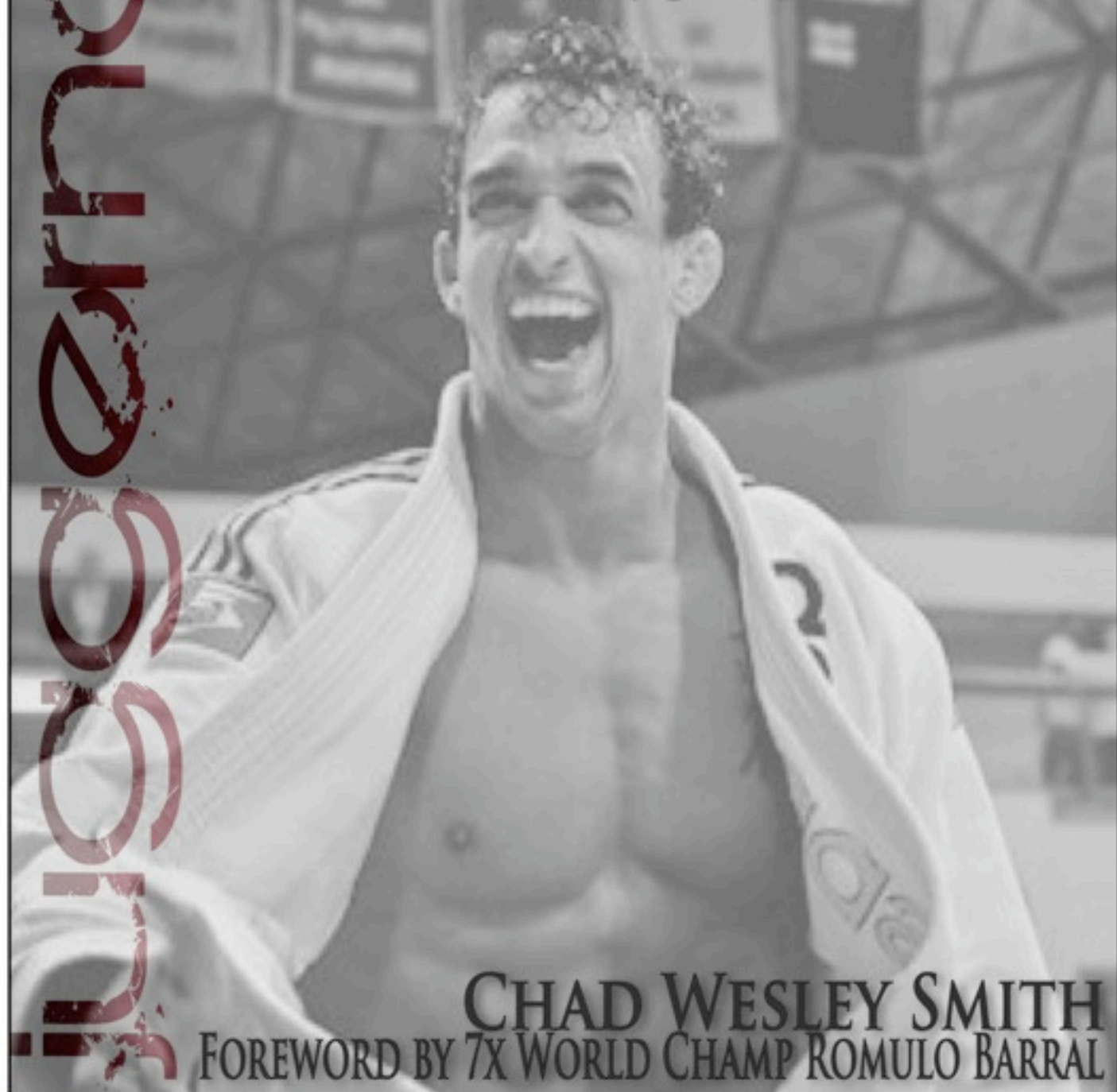


BRAZILIAN JIU-JITSU

PHYSICAL PREPARATION MANUAL



CHAD WESLEY SMITH

FOREWORD BY 7X WORLD CHAMP ROMULO BARRAL

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To say that Jiu-Jitsu has been a part of my life for the past 12 years would be an understatement, Jiu-Jitsu is my life. I have sacrificed my youth, my body, time with my family and finances in my pursuit of being the greatest jiu-jitsu competitor possible.

I know if there is one thing that has set me apart from my competition and allowed me to achieve the success I have (7 World Championship, 6 Gi, 1 No-Gi) it has been my desire. Not a desire to compete, everyone loves to compete, but a desire to prepare. Tournaments are a time to have fun, but that is not the day you become a champion, you become a champion in the weeks, months and years leading up to that competition. It is simple, whoever trains harder will win more, simple to say at least. Winning is a byproduct of great preparation.

In late 2009, I first became aware of Chad Smith and Juggernaut Training Systems. He was training several guys I trained with and it quickly became apparent that what they were doing was working. I knew after having ACL surgery from an injury suffered at the 2010 Mundials, that I needed to seek out Chad to help me come back stronger than I was before. Chad's knowledge and attention to detail helped me fully recover for the 2011 Abu Dhabi Pro and 2011 Mundials. The training challenged me like I had never been challenged before, I knew that win or lose I had done everything in my power to prepare. Not only was Juggernaut a great benefit to me in rehabbing my knee and preparing myself to compete again, they also helped my student Felipe Pena transform his body and win the 2011 World Absolute Championship as a purple belt.

This book is a great resource to anyone looking to improve their jiu-jitsu or any kind of grappling. The training is well organized, effective, challenging and fun. Chad understands what is necessary to best prepare your body for success and I would urge anyone who is serious about being the best they can be to study this book and apply its principles.

Chad told me a quote that sums up the attitude you must have to become the best...

"I train everyday of my life as they have never trained a day in theirs."-Alexander Karelin, Russian Olympic Champion Wrestler

Boa Sorte,
Romulo Barral
7x Jiu Jitsu World Champion

What top Jiu Jitsu athletes and coaches are saying about Juggernaut...

"I was the first Jiu Jitsu fighter to train at Juggernaut and within a few weeks of beginning, our group grew with other black belts because they all saw how much of a difference there was in my physique, strength and conditioning. I had never had so much confidence stepping on the mat as I did during my time with Juggernaut"-Fabio "Gigantinho" Villela, Head Professor Gracie Barra North Austin, World No Gi Champion (Brown Belt), Pan Am Champion, American National Champion 2x

"When you reach the top level of Jiu Jitsu, black belt, everyone is skilled, so it is your physical abilities that will separate you from your competitors.

Training at Juggernaut, my strength, speed, power and endurance reach new levels, and I always felt confident to push the pace against my opponent without fear of getting tired. The training is tough and makes you hate Chad while you're doing it, but you love him when you get on the mat in a tournament."-Fabiana Borges, Pan American Champion 2x, No Gi Pan Am Champion, 2nd Place World Championships



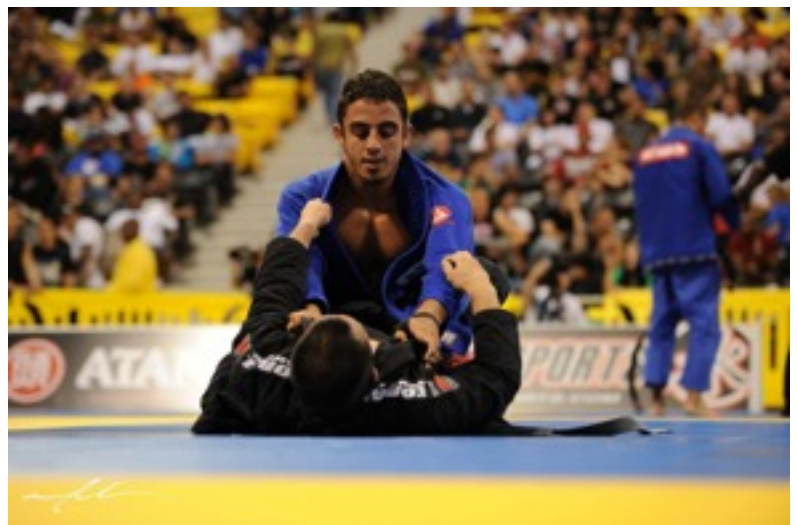
"I believe that when you reach the level of black belt everyone knows the techniques and surely one of the factors that will make the difference is your condition. Once I started training at Juggernaut my Jiu jitsu changed, I do not get tired easily, my recovery is very fast, my body is much stronger and even improved my psychology. I believe that the difference in jiu jitsu."-Rodrigo Simoes, Head Professor Gracie

Barra Manhattan Beach, American National Champion

“Juggernaut helped me reach a new level in my jiu jitsu, World Champion. In the three months I trained at Juggernaut leading up to the 2011 Mundials, my body underwent a transformation. Everything I did became stronger, and my body became much more durable. Before training at Juggernaut I would have been considered an underdog at Worlds, but because of the well planned and intense training, I was able to win my weight class and capture the title in the open weight division.”-Felipe Carasdale Pena, 2011 Open Weight World Champion (Purple Belt), 2011 Pan Am Champion



“Every aspect of my physical skills improved training at Juggernaut. My power, speed, endurance, grip strength and mental toughness all reached new levels. If you are serious about competing at the world level, you need to be serious about your physical preparation and Juggernaut is the best place to find the serious training information you need.”-Philippe Della Monica, Head Professor Gracie Barra Laguna Niguel, European Champion, Medalist at Mundials, Pan Ams, American and Brazilian Nationals



Brazilian Jiu-Jitsu presents a unique set of physical demands to its practitioners. The paramount trait needed to be a successful BJJ competitor is technique, without technique, all the strength and power in the world is meaningless; because of this it is critical that the athlete's training program allows them to develop their technical and physical skills harmoniously. As the athlete develops their technical base, they must also improve their...

- Relative strength-Strength compared to bodyweight is the controlling factor of all other physical qualities. The stronger you are compared to your bodyweight, the more powerful every muscular contraction and hence movement you make will be. Particularly in a weight class controlled environment it is imperative that the athlete is as strong as possible at their given bodyweight.
- Explosive power-The ability to rapidly generate force is key to every takedown, sweep, throw and any other move which requires you to rapidly overcome your opponent's weight.
- Specific energy system capacities-Any great competitor must be able to go the distance in any match or tournament. Jiu Jitsu has a specific set of conditioning requirements, covering the anaerobic-alactic, anaerobic-lactic and aerobic energy systems. Each of these must be addressed in a specific manner for maximum results. Simply running 5 miles a few times per week isn't sufficient to be able to still move powerfully 9 minutes into a championship match. Not only will this type of long distance training not properly prepare you to be at your best through long strenuous matches, it also will detract from your maximal strength and power development, as well as placing undue stress on your joints.
- Special strength-As an athlete improves their technical abilities and rises towards the top of the competitive field, in this case Black Belts, the number of means that can be used to improve their sport performance becomes much more specific. For higher level competitors, adding 10 pounds to your deadlift or 2" to your standing broad jump, will not yield sporting improvements the same way that they would for a white or blue belt. For maximum training effect you must be able to analyze specific parts of the movements in your sport, measure them (in time, force output, etc) and improve those traits. This type of training is beyond the scope of this book, and for that matter any text, but we will provide you with starting points to begin critically thinking about your training and ways to develop special strength. We are also available for program design through JTSstrength.com

Here are Five Training Tips, Myths and Guidelines that Juggernaut athletes know and you need to know to become a nightmare on the mat.

1. *Improve Your Maximal Strength and Everything Improves*-Increasing your maximal strength will have a positive benefit on your jumping, sprinting, pushing power and conditioning. Jiu Jitsu has a large isometric (static/holding strength) component to it and even though it doesn't involve movement, holding an opponent in your guard or trying to lock in a submission, which can take minutes, greatly taxes the body. The stronger the athlete is, the lower percentage of their maximal strength they must exert to complete the same move. In other words if one athlete is 2x as strong as the other, that athlete will only need to use 50% as much energy to execute the same maneuver. As the highly respected (and very quotable) coach Mark Rippetoe once said, "Strong people are harder to kill than weak people." Which one would you rather be?
2. *Everything You Do is a Stress to the System*-People often make the mistake of looking at their sport practice (Jiu Jitsu training) and physical training (lifting, conditioning, etc) as separate entities. Why create a periodized plan for your lifting, jumping, and sprinting, but not your BJJ training? They are both stressors to the body and need to be managed properly to reach a physical peak. To go another step further, you also must consider stresses that your job, relationships and hobbies place on you. If all these stressors are not considered it is very easy for an athlete to experience Central Nervous System fatigue and overtraining, an issue that is common among combat athletes. Charlie Francis, considered by many to be the greatest sprint coach of all time, likened the CNS to a cup. A cup has a fixed amount of liquid that it can hold, and all the training you do fills it up to various degrees. The more demanding the training, the more goes in the cup. The stresses of life, such as work or problems with a significant other, will also fill up your cup, so learn to manage stress. If the cup overflows, it is a lengthy process to recover from.

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3. *Circuit Training Should Be The Basis of Your Physical Preparation (Myth)*-The internet is a great thing and full of lots of valuable training information, but it is also the culprit of perpetuating the myth that all fighters need to be nearly passing out from grueling circuit training. Now we certainly use circuits to help condition our athletes, but they comprise no more than 1 day per week of our training, or 10-15 minutes of work towards the end of other sessions. You are beating your body up enough through numerous weekly sessions on the mat, so make sure you are limiting your circuit work to 1-3 circuits per week and know that you should be walking away from your circuit feeling tired but strong and ready to do another after a few minutes. Athletes must begin to understand that hard work and quality work aren't one in the same and that you don't have to crawl out of the gym everyday to improve. Performing extremely intense circuits that cause you to become very sore are a great way to fill up your CNS cup fast and overtrain. For example, Olympic sprinters, the fastest and most explosive athletes in the world, have training that is largely comprised of sprints with full recoveries (eg. 5-6 minutes after a 60m sprint). They are improving because of their quality of their work, not because it is difficult to complete or has them vomiting on a regular basis.

4. *Know What Works For You*-Many athletes, particularly young or inexperienced ones, often lose sight of this. They want to emulate what the top in their field do, but do not understand that they are doing programs that are suited well to them. You must develop and intuition about and connection to your training to truly make it your own and make it effective. While this book will provide exercises, sets, reps, times and more information about your training, you must figure out what parts of that are the most effective for you and build from there.

The great Olympic lifting champion, Vasliy Alexeyev, often talked about how people would often ask what program he followed so they could follow it to, but he would not tell them. He didn't do this to be secretive or to withhold information, but rather he would tell them that they cannot do HIS program, they must do THEIR program. Even if it happened that all their sets, reps, intensities, etc were the same, it was imperative that they understand the program for themselves.

So while it may be valuable for you to know the training program of great competitors like Roger Gracie, Romulo Barral or Rodolfo Vierra, it is imperative that you understand that they do what they do because it is what works best for them and you must find out what works for you. Learn to enjoy the journey of training, not just the destination.

5. *Be a Professional*-Being professional isn't about getting paid millions of dollars to practice your discipline of choice, it is about doing the little things right and truly being committed to your craft. I firmly believe there is a difference between someone who practices a craft or someone who is a practitioner of it. There is a great difference between people who train jiu jitsu and casually compete in tournaments and someone who is truly invested in their success as a jiu jitsu competitor. To be a true Jiu Jitsu athlete you must be willing to sacrifice of your time, social life, money, or anything else that may stand in the way of your goals. You need to be willing to sacrifice time to do extra training and recovery work, to make sure your body is prepared to perform at the highest level. You must be willing to pass on going to the bars with your friends, because you know a night of drunken debauchery will hold you back on the mats the next day. You must be willing to put your finances towards better food, soft tissue/chiropractic work, seminars and other things that will contribute to your success, instead of fancy clothes, cars, or other unimportant material items.



Seven-time World Champion, Romulo Barral, is the ultimate competitor and knows that outworking your opponent in every facet of Jiu Jitsu, technical, tactical and physical, is the only way to guarantee success.

The Training

Pre Training Period

The Pre Training period serves multiple functions 1) Prepare the body for the upcoming session, 2) Improve general movement skills in a low amplitude/extensive environment, 3) Evaluate movement mechanics and patterns, 4) Prehabilitate injuries. A properly structured pre-training period will cover all of these areas. Pre-training should also be organized in a general to specific manner, where the last drills performed will most closely mimic those that will begin the training session. At Juggernaut we divide our pre-training period into 3 main phases, 1) General, 2) Specific, 3) Power and Speed. The majority of the pre-training period can and should be done barefooted, provided that you are in a controlled environment and won't have anything hazardous to your feet in the area.

General

The general pre training period should serve to increase the athlete's core temperature. It is important that this is done in a manner which has the least impact on the rest of the training session, meaning that you don't want to diminish the athlete's ability to perform their training for the day with too much work during the pre-training period. A good way to help increase the athlete's core temperature and get a light sweat going in a passive manner, is to wear sweatbands during this time. Here are some easy ways to take care of the general period in a low cost manner. Increasing the range of motion of the joints is also a critical aspect of the general period.

[Low Amplitude Abdominal Training](#)

In and Outs

Moving Side Planks-Make sure to keep the body in a straight line. Don't let the hips move forwards or backwards and keep a neutral angle with your head.

McGill Situps-Focus on maintaining a neutral spine and push the forehead towards the sky. Remember to support the low back by putting your hands under your butt.

Moving Front Planks

Joint Mobility-Emphasize a smooth, controlled movement, through a natural range of motion. Don't force the positions

Neck Circles

Shoulder Rolls

Arm Circles-Palms up when going backwards

PNF Patterns-Make sure the top hand has the palm to the sky and bottom palm is facing backwards

Elbow Circles

Hip Circles

Good Mornings-Big chest, push your hips backwards.

Trunk Circles

Hurdler Circles-Make sure to achieve full extension through the ankle and knee of the leg that is on the ground.

IYTs-Focusing on pulling the shoulder blades down and back, squeezing them together as hard as possible

PNF Partner Stretches

There are many coaches who are critical of static stretching prior to a training session. PNF Partner stretches though are not static, they involve an isometric contraction and are a great way to increase the temperature of a given muscle

Hamstrings-Once the end of the athlete's range of motion they will push the leg against their partner for 3-5 seconds, then the stretch is released and reset. This is repeated for 3-5 more rounds.

Psoas- The same procedure as the hamstring stretch is used.

Quad/Hip Flexor-The partner needs to make sure to use their weight to pull up on the knee and back on the foot. Once the end of the range of motion is reached, the athlete will pull their knee down and foot towards the ground, while the partner lightly resists, but does not stop their motion.

Specific

The specific period of the warmup is to address movement patterns that are more specific to the sport of Jiu Jitsu. These movements include animal crawls and gymnastic and tumbling exercises.

Inchworms

Spider Crawls

Crab Walks

Pushup Crossovers

Cartwheels

Speed and Power Warmup

The final portion of the pre-training period should be dedicated toward developing proper mechanics for speed and power movements such as sprinting, jumping and medicine ball throws. If you do not have adequate technique in these exercises, your positive training effects will be limited because your force output will be diminished due to improper technical skills. All of the speed and power period should have an emphasis on relaxed and rhythmic movements.

Running Series-This should be performed prior to any sprinting session for 2-3 sets of 10 yards per

High Knee March-Knee up, toe up and full extension through the down leg.

Ankling-Toe up and forcefully pull the leg under you.

High Knee Skip-Smooth, rhythmical movements should be emphasized. Achieve full extension through the down leg.

Buttkickers-Focus on a quick turnover.

[High Knee Run](#)-Do not overlift the knee, as this often impedes full extension of the down leg.

Maintain a good chin to pocket arm action through all drills.

Low Amplitude Jumping-This can be done prior to sprint or jump training, or both

[Rolling Hops](#)-Silent landings and a smooth transition from jump to jump must be the priority.

[Rolling Diagonal Hops](#)-Maintain the same width base of support throughout all the jumps.

Continue to emphasize soft landings and smooth, quick transitions from jump to jump.

[Rolling Single Leg Hops](#)-Lateral movement needs to be the priority here. Make sure that you are covering the same amount of distance on every jump.

[Medball Mobility](#)-This should be done prior to all medicine ball throw training and can also be used as a general warmup before upper or lower body sessions. These exercises are a great evaluator and builder of shoulder mobility and strength.

Prone Halos-Create as big a circle around the head as possible while keeping the arms, chest and legs off of the ground.

Prone Straight Arm Raises-Squeeze the upper back together to lift the ball as high off the ground as possible while maintaining nearly straight arms. Do not let the ball touch the ground on the way down.

Supine Straight Arm Pullovers-Keep the arms straight and pull the ball through a full range of motion in a slow and controlled manner.

Glute Bridges-Squeeze the ball between your knees, drive the heels into the ground to bridge your hips towards the ceiling, squeeze the glutes for a 1 count at the top of the movement.

Standing Straight Arm Chops-Similar to the Supine Straight Arm Pullover but done standing.

Squats-Hold the ball straight in front while performing squats, push the hips back and keep your weight on your heels.

Full Swings-Maintain a flat back position while swinging the ball from straight above the head to down between the knees.

Diagonal Chops-Maintain a flat back position while swinging the ball from over the shoulder to down outside the knee.

Overhead Reverse Lunges-Keep the ball straight over your head as you reach your foot back into a lunge position, maintain a vertical shin angle with the front leg.

Around the Worlds-Similar to the Prone Halos, create a big circle around the head, tracing the neckline of your shirt. Achieve a straight arm position at the bottom of each squat. Maintain a flat back position throughout.

Speed/Power Work

Speed is often the determining factor in athletes success in any sport. To be a successful Jiu Jitsu athlete you must be able to move your body and your opponents body explosively. It is key that the athlete improves their rate of force development and reactive/elastic abilities through a variety of sprints, jumps and throws. Speed/power work must be performed at the beginning of training sessions, while the athlete is fresh and have complete or nearly complete recovery between bouts to maintain high quality outputs.



Gracie Barra Black Belt, Mikey Gomez, knows the value of being able to physically overpower an opponent, whether it is in the Gi, No-Gi, or while competing in MMA.

Sprints

Sprints are a great way to develop lower body strength and power, as well as improve your physique. Look at the physiques of Olympic Sprinters, their muscular development can be attributed as much to their sprint training, as it can their weight training.

It is important to prepare the body for the forces it will have to absorb during sprint training. The faster you are running, the more stress there is on the body and CNS, so one should begin their sprint training program with resisted running (after undergoing a proper GPP phase and extensive tempo work, which will be discussed later) and then progress to free sprints at a higher velocity.

[Sled Sprints](#)-Weight on the sled should not noticeably slow the athlete down. Often times faster athletes, even with a lower bodyweight, can use a heavier weight than slower athletes. Focus on achieving a hard forward body lean and using a powerful and aggressive arm action.

Prowler Sprints-The same guidelines should be used regarding weight selection with prowler sprints. Focus on driving your knee up aggressively and slamming the foot down.

[Free Sprints](#)-Focus on keeping a good forward lean, with the eyes down. Aggressive arm action and relaxed face and shoulders.

Different Starting Positions

On Stomach-Explosively pushup and drive your knee under you. Utilize the hard lean than rising from the pushup will create.

On Back-Beginning on your back with your feet flat on the ground or elevated as if someone was in your guard, explosively flip over, rise to your feet and sprint.

Volume Guidelines:

10-40 yd reps. 100-400yds per session. 1-3 sessions per week.

Jumps

Jumping is vital to increase an athletes rate of force development, improve coordination, and build reactive/elastic abilities in the lower body. An athlete with high reactive/elastic abilities is often referred to being “light on your feet”. Improved jumping ability will have a high correlation with improved takedown power. There are seemingly endless variation of jumps, so it is important to keep in mind that you want to move from double leg variations to single leg, single response to multiple response, unweighted to overloaded. When performing any type of jump training it is critical that complete rest is achieved, focus on quality of effort and repetition, not quantity.

[Standing Long Jump\(s\)](#)

Up Stairs-Cover as many stairs as you can while, reactively transitioning from on jump to the next. Two consecutive jumps is suitable.

[Up Hill](#)-Again, focus on connecting your jumps through a smooth and reactive ground contact.

Flat Land-Two, 3, 4 or 5 consecutive jumps can be performed depending on reactive abilities. When performing these consecutive hops, all but the last jump of each series should be slightly submaximal and only the final jump should be an all out effort.

[Box Jumps](#)

Single Jumps-When selecting a box height, you should be able to land on the box in no lower than a parallel squat position. If this isn't occurring, this becomes more an exercise in hip mobility than rate of force development. Use other steps to get down from the box in a controlled fashion.

Multi Response-Jumping on the box as many times as possible in a given time frame or a certain number of reps in as short a time as possible. Focus on soft feet and reactive landings.

Kneeling Jumps

[Double Leg](#)-Focus on explosively driving the hips towards the sky and landing at or above a parallel squat position.

[Single Leg](#)-Make sure the leg with the foot on the ground is creating all of the movement action, laying the laces flat on the ground. Focus on a soft and under control landing, When performing the backwards variation, you should post over the opposite leg which will require to have your foot flexed so you are on your toe.

[Hurdle Hops](#)-When selecting hurdle height, you need to use a height that allows you to still move reactively off the floor from a relatively shallow knee bend position. Three to 5 hurdles per series of jumps is sufficient.

Volume Guidelines:

There are many variables to consider when programming jumping volume. A general rule of thumb to consider though is to not exceed 30 contacts of intensive jumping per session. Jumping can be performed 2 times per week in this fashion.

Throws

Medicine ball throws are a full body explosive movement. To throw effectively you must be able to coordinate your entire body into a powerful maneuver. Throws can be performed with a variety of weights to attack a variety of skill sets. Think of all these throws as happening from the legs through the arms, meaning that the legs/hips/trunk create the power and the arms deliver it into the ball.

Diving Throws

Single Jump-Starting from a squat position explode forward in a long jump, focus on achieving full extension through the legs and hips. Use a weight that allows you to throw approximately 12 yards, once that distance is being exceeded consistently, you can increase the weight of the ball. The benefits of this throw are accentuated if the athlete can dive onto a pad (like a landing pad for the high jump) at the finish of the throw, as this will allow for greater hip extension.

Multiple Jumps-For athletes with good reactive abilities and relative strength, they can perform a series of long jump preceding a diving throw. Begin with 1 jump and then throw and as you are able to execute them effectively.

Overhead Backwards-Make sure to keep a flat back and long arms throughout the throw. Your arms should be relaxed and long like ropes, release the ball so that you are achieving both height and distance. Make sure to jump up and back as you release, you should be backpedaling for a few steps after the ball is released. This throw should exceed 15 yards

Scoop Throw-This throw will have a huge carryover to your takedown strength. Start with the ball above your head, swing it down between your legs as you drop and load your hips, maintain a flat back, and then jump forward explosively pulling the ball with you. Let your arms be long and relaxed like ropes, so that your legs and hips are creating the power. Results in this throw should be on par with the overhead backwards throw, so look to exceed distances of 15 yards before increasing weights.

Squat+Vertical Throw-Start with the ball on your chest, squat down and reactively reverse your momentum driving the ball into the air with a jump and then press of the arms, trying to achieve maximum height. Height will be difficult to gauge with this throw so you just need to feel that you are moving powerfully and with good technique. One way to measure height though would be to throw the ball over the goalposts on a football field.

Overhead Forward-This throw is similar in technique to a soccer throw in. Take 1 step forward and explosively pull the ball over your head and throw it for distance. Alternate which foot is forward upon release each throw. Use a weight that allows you to throw over 10 yards.

Rotational Throw-The rotational throw should move from a low to high trajectory through the release. Forcefully turn your foot and hip towards the target to pull your shoulder and the ball around. Keep your arms long and let your legs and hips drive this throw. Distances of 12+ yards, on each side, should be achieved before increasing the weight of the ball.

Shot Throw-Make sure to keep the ball close to your body and your elbow behind the ball, so you are pushing the ball away from you. Step through the throw powerfully as if throwing a punch. 10+ yards should be achieved consistently before increasing the weight of the ball.

Scramble Throw-Laying on your back with your feet up as if someone is in your guard, throw the ball as high as possible, scramble to your feet and catch the ball before the 2nd bounce. The greater the horizontal distance you throw the ball away from you the more difficult it will be.

Volume Guidelines:

When performing explosive throws, as with sprints or jumps, quality needs to be the focused and complete recoveries between outputs should be achieved. The absolute maximum volume of throws that should be performed on an intensive day is 50 throws. If this high of a volume is used, it will need to make up the large majority of training stimulus for that particular day. Our athletes commonly perform 10-30 intensive throws (4-6 of different varieties) per session for 2-3 sessions per week.

Medicine ball rebounds are another way to train reactive/elastic abilities. When performing medicine ball rebounds you want to stand near the wall (arms length at maximum) and perform as many throws as possible in a given time frame or a set number of throws in as short as time as possible.

Medicine Ball Rebound Series

Chest Pass-Stand just over an arms length from the wall, maintain a $\frac{1}{4}$ squat position throughout the throws.

Overhead-Stand with your toes touching the wall and explosively pull the ball into the wall

Rotational-Make sure to keep your shoulders level and pull the ball around with your abs, not your arms.

Scoop-Push your hips backwards, keeping a vertical shin angle, stand up explosively to pull the ball forward.

Volume Guidelines:

Two to 3 sets of 10-20 seconds or 10-20 rapid throws will be sufficient with medball rebounds. These can be performed on a daily basis.

Pushup Variations

Creating explosive strength and power in the upper body is critical to success. These pushup variations will also create tremendous strength and stability throughout the shoulder joint. Focus on maintaining a rigid body position throughout the pushups, similar to that of a plank, so that you will rise onto the box by the drive of your upper body, not lifting the hips.

Three Position Pushups

Top Position-Keep the shoulder blades pulled together tightly with a slight bend in the elbows as you rapidly pop off the ground. Abs flexed hard throughout.

Middle Position-Arms should be bent at 90 degrees, everything else remains the same as the Top Position.

Bottom Position-Chest remains 1-2" off the ground throughout, everything else remains the same as the other positions.

Pushups Up Onto Box-Perform an explosive position that launches your hands off the ground and then land on boxes that are placed just outside of shoulder width. Walk your hands back to the ground under control, do not drop. Box height will vary by ability but should fall between 10-24". Remember to keep the body rigid, so your hips do not rise above your shoulders.

Drop Pushups-Starting with your hands on top of the boxes, pop yourself off the boxes slightly and land in a pushup position with your arms at 90 degrees bend. Land softly and walk your hands back up to the top of the boxes.

Rebound Pushups-This variation combines the other two into one, start on the top of the boxes, drop to the floor and rapidly reverse your momentum back onto the boxes.

Volume Guidelines:

Three position pushups can follow the same volume guidelines as medball rebounds. The explosive pushup variations (Up onto box, drop and rebound) should not exceed 3 repetitions per set, 3 to 6 sets can be performed during 2-3 sessions per week.

Special Exercises

The development of special strength is the key factor for athletes of high technical qualifications to continue to further improvement through physical preparation training. Special strength has the highest level of dynamic correspondence to sporting performance. Special strength exercises are not restricted to barbell exercises, they are a part or whole of a biomechanical position that is achieved during competition and then overloaded. Special exercises need to be performed immediately after your power/speed work and should be the bulk of the training for brown and black belts. Special strength exercises are designed to prepare the athletes for the strenuous and explosive muscular efforts associated with combat sports. Here are some of our staple exercises we use for developing special strength in our most qualified BJJ practitioners.

[Sprawl Repeats](#)-Make sure you are pressing yourself off the ground explosively and having reactive feet as you shoot your legs back into the sprawl.

[Swiss Ball Guard Squeezes](#)-Wrap your legs around or over a swiss ball, and squeeze it as tight as possible for the duration of the period

[Barbell Stand Ups](#)-Start in a kneeling position, one knee down, with the sleeve of the barbell in the crook of your elbow, stand up powerfully, driving your heels into the floor and firing your glutes, as if sinking in a guillotine, drop the barbell and repeat. Make sure to switch arms every rep or set. These can be performed from either a kneeling or seated position.

[Grappler Press and Hip Escape](#)-Lay on your back and press the bar away from you powerfull as you escape your hip towards your outside hand, quickly return to the starting position and repeat. Emphasize the speed of the movement over the weight being used.

[Grappler Twists](#)-While standing, lower the bar to your hip with slightly bent arms and rip it back to the opposite side with your hips and abs, allow your foot to turn as you move the weight.

[Single Arm Rope Rows](#)-Grab a rope (1/2" to 2" in diameter) and lean back, letting your shoulders open towards the floor, explosively pull your body towards your hand and then fall back into the starting position. The closer to parallel your body is, the more resistance you will have to overcome. Make sure to alternate hands each set.

[Donkey Kongs](#)-Squeeze a swiss ball against your chest and have a partner try to knock it out of your hands by hammering down on it with their hands. Make sure to squeeze the ball from every possible angle to achieve maximum pressure.

[Clapping Pushups](#)-Propel your upper body off the ground with an explosive pushup and perform a clap while in the air. If you can't get high enough to clap, then just pop your hands off the ground, until you improve.

[Box Jump Repeats](#)-Same as the reactive box jumps that are outlined in the jumping section.

[Prowler Shoves](#)-Push the prowler away from you explosively and quickly advance towards it and repeat, make sure to alternate which foot is forward during each push. Focus on the power of each push over the frequency of pushes.

[Prowler Rope Pulls](#)-Seated (with your feet braced against something) or standing, pull the prowler to you hand over hand. Make sure to drive with your legs as you pull with your arms and back. A thicker rope will make this more taxing.

[Tire Fight](#)-With a partner, or against a surface with sufficient rebound, push a tire explosively. Feel free to change hand/foot positioning throughout the duration of the drill.

[Kettlebell Drop and Catch](#)-Using a heavily chalked up kettlebell or hex dumbbell, drop the implement with one hand and catch with the other, alternating hands each rep.

Volume Guidelines:

The volume of special exercises, as with any exercise, is dependent upon the preparedness levels of the athlete and what physical ability is trying to be developed. With that being said, these exercises should be performed in short bursts (10 seconds) when aiming to develop alactic power and longer durations (30 seconds) when aiming to develop lactic capacity. When developing alactic power, rest periods need to be long enough so that the quality of the effort doesn't diminish. A good rule of thumb is to begin your rest periods at 1 minute and lower them from there as your aerobic abilities improve. When looking to develop lactic threshold, begin at 30 seconds of work to 1 minute of rest and over time bring the rest periods down to a 1:1 ratio or constantly move from one exercise to the next, with as little time between movements as possible. Two to 8 sets of each exercise can be performed during 2 or 3 sessions per week.



Up and coming Purple Belt Jeff Shulze, of Gracie Barra Santa Ana, is a great testament to how improved physical preparation can allow an athlete to overcome a competitor with more technical experience.

Maximal and Explosive Strength Development

Maximal strength is the key controlling factor to most other physical traits. When your maximal strength increases, you do not have to expend as much energy to execute the same movements. It is rare, and impractical from a bioenergetic standpoint, that a BJJ athlete will have to express 100% of their strength/power. Much more of the work being done during a match is in the 50-70% intensity range. By increasing the maximal strength though, now your submaximal (50-70%) effort is more powerful and easier to sustain for longer durations, as it represents a lower percentage of your total abilities. Maximal strength in the legs, hips, lower and upper back are critical to success in Jiu Jitsu. It is important though to understand the point of diminishing returns in maximal strength development, especially for the higher qualified athletes (from both a belt and strength standpoint). If an athlete already has achieved a high level of strength development, 400 pound squat at 200 pound bodyweight for example, the energy necessary to do the same movement is less. For example, if an athlete improves his bench press from 250 to 300 pounds, he does not need to use as much energy to push a 200 pound opponent away from him as before.

There are numerous acceptable ways for an athlete to improve their maximal strength. The best way of doing so is through the use of submaximal loading, as this will be less stressful to the body/CNS and will pose less risk of injury to the athlete. Remember that your are training for Jiu Jitsu, not powerlifting, so don't expect to have elite powerlifting numbers if BJJ success is your ultimate goal.

The Juggernaut Method and 5/3/1 are both great options for the athlete looking to increase their strength through the use of submaximal loading. Both books are available at EliteFTS.com. When utilizing either one of these programs, I would suggest not taking the final set past the prescribed reps more than every other week. For example, during the 10s Wave of the Juggernaut method an athlete with a 300 pound squat would do the following...

Week 1 (Accumulation Week)-180 (60% of 300) for 4 sets of 10 reps, 180 for 1 set of over 10 repetitions

Week 2 (Intensification Week)-165 (55% of 300) for 1 set of 5 reps, 185 (62.5% of 300) for 1 set of 5 reps, 205 (67.5% of 300) for 3 sets of 10 reps.

Week 3 (Realization Week)-Warmup to 225 (75% of 300) for one set of maximum repetitions.

Notice that in Week 2 (Intensification) none of the sets are done for over the prescribed repetitions. Doing this will allow the athlete to recover better from week to week and have enough energy to devote to your technical and tactical development.

When discussing maximal strength development there are 3 categories we will divide exercises into, Lower Body, Upper Body Pull and Upper Body Push.

Lower Body

[Back Squat](#)-The back squat is the foundational movement for lower body strength development. The loading parameters for strength development for the athlete are very different from that of the elite powerlifter. With that being said, you want to focus the bulk of your efforts towards work in the 3-10 rep range at weights that are submaximal, meaning that you can move the bar explosively, without fear of missing any repetitions. The Juggernaut Method and 5/3/1 are both excellent options for athletes to use as guidelines here. Both of these programs utilize limit sets (sets taken to near failure) and I would encourage you to only go past the prescribed reps in the 1st and 3rd weeks of each microcycle.

[Box Squat](#)-The box squat is a great option for athletes as they are easy to learn and do not induce as much soreness as regular back squats. Make sure that you are choosing an appropriate box height and refer to the dozens of articles on EliteFTS.com for technical help.

[Deadlift](#)-The deadlift can also serve as the foundational movement for athletes lower body strength development, but I prefer the use of the back squat for BJJ athletes though because the deadlift is very taxing to the CNS and can more easily lead to overtraining. Also, many BJJ practitioners have existing lower back injuries and there is no need to stress them further. The weakness that exists in the lower back can be more than adequately addressed through assistance work and squatting.

[Belt Squat](#)-If you have access to this piece of equipment, it is a great option because it will strengthen the legs without loading the spine. The belt squat is also a very easy movement to learn.

[Trap Bar Deadlift](#)-The trap bar is a superior option for many than the straight bar deadlift, because it places the bar down the midline of the body (taking stress of the low back) and is a less technical movement than a straight bar deadlift.

[Jump Squat](#)-This can be done with a bar on your back, or holding a DB or KB between your legs. I prefer the latter option. Make sure to keep your chest up tall, land on your whole foot and push your hips back. Emphasize a short ground contact between each jump and maximal height on every rep.

[High Pull](#)-Using a BB, DB or KB, explosively extend the hips and knees, driving your hips forward and up and simultaneously pull the weight as high as possible. The weight should come slightly higher than your naval.

Loading Parameters/Volume Guidelines:

As I stated above, athletes want to focus on submaximal training especially because you will receive a great training effect from the sprinting, jumping and throwing that you will be performing. Both the Juggernaut Method and 5/3/1 are great options for athletes to utilize. If using either of those programs, do not take any more than 2 weeks past the prescribed repetitions out of every 4 weeks (including a deload) of a microcycle. The possible set/rep schemes and loading techniques are too vast and numerous to be discussed here, but refer to the sample programs section for more in depth suggestions.

Upper Body Pull

[Bentover Rows](#)-The bentover row has a great dynamic correspondence to BJJ because of the anatomical position of the body, which is very similar to being inside someone's guard. The horizontal pulling motion utilized is very similar to many movements in BJJ and a strong grip is essential to being able to pull heavy weight.

[Pullup/Chinup](#)-For athletes who are strong enough to perform externally weighted pullups/chinups these are a great option. I do though prefer a horizontal pulling variation as it is a more similar movement to what occurs in BJJ. Draping a Gi over the bar will introduce a specific grip training element to this and other exercises.

[Clapping Pullups](#)-Pull yourself explosively over the bar, so you momentarily become weightless and during this time bring your hands off the bar and clap. If you don't feel comfortable clapping, just let your hands come off the bar. Make sure to perform all the prescribed reps in as short a time as possible and to not let yourself go into a dead hang between reps.



World Champion, Mario Reis, chose Juggernaut to fine tune his physical preparation before the 2011 Mundials.

Upper Body Push

[Weighted Pushup](#)-Jiu Jitsu athletes should be able to use in excess of 1/3 of their bodyweight (60 pound of resistance for a 180 pound athlete) for weighted pushups in the 5-12 rep range. These can be loaded through dumbbells, plates or weight vests. Make sure the athlete is retracting their shoulder blades throughout the movement.

[Bench Press](#)-The bench press is a foundational movement for upper body pushing strength. Make sure the athlete is tucking their elbows to their body at a 45 degree angle and pulling their shoulder blades together to create a tight base to press from. The incline bench is also suitable if the athlete prefers. If the athlete has access to a neutral grip bar, that is would be a superior option, as it relieves stress on the shoulders. If you don't have access to a neutral grip bar, using a fat bar or adding grips (Fat Gripz, Grip4Force, Tyler Grips) will aid in grip development in addition to relieving stress from the elbows and shoulders.

[Floor Press](#)-The floor press will be a great alternative to the bench press for many BJJ athletes because it limits the range of motion and therefore the stress on the shoulder. The floor press also more accurately mimics the demands of pressing an opponent away from you while on your back.

[Dumbbell Bench Variations](#)-Flat/Incline/Floor/Decline dumbbell press are suitable options for the BJJ athlete, this will allow them to find a hand positioning that is comfortable for their shoulders.

[Rebound Pushups](#)-Perform as described earlier in the explosive pushup section.

Accessory Strength Movements

Accessory movements need be treated as what they are, secondary. Don't worry about loading up your accessory moves or going to failure, all that will do is impede your recovery. Accessory training is to strengthen specific areas of the body, increase muscle cross section and promote blood flow and maintain joint health. How much you can tricep pushdown isn't going to be the difference between winning and losing your next match. Understand that accessory training isn't the key to sport performance, know that sometimes you will feel rundown and should skip it.

Here are the areas that you want to focus your accessory work on, listed are the exercises that we usually select from, but the options are certainly not limited to the following...

[Shoulders](#)

- Lateral Raises
- Front Raises
- External Rotations
- Rear Delt Swings
- Dumbbell Cleans

[Neck](#)

- Wrestlers Bridges
- Bench Bridges
- Swiss Ball Bracing
- Neck Harness
- Partner Resisted Rotations
- Partner Resisted Bracing

[Traps](#)

Barbell Shrugs
Dumbbell Shrugs
Single Arm Shrugs

[Arms](#)

Hammer Curls
Alternate Dumbbell Curls
Barbell Curls
Rope Curls
Dumbbell Extensions
Barbell Extensions
Dips
Pushdowns

[Low Back/Hamstrings](#)

RDLs
45 degree back extensions
Glute Ham Raises
Pull Throughs
Reverse Hyperextensions
Kettlebell Swings

[Back Extension Series](#)-The back extension allows athletes to combine multiple exercises into a single movement, thus spending less time in the weightroom and hence having more time to devote towards technical development and recovery.

Back Extension plus

Row (w/ Barbell or dumbbells)

IYT's

External Rotation (w/ weight or bands)

Because of the vital role that grip strength plays in Jiu Jitsu success, it would benefit you to add a grip element to your accessory training. An easy way to do this is by introducing a fat grip to any barbell or dumbbell accessory work. Fat Gripz and Grip4Force are both excellent options that are available from EliteFTS.com. Remember though that the grip, like anything, can be overtrained and because it is being heavily taxed already through your technical BJJ training, I suggest that you limit adding extra grip elements to two excises, two times per week.

Loading Parameters/Volume Guidelines:

As stated before accessory work is of far lesser importance than speed/power, special strength and maximal strength development, and needs to be treated as such. One to 3 sets of 8 to 15 reps per muscle group per training session should be sufficient. Avoid training to failure during your accessory work, as this will impede recovery.

Energy System Training

The role of conditioning (aerobic and lactic capacity in the case of BJJ) is of utmost importance to the athletes success, but is extremely misunderstood by athletes and coaches alike. The internet is the culprit of many of these misconceptions about specific energy system training. There are countless videos of athletes puking their guts out after highly lactic circuits or prowler pushing sessions and because these athletes are so “hardcore” their style of ‘conditioning’ has become the standard for many combat athletes. Understand that I am not against all circuit based conditioning work, there are ways to successfully target the necessary energy systems for BJJ with circuits that don’t impede recovery and technical development, it just requires a much more thoughtful approach to their construction.

There are countless ways to improve your aerobic capacity but for the purposes of this manual we will focus on our favorite methods here at Juggernaut.

Tempo Runs-Tempo runs are an aerobic capacity development tool popularized by Charlie Francis through the training of his elite sprinters like Ben Johnson. Tempo runs are runs, not sprints or jogs, performed at 60-75% intensity for varying lengths. It is key to stay within the prescribed speed range, as the 75-90% range would be too slow to develop maximal speed and too fast to promote recovery and train the aerobic zone. Slower than 60% will not allow the athlete to raise their heart rate to the necessary level. Depending on your running ability and current aerobic capacity, you will want to focus your tempo running on distances from 60-200yds and your total volume should fall between 1000-3000m. We break our tempo sessions into two distances, one long and one short (100 and 200yds or 80 and 160yds for example), and perform calisthenics between each rep. Rest periods will vary depending on preparedness but should be capped at 45 seconds after short reps and 2 minutes after long reps, once the calisthenics are completed. One to 3 minutes or a 100-400yd walk should be sufficient rest between each set. It is critical to maintain the same pace throughout all the runs in a session, so make sure that you are resting sufficiently to allow yourself to do that. We have athletes who are able to do so with as little as 10-15 seconds rest after short reps and 20-30 seconds after long reps. A typical tempo run session will be as follows...

Set 1-3x100 yds

Set 2-100, 200, 100, 100 yds

Set 3-100, 200, 200, 100 yds

Set 4-100, 100, 200, 100 yds

Set 5-3x100 yds

Between each rep either 10 pushups or 20-30 abs should be performed. This is 2200 yds of volume and would be an excellent amount for a medium sized blue or purple belt or large sized brown or black belt to perform.

If an athlete doesn't have access to a track, field or other large open space to perform tempo runs, a treadmill is a viable option to perform this work. If a treadmill isn't an option, then the athlete can perform high knees in place for 30-90 seconds in duration. With either the treadmill or running in place option, continue to perform calisthenics between repetitions.

Tempo runs are an excellent builder of aerobic capacity, but in my opinion serve an even greater function as an active recovery tool. Tempo runs will flush the body with new blood and activate the body's adaptive biological systems. To ensure that tempo runs are serving their function as an active recovery tool, make sure that you

[Tempo Throws](#)-Medicine ball throws are a great way to develop total body power, and can also be utilized to raise the heart rate and develop aerobic capacity. To perform a tempo throws session, select 4 or 5 throws (Chest pass, overhead forward, rotational and scoop, for example) and perform 5-10 reps of each in as short a time as possible. It is important when performing tempo throws that you stand far enough from the wall that you are catching the throws after 1 bounce and that you focus on keeping a smooth and even rhythm to your throws. Once you have completed your round of throws, perform some easy calisthenics such as 10 pushups or 20-30 reps of abs, and then begin a new round of throws immediately. Two to three sets of 6 to 10 rounds of throws should be sufficient. Tempo throws are an excellent way to change up your aerobic capacity work and make a particularly alternative to heavier athletes or those with lower body injuries, to reduce stress on the joints.

Aerobic Circuits-Aerobic circuits share many of the same ideas as tempo runs, but can be organized in a manner that is more specific to the demands of BJJ. To perform an aerobic circuit you perform 12-20 seconds of grappling drills at about 75% intensity, then jump rope, run in place, bike, row, etc for the remainder of the minute (40-48 seconds). Keep performing these intervals for 15-30 minutes depending on your preparedness.

Lactic Circuits-Lactic based training is much more strenuous to the body and needs to be monitored closely to avoid having a negative impact on technical/tactical training. Lactic threshold training should be performed in intensive 20-40 second bouts of activity and can be followed by 10-60 second periods of low intensity aerobic activity. Almost any exercise can be selected for the intensive lactic portion of these circuits, the only criteria being that a sufficiently high output can be produced and sustained for the entire duration. Our best results have come from the utilization of special strength exercises in these lactic capacity drills. For the purposes of these explanations we will utilize a 30 second work interval and 50 second rest interval. A great interval timer can be found at www.speedbagforum.com/timer.html. So to organize a lactic circuit, select 3-10 exercises and perform each of them for 30 seconds and then perform a light aerobic activity like extensive medball throwing, jump roping or jogging for 50 seconds, and then move onto the next exercise. Two to 4 rounds of this type of work can be performed in a single session. There are numerous options as to the content of these circuits, so you are really just limited by your imagination.



Having a great training group, like this squad of Gracie Barra black, brown and purple belts, can really enhance your training. L to R; Pablo Cabo, Brian Morizi, Phillipe Dela Monica, Chad Wesley Smith, Kenny Tenny, Felipe Pena, Romulo Barral, Luciano Cristovam, Bruno Antunes, Rodrigo Simoes, Jeff Shulze

Sample Training Plans

Intermediate (Blue/Purple Belts)

This program is geared towards the development of the general physical abilities required to be a successful BJJ practitioner. This will develop the athletes maximal strength, speed, explosive strength, alactic power and aerobic capacity. This program also doesn't require much if any special equipment that cannot be found within a commercial gym.

Week 1

Day 1

- 1) Warmup-Low Amplitude Abdominals, Joint Circles, All Power Speed Drills 2-3x10 yds
- 2) Prowler/Sled Sprints-6x10/15/20yds
- 3) Jumps Up Hill or Reactive Box Jumps-4x2
- 4) Pushups up onto box-4x2
- 5) Bentover Rows-5x8
- 6) Upper Body Push (Any kind you want)-5x8
- 7) Accessory Strength Work-1-3 sets of 8-15 reps of each
Neck, Shoulders, Traps, Arms
- 8) Abs-150 Total Reps

Day 2

- 1) Warmup-Low Amplitude Abdominals, MB Mobility
- 2) Explosive MB Throws x6 each (Diving, OHB, OHF, Scoop, Rotational, Shot)
- 3) Tempo Runs/Abs/Pushups
Set 1-Short, Long
Set 2-Short, Long, Long
Set 3-Long, Long, Short
- 4) Squat-3x8
- 5) Low Back/Hamstrings-2 to 3x8-15
- 6) Abs-30 seconds on/30 seconds off x6 rounds

Day 3

- 1) Warmup
- 2) Extensive Throws-1000 total
- 3) Abs-600 Total

Day 4

- 1) Warmup-Low Amplitude Abdominals, Joint Circles, All Power Speed Drills 2-3x10 yds
- 2) Prowler/Sled Sprints-6x10/15/20yds
- 3) Jumps Up Hill or Reactive Box Jumps-4x2
- 4) Pushups up onto box-4x2
- 5) Chinups-15, 12, 10
- 6) Upper Body Push (Any kind you want)-15, 12, 10
- 7) Accessory Strength Work-1-3 sets of 8-15 reps of each
Neck, Shoulders, Traps, Arms
- 8) Abs-150 Total Reps

Day 5

- 1) Warmup-Low Amplitude Abdominals, MB Mobility
- 2) Explosive MB Throws x6 each (Diving, OHB, OHF, Scoop, Rotational, Shot)
- 3) Tempo Runs/Abs/Pushups
Set 1-Short, Long
Set 2-Short, Long, Long
Set 3-Long, Long, Short
- 4) Squat-3x6
- 5) Low Back/Hamstrings-2 to 3x8-15
- 6) Abs-30 seconds on/30 seconds off x6 rounds

Week 2

Day 1

- 1) Warmup-Low Amplitude Abdominals, Joint Circles, All Power Speed Drills 2-3x10 yds
- 2) Prowler/Sled Sprints-3x6x20 yds
- 3) Jumps Up Hill or Reactive Box Jumps-5x2
- 4) Pushups up onto box-5x2
- 5) Bentover Rows-5x6
- 6) Upper Body Push (Any kind you want)-3x10
- 7) Accessory Strength Work-1-3 sets of 8-15 reps of each
Neck, Shoulders, Traps, Arms
- 8) Abs-200 Total Reps

Day 2

- 1) Warmup-Low Amplitude Abdominals, MB Mobility
- 2) Explosive MB Throws x5 each (Diving, OHB, OHF, Scoop, Rotational, Shot)
- 3) Tempo Runs/Abs/Pushups
 - Set 1-Short, Short
 - Set 2-Short, Long
 - Set 3-Short, Long, Long
 - Set 4-Short, Long
 - Set 5-Short, Short
- 4) Squat-3x6
- 5) Low Back/Hamstrings-2 to 3x8-15
- 6) Abs-30 seconds on/30 seconds off x8 rounds

Day 3

- 1) Warmup
- 2) Extensive Throws-1100 total
- 3) Abs-700 Total

Day 4

- 1) Warmup-Low Amplitude Abdominals, Joint Circles, All Power Speed Drills 2-3x10 yds
- 2) Prowler/Sled Sprints-3x6x20yds
- 3) Jumps Up Hill or Reactive Box Jumps-5x2
- 4) Pushups up onto box-5x2
- 5) Chinups-12, 10, 8
- 6) Upper Body Push (Any kind you want)-12, 10, 8
- 7) Accessory Strength Work-1-3 sets of 8-15 reps of each
Neck, Shoulders, Traps, Arms
- 8) Abs-200 Total Reps

Day 5

- 1) Warmup-Low Amplitude Abdominals, MB Mobility
- 2) Explosive MB Throws x5 each (Diving, OHB, OHF, Scoop, Rotational, Shot)
- 3) Tempo Runs/Abs/Pushups
Set 1-Short, Short
Set 2-Short, Long
Set 3-Short, Long, Long
Set 4-Short, Long
Set 5-Short, Short
- 4) Squat-3x5
- 5) Low Back/Hamstrings-2 to 3x8-15
- 6) Abs-30 seconds on/30 seconds off x8 rounds

Week 3

Day 1

- 1) Warmup-Low Amplitude Abdominals, Joint Circles, All Power Speed Drill 2-3x10 yds
- 2) Sprints-3x6x20 yds
- 3) Jumps Up Hill/Reactive Box Jumps-6x2
- 4) Squat-3x5
- 5) Low Back/Hamstrings-2 to 3x8-15
- 6) Abs-250 Total Reps

Day 2

- 1) Warmup-Low Amplitude Abdominals, MB Mobility
- 2) Explosive MB Throws x4 (Diving, OHB, OHF, Scoop, Rotational, Shot)
- 3) Tempo Runs/Abs/Pushups
 - Set 1-Short, Short
 - Set 2-Short, Long, Short
 - Set 3-Short Long, Long, Short
 - Set 4-Short, Long, Short
 - Set 5-Short, Short
- 4) Drop Pushups-4x2
- 5) Bentover Rows-5x5
- 6) Upper Body Push-3x8
- 7) Accessory Strength Work-1 to 3 sets of 8 to 15 reps of each
 - Neck, Shoulders, Traps, Arms
- 8) Abs-30 sec on/30 sec off x10 rounds

Day 3

- 1) Warmup
- 2) Extensive Throws-1200 Total
- 3) Abs-800 Total

Day 4

- 1) Warmup-Low Amplitude Abdominals, Joint Circles, All Power Speed Drill 2-3x10 yds
- 2) Sprints-3x6x20 yds
- 3) Jumps Up Hill/Reactive Box Jumps-6x2
- 4) Squat-3x4
- 5) Low Back/Hamstrings-2 to 3x8-15
- 6) Abs-250 Total Reps

Day 5

- 1) Warmup-Low Amplitude Abdominals, MB Mobility
- 2) Explosive MB Throws x4 (Diving, OHB, OHF, Scoop, Rotational, Shot)
- 3) Tempo Runs/Abs/Pushups
 - Set 1-Short, Short
 - Set 2-Short Long, Short
 - Set 3-Short Long, Long, Short
 - Set 4-Short, Long, Short
 - Set 5-Short, Short
- 4) Drop Pushups-4x2
- 5) Chinups-10, 8, 6
- 6) Upper Body Push-10, 8, 6
- 7) Accessory Strength Work-1 to 3 sets of 8 to 15 reps of each
 - Neck, Shoulders, Traps, Arms
- 8) Abs-30 sec on/30 sec off x10 rounds

Week 4

Day 1

- 1) Warmup-Low Amplitude Abdominals, Joint Circles, All Power Speed Drill 2-3x10 yds
- 2) Sprints-4x4x20 yds
- 3) Jumps on Flat Land-5x3
- 4) Squat-3x4
- 5) Low Back/Hamstrings-2 to 3x8-15
- 6) Abs-300 Total Reps

Day 2

- 1) Warmup-Low Amplitude Abdominals, MB Mobility
- 2) Explosive MB Throws x3 (Diving, OHB, OHF, Scoop, Rotational, Shot)
- 3) Tempo Runs/Abs/Pushups
 - Set 1-Short, Short, Short
 - Set 2-Short, Short, Long, Short
 - Set 3-Short Long, Long, Short
 - Set 4-Short, Long, Short, Short
 - Set 5-Short, Short, Short
- 4) Drop Pushups-5x2
- 5) Clapping Pullups-6x3
- 6) Upper Body Push-3x8
- 7) Accessory Strength Work-1 to 3 sets of 8 to 15 reps of each
 - Neck, Shoulders, Traps, Arms
- 8) Abs-30 sec on/30 sec off x12 rounds

Day 3

- 1) Warmup
- 2) Extensive Throws-1300 Total
- 3) Abs-900 Total

Day 4

- 1) Warmup-Low Amplitude Abdominals, Joint Circles, All Power Speed Drill 2-3x10 yds
- 2) Sprints-4x4x20 yds
- 3) Jumps on Flat Land-5x3
- 4) Squat-3x3
- 5) Low Back/Hamstrings-2 to 3x8-15
- 6) Abs-300 Total Reps

Day 5

- 1) Warmup-Low Amplitude Abdominals, MB Mobility
- 2) Explosive MB Throws x3 (Diving, OHB, OHF, Scoop, Rotational, Shot)
- 3) Tempo Runs/Abs/Pushups
 - Set 1-Short, Short, Short
 - Set 2-Short, Short, Long, Short
 - Set 3-Short Long, Long, Short
 - Set 4-Short, Long, Short, Short
 - Set 5-Short, Short, Short
- 4) Drop Pushups-5x2
- 5) DB Rows-12, 10, 8
- 6) Upper Body Push-12, 10, 8
- 7) Accessory Strength Work-1 to 3 sets of 8 to 15 reps of each
 - Neck, Shoulders, Traps, Arms
- 8) Abs-30 sec on/30 sec off x12 rounds

Week 5

Day 1

- 1) Warmup-Low Amplitude Abdominals, Joint Circles, All Power Speed Drill 3x10 yds
- 2) Sprints from Various Starts-3x5x10-20 yds, 15-20 sec rest b/t reps, 2-3 minutes b/t sets
- 3) Explosive MB Throws x5 (Diving, Scoop, Rotational)
- 4) Jumps on Flat Land-4x3
- 5) Rebound Pushups-4x2
- 6) Clapping Pullups-5x3
- 7) Squat-3x3
- 8) Upper Body Push-10, 10, 8
- 9) Abs-350 Total Reps

Day 2

- 1) Warmup-Low Amplitude Abdominals, MB Mobility
- 2) Tempo Runs/Abs/Pushups
 - Set 1-Short, Short, Short
 - Set 2-Short, Short, Long, Short
 - Set 3-Short Long, Long, Short
 - Set 4-Short, Long, Short, Short
 - Set 5-Short, Short, Short
- 3) Extensive Throws-700 Total
- 4) Abs-30 sec on/30 sec off x14 rounds

Day 3

- 1) Warmup
- 2) Explosive MB Throws x5 (OHB, OHF, Shot)
- 3) Rebound Pushups-4x2
- 4) Accessory Strength Work-1 to 3 sets of 8 to 15 reps of each
Neck, Shoulders, Traps, Arms, Low Back/Hamstrings
- 5) Abs-350 Total

Day 4

- 1) Warmup-Low Amplitude Abdominals, MB Mobility
- 2) Tempo Runs/Abs/Pushups
Set 1-Short, Short, Short
Set 2-Short, Short, Long, Short
Set 3-Short Long, Long, Short
Set 4-Short, Long, Short, Short
Set 5-Short, Short, Short
- 3) Extensive Throws-700 Total
- 4) Abs-30 sec on/30 sec off x14 rounds

Day 5

- 1) Warmup-Low Amplitude Abdominals, Joint Circles, All Power Speed Drill 3x10 yds
- 2) Sprints from Various Starts-3x5x10-20 yds, 15-20 sec rest b/t reps, 2-3 minutes b/t sets
- 3) Explosive MB Throws x5 (Diving, Scoop, Rotational)
- 4) Jumps on Flat Land-4x3
- 5) Rebound Pushups-4x2
- 6) DB Rows-10, 8, 6
- 7) Squat-3x2
- 8) Upper Body Push-3x8
- 9) Abs-350 Total Reps

Week 6

Day 1

- 1) Warmup-Low Amplitude Abdominals, Joint Circles, All Power Speed Drill 3x10 yds
- 2) Sprints from Various Starts-4x5x10-20 yds, 15-20 sec rest b/t reps, 2-3 minutes b/t sets
- 3) Explosive MB Throws x5 (Diving, Scoop, Rotational)
- 4) Jumps on Flat Land-3x3
- 5) Rebound Pushups-5x2
- 6) Clapping Pullups-4x3
- 7) Squat-3x2
- 8) Upper Body Push-10, 8, 8
- 9) Abs-350 Total Reps

Day 2

- 1) Warmup-Low Amplitude Abdominals, MB Mobility
- 2) Tempo Runs/Abs/Pushups
 - Set 1-Short, Short, Short
 - Set 2-Short, Short, Long, Short
 - Set 3-Short Long, Long, Short
 - Set 4-Short, Long, Short, Short
 - Set 5-Short, Short, Short
- 3) Extensive Throws-800 Total
- 4) Abs-30 sec on/30 sec off x14 rounds

Day 3

- 1) Warmup
- 2) Explosive MB Throws x5 (OHB, OHF, Shot)
- 3) Rebound Pushups-5x2
- 4) Accessory Strength Work-1 to 3 sets of 8 to 15 reps of each
Neck, Shoulders, Traps, Arms, Low Back/Hamstrings
- 5) Abs-350 Total

Day 4

- 1) Warmup-Low Amplitude Abdominals, MB Mobility
- 2) Tempo Runs/Abs/Pushups
Set 1-Short, Short, Short
Set 2-Short, Short, Long, Short
Set 3-Short Long, Long, Short
Set 4-Short, Long, Short, Short
Set 5-Short, Short, Short
- 3) Extensive Throws-800 Total
- 4) Abs-30 sec on/30 sec off x14 rounds

Day 5

- 1) Warmup-Low Amplitude Abdominals, Joint Circles, All Power Speed Drill 3x10 yds
- 2) Sprints from Various Starts-4x5x10-20 yds, 15-20 sec rest b/t reps, 2-3 minutes b/t sets
- 3) Explosive MB Throws x5 (Diving, Scoop, Rotational)
- 4) Jumps on Flat Land-3x3
- 5) Rebound Pushups-5x2
- 6) DB Rows-8, 6, 5
- 7) Squat-3x1
- 8) Upper Body Push-8, 8, 6
- 9) Abs-350 Total Reps

Week 7 (Week of Competition)

Day 1

- 1) Warmup-Low Amplitude Abdominals, Joint Circles, All Power Speed Drill 3x10 yds
- 2) Sprints from Various Starts-2x5x10-20 yds, 15-20 sec rest b/t reps, 2-3 minutes b/t sets
- 3) Explosive MB Throws x3 (Diving, Scoop, Rotational)
- 4) Jumps on Flat Land-2x3
- 5) Rebound Pushups-3x2
- 6) Clapping Pullups-2x3
- 7) Squat-2x6
- 8) Upper Body Push-2x10
- 9) Abs-150 Total Reps

Day 2

- 1) Warmup-Low Amplitude Abdominals, MB Mobility
- 2) Tempo Runs/Abs/Pushups
 - Set 1-Short, Short, Short
 - Set 2-Short, Short, Long, Short
 - Set 3-Short Long, Long, Short
 - Set 4-Short, Long, Short, Short
 - Set 5-Short, Short, Short
- 3) Extensive Throws-400 Total
- 4) Abs-30 sec on/30 sec off x6 rounds

Day 3

- 1) Warmup
- 2) Explosive MB Throws x3 (OHB, OHF, Shot)
- 3) Rebound Pushups-3x2
- 4) Accessory Strength Work-1 to 3 sets of 8 to 15 reps of each
Neck, Shoulders, Traps, Arms, Low Back/Hamstrings
- 5) Abs-150 Total

Day 4/5

Off



The tremendous physiques of BJJ athletes like Juggernaut Romulo Barral, are not only a product of great physical preparation training and diet, the large amount of isometric holds that occur during BJJ training are great builders of hypertrophy.

Advanced (Brown/Black Belts)

This is a program that relies heavily upon the use of special strength exercises. It is designed for athletes with a relatively large base of general physical preparedness, who will no longer yield great returns in sports performance from improving their general abilities (ie. Barbell strength, sprints, jumps).

Week 1

Day 1

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds-2x10 seconds of each
- 3) Three Position Pushups-2x10 seconds of each
- 4) Power Speed Drills-3x10 yds each (High Knees, Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x10 each (OHB, Rotational, Diving, Scoop)
- 6) Maximal Strength-Weighted Pushups x12, 10, 8, 10, 12; Belt Squat x5x8
- 7) Special Strength Circuit/Aerobic Capacity-10 seconds on, 50 seconds off x4 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists,
Barbell Press and Hip Escape, Clapping Pushups, Single Arm Rope Row, Tire Jump
Repeats, Donkey Kongs
- 8) Abs-150 Total Reps

Day 2

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x6 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs
between each rep
- 3) Extensive Throws x400 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 6 rounds

Day 3

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds-2x10 seconds of each
- 3) Three Position Pushups-2x10 seconds of each
- 4) Power Speed Drills-3x10 yds each (High Knees, Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x10 each (OHB, Rotational, Diving, Scoop)
- 6) Maximal Strength-Weighted Pullups/Chinups x12, 10, 8, 10, 12; Rack Pull from Knees x5x8
- 7) Special Strength Circuit/Aerobic Capacity-10 seconds on, 50 seconds off x6 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists,
Barbell Press and Hip Escape, Clapping Pushups, Single Arm Rope Row, Tire Jump
Repeats, Donkey Kongs
- 8) Abs-150 Total Reps

Day 4

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x6 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs
between each rep
- 3) Extensive Throws x400 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 6 rounds

Day 5

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds-2x10 seconds of each
- 3) Three Position Pushups-2x10 seconds of each
- 4) Power Speed Drills-3x10 yds each (High Knees, Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x10 each (OHB, Rotational, Diving, Scoop)
- 6) Maximal Strength-Weighted Pushups x12, 10, 8; Belt Squat x3x6
- 7) Special Strength Circuit/Aerobic Capacity-10 seconds on, 50 seconds off x4 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists,
Barbell Press and Hip Escape, Clapping Pushups, Single Arm Rope Row, Tire Jump
Repeats, Donkey Kongs
- 8) Abs-150 Total Reps

Day 6

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x6 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs
between each rep
- 3) Extensive Throws x400 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 6 rounds

Week 2

Day 1

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds-2x10 seconds of each
- 3) Three Position Pushups-2x10 seconds of each
- 4) Power Speed Drills-3x10 yds each (High Knees, Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x8 each (OHB, Rotational, Diving, Scoop)
- 6) Maximal Strength-Weighted Pullups x10, 8, 6, 8, 10; Rack Pulls from Knees 5x6
- 7) Special Strength Circuit/Aerobic Capacity-10 seconds on, 40 seconds off x4 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists, Barbell Press and Hip Escape, Clapping Pushups, Single Arm Rope Row, Tire Jump Repeats, Donkey Kongs
- 8) Abs-200 Total Reps

Day 2

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x8 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs between each rep
- 3) Extensive Throws x500 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 8 rounds

Day 3

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds-2x10 seconds of each
- 3) Three Position Pushups-2x10 seconds of each
- 4) Power Speed Drills-3x10 yds each (High Knees, Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x8 each (OHB, Rotational, Diving, Scoop)
- 6) Maximal Strength-Weighted Pushups x10, 8, 6, 8, 10; Belt Squat 5x6
- 7) Special Strength Circuit/Aerobic Capacity-10 seconds on, 40 seconds off x6 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists,
Barbell Press and Hip Escape, Clapping Pushups, Single Arm Rope Row, Tire Jump
Repeats, Donkey Kongs
- 8) Abs-200 Total Reps

Day 4

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x8 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs
between each rep
- 3) Extensive Throws x500 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 8 rounds

Day 5

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds-2x10 seconds of each
- 3) Three Position Pushups-2x10 seconds of each
- 4) Power Speed Drills-3x10 yds each (High Knees, Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x8 each (OHB, Rotational, Diving, Scoop)
- 6) Maximal Strength-Weighted Pullups x10, 8, 6; Rack Pull from Knees 3x4
- 7) Special Strength Circuit/Aerobic Capacity-10 seconds on, 50 seconds off x4 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists,
Barbell Press and Hip Escape, Clapping Pushups, Single Arm Rope Row, Tire Jump
Repeats, Donkey Kongs
- 8) Abs-200 Total Reps

Day 6

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x8 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs
between each rep
- 3) Extensive Throws x500 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 8 rounds

Week 3

Day 1

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds-2x10 seconds of each
- 3) Three Position Pushups-2x10 seconds of each
- 4) Power Speed Drills-3x10 yds each (High Knees, Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x6 each (OHB, Rotational, Diving, Scoop)
- 6) Maximal Strength-Weighted Pushups x8, 6, 4, 6, 8; Belt Squat 5x4
- 7) Special Strength Circuit/Aerobic Capacity-10 seconds on, 30 seconds off x4 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists,
Barbell Press and Hip Escape, Clapping Pushups, Single Arm Rope Row, Tire Jump
Repeats, Donkey Kongs
- 8) Abs-250 Total Reps

Day 2

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x10 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs
between each rep
- 3) Extensive Throws x600 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 10 rounds

Day 3

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds-2x10 seconds of each
- 3) Three Position Pushups-2x10 seconds of each
- 4) Power Speed Drills-3x10 yds each (High Knees, Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x6 each (OHB, Rotational, Diving, Scoop)
- 6) Maximal Strength-Weighted Pullups x8, 6, 4, 6, 8; Rack Pull from Knees 5x4
- 7) Special Strength Circuit/Aerobic Capacity-10 seconds on, 40 seconds off x6 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists,
Barbell Press and Hip Escape, Clapping Pushups, Single Arm Rope Row, Tire Jump
Repeats, Donkey Kongs
- 7) Abs-250 Total Reps

Day 4

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x10 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs
between each rep
- 3) Extensive Throws x600 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 10 rounds

Day 5

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds-2x10 seconds of each
- 3) Three Position Pushups-2x10 seconds of each
- 4) Power Speed Drills-3x10 yds each (High Knees, Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x6 each (OHB, Rotational, Diving, Scoop)
- 6) Maximal Strength-Weighted Pushups x8, 6, 4; Belt Squat 3x3
- 7) Special Strength Circuit/Aerobic Capacity-10 seconds on, 50 seconds off x4 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists,
Barbell Press and Hip Escape, Clapping Pushups, Single Arm Rope Row, Tire Jump
Repeats, Donkey Kongs
- 7) Abs-250 Total Reps

Day 6

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x10 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs
between each rep
- 3) Extensive Throws x600 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 10 rounds

Week 4

Day 1

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds x10 seconds each
- 3) Three Position Pushup x10 seconds each
- 4) Power Speed Drills 3x10 yds each (Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x5 each (OHB, Rotational)
- 6) Explosive Strength Exercises-Clapping Pullup 6x3, KB Jump Squat 6x3, Explosive Hops 5x2
- 7) Special Strength Circuit/Lactic Capacity-30 seconds on, 50 seconds off x2 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists, MB Chest Rebounds, Prowler Rope Pull, Tire Fight, KB Drop and Catch, Tire Jump Repeats
- 8) Abs-300 Total Reps

Day 2

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x12 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs between each rep
- 3) Extensive Throws x600 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 12 rounds

Day 3

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds x10 seconds each
- 3) Three Position Pushup x10 seconds each
- 4) Power Speed Drill 3x10 yds each (Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x5 each (Diving, Scoop)
- 6) Explosive Strength Exercises-Rebound Pushup 6x3, High Pull 6x3, Explosive Hops 3x3
- 7) Special Strength Circuit/Lactic Capacity-30 seconds on, 50 seconds off x4 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists, MB Chest Rebounds, Prowler Rope Pull, Tire Fight, KB Drop and Catch, Tire Jump Repeats
- 8) Abs-300 Total Reps

Day 4

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x12 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs between each rep
- 3) Extensive Throws x600 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 12 rounds

Day 5

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds x10 seconds each
- 3) Three Position Pushup x10 seconds each
- 4) Power Speed Drill 3x10 yds each (Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x5 each (OHB, Rotational)
- 6) Explosive Strength Exercises Clapping Pullup 4x3, KB Jump Squat 4x3, Explosive Hops 3x2
- 7) Special Strength Circuit/Lactic Capacity-30 seconds on, 50 seconds off x3 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists, MB Chest Rebounds, Prowler Rope Pull, Tire Fight, KB Drop and Catch, Tire Jump Repeats
- 8) Abs-300 Total Reps

Day 6

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x12 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs between each rep
- 3) Extensive Throws x600 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 12 rounds

Week 5

Day 1

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds x10 seconds each
- 3) Three Position Pushup x10 seconds each
- 4) Power Speed Drill 3x10 yds each (Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x5 each (Diving, Scoop)
- 6) Explosive Strength Exercises-Rebound Pushup 5x3, High Pull 5x3, Explosive Hops 5x2
- 7) Special Strength Circuit/Lactic Capacity-30 seconds on, 40 seconds off x2 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists, MB Chest Rebounds, Prowler Rope Pull, Tire Fight, KB Drop and Catch, Tire Jump Repeats
- 8) Abs-350 Total Reps

Day 2

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x14 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs between each rep
- 3) Extensive Throws x600 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 14 rounds

Day 3

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds x10 seconds each
- 3) Three Position Pushup x10 seconds each
- 4) Power Speed Drills 3x10 yds each (Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x5 each (OHB, Rotational)
- 6) Explosive Strength Exercises-Clapping Pullup 5x3, KB Jump Squat 5x3, Explosive Hops 3x3
- 7) Special Strength Circuit/Lactic Capacity-30 seconds on, 40 seconds off x4 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists, MB Chest Rebounds, Prowler Rope Pull, Tire Fight, KB Drop and Catch, Tire Jump Repeats
- 8) Abs-350 Total Reps

Day 4

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x14 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs between each rep
- 3) Extensive Throws x600 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 14 rounds

Day 5

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds x10 seconds each
- 3) Three Position Pushup x10 seconds each
- 4) Power Speed Drill 3x10 yds each (Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x5 each (Diving, Scoop)
- 6) Explosive Strength Exercises-Rebound Pushup 3x3, High Pull 3x3, Explosive Hops 3x2
- 7) Special Strength Circuit/Lactic Capacity-30 seconds on, 40 seconds off x2 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists, MB Chest Rebounds, Prowler Rope Pull, Tire Fight, KB Drop and Catch, Tire Jump Repeats
- 8) Abs-350 Total Reps

Day 6

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x14 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs between each rep
- 3) Extensive Throws x600 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 14 rounds

Week 6

Day 1

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds x10 seconds each
- 3) Three Position Pushup x10 seconds each
- 4) Power Speed Drill 3x10 yds each (Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x5 each (Diving, Scoop)
- 6) Explosive Strength Exercises-Clapping Pullups 4x3, KB Jump Squat 4x3, Explosive Hops 4x2
- 7) Special Strength Circuit/Lactic Capacity-30 seconds on, 30 seconds off x2 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists, MB Chest Rebounds, Prowler Rope Pull, Tire Fight, KB Drop and Catch, Tire Jump Repeats
- 8) Abs-400 Total Reps

Day 2

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x16 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs between each rep
- 3) Extensive Throws x700 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 16 rounds

Day 3

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds x10 seconds each
- 3) Three Position Pushup x10 seconds each
- 4) Power Speed Drills 3x10 yds each (Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x5 each (OHB, Rotational)
- 6) Explosive Strength Exercises-Rebound Pushups 4x3, Hi Pull 4x3, Explosive Hops 3x3
- 7) Special Strength Circuit/Lactic Capacity-30 seconds on, 40 seconds off x4 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists, MB Chest Rebounds, Prowler Rope Pull, Tire Fight, KB Drop and Catch, Tire Jump Repeats
- 8) Abs-350 Total Reps

Day 4

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x14 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs between each rep
- 3) Extensive Throws x600 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings Abs-30 seconds on/30 seconds off x 14 rounds

Day 5

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds x10 seconds each
- 3) Three Position Pushup x10 seconds each
- 4) Power Speed Drill 3x10 yds each (Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x5 each (Diving, Scoop)
- 6) Explosive Strength Exercises-Rebound Pushup 3x3, High Pull 3x3, Explosive Hops 3x2
- 7) Special Strength Circuit/Lactic Capacity-30 seconds on, 40 seconds off x2 rounds
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists, MB Chest Rebounds, Prowler Rope Pull, Tire Fight, KB Drop and Catch, Tire Jump Repeats
- 8) Abs-350 Total Reps

Day 6

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x14 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs between each rep
- 3) Extensive Throws x600 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 14 rounds

Day 1

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 1) Medicine Ball Rebounds x10 seconds each
- 2) Three Position Pushup x10 seconds each
- 3) Power Speed Drill 3x10 yds each (Rolling Hops, Zig Zag Hops)
- 4) Explosive MB Throws x5 each (OHB, Rotationa)
- 5) Explosive Strength Exercises-Clapping Pullup 3x3, KB Jump Squat 3x3, Explosive Hops 3x3
- 6) Special Strength Circuit/Lactic Capacity-30 seconds on, 30 seconds off x2 rounds, 85-90% of previous weeks effort
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists, MB Chest Rebounds, Prowler Rope Pull, Tire Fight, KB Drop and Catch, Tire Jump Repeats
- 7) Abs-350 Total Reps

Day 2

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x8 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs between each rep
- 3) Extensive Throws x300 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 6 rounds

Day 3

- 1) Warmup-Low Amplitude Abdominals, Medball Mobility Circuit
- 2) Medicine Ball Rebounds x10 seconds each
- 3) Three Position Pushup x10 seconds each
- 4) Power Speed Drill 3x10 yds each (Rolling Hops, Zig Zag Hops)
- 5) Explosive MB Throws x5 each (OHB, Rotationa)
- 6) Explosive Strength Exercises-Rebound Pushups 3x3, High Pull 3x3, Explosive Hops 3x2
- 7) Special Strength Circuit/Lactic Capacity-30 seconds on, 30 seconds off x1 round,
85-90% of previous weeks effort
Sprawl Repeats, Swiss Ball Guard Squeezes, Barbell Stand Ups, Grappler Twists, MB
Chest Rebounds, Prowler Rope Pull, Tire Fight, KB Drop and Catch, Tire Jump
Repeats
- 8) Abs-350 Total Reps

Day 4 (Off if competing on Friday)

- 1) Warmup
- 2) Tempo/Aerobic Capacity Development
2x8 rounds of 40 seconds of running in place with 10 pushups or 20-30 abs between
each rep
- 3) Extensive Throws x300 Total Throws
- 4) Accessory Strength Movements 1-3 sets of 8-15 reps of each
Neck, Traps, Arms, Shoulders, Low Back/Hamstrings
- 5) Abs-30 seconds on/30 seconds off x 6 rounds

Day 5/6

- 1) Warmup
- 2) Light Drilling
- 3) Massage/Soft Tissue/Cold Bath

The Nutritional Demands of Combat Sports

By Nate Winkler

Combat sports are so unique in that they do not allow for an athlete to relax while competing. Many sports allow for short rest intervals during the game/match, this does not occur in combat sports while the round is going on. Because of this, anaerobic metabolism, the short, explosive, strong bursts, and aerobic metabolism, movements that require oxygen and make up the majority of movements after the match begins, must each be at their peak and simultaneously fueled. Preparing for, and recovering from the grueling training that is demanded of combat athletes is also a unique aspect of fighting. No other sport places a higher demand on the athlete mentally, emotionally, physically, and therefore nutritionally than combat training. Because of this, understanding how *your* nutrition impacts *your* performance is crucial. Eating 'healthy' isn't enough; leveraging hormones, combining whole food macronutrients (proteins, fats, carbohydrates) with proper supplementation, and timing is where your greatest performance lies. This brief nutritional overview will guide you in assessing where you are at nutritionally, and where you can improve to take your training, recovery, and fight performance to the next level.

3 Program Pillars

1) Nutritional decisions and planning ALWAYS need to be determined by evaluating these three criteria, in their stated order:

- 1) Overall training goals and fight weight
- 2) Next training session type and duration
- 3) Recovery demands of previous training session

If you are trying to maintain or lose weight, you need to be very aware of what type of exercise you are recovering from and what type of training session you are preparing for next. If your goal is cutting weight, eating carbohydrates and inducing an insulin spike (fat burn is ceased) before a 'cardio' session would not be intelligent, however, if you are preparing for an intense sparring or lifting session, carbohydrates are crucial to dominating your opponent on the mat, or in the gym. Because of this, creating a 'one size fits all' approach to combat nutrition is nearly impossible.

Understand that increasing daily meal numbers, carbohydrates, calories, and creatine intake will most likely cause you to gain weight. Having a diet that is mainly protein and fat based will allow you to drop weight. If you need to drop 15 lbs for your next fight, you should avoid getting the bulk of your carbohydrates servings from starches and bread. Also, if you eat any way you choose throughout your training camp and try to cut all your weight the last 48-72 hours before your fight, you will be losing more than water weight and fat. You can lose 2-3 lbs of fat a week only, any more and you're dropping lean muscle tissue. You can train very hard while losing weight incrementally. Every fighter I have ever worked with has hit training PR's throughout their camp, even when they are at their lightest body weight.

2) The hormonal and metabolic conditions that are created by sleep, as well as the time gap between dinner and breakfast must be taken into consideration and leveraged. Upon waking, the body is hormonally set up to burn fat better than any other time of the day (no blood serum levels of insulin/sugar, high levels of growth hormone, cortisol, and other hunger hormones), therefore, any movement



that occurs early in the day will be mainly fueled by fat. This will continue until the first release of insulin into the blood stream as a response to carbohydrates metabolism. To accomplish this, with the larger goal of performance and body composition in mind, breakfast should consist of protein sources, vegetables, and fats. This rule is true even if you have early morning training sessions: DON'T EAT CARBS.

A typical breakfast at Juggernaut is eggs and spinach. Eggs provide you with the healthy fats, protein, and calories to put your body in an anabolic state. The spinach will provide you with nutrients and fibrous carbohydrates that won't induce an insulin response early in the day. The result, lean tissue building, blood sugar stability, and mental focus throughout the entire day. Can ANY carb promise you that in the morning?

3) Each bite of food you voluntarily eat has a major impact on your involuntary, chemically based, bodily responses. Understanding these interactions will align your body's response with your body weight goals. Growth hormone and testosterone aid in fat burn, expression of absolute strength, lean tissue growth, mental acuity, and aggression. These hormones are at their highest upon waking and post workout, and insulin works as an antagonist to these hormones, and their impact on the body. Insulin release causes the muscle cells to absorb nutrients, but represses the effects growth hormone and testosterone have on the body. You can eat carbohydrates hours (3-5 for females, up to 24 hours for men) after workout and your body will process carbohydrates just as efficiently, while still taking advantage of the positive effects of growth hormone and testosterone. Remember, your overall program goals and the next training session always take precedence over the training session you just completed when training for a fight.

Macronutrient Overview

The three macronutrients, Proteins, Fats, and Carbohydrates, can be used as an identifier that allow you to categorize and classify your foods. Knowing what type of macronutrient characterizes the foods that you are choosing to eat will greatly increase the amount of purpose and strategy that goes into your menu selection. Eating healthy and making the extra effort to prepare your meals should already be occurring, and I will provide no real discussion in an attempt to motivate you to start doing these things if you are not. A wise man once posed this question to me, "Why would you expect your body to perform like a Ferrari, when you treat it and fuel it like a Volkswagen?" This simple concept came from a man in the mountains of North Carolina, but rings true in all my nutrition research; you must eat high quality foods in order to prepare, perform, and recover from the day to day training stress that combat sports impose on your body. The real skill becomes understanding the hormonal situation that your body is in, knowing your body composition goals and weight you need to fight at, and aligning those aspects with proper macronutrient timing. The first step is considering what macronutrients you need at a certain time, where to go to get those nutrients, and more importantly, how to avoid the nutrient types you don't need.



This is a picture of my shopping cart, pretty healthy right? Using 'healthy' foods at the wrong time can cause you to gain weight and hinder your performances. It isn't enough just to eat healthy, you need to eat the right macronutrient at the right time. In the morning hours, eat fats and proteins, after lunch let the bulk of your carbs come from fruit sources or legumes. At night, gauge your carbohydrate consumption on the 3 Program Pillars: 1) Overall training goals and fight weight, 2) Next training session type and duration, 3) Recovery demands of previous training session

The real skill becomes understanding the hormonal situation that your body is in, knowing your body composition goals and weight you need to fight at, and aligning those aspects with proper macronutrient timing. The first step is considering what macronutrients you need at a certain time, where to go to get those nutrients, and more importantly, how to avoid the nutrient types you don't need.

Proteins

As it applies to our discussion, proteins are necessary for tissue rebuilding and repair after/ between training sessions. There are two major types of protein I recommend, animal proteins and whey protein. Soy protein is very popular right now, however this protein source reduces testosterone when consumed in large quantities, I also prefer animal based protein sources to plant based protein any day of the week. Of animal proteins, chicken, eggs, beef and fish are the most common types and the sources I recommend. Pork does not possess the lean protein, to low fat ration of other types of meat and should be avoided. Chickens as well are very hard to find in high quality, even the 'organic' chickens often times are not anywhere close to the billing. My advice with chickens and eggs alike, buy hormone free and save your money. Grass fed beef has loads of healthy fats, and organic cattle farming seems to be somewhat regulated, so investing in a higher quality beef is worthwhile. Fish is the best animal protein source for women due to the amount of healthy fats that promote hormone balance, clear complexion and weight loss. Fish protein is very lean and digests well, any fighter wanting to lose weight and has a larger budget for food should consider this animal protein source.

Whey is an isolated protein source from the dairy milk of cattle. Nutritionally, whey protein will provide you with high calorie protein to help build lean tissue. When cutting weight, whey protein needs to be a staple of your nutrition to ensure that lean tissue is preserved. Whey protein also is a great source of antioxidants, and will protect you cells from the oxidative damage that occurs from training. Over the last two years I have read numerous sources discussing the issues and lack of regulation in the making of these products. One thing you need to know is that there is a difference between quality whey protein sources and the companies that insert plastics into their products to serve as fillers. Quick digesting protein is great post workout, but if the protein you are drinking is 50% indigestible, poorly processed whey powder, from hormone laden cows, and the other ingredients are chemicals (just to name a few, niacinamide, d-alpha tocopheryl succinate, selenomethionine, etc.), do you think these protein sources are really the best choice to rebuild tissue with? This is what led us to develop the Juggernaut Supplement Series, proteins made in America, from cows not that are not 'Genetically Modified Organisms'. What ever source you choose, research the source and company behind the product first.



Romulo Barral scrutinizes every food and product he puts into his body. His nutritional knowledge and nutrient timing are unparalleled, so are his 7 BJJ World Championships. Romulo trusts his performance and recovery with The Juggernaut Supplement Series.

Fats

Like most popular dietary advice, avoiding fats and the foods that have healthy fats in them could not be more misguided. Fats have been given the blame for causing the high levels of obesity in America, when in fact, they are a very small part of the picture, if even at all. There are four types of dietary fats, trans-fats, saturated, mono-unsaturated, and poly-unsaturated; what you need to know is where each type is found and how it impacts your performance. As I will detail below, fats do not sufficiently fuel explosive movements, which combat sports demand, as carbohydrates do. However, fats do provide the body with more energy per gram than carbohydrates. So, it is possible to continue training with fats as your dominant fuel source, if your program is planned out well. Trans-fats are mainly found in processed foods like desserts, and should be avoided as much as possible. Will eating the trans-fats found in cakes and processed foods kill you, no, but if you are serious about becoming the best at what you do, why would you ruin it at the dinner table? Saturated fats are the second type of fat, and are found mostly in foods that are derived from animals, saturated fats should make up a small percentage of your dietary fat. Mono-Saturated fats are found mainly in cooking oils, with olive oil being the most popular mono-saturated fat. These fats have numerous health benefits, but are most beneficial when used in conjunction with lean meat and vegetable sources, and not mixed with carbohydrates. If you need to cut weight for a fight, do not eat carbohydrates and fat in the same meal. Poly-unsaturated fats are the most healthy fat sources (Omega 3 and Omega 6) and must be supplemented into the diet because the body can not make these essential compounds. The best sources of poly-unsaturated fats are grass fed beef, fish, organic eggs, flax seeds, and fish oil pills. Appropriate servings of fat will ensure hormone balance throughout the day, this is crucial for a training athlete, especially during hours of sleep when growth hormone is released.

Carbohydrates

The importance of carbohydrates for combat is discussed in detail in the following section. We don't have to eat carbohydrates to exist, but if you want to dominate your opponent, fats fail in comparison to carbohydrates as a fuel source. As discussed below, carbohydrates fuel aerobic and anaerobic metabolism much better than fats. What does this mean, carbs will enhance your performance the instant the match starts until the last second.

Liquid carb sources always digest quicker, but any liquid gets into the body faster than solids (Advil Liquid Gels compared to solid pill form gives you an illustration here). What makes carbs “digest slowly” is what you eat along with it. Lean meat and vegetables digest slowly, therefore if you eat rice along with chicken and broccoli, the rice is going to digest slowly because those other food types are going to remain in your small intestine longer. If you want carbs to digest quickly, drink a shake with your carb source (fruit, oats, powder, etc.) blended, or eat your carbohydrate type prior to eating your other menu items. Sweet potatoes, rice, black beans, raw oats, and fruit should be the first choices here, bread can be over processed and worthless from a nutritional standpoint, so be careful in choosing this as a carb option.

Overview of Exercise Metabolism

Different Fuel Types for Different Demands

Skeletal muscles use Adenosine Tri Phosphate (ATP) as the catalysts to generate movement. Unfortunately, there is only enough ATP stored in our muscles to fuel 3-5 seconds of explosive exercise, and 15 seconds of aerobic exercise.¹ These resources must be continually replaced or fatigue will set in.² Fats and Carbohydrates are the two fuel sources the body will use to replace the ATP stores in our muscles during exercise.² Fats and carbs both end up as the same compound, Acetyl-CoA, which propels your muscles to continue working during exercise. However, fat metabolism doesn't come close to generating the explosive power or aerobic capacity that carbohydrate metabolism does.^{3,4}

Carbohydrate metabolism occurs faster than fat metabolism, refilling ATP stores quicker, and improving short range (10-60 seconds) recovery better than Fats.² Don't believe the myth that carbohydrates are limited to just improving short-term explosiveness, fats cannot support aerobic intensity over 60% of VO2 max either the way that carbohydrates can.³ Researchers found that both anaerobic (short bursts) metabolism and aerobic (endurance) metabolism are simultaneously activated the instant exercise begins; and they work together throughout the duration of exercise to replenish muscle ATP.⁵⁻⁸ Carbohydrates have been found to serve as the superior fuel for both of these systems², and when fatigue begins to set in, it is due to muscle glycogen (metabolized from eating carbohydrates) depletion, not a lack of fats.⁹⁻¹³ When there is pre-existing glycogen in the muscle cell, the body uses the anaerobic (explosive) pathway more effectively, regardless if you are participating in endurance or explosive activities. Maintaining carb intake during exercise is also crucial, liquid carb sources, which are quickly digested, will further increase the amount of glucose uptake by muscles, taking your work capacity for explosive movements to an even higher level.^{10,11,14,15,16} When it comes to choosing a fuel source to use while training, carbohydrates are by far the best macronutrient for combat sports.

Nutrition as the Fight Approaches

With this research in hand, one might make this assumption: 'By continuously consuming carbohydrates I will be primed for phenomenal, long lasting performances.' However, this is just not the case, continually ingesting carbohydrates results in water retention, high amounts of blood sugar, fat cell synthesis, and finally, weight gain. With combat sports, your numerical weight does matter and if you are one pound over your limit it doesn't matter how well prepared you are to dominate your opponent. What we want to do is maximize carbohydrate metabolism and utilization during exercise and fat burn away from exercise. Fortunately, the body is complex enough to manage fat loss and intense exercise at the same time if proper nutrient timing of fat and carbohydrate servings is accomplished. Applying the proper nutrition so that weight loss occurs, and overtraining doesn't, is very difficult.

Like we have discussed previously, carb depletion leads to fatigue, and completely removing carbohydrates from your diet too far from your fight puts you at risk of being too weak to prepare for the fight physically. I have witnessed this first hand, and it's frustrating to see a warrior lose their competitive fire because they have no energy on a low carb diet. Dropping carbohydrates and increasing fat is a great way to lose weight, and this strategy should have a place in your program if you have to cut weight for a fight. Keep in mind that your body can derive more energy from a calorie of fat than a calorie of carbohydrates or protein. When the fight is nearing and you are starting to focus on 'making weight', a high fat, high protein diet will make this process much easier for you than having to cut 15-20 lbs 48 hrs before your fight (especially if you are having to weigh-in and immediately step on the mat to fight). 3-4 weeks out begin to 'wean' yourself off of the carbohydrates so that you are gradually replacing your carbohydrate calories with your fat calories. 7 Time World Champion, Romulo Barral, initially introduced this method to me and I think it's brilliant.



Vegetables are a great way to get carbohydrates and nutrients into your body without inducing an insulin response, which ceases fat burn. Cutting weight does not mean you have to cut your caloric consumption. The fiber in vegetables reduces the impact that the carbohydrates have on your metabolism, curbs hunger, and will give you the nutrients your body needs to continue training hard as carbohydrates are being removed from your diet.

Romulo said that he hated cutting more than 7 lbs. for any of his fights, so he started gradually dropping weight further out than most fighters; this would prevent him from having to completely remove carbohydrates from his diet while training. By keeping your insulin spikes and carbohydrate consumption limited, your body will remove the water from your muscle cells and begin to use the nutrients in your fat cells as a fuel source (this is a process called lipolysis). As I explained above, when your body is not using glycogen as it's major fuel source, anticipate some fatigue, but if you fail to 'make weight' and can't fight, then all is lost. If you are needing to drop additional weight and are having trouble making progress, try the 'Juggernaut Morning Mocha' shake recipe below and do not eat any solid food before 1:00pm.

Juggernaut Morning Mocha

15oz Coffee, prepared to desired taste

2 Scoops Whey Protein

10-12oz Water

3000mg L-Tyrosine

2g Acetyl L-Carnitine

400mg Green Tea Extract

5mg Yohimbine HCL



The Juggernaut Morning Mocha has been a great tool for me to use with fighters as they approach their competitions. This recipe will provide you with the lean protein and calories you need to operate. The caffeine will give you great energy and suppress your appetite throughout the morning hours.

Some fighters who have to cut between 15 and 30 lbs of weight before they fight resist this advice, saying that they can cut most of their weight by ‘sweating it out’ the day before. If they cut the carbs out of their diet 7-8 days before they weigh-in, then they can’t train hard leading up to the fight. My response is always trying to highlight the obvious fact that if they are training very hard their last week and trying to play ‘catch up’ with their program then they are most likely going to get tapped out anyway. That’s why Romulo’s approach of gradually decreasing carbs over a period of weeks is genius, gradually dropping weight while keeping training intensity high is the perfect recipe for success. As I stated above, making a ‘one size fits all’ program for fighters would be impossible, gauge your current weight and where you need to fight at as your fight approaches. If you are 7-8 days out and still need to drop more than 5-8 lbs, using the ‘7 Day Fight Prep Plan’ below will help guide you make weigh-ins.

7 DAY Fight Prep Plan

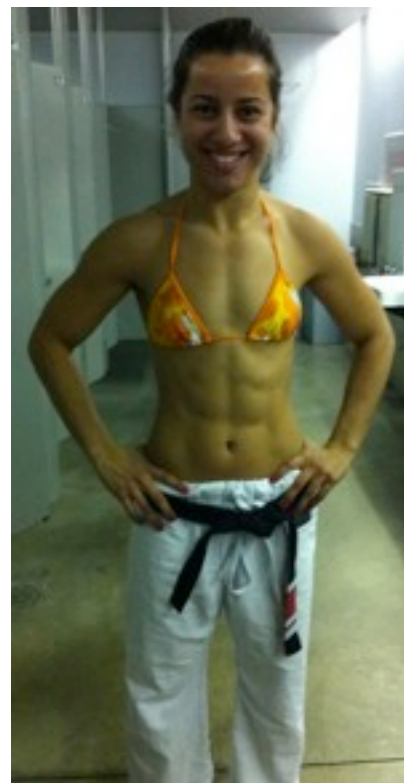
This plan should be started 7 days away from weigh-ins. Using other methods of cutting weight, sauna/steam/sweat suits, etc. are up to your preference. Keep the carbohydrates as low as possible and try to get your calories through protein shake/meat/eggs. These 7 days will be uncomfortable, frustrating, and painful at times, all that matters is making weight, refueling, then dominating

Water Intake

Drink this much water each day in addition to normal fluid consumption

Day	Amount	Type
1	1 Liter	Normal
2 & 3	3 Liters	Normal
4	6 Liters	Distilled
5	8 Liters	Distilled
6	6 Liters	Distilled, Finish all fluids by 5pm

Fabiana Borges before weigh-ins at the 2011 Pan American Championships. Fabiana trained at Juggernaut going into the Pan Ams and we designed a program that allowed her to gradually lose weight 6 weeks leading up to the Championships. She finished 2nd overall in the black belt division.



Day 1-5 Food Menu

Lean Red Meat with suggested water consumption, add protein shakes and morning shakes when needed. Adding sodium to each meal this week is crucial to allowing your body to stay in balance while excreting the water you are consuming.

Day 6

No food until 8pm other than water and small whey/casein protein servings. Your preference of cutting methods can be used on this evening. If you have trouble sweating, getting into a steam shower will help bring the water out of you. When you hit your targeted weight or get within 2 lbs. the night before you weigh-in, you can stop the cutting methods. Prior to weighing in, you can spit out 2 lbs. of weight if you are having trouble 'sweating' the extra weight off, just grab a handful of your favorite hard candy, get a spit cup, and take care of business.

Dinner 8pm

Item	QTY
Filet Mignon	6 oz well done
Asparagus	1 to 2 cups
Senokot (or equiv)	2 tabs, find at any pharmacy department

Before Bed

Item	QTY
Beef Jerky	Variable
Senokot (or equiv)	2 tabs

Day 7

Upon Waking

Item	QTY
Espresso	2 to 3 shots, no additives, and no regular coffee

****Nothing else until weigh-in**

After Weigh-In Nutrition

Because the time between weigh-ins and fight vary from tournament to tournament the food types you select post weigh-in are crucial. If you have to weigh-in and step directly onto the mat, cutting as little water weight as possible for weigh-ins is crucial. If this is the case, 12-30 oz. of Pedialyte should be consumed immediately, with 20 grams of whey hydrolysate and blended raw oats (20-80 grams based on level of stomach comfort). You need something quick and packed with necessary nutrients for the metabolic demands of combat. If you have hours between weigh-ins and fighting, 2-3 bottles of Pedialyte and a small whey hydrolysate protein serving can be consumed first. Wait 30-45 minutes for your stomach to settle, then start introducing larger amounts of carbohydrates and solid foods into your body, stopping 90 minutes before you begin warming up so your Central Nervous System and Autonomic Nervous Systems are not impaired by digestion. As always, avoid low quality foods and breads as carbs sources. Another note for competition day, avoid introducing anything 'new' to the body, this includes food types you haven't recently eaten and stimulants. Your body's environment is chaotic enough without you introducing 'Super Jacked 35000' for the first time. Caffeine and other supplements are great and aid in performance, just make sure that you have had a particular supplement in your body before so you know how your body is going to react. My favorite supplements and their impact on performance are listed below. Incorporating isolated sources of a certain compound/vitamin/nutrient will greatly improve your performance, recovery, and body composition.

Supplements

a. Creatine

- i. No other supplement has been scrutinized and researched more than creatine, and the results are very convincing: creatine works. Creatine is the first fuel source our body's use when moving explosively, and creatine is a major player in restoring ATP levels in the muscle cell. Our body's creatine stores are limited, much like our ATP stores and much be continually replaced during exercise.² Creatine aids in recovery and increases strength gains made from training. Understand that creatine does cause some weight gain and men should anticipate gaining 5-10 lbs of water weight and women will gain 3-5 lbs of water weight. This weight can be lost quickly and should be factored into your planning process as your fight approaches.

b. Casein and Whey Protein

- i. These supplements were discussed in detail in the 'Macro-nutrient Overview' section for their ability to rebuild and repair tissue. Casein protein is much slower to digest (6-8 hrs) than whey protein and should be used as an evening protein source. Many claim that protein supplements are hard on the liver, or that you can't absorb more than 20 grams of protein in one sitting. These opinions are just that and with proper water consumption you will be safe.

c. Fish Oil

- i. Discussed earlier, fish oils are a great source of necessary Omega 3's and 6's that are tough to get from your diet alone. Fish oil helps balance hormones and reduce inflammation, something that is crucial for fighters given the stress that various holds place on the joints and tendons. Servings for this range from 3-5 grams two times per day.

d. Caffeine

- i. The three major sources of caffeine are coffee, energy drinks, and tea. Caffeine increases mental alertness, information retention, and muscle contraction efficiency (increased motor unit recruitment). Serving suggestions depend on your preexisting experience with caffeine. For those of you who never drink coffee, or any caffeine products, I recommend 300-400 mg of green tea extract/day just to gauge how your body will react, and a small (8 oz.) iced coffee at some point in the early or late afternoon. For those with more experience in handling the effects of caffeine, morning and early afternoon coffee would be great for this time period, one 8 oz. serving in the morning and one 8-12 oz. serving in afternoon. Energy drinks have a number of artificial ingredients; I suggest avoiding these when possible. Make sure that you are getting proper nutrient replacement if you use caffeine, with the increased muscle contraction strength, you will require more nutrients to meet these demands, which creates a higher risk of muscle cramp.

- e. Milk Thistle
 - i. This supplement promotes liver health, with the stress and demands you are placing on your body through other supplements, exercise, and recovery, milk thistle is a great herb keep your liver functioning at it's highest level. Because this is a herb, over dosing is no concern, start with one serving in the morning and one at night and see how your body reacts. As with any herb, if you notice a loss stool, reduce daily servings.
- f. L-Tyrosine
 - i. I like to use this amino acid with my female fighters because of it's effects on improving metabolism, thyroid function, and neurotransmitter transmission. I have my athletes start with a 3000 mg serving once per day to begin with to see how their body reacts to it.
- g. Acetyl L-Carnitine
 - i. This supplement helps initiate the release of fat into the metabolic processes. The initial serving sizes for this supplement are 2 grams daily.
- h. Vitamin E
 - i. This supplement will aid in oxygen binding and women's health. I use it primarily with my endurance athletes or those that must engage in heavy aerobic bouts, i.e. combat training. If you are having trouble catching your breath after exercise begins, increase the amount of Vitamin E supplementation you are incorporating into your diet.
- i. Yohimbine
 - i. This herb aids in fat loss by working as a vasodilator, which increases blood flow to adipose tissue. The greater the blood flow to adipose tissue, the greater the rate of lipolysis.

In Summary

Nutrition plays a much larger role in performance than many fighters realize. Aligning your training camp and body weight goals with proper food selection will give you an upper hand with any opponent. Incorporating these dieting strategies, techniques and nutrient sources into your training routine will allow you to train harder, recover better, and reduce the amount of weight you have to cut prior to your fight. Executing these aspects will allow you to compete and perform better than you ever have before.

References

First and foremost, I would like to thank author and creator of DangerouslyHardcore.com, Kiefer John for his effort in educating me. He developed the '7 Day Fight Prep Plan' and deserves credit for so much of my writing and success with my athletes. Kiefer, along with the sources I have cited below, along with so many others deserve the credit for my methods. My aim is not fame, but to help great athletes achieve results with their body composition and performance levels that they never thought possible. Your success is my success.

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