



A Soldier with the 5th Special Forces Group (Airborne), races on a rowing machine during the Tactical Human Optimization, Rapid Rehabilitation and Reconditioning (THOR3) event of the Legion's 53rd Anniversary Commander's Cup Competition held Sept. 20, 2014. (U.S. Army photo by Sgt. Justin Moeller)

Tailored Fitness Programs Prepare Soldiers for Combat

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U.S. Army Special Operations Soldiers have access to some of the most advanced military weapons and equipment in the world. However, the most important asset in Army Special Operations Forces (SOF) is the human element. The Army invests millions of dollars in training each SOF Soldier. It makes sense to maximize the physical readiness and minimize the personnel loss by avoiding non-combat-related injuries with new physical training programs (Ragusa, 2012; also

see Bear et al., 2017; Knipscher, 2010).

Musculoskeletal injury rates are an issue across the Army. Lost work due to injury costs the military millions of dollars a year, increases the workload on healthy Soldiers, and decreases mission-readiness (Jones et al., 1993). This problem is especially impactful within SOF, where personnel who require years of specialized training cannot be easily replaced when injured.

The Army has recognized injury prevention as a



Master Sgt. Amy Prince, 101st Airborne Division (Air Assault), Resolute Support Sustainment Brigade, attempts to dead lift 280 pounds during an Army Combat Fitness Test held at Bagram Airfield, Afghanistan, Aug. 14, 2018. (U.S. Army photo by 1st. Lt. Verniccia Ford)

serious problem and has implemented training approaches to mitigate the problem. The 75th Ranger Regiment incorporates the Ranger Athlete Warrior (RAW) program, while Special Forces (SF) implements the Tactical Human Optimization, Rapid Rehabilitation and Reconditioning (THOR3) program. Both programs aim to provide functional training that safely and effectively prepare SOF personnel physically for the demands of combat.

The purpose of this review is to assess the effectiveness of special operations physical training programs, like RAW and THOR3, in preventing non-combat injuries in SOF personnel. By decreasing the incidence rate of non-combat related injuries in SOF, combat readiness is preserved, Soldiers' careers are lengthened, and the human element is optimized (Parr et al., 2015).

The Problem

Historically, Army physical fitness programs focused on tasks such as calisthenics and long runs. These pro-

grams reflected the American College of Sports Medicine recommendations for civilian fitness (Ragusa, 2012). On the opposite end of the spectrum bodybuilding-type workouts are also popular in the military's hyper-masculine environment that generally rewards and praises feats of strength and "looking" the physical part of a Soldier (e.g. large and muscular) (Klein, 1993). However, these recommendations and trends do not fit the needs of current SOF personnel. SOF personnel must be proficient across the strength continuum to maximize performance. They need a program that is tailored for functional performance, not just based solely on explosive power, or—as it is right now—focused on predominantly aerobic conditioning. Current Army physical fitness doctrine does not address the need for a tailored program that meets the needs of tactical athletes (Gonzalez, 2010).

To compound the problem, the sedentary lifestyle so prominent in American culture today is spilling over into our military. An exponentially increased "screen time"

from previous generations, due to computer, television, and phone screen usage, is causing young men and women to show up to basic training in poor physical shape due to a lack of emphasis on nutrition and basic fitness in schools. These increasingly stationary leisure-time activities (e.g. video game playing and heavy internet and social media usage) have replaced outdoor physical activity as the new go-to forms of socialization (Cantrall, 2010). This lack of basic fitness often leads to injury and the military footing the medical bill for service members who are not able to complete basic physical requirements (Carow & Gaddy, 2015).



I Corps Command Sgt. Maj. Walter Tagalicud, throws a medicine ball rearward during an Army Combat Fitness Test (ACFT) familiarization at Joint Base Lewis McChord, Aug. 14, 2018. The newly proposed ACFT is expected to replace the Army Physical Fitness Test in late 2020. (U.S. Army photo by Staff Sgt. Youtoy Martin)

Recruits are more likely to be injured at basic training simply because they lack the foundational physical fitness to adapt to the physical demands of daily military life. Daily physical exercise in basic training involves conditioning drills and running that focuses on improving cardiovascular and muscular strength and endurance.

Because this has become such a major issue, the Army now screens recruits using the Occupational Physical Assessment Test (OPAT), before assigning them a job. The OPAT tests for base levels of aerobic endurance, and upper and lower body muscular strength and power. The test allows the Army to determine if recruits have the basic physical fitness to successfully complete initial training for some of the more physically demanding jobs in the military. The Army expects the OPAT to decrease

injury rates at basic training by assigning jobs based on physical fitness levels.

The injury problem does not end at basic training. Competitive exercise programs like CrossFit and power lifting also put Soldiers at risk for injury. These types of high-risk physical activities cause musculoskeletal injuries that cause personnel to miss work—especially because these activities involve a high degree of technique to complete properly that Soldiers are either not correctly trained in, or choose not to follow in order to lift heavier weight.

The Need

By the time SOF personnel reach their units, some have served in the regular Army. The individuals who make it are extremely fit and motivated. They are required to maintain this high level of physical fitness throughout their careers, even with constant tactical training, multiple deployments, and aging. This fast-paced environment, and need to maintain peak physical conditioning at all times, has created a culture of high performance at any cost.

Years of high operational tempo fighting the global war on terrorism, has taken its toll mentally and physically on SOF personnel. The need to keep them in the fight has led many “operators” to find ways to continue performing even when injured, leading many to compensate in much the same way overpowered athletes do, by putting functional performance ahead of functional movement ability.

Overpowered athletes perform well at their sport, or job as in the case of SOF personnel, but injuries or lack of muscular flexibility limits their ability to move functionally. Functional movement is the ability to move joints through their full range of motion while performing movement tasks in any plane of motion. Overpowered performers will compensate with strength or skill when they lack the ability to move functionally. This compensation progressively worsens, and greatly increases the risk of injury.

The purpose of programs like THOR3 are to move warrior athletes from the overpowered performance side of the functional paradigm to optimum performance by focusing on foundational, functional movements that lead to greater performance and longevity. These special programs use professional coaches to test SOF personnel's performance and functional movement capability. Then, based on test results, the coaching staff creates individualized plans that focus on improving the functional movement and physical performance. These plans are tailored to each Soldier like professional athletes' training plans. However, SOF personnel are considered tactical athletes and their training is specific to battlefield tasks. Special emphasis is placed on their ability to run, jump, climb, and move from the prone while wearing full

combat gear and holding a rifle.

On the surface, basic movement patterns required by tactical athletes like running, jumping, and walking, may seem similar to those of professional athletes. However, sport athletes are not typically required to perform tasks like picking up an injured Soldier while wearing full combat gear, and moving an unknown distance to safety. This requirement makes it necessary to develop proper functional movement, and train tactical athletes through the entire strength continuum.

That is why programs such as THOR3 and RAW train personnel at both ends of the strength continuum and everywhere in between. SOF personnel must train to develop strength and power and muscular endurance to move great distances while wearing heavy gear.

Moving Forward

The gaps in the literature pertaining to the needs of tactical athlete warriors are decreasing, and training protocols in the Army are changing. The Army body-building culture is beginning to shift from an emphasis on hypertrophy (muscle size increase), to hypertrophy as a result of function-specific training to improve tactical task performance (Boyle, 2001). Running is shifting from running for distance to running for time with an emphasis on more battlefield specific short and middle distance running. Even Army doctrine, such as [Field Manual 7-22](#), now reflects the need for Soldiers to be tactical athletes capable of more than push-ups and running long distance (Cox, 2010). Some commercial programs, such as CrossFit, have become popular because of their primal movements and competition-based workouts. However, the lack of specificity and coherent programming seen in CrossFit can lead to injury (Shugart, 2008). Mark Twight (2004), owner of Gym Jones, incorporates the specificity principle into a CrossFit-type program that builds general fitness then converts that fitness into sport or movement specific fitness. Twight's Gym Jones program serves as one of the benchmark examples for the current development of programs such as THOR3 and RAW.

Army Combat Fitness Test

The Army's overhaul of the current Army Physical Fitness Test (APFT) in favor of the gender-neutral Army Combat Fitness Test (ACFT) acknowledges the need for

change. The current three-event APFT measures upper and lower body muscular endurance and cardiorespiratory endurance only. The new six-event ACFT expands the scope of the Army's fitness test to the five domains of fitness necessary for competent tactical athletes: muscular strength, muscular endurance, cardiorespiratory endurance, explosive power, and speed/agility. While the ACFT field testing is underway, there are still questions regarding equipment, time requirements, funding, and military occupational specialty-specific grading standards. But one thing is certain, physical fitness training across the Army is adapting to better prepare Soldiers for the rigors of the new test.

[Download the ACFT Handbook here.](#)

Conclusion

Success of programs like THOR3 and RAW support the need for an overhaul on the training focus for all military personnel, and supports previous findings for strategies to help prevent injury across the force. In a 2010 study, Bullock, Jones, Gilchrist, and Marshall found that physical training interventions seeking to prevent overtraining and promote functional movement should be implemented by all services to decrease injury rates.

There is still much research needed to determine what will best meet SOF needs. By decreasing the incidence of non-combat related injuries, combat readiness is preserved and Soldiers' operational careers are lengthened, which serves to better optimize the most important element of any special operations force—the human element (Parr et al., 2015).

Unit leaders can use this information as evidence of the effectiveness of the THOR3 and RAW programs to mitigate non-combat related injuries within their ranks, and promote the programs and their benefits. While the programs are currently specific to the SOF community, similar programs could be effective throughout the Army (Owens & Cameron, 2015). With the Army introducing the ACFT, it is imperative that unit physical training plans adapt to better prepare Soldiers across all five domains of combat related physical fitness. The effectiveness of programs like THOR3 and RAW could serve as standard for combat-oriented physical fitness. ■

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