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COMBINING POWERLIFTING AND FUNCTIONAL TRAINING IN COMBAT SPORTS

Summary. *Background: Combat sports require not only raw strength but also dynamic, sport-specific abilities such as agility, explosive power, and endurance. This article explores the integration of powerlifting and functional training to develop a comprehensive training regimen that addresses these multifaceted demands.*

Methods: The discussion delineates the core principles of powerlifting — emphasizing heavy compound movements like the squat, bench press, and deadlift — to build maximal strength, alongside functional training that focuses on movement efficiency, sport-specific drills, and high-intensity conditioning. A sample weekly training program is presented, illustrating how to balance periodization, complementary exercises, and recovery strategies.

Results: The combined training approach is shown to enhance overall athletic performance by improving force generation, agility, balance, and injury resilience. The integration not only boosts explosive power and technical skills but also contributes to better body composition and mental toughness essential for competitive combat sports.

Conclusion: Incorporating both powerlifting and functional training into a structured program offers a well-rounded strategy for combat athletes. By addressing both maximal strength and sport-specific performance, this dual

approach effectively elevates an athlete’s capabilities, ensuring readiness for the physical and mental challenges of combat sports.

Key words: *combat sports, powerlifting, functional training, explosive power, periodization, sport-specific conditioning, recovery, mental toughness.*

Introduction. If you’ve ever watched a high-level MMA fight, a boxing match, or a Brazilian jiu-jitsu tournament, you know how demanding combat sports can be. These athletes aren’t just strong or fast - they’re explosive, agile, and capable of enduring grueling physical and mental challenges. To perform at their best, fighters need a training regimen that builds raw strength while also preparing them for the dynamic, unpredictable nature of their sport. That’s where the combination of powerlifting and functional training comes in.

At first glance, powerlifting and functional training might seem like opposites. Powerlifting is all about lifting heavy weights to build maximal strength, while functional training focuses on movement efficiency, conditioning, and sport-specific skills. But when you combine the two, you get a training approach that’s greater than the sum of its parts. In this article, we’ll break down how these two methods can work together to take your combat sports performance to the next level.

1. What Are Powerlifting and Functional Training?

Before we dive into how to combine these two training styles, let’s define what each one is.

- **Powerlifting:** Powerlifting is a strength sport centered around three main lifts: the squat, bench press, and deadlift. The goal is simple-lift as much weight as possible for a single repetition. Powerlifting builds maximal strength, which is the ability to generate force against an external resistance. For combat athletes, this means more powerful strikes, stronger takedowns, and the ability to overpower opponents in clinches or grappling exchanges.

- **Functional Training:** Functional training, on the other hand, focuses on movements that mimic real-life activities or sport-specific actions. It’s about training your body to move efficiently and effectively in dynamic, unpredictable environments. Think kettlebell swings, medicine ball throws, sled pushes, and agility drills. Functional training improves coordination, balance, endurance, and the ability to perform under fatigue-all of which are critical in combat sports.

While powerlifting builds the foundation of raw strength, functional training helps you apply that strength in ways that are directly relevant to your sport. Together, they create a well-rounded athlete who’s not just strong, but also agile, explosive, and resilient.

2. Why Powerlifting is a Game-Changer for Combat Athletes

Let’s start with powerlifting. Why should combat athletes care about lifting heavy weights? Here’s why:

- **More Power in Your Strikes and Takedowns:** The squat, bench press, and deadlift are compound movements that engage multiple muscle groups at once. By getting stronger in these lifts, you’ll be able to generate more force in your punches, kicks, and takedowns. For example, a stronger bench press can translate to a more powerful punch, while a stronger deadlift can help you dominate in the clinch or during grappling exchanges.
- **Injury Prevention:** Heavy lifting doesn’t just make you stronger-it also makes you more durable. Powerlifting strengthens your bones, tendons, and ligaments, reducing the risk of injuries like fractures, dislocations, and sprains. This is especially important in combat sports, where injuries are common.
- **Mental Toughness:** Let’s be honest-lifting heavy weights isn’t easy. It requires focus, discipline, and the ability to push through discomfort. These mental

attributes are invaluable in combat sports, where you need to stay composed under pressure and keep fighting even when you're tired or hurt.

- **Better Body Composition:** Powerlifting helps you build lean muscle mass while burning fat, which is crucial if you're competing in a weight class. A stronger, leaner physique means you'll have a better strength-to-weight ratio, giving you an edge over your opponents.
- **Core Strength and Stability:** The squat, bench press, and deadlift all require serious core engagement to maintain proper form. A stronger core means better balance, stability, and the ability to transfer force between your upper and lower body-skills that are essential in combat sports.

3. The Role of Functional Training in Combat Sports

While powerlifting builds the foundation of strength, functional training helps you apply that strength in ways that are directly relevant to your sport. Here's how:

Sport-Specific Movements functional training includes exercises that mimic the movements you'll use in combat sports. For example, rotational medicine ball throws can improve your striking power, while sled pushes can enhance your takedown explosiveness. These exercises help you bridge the gap between the gym and the ring or cage.

Improved Conditioning combat sports are as much about endurance as they are about strength. Functional training often includes high-intensity interval training (HIIT) and circuit training, which improve your cardiovascular fitness and recovery. This is essential for maintaining a high pace throughout a match or fight.

Enhanced Mobility and Flexibility many functional exercises involve full ranges of motion, which can improve your flexibility and reduce the risk of injury. For example, kettlebell swings and Turkish get-ups promote hip mobility, while medicine ball rotations enhance spinal mobility.

Better Balance and Coordination functional training often includes unilateral movements (like single-leg deadlifts) and exercises on unstable surfaces (like balance boards). These improve your proprioception, balance, and coordination-qualities that are essential for executing precise techniques in combat sports.

Injury Prevention by strengthening stabilizer muscles and improving movement patterns, functional training reduces the risk of injuries caused by imbalances or poor mechanics.

4. How to Combine Powerlifting and Functional Training

Now that we’ve covered the benefits of both approaches, let’s talk about how to combine them effectively. The key is balance-you don’t want to overemphasize one approach at the expense of the other. Here’s how to do it:

Periodization, structure your training into cycles, focusing on different goals at different times. For example, during the off-season, prioritize powerlifting to build maximal strength. As competition approaches, shift the focus to functional training to refine your sport-specific skills and conditioning.

Complementary Exercises, pair powerlifting movements with functional exercises that target similar muscle groups. For example, after performing heavy squats, follow up with box jumps or sled pushes to translate that strength into explosive power.

Recovery and Mobility Work, both powerlifting and functional training are demanding on the body. Incorporate recovery practices like foam rolling, stretching, and yoga to maintain mobility and prevent injuries.

Sport-Specific Drills integrate combat-specific drills into your functional training sessions. For example, after a set of kettlebell swings, practice striking combinations or takedown entries.

Volume and Intensity Management be mindful of the volume and intensity of your training. Powerlifting sessions should focus on heavy, low-rep sets, while functional training should emphasize moderate weights and higher reps. Avoid overloading the body with too much volume, which can lead to fatigue and overtraining.

5. A Sample Training Program

Here’s an example of a weekly training program that combines powerlifting and functional training for a combat athlete:

Day 1: Powerlifting Focus

- Squat: 5 sets of 5 reps
- Bench Press: 5 sets of 5 reps
- Deadlift: 3 sets of 3 reps
- Accessory Work: Pull-ups (4 sets of 8 reps), dips (4 sets of 10 reps), core exercises (plank, leg raises)

Day 2: Functional Training Focus

- Kettlebell Swings: 4 sets of 12 reps
- Medicine Ball Slams: 4 sets of 15 reps
- Sled Pushes: 4 sets of 20 meters
- Agility Ladder Drills: 10 minutes
- Sport-Specific Drills: Shadowboxing or light sparring

Day 3: Active Recovery

- Yoga or mobility work (30-45 minutes)
- Light cardio (e.g., swimming, cycling, or brisk walking)

Day 4: Powerlifting Focus

- Squat: 4 sets of 4 reps (heavier than Day 1)
- Overhead Press: 5 sets of 5 reps
- Romanian Deadlift: 3 sets of 8 reps

- Accessory Work: Rows (4 sets of 8 reps), face pulls (4 sets of 12 reps), core exercises (Russian twists, hanging knee raises)

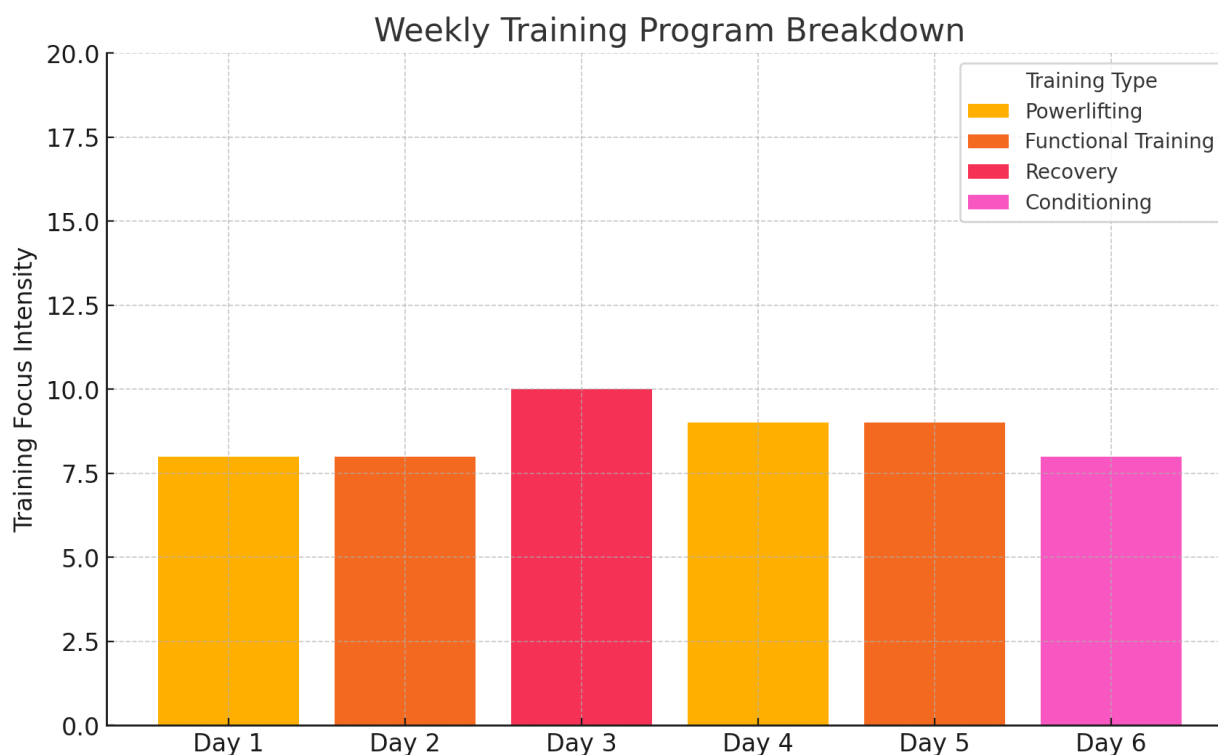
Day 5: Functional Training Focus

- Box Jumps: 4 sets of 8 reps
- Battle Ropes: 4 sets of 30 seconds
- Sandbag Carries: 4 sets of 30 meters
- Sport-Specific Drills: Grappling or takedown practice

Day 6: Conditioning

- HIIT Circuit: 5 rounds of 30 seconds work, 30 seconds rest (e.g., burpees, sprints, push-ups, mountain climbers)
- Core Finisher: Plank variations, leg raises, or ab wheel rollouts

Day 7: Rest or Active Recovery



(Stacked bar chart visualizing the weekly training program breakdown)

6. Common Mistakes to Avoid

- **Neglecting Recovery:** Overtraining can lead to burnout or injury. Make sure you’re getting enough sleep, nutrition, and active recovery.
- **Ignoring Sport-Specific Skills:** While strength and conditioning are important, they should complement-not replace-technical training in your combat sport.
- **Poor Exercise Selection:** Choose functional exercises that directly benefit your sport. Avoid overly complex or irrelevant movements.
- **Lack of Periodization:** Training should be structured to peak at the right time. Randomly mixing powerlifting and functional training without a plan can lead to suboptimal results.
- **Overemphasis on Maximal Strength:** While powerlifting is beneficial, combat athletes also need explosive power, endurance, and agility. Balance your training to address all aspects of performance.

7. Nutrition and Recovery

To support the demands of combined powerlifting and functional training, combat athletes must prioritize nutrition and recovery:

- **Protein:** Essential for muscle repair and growth. Aim for 1.6-2.2 grams of protein per kilogram of body weight daily. Sources include lean meats, fish, eggs, dairy, and plant-based options like beans and lentils.
- **Carbohydrates:** Provide energy for intense training sessions. Focus on complex carbs like rice, oats, sweet potatoes, and whole grains.
- **Fats:** Support hormone production and overall health. Include sources like avocados, nuts, seeds, and olive oil.
- **Hydration:** Combat sports and intense training lead to significant fluid loss. Stay hydrated throughout the day, especially during training sessions.

- Supplements: Consider supplements like creatine (for strength and power), beta-alanine (for endurance), and branched-chain amino acids (BCAAs) to enhance performance and recovery.
- Sleep: Aim for 7-9 hours of quality sleep per night to support recovery and performance.

8. Real-World Examples

Many elite combat athletes have successfully combined powerlifting and functional training to enhance their performance. For example:

Georges St-Pierre (MMA) known for his incredible athleticism, GSP incorporated powerlifting exercises like squats and deadlifts into his training regimen. He also used functional training tools like kettlebells and sleds to improve his conditioning and movement efficiency.

Francis Ngannou (MMA) Ngannou's knockout power is legendary, and he attributes much of his strength to powerlifting. He also uses functional training to maintain his agility and endurance.

Saenchai (Muay Thai) while not a traditional powerlifter, Saenchai incorporates strength training and functional exercises like medicine ball throws and resistance band work to enhance his striking power and flexibility.

9. Mental Training Techniques for Combat Athletes

While physical training is crucial for success in combat sports, mental toughness and psychological resilience are equally important. The ability to stay focused, composed, and confident under pressure can make the difference between victory and defeat. One of the most effective mental training techniques is visualization, which involves creating vivid mental images of successful performance. By imagining yourself executing techniques flawlessly, winning

matches, or overcoming challenges, you can build confidence and improve muscle memory.

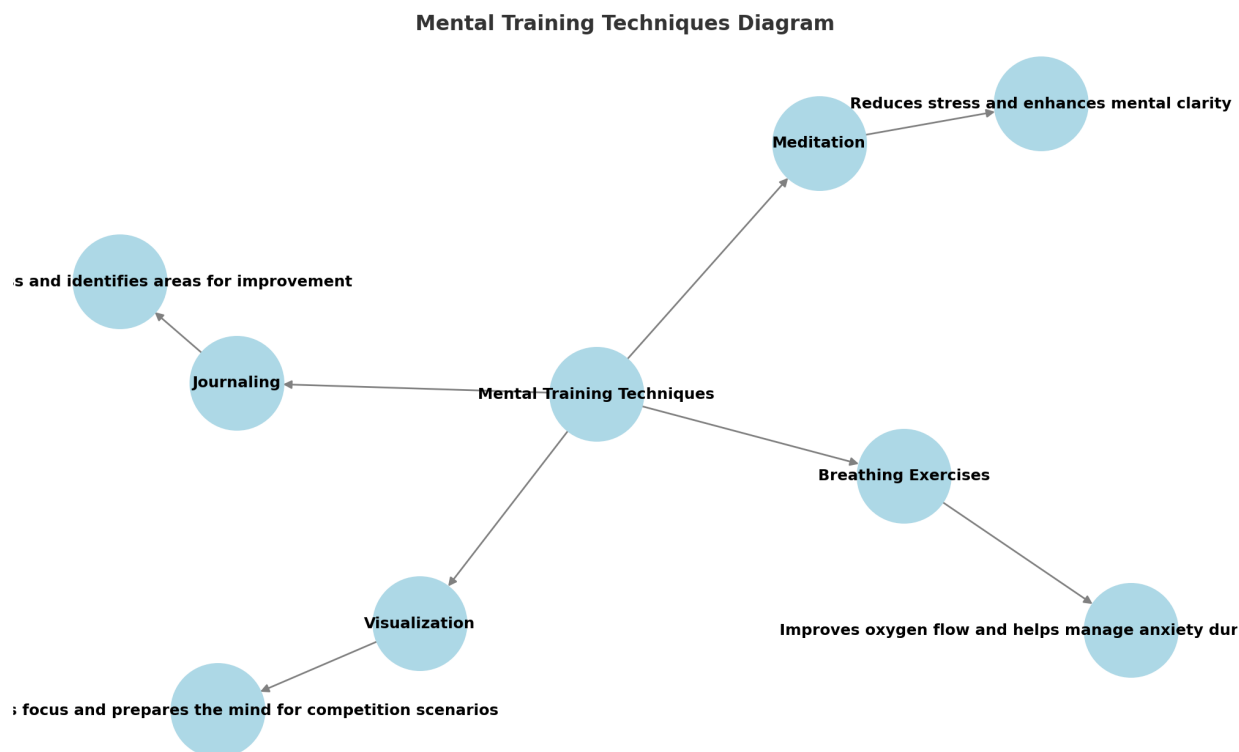
Meditation and mindfulness practices are also valuable tools for combat athletes. These practices help you stay present and focused, reducing distractions and negative thoughts. Start with just 5-10 minutes of mindfulness meditation daily, focusing on your breath or a mantra. Over time, this can improve mental clarity, reduce stress, and enhance emotional regulation.

Breathing exercises are another powerful tool for managing anxiety and controlling heart rate during intense moments. Practice diaphragmatic breathing for 5-10 minutes daily, and use tactical breathing during training or competition to stay calm. Proper breathing techniques can also improve oxygen flow, which is essential for endurance and recovery.

Goal setting is another critical aspect of mental training. Setting clear, achievable goals provides direction and motivation. Use the SMART framework to set goals that are Specific, Measurable, Achievable, Relevant, and Time-bound. Write them down and review them regularly to stay on track.

Positive self-talk is another technique that can boost confidence and reduce self-doubt. Replace negative thoughts with encouraging, constructive ones, and practice this during training and competition. Journaling is also a valuable tool for reflecting on your progress and identifying areas for improvement. Write down daily training sessions, how you felt, what went well, and what could be improved.

Finally, developing a consistent pre-competition routine can help you get into the right mindset and reduce anxiety. This routine might include physical warm-ups, mental preparation like visualization or breathing exercises, and a motivational ritual like listening to music or repeating a mantra. By incorporating these mental training techniques into your routine, you can enhance your focus, resilience, and overall performance in combat sports.



10. Advanced Strategies for Elite Athletes

For advanced combat athletes looking to take their training to the next level, consider the following strategies:

- **Conjugate Training:** Rotate exercises frequently to prevent adaptation and continuously challenge the body. For example, alternate between front squats, back squats, and trap bar deadlifts.
- **Velocity-Based Training:** Use tools like velocity trackers to measure the speed of your lifts. This helps ensure you're training at the appropriate intensity for your goals.
- **Sport-Specific Simulations:** Incorporate drills that closely mimic the demands of your sport. For example, use resistance bands during striking drills or practice takedowns with a weighted vest.

- **Mental Training:** Combine physical training with mental conditioning techniques like visualization, meditation, and breathing exercises to enhance focus and resilience.

Conclusion. Combining powerlifting and functional training is a powerful way to enhance your performance in combat sports. By building raw strength through powerlifting and applying that strength in dynamic, sport-specific ways through functional training, you'll become a more well-rounded, resilient, and explosive athlete. Remember, the key to success is balance. Don't neglect recovery, and make sure your training is structured to address all aspects of performance—strength, power, endurance, agility, and mental toughness. With dedication and smart training, you can unlock your full potential and take your combat sports performance to new heights.

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