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A CRITIQUE OF CROSSFIT: PART 2



By Matt Brzycki

CrossFit has become a highly popular exercise program and competitive sport. But CrossFit has a large and growing body of critics in the athletic, scientific and medical communities. A variety of concerns have been raised by a multitude of strength coaches, weightlifting coaches, fitness professionals, exercise physiologists, athletic trainers, physical therapists, competitive weightlifters and others. Critics even include numerous individuals who had been CrossFit "insiders," CrossFit athletes and coaches at CrossFit affiliate gyms.

THE BAD

Every system of exercise has aspects that are good and bad. Part 1 of this article examined the things that I like about CrossFit. Here are the things that I dislike about CrossFit:

1. The exercise program has excessive variety. CrossFit workouts are "constantly varied," meaning that specific workouts aren't repeated very frequently. Although some degree of variety can be beneficial – especially for experienced individuals – too much of it can be detrimental. When the same workouts are done infrequently, it's virtually impossible to compare one performance to another in order to quantify improvement (or lack thereof). And when the competitive lifts and their derivatives – such as the squat, deadlift, snatch and clean – are done infrequently, it's extremely difficult to perfect the complex technique that's required to do the exercises safely and effectively.

CrossFit's manic obsession with programming that's "constantly varied" sometimes results in a nonsensical sequence of workouts and/or combination of exercises/activities within a workout that's without rhyme or reason. One graphic illustration is a Workout of the Day (WOD; pronounced "wad") named Linda which is a series of three exercises: the deadlift, bench press and clean. This series of exercises is repeated 10 times with descending reps of 10-9-8-7-6-5-4-3-2-1. The recommended weights are based on percentages of bodyweight as follows: deadlift (150%), bench press (100%) and clean (75%). So if you're 200 pounds, you'd deadlift 300, bench press 200 and clean 150. It makes no sense whatsoever to exhaust your hips, legs and lower back with deadlifts then do something as highly technical as cleans, especially when the goal of this WOD is to complete the exercises as quickly as possible. And don't forget, the sequence of deadlifts before cleans is repeated 10 times.

2. The workouts produce chronic soreness. If you do something unfamiliar or different – whether it's a different exercise, a different sequence of exercises or a different rep range using a different resistance – with enough intensity (effort), you'll experience muscular soreness. Because CrossFit workouts are "constantly varied," you'll be constantly achy. Soreness also makes it very difficult to train. And when you're sore, your muscles won't be able to produce as much force which means that your performance will suffer.

3. Progressive overload is overlooked. One of the key ingredients of an effective program is to overload your muscles with progressively greater demands. When workouts are "constantly varied," there's little opportunity for you to make steady and systematic progressions in the workload (the resistance and reps).

4. Strength will plateau. You can improve your strength by doing CrossFit workouts – particularly if you're new to CrossFit – but only for a short while. Over time, your strength will stagnate for a number of reasons, including a lack of emphasis on progression as well as the extreme stress that's placed on your musculoskeletal, respiratory and circulatory systems coupled with insufficient recovery between workouts.

5. It has poor quality control. In order to open or coach at a CrossFit affiliate gym, a CrossFit Level 1 (CF-L1) certificate is required. The certificate course costs \$1,000 and you must be at least 17 years of age. Translation: Anyone who's 18 or older with \$1,000 can obtain this certificate and open a CrossFit gym or coach at one. Such lenient standards don't bode well for high-quality training. Considering that there are currently more than 12,000 affiliate gyms and 90,000 certificate holders who are coaching CrossFit, there's a distinct possibility that large numbers of gyms will be staffed by underqualified individuals who are severely ill-equipped to teach extremely complicated lifts and give highly educated advice.

6. The reps are often done with cringe-worthy technique. In most CrossFit workouts, the goal is to do the exercises/activities as quickly as possible – in the shortest amount of time – or for "as many rounds as possible" (AMRAP) in a designated time. The emphasis is on doing the reps quickly, not strictly.

John Jesse recognized the pitfalls of this approach more than 40 years ago in his book *Wrestling Physical Conditioning Encyclopedia*. In 1974, he wrote: "Circuit training can be ruined if the athlete or coach pays too much attention to speed and sacrifices the correct performance of exercises."

There's no question that in speeding through a series or circuit of exercises/activities, technique is compromised. And when technique is compromised, bad things can happen. This is especially true of the competitive lifts and their derivatives which are the most complicated things that you can do with a barbell. For those exercises to be safe and effective, using good technique is extremely critical.

Doing the competitive lifts while racing against the clock and/or when fatigued is a recipe for sloppy technique. As part of a study that investigated CrossFit, 14 subjects performed a WOD named Grace which is 30 reps of the clean and jerk that are done as fast as possible with 135 pounds. One subject completed 30 reps in 93 seconds or one rep every 3.1 seconds. There's actually a WOD named Double Grace which is – you guessed it – 60 reps of the clean and jerk that are done as fast as possible with 135 pounds. When high reps are performed in complex

lifts, technique will quickly deteriorate. With the clean and jerk, for example, the technique becomes "get the weight from the floor to overhead any way you can." This is in stark contrast to competitive weightlifters who mostly do low-rep sets – singles, doubles and triples – and don't lift when fatigued. They never sacrifice correct performance for speed.

Moreover, performing the exercises as quickly as possible increases the likelihood that the reps will involve an excessive amount of momentum. The more momentum is used to perform a rep, the less muscle is required to perform a rep. This makes the exercises less productive.

Plus, performing the exercises as quickly as possible increases the likelihood that the reps will be done through a partial range of motion. This makes the exercises even less productive. In the aforementioned study, the 14 subjects also performed a WOD named Cindy which is 5 pull-ups, 10 push-ups and 15 squats for AMRAP in 20 minutes. One subject did 1,010 reps in 20 minutes – and no, that's not a typo. Based on this series of exercises, 36 sets would be needed to do 1,010 reps. Even if the subject took no time whatsoever to transition between those 36 sets – which is impossible, of course – then that's still a pace of 50.5 reps per minute or one rep every 1.19 seconds. For 20 minutes. There's absolutely no way in the world that those reps were done with anything that approached a full range of motion. Frankly, the reps would've been ridiculous.

7. There's no sport-specific element. CrossFit boasts that it "specializes in not specializing." Nonetheless, CrossFit offers specialty courses in a variety of sports/activities, including endurance, "mobility," self defense, football, rowing, gymnastics, strongman and weightlifting. That's right, CrossFit "specializes in not specializing" yet offers a number of specialty courses (which will almost certainly multiply in the future).

But are these "specialty courses" really "sport-specific"? The "sport-specific" workouts for football are divided into two parts, one for strength and one for conditioning. As an example, the strength part of one off-season workout is 5 x 1 (5 sets of 1 rep) in the squat and 5 x 5 in the bench press with three to five minutes of recovery between sets. That's it for strength training: 30 reps in about 30 to 50 minutes (which isn't even characteristic of CrossFit, by the way). The conditioning part of this workout is a series of a 40-yard shuttle run (4 x 10 yards), 3 reps with bodyweight in the

power clean, 5 reps with bodyweight in the front squat and max reps in dips. This series of exercises is repeated five times with 45 seconds of recovery between each series.

So how is this workout specific to football? Workouts that are prescribed to prepare for the demands of football should include exercises that strengthen the neck to reduce the risk of cervical injury as well as exercises that strengthen the ankle, a joint that's often injured on the gridiron. Incredibly, those exercises are absent from this and all other CrossFit workouts for football. And while it can be argued that the 40-yard shuttle run is at least

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somewhat specific to football, that length isn't specific to position. The distances that are covered in a game or possession by, say, a lineman and a wide receiver are considerably different. Here, however, the distances are the same regardless of position. So this workout for football is neither sport-specific nor position-specific.

The point is that CrossFit workouts are designed to make you better at exercise, not athletics. Think about it: How many strength coaches at the collegiate and professional levels have their athletes do CrossFit workouts on a regular basis? The answer is relatively few. And I'm being generous. If CrossFit was such a superior system of exercise, there'd certainly be far more coaches who prescribed it and athletes who performed it.

8. It outlaws single-joint movements and machine exercises. Most of this has to do with the notion that single-joint movements and machine exercises aren't "functional." A definition of functional is useful. This would mean, then, that single-joint movements and machine exercises are non-functional or useless.

If you do the leg curl – a single-joint exercise – and, over time, increase the strength of your hamstrings to produce more force, aren't those muscles now more "functional" (or useful)? If you do the lat pulldown – a machine exercise – and, over time, increase the strength of your upper back ("lats"), biceps and forearms to produce more force, aren't those muscles now more "functional" (or useful)?

9. It has an elitist attitude and superiority complex. Where do I begin?

There's a running joke that goes something like this: How do you know if an individual does CrossFit? He'll tell you.

A popular viewpoint in the CrossFit community is that the alternative to doing CrossFit is sitting or lying on a couch. As if no other system of exercise is worthwhile. Further evidence of CrossFit's air of superiority is the slogan "Your workout is our warm-up." As if no other individuals work hard.

But perhaps the most egregious example of its elitist attitude is the banner at the top of the CrossFit website that announces "Forging Elite Fitness." You'd think that those who have been doing CrossFit workouts since the company was founded in 2000 would be superhuman by now.

Its superiority complex is underscored by Greg Glassman, the founder of CrossFit, who once stated: "The strength and value of CrossFit lies entirely within our total dominance of other athletes and this is a truth that cannot be divined through debate, only competition." Here's the problem: CrossFit designs and oversees the "competition" – the CrossFit Games – and defines the metrics that are used in the "competition" to determine the men and women who are crowned the "Fittest on Earth." The "truth that cannot be divined through debate" is that countless numbers of men and women have achieved elite levels of fitness without doing CrossFit.

10. It has a cavalier attitude about injuries. This manifests itself in many ways.

In an article that was published in December 2005 in The New York Times, Glassman famously stated: "If you find the notion of falling off the rings and breaking your neck so foreign to you, then we don't want you in our ranks." But CrossFit's attitude about injuries might be best summed up by Glassman who once wrote: "We have a therapy for injuries at CrossFit called STFU." In case you're wondering, STFU stands for "shut the f*** up."

11. The company conducts itself in a highly unprofessional

manner. Frankly, sometimes its actions are unsettling.

After completing a CrossFit workout in December 2005, Makimba Mimms, a Navy veteran, was hospitalized for about a week with rhabdomyolysis, a condition that can bring about cardiac arrest (a sudden loss of heart function) and renal (kidney) failure. Rhabdomyolysis can result from exercise that's extreme, repetitive and unfamiliar as well as workouts that overemphasize one or two muscles. In August 2008, he filed a lawsuit against Manassas World Gym, Ruthless Training Concepts (a CrossFit affiliate) and Javier Lopez (the trainer). Mimms was subsequently ridiculed on the CrossFit website and elsewhere. In fact, CrossFit reacted to the lawsuit with sarcasm, naming the workout that he did as "Makimba" and categorizing it as a "kid's workout." Classy.

Glassman claims that "Crossfit is the world leader in rhabdo prevention and awareness." Yet, Maddy Myers – as a result of exercises/activities that she did in the 2015 CrossFit Games – was hospitalized with rhabdomyolysis.

CrossFit has two cartoon clowns as mascots. One is known as "Pukie" who's shown vomiting. Another is known as Uncle Rhabdo – obviously named after "rhabdomyolysis" – who's shown tethered to a dialysis machine while standing in a pool of blood with one of his kidneys on the floor between his feet. It's difficult to imagine that "the world leader in rhabdo prevention and awareness" would employ such a disturbing depiction of a potentially life-threatening condition.

And what respectable organization has a vomiting clown named Pukie and another clown named Uncle Rhabdo as its mascots? Well, according to Glassman, "We introduced Pukie [the Clown] because we're dark, tough, and don't mind shocking the effete. We introduced [Uncle] Rhabdo because we're honest and believe that full disclosure of risk is the only ethical thing to do."

12. It has a cult mentality. Is CrossFit a cult? Consider the things that define a group as a cult: It has an outspoken, charismatic leader. Check. It has an "us-versus-them" mindset. Check. Its members claim life-changing experiences. Check. It promotes the idea that no one else knows the truth or has the answers. Check. Its beliefs differ from the majority. Check. It's overly zealous about its beliefs. Double check.

THE INJURIES

Nothing about CrossFit is more heavily and heatedly debated than the topic of injury. Two published studies – both surveys – collected data on injuries from CrossFit workouts. In one survey, 97 individuals reported at least one injury during CrossFit, citing 186 injuries (with nine injuries requiring surgery). In the other survey, 75 individuals reported at least one injury during CrossFit in the six months prior to the survey, citing 89 injuries. These two surveys found that the most frequently injured areas were the shoulder, lower back, knee and arm/elbow. A third survey was given as a scientific abstract in a poster format at the 2014 American College of Sports Medicine Annual Meeting. In this survey, 376 individuals reported at least one injury during CrossFit in the year prior to the survey (with 60 injuries requiring some form of hospitalization). The most frequently injured areas were the shoulder, back and hand.

It's often pointed out that the injury rates in CrossFit are similar to those of sports such as competitive weightlifting, powerlifting and gymnastics. Well, there's a problem with this rationale:

The vast majority of individuals who do CrossFit use it as an exercise program. And an exercise program – done to improve strength and fitness – shouldn't be a risky venture. Comparing injury rates of an exercise program to injury rates of competitive sports is, as they say, like comparing apples to oranges.

To underscore how much injuries are a part of CrossFit, look no further than the company website where one of the forums is dedicated exclusively to injuries. The very existence of such a forum says a lot. Granted, this is anecdotal evidence but the sheer volume of injuries that are reported in the forum – and elsewhere on the Internet – is far too much to ignore.

In particular, the risk of overuse injuries is high due to the mind-boggling number of reps that are required in many CrossFit workouts. A WOD named Pike is a series of 20 thrusters, 10 ring dips, 20 push-ups, 10 handstand push-ups and a 50-meter bear crawl. This series of exercises/activities is repeated five times. That's a total of 300 reps plus 250 meters of bear crawls – all targeting the chest, shoulders and triceps. (This is also a case of rhabdomyolysis waiting to happen.) A WOD named Angie is 100 pull-ups, 100 push-ups, 100 sit-ups and 100 squats. That's a total of 400 reps. A WOD named Miagi is 50 reps of 10 different exercises/activities. That's a total of 500 reps. A WOD named Murph is a one-mile run, 100 pull-ups, 200 push-ups, 300 squats and a one-mile run. That's a total of 600 reps sandwiched between two one-mile runs. A WOD named Barbara is a series of 20 pull-ups, 30 push-ups, 40 sit-ups and 50 squats. This series of exercises is

repeated five times. That's a total of 700 reps. But wait: A WOD named Chelsea is a series of 5 pull-ups, 10 push-ups and 15 squats. This series of exercises is repeated once a minute for 30 minutes. That's a total of 900 reps.

In addition, a number of exercises/activities in CrossFit workouts are inherently dangerous. This includes the kettlebell swing, kip-up (aka kipping pull-up), glute-ham sit-up (aka Roman chair sit-up) and "medicine ball throw sit-up." And even exercises/activities that are otherwise safe become dangerous when they're performed as quickly as possible.

Finally, the highly competitive nature of CrossFit – in workouts that are done in affiliate gyms as well as the world-wide postings of results on the company website – increase the likelihood of injury.

THE LAST REP

Can CrossFit be effective? Sure it can. Any system of exercise that encourages a high level of effort, is progressively more challenging over time and provides adequate recovery can be effective. However, a system of exercise shouldn't be done if it carries an unreasonable amount of risk.

Matt Brzycki has authored, co-authored and edited 17 books on strength and fitness including four that are devoted to wrestling. His latest book is A Practical Approach to Strength Training (4th edition).



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