

the **CrossFit**  
JOURNAL ARTICLES

## CrossFit Certification Seminar - Colorado

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Notes From the “Outside Girl”

How the strength-in-numbers phenomenon can leave you crying for more.

- Linsay Yaw

At 9am on November 12th, I parked my car in front of the Colorado State Patrol Training Academy in Golden, Colorado, looked at Carolyn Parker riding shotgun and wondered what we were about to embark upon. As we ducked between towers of turbo diesel trucks and undercover cop cars on our way inside I whispered, “Good

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thing I paid all my speeding tickets, girl, because they'd probably make us CrossFit for payoff." As soon as our feet hit the waxed linoleum floor of the Academy—nice work, boys—and I looked up and saw a sea of 6-plus foot herculean stouts whose mere raw poundage could likely break both Carolyn and me in half, my heart rate quadrupled and my ego dived. "Oh man, I'm going to get throttled this weekend, these dudes are burly," I thought to myself. Despite my shrinking physical prowess, I kept my cool and continued weaving my way through the bulksters and introduced myself to CrossFit founders, Greg and Lauren and equally legendary moguls like Lani, Eva, Dan John and Coach Burgener. The funny thing was that regardless of their girth, height, thigh circumference or wickedly fast time on the WOD's, each firm handshake was met with a decidedly humble nod and a welcoming smile. It was then that I realized these were not your average gym junkies.

Until this moment, I had only been exposed to CrossFit on a few tangential levels. It started with an evening session in Salt Lake City with my fiancé's colleague, Mark Twight whose 6-minute box jump and deadlift combo made the ensuing four days wrought with the pain of hot daggers piercing my upper hamstrings. Twight's enthusiasm and my personal curiosity led me to write a story for Outside Magazine

## Mark Twight - Tyler Hass

Mark Twight is an extreme alpinist. His sport involves spending anywhere from 6 hours to 6 days in some of the harshest environments on the planet. The nature of his sport requires power endurance and plain old endurance. Last year he started incorporating CrossFit into his regimen and noticed major improvements. His talk covered the metabolic adaptations necessary for his sport and other endurance events.



He covered concepts such as VO2 Max, stroke volume and lactate turn point. Most people in fitness think of lactic acid as an evil byproduct of hard exertions. But Mark explained lactate (a product of glycolysis) is produced in the muscles as sodium lactate, which you could inject into the bloodstream without causing detrimental effects. Furthermore, lactate is reused as an energy source by the heart, kidneys, inactive muscles and the liver. It is the hydrogen ions—also a byproduct of glycolysis—that are acidic and detrimental to continued muscular contraction. He explained that CrossFit training improves the body's capacity to buffer, tolerate and clear acidity during high intensity exercise.

He also covered the Central Governor Theory. Because the heart is unable to produce energy anaerobically, it must always have a continuous supply of oxygen. As a result, it is believed that the body downregulates muscular recruitment and power output to ensure that the heart is never dangerously low on oxygen. This is one reason an athlete cannot maintain peak power output indefinitely. Through intense training, Mark believes that it is possible to increase the threshold at which the central governor kicks in, thus increasing your ability to sustain a high power output.

The most interesting part of Mark's presentation was his own training regimen. His CrossFit workouts rarely lasted more than 20-25 minutes, with an average of 10-15 minutes, but his event lasts for many hours. While his experience shows that CrossFit alone can prepare an athlete to excel during efforts lasting two to four hours (and more), he has tweaked CrossFit to include regular training sessions in the realm of high endurance. Following several months of doing only CrossFit, he began including 2-3 days of training at low intensity for long duration in his weekly schedule. Only these long, endurance sessions will provide some of the specific adaptations required for his sport: muscle fiber type conversion, improved oxygen efficiency, fat metabolism and economy of effort to name a few. As these longer days were incorporated, peak power declined, but his ability to maintain high rates of work for long periods of time improved, and more importantly, he began recovering more quickly from lengthy (up to 24-hour) efforts. Twight believes that this type of hybrid training program, combining CrossFit with sports-specific endurance will be the way the best athletes of the future are trained.

Mark Twight eats a "40-30-200" diet to provide fuel for his efforts. A diet high in fat is essential to fuel efforts executed at predominantly fat-burning intensity. Oxidation of fat does not produce acid, while glycolysis (anaerobic conversion of carbohydrate) produces acid. Training and fueling to use fat as the main source of energy (even at high rates of work) spares glycogen, maintains balanced muscle pH and allows the athlete to maintain output "forever".

where the “research” gave me hours of excuses for bugging Greg Glassman on the phone with quantifiable CrossFit questions. Since 99 percent of that information did not make it into the article (apologies all around for that one), I began using the unused notes for experimental and experiential research on myself and a few friends willing to submit themselves to my torture. As I began witnessing a widening fascination with my CrossFit-esque sessions in the local park with no more than a Holiday Inn notepad and a Suunto stop watch, so too was the west coast CrossFit crew watching their philosophy disseminate via the internet and word of mouth into big gyms, little gyms, home gyms, parks, and police training academies nationwide.

The beauty of this wildfire, however, was that the CrossFit method spread not to miracle dieters or quick-fix soccer moms, but rather to a swarm of champion athletes and biomechanical experts whose impact is unmatched in the world of sport, combat and fitness and whose geographical locations were as varied as their professions. And on November 12th, upon walking into the room full of 85 elite I finally realized what Greg Glassman had been hammering into my head over the phone months before—that this cadre of people who call themselves kin to CrossFit is where the magic lies. The room was filled with world-class

## Christopher Sommer - Tyler Hass

Elite gymnastics coach Christopher Sommer presented his methods for training gymnasts and gave us a hands-on demo of how he warms up his athletes and some of the exercises he uses. The primary difference between Sommer’s approach and that of other gymnastics coaches is that he emphasizes preparing the body before developing high level skills. Once the physical development is in place and air awareness is developed through trampoline work, skills can be acquired rapidly.



In the physical preparation of his athletes he stresses 5 areas: limit strength, static strength, support/hang strength-endurance, plyometric strength and joint preparation/ active flexibility. Limit strength is developed by adding resistance to dynamic exercises such as muscle-ups. Similar to the progressive resistance used in weight training, he adds loads to gymnastics specific movements. Static strength is developed in positions such as the front lever, planche and cross. Support/hang strength-endurance is developed by handstand training, swing work and holding supports on parallel bars and rings. This type of strength training was actually more effective for him in getting his young athletes to perform dips than directly practicing dips. He prepares his athletes for plyometric loading using progressively more difficult hopping and bouncing and swinging exercises for the lower and upper body. Lastly, he carefully prepares the joints for the demands of high level training with a special joint preparation/active flexibility program.

The hands-on session began with a total body warm-up. For the wrists we laid our hands flat on the floor, fingertips forward and we rocked our weight back and forth. Then we turned our hands to face the fingertips backwards and rocked back forth. We then turned the hand over and did the same with fingertips pointing back. Another pair of interesting warm-up exercises involved using a dowel. Normally these are done with barbells, however on a first exposure the dowel is more comfortable. The first was like a toe-touch stretch, but you hold the dowel behind your back and then stretch forwards. Your straight arms travel as far as possible in an arc towards the ground. The second was a shoulder dislocate exercise. Holding the dowel behind you with palms pointing backwards, you bring the bar to the front of your body without bending your arms. A wide grip may be necessary.

The bodyweight exercises were one of the most interesting parts of the presentation. One of the more interesting ones was a dynamic abdominal exercise. From a pushup position, lower your hips to the ground, but keep your arms and legs straight. From here, explosively lift your hips, causing your whole body to jump from the ground into a piked position. Absorb the landing by lowering your hips back down, but not bending your arms. Use this lowering phase to load up for the next jump. Repeat this pattern and hop sideways across the floor. Another interesting one is a variation of crawling. From a seated position, push yourself across the floor. Do not pull yourself with your legs. Push from your arms only. A more advanced variation of this exercise is to walk in an L-sit. There were too many exercises to cover here, but they will all be in his upcoming books.



coaches, jiu-jitsu masters, Olympians, national record-holders in a range of sports, climbing legends and then me, the “Outside [Magazine] girl.” But what struck me as the most fascinating was, despite the diversity of passions, vulnerabilities, strengths, and weaknesses, everyone gave each other the latitude and confidence to make their differences known even in a large group such as this. Rarely do you find a celebration of physical disparities as I did in the CrossFit community that weekend.

The first day of the seminar, I maintained a witness standpoint in an attempt to soak in why and how CrossFit had become a sort of antithetical fitness movement whose popularity was uncannily sweeping. After watching ten involuntary volunteers do “Fran” in front of 75 screaming cohorts, it started making sense. Upon interview after the workout, five out of six people acquiesced that had there not been a gym full of echoing encouragement, “Fran” would have taken them longer, they wouldn’t have pushed as hard and strength gains would have fallen. The second day, I experienced this drive personally as myself and 85 others contributed to the symphony of wallowing grunts during the bottom-to-bottom Tabata Squat session. Indeed, I was grinding my molars in pain during the four excruciating minutes, but knowing that the red-haired

## Mike Burgener - Tyler Hass

Mike Burgener is Senior International level Olympic weightlifting coach and a close friend of the CrossFit family. To help him demonstrate the Olympic lifts he brought along 3 world class Olympic lifters who reside at the Olympic Training Center, including his son Casey! We were also fortunate enough to have two more competitive lifters assisting, Josh Everett and Dan John. We went through Mike’s entire learning progression for the snatch using only a piece of PVC pipe.



To start off, we learned the very basic stances: the jump position and the landing position. The jump position is the same foot placement as the take-off for a jump, feet underneath the hips. The landing position is slightly wider, with the feet outside of the hips by 2” or so, with knees bent and weight on the heels. The hook grip involves putting your thumb on the bar and wrapping your fingers around the thumb. The grip should be set so that the bar is 8-12” over your head in the overhead position.

We first learned how to reach full extension in the second pull. Holding the barbell at the waist with a slight bend in the knees, we extend our ankles, knees and hips (triple extension) and shrug upwards with our shoulders. We practiced this in several sets of three. Next, we practiced this from progressively lower hangs. The final step in this section was pulling from above the knees. Mike emphasized that this motion is exactly like a jump. The next step was the muscle snatch, which mimics the 3rd pull. This is a pull from a high hang to overhead. However, it reaches overhead without a rebend of the knees. In other words, once your legs reach extension, they remain straight. The barbell should stay close to the body and lock out overhead. Next we learned the overhead squat. It is important to learn this in order to establish a context for completing this lift. Then we learned how to perform three variations of the snatch balance. In this exercise, you stand with the barbell behind your neck and propel it upwards with a slight knee dip. In the pressing snatch balance, you press yourself slowly away from the bar. The heaving snatch balance is a quicker movement. The drop snatch is the quickest of the three. You drive yourself under the bar as fast as possible and catch it in the overhead squat position. Once comfortable with the drop snatch, we practiced the full snatch from a high hang. As we got better with this, the bar was pulled from lower and lower positions, such as from the thighs, slightly above the knees and finally from the floor. Once you have completed this progression, you have a snatch. It is also a great warm-up. Coach Burgener recommend hammering yourself with PVC pipe for a long time before adding very modest amounts of weight to the bar.

The clean was taught second because it is the easier of the two lifts to learn. We started off by learning the front squat. The rack position is a key part of this. Sometimes a light weight, such as an empty barbell is good to help an athlete feel the rack position. Mechanically, the front squat was very similar to the overhead squat, so it was very easy for most people to understand this part. Once our front squats were looking good, Mike told us to start from a high hang and then JUMP with the barbell and land in a front squat. That’s it, the clean. Instruction on the jerk followed this. Mike had us first performed push presses and power jerks to get the idea of the hip drive. He then had us perform his daughter Sage’s progression for learning the jerk landing position. This progression is simply the walking lunge. To do this, you simply hold the bar (PVC) overhead and step forward into a lunge. Then you step forward with the other leg. After this, we were all ready to jerk. With only two hours of instruction, we were all performing the Olympic lifts!

Seal next to me—who also forewarned me that these squats “put the uck in suck”—was equally hurting made me forge through to a higher level of pain and power. Although this does hurt for a few days, it’s worth it in the end. Ah, yes, strength in numbers; the beauty of CrossFit lies in it’s pupils and their ability to team up to reach higher levels of potential strength.

That potential is where CrossFit airs on miraculous. In just under four years, Greg, Lauren and those willing to subject themselves to experiential (or “clinical” as Greg calls it) research have forged an ironclad grip on what it means to be fit. They’ve unintentionally spawned an entirely progressive physical revolution that has cemented a gap in elite fitness and offered a solution to a large group of willing individuals—individuals whose collective potency is reason for their compounding success. Nowhere else can you find such dedicated pupils and being witness to this brother- and sisterhood only fueled the fire within me to become a dedicated citizen in the CrossFit community.



## Dan John - Tyler Hass

Master lifter and thrower Dan John presented a lecture on a variety of topics including lifestyle, recovery and throwing. One of the important points in Dan’s presentation is that a person must strike a balance between work and rest, play and prayer. The first is obvious, if you have not recovered from previous work, future work will suffer. However, play and prayer are not often thought of in the context of optimizing performance. Russian lifters used to spend two months a year playing elite level volleyball. This cross-training period provided a break from lifting that restored not only the body, but the enthusiasm for lifting. What prayer means is up to the individual. It can be prayer in the religious sense, or simply “alone time”. Finding quiet, peaceful time is a great way to collect your thoughts and clear your head. A balanced lifestyle must include all four elements.

Recovery is a topic often ignored by most coaches and athletes. There is a saying that there is “no such thing as overtraining, only under recovery.” Dan had an interesting system to quantify recovery, which he first learned from Lonnie Lowery. Points are awarded for nutrition (8), hydration (2), sleep (3), rest (1), meditation/relaxation (1), emotional support/relationships (2), warm-up (2), stretching (1). This adds up to a total of 20 points. Workouts are also quantified on this scale. Meeting Pukie is a 20 and a lighter workout would be fewer points. The overall idea is that if you are racking up several consecutive 20 workouts, while only earning 15 recovery points, you will have a -15 deficit after three days. You have entered into a state of overtraining and your performance will decline until you have restored yourself.

Dan gave us a hands-on throwing seminar, which included several of his throwing implements- discus, heavy and light weight and “javelins”. You can read the handout given to us by Dan for a more clear distillation of his throwing wisdom than I can provide: <http://danjohn.org/101.pdf>. Beware that it was copied into pdf by a Vonnegut-wannabe, so be sure to read it in a zig-zag down the page and then back up to the top.



## Jim Cawley - Tyler Hass

Founder of Dynamax, Dr. Jim Cawley is the world's leading exponent on medicine ball training. His classroom presentation covered a variety of principles gleaned from his experience as a lifelong track and field competitor and coach. One of the key principles is to train everyone like an athlete. One of CrossFit's foundations is that the needs of regular people and elite athletes differ only in degree, not kind. Dr. Cawley also stressed the importance of building a base through metabolic conditioning, gymnastics, track and field and finally sports.

His presentation on medicine balls demonstrated the versatility of this tool. A variety of throwing drills were presented. The first was to develop rotational strength and involved throwing it to a partner. Standing back to back with your partner, you receive a hand-off and then explode, tossing the ball behind you on the other side of your body via a quick twist of the torso initiated from the ground up. Your partner catches it and then hands it off again to the same side where you started. Another drill for developing an explosive hip drive involved making large strides across the floor and kicking the ball with your knee. You would hold the ball in front of you at all times at approximately navel height. You then simultaneously drop the ball as you thrust your knee upwards and kick the ball back into your hands. It is a quick movement and is repeated all the way across the floor. The medicine ball sit-up toss was also demonstrated. Lying flat on your back with the medicine ball over your head, you toss it to your partner. He absorbs the catch by falling backwards, thus loading up to throw the ball back to you. Each of these exercises was performed using a ball weighing 8 lbs or less.



## Dave Werner, Nick Nibler and Jeff Martone - Tyler Hass

Nick Nibler and Dave Werner of CrossFit North presented the mechanics of the kettlebell swing. The swing is the fundamental component of all kettlebell lifting. Learning the basics on this lift will cement the foundation for learning the clean, snatch and Hand2Hand exercises taught by Jeff Martone. The basics are actually very similar to Olympic lifting- weight on the heels, butt back, load the hamstrings, etc. The only major differences are made to accommodate the fact that the kettlebell travels along an arc, whereas the barbell travels straight up and down. The arms remain straight and loose; they act like chains attached to the kettlebell. It is not a front shoulder raise!

One of the best moments of the workshop was when Greg Amundson performed swings with the 1.5 pood (53 pounds) Kettlebell. He literally ripped that bell up and down so fast that they took it away from him, fearing that he might let go of it and put it through the ceiling. Then they handed him a 2 pood (71 pounds) Kettlebell and he did the same thing! He could not have swung it any faster if it was hollowed out.

After teaching the swing, they covered a variety of kettlebell exercises including cleans and snatches, the windmill and under the leg pass variations. One such variation is the slingshot. In this exercise you pass the kettlebell around your body at a rapid pace and pass the kettlebell from hand to hand both in front and back of your body. You then switch directions and circle the bell around your body in the opposite direction. A similar drill is the Hot Potato. To do this, you hold the kettlebell in front of your chest, gripping it by the ball (rather than the handle) with both hands. You then pass the bell from hand to hand in front of your body, using a shotputlike drive to propel the weight. The most exciting part of the presentation was Jeff Martone's demonstration of his kettlebell juggling. He tossed the kettlebell from under his knee, around his back and over his head in a smoothly connected sequence of moves. If you can imagine a gymnastics routine performed with a kettlebell, then you will have an idea of what Jeff Martone's Hand2Hand kettlebell drills are all about.

