



UTILIZING BATTLE ROPE EXERCISES FOR HIIT AND SMIT

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Battle rope exercises are increasingly popular amongst strength and conditioning professionals. A common method is to use battle rope exercises as a metabolic training modality following a comprehensive resistance training workout, which is referred to as a “metabolic finisher.” The main idea behind using battle rope exercises in this manner is to increase the client’s heart rate and help maximize the metabolic cost of the training session.

A 2013 study demonstrated that exercises with battle ropes elicited relatively higher acute metabolic demands than traditional resistance exercises performed with moderately heavy loads (6). Integrating battle rope exercises along with traditional resistance training allows the client to reap the unique benefits that both types of exercise offer, including making the workouts more comprehensive, diverse, and interesting. This article provides three scientifically founded, practical training strategies that can be immediately implemented in order to help maximize the metabolic cost of performing battle rope exercise.

1. INVOLVE AS MANY MUSCLES AS POSSIBLE

The metabolic cost of a given exercise relates directly to the amount of muscle worked (3). For instance, when using battle ropes, the client should allow the entire body to contribute to the motion of rapidly moving the ropes back and forth in a manner that is smooth and coordinated. Battle rope exercises can be beneficial in a workout program because they involve many joints moving simultaneously—not just the arms. Therefore, they require the client to expend more energy because they require more muscles to work.

Battle rope exercises can be performed as either a single- or double-arm exercise. Although both single- and double- arm exercises can be very effective for increasing the metabolic demand of a workout, double-arm exercises may be more effective. A recent study found that 30 s of the double-arm wave using battle ropes yielded a larger metabolic response

than did the single-arm wave consisting of 15 s on each arm (7). It makes sense that the double-arm wave provides a stronger metabolic stimulus than does the single-arm wave, since the single-arm wave involves less overall motion of the leg and hip musculature. It is most likely that the increased involvement of the lower body during the double-arm wave leads to the greater metabolic response.

2. USE SHORTER REST PERIODS

Rather than using long rest periods between bouts of battle rope exercises, it may be most beneficial to use shorter rest periods. The cardiovascular and metabolic effects that battle rope exercises create are increased by using one-minute rest intervals compared to two minutes of rest (7).

3. USE SUPRAMAXIMAL INTERVALS

High-intensity interval training (HIIT) is currently a hot topic in fitness and sports training. According to the American College of Sports Medicine (ACSM) HIIT was identified as the most popular fitness trend worldwide for 2014 (9). Unlike most fitness training trends, HIIT has been shown in the research to provide improved work capacity, glucose metabolism, and fat burning (4,5,8).

While most personal trainers and athletes are familiar with HIIT, many are less familiar with supramaximal interval training (SMIT). To better understand how to properly use SMIT and HIIT, one must first understand the differences between the two. HIIT involves interspersing high-intensity work intervals performed at 100% $\text{VO}_{2\text{max}}$ with either low-intensity, active-recovery, or passive recovery phases (e.g., standing or sitting fairly still). SMIT, on the other hand, involves interspersing maximal-intensity bursts of physical activity intervals performed at more than 100% $\text{VO}_{2\text{max}}$ with the same rest interval.

Performing SMIT may even be a more effective method for improving fitness and performance. A 2013 study published in the *European Journal of Sport Science* looked at the endurance

and sprint benefits of high-intensity and supramaximal interval training (2). The researchers found that “improvements in 3,000-m time trial performance were greater following SMIT than continuous running, and improvements in 40-m sprint and repeated sprint ability (RSA) performance were greater following SMIT than HIIT and continuous running,” (2). Additionally, the higher the intensity of the exercise, the greater the metabolic impact (1).

The personal trainer can implement battling ropes as a HIIT or SMIT method in their client’s strength and conditioning program. There are several variations of exercises that can be performed using battling ropes. Some examples of some double-arm exercises include rope tidal waves (Figures 1 and 2), rope spirals (Figures 3 – 6), rope press waves (Figures 7 and 8), and rope rainbows (Figures 9 – 11).

CONCLUSION

In summary, if a personal trainer has a client who wishes to maximize the metabolic impact of battling ropes exercises, it is recommended that they emphasize the performance of double-arm battling rope exercises that involve the entire body for supramaximal intervals. Additionally, evidence indicates that shorter rest periods are an important factor to consider when looking to maximize the metabolic cost of using battling ropes. In addition to enhancing the metabolic cost of workouts, the battling rope exercise applications provided in this article can serve as an effective means of conditioning for the upper body. This can be particularly useful in keeping a client’s program balanced since so much of conditioning is lower body dominant (e.g., sprints, hills runs, stairs, etc.). Given these factors, battling rope exercises and metabolic training strategies can be a valuable tool in the strength and conditioning professional’s training toolbox.

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ABOUT THE AUTHOR

Nick Tumminello is the owner of Performance University, which provides practical fitness education for fitness professionals worldwide, and is the author of the book “Strength Training for Fat Loss.” Tumminello has worked with a variety of clients from National Football League (NFL) athletes to professional bodybuilders and figure models to exercise enthusiasts. He also served as the conditioning coach for the Ground Control Mixed Martial Arts (MMA) Fight Team and is a fitness expert for Reebok. Tumminello has produced 15 DVDs, is a regular contributor to several major fitness magazines and websites, and writes a very popular blog at PerformanceU.net.

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EXERCISE DESCRIPTIONS

ROPE TIDAL WAVES (FIGURES 1 AND 2)

Anchor a heavy rope at its center away from where you are standing and around a stable object. Stand facing the rope with your feet hip-width apart, your knees slightly bent, and one end of the rope in each hand with your arms extended in front of your body.

Start swinging your arms up and down at the same time to create a parallel wavelike motion with the rope. Extend your legs each time you lift your arms slightly overhead, and allow your knees to bend each time your arms come down.

Do not allow your back to round when you slam the ropes toward the ground. Do not just use your arms; allow your entire body to contribute to rapidly moving the ropes. Move as fast as possible without pausing at any point until the set is completed.

ROPE SPIRALS (FIGURES 3 - 6)

Anchor a heavy rope at its center away from where you are standing and around a stable object. Stand facing the rope with your feet hip-width apart, your knees slightly bent, and one end of the rope in each hand with your arms in front of your body.

Keeping your elbows slightly bent, make outward circular motions with both hands, moving your arms from your knees to above your head to create a spiral pattern. Repeat this motion as fast as possible without pausing at any point until the set is completed. Do not just use your arms; allow your entire body to contribute to the motion of rapidly moving the ropes.



FIGURE 1. ROPE TIDAL WAVE



FIGURE 2. ROPE TIDAL WAVE



FIGURE 3. ROPE SPIRAL



FIGURE 4. ROPE SPIRAL



FIGURE 5. ROPE SPIRAL



FIGURE 6. ROPE SPIRAL

ROPE PRESS WAVES (FIGURES 7 AND 8)

Anchor a heavy rope at its center away from where you are standing and around a stable object. Stand facing the rope with your feet hip-width apart, your knees slightly bent, and one end of the rope in each hand with your arms in front of you at roughly waist height.

Extend your legs and explosively drive your arms out in front of your body at roughly a 45-degree angle. Quickly reverse the motion, pulling your arms back down and returning to the starting position. Continue this total-body action, whipping the ropes up and down as fast as possible without pausing at any point until the

set is completed. Do not just use your arms; allow your entire body to contribute to the motion of rapidly moving the ropes. Since this exercise uses the opposite grip than rope tidal waves, the emphasis of this exercise is reversed. It emphasizes a pushing action—driving the rope away from you—instead of a pulling action—driving the rope down into the ground—to create the waves.



FIGURE 7. ROPE PRESS WAVE



FIGURE 8. ROPE PRESS WAVE

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ROPE RAINBOWS (FIGURES 9 – 11)

Anchor a heavy rope at its center away from where you are standing and around a stable object. Stand facing the rope with your feet hip-width apart while holding one end of the rope in each hand above your head with your elbows bent and your hands underneath the rope.

Explosively pivot your body while flipping the ropes over as if throwing them from the floor to one side of your body and then the other. Move your arms explosively in an arching, rainbow-like motion. This movement should create a rhythmic, wavelike motion in the ropes.

Move the ropes back and forth in a manner that is fast but smooth and coordinated; do not use a jerking, stop-and-start motion. Use your legs by allowing your knees to bend as your arms lower to each side and by extending your legs each time your arms are overhead when you go back to center.



FIGURE 9. ROPE RAINBOW



FIGURE 10. ROPE RAINBOW



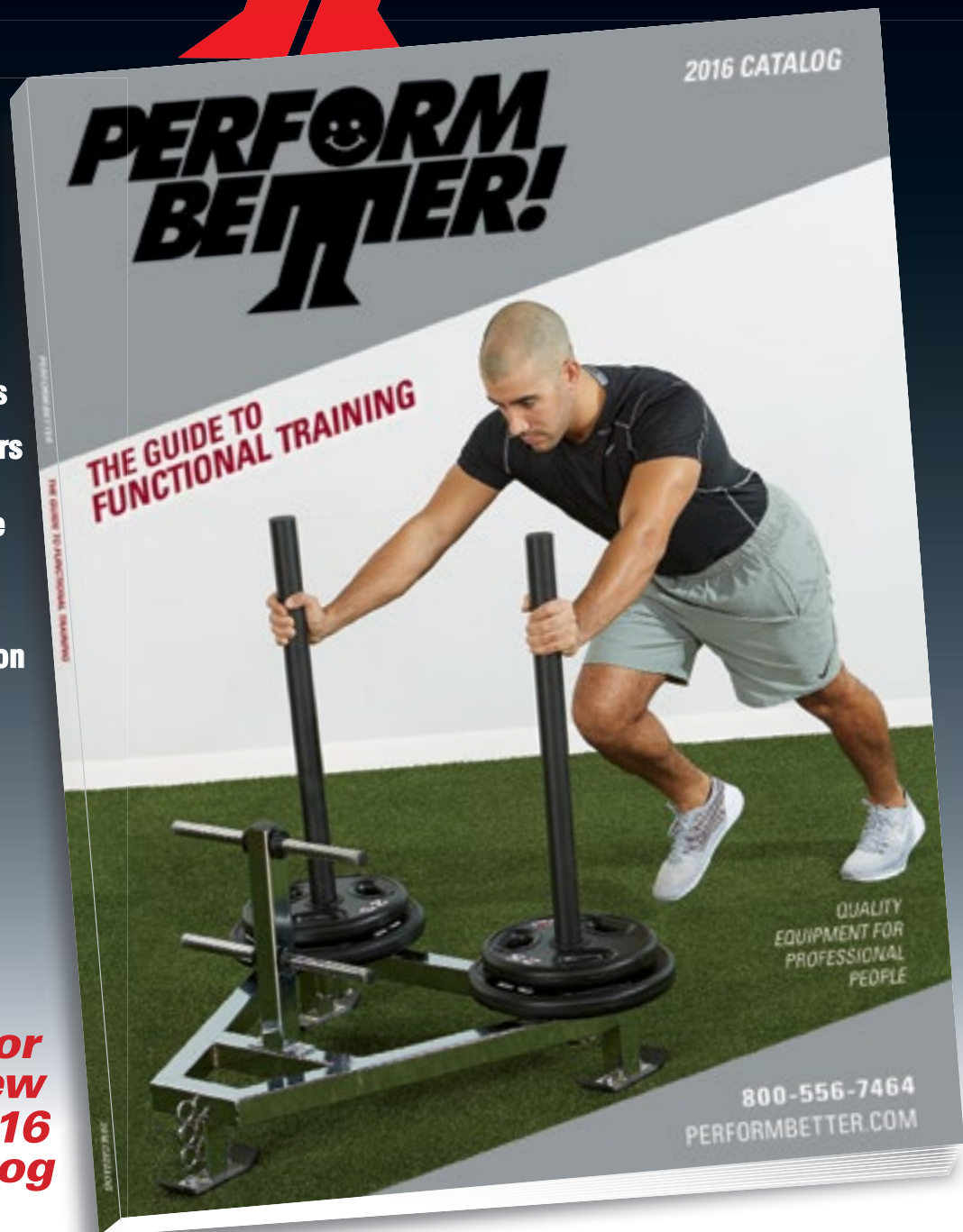
FIGURE 11. ROPE RAINBOW

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