that we will become more fit or have a ton of fun playing outweighs the risk for most individuals. However, that sets up a pesky problem for exercise professionals.

Who Can Exercise or Play in Our Program?

Most readers here want as many people as possible to be in their programs. We'd like to include everyone—but we can't. There are legitimate reasons for excluding people from exercising or sports participation. An exercise professional must be cognizant of those reasons and must make every effort to identify those individuals in order to ensure their safety.

In my opinion, the primary purpose of pre-exercise screening is to identify individuals who should be required to obtain a physician's clearance prior to participation, as well as those people with significant medical conditions that should exclude them from participation in exercise under your supervision. Screening should also identify any individual who requires any adaptation in his or her participation.

In reality, a lion's share of recreational exercisers train on their own without any type of screening or examination before they begin unsupervised activities, whether general exercise or sports. All people, even diseased populations, can do more than they're doing if sitting on their butts is their major activity. And most trainees, when left to their own devices, will stop exercising at the slightest discomfort or pain.

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Statistically, soccer is a relatively dangerous activity—but participants believe the benefits outweigh the risks of participation.

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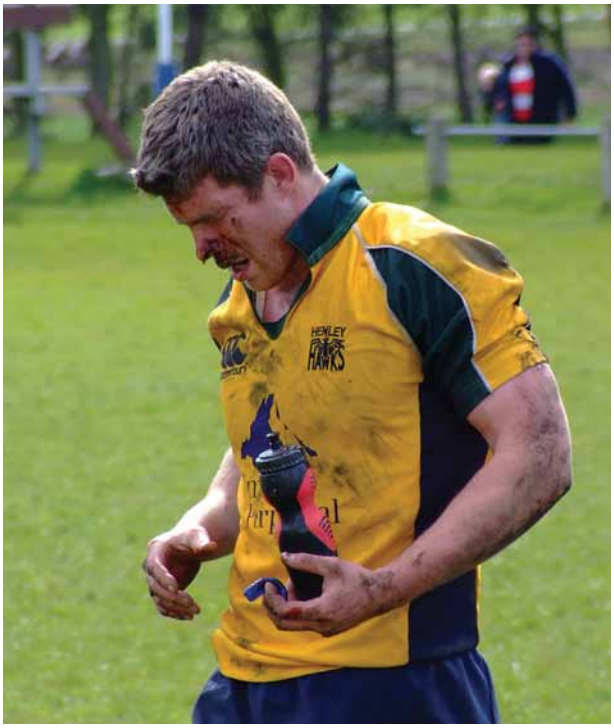
So how relevant is a pre-participation screening if a huge portion of the exercising public does not follow the process or even know of it?

Well, they should know. Every exercise and fitness-gimmick ad on TV or in the fitness fluff magazines has a tiny disclaimer about seeing a physician prior to beginning a diet and exercise program. There is probably no real harm done, as a recent study (1) reported that pre-participation physical examinations by physicians did not reduce injury rates in sporting activities. So the impact of the screening process on public health and safety is limited in members of the general population who exercise on their own, but most readers here are professionals who train clients. I believe it is incumbent on them to consider public safety in their practice.



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Pre-screening participants is the first step, but obtaining informed consent and a waiver of liability are also very important.

Rule 1: Safety First

The American College of Sports Medicine proposes a fairly complicated multi-step screening process that identifies individuals who should not exercise due to presence of disease, those who should be examined by a physician prior to participation, and those who can participate immediately without further considerations. The complete process involves a variety of forms (including a medical-history questionnaire), evaluation of laboratory tests, observation for signs and symptoms of cardio-pulmonary disease, and age-related exclusion. This is a process not viable within the standard fitness professional's practice.

A screening in the gym can be much simpler, as it is not a focus or intent of commercial fitness enterprises to be clinical rehabilitation or therapy units. As such, the seven-question Physical Activity Readiness Questionnaire (PAR-Q) from the Canadian Society for Exercise Physiology can more than suffice to identify appropriately risk-free participants (those who answer "No" to all questions on the PAR-Q).

If a potential client answers "Yes" to one or more of the questions, it is prudent for the individual to obtain a physician's clearance to exercise prior to supervising their training. I would insist upon it. This provides the trainer valuable information about possible disease states requiring adaptations needed in the client's exercise programming.

For the most part, screening is a pen-and-paper process, but it is a process that requires the trainer's attention and some basic knowledge. Attention is needed as an exercise practice cannot afford to allow a high-risk individual who needs program modifications to be trained in the same manner as a healthy individual. Basic knowledge is needed because you must be able to explain to an individual who is being excluded from training why he or she is being excluded. This means understanding some anatomy and physiology as it applies to exercise and disease processes. Once you get your certification and set up a practice, learning never stops. Keep reading, keep going to seminars, and keep thinking.

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Rule 2: You Do Not Want to Go to Jail

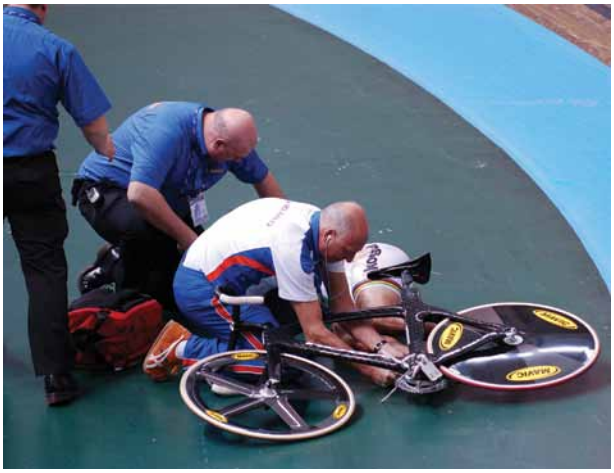
Legal considerations play an important role in the screening process. Exercise professionals are held to the same standards and laws in regards to malpractice and negligence as any other professional. Failure to appropriately perform a client screening is an open door for litigation against you should any injury occur in your facility or under your supervision.

But a screening is just the starting point for protecting your professional interests and providing for client safety and health. There are several other pen-and-paper documents that I believe should be part of the sign-up procedure for any gym.

Once a client has made it past the screening process, the next step is the informed consent. This is where the trainer explains what exercise services he will provide to the trainee, what the trainee will experience during his sessions, what benefits he will reap from participation, and what risks are associated with participation. List common injuries that might occur and that exercise can kill you. There must be a written record of this communication that is signed by the trainee and trainer.

Usually included on the same form as the informed consent will be an assumption-of-risk and waiver-of-liability statement. This section is usually in the form of a short paragraph where the trainee specifically acknowledges he has been fully informed of the benefits and risks of participation, that he willingly assumes all risks for any and all injuries occurring as part of his participation in exercise, and that he releases the trainer and facility from liability for any such occurrences.

The format and wording on informed-consent/assumption-of-risk/waiver-of-liability forms varies, but the basic elements are the same. For an example of a single-event form, take a look at the standard race entry form from USA Cycling. For an example of a program form, take a look at the American College of Sports Medicine's own form. For an over-the-top but entertainingly illustrative form, take a look at Dethklok's Pain Waiver from the animated series *Metalocalypse*.



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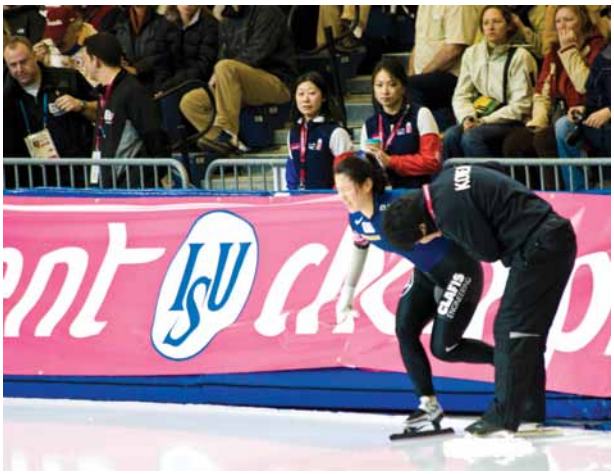
Professional liability insurance is an important part of coaching and training, and Dr. Kilgore believes it is absolutely essential.



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Many injuries have nothing to do with the trainer but are rather the result of an athlete's error or the nature of the sport itself.

The CrossFit Risk Retention Group specifically fills a chink in the armor of exercise-professional liability coverage. Visit the site for more information.

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Rule 3: There are no guarantees

Bad things can happen to good people. Even if a trainer takes care of every screening detail, exquisitely explains the benefits and risks of training within his system, and obtains an assumption of risk and a waiver of liability from a trainee, and even if every cleanliness, equipment-safety, exercise-technique and supervisory standard is met, someone will get hurt. The statistics tell us that. It is a certainty. We just can't say who or when.

For that reason, I believe it is an absolute necessity to obtain professional liability insurance. You have liability insurance on your car; shouldn't you have it on something as important as your professional practice? Professional liability insurance protects you from unwarranted claims of negligence or malpractice, but it can only do so if you paid attention to Rule 1 and Rule 2, and only if you can explain and defend, in court, the system of exercise you used in the training of the individual bringing the charges against you.

If you get to this point, you not only need to be able to explain the exercises and the conditions in which the exercises were conducted, but you also need to be able to explain why you used those exercises, what those exercises do to the body, and why they are appropriate and safe for that specific client. You need to be able to do this authoritatively: you are supposed to be the expert. If an attorney appears to have more knowledge about exercise anatomy than you, will the jury perceive your competence? If an opposing expert witness provides a research paper saying an exercise is damaging, can you provide 10 that counter the assertion?

Again, once you get your certification and set up a practice, learning never stops. Keep reading, keep going to seminars, keep thinking. Your practice and standing as a professional depend on it.

References

[1.] Physical Activity Guidelines Advisory Committee. *Physical Activity Guidelines Advisory Committee Report, 2008*. U.S. Department of Health and Human Services: E28, 2008. Available at http://www.health.gov/PAGuidelines/Report/pdf/CommitteeReport.pdf.

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About the Author

Lon Kilgore is a professor at Midwestern State University, where he teaches applied physiology and anatomy. He has also held faculty appointments at Kansas State University and Warnborough University (IE). He graduated from Lincoln University with a bachelor of science in biology and earned a PhD in anatomy and physiology from Kansas State University. He has competed in weightlifting to the national level since 1972 and coached his first athletes to national championship event medals in 1974. He has worked in the trenches, as a coach or scientific consultant, with athletes from rank novices to professionals and the Olympic elite, and as a collegiate strength coach.

He has been a certifying instructor for U.S.A. Weightlifting for more than a decade and a frequent lecturer at events at the U.S. Olympic Training Center. His illustration and authorship efforts include books, magazine columns and research journal publications.

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