



# THE NASM GUIDE ON **INTRODUCTION TO BODYWEIGHT TRAINING**



# Contents

---

Welcome!	1
About NASM	1
Getting the Most from This Guide	1
Introduction	2
Bodyweight Exercise	3
BWTs Impact on Fat loss	4
The Role of Muscle Development in Fat Loss	5
List of Effective Bodyweight Exercises	6
Creating a Bodyweight Training Routine	9
Assessing Fitness Levels	9
Overhead Squat Assessment	11
Designing a Balanced Routine	12
Adjusting the Exercise Routine Based on Progress	19
Safety Considerations and Precautions	21
Proper Form and Technique	21
Listening to Your Body and Avoiding Overtraining	22
When to Seek a Fitness Professional	22
Conclusion	23
What You Can Do	23
4-Week Bodyweight Training Program	23
Week 1	24
Week 2	25
Week 3	26
Week 4	27
Recommended Resources	28
References	29

## Disclaimer

The content in this guide is intended to be used for informational purposes only. It is not to be used to diagnose or treat any medical condition or disease, and not to replace guidance from a licensed healthcare provider.

# Welcome!

We are excited that you have chosen to learn more about bodyweight training. Bodyweight Training (BWT) is not a new fad; it's a time-tested method rooted in our very existence. Our ancestors relied on their body strength for survival, and now, it's your chance to harness the same natural power. BWT is straightforward: use your body's weight as the primary tool to build strength and shed fat. It's a self-sufficient, cost-effective way to exercise. With our guide, you'll learn how to effectively utilize BWT to improve muscular strength, enhance mobility, and boost cardiorespiratory fitness—all crucial for fat loss and overall wellness. Our guide walks you through the diverse spectrum of BWT, focusing on popular forms like calisthenics and suspension training. However, our course is not just about exercises; it is about understanding and applying. By integrating tools like the overhead squat assessment (OHSA), we empower you to craft a tailored and efficient training regimen. Join us on this journey where every session is a leap towards a more empowered you.

## About NASM

The National Academy of Sports Medicine is the leader in educating and credentialing fitness, wellness, and performance professionals across the globe. We pride ourselves on creating practical content you can apply right away. Learn more about us at [www.nasm.org](http://www.nasm.org), your favorite social media platform, or wherever you listen to podcasts.

## Getting the Most from This Guide

This Introduction to BWT will introduce you to appropriate strategies to assist your journey. Bodyweight exercises have many advantages. Some of them include convenience, effective calorie burners, and they are fun! Most likely, you are familiar with BWT from your physical education classes. Do not worry – no whistles are required here! What we will do is make sense of the information for you. Then, we'll give you some key takeaways and actionable steps to apply whenever you like.

Come back and use the information as a reference at any time. Use the key takeaways and application strategies however they make sense. Don't feel obligated to put everything into action right away. When you can dive deeper into the topic, please check out our recommended resources.





# Introduction

Bodyweight training (BWT) has existed for a long time. For most of human history, humans had to have adequate strength, mobility, and coordination to hunt, gather, and eventually farm for many hours every day, almost daily (Del Vecchio et al., 2022). As a result of that labor, our ancestors were arguably better suited for their environment. Over time, BWT was advanced by Romans and Greeks, using it as part of their military training (Del Vecchio et al., 2022). In recent years, BWT has re-emerged as a popular exercise technique and was listed as a top three fitness trend by the American College of Sports Medicine (Thompson, 2023).

BWT is a self-defining term that means performing exercises that use body weight as the primary form of resistance. It can also be defined as “any movement where additional load is not added to the body” (Langston & King, 2018, p.45). Calisthenics is a form of BWT. The term calisthenics comes from the Greek word “kalos,” meaning beauty, and “sthenos,” meaning strength, and achieves many of the same benefits as traditional weight training. BWT can help improve muscular strength, endurance, mobility, and cardiorespiratory fitness (Lipecki & Rutowicz, 2015). BWT can be done anywhere; by definition, no additional equipment is needed, making it an appealing option to many.

Further, many BWT exercises are full-body and rely heavily on the core musculature for stabilization. Thus, it can be very demanding due to the high number of recruited muscle groups. This also means that total exercise time is usually shorter. Since BWT exercises are transportable, they can attract the adventurous and those who like to travel. In addition, it may be a more viable option cost-wise.



# Bodyweight Exercises

There are many variations and applications of BWT. However, two popular forms are calisthenics and suspension training. As described above, calisthenics are accessible and highly practical for building functional strength that translates to everyday activities. Calisthenics range from foundational movements like pushups and squats to advanced techniques such as the planche (frequently used in gymnastics) and the human flag.



People can adapt and scale calisthenics to match their evolving skill and strength levels as they progress. The adaptability of calisthenics makes it possible for anyone to engage in this form of activity. Another hallmark of calisthenics is its focus on core engagement, which fosters improved posture and overall stability. The community aspect is also notable, with many urban areas boasting dedicated calisthenics parks and competitions. In essence, calisthenics offers a holistic approach to fitness, blending strength, balance, agility, and endurance, making it a comprehensive choice for those seeking overall health and well-being. One downside of calisthenics is that it is often non-individualized and appears random. Some research shows that individualized training sessions yield better results than non-individualized training (Greulich et al., 2014). However, this can be offset by programming calisthenics to create structure, just like many traditional exercise programs.

Suspension training, epitomized by the TRX system, is another method that utilizes gravity and body weight to facilitate a broad spectrum of exercises. Suspension straps, characterized by their adjustable nature and handles, can be anchored to sturdy overhead points, enabling indoor and outdoor workouts. This training modality is celebrated for its versatility, allowing users to engage various muscle groups, from core-centric exercises to full-body workouts. A standout feature of suspension training is its inherent adaptability; simply altering one's body angle or foot position can modulate the exercise intensity, allowing all fitness levels to participate. Moreover, its design enhances core activation, a cornerstone for stabilization during workouts. Beyond strength-building, the straps can be employed for stretching to enhance flexibility and mobility. Suspension training has the same "on-the-go" appeal as traditional calisthenics because the straps are lightweight and portable. Suspension training offers a dynamic approach to fitness, merging strength, flexibility, and balance in a compact and efficient system.



BWT can effectively burn fat, build strength, and improve overall health (Liu et al., 2022). Fat loss is very common goal, so how BWT impacts fat loss will be discussed in the following sections.

## BWTs Impact on Fat Loss

While the science underlying fat loss is not simplistic, the methods to increase fat loss can be simple. Generally, fat loss results from burning more calories than consumed (Law of Thermodynamics) while minimizing muscle loss. BWT can accelerate calorie burn compared to simple weight training since the exercises generally incorporate the entire body (i.e., lower- and upper-body and the core musculature). Additionally, BWT means that very little, if any, equipment is utilized. Exercises requiring a part of a person's body to be fixed to the ground, such as squats, pushups, etc., require more stabilization and use of the core than most exercise equipment (Del Vecchio et al., 2020). This is a major reason why exercises like pushups and pullups are so challenging for most people. The intensity of BWT can be substantial for the average person. Suprak et al. (2011) found that an exercise such as the traditional pushup required the user to lift

as much as 75% of their body weight. Of course, a bodyweight squat requires lifting 100% of the weight unless it is modified. Training with this much load significantly increases the overall intensity.

Further, utilizing suspension training straps with BWT adds instability, which recruits more muscles, thus increasing overall caloric expenditure (Fayazmilani et al., 2022). For example, when using the straps for a pushup, the arms are free to move; thus, more stabilizing muscles must be engaged to support the arms and shoulders. Including suspension training straps in a BWT may also be novel and fun! Novel exercises are often associated with increased demand because it's a movement new to the nervous system, which must be learned. Thus, during the initial phases of the exercises, more calories are burned compared to later when the exercises are



no longer considered “new” stimulation. There is some encouragement in the research that novel exercises may play a role in non-shivering thermogenesis and the increased utilization of brown fat (Zhu et al., 2022). Fun exercises are more likely to be performed for longer and repeated. Again, increasing overall calorie burn equates to fat loss only if the calories burned exceed the calories consumed.

Lastly, many BWT exercises help beginners learn the essential movement patterns (i.e., push, pull, squat, etc.) correctly, establishing a foundation for more intense training later. Essentially, learning technique also creates a solid fat-burning foundation. Like any exercise paired with proper nutrition, BWT can effectively lose fat.

## The Role of Muscle Development in Fat Loss

As mentioned above, maintaining as much muscle mass as possible is a notable aspect of fat loss. While not the costliest tissue regarding caloric burn, it takes up to 10 calories to maintain one pound of muscle tissue per day (Donnelly et al., 2003). To put this into perspective, adding 5 lbs. of muscle could increase daily calorie burn by 50. While this may not sound substantial, it’s important to remember that this means while the body is at rest (i.e., resting metabolic rate). Therefore, total calorie burn may increase in direct proportion to movement. Researchers Kinucan and Kravitz (2006) stated that a vital aspect of maintaining muscle mass is that it might be just what someone needs to achieve a specific caloric deficit to reach a specific fat loss target.



People can use BWT to improve muscle mass (Liu et al., 2022). BWT exercises can elicit the enlargement of skeletal muscle tissue no differently than weight training (i.e., barbells, dumbbells, select training machines, etc.) because all mechanical stress overloads the muscular system. BWT exercises such as squats, pullups, or lunges are 100% bodyweight unless assisted with suspension straps or something

similar, while an exercise such as a traditional pushup is up to 75% body weight. Such loads will likely meet the ACSM recommendations for strength development for most individuals.

One potential barrier to BWT involves the concept of progressive overload. BWT exercises can provide the necessary overload for many people upon the onset of training, which aids in initial fat loss. But, if the load is not slowly yet continually increased, the body adapts to the load (by becoming stronger), and the rate of muscle development will begin to slow (Plotkin et al., 2022). Not only does the rate of muscle development slow, but the intensity will begin to decrease, thus decreasing total caloric expenditure during training. For this reason, specific exercise progressions must be incorporated to maintain the desired intensity.

There are several methods to progress all exercises, including BWT. BWT exercises can be progressed by:

- Increasing total volume by performing more sets or repetitions.
- Changing exercise tempo. Slowing down the repetition speed can increase the intensity by increasing the duration of work performed. Conversely, speeding up the tempo (e.g., plyometric) can also increase the intensity.
- Decreasing external stability. Performing a pushup with only one leg on the ground or with hands on a stability ball will increase intensity by activating more muscles.
- Decreasing rest periods between exercises (i.e., using circuit-style training) increases intensity by maintaining an elevated heart rate for more extended periods.
- Changing the exercises. Novel exercises are more demanding on the nervous system, thus increasing intensity. However, it should be noted that movements should be repeated and learned before novel movements are introduced.

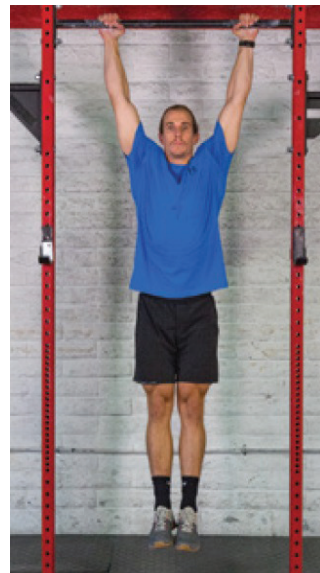
## List of Effective Bodyweight Exercises

Using the information above as a guide, anything that increases demand effectively increases caloric burn and thus can be suitable for fat loss. Traditional BWT exercises include:

→ Pushup



→ Pullups





→ Squats



→ Lunges



→ Planks



→ Side-planks



## → jumping Jacks



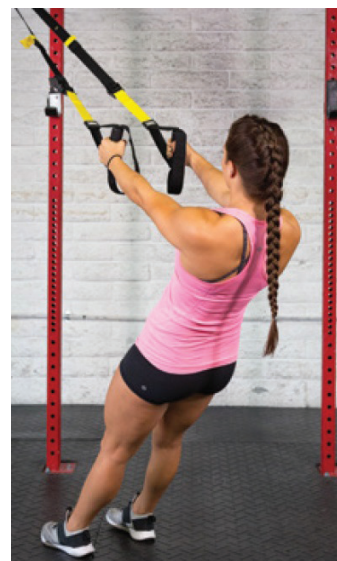
## → Squat jumps



Or more unique BWT exercises such as:

- Gecko pushups
- Kick sits
- Half-Hindus
- Frog Squats

Many of these same exercises can be supported or progressed using suspension straps. This list is not exhaustive of BWT exercises but offers various examples of effective movements.



# Creating a Bodyweight Training Routine

Designing a proper BWT program is arguably the most crucial aspect of any training program. Key items to consider are one's current fitness level, specific goals, safety, and a well-rounded program. Many people frequently underestimate the importance of considering these items and doing a quick self-assessment. Taking even a few minutes to do a "self-check-in" can save time and reduce the chance of certain injuries.



## Assessing Fitness Levels

Assessing fitness level is done by finding one's current health status. The first suggestion is a physical activity readiness questionnaire (PAR-Q+) (**Figure 1**). The PAR-Q+ is a crucial self-assessment tool designed to gauge an individual's readiness for physical activity. Its primary objective is to uncover any pre-existing medical conditions or health issues that might be aggravated by physical activity, thereby ensuring individuals are aware of any health risks associated with a new exercise regimen. The PAR-Q+ is a safety precaution to avert exercise-related injuries or adverse events by identifying potential health risks. This proactive measure promotes safety and well-being as individuals commence their fitness journey. Use the instructions provided on the PAR-Q+ to determine whether exercise is safe or if a medical professional should be consulted.

## The PAR-Q+ Questionnaire

Please read the 7 questions below carefully and answer each question honestly by checking Yes or No.

	YES	NO
1. Has your doctor ever said that you have a heart condition <input type="checkbox"/> OR high blood pressure <input type="checkbox"/> ?	<input type="checkbox"/>	<input type="checkbox"/>
2. Do you feel pain in your chest at rest, during your daily activities of living, OR when you do physical activity?	<input type="checkbox"/>	<input type="checkbox"/>
3. Do you lose balance because of dizziness OR have you lost consciousness in the last 12 months? Please answer NO if your dizziness was associated with over-breathing (including during vigorous exercise)	<input type="checkbox"/>	<input type="checkbox"/>
4. Have you ever been diagnosed with another chronic medical condition (other than heart disease or high blood pressure)? Please list:	<input type="checkbox"/>	<input type="checkbox"/>
5. Are you currently taking prescribed medications for a chronic medical condition? Please list condition and medications:	<input type="checkbox"/>	<input type="checkbox"/>
6. Do you currently have (or have had within the past 12 months) a bone, joint, or soft tissue (muscle, ligament, or tendon) problem that could be made worse by becoming more physically active? Please answer NO if you had the problem in the past, but it does not limit your current ability to be physically active. Please list conditions:	<input type="checkbox"/>	<input type="checkbox"/>
7. Has your doctor ever said that you should only do medically supervised physical activity?	<input type="checkbox"/>	<input type="checkbox"/>

If you answered **NO** to all questions, you are cleared for physical activity - please sign the participation declaration and do not complete the rest of the questionnaire. Delay becoming more active if:

- You have a temporary illness such as a cold or fever until you feel better.
- You are pregnant - talk with your healthcare practitioner or physician first.
- Your health changes - in this case proceed through the remainder of the questionnaire and talk with your doctor or medical health provider.

**Figure 1. PAR-Q+**

A movement assessment should be included once exercise has been deemed safe. A movement assessment will help determine which, if any, flexibility exercises should be included in the program and guide certain exercise selections. For example, if a movement assessment cannot be performed as directed, it might point to specific muscles needing to be stretched.



# Overhead Squat Assessment





One of the most recognized and accessible movement assessments is the overhead squat assessment (OHSA). The OHSA is a proven test to assess posture, core stability, and overall coordination and strength (Post et al., 2017; Rabin & Kozol, 2017). It is easy to perform and provides insight into how the foot, ankle, knee, hip, and spine line up during the foundational squat movement (**Figure 2**). If joints are found to misalign, then specific foam rolling and stretching exercises can be integrated to improve the movement patterns. Even though additional load is not included in BWT, identifying, and correcting faulty movement patterns can enhance the exercise experience and improve results.



**Figure 2. OHSA**

The OHSA can be performed by using a mirror, asking a friend to watch the movement, or setting up the phone to record. Recording the OHSA is recommended because it allows the squat to be viewed more objectively rather than trying to identify movement faults while squatting. Perform the squat without shoes (if possible) and with the arms fully overhead. Begin with the feet pointing straight (they should be parallel as if on snow skis). Try to squat down to about the height of a regular chair. Do 4 – 5 squats total at a smooth, steady pace. It should not be so fast that momentum is used to “bounce” out of the bottom, nor so slow that every second can be over-controlled. During the squat, the feet should remain straight, the knees (mid-line of the kneecap) remain aligned with the middle of the foot, the hips and spine stay neutral, and the arms remain overhead. Use **Table 1** to identify common movement faults.

**Table 1. OHSA Solutions Chart**

Misalignment	Foam Rolling Exercise	Stretching Exercise	Visual Cue
Feet Turn Out	Calves	Standing calf	
Knees Cave In	TFL Adductors	Kneeling hip flexor Standing adductor	
Low Back Arch	TFL Quadriceps	Kneeling hip flexor	
Arms Fall Forward	Lats Chest	Wall lat stretch Doorway pec stretch	

Recall that the results of this assessment are not used to prevent someone from beginning a BWT routine. Instead, they are to help identify areas where specific flexibility exercises can be integrated to improve movement patterns.

# Designing a Balanced Routine

A balanced routine follows the basic tenets of exercise science to ensure results and prevent injury, such as a warmup, some form of resistance training, cardiovascular training, and a cooldown. BWT can be utilized within each aspect of a training program. For example, bodyweight exercises are commonly used as a form of dynamic flexibility within the warmup section. Further, provided the load is sufficient, as discussed earlier, BWT is an effective tool to increase muscular strength. Also, if performed at the right intensity and with specific rest and recovery times, BWT can provide a stimulus for cardiorespiratory adaptations. Finally, slower-paced BWT can be used as part of the cooldown if desired.



## Warm-up Exercises

A warmup is done to prepare the body for exercise. It is generally designed to increase the heart rate, tissue temperature, muscle activation, and to mentally prepare for exercise. However, all too often, people think of simple cardiovascular activity as sufficient for a warmup. While cardio checks a few warmup boxes, a more comprehensive warmup is a better option. An integrated warmup that includes flexibility, stability, balance, and agility training helps improve motor control and the performance of foundational movement patterns (Alonso-Aubin et al., 2021; Brachman et al., 2017).

## Flexibility Training

Recall that specific flexibility exercises should be based on the results from the OHSA. Therefore, one should not just “stretch what feels tight,” which is often the case. Instead, stretch only the muscles identified as short on the OHSA Solutions Chart above. Flexibility training can be divided into self-myofascial rolling (SMR) and traditional stretching. SMR is a method to calm down or “release” specific muscles. While traditional stretching (generally static stretching) returns muscles to an ideal resting length. Static stretching before exercise is often, erroneously, frowned upon. Many classic research studies have suggested that holding a muscle in a lengthened position reduces isometric strength and power. However, updated research focuses on the stretch duration. Long-duration static stretches negatively impact muscle performance, whereas shorter duration has little to no adverse effect on muscle performance (Chaabene et al., 2019). Therefore, the recommendation has emerged to only hold static stretches for up to 60 seconds (Behm et al., 2016). Further, since the SMR and stretching techniques target specific muscles identified as problematic, slightly reducing isometric stretching and power development may improve the performance of functional movement patterns. Some examples are provided below.

## SMR

### → Calves



### → Quadriceps



### → Hamstrings



### → Glutes



### → Lats





## STATIC STRETCHING

### → Calves



### → Hamstrings



### → SB Lats



## Core, Balance, and Agility

As stated above, a comprehensive warmup involves more than simply performing cardio and doing a few stretches. Integrated core, balance, and agility exercises help to continue warming up the body and engage/activate smaller, stabilizing muscles vital to the successful performance of more intense BWT. Exercises that fall within this section of the warmup are bodyweight but are generally performed with static holds rather than performing repetitions. Of course, traditional core exercises, such as abdominal crunches, sit-ups, back extensions, etc., can still be utilized, but the initial emphasis of core training should be on spinal stability. Core stabilization exercises aim to awaken the muscles surrounding the pelvis and spine at the beginning of the workout. These exercises include:

---

→ Planks



---

→ Glute bridge



---

→ Prone cobra



---

→ Quadruped arm and leg raise.



---

Balance training is a simple extension of core stabilization in many aspects. Once the core muscles have been stimulated, balance training adds complexity by forcing many of the same muscles to work while standing with a reduced base of support (i.e., one leg, staggered stance, unstable surface, etc.). These exercises should be demanding but not so challenging that they cannot be performed with proper technique. Examples are:

## → Single leg balance



## → Single leg balance with reach

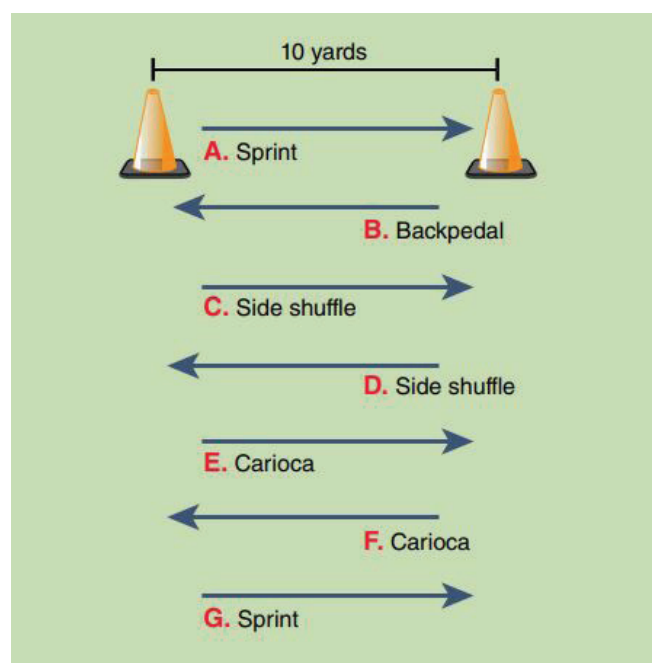


## → Single-leg RDL



Agility training follows a similar logic as balance training by adding complexity to the mix. Many stabilizing muscles have been stimulated with core training, integrated into the whole system with balance training, and now they must stabilize the pelvis and spine under more challenging movements. However, like balance training, agility exercises should begin by being simple and predictable. They should be performed with control while maintaining the body's proper alignment. Utilizing agility training as part of a warmup is optional. Using cones for basic cone drills is a great way to get started:

- Lower Extremity Functional Test (LEFT). LEFT can be performed as a test (i.e., performed for time) or can be an overall drill to work on several different movements (see diagram below). Set two cones 10 yards apart and follow the recommended movements.



## Using BWT for Resistance Training

When people hear the words “resistance training,” they often think specifically about exercise using dumbbells, barbells, cables, and many other equipment readily available at any gym. However, resistance training can be any movement against an external force. In this light, BWT is an excellent form of resistance training. If the load is substantial enough (i.e., between 70 to 100% of one’s maximum effort), then the stimulus will induce the adaptation of strength (Schoenfeld et al., 2021).

At the onset of a BWT program, if one is not accustomed to exercise, the foundational movements of squatting, pressing, pulling, and hinging (e.g., deadlifting) using body weight will be enough to stimulate some change. However, as noted above, if the program is repeated enough, it will soon need to be adjusted. One way to increase the challenge of BWT exercises is to change the base of support (Del Vecchio et al., 2022). For example, a normal hand position pushup can be changed to a diamond or staggered stance position. Similarly, a normal stance during a squat can be changed to a split-stance squat or a single-leg squat.



## Cardiorespiratory Exercises

Cardiorespiratory exercise training has enormous benefits, including better overall health, longer living, and fat loss (Pinckard et al., 2019). It is hard to argue that cardio training burns more calories per minute than any other form of training. For example, a 160-pound person can burn about 250 calories per 30 minutes of moderate jogging versus only 180 calories (on average) in weight training (Ainsworth et al., 2011).

What can be argued is the best form of cardio training. Running, swimming, biking, riding the elliptical, etc., frequently come to mind when considering this type of training. However, cardiorespiratory fitness is defined simply as the ability of the circulatory and respiratory systems to provide the body with sufficient oxygen during activity (Sutton, 2022). Using this definition as a guide, any form of physical activity that challenges the circulatory and respiratory systems can be used to enhance cardiorespiratory fitness. Speed, agility, quickness, and plyometric exercises are excellent forms of cardio training, and they provide additional performance benefits.

Resistance training exercises, including BWT, can suffice as cardio training, provided they are performed at a rate that maintains an elevated heart rate for a specified duration. This is often considered circuit training. During circuit training, the exerciser should go from one exercise directly to the next without rest. A common circuit training method is alternating upper- and lower-body exercises to prevent early fatigue. An example circuit could be performing bodyweight squats followed immediately by pushups, alternating lunges, and pullups. There is no rest between each exercise, but a short rest can be taken after each complete round (i.e., one set of



each exercise). Alternating upper- and lower-body exercises have also been referred to as peripheral heart action (PHA) training. PHA training helps to increase circulation as the blood must be alternately directed to the upper and lower extremities during exercise and appears to be beneficial to many cardiovascular functions (Piras et al., 2015).

## Cool-down Exercises

The cooldown section of the training program is used to bring the body back to resting levels. Specifically, the heart rate, breathing, and body temperature should all be reduced. Repeating warmup exercises, such as static stretching and SMR, is one method.



## Adjusting the Exercise Routine Based on Progress

Like any structured exercise program, the progress of a BWT program should be monitored and adjustments made to continue seeing positive results. Plateaus are moments in the training program where results decrease or stop altogether are common. To reboot the results, consider the following recommendations.

1. Follow a specific program and track progress – while there is nothing wrong with unstructured exercise, it can often be hard to identify what works and what doesn't when exercise sessions are not planned and tracked. Tracking progress can be keeping simple notes (often using a fitness app) about the number of sets, reps, intensity, and specific exercises.
2. Regularly adjust the intensity – recall the principle of progressive overload. Over time, the body will adapt, and adjustments must be made. Adjust only one or two training variables, such as sets, reps, tempo, or exercise selection. For example, increase the total training volume by adding one

more set to each exercise. Or increase the overall intensity by speeding up the tempo of each exercise. Intensity can also be increased by reducing the rest period allowed between sets.

3. Regularly reassess – this is vital to all training programs because it allows users to document progress and modify programs as needed. Reassessment recommendations generally follow traditional strength training methods, often set up in four-week blocks. Four weeks between assessments is a great idea to allow some adaptation to the training, which allows for noticeable improvements when re-testing. However, spacing re-testing out every four weeks is not a requirement. Use whatever schedule works best for you and your environment. One thing to note is that putting reassessments on the calendar can be a great motivational tool to increase consistency.
4. Don't be afraid to work on weaknesses – everyone likes to perform what they are good at because it can boost confidence. And being a confident exerciser increases consistency, ultimately leading to better results. However, working on weak points can drastically improve overall performance. So, use the assessments to identify weaknesses and include these in your overall programming process.
5. Stay educated and informed – continually educate yourself on BWT techniques and principles of progression and stay updated on the latest fitness trends and best practices.

Adjusting BWT routines in response to progress requires a blend of assessment, adjustment, and education. By paying attention to how your body is responding and being willing to make necessary adjustments, you can continue to move forward toward your fitness goals.



# Safety Considerations and Precautions

Safety must be a vital consideration for any exercise program. Regardless of the goal, it can rarely be reached or delayed if an injury occurs. Safety can include various factors regarding intensity, load, rest periods, type of exercise, etc. However, this can be simplified by ensuring all programs are designed with the assessment data in mind. For example, if the PAR-Q+ suggested that a medical professional be consulted, then consult a medical professional before engaging in exercise.

Additionally, if movement faults were identified in the OHSA, the correct flexibility and activation exercises should be included. Lastly, exercise form and technique are imperative to reducing the chance of injury. Overuse injuries are common in general exercise due to improper form, poor conditioning, and improper loads (Bonilla et al., 2022). In most cases, improving exercise techniques could reduce such injury rates by reducing unnecessary stress on certain joints, ligaments, and associated tissues.

## Proper Form and Technique

Proper form is ensuring key joints are correctly aligned. Five critical regions of the body include:

- Feet/ankles: usually straight and parallel.
- Knees: in line with toes (not pointing in or out).
- Hips/low back: neutral, not arched or rounded.
- Shoulders: leveled, not high, or rolling forward.
- Head: neutral, not tilted to one side or sticking forward.

Ideal alignment might have some variations between different exercises. For example, during a pullup, one might hear they need to pull the shoulder blades back (retract) and down (depressed). However, the shoulder blades should move forward (abduct or move away from the midline) during a plank or at the top of a pushup. Therefore, the abovementioned alignment should be a general guide rather than an absolute statement for all exercises.



# Listening to Your Body and Avoiding Overtraining

The human body effectively tells us when something isn't going as planned. The saying goes, "There's a reason why pain hurts." Aches, pain, or little "tweaks" should not be ignored. They may not mean that all exercise should cease, but they indicate if a particular body area has exceeded normal load or stress. For example, that simple tweak might be the start of grinding on the tissue surrounding a joint, eventually leading to an overuse injury. Soreness (DOMS – delayed onset muscle soreness) is common after beginning an exercise program or introducing novel movements. However, if the soreness extends beyond 1-2 days or unusual fatigue is experienced, it can be a sign of overtraining (Sutton, 2022). It is not wise or recommended to feel sore after every training session.



## When to Seek a Fitness Professional

Sometimes, even the best guides are insufficient to achieve specific health and fitness goals. Seeking the help of a fitness professional can be an invaluable decision for most individuals. A fitness professional can provide guidance on proper form and technique, which are paramount in preventing injuries. Besides injury prevention, a fitness professional can design personalized exercise programs aligning with an individual's fitness goals, whether building muscle, improving endurance, or losing weight. Structured guidance and motivational support from a personal trainer can significantly enhance one's ability to achieve and surpass fitness objectives. Therefore, when in doubt, reach out to a fitness professional for insight and guidance on BWT.



# Conclusion

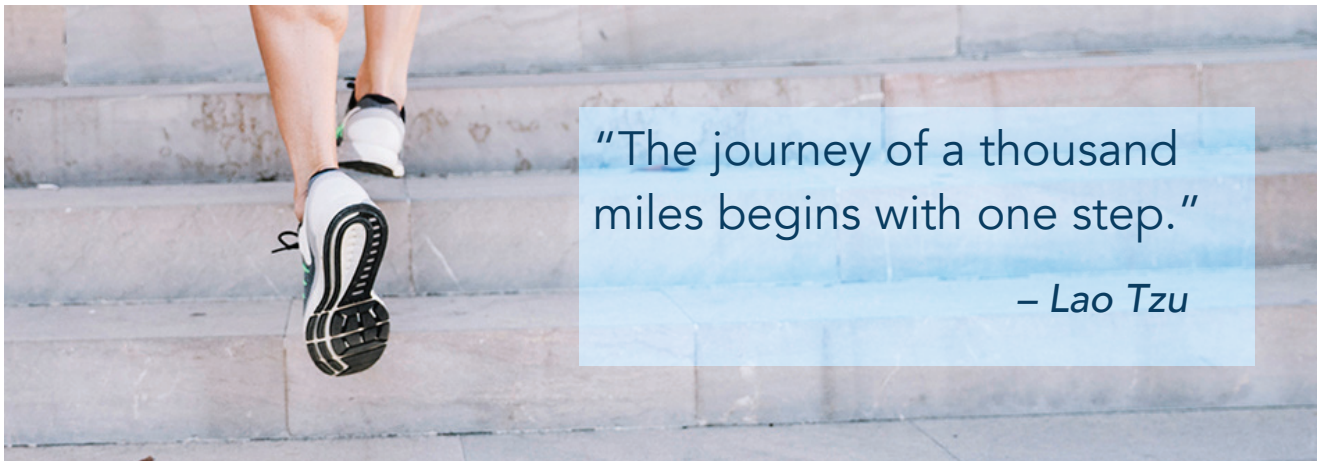
---

In conclusion, BWT is an excellent form of exercise that can be used to lose body fat, improve motor control and coordination, build muscle, or stay fit and healthy! BWT exercises can be fun and easy to set up and execute. In many cases, they might feel like a form of play and remind you of physical education classes of the past.

Fitness goals can be challenging. So, it is essential to remember to stay consistent despite the obstacles. Use BWT as one of many types of exercise to help you stay on track and reach your health and fitness goals!

## What You Can Do Now

The best thing to do now is BEGIN. Start with the assessments. If you're safe to begin exercise, perform the movement assessments and use this guide to develop a basic flexibility, core, and balance routine. This routine can stay the same for several weeks. Next, pick a few exercises described here and start.



"The journey of a thousand miles begins with one step."

– Lao Tzu

## 4-Week Bodyweight Training Program

---

Here is a sample four-week BWT program. It is designed to be done three times/week but can be done five days/week. If you are new to exercise or not consistent, the recommendation is to stick with three days. However, if your fitness level is intermediate to advanced, five days/week may be appropriate for you. Regardless, the program covers all the essentials of a results-driven program. Give it a try for the entire four weeks. Do not forget to adjust where necessary.

# Week 1

Repeat the same routine on Monday, Wednesday, and Friday. Tuesdays and Thursdays can be rest or cardio training days—progress exercises by performing more repetitions if needed. Perform enjoyable cardio on Saturday and Sunday.

	Monday	Tuesday	Wednesday	Thursday	Friday
<b>Warmup:</b> 1 set. Hold tender spots and stretches for 30 seconds each.	<b>Foam roll/ stretch:</b> Calves Glutes Upper back		<b>Foam roll/ stretch:</b> Calves Glutes Upper back		<b>Foam roll/ stretch:</b> Calves Glutes Upper back
<b>Core/Balance/ Plyometrics/SAQ:</b> Hold core and balance exercises for 20-30 seconds. Perform 8 reps of squat jumps and 1 set of cone shuffles	Plank on knees Single leg balance  Squat jump – hold the landing  Cone shuffles		Plank on knees Single leg balance  Squat jump – hold the landing  Cone shuffles		Plank on knees Single leg balance  Squat jump – hold the landing  Cone shuffles
<b>Resistance Training:</b> 2 sets of 15 reps. Use a slow tempo.	Squats, pushups, lunges & pullups		Body weight squats, pushups, lunges & pullups		Body weight squats, pushups, lunges & pullups
<b>Cooldown</b>	Repeat foam roll and stretching		Repeat foam roll and stretching		Repeat foam roll and stretching

## Week 2

Repeat the same routine on Monday, Wednesday, and Friday. Tuesdays and Thursdays can be rest or cardio training days—progress by performing more repetitions if needed. Perform enjoyable cardio on Saturday and Sunday.

	Monday	Tuesday	Wednesday	Thursday	Friday
<b>Warmup:</b> 1 set. Hold tender spots and stretches for 30 seconds each.	<b>Foam roll/ stretch:</b> Calves Thighs Chest		<b>Foam roll/ stretch:</b> Calves Thighs Chest		<b>Foam roll/ stretch:</b> Calves Thighs Chest
<b>Core/Balance/ Plyometrics/SAQ:</b> Hold core and balance exercises for 20-30 seconds. Perform 8 reps of squat jumps and 1 set of lateral A skips	Plank on toes  Side plank  Single-leg balance with opposite-leg reach  Squat jump – hold the landing  Lateral A Skips		Plank on toes  Side plank  Single-leg balance with opposite-leg reach  Squat jump – hold the landing  Lateral A Skips		Plank on toes  Side plank  Single-leg balance with opposite-leg reach  Squat jump – hold the landing  Lateral A Skips
<b>Resistance Training:</b> 2 sets of 15 reps. Use a slow tempo.	Squats, pushups, lunges & pullups		Squats, pushups, lunges & pullups		Squats, pushups, lunges & pullups
<b>Cooldown</b>	Repeat foam roll and stretching.		Repeat foam roll and stretching		Repeat foam roll and stretching

## Week 3

Repeat the same routine on Monday, Wednesday, and Friday. Tuesdays and Thursdays can be rest or cardio training days—progress by performing more repetitions if needed. Perform enjoyable cardio on Saturday and Sunday.

	Monday	Tuesday	Wednesday	Thursday	Friday
<b>Warmup:</b> 1 set. Hold tender spots and stretches for 30 seconds each.	<b>Foam roll/ stretch:</b> Outside thigh Hamstrings Hips		<b>Foam roll/ stretch:</b> Outside thigh Hamstrings Hips		<b>Foam roll/ stretch:</b> Outside thigh Hamstrings Hips
<b>Core/Balance/ Plyometrics/SAQ:</b> Hold core and balance exercises for 20-30 seconds. Perform 8 reps of squat jumps and 30 seconds of jump rope	Side plank Opp arm/leg reach Single-leg squat Repeating squat jumps Jump rope		Side plank Opp arm/leg reach Single-leg squat Repeating squat jumps Jump rope		Side plank Opp arm/leg reach Single-leg squat Repeating squat jumps Jump rope
<b>Resistance Training:</b> 2 sets of 15 reps. Use a medium tempo.	Squat Thrusts, Staggered hand stance pushups, Side lunges, Cobras		Squat Thrusts, Staggered hand stance pushups, Side lunges, Cobras		Squat Thrusts, Staggered hand stance pushups, Side lunges, Cobras
<b>Cooldown</b>	Repeat foam roll and stretching		Repeat foam roll and stretching		Repeat foam roll and stretching



## Week 4

Repeat the same routine on Monday, Wednesday, and Friday. Tuesdays and Thursdays can be rest or cardio training days—progress by performing more repetitions if needed. Perform enjoyable cardio on Saturday and Sunday.

	Monday	Tuesday	Wednesday	Thursday	Friday
<b>Warmup:</b> 1 set. Hold tender spots and stretches for 30 seconds each.	Foam roll/ <b>stretch:</b> Calves Thighs Upper back		Foam roll/ <b>stretch:</b> Calves Thighs Upper back		Foam roll/ <b>stretch:</b> Calves Thighs Upper back
<b>Core/Balance/ Plyometrics:</b> Hold core and balance exercises for 20-30 seconds. Perform 8 reps of squat jumps	Dead bugs  Prone cobra  Single-leg squat touchdown  Repeating lateral squat jumps  Running in place		Dead bugs  Prone cobra  Single-leg squat touchdown  Repeating lateral squat jumps  Running in place		Dead bugs  Prone cobra  Single-leg squat touchdown  Repeating lateral squat jumps  Running in place
<b>Resistance Training:</b> 2 sets of 15 reps. Use a medium tempo.	Squat Thrusts, Staggered hand stance pushups, Side lunges, Cobras		Squat Thrusts Staggered hand stance pushups, Side lunges Cobras		Squat Thrusts, Staggered hand stance pushups, Side lunges, Cobras
<b>Cooldown</b>	Repeat foam roll and stretching		Repeat foam roll and stretching		Repeat foam roll and stretching

# Recommended Resources

If you are looking for additional resources regarding BWT, consider the options below.

- The NASM-CPT Podcast with Rick Richey
- A 9-Exercise Bodyweight Workout: <https://blog.nasm.org/9-exercise-body-weight-workout>
- Using the NASM OPT™ Model for Home Workouts: <https://blog.nasm.org/using-the-nasm-opt-model-for-home-workouts>
- Tips for Working Out At Home: Making At-Home Workouts Work for You: <https://blog.nasm.org/home-workout-tips>



# References

- Ainsworth, B. E., Haskell, W. L., Herrmann, S. D., Meckes, N., Bassett, D. R., Jr, Tudor-Locke, C., Greer, J. L., Vezina, J., Whitt-Glover, M. C., & Leon, A. S. (2011). 2011 Compendium of Physical Activities: a second update of codes and MET values. *Medicine and science in sports and exercise*, 43(8), 1575–1581. <https://doi.org/10.1249/MSS.0b013e31821ece12>
- Alonso-Aubin, D. A., Picón-Martínez, M., Rebullido, T. R., Faigenbaum, A. D., Cortell-Tormo, J. M., & Chulvi-Medrano, I. (2021). Integrative Neuromuscular Training enhances physical fitness in 6-to 14-year-old rugby players. *The Journal of Strength & Conditioning Research*, 35(8), 2263–2271
- Behm, D. G., Blazevich, A. J., Kay, A. D., & McHugh, M. (2016). Acute effects of muscle stretching on physical performance, range of motion, and injury incidence in healthy active individuals: A systematic review. *Applied Physiology, Nutrition, and Metabolism*, 41(1), 1–11.
- Bonilla, D. A., Cardozo, L. A., Vélez-Gutiérrez, J. M., Arévalo-Rodríguez, A., Vargas-Molina, S., Stout, J. R., Kreider, R. B., & Petro, J. L. (2022). Exercise selection and common injuries in fitness centers: A systematic integrative review and practical recommendations. *International journal of environmental research and public health*, 19(19), 12710. <https://doi.org/10.3390/ijerph191912710>
- Brachman, A., Kamieniarz, A., Michalska, J., Pawłowski, M., Słomka, K. J., & Juras, G. (2017). Balance training programs in athletes—A systematic review. *Journal of human kinetics*, 58, 45.
- Chaabene, H., Behm, D. G., Negra, Y., & Granacher, U. (2019). Acute Effects of Static Stretching on Muscle Strength and Power: An Attempt to Clarify Previous Caveats. *Frontiers in physiology*, 10, 1468. <https://doi.org/10.3389/fphys.2019.01468>
- Cheatham, S. W., Kolber, M. J., Cain, M., & Lee, M. (2015). The effects of self-myofascial release using a foam roll or roller massager on joint range of motion, muscle recovery, and performance: A systematic review. *International journal of sports physical therapy*, 10(6), 827–838.
- Del Vecchio, L., Green, S. & Daewoud, H. (2022). Bodyweight training for muscular strength & endurance. *Journal of yoga & physiotherapy*, 10(2): 555783. <https://juniperpublishers.com/jyp/pdf/JYP.MS.ID.555783.pdf>
- Donnelly, J. E., Jakicic, J. M., Pronk, N., Smith, B. K., Kirk, E. P., & Jacobsen, D. J. (2003). Is resistance training effective for weight management?. *Evidence-Based Preventive Medicine*, 1(1).
- Fayazmilani, R., Abbasi, A., Hovanloo, F. & Rostami, S. (2022). The effect of TRX and bodyweight training on physical fitness and body composition in prepubescent soccer athletes. *Sport sciences for health*, 18, 1369–1377. <https://doi.org/10.1007/s11332-022-00908-1>
- Greulich, T., Kehr, K., Nell, C., Koepke, J., Haid, D., Koehler, U., Koehler, K., Filipovic, S., Kenn, K., Vogelmeier, C., & Koczulla, A.-R. (2014). A randomized clinical trial to assess the influence of a three months training program (Gym-based individualized vs. Calisthenics-based non-individualized) in COPD-patients. *Respiratory Research*, 15(1), 36. <https://doi.org/10.1186/1465-9921-15-36>
- Kinucan, P. & Kravitz, L. (2006). Controversies in metabolism. *IDEA Fitness Journal*, 3(1), 20–22.
- Liu, X., Gao, Y., Lu, J., Ma, Q., Shi, Y., Liu, J., Xin, S., & Su, H. (2022). Effects of Different Resistance Exercise Forms on Body Composition and Muscle Strength in Overweight and/or Obese Individuals: A Systematic Review and Meta-Analysis. *Frontiers in physiology*, 12, 791999. <https://doi.org/10.3389/fphys.2021.791999>
- Pinckard, K., Baskin, K. K., & Stanford, K. I. (2019). Effects of exercise to improve cardiovascular health. *Frontiers in cardiovascular medicine*, 6, 69. <https://doi.org/10.3389/fcvm.2019.00069>
- Plotkin, D., Coleman, M., Van Every, D., Maldonado, J., Oberlin, D., Israetel, M., Feather, J., Alto, A., Vigotsky, A. D., & Schoenfeld, B. J. (2022). Progressive overload without progressing load? The effects of load or repetition progression on muscular adaptations. *PeerJ*, 10, e14142. <https://doi.org/10.7717/peerj.14142>
- Piras, A., Persiani, M., Damiani, N., Perazzolo, M., & Raffi, M. (2015). Peripheral heart action (PHA) training as a valid substitute to high intensity interval training to improve resting cardiovascular changes and autonomic adaptation. *European journal of applied physiology*, 115(4), 763–773. <https://doi.org/10.1007/s00421-014-3057-9>

- Post, E. G., Olson, M., Trigsted, S., Hetzel, S., & Bell, D. R. (2017). The reliability and discriminative ability of the overhead squat test for observational screening of medial knee displacement. *Journal of Sport Rehabilitation*, 26(1). <https://doi.org/10.1123/jsr.2015-0178>
- Rabin, A., & Kozol, Z. (2017). Utility of the overhead squat and forward arm squat in screening for limited ankle dorsiflexion. *Journal of Strength and Conditioning Research*, 31(5), 1251–1258. <https://doi.org/10.1519/jsc.0000000000001580>
- Schoenfeld, B. J., Grgic, J., Van Every, D. W., & Plotkin, D. L. (2021). Loading recommendations for muscle strength, hypertrophy, and local endurance: A re-examination of the repetition continuum. *Sports*, 9(2), 32. <https://dx.doi.org/10.3390/sports9020032>
- Suprak, D. N., Dawes, J., & Stephenson, M. D. (2011). The effect of position on the percentage of body mass supported during traditional and modified pushup variants. *Journal of strength and conditioning research*, 25(2), 497–503. <https://doi.org/10.1519/JSC.0b013e3181bde2cf>
- Sutton, B. (2022). *NASM Essentials of Personal Fitness Training* (7<sup>th</sup> ed.). Jones & Bartlett Learning.
- Thompson, W. R. (2023). Worldwide survey of fitness trends for 2023. *ACSM's health & fitness journal* 27(1), 9-18, 1/2. <https://doi.org/10.1249/FIT.0000000000000834>
- Zhu, Y., Qi, Z., & Ding, S. (2022). Exercise-induced adipose tissue thermogenesis and browning: How to explain the conflicting findings?. *International journal of molecular sciences*, 23(21), 13142. <https://doi.org/10.3390/ijms232113142>