

Equipping a Home Gym

[Pete Matthews Jr](https://3nt.xyz) – <https://3nt.xyz> – © December 26, 2020; August 13, 2021

With some ingenuity, it's possible to come up with a home equivalent for almost anything you might want to do at a commercial gym. You'll need to make some trade-offs, depending on your space, budget, inclinations, abilities and disabilities. Don't have any disabilities? Lucky you!

The fundamentals for equipping a home gym are:

1. **Latex Bands.** Flat and/or tubular bands, both with and without handles, are a great place to start. I also describe vertical bars and exercise stations to use with bands. [page 1]
2. **Weights.** Dumbbells (pairs of one-hand weights) are more versatile than barbells or kettlebells. When possible, I prefer to work against gravity with weights, rather than use bands. [page 5]
3. **Cardio Machine.** If your space and budget permit, a cardio machine will be a great centerpiece to your gym. [page 6]
4. **Supporting Gear.** Rugs, mats, gloves, bench, TV and more. [page 7]
5. **Exercise Stations.** For best use of bands, a pole, vertical bar or door hinge attachment is necessary. I have two additional stations dedicated to specific exercises with bands. [page 9]



Latex Bands

Perform Better is a fine resource for gym gear. Their “First Place All-Purpose Exercise Band” is excellent. The connecting strap joins two separate pieces of latex tubing. The tail of the connector can be slipped through a door hinge, and the door closed, to attach the tubing without damaging it. Start here:

<https://www.performbetter.com/First-Place-All-Purpose-Exercise-Band>



It can easily be wrapped around a bar or post. Note how I have positioned the connecting straps on the sides of the plastic, to better keep the band centered on the post.

I ordered the orange (level 4) band that I had used at the gym, and the yellow (level 6) band, attempting to bracket my needs. If you have not used tubing, I suggest levels 2 & 4 (there are no 3 & 5) or maybe 1 & 2. I used the






orange for a while, moved up to yellow, and backed down to orange for two exercises. It is typical to move through one level of bands to the next, a cost to be accepted. First Place bands are sturdy and last a long time. Shipping can be a factor, so try to get it right in one or two orders.

Perform Better had a major, long, Black Friday sale in 2020. Also look for promo codes online.

Wirecutter evaluates and recommends latex exercise bands at <https://www.nytimes.com/wirecutter/reviews/best-resistance-bands/>. Their top two picks were sets of tubing with metal ends, detachable handles and an additional strap that you slip past a door hinge and then close the door on. Resistance can be varied by changing bands or connecting multiple bands simultaneously.

Because reconfiguring equipment slows you down, I prefer the captive handles of First Place bands to reconfiguring bands at the time of use.

Resistance Band Training (RBT) is the business of Dave Schmitz at <https://resistancebandtraining.com>. He has a fine line of flat latex training bands and accessories, of which I have quite a few. The Economy Fitness Package was the “Upgrade Pick” at Wirecutter, which is how I discovered them. Dave also offers “Band Gym” advice, videos and services. While I do read his e-mails and occasionally interact with Dave, I mostly just buy his products and bend them to my will. Here is a table of his products that I recommend:

Band	Band Image	Cross Section	Estimated Resistance, Price
41 Inch Orange Micro Band (0.5"x2.5mm)		32 mm ²	5-30 lbs \$7.49
41 Inch Yellow Super Micro Band (0.812"x2.5mm)		52 mm ²	10-40 lbs \$9.49
41 Inch Red Mini Small Band (0.5"x5mm)		64 mm ²	15-55 lbs 11.99 21.99 (2)
41 Inch Black Medium Band (0.812"x5mm)		104 mm ²	20-85 lbs 16.99 31.99 (2)
41 Inch Purple Large Band (1.125"x5mm)		143 mm ²	30-115 lbs 22.49 42.99 (2)

13 x 3/4 Inch Green Dynamic Stabilizer Band (0.75"x3.2mm)		60 mm ²	5-20 lbs \$6.99
13 x 1 Inch Black Dynamic Stabilizer Band (1"x3.2mm)		80 mm ²	15-35 lbs \$7.99
13 x 1 1/2 Inch Purple Dynamic Stabilizer Band (1.5"x3.2mm)		120 mm ²	25-50 lbs \$8.99
Training Handles: 1" diameter foam covered plastic handles designed with a secure triple stitched nylon strap and a band friendly 1" wide carabiner for quick band attachment. \$24.99			
Band Utility Strap: A 28" long triple stitched looped nylon strap that is placed through a 10" x 2" long plastic tube. \$15.99			
The BAR: 48" long x 1" diameter secure wall mount bar, with vertically positioned screw sites for quick attachment to a wall stud. Hardware is included. \$89.99			

Don't get a **link strap** (not shown), which is used to join two bands into one long one. The process is time-consuming and only makes sense if you will leave them set up that way for a while. In most cases, you would be better off with a First Place band, even if you (as I did) already have flat bands.

The **Purple Large** RBT bands provide substantial resistance and are the widest that can be used with the RBT handles. I have a pair of them, but use only one, for leg exercises. I have it permanently set up on a pole with my Band Utility Strap. Dave has bands that are both longer and wider than those shown above, but I have no need for them.

If you will set up a **lat machine** (described later, for assisted pull-ups and dips), get the **handles** and two pairs of bands to bracket your needs. I used to do 100 lb on the lat machine at the gym. I started with red bands and moved up to black. I have no intention of going higher. This is a serious machine that benefits from having dedicated flat bands with the superior RBT handles.

The quality of flat latex bands reportedly varies from vendor to vendor, but it's reasonable to assume that the resistance provided by a band is proportional to its **cross section** – that's why I calculated the values in that column. For example,

we can see that the resistance of one purple **stabilizer band** (120 mm²) is equal to the resistance of two green stabilizer bands (60 mm² each).

Perform Better has “First Place Super Bands,” flat bands that are all listed as 5mm thick. Their 40” black ½-inch wide band proved to be a hair thicker and stiffer than the **RBT red band** of the same nominal dimensions – but close enough. I passed the new black one on to my daughter, when I helped her start a home gym. For sizes smaller than those I compared, I recommend only the **RBT orange and yellow bands**, which are the same width but half as thick as the RBT red and black bands, respectively.

Perform Better also has 9-inch mini and 12-inch mini-XL bands in multiple grades, recommended by Wirecutter. The stiffest of these bands has the approximate cross section of a green RBT stabilizer band. These thin bands need to be treated carefully to avoid tearing. The short bands you find on Amazon appear similar to these bands. Because they were of no use for the exercises I do, I passed my mini-XL set on to my daughter (who may also not need them).

Instead, get a set of three **RBT Stabilizer Bands**. If you will set up a Hip Adduction machine (described later), get a second set. I have only found stabilizer bands (or anything like them) at RBT. My green and purple stabilizer bands are slightly longer than a black band, which fits inside the others – a considerable convenience when combining bands.

RBT has a new product that appears to compete in an adjacent space. The “Hip Band” is fabric-constructed, 13-inches long (stretching to 36), 2 inches wide and 1 mm thick. It’s available in five color-coded resistances and is intended to be used just above both knees.

Band resistance. If a band is too weak for you on a given exercise, you would need to [over]stretch it a long way to get sufficient resistance. If the band is too strong, you cannot complete the exercise when the band is taut to start; to do it at all, the band would need to be slack for some of the distance of the exercise. Between these extremes, more than one size of band might work properly for you. In practice, shorter bands are stiffer than longer bands, because you stretch each bit of shorter material more.

Perform Better offers “First Place Travel Bands” at levels 2, 4 & 6. The tubing is about half the length of the tubing on the regular bands. I bought an orange (4) band, but have not found much use for it. The short bands are stiff and don’t have the travel necessary for most of my exercises. Every once and a while, I pick it up and think about what it would be good for – here are some ideas:

- A travel band can be loop-attached, through the handle, to a pole. This would allow you to do single-hand exercises holding one handle.
- If you want a small band for travel, try the red (level 2) band.

- A pair of RBT black bands and a pair of handles is about \$57. You could substitute two First Place Travel Bands on a lat machine for \$38, but you would have to hold two handles in each hand – and get the right bands.

Perform Better also has single pieces of tubing (without connector) with handles on each end. This style is OK, but the connector is better.

Having extra gear on hand lets you experiment, whether you use it regularly or not.

Flat bands are versatile for exercises done without attachment: between hands, wrapped under a foot, around the back, etc. There are no handles to knock you about. I only do one such exercise, but many are possible – Dave is ready to help.

RBT offers various packages of products that will save you a few bucks if you want all the equipment they include.

Weights

Start low with the weights (and the reps). When I started, many years ago, I bought 5, 7 and 10 pound weights at City Sports. I started with 5s, then 5s & 7s; it was a while until I used the 10s.

After we moved to Canton MA, I joined the Answer Is Fitness gym. After a while there, I moved up to 12 pound weights. When somebody stole the Apollo 12s, I pushed on early to 15s, with no intention of going higher.



When I set up my home gym, I bought Apollo brand, blue, neoprene-coated, 15 pound weights, which I had found to be excellent at the gym. The key is, when you set them on the floor, I want enough room for my fingers under the bars to do push-ups. This is definitely true on the 12s, and probably on the 10s.



It's bad for the wrists to do pushups palm-down on the floor. The Apollo weights mean that I don't need to get out my old push-up bars (shown) during the workout. At apolloathletics.com, the item number is "NEO-N-1 to -20", indicating the weight. I got mine at Amazon, who no longer carry them.

Neoprene keeps the weight from hurting your hand or ring – I don't like cross-cut metal shafts.

Apollo weights are hard to come by now. In case I might need to step down to 12 pound weights, I bought this very good black pair from Perform Better. I gave the 10s to my daughter – her fingers fit under the bar, and they are a good weight for her. I may replace them with 9s or 10s from Perform Better at their next sale.

Once I got the new Apollo weights, I reconfigured my quite old, adjustable set of dumbbells from 14 pounds to their max of 22 pounds each (top right of the rack). I only use them on the Shoulder Press. (Adjustable does not mean you want to adjust them often.)

On the top left of the rack is the block I use for ankle eversion exercises.

The lower rack contains my now-unused 7s and 5s. Karen has had the 3s, 2s, 1s and single chrome/green 5 for quite a while. On the right is an exercise mat we don't use (having rugs). I have seen Karen use the 10s, 5s and 2s, working with a trainer, but the trainer moved away.

If you want barbells, it's better to wait until you feel it's safe to return to the gym. I miss a few machines and the great showers at the gym, but not the exposure to COVID and colds – I'm not going back.

Cardio Machine

Outdoor activity, such as walking, running, gardening or yardwork is often superior to working out on a machine. However, when the weather does not cooperate, a machine is a fine option. Also, it's often safer to get your heart rate up, if you wish, working hard on a machine. The main forms of cardio machine you are likely to consider for home, starting with the least likely, include:

Rowing Machine. If you rowed in college, this machine may be for you. Most others should pick something else. The rowing machines I have tried all use a fan for resistance; the blades should be adjustable to change the resistance for a given speed. Since both hands are busy on the bar, rowing is not a good match for reading during a lighter workout. At the gym, I found it numbing, as in both boring and mildly painful on my back. I was always ready to quit after five minutes. The rowing machine provides a full body, but non-weight-bearing workout.

Ski Machine. The original cardio clothes rack, indeed. Stop laughing; a ski machine can give you a good workout. I had a NordicTrack for about two decades, when I mostly used the pool & gym at MIT (near work). When I moved to Canton, I finally figured out why I did not like using it: it hurt my back. The machine offers skis on rollers and your choice of handles: fixed or on strings and pulleys, the latter adding somewhat of an upper body workout. The machine has a vertical post with a cushion to lean against. That cushion could not be adjusted

high enough for me (5'11"), so I had to use my muscles to stabilize my back. If you are shorter, a used ski machine may work for you.

Treadmill. A treadmill should provide more cushioning for your leg joints than walking or running outdoors, but it would add little variety. Consumer Reports rated the Sole F80 treadmill a CR Best Buy; the price is up \$100 since then, to \$1,600.

Exercise Bike. If your primary cardio is walking or running outdoors, then an exercise bike may be just the ticket. (However, for a swimmer, a bike is a second non-weight-bearing exercise.) You can get into a fine bike for well under \$1,000 – see “Exercise Bikes for Home Gym” on my Fitness for Life page. If you want an online class experience, you can get that on a bike for a 5-year cost ranging from \$1,400 on the cheap to \$5,300 for the best from Peloton.

Elliptical Machine. An elliptical machine provides weight bearing, almost no-impact exercise. When equipped with moving handles, it can provide a full-body workout. Consumer Reports recommends, among others, the Sole E95S at its current \$2,200 price. The feature that sets it apart from the E95 (which I purchased for \$1,800): the stride length is adjustable – on the fly – to vary the workout and to accommodate riders of different sizes. On a budget, the E35 at \$1,500 is a good compromise. For more information, see “Sole E95 Elliptical” on my Fitness for Life page. Note that this machine requires clearance from the floor over the riding position of 18 inches more than the height of the rider. I continue to find new ways to use the machine, such as full body high intensity interval training (HIIT) and SPRINT workouts.

High-end cardio machines often come with a subscription to video classes, which may be costly. You may find a TV hung on the wall to be more flexible, as you can stream more than workouts.

Supporting Gear

Media. While I do have an old TV I could hang, I have not yet done so. Instead, I dug out an old set of computer speakers and hung the satellites on the wall with the subwoofer on the floor in the middle, and my old Clip music player feeding it. This is far superior to the speakers on the E95. If I'm taking it easy on the E95, I prefer to read a book on my phone to watching TV.



Floor covering. You should have a carpet or padding on the floor, to protect it and you. We use some old, machine-made orientals. They work well in a home gym, because they come with built-in marks to help place feet consistently. Among other places, Costco sells interlocking foam squares that could be useful

on a gym floor. You could let the floor fend for itself, and use a basic gym mat for floor exercises. Perform Better has both squares and mats.

Bench. Some exercises require or are best on an exercise bench. When we broke up my Dad's summer home on Islesboro ME, I got his bench. The long back can be raised up at various angles, a feature that I use on the Shoulder Press, which I consider optional. That is my only exercise that requires a bench.

Floor Pad. My wife gave me this green gardening pad, which I use with an extra scrap of carpet underneath: as a pillow on most supine exercises (protecting my neck), and to protect my elbow when doing a side plank.

Pads for your legs. Some band exercises can irritate the tissues on your legs. If wearing long pants are not sufficient protection, get some fluffy pads. I use some old mitts I used once in the 90s, washing the car with family. I use them on Kicks and Hip Adductions.



Gloves. The top pair are my original leather weight gloves. Tabs held the back closed with hook-and-loop closures (cut off here). The closure wore out and the seam on the thumb let go as well (see flattened thumb on right). I replaced them with a similar pair, still available for \$10:

<https://smile.amazon.com/gp/product/B00K3E3A3M/>. These are great when working with bands and handles, or serious weight such as push-ups. However, Dave Schmitz recommends gloves with fingers, if you will do a lot of work with your hands on flat latex bands (I seldom do that).

The closure wore out on the second pair, and the hooks began to snag and degrade the front of my shirt and straps on my band handles. I cut the tabs off the original pair, as shown. This worked OK. My gloves stayed on fine, but I was concerned that they might cause a problem.

At the end of April 2021, I ordered the bottom pair in the photo for \$15:

<https://smile.amazon.com/gp/product/B086X4S2WV/>. They are made of synthetic fabric with gel pads. The closures have been holding up well, as the fabric stretches to relieve tension. They work well most of the time, but the padding is not sufficient for push-ups. To solve that problem, I wear the original gloves on top of the new ones for that exercise.

Exercise Stations

Attachment. My basement has two adjacent poles that would suffice, but I thought I might want to do exercises between two separated poles or bars. I bought a 42-inch Glacier Bay grab bar from Home Depot. This I mounted on a stud that presented its 3.5" face by the staircase; a doubled stud would also work well. Notice in the photo, the nearly smooth brushed nickel finish that won't damage bands.



The inside pencil marks on the stud are 1.5" apart (the narrow width of a stud); the outside marks are 2.5" apart (the wide face of a 2x3). In theory, this bar can be mounted onto the narrow width of a stud using the top hole and driving screws at an angle through the two bottom holes (mostly concealed by the bar). In practice, you would need to know exactly where the stud is. Behind wallboard, that could be

difficult; on a bare stud, the flange will hang out in the air.

For mounting a bar vertically onto a single stud behind wallboard, it would be wise to buy **The BAR** from RBT. It has screw holes in line with, and on the outside ends of, the bar.

My grab bar does get some use, but I gave up on the 2-bar exercises – too much setup time. **Note:** most doorways have a wide or doubled stud.



Band attachment. Here, the band simply wraps around the bar (or post). You can exercise using one hand or handle on each loop, or both loops in one hand or handle. We'll see a single handle used with this setup on the Lat Machine.



Here is a **loop attachment** to the bar. You can exercise with one or both hands or legs on the single available loop (out of the picture to the right).



Finally, we have a loop attachment to a band utility strap that is loop-attached to a post. The strap eases friction on the main band, but a loop attach to the pole or a bar could be used. Alternatively, the strap could be sent past the hinges of a door, and the door closed on the strap. This setup is for Leg Curls and (with a pad) Kicks.

The stool is for the Lat Machine, overhead.



Lat & Dip machine. For swimmers, the Lat (Assisted Chin) machine is important. It can also be used for Assisted Dips. I installed two assist bars onto the nominal 2x3 (2.5”) bottoms of the fabricated joists in the ceiling, near to the supporting steel beam. An alternative would be to use a single grab bar running perpendicular to the joists (parallel to the wall/beam/poles).



You’ll need space for your legs or back between the bars and any wall, which I assured by offsetting one bar from the vertical poles. My black flat bands and detachable handles from RBT live permanently on this machine. Each band passes over its bar, and the carabiner of the handle hooks onto both loops of the band. These wide handles are excellent for this purpose.

The assist bars came from Home Depot. Combined, the two bars would easily support my whole weight. One bar is not rated that high, but I always use both bars – I attached them well – and I generally have some weight on the ground or a stool.



Hip Adduction Machine. In Latin, *ad* means “to” or “toward” and *ab* means “from.” The Hip Adduction exercise draws the knees together.

Here you see my hip adduction machine (hung with triple-looped red bands, along with the pads I use (tucked into the vertical bar mentioned above). Detailed instructions for this exercise are in “Home Gym Workout” on my Fitness for Life page.

Each post of the hip adduction machine) is constructed from ½ inch (nominal inside diameter) plumbing parts. These look like the parts I bought:

[½ in. Black Iron Floor Flange \(2-Pack\)](#)

[½ in. x 4 in. PVC Riser \(2\)](#)

[½ in. Malleable Iron Cap \(2\)](#)

The floor flange is screwed to the wall, the threaded riser screws into the flange, the iron cap screws onto the riser, and yellow duct tape is layered over the cap as a protective warning. I chose to use a 4” plastic sprinkler riser for the rod, being easier on the bands and less rigid. This has been fine so far, but a black steel nipple would be sturdier. This machine requires the 10.5” inset before the first step, to swing the feet and knees, although with no inset, it might be possible to sit on the second step to do the exercise. The pipe centers are 42.5 inches apart.

If I were to construct a hip adduction machine on studs 16 inches apart, I would select a triple gap of 48 inches. I’d replace the PVC risers with a wide “H” constructed from a 48” black steel pipe (reinforcing crossbar), two 2” black steel nipples (next to the wall), two ½” black iron FPT x FPT Tees, and two 10” black steel nipples (plus the flanges and caps). I’d try double-looped red or black bands.

This may seem like a big deal for one exercise, but the arthritis in my hips is a big deal for me. This is an exercise that seemed to be on the list for many women at the gym.

Final Advice

Before ordering anything, try to figure out what exercises you might want to do. Keep as many options open as possible.

Be sure to explore “Home Gym Workout” on my Fitness for Life page at <https://3nt.xyz/fitness.htm>. The name of each exercise there is a link to a full explanation, including pictures. Look up any exercise mentioned above that you did not understand.

Born in 1948, I am over 200 pounds, 5’11” and have been working out most days for many years. If you have read this far, you probably need less resistance than I do. Here is a starting point:

Reasonable initial purchases from RBT.

- 13” Dynamic Stabilizer Pack (three bands, one of each size). If you will set up a Hip Adduction machine, get two packs.
- Five 41” bands in four consecutive sizes, with one size in the middle doubled, for example: orange, yellow, red, red and black. If you will set up a lat machine, add a band to double up a second size, and get a pair of handles. Otherwise, you might get by with a couple of well-chosen bands.
- Band utility strap.
- The BAR, if you are unable to use the recommended bar from Home Depot.

Reasonable initial purchases from Perform Better:

- Two First Place All-Purpose Bands, levels 1 & 2 or 2 & 4.
- Three sizes of black, Neoprene Covered Dumbbells, two or three pounds apart. (They come in whole pound weights from 1 to 10, 12, and 15.) The largest should be your guess at your top weight for the coming year, perhaps 9 or 10 pounds. If you are just starting out, begin no higher than 5 pounds. Increase weights slowly, because your muscles get stronger much faster than tendons and ligaments.

Because a significant shipping charge is tacked onto all but 1 and 2 pounders, you may do better at a sporting goods store for weights. (Just be sure that, when you set the largest on the floor, your fingers will go under them, to serve as pushup bars.)