



ARMY COMBAT FITNESS
TEMPLATE

“Your health account, your bank account, they’re the same thing. The more you put in, the more you can take out. Exercise is king and nutrition is queen. Together you have a kingdom.”- Jack LaLanne

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Army Combat Fitness Template Overview

Welcome to the Barbell Medicine Army Combat Fitness Template. At [Barbell Medicine](#), our mission is to promote improvements in health, performance, and quality of life by bringing the best of modern medicine together with strength, conditioning, and nutrition.

This eBook serves as an explanatory guide for the accompanying training templates. We thank you for your business and hope that you find the recommendations, explanations, and other materials useful. **Before you head off to the gym, please read the Overview section below.** Thanks again and happy training!

How To Download

1. Using the link included in your email receipt (make sure to check the spam folder if you don't see it), download the zip file onto your computer. Some phones and tablets will allow you to unzip a ".zip" file, however we cannot guarantee that this will work 100% of the time. We recommend using a desktop or laptop computer to unzip the file.
2. Within the zip file you should have an instruction manual and a training template.
3. We recommend duplicating the template you're planning on using and saving it under a new name. We also recommend saving the templates you just downloaded in a safe and secure location so you have fresh one ready to go in future.
4. All of our templates are designed to be used in Microsoft Excel. They will also work using the "Google Sheets" application on Android and Apple products. Below are some links to these items:
 - a. [Online version of Microsoft Excel](#)
 - b. [Desktop version of Microsoft Excel](#)
 - c. [Google Sheets](#)
5. Open the template and head to the first tab, which is located all the way to the left at the bottom of the screen. In the red cell, F5, enter Sunday's date of the week you're going to start the template.

Welcome

Please do the following:

- 1) Watch the introductory video <https://youtu.be/jXaujU2qvws> (copy and paste into browser).
- 2) Look over the tab labeled "Help" and the included text document labeled "Instructions."
- 3) Using the drop-down cells on the "Exercise Selection" tab select your movements for this template. It comes pre-filled with our recommended exercises.
- 4) Enter Sunday's date for the week you will be starting this template in the highlighted cell to the **RIGHT**
- 5) Email info@barbellmedicine.com if you have any problems!

Date

4/14/19

Introduction to the Army Combat Fitness Test

The traditional Army Physical Fitness Test (APFT) was used for over 40 years to test the muscular strength, endurance, and cardiorespiratory fitness of Army soldiers. It involved three tests:

- 1) Push-ups, as many as possible in 2 minutes
- 2) Sit-ups, as many as possible in 2 minutes
- 3) Two-mile run

Each event was scored from a minimum of 60 points to a maximum of 100 points. The potential total score therefore ranged from 180 to 300 points.

In 2021, the new Army Combat Fitness Test (ACFT) will replace the traditional APFT. The new test was designed in order to better reflect combat demands and to develop the qualities that reduce the risk of musculoskeletal injury.

The full ACFT involves six events arranged as follows:

1. Dynamic warm-up (10 minutes)
2. **3 Repetition Maximum Deadlift (MDL)**
[minimum of 2 minutes rest]
3. **Standing Power Throw (SPT)**
[minimum of 3 minutes rest]
4. **Hand Release Push-Up – Arm Extension (HRP)**
[minimum of 3 minutes rest]

5. **Sprint-Drag-Carry (SDC)**
[minimum of 4 minutes rest]
6. **Leg Tuck (LTK)**
[5 minutes rest]
7. **Two-Mile Run (2MR)**

The total expected test time is approximately 51-54 minutes, including rest time.

Each event is scored from a minimum of 60 points to a maximum of 100 points. The potential total score therefore ranges from 360 to 600 points. "Passing" minimums for each event vary depending on specific occupation, depending on whether an individual works in a "moderate" (60), "significant" (65), or "heavy" (70) job. See Appendix 1 for full scoring guide.

Specific Events

Event 1: 3 Repetition Maximum Deadlift (MDL)

According to the U.S. Army ACFT Field Testing Manual:

"3 Repetition Maximum Deadlift (MDL) is a muscular strength test that represents movements required to safely and effectively lift heavy loads from the ground, jump, bound and tolerate landing. The MDL is a strong predictor of a Soldier's ability to lift and carry a casualty on a litter, and to lift and move personnel and equipment. This test event requires well-conditioned back and leg muscles that assist Soldiers in load carriage and in avoiding injuries to the upper and lower back caused by moving long distances under load and lifting heavy objects."

The test is performed using a 60-pound hex bar and weight plates. The soldier will stand inside the hex bar with feet approximately shoulder-width apart, grasping the lower handles with arms extended. After bracing, the soldier will lift the barbell to a full standing position, before lowering it back to the ground with a slow, controlled tempo. This will be repeated for a total of 3 repetitions *without* resting in the "down" position between repetitions.

According to military standards, judges will stop the attempt "if they determine a soldier will injure themselves by continuing", although this is a subjective assessment without clear criteria. Examples of movements that may cause a

judge to stop the attempt include:

- Hips moving above the shoulders
- “Excessive” rounding of the shoulders (which is not well-defined; however, the graders will expect an attempt to maintain a “flat back”)
- Knees collapsing inwards
- Dropping the weights (i.e., failing to lower with a slow, controlled tempo)

60 and 100 point scores: 140 pounds and 340 pounds. See Appendix 1 for full scoring guide

Event 2: Standing Power Throw (SPT)

According to the U.S. Army ACFT Field Testing Manual:

“Standing Power Throw (SPT) measures upper and lower body explosive power, flexibility, and dynamic balance. Explosive power contributes to tasks requiring quick explosive movements to maneuver equipment and personnel. These tasks include executing a buddy drag to pull an injured person to a safe location, throwing equipment onto or over an obstacle, throwing a hand grenade, assisting a buddy to climb up a wall, lifting and loading equipment, and employing progressive levels of force in man-to-man contact.”

The test is performed using a 10-pound medicine ball. The soldier will stand facing away from the start line, holding the medicine ball at hip height, before throwing the ball overhead and backwards. It is permitted to perform preparatory counter-movements (e.g., flexing at the trunk, hips, and knees) and lowering the ball between the legs before throwing.

Throw 1 is a “practice” throw, and is not measured or recorded. This is followed by two throws that are measured and recorded for maximum distance.

60 and 100 point scores: 4.5 and 12.5 meters. See Appendix 1 for full scoring guide.

Event 3: Hand-Release Push-up (HRP)

According to the U.S. Army ACFT Field Testing Manual:

“HRP is a two-minute timed event that measures upper body muscular endurance, and represents repetitive and sustained pushing used in combat tasks. The HRP tests a Soldier’s ability to push an opponent away during man-to-man contact, push a disabled vehicle, and push up from

the ground during evasion and maneuver. It also engages upper back muscles used when reaching out from the prone position when shooting, taking cover, or low crawling."

The event is performed in testing lane. The soldier will assume the starting position, lying prone facing the start line with hands flat on the ground and index fingers inside the outer edges of the shoulders. The chest, hips, thighs, and toes will touch the ground. Feet will be together or up to a boot's width apart. Upon receiving the "GO" command, the soldier will press themselves up to the top position with fully extended elbows, while maintaining a rigid, straight body alignment throughout the event. They will then lower themselves back to the starting position, at which point the "hand release" is performed. Depending on the specific testing protocol, this will involve extending the arms out laterally at 90 degrees to the body ("Arm extension" protocol), or simply lifting the hands from the ground ("hand lift" protocol).

The front leaning rest position is the only rest position allowed during the test. Any other resting position, including lying on the ground for greater than 5 seconds, will result in termination of the event. Lifting the feet from the ground or resting a knee on the ground will also result in termination of the event.

60 and 100 point scores: 10 and 60 repetitions. See Appendix 1 for full scoring guide.

Event 4: Sprint-Drag-Carry (SDC)

According to the U.S. Army ACFT Field Testing Manual:

"Sprint-Drag-Carry (SDC) is a measure of muscular power, endurance, and strength, and anaerobic capacity, which are needed to accomplish high intensity combat tasks that last from a few seconds to several minutes. This capacity contributes to a Soldier's ability to react quickly to direct and indirect fire, build a hasty fighting position, and extract a casualty from a vehicle and carry them to safety."

The event is performed using two 40-pound kettlebells and a 90-pound sled. The soldier begins lying prone behind the starting line. Upon receiving the "GO" command, the event begins:

50 m Sprint: The soldier stands up and sprints to the 25 m line. After touching the 25 m line with hand and foot, they sprint back to cross the starting line.

50 m Drag: The soldier grasps both handles of the 90 lb sled and walks backwards, dragging until the sled fully crosses the 25 m line before turning back and dragging the sled fully across the starting line.

50 m Lateral: The soldier performs a 25 m lateral shuffle to the 25 m line. After touching the 25 m line with hand and foot, they perform a lateral shuffle back until crossing the starting line. The soldier will face the same direction the entire time. The feet may touch, but may not cross.

50 mg Carry: The soldier grasps a 40 lb kettlebell in each hand and carries it until touching or crossing the 25 m line, before turning back and carrying them across the starting line. If the kettlebells are dropped, the carry may be resumed from the point where they were dropped.

50 m Sprint: The soldier stands up and sprints to the 25 m line. After touching the 25 m line with hand and foot, they sprint back to cross the starting line, at which time the total time is stopped and recorded.

60 and 100 point scores: 3:00 and 1:33 minutes. See Appendix 1 for full scoring guide.

Event 5: Leg Tuck (LTK)

According to the U.S. Army ACFT Field Testing Manual:

“Leg Tuck (LTK) has great occupational relevance and tests a Soldier’s muscular strength and endurance. LTK assesses grip strength, shoulder adduction and flexion, elbow flexion, and trunk and hip flexion. These movements assist Soldiers in all climbing tasks and in surmounting obstacles like a vertical wall, or climbing onto a shelf or up a rope. This test event will require well-conditioned abdominal, hip, and core flexor muscles, and anterior and posterior upper body muscles that will assist Soldiers in load carriage and in avoiding injuries to the upper and lower back.”

The event is performed using a pull-up bar. The soldier will assume a straight-arm hang from the bar using an alternating grip with the body hanging in full extension, perpendicular to the bar. The legs and feet may not cross. Upon receiving the “GO” command, the soldier will flex at the arms, trunk, hips, and knees until both knees or thighs touch the elbows. The soldier will then lower back into the straight-arm hang position with the body (including the elbows) in full extension, before initiating the next repetition. They must also return to this position prior to dropping off the bar to terminate the event. Deliberate swinging or “kipping” of the body, as well as pushing off the ground, are not permitted.

60 and 100 point scores: One and 20 repetitions. See Appendix 1 for full scoring guide.

Event 6: 2 Mile Run (2MR)

According to the U.S. Army ACFT Field Testing Manual:

“2 Mile Run (2MR) is a test of aerobic endurance. It applies to common Soldier tasks such as dismounted movement, ruck marching, and infiltration. It can be completed on an indoor or outdoor track, or an improved surface such as a road or sidewalk.”

The event may be performed on an indoor or outdoor track, or a surface such as a road or sidewalk. The soldier will run 2 miles for time.

60 and 100 point scores: 21:00 and 13:30 minutes. See Appendix 1 for full scoring guide.

Template Overview

This template is designed for individuals who are new to training for any of the ACFT events and who are not already well-trained.

Many individuals who are accustomed to the traditional 3-event APFT do not have experience with lifting weights, sprinting, or other skills such as pull-ups. A substantial fraction of individuals are therefore essentially untrained with respect to the new 6-event ACFT, and experience significant difficulty with several events – in particular the deadlift and leg tuck.

This template will expose the trainee to the necessary skills in a progressive fashion, such that a passing score will be achieved at the end of 12 weeks of training. The program is designed in order to balance the dose of training stimulus against fatigue and injury risk for individuals who are untrained in many of the events. Time management is also a primary consideration in program design, such that the time required to complete each of the 3 sessions per week is relatively low.

If an individual who is already well-trained chooses to undertake this training program in order to prepare specifically for the Army Combat Fitness Test, there are several modifications they can make:

- Trainees may choose to forego many of the exercise progressions used to gradually develop skills such as the leg tuck, and instead train these skills directly from the start.
- A well-trained runner may choose to maintain their habitual running volume from week 1, rather than starting low and gradually progressing

upwards.

- An individual who is used to lifting weights on a regular basis may maintain that routine alongside the non-lifting components of the program. Here are a few examples using elements of our other templates' framework:
 - Powerbuilding I
 - Day 1
 - Squat
 - Press
 - Deadlift Variation (may consider making this the trap bar deadlift if unfamiliar with that movement)
 - Run/walk Intervals
 - Hand-release Push-Up Work
 - Day 2
 - Bench Press
 - Squat Variation
 - Row Variation
 - Hanging Leg Raise/Leg Tuck Work
 - Running/Jogging
 - Day 3
 - Deadlift
 - Bench Variation
 - Press Variation
 - Power Throw Work
 - Conditioning Circuit, e.g. Leg Raises and Kettlebell Swings
 - GPP Recommendations
 - Do additional jogging/running work from ACFT template or similar
 - Powerlifting II
 - Day 1
 - Squat w/ Belt
 - Competition Bench
 - Strict Press
 - Run/walk Intervals
 - Hand-release Push-Up Work
 - Day 2
 - Deadlift w/ Belt
 - Floor Press
 - 3-0-3 Tempo Squat
 - Hanging Leg Raise/Leg Tuck Work
 - Running/Jogging
 - Day 3
 - Squat Variation

- Touch and Go Bench
- Press Accessory
- Conditioning Circuit, e.g. Leg Raises and Kettlebell Swings
- Day 4
 - Deadlift Variation (may consider making this the trap bar deadlift if unfamiliar with that movement)
 - Bench Variation
 - Row Variation
 - Power Throw Work
 - Conditioning Circuit, e.g. Sled Drag and Farmer's Walk
- GPP Recommendations
 - Do additional jogging/running work from ACFT template or similar

An experienced trainee likely has the knowledge needed to make many of these decisions for themselves and we would recommend focusing on developing the specific skills and conditioning required for the ACFT.

General Principles

The new ACFT is designed to test a variety of physical attributes including muscular strength, power, aerobic endurance, anaerobic capacity, and coordination/agility. These attributes are all assessed through specific tasks. In addition to developing the underlying physical attribute (e.g., muscular strength), the individual will also need to develop the skills necessary to express that attribute through the required test format (e.g., a hex bar deadlift).

Our general approach will involve developing:

- 1) Muscular strength: Upper and lower body strength is developed through a variety of tasks including loaded movements such as the squat, bench press, deadlift, and overhead press, as well as activities using bodyweight and other loaded implements. Building muscular strength has significant benefits on power, anaerobic capacity, and coordination/agility. It also increases the capacity and tolerance for loading, which aids in mitigating the risk of musculoskeletal injury.
- 2) Aerobic endurance: aerobic endurance is primarily developed through running, as this is the test modality. Programming will involve both low and high intensities applied in sustained and interval efforts.
- 3) Task-specific skill practice: many of the included events require very specific skills, such as knowing how to perform a deadlift with a hex bar,

how to throw a medicine ball, or how to perform a leg tuck, among others. Any effective training program towards these events must include regular exposure to these tasks. For those who are unable to complete the task at the beginning of training, an intelligent progression method must be employed in order to develop the necessary skill and physical capacity to complete the goal task.

Intensity Selection

This training template includes a variety of movements that can be loaded or performed at varying intensities. Load selection or intensity for these activities has been programmed based on either:

- 1) Specific event demands: this applies for events using a specific pre-determined load for all individuals, such as the 90 lb sled and 40 lb kettlebells used in Sprint/Drag/Carry, or the 10 lb Medicine Ball used in Standing Power Throw.

The majority of training in this category is designed to progress the trainee until they are able to train with the uniform event-specific load.

- 2) Individual abilities: this applies for situations where there is no specific pre-determined intensity for all individuals, such that individual abilities and strengths will impact the load used. This includes activities such as the hex-bar deadlift, bench press, overhead press, squat movements, as well as running pace.

In this category, we require a method to program the activity such that the load or intensity used scales with the individual's ability and preparedness.

The method we use in order to scale intensity is known as the Rating of Perceived Exertion. It involves a 1-to-10 scale, where 10 represents absolute maximum effort, and 1 represents essentially no effort, with a subjective gradation in between the two. In the context of resistance exercise, this has been correlated with the concept of Repetitions in Reserve (RIR). This describes the estimated number of additional repetitions an individual could perform before muscular failure, and is particularly useful in the context of strength training with relatively lower-rep sets (e.g., < 10-12 reps per set).

Rate of Perceived Exertion	Repetitions in Reserve	Notes
10	0	Maximal effort, severe slowdown in bar speed
9	1	Very heavy, moderate slowdown in bar speed
8	2	Heavy, mild slowdown in bar bar speed
7	3	Pleasantly annoying, nothing really gets slow
6	4	Just a whiff of difficulty, all reps are fast
5	5	Warmup weight

Exercise programming using this approach is written as follows:

Deadlift: 6 repetitions @ RPE 8 (may also be abbreviated as 6 reps @ 8, or 6 @ 8).

Deadlift: 6 reps @ 2 RIR

This indicates that the trainee should perform a set of 6 deadlifts, using a load such that the subjective effort level of the set is estimated at 8 out of 10 in difficulty (where 10/10 represents absolute maximum effort). Alternatively, according to RIR notation this would correlate with approximately 2 repetitions left in reserve before failure.

In order to select the appropriate load, there are often preceding warm-up sets at lower intensities that are used to “calibrate” the load selection for the day (e.g., 6 reps @ RPE 6, then increase the load to find 6 reps @ RPE 7, then increase the load to find 6 reps @ RPE 8).

There are several benefits of this approach which are discussed in greater detail in the article linked at the end of this section. Principally, these include the ability to scale loading across trainees of different strength levels such that two different trainees can both perform a set to the intended level of effort using self-selected loads. This method does not require the use of 1-repetition max testing, as would be needed for percentage-based programming. Additionally, a trainee may adjust loading from day to day or week to week based on their performance, fatigue, and readiness to train.

Ratings of Perceived Exertion are also useful for prescribing endurance efforts. For example:

Rate of Perceived Exertion	Pace	Respiratory Rate	Example Activity
10	Maximum effort that cannot be maintained	Cannot speak during activity	Maximum-effort sprints, rowing, or cycling at 100% max pace
9	Hard effort that is very difficult to maintain	Cannot speak during activity	Fast running, rowing, or cycling at 90% max pace
8	Moderate effort activity that is somewhat difficult to maintain	Can speak in 1- and 2-word phrases only	Fast jogging or running, rowing, or cycling at 80% max pace
7	Fairly easy pace that can be sustained	Can speak in short sentences but not sing	Light jogging or running, rowing, or cycling at 70% max pace
6	More boring than hard, easy to sustain	Can speak in full sentences without difficulty	Brisk walking, easy cycling, or light rowing

Exercise programming using this approach is written as follows:

Run: 15 minutes @ RPE 6

This indicates that the trainee should perform a run for 15 minutes, consistently maintaining a subjective effort level of approximately 6 out of 10 in difficulty (where 10/10 represents absolute maximum effort).

For more details on how to use RPE and/or RIR in the context of exercise training, see the following resources:

[Barbell Medicine: Autoregulation and RPE](#)

Alan Thrall YouTube Tutorials; [RPE Part 1](#), [RPE Part 2](#)

3 Repetition Maximum Deadlift (MDL)

This event primarily tests muscular strength. In order for an individual to demonstrate this strength, they must also develop coordination and skill specific to the hex bar. Training towards this event therefore requires developing muscular strength as well as task-specific skill development.

The training template includes task-specific skill practice via once-weekly exposure to the hex bar deadlift. Training loads begin low early in the program, where exercises are performed with higher repetitions program. This low loading provides the trainee with an introduction to the movement that allows for practice and technical improvement. The trainee will learn where to position the feet, how to grip and balance the bar, how to brace effectively, and how to lower the bar under control as is required during the test.

As the program progresses, repetition targets drop and loading intensity increases to more closely mimic the test demands of a 3-repetition maximum, although it is not necessary to perform a true 3-rep max on a regular basis in training.

Other general strength training is included via training the squat, overhead press, and bench press movements.

Standing Power Throw (SPT)

This event primarily tests explosive power as demonstrated through a throwing task. The training template incorporates a combination of training for general strength and power, as well as task-specific skill practice.

The majority of the program focuses on building strength and power through movements such as the squat, deadlift, overhead press, bench press, and squat jumps. Task-specific skills are developed through movements including kettlebell swings, medicine ball slams, and ultimately, specific standing power throw practice in the final weeks of the program.

Hand-Release Push-up (HRP)

This event primarily tests upper body muscular strength and muscular endurance. These are developed through strength training movements including the bench press, overhead press, and rows/chin-ups, as well as task-specific skill practice with hand-release push-ups.

Sprint-Drag-Carry (SDC)

This event tests a variety of attributes, including muscular strength, muscular endurance, anaerobic capacity, coordination, and agility.

Training for this event involves general strength training using the squat, bench press, deadlift, and overhead press, as well as task-specific training for the tested events. These skills include 25-50 m sprint efforts, loaded carries (sometimes known as “Farmer’s walks”), sled drags, and lateral shuffles. Many of these skills are trained in circuit fashion, alternating with other exercises in order to train anaerobic capacity and simulate test conditions where these tasks will be completed under fatigue.

Leg Tuck (LTK)

This event primarily tests muscular strength, muscular endurance, and coordination. Many individuals experience significant difficulty completing this task. For this reason, the training template involves a gradual skill and strength progression, with exposure to this task programmed on each training day. These include movements such as hanging leg raises, Jack knives (sometimes known as “V-ups”), and inverted rows or chin-ups (depending on the individual’s abilities).

Modifications to these programmed movements are acceptable for those who experience difficulty with the initial skill progression, as follows:

- Hanging leg raises can be substituted with lying leg raises in the initial weeks
- Straight-leg Jack knives (V-ups) can be modified to involve bent knees in the initial weeks
- Chin-ups can be substituted with inverted rows or Bulgarian rows in the initial weeks

If these substitutions are made, frequent re-assessment should be done in order to facilitate progression towards the goal task by the end of the program.

If the trainee is instead already capable of performing leg tucks at the beginning of the program, they may substitute some (or all) of the progressions for more regular, specific practice with the leg tuck exercise.

2 Mile Run (2MR)

This event primarily tests cardiorespiratory fitness (aerobic endurance) through running. The training template involves a gradual introduction to regular running, starting with short efforts at relatively low intensities in order to facilitate adaptation and mitigate injury risk. The total volume (duration) of running increases gradually throughout the program and incorporates both short sprint/interval efforts as well as longer-duration runs.

For trainees who are already well-trained runners, modifying the program to increase the running volume early in the program up to their habitual running volume is acceptable.

For those who are not experienced runners, it is important to adhere to the effort prescriptions, particularly early in the program. An overly rapid introduction to high-intensity running or sprinting may increase the risk of muscular strain (e.g., hamstring) or tendinopathy. These injury risks are mitigated through a gradual introduction to running, as well as through the regular strength training included in the training program. Individuals with a history of hamstring injury related to running may choose to incorporate the Nordic Hamstring Curl exercise in their training in order to mitigate re-injury.

Equipment & Substitution

The following equipment is required to complete the ACFT, and should ideally be available for training purposes as well.

- 1 Hexagonal Barbell & Weight Plates
- 2 x Barbell Clips
- 1 x Loadable Sled + Strap
- 1 x 10lb Rubber Medicine Ball
- 2 x 40lb Kettlebells
- 1 x Pull-Up Bar

Access to a gym, including a bench press, squat rack, and incremental kettlebells or dumbbells will be helpful in completing the template, but can be substituted if equipment is limited.

If a bench press is unavailable, substitutions for bench press training could include:

- Weighted push-ups (e.g., wearing a weighted vest or with a partner placing a load on your back); these can also be done as “deficit” push-ups with the hands elevated
- Floor presses with a barbell, dumbbells, or kettlebells

If a squat rack is unavailable, substitutions for squat training could include:

- Goblet squat using kettlebell or dumbbell (preferred)
- Lunges, split squats, or box step-ups

If a hex barbell is unavailable, substitutions for deadlift training could include:

- Straight barbell deadlift
- Kettlebell / dumbbell deadlift

If a loadable sled is unavailable, substitutions could include any other form of loaded drag. For example, if weight plates are available, a rope or strap can be passed through/around the weight plate and this can be dragged.

If a medicine ball is unavailable, any object with sufficient weight that is resistant to damage from being dropped/thrown can be used as a substitute. Sandbags can also be used to practice the Standing Power Throw.

If 40 lb kettlebells are unavailable, any objects of similar weight that can be gripped with one hand can be substituted for practice with loaded carries. For example, a weight plate can be gripped and carried as programmed, or any weighted object with handles such as a milk gallon.

If a pull-up bar is unavailable, the bodyweight exercises and progressions included in the program should comprise the majority of training, although some amount of practice before test day is highly recommended for the Leg Tuck event.

Appendix 1: Scoring Guide

Points	3RM Deadlift (lbs.)	Power Throw (m)	Release PU (reps)	Sprint Drag Carry (m:s)	Leg Tuck (reps)	2 Mile Run (m:s)	
100	340	13.5	70	1:40	20	12:45	
99	330	13.2	68			13:00	
98	320	13.0	66	1:41	19	13:15	
97		12.8	64	1:42		13:30	
96	310	12.5	62	1:43	18	13:40	
95		12.3	60	1:44		13:50	
94	300	12.1	58	1:45	17	14:00	
93		11.9	56	1:46		14:10	
92	290	11.8	54	1:47	16	14:20	
91		11.6	52	1:48		14:30	
90	280	11.5	50	1:49	15	14:40	
89		11.3	49	1:50		14:50	
88	270	11.2	48	1:51	14	15:00	
87		11.0	47	1:52		15:10	
86	260	10.9	46	1:53	13	15:20	
85		10.7	45	1:54		15:30	
84	250	10.6	44	1:55	12	15:40	
83		10.4	43	1:56		15:50	
82	240	10.3	42	1:57	11	16:00	
81		10.1	41	1:58		16:10	
80	230	10.0	40	1:59	10	16:20	
79		9.8	39	2:00		16:30	
78	220	9.7	38	2:01	9	16:40	
77		9.5	37	2:02		16:50	
76	210	9.4	36	2:03	8	17:00	
75		9.2	35	2:04		17:10	
74	200	9.1	34	2:05	7	17:20	
73		8.9	33	2:06		17:30	
72	190	8.8	32	2:07	6	17:40	
71		8.6	31	2:08		17:50	
70	180	8.5	30	2:09	5	18:00	HVY
69		8.3	28	2:16		18:10	
68	170	8.0	26	2:23		18:20	
67		7.5	24	2:30	4	18:35	
66		7.0	22	2:37		18:50	
65	160	6.5	20	2:45	3	19:00	SIG
64		6.2	18	2:55		20:10	
63	150	5.9	16	3:05	2	20:20	
62		5.6	14	3:15		20:30	
61		5.3	12	3:25		20:45	
60	140	4.6	10	3:35	1	21:07	MOD
59				3:36		21:09	
58				3:37		21:11	
57				3:38		21:13	
56		4.5		3:39		21:15	
55				3:40		21:17	
54			9	3:41		21:19	
53				3:42		21:21	
52		4.4		3:43		21:23	
51				3:44		21:25	
50	130			3:45		21:27	

Nutrition and Supplementation

Dietary Management

Energy balance and dietary protein intake can have a large influence on muscle mass, recovery, and performance. For example, low calorie and dietary protein intake can produce large, rapid losses in muscle mass when combined with medical conditions that require hospitalization and/or bedrest. In a healthy population, muscle mass increases tend to occur slowly over time provided adequate anabolic stimuli are provided.

It is possible to lose body fat and gain muscle mass at the same time, particularly in individuals who are overweight or obese, those who are new to training, and those with above-average genetics with respect to hypertrophy responses. For example, it is not unusual to see a beginner increase the circumference of their arms, legs, and shoulders while seeing a simultaneous decrease in their waist circumference. Taken together, this indicates an increase in muscle mass and a decrease in fat mass and this finding has been repeated numerous times in the scientific literature.

That said, we don't yet know if muscle mass gain is greater in a positive energy balance (e.g. caloric surplus) than at maintenance. [Slater 2019](#) For example, a study on elite athletes completing a 4-days per week training program were split into two groups, one with a modest surplus (~200kCal) and one with a larger surplus (~600kCal). After 3 months, they both gained about the same amount of LBM, ~1.5kg, with no statistically significant differences between the groups. [Garthe 2012](#)

In short, there are still many knowledge gaps that persist in this space, such as how much does it actually cost metabolically to build and support new muscle, can this energy "surplus" come from stored body fat, etc.

All this is to say, it's complicated. We know that straightforward, concrete answers are preferred when answering questions like this, however that's not really possible at this time. Rather, our recommendations for dietary management based on the current scientific evidence are as follows:

- 1) Individuals whose have a waist circumference that **exceeds** the current cut-points indicating a higher risk of adiposity-related chronic disease, e.g. 37" for men and 31" for women, would likely benefit from losing fat mass via a calorie restricted diet. This also applies to individuals with a Body Mass Index of 30 or greater and/or the presence of an adiposity-related chronic disease such as high blood pressure, type II diabetes mellitus, insulin resistance, cardiovascular disease, non-alcoholic fatty liver disease, etc. A modest deficit of -

250-500 kCal is reasonable with a goal of losing 2.5% bodyweight per month. *For reference, we are using these lower waist cut points given the existing data correlating them to adiposity-related chronic disease risk, despite the current Obesity guidelines using 40" and 34" for men and women, respectively.*

- 2) Individuals whose have a waist circumference that is **borderline exceeding** the current cut-points indicating a higher risk of adiposity-related chronic disease, e.g. 37" for men and 31" for women, would likely benefit from losing fat mass via **either** a calorie restricted diet or a maintenance diet, given that they may be able to decrease fat mass and gain muscle mass simultaneously. For reference, this borderline range is ~ 35-37" for waist circumference for men and 29-31" for women.
- 3) Individuals whose have a waist circumference that is **below** the borderline cut points and who are free from adiposity-related chronic disease that desire increases in lean body mass may are likely to benefit from a modest calorie surplus, e.g. adding 250-500 kCal to their daily intake. The increase in Calories should be predominantly carbohydrates and/or fats, depending on personal preference.

Building a Diet

There are many dietary patterns that promote lean body mass gain, fat loss, and overall health. Ultimately, the dietary pattern should reflect individual preferences and goals in order to bolster adherence. That said, the following represent our current guidelines for constructing a diet:

- 1) Total daily Calorie intake should achieve [healthy body fat](#) and muscle mass levels, while also supporting appropriate amounts of physical activity. Vegetarian and vegan approaches can be utilized based on individual preferences, as vegans and vegetarians tend to eat an average of 600 and 263 fewer Calories per day compared to those who eat both plants and meat, respectively. [Clarys 2014](#) We recommend using the [NIH Bodyweight Planner](#) to determine the calorie intake needed to maintain body weight. Calories should be adjusted as described above by reducing or adding carbohydrates and/or fats.
- 2) Total dietary protein intake should fall between **1.6-3.1 grams per kilogram body weight per day**, unless medically contraindicated. Those who are gaining or maintaining weight should aim for the lower to middle-range, whereas those who are losing weight and/or who have risk factors for [anabolic resistance](#) may aim for the middle to upper range. For those able to consume protein within this range, we are not concerned about animal/marine versus plant sources of protein, as plant protein sources

appear to be equivalent to animal protein sources when dosed at this level. In contrast, this distinction may have more relevance for individuals needing to consume a protein-restricted diet. [Babault 2015](#), [Joy 2013](#), [Hartman 2007](#)

- 3) **Daily carbohydrate and fat intake are mostly matters of personal preference**, however with respect to gaining lean body mass there is some evidence that low carbohydrate diets don't do quite as well as diets with more carbohydrates. With that in mind, we recommend **2-8 grams of carbohydrates per kilogram bodyweight per day for individuals who do not prefer low-carbohydrate diets, depending on individual needs**. Individuals who are in a calorie restricted state and/or who prefer low carbohydrate diets will be eating substantially less carbohydrates per day.
- 4) **Total dietary fiber intake should be at least 25-30 grams per day, ideally sourced from vegetables, fruits, and complex carbohydrate sources**. [Reynolds 2019](#) We recommend eating as many servings of fruits and vegetables as is consistent with the total calorie and protein goals mentioned above. Fiber intake may also mitigate some of the potential negative effects of a diet high in saturated fat. [Wallstrom 2012](#)
- 5) **Dietary fat intake should be primarily unsaturated, e.g. from marine and plant sources, with saturated fat limited to approximately 10% or less of total Calories**. There is no recommended minimum or maximum dietary fat intake provided these other guidelines are met, however a good rule of thumb is to consume ~20-30% of their daily calorie intake from dietary fat, or 0.5-2 grams of fat per kilogram bodyweight per day, depending on needs . When replacing saturated fat with other nutrients, we recommend foods rich in PUFA, MUFA, or complex carbohydrates depending on an individual's preferences, Calorie goal, and individual response to the diet. This recommendation is strongest for those at elevated cardiovascular risk. With respect to red meat, the current recommendation of limiting intake to 12-18 ounces of cooked red meat per week is reasonable, although we feel less strongly about this if the other criteria above are being met.
- 6) **Processed red meat should be limited to less than 1.7 ounces (50 grams) per day**.
- 7) **Nutrient timing is only of minimal consideration** in the context of long-term dietary patterns. That said, it is reasonable to recommend consuming a moderate dose of protein (e.g. 20-40g of protein) within a meal every 3-5 hours, provided other guidelines are met. [Kersick 2017](#)

Supplements

In the context of an individual who is otherwise meeting the dietary goals described above, we do not routinely recommend dietary supplements to improve health. With respect to performance, there are a handful of dietary supplements that may improve training outcomes such as hypertrophy, strength, and cardiorespiratory fitness in individuals participating in properly-structured exercise programs.

Supplements that currently have evidence supporting their use include:

- 1) Protein supplements, e.g. whey protein, pea protein, and others. Ideally, these are used to meet the protein recommendations described above.
- 2) Creatine monohydrate- dosed at 0.05mg/kilogram bodyweight per day.
- 3) Beta alanine- dosed at 6g/day.
- 4) Caffeine – dosed at 3-9 mg/kilogram bodyweight taken ~30 min prior to exercise based on individual tolerance, preferences, and other factors.

There are many other supplements that have been evaluated for efficacy, some showing potential benefit and others showing none. We refer you to the latest [International Society of Sports Nutrition review](#) on supplements to aid in making further supplementation decisions.

Unfortunately, many supplements are manufactured in environments where contamination, improper dosing, and other less than desirable outcomes occur. For that reason, we recommend that individuals who choose to use supplements select only those who have received both the *Certificate of Good Manufacturing Process (cGMP)* and *Informed Consent/Informed for Sport* (or similar) designations. All of the supplements sold by Barbell Medicine meet these standards and there are a few other manufacturers doing the same.

Logging Training

This template comes with built-in space right under the workout in the overview tab where you can track and record your progress. We recommend using it to track the following variables:

Weight used – Most of our templates come in both kilo and pound versions for you to log the weight used for each set. You can log your weight in half pound or kilo increments. For dumbbell exercises, we recommend recording the weight of 1 dumbbell, e.g. for a dumbbell press with 55-pound dumbbells, log the weight as 55 pounds. For exercises with bands, chains, etc., we recommend recording just the weight on the barbell.

Reps completed – Log the reps completed-per-set using whole numbers. This helps you plan the following week's workout.

Set Rate of Perceived Exertion (RPE) – Rate the RPE for each set during your workout and record the weight, reps completed, and RPE in your log for **all sets**

listed in the workout.

Conditioning Efforts/Circuits- Log the duration (time) completed for each conditioning effort or circuit, the weight and/or implement used, and the RPE, where applicable.

Tabs Explained

Nutrition Log

The Nutrition Log tab allows you to track your daily and average body weights, macronutrient (e.g. protein, carbohydrates, and fat) intake, and daily and average calorie levels.

You can plug in your weight (in pounds) in the columns listed under the title Weight. It will automatically convert your weight to kilograms. Additionally, your average weekly weights will be calculated automatically after plugging in a series of weights.

You can also log the fat, carbohydrate, and protein in grams you consume per day under their respective titles. Your total daily calorie intake will be calculated automatically.

Overview

The overview tab allows the template user to view the entire training program week-by-week. The weeks are labeled 1-12 on the left-hand side of the sheet and the training days are labeled 1-3 across the top of the sheet. Each exercise and its specific programming is included in the overview sheet.

Frequently Asked Questions

1. Who do I contact about technical problems?

Send an email to support@barbellmedicine.com

2. When should I use a belt?

We recommend using a belt on all exercises labeled as “with belt” or “competition.” Alternatively, you are free to use a belt any exercise variation you want to. However, our stock recommendation is to go beltless on all other variations if possible.

3. I have an injury, what do?

Start here:

You may also post a question on our Facebook group or Pain/Injury forum to get specific recommendations to any injury-related problem you may have.

Facebook Group:

<https://www.facebook.com/groups/BarbellMedicineGroup/>

Forum: <https://forum.barbellmedicine.com/forums/pain-and-rehab-q-a-with-dr-derek-miles-and-dr-michael-ray>

That being said, **don't panic**. Remain calm. Use the above resources and your doctor, if needed, to determine the correct course of action.

4. What should I do when I don't know my max for a particular exercise?

We recommend using RPEs to arrive at the correct workload for the day. After using RPE for the initial exposure to the exercise, you will have an estimated 1RM to work from.

5. What should I do if I don't want to use RPE?

We include percentages where we can, but we feel that using some intrinsic metric of difficulty is very important and we encourage you to give RPE a little time before writing it off.

If you absolutely will not use it, you can run the templates based solely on the percentages correlated with the specific Rep and RPE prescriptions.

Head over to the calculator tab and plug in 100 for your 1RM. Then you will see all the percentages associated for each RPE and rep prescription.

6. Can I substitute ____ for ____?

Unfortunately, it is not possible to provide substitutions for all exercises. However, if you have an injury or equipment issue, substitute the exercise programmed for a different exercise within the same "class." In other words, if it's a squat type of movement, replace the programmed exercise with another kind of squat or if it's a bench or press, replace with another type of pressing exercise.

For equipment limitations, please replace whatever you don't have or cannot do (due to prior injury or other limitations) with something similar, e.g. for leg press/belt squat/front squat- you could theoretically do a regular back squat or lunges. Please don't buy another gym membership because of us!

7. What supplements do you recommend?

See here: <https://forum.barbellmedicine.com/forums/nutrition-q-a-with-dr-jordan-feigenbaum/15180-supplement-what-when-why-and-how>

Exercise Demos

Press Exercises

- Press:
<https://www.youtube.com/watch?v=isAJB6MKUg0&feature=youtu.be>
- Classic Press:
<https://www.youtube.com/watch?v=pimRRnQanjY&feature=youtu.be>
- Push Press:
<https://www.youtube.com/watch?v=ZyJSt05zXOs&feature=youtu.be>
- 2 Count Paused Bench:
<https://www.youtube.com/watch?v=N4Zy9X4l09M&feature=youtu.be>
- Touch and Go Bench:
<https://www.youtube.com/watch?v=S4NIX83DqVE&feature=youtu.be>
- Close Grip Bench:
<https://www.youtube.com/watch?v=zPwoGanhQ28&feature=youtu.be>
- Floor Press:
<https://www.youtube.com/watch?v=cA14CAjilyc&feature=youtu.be>
- Close Grip Floor Press:
<https://www.youtube.com/watch?v=0fbeVlIC7SU&feature=youtu.be>
- Pin Bench:
<https://www.youtube.com/watch?v=RLfnie5wMyA&feature=youtu.be>
- How to Bench: <https://www.youtube.com/watch?v=1FWDde2lEPg>

Deadlift Exercises

- How to Deadlift:
<https://www.youtube.com/watch?v=wYREQkVtvEc>
- Common Deadlift Errors:
<https://www.youtube.com/watch?v=NYN3UGCYisk>
- Barbell Row:
<https://www.youtube.com/watch?v=hDxEomiZHw&feature=youtu.be>
- Rack Pull, Mid Shin:
<https://www.youtube.com/watch?v=KkS18KNJCKY&feature=youtu.be>
- Romanian Deadlift:
<https://www.youtube.com/watch?v=m6HXwAN-gdw&feature=youtu.be>
- Stiff Legged Deadlift:
<https://www.youtube.com/watch?v=lsAFY5Dv7E8&feature=youtu.be>
- 2" Deficit Deadlift:
<https://www.youtube.com/watch?v=FeZrlhmvoJI&feature=youtu.be>
- 2 Count Paused Deadlift:
<https://www.youtube.com/watch?v=njujfUjkz0k&feature=youtu.be>
- Lever Row:
<https://www.youtube.com/watch?v=gx1Ex38j3Ec&feature=youtu.be>

Squat Exercises

- How to Squat:
<https://www.youtube.com/watch?v=vmNPOjaGrVE&t=5s>
- Common Squat Errors:
<https://www.youtube.com/watch?v=NtX8GGbDCuc>
- 2 Count Paused Squat:
<https://www.youtube.com/watch?v=ODft8vnXhlE&feature=youtu.be>
- 3-0-3 Tempo Squat:
<https://www.youtube.com/watch?v=fKELjulrULA&feature=youtu.be>
- 5-3-0 Tempo Squat:
<https://www.youtube.com/watch?v=vre8HM0vcXE&feature=youtu.be>
- Pin Squat: <https://www.youtube.com/watch?v=B13-AZVWchA&feature=youtu.be>
- Front Squat:
<https://www.youtube.com/watch?v=WkWzoiKQE2l&feature=youtu.be>

Resources and Contact

Technical

For all technical issues, please send us an email to support@barbellmedicine.com

Website

Find all of our articles, videos, and more at www.barbellmedicine.com

Forum: www.forum.barbellmedicine.com/

Social Media

Find us on social media:

YouTube: <http://www.youtube.com/c/BarbellMedicine>

Instagram:

@austin_barbellmedicine

@jordan_barbellmedicine

@leah_barbellmedicine

@vanessa_barbellmedicine

@untamedstrength

@michael_barbellmedicine

@derek_barbellmedicine

@hass_barbellmedicine

@charlie_barbellmedicine

@alex_barbellmedicine

@tomcampitelli

@barbellmedicine

Products:

For our research review, apparel, supplements, seminars, and more templates head to:

www.barbellmedicine.com/shop/

Newsletter:

www.eepurl.com/cpqB3n