

Functional Fitness for Law Enforcement

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You've probably heard the hot new term floating around the fitness profession, but what exactly is "functional fitness?" It's exactly that – functional; it serves a purpose and makes sense. Functional training will help develop the necessary strength, power, and balance for performance on unstable surfaces¹ in the unpredictable environments in which officers operate. Rarely does a forcible arrest take place on an ideal flat soft surface, and often we must negotiate these altercations in and around obstacles and on less than ideal surfaces; snow, ice, grass, dirt, gravel, off camber, etc. For public safety officers, functional training can be described as training that will assist in performing physical skills on the street, more explosively, more efficiently, with as much force as possible, and with reduced risk of injury. Functional training will give us the best possible odds of sustaining the fight at high intensities; complete with all the unplanned events and surprises that a real fight on the street can include – unlike choreographed DT drills in the mat room, and unlike a predictable bout on a treadmill or a controlled weight lifting session. An added benefit to intense functional training is that the calorie burn can be off the charts if so chosen, and even though appropriate rest periods are incorporated into each routine, heart rate stays elevated during recovery thus improving and maintaining the cardiovascular system as well.

Train for Power and Torque

The key to developing and maintaining explosiveness is to train explosively: Train slow be slow, train fast be fast, train explosively be explosive. Yes, training slow has its place in physical fitness, such as in high weight/low rep resistance training for brute strength or body building. Slow steady cardio has its benefits as well, such as fat burning and cardiopulmonary rehab. "Power" however, which incorporates an element of speed, is a finely tuned balance between resistance (weight) and speed. The fastest sprinters are not the biggest, most muscular athletes, and neither are the very thin and light distance athletes with little muscle mass. Optimal power falls somewhere in between.

Velocity is the rate of change of position. Absent trunk rotation, punching someone straight out in front of you would be an example of linear velocity. Since our limbs are fixed to our bodies at specific points of origin, most of our strikes are done with rotation about those fixed

¹ Boyle, Functional Training for Sports, Human Kinetics, 2004.

points or axes (i.e. the point at which the arm attaches to the torso at the shoulder, or where the thigh attaches to the pelvis at the hip). Power relative to delivering strikes with the greatest amount of rotational power, develops with maximal rotational or angular velocity. Whether throwing a ball, swinging a bat, golf club, fist, baton, or foot, that rotational power starts from the ground and works its way up the body and out to the extremity that is rotating. The body itself relative to the ground, acts as the very first axis about which we rotate to swing the bat or throw the punch. Imagine if you tried to punch somebody and kept your torso rigid with no rotation – you would have very little power by the time the fist met the nose, and you would surely suffer the consequences of an inadequate strike. Training the body to improve rotational torque is an enormous benefit to applicable job tasks on the street, and requires rotational movement in a fitness routine.

Building a Base

A solid fitness base should be built prior to incorporating interval training, plyometrics, and functional training into any routine. If you're just starting out, work your way up to a solid cardiovascular base: work up to running 30 minutes per session, 3-6 times per week or more. For weight loss and management this should eventually increase to an hour each day, 5-6 days/week. Other forms of cardiovascular training are acceptable as long as your heart rate is elevated and sustained at 80% of your max (max heart rate is figured by subtracting your age from 220). Build a solid strength base with resistance training. Start out with a full body workout using your personal 15 rep max, then progress to 10 rep max lifting. You can continue to progress to higher weight and lower reps to build muscle mass and raw strength, but wait until you've built this base before incorporating intervals and plyometrics into your functional training routine.

Start to incorporate intervals into your cardio workouts. For example, warm up for 5 minutes, do 20 minutes of intervals, then cool down for the last five. For your intervals, go hard for 30 seconds then easy for 90, repeat 10 times for a total of 20 minutes, then cool down for 5 minutes. You can increase speed, elevation, or difficulty level for your intervals. If you're working on a stair stepper, don't hang onto the rails because this defeats the purpose of climbing steps. By not holding onto the rails you will have to support your entire body weight which will result in a higher calorie burn and a higher cardiovascular ROI.

If time is an issue, a great way to maximize calorie burn and minimize time requirements is to superset resistance intervals with cardio (lift, jog, lift, jog, etc.) Compared to doing steady state cardio, this method will burn more calories in the allotted time as well as maintain muscle tone. Since the body will physiologically adapt to long term cardio exercise by morphing some of the fast twitch muscles into slow twitch muscles. This type of interval training will prevent this

from happening so officers will maintain the fast twitch muscle mass which is responsible for the explosiveness and power.

Functional Training

Once a cardiovascular and strength base has been built, you're ready to integrate functional training into your workouts. Start out by using just your body weight, then gradually progress to light dumbbells and increase as you feel necessary. The body was meant to rotate. Start to incorporate core rotation into your training for added power development and injury prevention. Much emphasis is placed on perfect form in weight lifting with good reason, however if you have no lower back issues, move the way you would out in the field. When you reach into the trunk to retrieve a box of flares or an evidence kit, you most likely round your back and reach down in front of you while doing so. Hence, train the way you move in life and you may avoid injury while performing such tasks. For example, while doing fast stationary lunges with light dumbbells in your hands, reach down as if you're tying your shoe lace while rounding your back - just like you do in everyday life, and just like you're bending over reaching into the trunk. This is much different than keeping perfect form with appropriate spinal alignment as required when squatting with heavy weight.

One of many potential functional workouts is the 3D Dumbbell Matrix by Gary Gray². There are many variations to this workout, but the routines basically incorporate the performance of several consecutive movements with no rest in between, and performing them as fast as possible while maintaining sound form. All exercises are performed standing up, as the entire core will be engaged for stability and support. Tightening the abdominal and core muscles will also help to perform more reps and push more weight. Here is one example workout:

10 alternating military press (5 each arm)

10 alternating "Y" presses (like the song YMCA)

10 alternating reaches straight out to your sides (like a "T")

10 alternating straight punches

10 alternating cross reaches (right hand crosses in front of the body towards the left hand, with torso rotation, and vice versa)

10 alternating upper cuts

10 alternating cross upper cuts (with torso rotation)

10 alternating bicep curls

² Gary Gray, 3D Dumbbell Matrix, Functional Design Systems, Gray Institute

10 alternating stationary lunges (step out in front)

10 alternating lateral lunges (to the sides while keeping the toes pointing forward)

10 alternating transverse lunges (torso rotation at a 45 degree angle behind you, keeping the front foot stationary and toes pointing forward)

Repeat the last three lunge exercises but add a military press or bicep curl on each return

Plyometric Training

Plyometric training is specific work for the enhancement of explosive power³. Vertical jumps, squat jumps, tuck jumps, single and double leg hops, long jumps, push ups with clapping in between reps, trunk rotation with a medicine ball in hand, and many forms of passing and throwing a medicine ball are all examples of plyometric exercises. Keep the work interval short and the rest interval longer for adequate recovery, but upper body plyos can be alternated with lower body plyos to save time and maximize workout efficiency.

For example, start by doing 10 stationary squat jumps with no extra weight. Drop and do 10 military push ups with an airborne phase in between each rep. Continue with 10 tuck jumps, then hold a dumbbell or medicine ball out in front of you and quickly spell out your name in the air (standing). Move to skipping in place getting as high as you can with your knees, then do 10 vertical wood chops out in front of your body with the ball or weight. If you can't do standard full body push up in the plank position, start from your knees and let your upper body fall towards the ground. Catch yourself with your hands and explosively push your body back up to the kneeling position. Work your way up to full body push ups, then work towards incorporating an airborne phase into the push up.

Another great upper body plyometric workout is medicine ball tennis. With a partner and a tennis court, use a medicine ball of your choice (weight varies). Use only one half of the entire tennis court, with each person responsible for the smaller doubles area on each side. The goal is the same as in tennis, with only one bounce of the medicine ball allowed. You must utilize side trunk rotation rather than throwing the ball over the net, but try to throw it so hard that your competitor misses, or cannot handle the medicine ball after the bounce. Again, keep the intervals short and allow for adequate rest. Other options include granny shots, chest pass, overhead throws, torso twist throws, sit up throws, and slamming the medicine ball on the ground in front of you.

If you don't have room and/or a partner for these types of plyometric drills, you can easily use a concrete wall for similar drills. You can also swing dumbbells in a torso twist, wood chop, or

³ Radcliffe and Farentinos, High Powered Plyometrics, 1999

write your name or the alphabet in the air in front of you while you stand with the medicine ball in your outstretched arms. The key is to move the ball, dumbbell, or weight plate as quickly as you can. Plyos require adequate recovery in between sessions, so schedule at least two days of rest before you engage in your next plyometric session.

Lifting for peak power

Even though cleans, jerks, snatches, and variations of all three seem to be reserved for more advanced athletes, there is a lot to be said for such exercises in the public safety profession. Optimal sports performance is usually based on the ability to develop power⁴. So to, is this true in our occupation when our lives may depend on our explosive functional abilities. Therefore it would be advantageous to explore and incorporate these exercises into the fitness routines of police, corrections, court, fire, EMS, and security occupations. Consult the National Strength and Conditioning Association (www.nscs-lift.org) for proper technique and protocol, prior to performing these exercises. Keep in mind that they can be done with lighter weights and dumbbells as well.

Pull ups with hands facing away from the body are also an overlooked requirement when addressing police fitness, as you may or most likely already have had to pull yourself up and into a window or fence. If body weight pull ups are not possible or too difficult, take advantage of some of the available training aids such as a 1 ¾" elastic band which will assist in the pull up and eventually get you to the point of performing them with no assistance. An officer should be able to do at least one pull up with the added weight of full duty gear for obvious reasons!

Today's kids (future criminals), as well as current criminals are all watching the ultimate fighting shows and practicing on each other. Some develop a "no fear, no consequence" mindset with little restraint and/or remorse. One day you may have to fight these very products of our society, if you haven't already. The tools we carry on our duty belts are not 100% reliable and you may not even have time to access them. Kickboxing cardio classes and actual sparring drills with appropriate protective gear, coupled with resistance, cardiovascular, and functional training, are outstanding options and even necessities to help deal with such adversaries.

If you enjoy any competitive sport, you will find significant improvements in your performance after incorporating functional training and plyometrics into your workouts. If you never have, try some type of individual or team sport you've had an interest in, without worries of whether you're good at it or not. Anything that involves reactionary movements, hand-eye-foot coordination, and/or elements of speed, agility, and quickness will benefit your performance in

⁴ Hedrick and Wada, "Weightlifting Movements: Do the Benefits Outweigh the Risks?" NSCA Strength and Conditioning Journal, Volume 30, Number 6, December 2008, p. 26

public safety, and as an added benefit will most likely result in feelings of accomplishment, well-being, and social fulfillment.

As always, it is recommended that you consult your doctor before starting any physical fitness program.

Kathleen Vonk has been a certified police officer in the state of Michigan since 1988, currently with Ann Arbor PD. She designed and implemented the Police Wellness Instructor Course for the Michigan Commission on Law Enforcement Standards, for which she is a subject matter expert, consultant and instructor-trainer. This program can be tailored to any state or agency www.loukatactical.com She has been the primary fitness instructor for the WCC Police Academy in Ann Arbor Michigan since 2001 when she designed the program. She is a Certified Strength and Conditioning Specialist (CSCS) by the National Strength and Conditioning Association (NSCA), and certified Health Promotion Director by the Cooper Institute. She earned a BS in Exercise Science and a BA in Criminal Justice. She can be reached at kathyvonk@aol.com