IMPROVE THE PUSH UP AND PULL UP

Bodyweight exercises are strength-training exercises that use a person's own weight as resistance. These exercises range in difficulty, but properly applied, they can enhance a range of biomotor abilities, including strength endurance, power, speed, flexibility, cardiorespiratory fitness, coordination, and balance. Considering that nearly an entirety of fitness qualities can be honed with their inclusion, bodyweight training should be viewed as a necessity for the tactical athlete.

Because most bodyweight exercises require no equipment, a warfighter on a mission or a law enforcement officer on a shift with limited time and access to traditional strength-training equipment can now engage in a workout of their choosing, incorporating as little as their own body and the ground. For the exercises that do require equipment, common household items are usually sufficient (such as a bath towel for triceps extensions), or alternatives can typically be improvised (for example, using a horizontal tree branch to perform pull-ups). Bodyweight exercises can be done anywhere, anytime, without any equipment.

Once an athlete possesses a high level of relative strength (strength-to-bodyweight ratio), they do not have to train only bodyweight movements for strength endurance. They can still be trained for strength, with the proper overload strategies. The following five strategies overload bodyweight training for the advanced tactical athlete:

- **Accentuate the negative:** This strategy not only increases difficulty but also helps build a mind-muscle connection (i.e., feeling the targeted muscles do their work). As a tactical athlete lowers themselves on a pull-up, push-up, squat, or any bodyweight exercise, have them do it with control and focus on the muscles they are specifically targeting. This prolongs the muscles' time under tension, and this element of control adds an element of safety. For example, if a tactical athlete can easily do 20 push-ups, have them do a set of 12 with a five-second negative.
- **Move away from the midline:** The proximity of a tactical athlete's extremities to their core greatly influences the difficulty of the movement. In other words, as mechanical advantage decreases, the intensity of a bodyweight movement increases. In traditional lifting, when an athlete is executing a deadlift and the barbell drifts away from their midline, the weight becomes much more difficult to lift. The same concept applies to bodyweight training. It is more difficult for a tactical athlete to lunge with their hands above their head than stationary by their side. To increase the difficulty of push-ups, a tactical athlete can place their hands on the floor in front of their head. These simple changes in limb position increase difficulty with bodyweight training, providing overload.
- **Increase range of motion:** A deficit deadlift provides greater overload than a traditional deadlift, as does a push-up in-between boxes with a stretch at the bottom or a lunge off a step. Both movements are more difficult than a traditional push-up or lunge. Using a larger motion increases overload with bodyweight movements.
- **Paused reps:** When strength training, an athlete's muscles work like elastic. As a tactical athlete lowers themselves on a bodyweight movement, they store elastic-like energy, like a rubber band being pulled back.

In turn, when they reach the bottom portion of a movement, this rubber band-like effect helps them reverse motion and "spring" back to the starting position. This is great for building explosive power. However, to build starting strength and provide additional muscular overload, the tactical athlete should pause at the bottom of a movement. After a one-second pause, nearly half of all elastic-like energy is gone; after five seconds, it's nearly all gone. Just a one-second pause will overload the movement and force the tactical athlete's body to recruit new muscle fibers. This small pause will provide a large overload.

- **Unilateral:** Push-ups and pull-ups might be easy for a tactical athlete, but they will be much harder with one arm. Besides having to lift a lot more weight, this requires much greater levels of balance and core stability. Furthermore, single-limbed exercises manipulate the bilateral deficit, which is articulately explained by expert strength coach Christian Thibaudeau as follows: "The sum of your maximum strength using both arms is less than the sum of the strength of your right arm and your left arm working individually." In other words, if a tactical athlete can lift 150 pounds with two hands, but using only their right hand, they can lift 85 pounds and can do the same on their left, 85 + 85 = 170. One hundred seventy pounds is more than 150. Knowing this allows greater overload and the knowledge to build increased levels of muscle and strength.

A 31-DAY PLAN TO IMPROVE THE PULL UP

The pull-up is a closed-chained vertical pulling exercise performed with a pronated, or overhand, grip that involves an athlete's body weight. When performing a pull-up, it is best practice to clench the bar as tightly as possible to irradiate proximate musculature and initiate the pull portion of the movement by depressing the scapulae, or "putting the shoulder blades in the back pocket," to mitigate stress imposed on the anterior deltoid, rotator cuff muscles, labrum, and biceps tendon. In an effort to further relieve stresses upon the shoulder girdle, pull-ups should be performed with hand placement at shoulder width. Going wider will cause the shoulders to abduct and externally rotate more during the movement.

Next, the elbows should be driven down to extend the arms toward the body's midline (an action of the latissimus dorsi), and the chest should be "kept proud" and pushed up through the remainder of the concentric portion. Doing so will activate the lower trapezius and serratus muscles, which will further stabilize the scapulae. The movement is to be cemented with elbow flexion.

Most gym goers initiate the pull-up with an elbow bend, thinking it's a biceps- and forearm-dominant exercise. It is worth noting that chin-ups call on the biceps a bit more than pull-ups. And neutral-grip pull-ups, in which the palms face one another on parallel bars, recruit more of the forearm flexors. The selectorized pull-up/dip-assist machine does not simulate the strength curve or require shoulder or core stability demands of their unassisted counterpart, so the exercise offers a fairly low rate of transference.

Assuming a tactical athlete cannot perform any pull-ups, or can do only a handful or fewer, a coach can refer to the program outlined below. This is also appropriate for those wishing to do weighted pull-ups; however, weighted pull-ups should be performed only if 10 repetitions of body weight pull-ups are able to be performed by the tactical

athlete. Ideally, vests should be used when transitioning to pull-ups, as chains with dangling weights on typical pull-up bars can pull a tactical athlete out of position. If a tactical athlete is unable to do a pull-up because of strength and not an injury, they can do the thirty-daymonth long pull-up progression below that has been used with outstanding results.

Day 1: Straight-legged flexed-arm hang* for time, three attempts with 1:1 work-to-rest ratio (e.g., if an athlete's first hang is 30 seconds long; they should take a 30-second rest. If their subsequent two sets are 22 and 14 seconds, they should take 22- and 14-second rests following those sets.

*If a tactical athlete is slipping, it could be attributable to insufficient static or sustaining grip strength. If the knurling is smooth, the coach can have the athlete chalk up their hands, apply athletic tape to the bar, or wrap it snugly with aging elasticized bands.

Day 2: Straight-legged flexed-arm hang for time, four attempts* (note flexion amount, i.e., chin above bar, 90 degrees)

*The coach should take the average duration of the athlete's hangs from the previous workout and perform all four sets with the average duration. Using the example above, 30 + 22 + 14 = 1:06. 1:06 / 3 = 22 seconds.

Day 3: Straight-legged flexed-arm hang for time, five attempts with 1:1 work-to-rest ratio*

*Use the same average time duration as above.

Day 4: Straight-legged flexed-arm hang for time, six attempts with 1:1 work-to-rest ratio*

*Use the same average time duration as above.

Day 5: Straight-legged flexed-arm hang for time, five attempts finished with five-second eccentric (lowering to starting position over five seconds with "one thousand count" for every second) with 1:1 work-to-rest ratio*

*Use the same average time duration as above.

Day 6: Straight-legged flexed-arm hang for time, five attempts finished with a six-second eccentric (lowering to starting position over six seconds with "one thousand count" for every second) with 1:1 work-to-rest ratio*

*Use the same average time duration as above.

Day 7: Straight-legged flexed-arm hang for time, five attempts finished with a seven-second eccentric (lowering to starting position over seven seconds with "one thousand count" for every second) with 1:1 work-to-rest ratio*

*Use the same average time duration as above.

Day 8: Off

Day 9: Partial concentric pull-up to seven-second flexed-arm hang with seven-second eccentric, five sets with 1:1 work-to-rest ratio.*

*The athlete should position a bench or plyometric box beneath the pull-up bar, jump and catch themself in starting position consisting of right angles at their shoulder and elbow joints. They should then complete the pull-up, finishing in a flexed-arm hang position for prescribed time before transitioning to lowering phase

Day 10: Partial concentric pull-up to five-second flexed-arm hang with five-second eccentric, six sets with 1:1 work-to-rest ratio

Day 11: Partial concentric pull-up to five-second flexed-arm hang with five-second eccentric, seven sets with 1:1 work-to-rest ratio

Day 12: Partial concentric pull-up to five-second flexed-arm hang with five-second eccentric, eight sets with 1:1 work-to-rest ratio

Day 13: Partial concentric pull-up to five-second flexed-arm hang with five-second eccentric, nine sets with 1:1 work-to-rest ratio

Day 14: Partial concentric pull-up to five-second flexed-arm hang with five-second eccentric, 10 sets with 1:1 work-to-rest ratio

Day 15: Off

Day 16: Three repetitions of partial concentric pull-up to three-second flexed-arm hang with three-second eccentric, three sets with 1:1 work-to-rest ratio

Day 17: Two repetitions of partial concentric pull-up to three-second flexed-arm hang with three-second eccentric, five sets with 1:1 work-to-rest ratio

Day 18: Three repetitions of partial concentric pull-up to three-second flexed-arm hang with three-second eccentric, four sets with 1:1 work-to-rest ratio

Day 19: Two repetitions of partial concentric pull-up to three-second flexed-arm hang with three-second eccentric, seven sets with 1:1 work-to-rest ratio

Day 20: Three repetitions of partial concentric pull-up to three-second flexed-arm hang with three-second eccentric, five sets with 1:1 work-to-rest ratio

Day 21: Two repetitions of partial concentric pull-up to three-second flexed-arm hang with three-second eccentric,

nine sets with 1:1 work-to-rest ratio

Day 22: Three repetitions of partial concentric pull-up to three-second flexed-arm hang with three-second eccentric, seven sets with 1:1 work-to-rest ratio

Day 23: Off

Day 24: One repetition of dead-hang pull-up* to three-second flexed-arm hang with two-second eccentric, 10 sets with 1:1 work-to-rest ratio

*Tightly grasping the pull-up bar, the athlete should permit their body to hang but keep their core tight and hips extended. They should initiate the movement by squeezing their shoulder blades back and down.

Day 25: Two repetitions of dead-hang pull-up to three-second flexed-arm hang with two-second eccentric, four sets with 1:1 work-to-rest ratio

Day 26: Two repetitions of dead-hang pull-up to three-second flexed-arm hang with two-second eccentric, five sets with 1:1 work-to-rest ratio

Day 27: Two repetitions of dead-hang pull-up to three-second flexed-arm hang with two-second eccentric, six sets with 1:1 work-to-rest ratio

Day 28: Two repetitions of dead-hang pull-up to three-second flexed-arm hang with two-second eccentric, seven sets with 1:1 work-to-rest ratio

Day 29: One repetitions of dead-hang pull-up to three-second flexed-arm hang with two-second eccentric, 15 sets with 1:1 work-to-rest ratio

Day 30: Off

Day 31: In just one set, perform as many repetitions as possible.

PUSH-UP PROGRESSION

Push-ups are not the way toward bench pressing 400 pounds, but they are an effective bodyweight exercise for developing and maintaining muscular endurance in the chest and shoulders. Push-ups can be performed in a variety of manners, increasing or decreasing the load by changing the vector angle. Those who have difficulty performing multiple push-ups with proper form will benefit from the progression provided.

STEP 1

Wall push-ups with the feet close to the wall.

Progression 1: 2 x 10 repetitions

Progression 2: 2 x 15 repetitions

Progression 3: 2 x 10 repetitions (5-second eccentric)

STEP 2

Wall push-ups with the feet farther away from the wall.

Progression 1: 2 x 10 repetitions

Progression 2: 2 x 15 repetitions

Progression 3: 2 x 10 repetitions (5-second eccentric)

STEP 3

Knee push-ups with the feet on the ground.

Progression 1: 2 x 10 repetitions

Progression 2: 2 x 15 repetitions

Progression 3: 2 x 10 repetitions (5-second eccentric)

STEP 4

Knee push-ups with the feet raised up and the knees on the ground.

Progression 1: 2 x 10 repetitions

Progression 2: 2 x 15 repetitions

Progression 3: 2 x 10 repetitions (5-second eccentric)

NOW THE TACTICAL ATHLETE IS READY TO DO A REAL PUSH-UP.