

**ALL ABOUT**

# PROGRAM DESIGN



**A STEP-BY-STEP GUIDE  
TO CREATING THE IDEAL WORKOUT**

**TIM HENRIQUES,**  
*DIRECTOR NPTI VA/MD/DC*



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Program Design: A Step-by-Step Guide to Creating the Ideal Workout  
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## Chapter 1

# Introduction

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The purpose behind this eBook is to help you—the personal trainer—create effective, results-oriented, fun workout programs for your clients. To do that we are going to combine the latest exercise science with time-tested methods that will help your clients achieve their goals. When clients get better results, they stay with you longer and they are more likely to refer their friends and family to you. It is a win-win situation. Client retention is the number one way to judge the effectiveness of a personal trainer; helping clients attain the best shape of their life is a surefire way to ensure their retention with you.

A personal trainer's scope of practice is to enhance the components of fitness for the general, healthy population. In plain language that scope explains two things. Who is a trainer able to work with, and what can a trainer do with that person?

First, trainers are taught to work with the general healthy population. In more simple terms that means trainers will work with adults who do not have a disease that might affect their metabolism or their ability to exercise. In more technical terms it means individuals that have one or fewer risk factors for Coronary Artery Disease as defined by the Risk Stratification guidelines outlined by the ACSM. If an individual falls outside the scope, then another health professional—typically a doctor—will need to place that individual in the scope before a trainer can work with them. The guidelines in this book are presented assuming that your client meets the general, healthy definition or your client has already been cleared to exercise without significant restrictions by a doctor. Special populations will often require more specialized exercise program guidelines.

The second part of the scope lays out what a trainer does. Our job is to enhance the components of fitness. That means we should be experts in

improving the various components of fitness. No one else has our scope and no one else should be as well trained as personal trainers to do just that. A physical expression of fitness is always multi-faceted and as such there are various components of fitness, which include 5 classic components plus 5 subcomponents. These components are:

## **5 Classic Components of Fitness**

- Muscle Strength
- Muscle Endurance
- Body Composition
  - Amount of bodyfat (fat loss)
  - Amount of muscle tissue (hypertrophy)
- Cardiovascular Endurance
- Flexibility

## **5 Subcomponents of Fitness**

- Power
- Explosiveness
- Speed
- Agility
- Quickness



As certified and qualified personal trainers, we are experts in the components of fitness. Whenever possible trainers should seek to relate a client's goals to a component of fitness. The joy of the components of fitness is that they are easy to measure, they have been standardized to allow clients to know where they rank in a particular component, and normally the components of fitness are easy to improve with a bit of hard work. The key to the latter is knowing what kind of hard work to do. This text will help define that.

Clients don't always know what their specific goals are. It is the job of the trainer to *seek first to understand their goals* and then to clarify them. When clients say they want more energy, trainers should think about cardiovascular endurance and body composition. When a client says they want to look better, trainers should think about bodyfat and muscle size. When a client wishes they had their youth back, trainers should think muscle strength and flexibility. Whenever possible engage the client and try to relate their goals to the components of fitness. That is something that we can measure, and something we can improve.

Don't forget to use the acronym SMART to help set up more concrete, clear goals for you clients once you fully understand what they are trying to accomplish. Goals should be:

**S**pecific

**M**easurable

**A**chievable

**R**ealistic

**T**imeline

One of the best things about focusing on the components of fitness and being a careful observer is you will very quickly realize what works and what doesn't. You can't fake fitness. One of my favorite quotes is: you can't argue with results. What gets measured—improves. Use the standardized tests to measure your clients ability in the areas you wish to focus on. Measure and record the data to the best of your ability. Train hard for 1–3 months and then retest. Hopefully what you did worked. If there was no progress, or worse the client regressed, analyze the situation as best you can. Learn from it so at the very least you don't make the mistake of repeating that program again. The more you train, the more you observe, the more results you get, the better you will become. It is my hope that this book provides a solid foundation to jump start you in the right direction.

## Chapter 2

# The Exercise Program Design Chart

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The majority of what we know about exercise science and program design can be distilled into a concise chart. They say a picture is worth a thousand words; so most definitely is this chart. This chart summarizes the primary fitness related goals that most clients and athletes will have, and then it outlines the key training parameters that should be used to meet those goals. The following 7 chapters will examine each one of those goals, one by one, in depth to fully explain how to best create a fun and effective workout program centered around the desired outcome.

### Exercise Program Design Chart

Goal	Exercises per session	Reps	Sets	Load	Rest
Power	2-6	1-5	3-5	75-90%	2:00-5:00
Max Strength	4-7	1-6	2-6	85%+	2:00-5:00
Hypertrophy	5-8	6-12	3-6	67-85%	:30-2:00
Muscle Endurance	5-10	12-20+	2-3	50-67%	0-:30
Weight Loss	6-12	8-20	2-4	50-70%	0-1:00
Beginner	8-12	10-15	1-3	40-65%	:30-1:00
Explosiveness	4-8	5-20	2-4	20-40%	:30-1:00

### Key Definitions

Running along the top row you'll see the key workout variables you want to consider when creating a goal based program.

**Exercises per workout**—this is the **total number** of resistance training exercises performed in a single workout, assuming one usually has 45–90 minutes to train. Think quality over quantity, but there needs to be a harmonious blend of both.

**Reps**—this is the number of **reps per work set** that should be completed when training for this goal. This guideline is not set in stone, but it means most of the training sets should incorporate the suggested number of reps. Warm-up sets can be structured as you wish.

**Sets**—this is the number of **work sets per exercise** you will generally employ. This does not include warm-up sets, which become more important as you move up the chart.

**Load**—this is the range of intensity you want to lift in compared to your 1RM on that lift. This applies to work sets only. This is a good guideline to start with but the bottom line is as long as you continually apply progressive overload, you will be at or near your target load in short order.

**Rest**—this is the suggested rest time in between work sets. In my opinion this variable is often overlooked but it is very important.

The first column lists the goal you are working toward.

**Power**—means you want to take a heavy object and move it fast. The best example of this is Olympic Weight Lifting, the shot put, hammer throw, or something like that. The lifts should be done in an explosive fashion whenever possible.

**Max Strength**—you want to improve your 1RM on the key lifts. Powerlifting represents this. Max Strength may be expressed reasonably slowly.

**Hypertrophy**—the scientific name for increasing muscle size and making the muscle grow. Bodybuilders express a great deal of hypertrophy but any growth

is hypertrophy (the opposite of this is atrophy or muscle loss).

**Muscle Endurance**—measures your ability to repeat the same action over and over again before fatiguing. This is most commonly associated with bodyweight exercises such as push-ups, dips, pull-ups etc., but it can be built and tested with almost anything. The 225 lb bench test is usually a test of muscle endurance for football players.

**Weight Loss**—The goal of that specific workout session is to lose weight. This means you are trying to burn as many calories as possible during that session so it will be fast paced with minimal rest and the heart rate will be up. Keep in mind nutrition likely has a more powerful effect on how much one weighs.

**Beginner**—A client has not worked out regularly before or has taken a prolonged hiatus (6 months or more) from training.

**Explosiveness**—Here you want to express high power against a light resistance, to move a limb or a part of your body very explosively. Examples of this would include pitching a baseball or throwing a punch. The repetitions should be performed explosively.

In addition to the previous information, a second chart will be presented for each fitness goal. It will look like this:

Goal	Routine	Frequency	Ex per area	W/U sets	Tempo

The **Goal** will be the same as previously listed (hypertrophy, strength, etc)

The **Routine** will outline which type of weekly routine is typically ideal for accomplishing the goal. Common examples given will include:

Total Body Routine—the workout will include an upper body pushing exercise, an upper body pulling exercise, and a compound lower body exercise—at a minimum. No large muscle group is intentionally left untrained in this routine.

Upper and Lower Routine—the workouts will divide the body into 2 groups, Upper Body is trained on one day; Lower Body is trained on another day. Core can be included on either day but it typically goes with Lower Body given time. The muscle group division typically looks like this:

Upper Body: Chest, Back, Shoulders, Bis, Tris

Lower Body: Glutes, Quads, Hams, Calves, Abs, Lower Back

Push/Pull Routine—the workouts will divide the body into muscles that push on one training day, and those that pull on a second training day. Leg muscles both push and pull so this is not an ideal distinction to use with them. Legs can be paired up with either day, or further separated, but most typically they are included on the pull day because of their relationship with the lower back. This in turn typically causes Abs to be included on the Push day. The muscle group division typically looks like this:

Push: Chest, Shoulders, Triceps, Abs

Pull: Back, Biceps, Legs, Lower Back

Once a Week Split—this workout routine has the client training each area of the body only once a week. It allows a large number of exercises to be done for one area and it allows for a great deal of recovery to occur. In order for this training system to work well the client needs to be willing to push themselves reasonably hard and typically they are past the beginner stage.

The **Frequency** will provide a guideline for how often most individuals who are focusing on this goal workout each week. Typically a second frequency guideline will be given which suggests how often each area of the body or movement should be trained per week.

The **Exercises per Area** outlines how many resistance training exercises clients should select for each specific area of the body in order to best accomplish their goals. If the right number of exercises are not selected, the total volume is likely to be incorrect and then the overall results may not be optimal.

The **Warm-up Sets** (W/U) list how many warm-up sets should be utilized for each exercise in the training session. Typically the first exercise of the day and

the first exercise for a new area of the body or a completely new movement require the most warm-up sets. This will be listed as the first number. If subsequent training is done for the same area or replicates the same movement, less warm-up sets are needed because the body and the neuromuscular system are already warm. This will be listed as the second number. Warm-up sets should be relatively easy to complete, the form should be perfect, and warm-up sets typically involve 40–80% of the weight of the first work set, with 60% being an ideal average. The more strength, power, and speed required in the exercise, the more important the warm-up sets become.

The **Tempo** describes the lifting speed suggested to best accomplish the desired training goal. This will be listed as a specific count, such as a 2:4 count. The first number represents the concentric contraction (the hard part of the exercise), the second number represents the eccentric contraction (the easy part of the exercise). If three numbers are listed the middle number is the suggested isometric contraction (a pause and squeeze in the middle of the exercise). If an X is listed that means the suggested tempo is explosive and the client should be lifting the weight as quickly as they can while maintaining good form.

The goal of this chapter is to provide you—the serious fitness enthusiast, the hardcore lifter, the personal trainer—with broad but clear parameters on how to create a workout program for the most common goals trainees have. Think of exercise program set-up a bit like captaining a ship. There is not just “one” way across the ocean, and it is okay to take a slightly different route than someone else even if they have the same goal. However, if you veer significantly off course or lose sight of where you are going, then trouble lies ahead. These guidelines are meant to serve as that buffer zone. You have wide leeway as to how you apply them and it doesn’t mean you can never train outside of them, but do so knowingly and for a good reason.

In the following chapters we will examine each one of these parameters in more detail and a fully fleshed out training program has been included for each goal so you can see these guidelines in action. Near the end of the book we will discuss special cases including focusing on running speed, agility, quickness and how to train older adults and how to create programs from scratch.

## Chapter 3

# The Beginner Workout

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The beginner workout is a workout that is suited for beginners: those new to exercise or those returning from a long hiatus after having exercised regularly. It is built around the ACSM's exercise guidelines for training those new to resistance training. The beginner workout is also well suited for those recovering from an injury or physical setback, and it is the type of workout most often prescribed for clients that fall outside the scope of the general, healthy population.

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**Tim's Tip:** To an advanced client or a personal trainer, the beginner workout might seem kind of boring. Some trainers opt to forego the beginner workout for something flashier, but typically that is not wise. You must remember that to a new client, any exercise or physical activity is new. If you were learning how to drive you would not first drive a race car. Something slower and more steady is appropriate. See the workout through the client's eyes. This may be the first time they have performed a lat pulldown or a chest press. Give them a few weeks to get acclimated to the basics before you pull out the more complicated stuff. I doubt very much your own first workout was an intense MetCon filled with circuits, supersets, and pre-exhaustion, so why should your client's workout be like that?

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## NPTI Exercise Program Design Chart

Goal	Exercises per session	Reps	Sets	Load	Rest
Beginner	8–12	10–15	1–3	40–65%	:30–1:00

Goal	Routine	Frequency	Ex per area	W/U sets	Tempo
Beginner	Total Body	2–3x week	1–2	0–2	2:4 count

## The Beginner Workout

**Definition:** A beginner is a one who has not lifted weights regularly before or one who is returning from an extended layoff (anyone who takes 6 or more months off should return and follow the beginner workout).

**Goal:** The goal of the beginner workout is 3-fold. We want to improve all of the classic components of fitness (muscle strength, muscle endurance, cardiovascular endurance, flexibility, and body composition); we want to prepare the body for a more intense workout to come; and we want to engrain proper form and proper motor patterns for the exercises utilized.

**Program Set-up:** Beginners will typically follow a total body routine, working out 2–3 days a week. If they wish to workout 4 days a week then an upper/lower routine can be utilized. Splits where you just train one or two body parts a day very intensely are not appropriate for beginners.

**Exercises per Session:** Beginners should choose 8–12 resistance training exercises per session, less can be used if time is a factor or the beginners are being taught what to do.

**Exercise per Area:** Beginners should choose 1–2 exercises per area (body part). Excessive exercises per area will take too long and do too much damage to the area worked.

**Exercise Order:** Beginners should follow the traditional order of choosing large muscles first, then smaller muscles. Free weights are implemented before machines for the same area. If a client is using a total body routine exercise order will typically follow one of these structures:

Option 1	Option 2	Option 3
Chest	Back	Legs 1
Back	Chest	Legs 2
Shoulders	Shoulders	Chest
Bis	Bis	Back
Tris	Tris	Shoulders
Legs 1	Legs 1	Bis
Legs 2	Legs 2	Tris
Lower Back	Lower Back	Abs

Abs	Abs	Lower Back
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**Reps per Set:** Beginners will want to choose a weight that allows them to complete 10–15 reps for each set. If they go too heavy and they get less than 10 reps a set, their form is likely to break down and because they are not strong, just a bit of extra weight can take the person from lifting 8 reps to 3 reps. If the weight is too light and the beginner can do sets of 20 or 30 reps easily then the stimulus is too low and that is more specialized for muscle endurance. Increase the weight the next time around.

**Load per Set:** Beginners do not need to lift heavy to cause the desired adaptations. Because the beginner is used to doing nothing (by definition of being a beginner) the body will initially respond to almost any stimulus. The idea of “light to moderate” intensity is most appropriate. Beginners should not reach failure or allow their form to break during their session. Remember they are using a higher frequency and likely repeating the workout in a day or two, they are not expected to match the intensity of someone who has been training for years. A beginner may not know their 1RM but in general they should lift 40–65% of it. When in doubt start light and then build from there.

**Sets per Exercise:** Beginners should use 1–3 work sets per exercise.

**Warm-up Sets per Exercise:** Beginners should use 1 warm-up set per exercise in most situations. If the person is in the middle of the session, the weight lifted will be light, and if the user is familiar with the exercise no warm-up sets may be necessary. On the first exercise for a big area (legs for example) if the weight will be a bit heavier 2 warm-ups sets can be used. Don't forget one reason for warm-up sets is to simply help the client learn and reinforce proper technique.

**Weight Progression:** Most beginners will either use ascending sets or straight sets when selecting their weights.

**Time Under Tension:** Beginners should lift with a moderate tempo (2:4 count is most common—it should not be painstakingly slow and it should not be explosive). Most sets should last about 30 seconds long.

**Rest Time:** Beginners should keep the rest short to induce the desired benefits, meaning they should rest 30–60 seconds in between most work sets. If the rest is too short the weight will have to be too light to produce the desired adaptations, or the workout will be too hard. If the rest is too long the workout itself will take too long and the client will not receive much of a cardiovascular benefit from it.

**Intensity Techniques:** Most intensity techniques should be avoided with beginners. Beginners are not used to exercising so the workout as is will be a new stimulus for them and it will likely be hard enough. When people are out of shape it is easy to push them too hard and they can get very fatigued, sick, or possibly rhabdo can be induced.

If appropriate the beginner can use supersets of opposing muscle groups to save time, particularly for the smaller muscle groups or when using isolation exercises.

## Suggested Starting Weight for Beginners

Exercise	Female	Male
Chest Press	10–20 lbs	20–40 lbs
Bench Press	25 lbs*	45 lbs
Lat Pulldown	30–40 lbs	40–60 lbs
Cable Row	30–40 lbs	40–60 lbs
Military (Shoulder) Press Machine	10–20 lbs	20–30 lbs
DB Military Press	5–8 lbs	10–15 lbs
EZ Bar Curl	Bar (15–20 lbs)	25–35 lbs
DB Curl	5–8 lbs	10–15 lbs
Curl Machine	10–20 lbs	20–30 lbs
Triceps Pushdown	30–40 lbs	50–60 lbs
Leg Press	0–50 lbs	50–90 lbs

Leg Extension	20–30 lbs	30–40 lbs
Leg Curl	20–30 lbs	30–50 lbs
Standing Calf Raise	60–80 lbs	60–100 lbs
Seated Calf Raise	5–10 lbs	10–25 lbs

*\*the bar is 45 lbs so you will need to use a smaller, lighter bar to use this weight*

## Sample Workouts

### Sample Beginner Workout: Two Times a Week Total Body Routine (First Month)

Workout A1	Optional Workout B1
Warm-up: 5 minutes Treadmill or Bike	Warm-up: 5 minutes Treadmill or Bike
Chest Press Machine	Incline Press Machine
Widegrip Lat Pulldown	V-grip Cable Row
Shoulder Press Machine	*DB Front Raise
*DB Lateral Raise	*Lateral Raise Machine
*Curl Machine	*DB Curl
*V-grip Tricep Pushdown	*Machine Tricep Extension
Leg Press	Horizontal Leg Press
*Leg Extension	*Leg Extension
*Seated Leg Curl	*Prone Leg Curl
*Standing Calf Raise	*Seated Calf Raise
Abdominal Crunch	Reverse Abdominal Crunch
Cardio (12–30 minutes)	Cardio (12–30 minutes)
Cool down (3–5 minutes)	Cool down (3–5 minutes)
Stretch (5–10 minutes)	Stretch (5–10 minutes)

*\* = an exercise that is ideal to include but optional if time or other constraints exist*

For the first month the client is performing 1 warm-up set of 10–15 reps followed by 1–3 work sets of 10–15 reps. Rest is 30 seconds to a minute in between sets. See table below for guidelines on the number of work sets and time spent on cardio. When in doubt, assume the client is a beginner because it is always better to start too easy than too hard.

### Sample Beginner Resistance Training Volume

	<b>Beginner/Lower Fitness Level Work Sets/Cardio Time</b>	<b>Beginner/Moderate Fitness Level Work Sets/Cardio Time</b>
Week 1	1 work set/ 12 minutes	2 work sets/ 15 minutes
Week 2	1 work set/ 16 minutes	2 work sets/ 20 minutes
Week 3	2 work sets/ 20 minutes	3 work sets/ 25 minutes
Week 4	2 work sets/ 24 minutes	3 work sets/ 30 minutes
Week 5 and beyond	3 work sets/ 25+ minutes	3 work sets/ 30+ minutes

### Sample Beginner Workout: Two Times a Week Total Body Routine (Second Month)

<b>Workout A2</b>
Warm-up: 5 minutes Treadmill or Bike
Bench Press
Hammer Strength Row
DB Military Press
*Cable Lateral Raise
*EZ Bar Curl
*Reverse Grip Triceps Pulldown
Squat
*Leg Extension
*Seated Leg Curl
*Rotary Calf

Sit-up
Cardio (20–35 minutes)
Cool down (5 minutes)
Stretch (5–10 minutes)

\* = an exercise that is ideal to include but optional if time or other constraints exist

### Sample Beginner Workout: Four Times a Week Upper Body/Lower Body Split Routine (First 2 weeks)

Day 1	Day 2
Warm-up: 5 minutes on treadmill or Bike	Warm-up: 5 minutes on treadmill or Bike
Chest Press Machine	Leg Press
Widegrip Lat Pulldown	Leg Extension
Hammer Strength Military Press	Leg Curl
DB Lateral Raise	Standing Calf Raise
V-grip Triceps Pushdown	Lower Back Machine
EZ Bar Cable Curl	Crunches
Cardio	Cardio
Cool down	Cool down
Stretch	Stretch
Day 3	Day 4
Repeat Day 1	Repeat Day 2

On the first week, your clients will perform one warm-up set of 10–15 reps and then 2 work sets of 10–15 reps, resting :30–1:00 in between each set. They will perform cardio for 12 minutes plus a 3-minute cool down and then stretch each muscle for about 5–10 minutes. On the second week, your clients will perform one warm-up set and 3 work sets of 10–15 reps, so you are increasing one work set per exercise in the second week. They will perform cardio for 16

minutes plus a 4-minute cool down and then stretch each muscle for 5–10 minutes.

### Sample Beginner Workout: Four Times a Week Upper Body/Lower Body Split Routine (Weeks 3 and 4)

Day 1	Day 2
Warm-up: 5 minutes on treadmill or Bike	Warm-up: 5 minutes on treadmill or Bike
Chest Press Machine	Leg Press
Chest Fly Machine	Horizontal Leg Press
Widegrip Lat Pulldown	Leg Extension
V-grip Cable Row	Leg Curl
Hammer Strength Military Press	Standing Calf Raise
DB Lateral Raise	Seated Calf Raise
Rear Delt Machine	Crunches
V-grip Triceps Pushdown	Reverse Crunch
DB Triceps Kickback	Lower Back Machine
EZ Bar Cable Curl	
DB Curl	
Cardio	Cardio
Cool down	Cool down
Stretch	Stretch

The table above shows the next two weeks of the split routine. For week 3 you are adding a second exercise to each muscle group. Generally you want the client to perform the exercises in the order that they are listed here. The clients are doing one warm-up set and dropping back to 2 work sets per exercise. This gives them a total volume of 4 work sets per muscle group (2+2) which is up one set from the week before which helps create overload. They will perform cardio for 20 minutes plus a 5-minute cool down and then stretch for 5–10

minutes. For week 4 you will repeat week 3 with the exception that the client will perform 3 work sets per exercise instead of 2. The client will perform cardio for 24 minutes plus a 5-minute cool down and then stretch for 5–10 minutes.

### Sample Beginner Workout: Four Times a Week Upper Body/Lower Body Split Routine (Month 2)

Day 1	Day 2
Warm-up: 5 minutes	Warm-up: 5 minutes
Bench Press	Smith Machine Squat
Incline Press Machine	Leg Press
Reverse Grip Lat Pulldown	Leg Extension
DB Row	Leg Curl
DB Military Press	Abductor Machine
Lateral Raise Machine	Adductor Machine
DB Rear Delt Raise	Rotary Calf
Skull Crusher	Seated
Rope Triceps Pushdown	Crunches
EZ Bar Curl	Reverse Crunch
Machine Curl	Hyperextensions
Cardio	Cardio
Cool down	Cool down
Stretch	Stretch
Day 3	Day 4
Repeat Day 1	Repeat Day 2

The above table shows the **second month** of the split routine; it is a challenging and effective program. For the entire month they should be

performing 1 warm-up set and 3 work sets. The warm-up set on the second exercise for that muscle group is optional but still recommended. The biggest thing is to continue to use a short rest period otherwise this workout will take too much time. These workouts should take the clients somewhere between 75–90 minutes including everything, so you have to make an effort to move fast. It is more important to keep the short rest period than it is to use heavier weight, so even if the weight is a little bit light use it so you can get through the workout in the recommended time frame. The client will have plenty of time to lift heavy later. Remember, the goal of this workout is to build your foundation. Often with this method—if it is acceptable to the client—the personal trainer will take them through the resistance training portion and then set the client up on the cardio and the client can complete the cardio, cool-down and stretch on their own time. If that doesn't work then some of these exercises may need to be eliminated to fit the workout into the usual 60-minute time frame. Generally eliminate the second exercise per muscle group listed and/or the isolation exercises. If the client's fitness level can handle it the exercises can be supersets to save significant time.

**Final Thoughts:** When designing a workout program for beginners start very light, give them exercises that are effective but that they can experience immediate success with, and make it a pleasant (rather than a horrible) experience. Teach them that lifting weights and working out is fun and is actually enjoyable. Do not implement progressive overload right away in that second week and beyond and take advantage of the very rapid gains that beginners often see (but don't rush the process, 5 lbs a week is great progress). Be encouraging and gradually expose them to more challenging things to build their confidence. Never denigrate or belittle a client regardless of their starting point, they are trying to improve their fitness now and that is all anyone can do. We all had to start somewhere. Imagine that your goal is to teach them to enjoy fitness for the rest of their life. Once a client enjoys fitness and working out a trainer's job becomes very easy and the client's quality of life is vastly improved.

## Chapter 4

# Weight Loss

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One way to promote weight loss is to burn calories through physical activity. Cardiovascular work is typically the most common way this is achieved, but it can be done through resistance training as well. The general trends with this type of programming are to perform a reasonable number of exercises, to move through the workout rapidly, and to stick with short rest time in between sets to keep the heart rate elevated. In essence one is replacing cardio with weight training.

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**Tim's Tip:** Most often this type of training is accomplished with circuits (a series of exercises performed in a row, one set each, and then starting over again), supersets, and short rest intervals. It is worth mentioning that one doesn't have to program the entire hour personal training session like this. Just as with cardio, clients might be well served to lift in a more traditional fashion for 20–40 minutes and then to spend their remaining time training in this style.

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## NPTI Exercise Program Design Chart

Goal	Exercises per session	Reps	Sets	Load	Rest
Weight Loss	6–12	8–20	2–4	50–70%	0–1:00

Goal	Routine	Frequency	Ex per area	W/U sets	Tempo
Weight Loss	Total Body	2–4x week	1–2	0–1	varied

*Disclaimer:* While the goal of this workout is “weight loss” I don’t believe that this is the ideal approach to take for long term weight loss. I have come to this conclusion through training, teaching, and observing thousands of clients, students, and fitness enthusiasts. This workout is called weight loss because the way it is set up it will burn a reasonable number of calories minute per minute for the hour long session. It is essentially replicating cardio in that effect (it should be noted that minute per minute cardio tends to burn the most calories). But weight loss is not only about calories burned in that one hour.

If one’s goal is to lose weight I would suggest first and foremost focusing on diet—getting calories under control (eating 10–12 kcals per pound—without eating less than 1250 kcals for anyone) and making sure the client is eating at least 20% protein. For resistance training I would suggest instead of focusing on weight loss per se, to focus on a more performance-based goal such

as strength, size, or power. Think of all the fit athletes out there (Fitness and Figure athletes, CrossFitters, Soccer Players, Sprinters, etc)—this is traditionally how they train and they often get the results that one is looking for when it comes to losing weight and looking good. Weight loss workouts tend to build minimal muscle, which in turn does little to raise the resting metabolic rate; and they don't create much EPOC. In addition these workouts are not as much fun to do long term. You can do them for a month or two but when you think about doing fast paced workouts for a year or two it is just not as appealing. If, however, you think about building strength for a year, or improving your physique for a year or two, you can do that indefinitely. In addition, as is true with cardio, the more you perform these types of workouts the more efficient you get which is actually a bad thing when it comes to weight loss. We want to be inefficient to burn calories and stimulate fat burning. Hopefully the myth that women who perform intense strength training will bulk up and look like a male is dead and gone—one of the joys of Instagram and social media is the plethora of examples showing this is not the case. And one of the things we can learn from CrossFit is that you don't have to perform hours of endless cardio or low intensity weight training to lose weight.

Having said all of that, there may be times where one just wants to workout, get a sweat, and burn a good number of calories without performing traditional cardio. For that purpose, the workout should be structured as outlined below.

**Goal:** The purpose of this type of workout is to burn a large number of calories during the workout session, 400–600 kcal/hour would be normal. This type of workout should also build multiple set muscular endurance and cardiovascular endurance. It will do little to improve maximal strength, power, or muscular size.

**Program Set-up:** Weight loss workouts are almost always total body in nature, although one can choose to emphasize certain areas over others if they wish do so. These workouts are usually performed 2–4 times a week.

**Exercises per Session:** Typically 6–12 resistance training exercises per session are employed, although this number can be raised.

**Exercises per Area:** Normally just one to two exercises are performed for each area of the body worked.

**Types of Exercises Selected:** If the goal is to burn a large number of calories, one wants to select exercises that work large muscle groups in a challenging setting. Standing exercises are preferred over seated, compound exercises are preferred over isolation exercises. Any exercise where the client will have a high power output will be good choices, providing they are not overused.

**Exercise Order:** Exercise order is not as paramount for this goal. Indeed it is common to intentionally mix up the order to avoid excessive fatigue in a specific area.

**Reps per Set:** Generally 8–20 reps per work set are performed, although one has reasonable freedom with this as long as the end result matches the goal of keeping the heart rate elevated throughout the session.

**Load per Set:** Because of the fast pace incorporated, heavy loads are generally not used, however if the weight is too light almost no adaptation will occur. Generally 50–70% of the 1RM is used for most work sets.

**Number of Work Sets:** Weight loss programs typically use a reasonably high volume, however if too many sets are used for the same exercise excess fatigue will occur. One will likely get better results by switching to another exercise. Most programs will use 2–4 work sets per exercise.

**Warm-up Sets:** The weight lifted during work sets in weight loss programs is typically quite light so warm-up sets are less important than they are in strength and power goals. Usually 0–2 warm-up sets are used for the first exercise and 0–1 for any subsequent exercises.

**Weight Progression:** Because the user is likely to be fatigued during most of the session, either straight sets or descending sets are most often utilized.

**Time Under Tension:** Time under tension should be moderate which is typically 15–45 seconds each set.

**Rest Between Sets:** We want to keep the rest time quite short to keep the heart rate elevated, typically 0–1:00 of rest time is given.

**Trick of the Trade:** To help promote calorie burning, multiple tricks of the trade can be used to keep the lifter moving rapidly from one exercise to the next. Good choices include:

- Supersets
- Combination Exercises
- Active Rest

- Circuit Training
- Compound Sets
- Timed Rest
- Timed Sets
- Drop Sets
- Rest-Pause Reps
- Peripheral Heart Action

## Ideal Exercises per Body Area to Promote Weight Loss

Chest	Back	Shoulders	Total Body
Bench Press	Jumping Pull-ups	Handstand Push-up	Battling Ropes
Alt Med Ball Push-up	Renegade Row	Standing Alt DB Mil Press	Med Ball Slam
Walking Sled Press	Standing Sled Row	Lunging Lateral Raise	Bear Crawl
			Sprinting
			Thruster
Biceps	Triceps	Legs	Abs
Power Curl	Close grip push-up	Squat	Wood chop
Biceps and triceps are generally not isolated when it comes to training for weight loss		Jumping Squats	Sword Swing
		Frog Jump	Hanging Leg Raise
		Deadlift	
		Walking Lunge	

## Sample Workouts:

### Sample 1-Month Fat Loss Program for a Late Intermediate Female Client (Day 1)

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Exercise	Day 1	Day 4	Day 7	Day 10
Complex, 5 rounds	55x8	55x10	60x8	60x10
Jumping Pull-up, 4 rounds	6	7	8	9
Burpee, 4 rounds	6	7	8	9
Front Squat	95x12 2 sets	95x12 2 sets	95x12 3 sets	95x12 3 sets
400 meter run	2 sets	2 sets	3 sets	3 sets

A “complex” consists of the following exercises performed consecutively without rest:

- Romanian deadlift
- Hang clean
- Thruster
- Squat
- Good morning
- 90 degree bent-over row

Also, the jumping pull-ups and the burpees are supersetted and the front squat and 400 meter run are supersetted.

**Sample 1-Month Fat Loss Program for a Late Intermediate Female Client (Day 2)**

Exercise	Day 2	Day 5	Day 8	Day 11
Shoulder Series, 3 sets	8x10	8x12	10x8	10x10
Push-up + DB Row, 4 sets	12 25x6	14 25x7	16 25x8	18 25x9
Goblet Squat, 4 sets	55x10	55x12	60x10	60x12
Deadlift, 5 sets	145x5	145x5	150x5	150x5
Sled Drag, 5 sets	135	135	145	145
Tabata Front Squat	55 5 intervals	55 6 intervals	55 7 intervals	55 8 intervals

The “shoulder series” is completed by performing 1 set of lateral raises, 1 set of front raises, and 1 set of rear delt raises consecutively. The push-up and dumbbell row exercises are supersets with the goblet squat exercise. Also, the deadlift and sled drag exercises are supersets. The “tabata” routine is performing 20 seconds of the exercise followed by 10 seconds of rest; the number indicated is how many intervals of that is performed.

### Sample 1-Month Fat Loss Program for a Late Intermediate Female Client (Day 3)

Exercise	Day 3	Day 6	Day 9	Day 12
Complex	55x9	55x12	60x9	60x12
Frog Jump, 4 sets	4-1 ea way	4-1 ea way	5-1 ea way	5-1 ea way
Overhead Farmer’s Walk with a kettlebell, 4 sets	25 lb	25 lb	30 lb	30 lb
Prowler Push alternating high/low, 6 total trips	50 lbs	50 lbs	60 lbs	60 lbs

The “frog jump” exercise involves jumping forward, backward, to one side, to the other side for the number indicated. The “4-1” routine means start with 4 jumps in each direction, then immediately continue with 3 jumps in each direction and so on until you just perform 1 jump in each direction. The overhead Farmer’s walk exercise consists of holding one or two kettlebells with arms extended overhead and walking for a distance. Note that the frog jump and overhead Farmer’s walk are supersets.

**Final Thoughts:** Many many personal training clients will come to a trainer with a goal of creating weight loss, but that does not mean that all of those clients should train in this style. First, it is imperative for the trainer to stress how important nutrition is in causing weight loss. Most of a client’s efforts should be focused on that area. Second, while weight loss workouts can certainly work to promote weight loss, they are more difficult to do long term. I would suggest incorporating 4-10 week mesocycles of training like this rather than training like this each and every time a client goes to the gym. Finally, many clients may have already tried workouts like this to lose weight, either by

themselves, with other trainers, or in group exercise classes. It is rare that 'more of the same' is going to be effective. If a runner who was running 6 miles a day 6 times a week wants to lose weight, I would hope your response would not be "run more." That won't work. The same is true of these type of workouts. If a client has been training like this and is not seeing the results they want, I would suggest they instead focus on a performance oriented goal and train in that fashion. They may find that weight loss then comes with it. In the words of my friend and trainer Ben Bruno, when someone comes to him and says they have tried everything to lose weight, his response is "have you tried lifting weights and pushing sleds?" It is amazing how many say no.

## Chapter 5

# Muscular Endurance

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Muscular Endurance is another component of fitness. It is the most similar to muscular strength, except that it involves performing something more than once. Technically it is the ability of the muscle to contract repeatedly, or more accurately it is the ability to perform a specific motor pattern repeatedly.

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**Tim's Tip:** It is worth noting that there are really two different types of muscular endurance, yet clients and trainers rarely bother to differentiate between the two. Single set muscular endurance is what is most commonly measured and it is when someone performs one task for as many reps as possible—such as 1 set of pull-ups, push-ups, and sit-ups. Single set muscular endurance is highly correlated with strength—as one's strength goes up, the effort required to complete a specific task with a set weight goes down, and thus one can perform more reps. That is why an individual that can bench press 1.5 x bodyweight will almost always be proficient at push-ups—the push-ups are so easy because their strength is high and thus they can perform a lot of reps in that movement. As such single set muscular endurance is closely related to strength, and many times a client would be better suited to focus on improving their strength if their goal is to build single set endurance.

Multiple set muscular endurance is when a person performs a fatiguing task, such as push-ups, then has limited rest time, and then they must perform that task again. For example doing 30 push-ups, resting 30 seconds, repping out 30 push-ups again, and repeating that process 5 times would test multiple muscular endurance. It is quite possible that one can be good at single set muscle endurance and not very proficient at multiple set endurance. Multiple set muscle endurance is most closely related to cardiovascular endurance, which determines one's ability to recover in between sets.

It is very important to know which one of those types of endurance the client is trying to build. The adaptations to each one can be quite different without that much overlap. The exercise protocol guidelines that follow are set up to best improve *multiple set* muscle endurance (remember—train for strength with just very occasional high rep sets included to improve single set muscle endurance).

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Goal	Exercises per session	Reps	Sets	Load	Rest
Muscle Endurance	5-10	12+ (15-20)	2-3	50-67%	0-:30

Goal	Routine	Frequency	Ex per area	W/U sets	Tempo
Muscle Endurance	Total Body	2-4	1-3	0-1	Fast

**Goal:** The goal of a muscular endurance program is to improve a client's ability to execute a repeated movement pattern. It is likely this type of training will improve cardiovascular endurance and reduce bodyfat as well.

**Program Set-up:** Muscular Endurance programs typically use total body routines. Push/Pull and Upper/Lower Routines can be used as well.

**Frequency:** Muscular Endurance Programs are typically followed 2–4 times a week.

**Exercises per Session:** Normally 5–10 exercises per session are incorporated.

**Exercises per Area:** 1–3 exercises per area to be worked are usually used. Incorporating very high rep sets tends to induce fatigue in the area rapidly.

**Types of Exercises Selected:** Generally the goal is to build endurance through the use of challenging, functional exercises that the user can perform for 20 or more reps. A functional exercise would be one that takes place in 3 dimensions and has a high degree of transfer to everyday activities (or athletic abilities if that is the purpose of the training).

**Exercise Order:** It is important to follow proper exercise order guidelines when training for muscular endurance. The most crucial guideline being to perform larger, compound movements before smaller, isolation movements, otherwise the prefatigued muscle will greatly limit how one performs on the second task.

**Reps per Set:** 12+ reps per set is a general guideline, with 15–20 reps being very common. If one wishes to complete a very high number of reps (50 or 100 for example), one should occasionally train in that rep range.

**Number of Work Sets:** 2–3 work sets are normally used, due to the high number of reps involved on each set, but this is variable.

**Load per Set:** 50–70% of the load is most commonly used. Less can be used if very high reps are being performed, but too much time spent on the extremely light weight may not produce the desired goal. Remember that strength is highly correlated with single set muscular endurance and one must be strong enough to do the activity reasonably easily to be able to perform multiple high rep sets of it.

**Rest Between Sets:** Muscular Endurance programs typically use short rest, defined as 30 seconds or less, particularly when the goal is to build multiple set muscle endurance. If one is going for single set endurance then one can rest longer.

**Warm-up Sets:** Because the weight lifted is typically light, warm-up sets are not as important when training for endurance as they are for strength. Usually 0–2 warm-up sets are used on the first exercise and 0–1 warm-up sets are employed for any subsequent exercises.

**Weight Progression:** When very high reps are performed it is difficult to increase the weight with each set, thus such either straight sets or descending sets are used.

**Time Under Tension:** This element will be the longest with muscular endurance programs. Most sets should last at least 30 seconds, with 45–60 seconds being the norm. If one is lifting for more than 2 minutes straight one might get better results by increasing the intensity and decreasing the duration of the set. Generally a more rapid tempo is used instead of a slower tempo.

**Tricks of the Trade:** Some tricks of the trade can be used to promote increases in muscular endurance. These include:

- Drop sets (with a good number of reps performed on each set)
- Compound sets (as above)
- Bodyweight exercises
- Timed Sets
- Timed Rests
- Stretching or light active recovery in between sets

### **Ideal Exercises per Body Area to Increase Muscular Endurance**

<b>Chest</b>	<b>Back</b>	<b>Shoulders</b>	<b>Total Body</b>
Bench Press	Pull-up	Handstand Push-up	Burpees
Push-up	Chin-up	Barbell Military Press	Bear Crawl
Dip	Inverted Row	DB Military Press	Thrusters

Ring Push-up	DB Row	DB Lateral Raise	
1-Arm Push-up	Flexed Arm Hang	DB Rear Delt Raise	
<b>Biceps</b>	<b>Triceps</b>	<b>Legs</b>	<b>Abs</b>
EZ Bar Curl	Close grip push-up	Squat	Plank
Suspension Curl	Bench Dips	Lunge	Sit-up
DB Curl	Band Pushdowns	Leg Press	Crunch
			Bicycle
			Wood chop

## Sample Workouts:

### Sample 1-Month Muscular Endurance Program for an Early Intermediate/Late Beginner Female Client

Upper Body						
Exercise	Day 1	Day 3	Day 5	Day 7	Day 9	Day 11
Assisted Pull-up	3x8	3x9	3x10	4x5 1 leg	4x6m1 leg	4x7 1 leg
Push-up	3x8	10, 8, 8	12, 10, 8	14, 11, 8	16, 12, 8	18, 14, 10
Bodyweight Rows at 5	8, 8, 6	10, 8, 6	12, 10, 8	At 6 3x6	At 6 3x7	At 6 3x8
Bodyweight Slide Fly	8 out 8 up 8 out	8 out 8 up 8 out	8 out 8 up 8 out	10 out 10 up 10 out	10 out 10 up 10 out	10 out 10 up 10 out
Standing DB Military Press	10x12 10x12 12x12	10x14 10x14 12x14	10x16 10x16 12x16	12x8 12x8 15x8	12x10 12x10 15x10	12x12 12x12 15x12
Tube Lateral Raise	Power 12, 12 Strict 20, 20	Power 12, 12 Strict 20, 20	Power 12, 12 Strict 20, 20	Power 15, 15 Strict 25, 25	Power 15, 15 Strict 25, 25	Power 15, 15 Strict 25, 25
Assisted Dips +	3x6	3x7	3x8	3x9	3x10	3x11

isometric hold	:10	:10	:10	:15	:15	:15
Flexed Arm Hang w/band	:20 :15	:20 :15	:25 :20	:25 :20	:30 :25	:30 :25
Push-ups negative + modified positive	3x8	3x10	3x12	3x6 military	3x8 military	3x10 military

Lower Body						
Exercise	Day 2	Day 4	Day 6	Day 8	Day 10	Day 12
Goblet Squats	25x12 35x12 45x12	25x15 35x15 45x15	35x8 45x8 55x8	35x10 45x10 55x10	35x12 45x12 55x12	35x15 45x15 55x15
DB Squats Wide Stance	25x12 35x12 45x12	25x15 35x15 45x15	35x8 45x8 55x8	35x10 45x10 55x10	35x12 45x12 55x12	35x15 45x15 55x15
Walking Lunge (2 = one time up and back)	BWx2 25x2	BWx2 25x2	BWx2 35x2	BWx2 35x2	15x2 45x2	15x2 45x2
Glute Ham Raise	16	18	20	22	24	26
Romanian Deadlift	45x12 65x12 65x12	45x15 65x15 65x15	45x18 65x18 65x18	45x20 65x20 65x20	55x8 75x8 75x8	55x10 75x10 75x10
Donkey Calf Raise — 1 leg	12x3	14x3	16x3	18x3	20x3	22x3
Ab Wheel	3x8	3x9	3x10	4x6	4x7	4x8
Rotations	5x30 3 sets	5x30 3 sets	5x35 3 sets	5x35 3 sets	5x40 3 sets	5x40 3 sets
Plank	1:30	2:00	2:30	3:00	3:30	4:00
Hyperextension	3x12	3x14	3x16	3x18	3x20	3x22
Bodyweight Squats to a box	2x20	2x24	2x28	2x32	2x36	2x40

**Final Thoughts:** Multiple set endurance style workouts are hard, which is good and bad. It is good because it will build up endurance which is the goal

and it will improve conditioning. The client's lactate threshold will get better and they will likely be dripping sweat and burning fat during and after the workout. It is bad because these workouts are pretty draining, and with more advanced clients they may not cause much adaptation in two of the foundational pillars of fitness—max strength and cardiovascular endurance. I would caution trainers against employing this type of training as the sole method for more than 8–10 weeks. These workouts typically are not as much fun as strength or size based workouts and they can't replace pure cardio either. But they can burn clients out. Don't forget, the number one reason why clients quit personal training is because the trainer made the workout too hard. That is very easy to do with high reps, short rest, and 60 minutes of time. Use this style of training as a compliment to your other, more long-term forms of training.

## Chapter 6

# Hypertrophy

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This chapter is devoted to outlining the training parameters if the goal is to cause hypertrophy, which is an increase in muscle mass. Additional lean mass can be very useful in improving performance in certain sports, in increasing the resting metabolic rate, and in improving the way one looks and feels about themselves. One has the most freedom when designing a hypertrophy based program because many methods can work; the key is to push hard and induce fatigue in the target muscle. The guidelines provided below outline the traditional method for improving hypertrophy.

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**Tim's Tip:** Clients should be not 'afraid' to induce hypertrophy for fear of getting too big. While it is true that bodybuilders express the greatest amount of hypertrophy, it takes years of training and focus to accomplish that goal. The client may also be more familiar with results that are achieved through the use of steroids and other drugs; similar results are not attainable naturally. The hypertrophy template of training is also very effective for improving body composition by burning fat, creating EPOC, and building lean tissue which tends to improve the size and shape of the body. Slowly but surely the idea that "lifting weights will make me big" is dying, particularly among women, but it is important to keep putting out quality information to dispel that myth.

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## NPTI Exercise Program Design Chart

Goal	Exercises per session	Reps	Sets	Load	Rest
Hypertrophy	5-8	6-12	3-6	70-85%	:30-2:00

Goal	Routine	Frequency	Ex per area	W/U sets	Tempo
Hypertrophy	Split	2-4 x week	3-5	2-4 0-2	2:2 count

**Goal:** The goal of a hypertrophy program is to build muscle, meaning that the cross-sectional area of the muscle will increase. This often causes an increase in strength as well, body composition may improve, muscle power and muscular

endurance may improve, resting metabolism may increase, and cardiovascular endurance may increase.

**Program Set-up:** Size routines usually utilize a split routine to allow for greater intensity to be placed on the muscle. Upper/Lower, Push/Pull, or once a week routines are common.

**Frequency:** Most hypertrophy routines are based on working out 2–4 times a week, with 3–4 times per week being the most common. Each area is usually hit 1–2 times a week.

**Exercises per Session:** Normally 5–8 exercises are performed in a hypertrophy based workout.

**Exercises per Area:** It is important to fully stimulate and fatigue a specific area to facilitate muscle growth. 3–5 exercises per area are usually incorporated.

**Types of Exercises Selected:** In order to promote muscular size one wants to select exercises that allow for a large amount of weight to be lifted *and* that place significant isolation (emphasis) on the target muscle. These effects should be achieved simultaneously.

**Exercise Order:** In general the standard recommendations for exercise order still apply when training for hypertrophy, however pre-exhaustion or the principle of priority might alter this.

**Reps per Set:** Research suggests that muscles respond best to the moderate range of reps which is defined as 6–12 reps per set. However it is appropriate to sometimes train in the lower rep ranges (1–5), thus going heavier and sometimes using higher rep ranges (12–20), thus going lighter when training for size. This can be summarized as follows:

- 50% of work sets or workouts: 6–12 reps
- 25% of work sets or workouts: 1–5 reps
- 25% of work sets or workouts: 12–20 reps

**Number of Work Sets:** Hypertrophy training is associated with using a high volume of work. This is normally best achieved by using a moderate weight for a moderate number of reps for multiple sets. 3–6 work sets are employed per

exercise. **8–20 challenging work sets should be used to stimulate the target area per week.**

**Load per Set:** To match the goal rep guideline, 70–85% of the 1RM is commonly used. If the goal reps are lower (1–5), then the lifter will go heavier (85%+). If the goal reps are lower (12+), then the lifter will use 50–70% of the 1RM. To build size the lifter should almost always use at least 50% of the 1RM.

**Rest Between Sets:** It is important to train in a slightly fatigued state when building size, thus the rest must be limited to avoid full recovery. However the rest has to be long enough to allow adequate weight to be lifted. When the lifter is using 6–12 reps generally the rest should be :30–2:00 min in between work sets.

**Warm-up Sets:** Warm-up sets are important when training for size to prepare the muscle for the intense set it is about to perform. Generally 2–4 warm-up sets are used for the first exercise or area hit, then 0–2 warm-up sets are used for any subsequent exercises.

**Weight Progression:** This can vary based on the lifter's preference. Descending sets are commonly used to build size and they match the limited rest guideline. Straight sets can be employed and pyramids are very frequently used to help increase volume.

**Time Under Tension:** Time under tension is important when building size and this is one of the big differences between training for strength and training for size. Sets geared toward hypertrophy should be 15–45 seconds long, with 30 seconds being the norm. Most lifters should use a comfortable tempo to accomplish this, something between a 2:2 and a 2:4 count is common.

**Tricks of the Trade:** There are many tricks of the trade one can use to build size, indeed the purpose behind most intensity techniques is to create muscular fatigue (which is ideal for building size). Some methods are not desirable, however; particularly methods that force a large reduction in the load.

Here is a list of things to AVOID:

- Stability Balls
- Very Light weight (<20 lbs for men, <10 lbs women)
- High Risk Exercises
- Exercises that put the lifter in a weak position

Here is a list of things to incorporate:

- Pre-exhaustion
- Compound sets
- Super sets
- Timed sets
- Drop sets
- Varying the angle of the stimulus
- Lifting slightly slower than you would for strength for more tension on the muscle
- Mentally trying to squeeze the muscle as it contracts during the exercise
- Developing a mind/muscle connection
- Getting a pump during the workout
- Feeling the lactate and un-buffered hydrogen ions in the muscles during a workout

## List of Ideal Exercises for Size:

Chest	Back	Shoulders	Total Body
Bench Press	Bent-over Row	Smith Mx Mil Press	Clean and Press
Smith Mx Bench	Mx Row	Power DB Lat Raise	Squat
Machine Press	DB Row	Leaning DB Lat Raise	
DB Press	Mx Pulldown	Power DB Rear Delt Raise	
Power DB Fly	Pullover Machine	Rear Delt Machine	
Biceps	Triceps	Legs	Abs
EZ Curl	Skull Crushers	Leg Press	Cable Crunch
DB Curl	Pushdowns	Smith Mx Squat	RC Leg Raise

Cable Curl	Close grip Bench	Squat	Decline Sit-up
Power Curl	Dips	Deadlift (any)	Mx Crunch
DB Hammer Curl	DB Over Head Tri	Leg Ext/Leg Curl	Dumbbell Side Bend

## Sample Weekly Templates for Hypertrophy

### 3 Workout Sessions Per Week

Day 1	Day 2	Day 3
Chest/Back	Legs/LB/Abs	Shoulders/Bis/Tris

Day 1	Day 2	Day 3
Push	Pull	Legs

Day 1	Day 2	Day 3
Push w/abs	Pull w/Legs/LB	Repeat cycle

### 4 Workout Sessions Per Week

*Note: There is usually a day of rest between days 2 and 3*

Day 1	Day 2	Day 3	Day 4
Push	Pull	Push	Pull

Day 1	Day 2	Day 3	Day 4
Upper	Lower	Upper	Lower

Day 1	Day 2	Day 3	Day 4
Chest/Abs	Back/Bis	Legs/LB	Shoulders/Tris

Day 1	Day 2	Day 3	Day 4
Chest/Bis	Legs/LB	Back/Abs	Shoulders/Tris

Day 1	Day 2	Day 3	Day 4
Legs/Abs	Chest/Bis	Back/LB	Shoulders/Tris

Day 1	Day 2	Day 3	Day 4
Chest/Back	Legs/Lower	Weak Points Core/Conditioning	Shoulders/Tris

Day 1	Day 2	Day 3	Day 4
Chest/Tris	Back/Core	Legs/LB	Shoulders/Bis

## Sample Workouts:

### Sample 1-Month Hypertrophy Program for an Intermediate Level Male Client

Day 1 — Push Day				
Exercise	Week 1	Week 2	Week 3	Week 4
Bench Press	45x8, 95x5, 135x5, 175x8, 195x6, 205x5, 215x5	45x8, 95x5, 135x5, 180x8, 200x6, 210x5, 220x5	45x8, 95x5, 135x5, 185x10, 170x12, 155x15	45x8, 95x5, 135x5, 190x10, 175x12, 160x15
Incline Bench Press	95x6, 135x10, 150x8, 165x6	95x6, 140x10, 155x8, 170x6	115x6, 165x8, 145x12, 125x15	115x6, 170x8, 150x12, 130x15
Cable Crossover	30x10, 30x10, 30x10	30x12, 30x12, 30x12	20x20, 20x20, 20x20	20x22, 20x22, 20x22
Seated DB Military Press	25x8, 40x10, 50x8, 60x6	25x8, 40x12, 50x10, 60x8	30x6, 55x10, 45x12, 35x15	30x6, 60x10, 50x12, 40x15
Leaning DB Lateral	25x10,	25x12,	20x15,	20x18,

Raise	25x10, 25x10	25x12, 25x12	20x15, 20x15	20x18, 20x18
Dips	BWx6, BW+45x5, BW+25x8, BW+10x10	BWx6, BW+55x5, BW+35x8, BW+15x10	AMRAP of BW 3 sets	AMRAP of BW 3 sets
Skull Crusher	65x6, 80x10, 90x8, 100x6	65x6, 85x10, 95x8, 105x6	65x8, 90x10, 80x12, 70x15	65x8, 95x10, 85x12, 75x15
V-Grip Triceps Pushdown	90x10, 90x10, 90x10	95x10, 95x10, 95x10	100x10, 90x12, 80x15	105x10, 95x12, 85x15

<b>Day 2—Pull Day</b>				
<b>Exercise</b>	<b>Week 1</b>	<b>Week 2</b>	<b>Week 3</b>	<b>Week 4</b>
Pull-up	BWx6 BW+10x8, BW+20x6, BW+30x6	BWx6 BW+15x8, BW+25x6, BW+35x6	AMRAP of BW 3 sets	AMRAP of BW 3 sets
45 Bent-over Row	135x6, 185x10, 205x8, 225x6	135x6, 190x10, 210x8, 230x6	135x6, 185x5, 205x10, 185x12, 155x15	135x6, 185x5, 210x10, 190x12, 160x15
Hammer Strength Row	140x6, 210x10, 240x8, 270x6	140x6, 215x10, 245x8, 275x6	160x6, 230x10, 210x12, 180x15	160x6, 235x10, 215x12, 185x15
Power DB Rear Delt Raise	30x10, 30x10, 30x10	30x12, 30x12, 30x12	20x20, 20x20, 20x20	20x22, 20x22, 20x22
EZ Curl	65x8, 85x10, 100x8, 115x6	65x8, 90x10, 105x8, 120x6	65x8, 100x10, 85x12, 65x15	65x8, 105x10, 90x12, 70x15
DB Hammer Curl	35x10, 35x10, 35x10	35x12, 35x12, 35x12	25x20, 25x20, 25x20	25x22, 25x22, 25x22

Cable Curl	70x10, 90x8, 110x6	75x10, 95x8, 115x6	65x8, 105x10, 90x12, 70x15	65x8, 110x10, 95x12, 75x15
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Day 3—Legs and Core				
Exercise	Week 1	Week 2	Week 3	Week 4
Squat	135x8, 185x6, 235x10, 255x8, 275x6, 295x5	135x8, 185x6, 240x10, 260x8, 280x6, 300x5	135x8, 205x6, 255x10, 235x12, 215x15	135x8, 205x6, 260x10, 240x12, 220x15
Deadlift	135x8, 205x6, 275x10, 305x8, 335x6	135x8, 205x6, 280x10, 310x8, 340x6	135x8, 225x6, 295x10, 265x12, 235x15	135x8, 225x6, 300x10, 270x12, 240x15
Leg Press	180x8, 360x6, 540x5, 585x5, 405x15	180x8, 360x6, 550x5, 595x5, 415x15	270x8, 405x5, 500x10, 455x12, 410x15	270x8, 405x5, 510x10, 465x12, 420x15
Seated Leg Curl	105x8, 135x12, 157x10, 180x8	105x8, 142x12, 165x10, 187x8	120x8, 172x10, 150x12, 127x15	120x8, 180x10, 157x12, 135x15
Standing Calf Raise	200x15, 230x12, 260x10	205x15, 235x12, 265x10	180x20, 180x20, 180x20	185x20, 185x20, 185x20
Hyper-extension	BWx12, BW+15x10, BW+25x8	BWx12, BW+20x10, BW+30x8	BWx20, BWx20, BWx20	BWx22, BWx22, BWx22
Hanging Leg Raise	10, 10, 10	11, 11, 11	Knees: 20, 20, 20	Knees: 22, 22, 22
Decline Sit-up	40x12, 50x10, 60x8	45x12, 55x10, 65x8	30x20, 30x20, 30x20	30x22, 30x22, 30x22

*Italicized sets are warm-up sets. AMRAP = as many reps as possible.*

**Final Thoughts:** As mentioned in the opening paragraph, there are many ways to promote hypertrophy. The ultimate end goal is to simply recruit as many motor units as possible in the target muscle and to fatigue them. As such it is reasonably common for lifters and personal trainers to go outside of the standard set and rep schemes when training for hypertrophy and that is okay, as long as it is done for a purpose. A very standard recommendation that works well for hypertrophy training is as follows:

25% of the training time—train following the Maximal Strength exercise protocols

50% of the training time—train following the Hypertrophy exercise protocols outlined here

25% of the training time—train following the Muscle Endurance exercise protocols

## Chapter 7

# Maximum Strength

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This chapter is focused on outlining exercise protocols to increase a client's maximum strength. It is worth noting that the word 'strength' can mean different things to different people. In this context we are using the textbook definition of strength which is the ability of the muscles to contract one time, or more accurately the ability to perform a specific motor pattern against maximal resistance. If a client's definition of strength is being able to hike for 5 miles with a weighted backpack or going 10 rounds in a boxing ring, you should clarify those goals and the appropriate terms for them.

**Tim's Tip:** Exercise selection, hard work, and long rest are hugely important when training for strength. It is imperative that clients and trainers know how they want to test their strength and then select their exercises accordingly. Becoming strong will require hard work—lots of it—and likely some patience as developing a high level of strength takes time. And trainers should not be afraid to let their clients rest, to just sit there and 'do nothing' while they recover and prepare for another intense set. Because rest time is long and overall training time can be limited, trainers should eliminate any fluff in the program and focus on quality over quantity when it comes to training for strength. Implementing progressive overload and keeping detailed records are a must with this goal.

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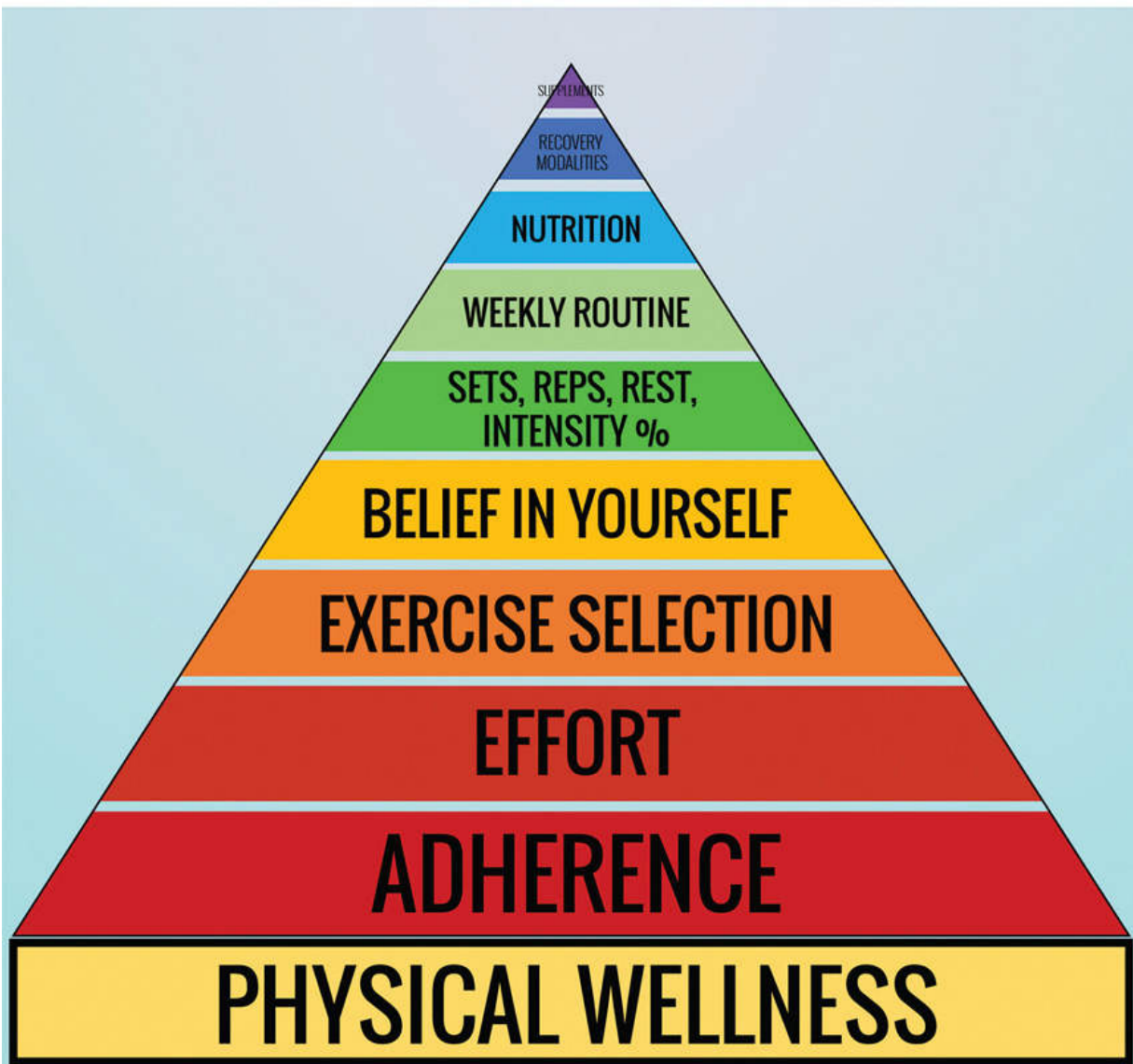
Goal	Exercises per session	Reps	Sets	Load	Rest
Max Strength	4-7	1-6	2-6	85%+	2:00-5:00

Goal	Routine	Frequency	Ex per area	W/U sets	Tempo
Max Strength	Split	2-4x week	2-5	2-6 0-2	Fluid

**Goal:** The goal of this program is to improve maximal strength which means the lifter's 1RM on the target lifts should increase. Traditionally these lifts include the big barbell lifts such as the squat, bench, and deadlift. It is likely that muscle size will also be improved and single set muscular endurance is likely to improve. Improved bone density, EPOC, increased power against heavy resistance, increased sprinting speed, and increased resting metabolism are also likely to occur.

To help personal trainers understand the key variables that affect the development of maximal strength, please refer to the Hierarchy of Strength.

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**Program Set-up:** Either a total body or a split routine can be utilized. When training for strength many lifters like to think about training a specific quality/ability instead of training an area of the body (for example lifters will have a bench day or a squat day versus a chest day or a leg day).



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**Frequency:** Strength based programs usually involve 2–4 training sessions per week, with each area (or movement) being targeted 1–3 times per week.

**Exercises per Session:** Strength based workouts tend to be time intensive, however due to the longer rest periods and multiple sets performed on each exercise, the total number of exercises tends to be low. Generally 4–7 exercises are performed in each session.

**Exercises per Area:** To improve strength generally 2–5 exercises for each area (or movement) are used in each session.

**Types of Exercises Selected:** The principle of specificity is very important to remember when training for strength. Strength is a specific skill. To incur the best transfer of strength from one activity to another, select exercises that allow

the most weight to be lifted *and* those that require the most skill to perform. These qualities should occur simultaneously.

**Exercise Order:** Exercise order is quite important when training for strength. Start with large muscles, compound movements, and free weights first before training smaller muscles, isolation exercise, or machines.

**Reps per Set:** When training for strength the reps are traditionally low, 1–6 reps per set is common and the vast majority of sets will be below 10 reps.

**Number of Work Sets:** Strength development requires practice so multiple sets per exercise are normally used. 2–6 working sets is most common, although occasionally a very high number of sets can be employed (up to 20 sets per exercise).

**Load per Set:** To build strength the load should be heavy. For beginners and early intermediates, **the most important factor is simply following progressive overload** meaning they should strive to lift more weight than they have before. As one advances it is important that their work sets are performed at a high intensity which is traditionally defined as 85% or more of the 1RM.

**Rest Between Sets:** Facilitating full recovery in between work sets is very important so long rest is utilized when training for strength. This is normally defined as 2–5 minutes. Longer rest can be taken on near maximal or very important attempts and up to 10 minutes is common. It is worth noting that if the athlete feels fully recovered and their performance is as expected then additional rest may not be beneficial and it does increase the time spent training. However, if performance would improve from a longer rest period then it is usually ideal to rest the extra time to lift at maximal performance vs rushing through a workout with short rest periods and lifting comparatively light weights.

**Warm-up Sets:** Warm-up sets are very important when training for maximal strength for two main reasons. One, the weight used is likely to be heavy so the lifter must prepare the body for that. Two, it is equally important to warm-up the neuromuscular system as it is to warm-up the body itself, and one does this by practicing the lift with lighter weights. Generally 2–6 warm-up sets are

performed for the first exercise with 3 being the norm, and then 0–2 warm-up sets are used for subsequent exercises, with 1 warm-up set being the norm.

**Weight Progression:** Strength based programs typically use ascending sets or straight sets. Occasionally back down sets can be employed to after the main heavy sets have been performed.

**Time Under Tension:** The time under tension should be low when training for strength. Most sets should be 15 seconds or less in duration and many may be closer to 5 seconds. Lifters should use a fluid tempo when training for strength. That means the speed should be comfortable, not intentionally slow. The lifter should be under control at all times. If the weight feels light the lifter can move it fast, if the weight is heavy it may move more slowly. Some lifters prefer to be explosive when training for strength.

**Tricks of the Trade:** There are fewer intensity techniques that work as well for developing strength as there are for size. It is also possible that some intensity techniques will not work well at all for strength due to significantly altering the load or the skill involved in the exercise.

#### Things to **AVOID**

- Smith Machine
- Most isolation machines (Leg Extension, bicep curl machine, etc)
- Chest and Shoulder Press Machines
- Stability Balls or unstable implement training
- Anything using a very light weight (<20 lbs men; <10 lbs for women)
- Regularly training until failure
- High Risk Exercises

#### Thing to use

- Cluster Sets
- Negatives
- Partial
- Accommodating resistance
- Compensatory Acceleration

## Ideal Exercises per Body Area to Build Strength

Chest	Back	Shoulders	Total Body
Bench Press	Pull-ups	Push Press	Clean and Press
Incline Press	Chin-ups	Barbell Military Press	Farmer's Walks
Decline Press	Bent-over Row	DB Military Press	Yolk Walks
DB Press	DB Row	Power DB Lateral Raise	Sled Drag
Dips	Cable Row	Leaning Lateral Raise	Muscle-ups
Biceps	Triceps	Legs	Abs
EZ Bar Curl	Close grip Bench	Squats	Hanging Leg Raise
Power Curl	Board Press	C Deadlifts	Inverted Sit-up
DB Curl	Skull Crushers	Sumo Deadlifts	Cable Crunch
DB Hammer Curl	DB Overhead Tri Ext	Good Mornings	Dragon Flags
Strict Curl	V-grip Tri Pushdown	Leg Press	Standing Ab Wheel

If your goal is to build strength, you are very likely to spend considerable time working on the Big 3 which are the squat, the bench press, and the deadlift. These 3 lifts make up the sport of Powerlifting and these lifts have huge transfer over to other exercises, athletic movements, and activities of daily living (ADL's). As such their focus is warranted in most cases. Radical changes in strength rarely occur quickly. Conditioning (particularly for a sport) can be built in a month or so. Bodyfat can be dropped in 2-3 months if the diet is dialed in. Impressive strength normally takes years, perhaps even a decade or two, to fully develop. And after the first year or so of beginner gains, a proper program must be implemented if progress is to be maximized. As such, specific lifting guidelines have been set up for each of the specific lifts. These lift-specific charts along with some explanations are outlined below:

### Squat Chart

Beginner	Intermediate	Advanced

Frequency	1-3 x week (2)	1-3 x week (1-2)	1-5 x week (3)
50-70%	30-60	40-80	15-30 (Speed/Optional)
	OR	OR	AND
71-80%	20-40	25-50	30-60
	OR	OR	OR
81-90%	10-25	15-30	15-40
		OR	OR
91-95%	N/A	5-15	10-20
		AND (Optional)	OR
96%+	N/A	1-5	3-6

*Note: Reps listed are the suggested total number of reps per week at a given workload*

The most important thing to realize when reading this chart is the reps listed are PER WEEK, not per session. They can be divided up as the lifter prefers.

### Bench Chart

	Beginner	Intermediate	Advanced
Frequency	1-3 x week (2)	1-3 x week (2)	1-3 x week (3)
50-70%	45-90	60-150	20-40 (Speed/Optional)
	OR	OR	AND
71-80%	30-60	45-90	50-140
	OR	OR	OR
81-90%	20-40	30-60	35-80

		OR	OR
91-95%	N/A	10-30	20-40
		OR	OR
96%+	N/A	5-10	10-20

*Note: Reps listed are the suggested total number of reps per week at a given workload*

## Deadlift Chart

	Beginner	Intermediate	Advanced
Frequency	1-3 x week (1)	½-2 x week (1)	1/3-2 x week (1/2)
50-70%	24-48	NA	5-16 (speed/optional)
	OR		AND
71-80%	12-32	15-45	18-60
	OR	OR	OR
81-90%	5-16	6-18	8-24
		OR	OR
91-95%	NA	4-8	4-8
		OR	OR
96%+	NA	1-3	1-5

*Note: Reps listed are the suggested total number of reps per week at a given workload*

## Sample Programs for Strength:

### Sample 1-Month Strength Program for an Intermediate Level Male Client



	155x10 175x10	165x5 185x5 205x5	165x3 185x3 205x3 225x5	160x10 180x10	170x5 190x5 210x5	170x3 190x3 210x3 230x3
Deadlift	135x6 205x10 235x10	135x6 215x5 245x5 275x5	135x6 210x3 240x3 270x3 300x3	135x6 210x10 240x10	135x6 220x5 250x5 280x5	135x6 215x3 245x3 275x3 305x3
Leg Press	180x8 290x10 335x10	180x8 315x5 360x5 405x5	180x8 295x3 340x3 385x3 430x3	180x8 300x10 345x01	180x8 325x5 370x5 415x5	180x8 305x3 350x3 395x3 440x3
Multi Directional Lunges	BW 6 6 6	BW 8 8 8	BW 10 10 10	BW + 10 lb 6 6 6	BW + 10 lb 8 8 8	BW + 10 lb 10 10 10
Glute/Ham Raise	BW 8 8 8	BW 10 10 10	BW 12 12 12	BW + 10 8 8 8	BW + 10 10 10 10	BW + 10 12 12 12
Cable Crunch	8x10 8x10	8x10 8x10 8x10	8x10 8x10 8x10 8x10	9x10 9x10	9x10 9x10 9x10	9x10 9x10 9x10 9x10
Hanging Leg Raise	8 8	8 8 8	8 8 8 8	10 10	10 10 10	10 10 10 10

*Italicized sets are warm-up sets.*

**Final Thoughts:** Strength training is one of those things that takes a day to learn and a lifetime to master. Clients should not expect themselves to lift maximal weight at all times while working on their strength. On the flip side people are very often capable of building impressive strength with practice and they should not be afraid to challenge themselves with the proper precautions. Improving maximal strength often has a very favorable transfer to the other

components of fitness, namely muscular endurance (single set) and body composition (both by dropping fat and building muscle). Maintaining an adequate level of strength is very important as one ages to maintain independence and quality of life. Resistance training is typically the most powerful tool the trainer has control over to change how a client looks and feels, and as such qualified trainers should have extensive familiarity with it.

## Chapter 8

# Power

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The word power is often used in fitness training, and like strength it can have different meanings to different people. The guidelines presented below are assuming one is using the more traditional definition of power, which is defined as  $(\text{Force} \times \text{Distance})/\text{Time}$ . Power is expressed when an athlete moves a heavy object as fast as possible. This is most commonly expressed in Olympic Weight Lifting, as well as the Shot Put, Hammer Throw, or Vertical Jump. A key element in power is what is referred to as rate of force development (RFD), which is how quickly one can get one's muscles to fire. Power is different from strength because strength can be expressed slowly (think of one grinding out a 1RM on the bench or pushing a broken-down car—that is strength). Power must be expressed rapidly, it can't be performed slowly. The terms power and strength are related and they can have an effect on one another, but they are not the same.

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**Tim's Tip:** There are really two broad forms of power, one is moving a **heavy object** (a shot put, a sledgehammer, a barbell, another person) really fast and one is moving a **light object** (a baseball, a bat, a fist, a foot) really fast. The first one is traditionally referred to as power and that is what is discussed below. The second is what is referred to as explosiveness (not running speed) and that is discussed in the following chapter.

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The biggest things to consider when training for power are whether the client is ready for it (this type of training is not ideal for beginners or early intermediates), you have the right equipment to perform these exercises, and making sure that power training is indeed accomplishing the goal. Use lower reps and longer rest periods to ensure it doesn't turn into a conditioning workout. As with strength, the client should be near fully recovered as they start each set.

Goal	Exercises per session	Reps	Sets	Load	Rest
Power	2-6	1-5	3-5	75-90%	2:00-5:00

Goal	Routine	Frequency	Ex per area	W/U sets	Tempo
Power	Total Body	2-4x week	1-4	3-6 2-4	Explosive

**Goal:** The athlete will be able to move a heavy object as fast as possible, thus generating more power. Maximal strength is very likely to increase, as is muscle size and bone density. Sprinting speed and vertical jump are also likely to improve.

**Program Set-up:** Power programs are more commonly centered around movements vs muscles. Total body routines and upper/lower routines are common. Elite athletes may perform multiple sessions per day with each session built around a specific movement.

**Frequency:** 2–4 times per week is common when working to improve power. Elite athletes may perform multiple sessions per day or may increase the frequency to 5 or 6 days a week.

**Exercises per Session:** Usually 2–6 exercises per session are recommended to build power.

**Exercises per Area:** 1–4 exercises per specific movement are generally used to build power.

**Types of Exercises Selected:** Exercise selection is key when attempting to build power. Athletes should select exercises that involve a large amount of weight, incorporate a high degree of skill, *and* allow the athlete to perform them explosively. Barbells would be the most common tool to develop power; machines would not be used as often. It is important that all 3 characteristics (weight, skill, and speed) are worked on together in the same exercise.

**Exercise Order:** Athletes should start with the key, primary exercises that improve power. These exercises are traditionally compound, structural movements performed explosively. High speed movements should take place before low speed movements.

**Reps per Set:** Power athletes will utilize low reps in training for the vast majority of their sets. 1–5 reps is the most common, with most sets in the 1–3 rep range.

**Number of Work Sets:** 3–5 work sets per exercise are commonly used to provide enough practice for the athlete without inducing significant fatigue.

**Load per Set:** The load must be heavy enough to allow the athlete to express their power against a heavy resistance, however if the load is excessive the athlete may lift it very slowly, thus limiting their overall force output. Generally athletes will lift 75–90% of the 1RM for the majority of their work sets.

**Rest Between Sets:** Power, as with strength, requires near complete recovery in between work sets for optimal performance. 2–5 minutes is recommended and more rest time can be used on big or important sets.

**Warm-up Sets:** Warming up appropriately is important for training for power just as it is when training for strength. Generally 3–6 warm-up sets are used on the first exercise in the session; 2–4 warm-up sets are used for any subsequent exercises.

**Weight Progression:** Ascending sets are most commonly utilized when training for power. Straight sets or wave loading can be used as well.

**Time Under Tension:** The time under tension should be short when training for power, the total set is generally less than 10 seconds long. Each rep is generally less than 2 seconds long with a break in between. The lifting tempo should be explosive, although the athlete should still maintain proper form at all times.

**Tricks of the Trade:** There are not too many intensity techniques that will be employed to build power, since these techniques usually involve extending sets to induce additional fatigue and that is not the goal here. Some power building techniques include:

- Pairing a resistance training movement with a lighter explosive exercise for the same movement
- Incorporating plyometrics
- Use Prilepin's Table

## Prilepin's Table

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<b>% 1RM</b>	<b>Reps per Set</b>	<b>Optimal Total Reps</b>	<b>Range of Total Reps</b>
<70%	3-6	24	18-30
70-80%	3-6	18	12-24
81-90%	2-4	15	10-20
>91%	1-2	7	4-10

## **Ideal Exercises per Body Area to Build Power against Heavy Resistance**

<b>Chest</b>	<b>Back</b>	<b>Legs</b>
Bench Press	Pull-up	Squats
Bench Press Throw	Plyometric Pull-up	Jump Squat
Plyometric Push-up	Bent Over Row	Front Squat
		Box Jump
<b>Shoulders and Arms</b>	<b>Total Body</b>	Overhead Squat
Push Press	Clean	
Overhead Press	Jerks	
Power Curl	Snatch	
	Jump	
	Sprint	

One is not expected to train only on these exercises or to perform all of the exercises in every session.

### **Sample Programs for Power:**

#### **Sample 1-Month Power Program for an Advanced Level, Lightweight Female Client**

## Power Day 1

Exercise	Workout 1	Workout 5	Workout 9	Workout 13
Clean & Jerk	45x5, 65x4, 85x3, 105x3, 105x3, 105x3	45x5, 65x4, 85x3, 105x3, 105x3, 105x3, 105x3, 105x3	45x5, 75x4, 95x3, 110x2, 110x2, 110x2, 110x2	45x5, 75x4, 95x3, 110x2, 110x2, 110x2, 115x1, 115x1, 120x1
Bench Press Supersetted with Drop Catch Push- ups	45x6, 75x6, 95x5, 95x5, 95x5, SS 3 Drop Catch PU x 3 sets	45x6, 75x6, 95x5, 95x5, 95x5, 95x5, 95x5, SS 3 Drop Catch PU x 5 sets	45x6, 75x6, 90x4, 105x3, 105x3, 105x3, 105x3, 105x3, SS 4 Drop Catch PU x 4 sets	45x6, 75x6, 90x4, 105x3, 105x3, 105x2, 110x1, 110x1, 115x1, SS 4 Drop Catch PU x 6 sets
45 Degree Bent Over Row Supersetted with Clap Pull-ups	45x6, 75x6, 95x5, 95x5, 95x5, SS 1 Clap Pull-up x 3 sets	45x6, 75x6, 95x5, 95x5, 95x5, 95x5, 95x5, SS 1 Clap Pull-up x 5 sets	45x6, 75x6, 90x4, 105x3, 105x3, 105x3, 105x3, 105x3, SS 2 Clap Pull-up x 4 sets	45x6, 75x6, 90x4, 105x3, 105x3, 105x2, 110x1, 110x1, 115x1, SS 2 Clap Pull-up x 6 sets
Power Curl	35x8, 55x5, 55x5, 55x5	35x8, 55x5, 55x5, 55x5, 55x5, 55x5	45x8, 65x3, 65x3, 65x3, 65x3	45x8, 65x4, 65x4, 65x4, 65x4

## Power Day 2

Exercise	Workout 2	Workout 6	Workout 10	Workout 14
Snatch	45x5, 65x4, 85x3, 85x3, 85x3	45x5, 65x4, 85x3, 85x3, 85x3, 85x3, 85x3	45x5, 75x4, 95x2, 95x2, 95x2, 95x2	45x5, 75x4, 95x2, 95x2, 95x2, 100x1,

				100x1, 105x1
Squat Supersetted with Box Jumps	45x6, 95x6, 135x5, 135x5, 135x5, SS 5 Box Jumps x3 sets	45x6, 95x6, 135x5, 135x5, 135x5, 135x5, 135x5, 135x5, SS 5 Box Jumps x5 sets	45x6, 95x6, 125x4, 150x3, 150x3, 150x3, 150x3, 150x3, SS 4 Box Jumps (higher) x4 sets	45x6, 95x6, 125x4, 150x3, 150x3, 150x3, 160x1, 160x1, 170x1, SS 4 Box Jumps (higher) x6 sets
Jumping Squat	45x6, 60x6, 75x5, 75x5, 75x5	45x6, 60x6, 75x5, 75x5, 75x5, 75x5, 75x5	45x6, 65x6, 85x3, 85x3, 85x3, 85x3	45x6, 65x6, 85x3, 85x3, 85x3, 95x3, 95x3
Overhead Squat	35x8, 55x5, 55x5, 55x5	35x8, 55x5, 55x5, 55x5, 55x5, 55x5	45x8, 65x3, 65x3, 65x3, 65x3	45x8, 65x4, 65x4, 65x4, 65x4

Exercise	Workout 3	Workout 7	Workout 11	Workout 15
Push Press	45x5, 65x4, 85x3, 85x3, 85x3	45x5, 65x4, 85x3, 85x3, 85x3, 85x3, 85x3	45x5, 75x4, 95x2, 95x2, 95x2, 95x2	45x5, 75x4, 95x2, 95x2, 95x2, 100x1, 100x1, 105x1
Bench Press	45x6, 65x6, 85x8, 85x8, 85x8	45x6, 65x6, 85x8, 85x8, 85x8, 85x8, 85x8	45x6, 75x6, 95x6, 95x6, 95x6	45x6, 75x6, 95x6, 95x6, 95x6, 95x6, 95x6
Pull-up	6, 6, 6	6, 6, 6, 6, 6	+10x3, +10x3, +10x3, +10x3	+10x3, +10x3, +10x3, +20x2, +20x2, +30x1
Deadlift	95x8, 155x5,	95x8, 155x5, 155x5,	95x8, 165x3, 165x3,	95x8, 165x4, 165x4,

	155x5, 155x5	155x5, 155x5, 155x5	165x3, 165x3	165x4, 165x4
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## Power Day 3

Exercise	Workout 4	Workout 8	Workout 12	Workout 16
Snatch	45x5, 65x4, 85x3, 85x3, 85x3	45x5, 65x4, 85x3, 85x3, 85x3, 85x3, 85x3	45x5, 75x4, 95x2, 95x2, 95x2, 95x2	45x5, 75x4, 95x2, 95x2, 95x2, 100x1, 100x1, 105x1
Power Clean	45x6, 75x6, 95x5, 95x5, 95x5	45x6, 75x6, 95x5, 95x5, 95x5, 95x5, 95x5	45x6, 75x6, 105x3, 105x3, 105x3, 105x3	45x6, 75x6, 105x3, 105x3, 105x3, 105x3, 105x3
Squat	45x6, 95x6, 125x5, 145x4, 145x4, 145x4, 145x4	45x6, 95x6, 125x4, 145x4, 145x4, 145x4, 145x4, 145x4	45x6, 95x6, 135x4, 160x2, 160x2, 160x2, 160x2	45x6, 95x6, 135x4, 160x2, 160x2, 160x2, 160x2
Front Squat	45x6, 65x6, 85x8, 85x8, 85x8	45x6, 65x6, 85x8, 85x8, 85x8, 85x8, 85x8	45x6, 75x6, 95x6, 95x6, 95x6	45x6, 75x6, 95x6, 95x6, 95x6, 95x6, 95x6

**Final Thoughts:** There are a lot of appealing things about training for power. Watching an explosive athlete demonstrate great power is a thing of a beauty. Improving RFD is very likely to improve on-the-field performance. Power can transfer over to speed and strength, and you can't fake improvements in power.

But there are several drawbacks to consider as well. Power training often requires specific equipment that many commercial fitness centers don't have. The power exercises often demand a high level of flexibility that many adult clients are simply lacking. Many power coaches suggest simply practicing the

movement with just the bar, or even a PVC pipe, for months on end to build proficiency before increasing the load. During that time while learning will be taking place, very little actual fitness progress will be made. Even once the power exercises are performed loaded, they don't have the same effect on body composition and muscle mass that many clients are seeking. With only 2–3 hours to train, one must ask themselves if spending half of that time performing the power exercises is the best use of time.

## Chapter 9

# Explosiveness

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Explosive training means you will move something, usually a part of your body, very rapidly against no or minimal resistance. This is more a representation of speed versus strength. Examples of this would be throwing a punch or a kick, kicking a soccer ball or a football, or pitching a baseball. This is sometimes referred to as power training against light resistance. Note that this generally refers to hand or foot speed while the body is reasonably stationary. Training to improve sprinting speed involves different training parameters.

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**Tim's Tip:** When training for explosiveness it is important to use an explosive tempo. In order to do that safely one must have reasonable familiarity with the lifts, as such this method is not suitable for beginners. It is also important to find exercises that are joint-friendly. The biggest drawback of speed training is that it tends to do very little to change how the body looks—it doesn't build appreciable muscle or otherwise force the body to change its appearance.

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Goal	Exercises per session	Reps	Sets	Load	Rest
Explosiveness	4-8	5-20	2-4	20-40%	:30-1:00

Goal	Routine	Frequency	Ex per area	W/U sets	Tempo
Explosiveness	Total Body	2-4	1-2	1-3 0-2	Explosive

**Goal:** The athlete should be able to move a light object with greater speed, thus generating more force.

**Program Set-up:** Generally a program to build explosiveness will use a total body routine; push/pull or upper/lower routines can be used as well.

**Frequency:** Normally athletes will work on this component 2–4 times a week. Each area or movement will be targeted 2–4 times a week.

**Exercises per Session:** 4–8 exercises per session are usually employed.

**Exercises per Area:** 1–2 exercises per body part or movement are normally used.

**Types of Exercises Selected:** To train this quality, the athlete must be able to perform the repetitions at a high rate of speed. As such machines are less commonly used. Instead barbells, kettlebells, medicine balls, body weight exercises, and bands are more commonly incorporated.

**Exercise Order:** Start with larger muscles and big exercises when training for speed. If fatigue is a factor the athlete can alternate exercises to facilitate recovery.

**Reps per Set:** 5–20 reps per set is usually chosen to build this goal.

**Number of Work Sets:** 2–4 sets per exercise are normally used.

**Load per Set:** The load needs to be light to allow the athlete to move at a very high rate of speed. Generally 20–40% of the 1RM is used (note that means every set is essentially a warm-up set). Mel Siff (author of *Supertraining*) suggests performing 5 out of 6 sessions with 20% of the load, one out of 6 sessions with 40% of the load.

**Rest Between Sets:** Rest between set is usually :30–1:00.

**Warm-up Sets:** Warm-up sets are important when training for speed, however because the weight is light, the warm-up sets usually involve the lifter performing at a slower speed to get their body used to the explosive nature of the activity. 1–3 warm-up sets are typically used for the first session, 0–2 warm-up sets can be used for subsequent exercises. Instead of warming up with less weight, the lifter can be given a percentage of effort to work toward. For example if a lifter is going to perform explosive bench presses with just the bar have them perform a set with the bar at 40% full speed, 60% full speed, and

then 80% full speed. Now they are ready for the work set which will be 100% full speed.

**Weight Progression:** Training for speed typically incorporates straight sets.

**Time Under Tension:** Speed is expressed quickly, even if higher reps are performed the sets should last 10 seconds or less. The tempo for each rep is explosive without sacrificing form or safety.

**Tricks of the Trade:** There are a few intensity techniques that can be useful to improve explosiveness. These things include:

Peripheral Heart Action

Pairing a resistance training exercise with a plyometric exercise for the same movement

Using bands to build explosive power

## Ideal Exercises per Body Area to Build Explosiveness

Chest	Back
Med Ball Chest Pass	Med Ball Overhead Throw
Med Ball Drop and Catch	Standing Band Row
Bench Press	Bent Over Row
Push-up	Inverted Row
Standing Cable Chest Press	DB Row
Shoulders and Arms	Total Body
Push Press	Clean
Band Face Pull	Med Ball Thruster
Band Lateral Raise	Sprints

One is not expected to train only on these exercises or to perform all of these exercises in every session.

## Sample One Month Explosive Workout Program for an intermediate level male athlete

Exercise	Workout 1	Workout 3	Workout 5	Workout 7
Hang Clean	35x15x3	35x15x3	70x15x3	35x15x3
Bench Press	45x15x3	45x15x3	95x15x3	45x15x3
Inverted Row	BWx15x3	BWx15x3	BWx5x3 Lower	BWx15x3
Slam Ball Wall Slams	10x10x3	10x10x3	20x10x3	10x10x3
Band Face Pull	20x4	20x4	20x4	20x4
Band Lateral Raise	12x4	12x4	12x4	12x4

Exercise	Workout 2	Workout 4	Workout 6	Workout 8
Drop Catch Pushup	6x4	6x4	6x4	6x4
Med Ball Box Jump	10x6x4	10x6x4	20x6x4	10x6x4
Push Press	25x15x3	25x15x3	45x15x3	25x15x3
Med Ball Thruster	10x12x3	10x12x3	20x12x3	10x12x3
Standing Cable Chest Press	15x15x3	15x15x3	30x15x3	15x15x3
Standing Band Row	20x3	20x3	20x3 Thicker	20x3

*Note: The goal is not typical progression which is why 3 out of the 4 weeks use the same weight, the goal is to be faster and more explosive with the same load.*

**Final Thought:** Of the subcomponents of fitness, explosiveness is not typically trained by personal trainers. Instead this aspect is more commonly worked on by strength and sport coaches. With the appropriate client the trainer may choose to incorporate these methods and it is for that reason the information is provided. The trainer should be aware that while physical

performance may be improved, physical looks are likely not to change significantly with this type of training. It is also difficult to measure actual speed of performance, and progressive overload is harder to incorporate as too much weight can decrease the speed generated. It takes a trained coach's eye to implement these techniques successfully.

## Chapter 10

# Training Older Adults

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The goal of this chapter is to provide some guidelines on how to create workout programs for older adults. Older adults can be anyone over the age of 55 but more commonly it is referring to those 65 and older. The tricky thing, of course, is that everyone is different and not all older adults have the same goal. If the older adult has been training extensively for many years (or even decades) then their training will very likely match the specific goal they are working on, much like their younger counterparts. This guideline is set up for the older adult that is just past the beginner stage and wants to continue to lift to receive the standard improvements of increased strength, power, endurance, and improved body composition. The information presented below is just a guideline and it is important and recommended that as a trainer you modify certain variables as you see fit to best accomplish your client's specific goals.



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Goal	Exercises per session	Reps	Sets	Load	Rest
Older Adult	6–10	6–15	2–4	50–75%	1:00–4:00

Goal	Routine	Frequency	Ex per area	W/U sets	Tempo
Older Adult	Total Body Upper/Lower	2–3xweek	1–3	0–2	2:4 count

**Goal:** The goal in training older adults is to build their fitness, improve their physical capacity, build muscle strength and bone density, help prevent injury, and improve their quality of life.

**Program Set-up:** Most older adults will want to work out 2–3 times per week. Once a week is certainly better than nothing, 4 times a week is workable but older adults typically need more time to recover (in terms of days) so 2–3 times a week seems ideal. Those training 2–3 times a week will most commonly use a full body routine, however if the goal is to promote recovery an upper/lower or push/pull split can be used as well. Those should be employed if the person is

training 4 times a week. If the person is just lifting once a week then total body is likely the only viable choice.

**Exercises per Session:** Older adults will generally perform 6–10 resistance training exercises per session. Additional exercises that focus on balance or flexibility can be included above and beyond this number.

**Exercises per Area:** Older adults will generally perform 1–3 exercises per area being worked. It is unnecessary and generally not ideal for non-advanced clients to perform more than 3 exercises per area due to the excessive soreness that typically follows that type of workout. In addition that set up may be too time intensive.

**Types of Exercises Selected:** Older adults want to choose exercises that meet their specific goals. A common goal is to improve general fitness and physical capacity, and as such exercises that take place in 3 dimensions, are standing rather than seated, have some balance component, and are compound movements are often used. However, if the older adult has significant weakness, balance issues, or injuries that need to be worked around certainly machine based, seated, isolation exercises can be used. Sometimes that is the only way for the person to begin loading up that area. Trainers are cautioned against trying to improve too many components all at once—for example the person who does weighted BOSU ball squats to work on both balance and strength may not be working on either ability very well. It is likely better to choose one exercise for strength (say a goblet squat or leg press) and another for balance (a step down).

**Exercise Order:** Older adults will generally want to follow the standard exercise order of starting with large muscle groups, big exercises, compound movements that require more skill and then moving on to smaller muscle groups and exercises that require less skill.

**Reps per Set:** Older adults are often well served by performing 6–15 reps per set. They are cautioned against exclusively using very light weight for very high reps. One of the primary goals a majority of older adults have is to build or at least maintain bone mass (bone density can be built at any age). Bones need

reasonably heavy weight to stimulate growth, a 5 lb dumbbell likely won't cut it, especially after a few weeks of training. As such it is okay to lower the reps a bit to allow the older adult to lift more weight and thus achieve better results. Of course, proper form should be maintained at all times and not sacrificed for the sake of going heavy.

**Number of Work Sets:** Generally older adults will perform 2–4 work sets per exercise to provide the appropriate stimulus.

**Load per Set:** Older adults will generally want to lift 50–75% of their 1RM. It is highly likely their exact 1RM may not be known and as such a conversion chart can be used to estimate their 1RM. In addition there is nothing wrong with simply starting with a very light weight and then applying progressive overload at periodic intervals to ensure the body continues to adapt to the stimulus. The big caution is this: if the goal is to build bone the weight must be reasonably heavy. This doesn't mean the older adult must reach failure on every set or anything like that, it simply means if they choose a weight they could really lift 50 times in a row and then they go on to perform 2 sets of 10 with it, that will not work. If the form is good and if there is no pain during or after the lift, then when in doubt increase the load instead of the reps once 15 reps have been reached.

**Rest Between Sets:** Because the goal is to have the load be reasonably heavy it is important to provide adequate rest between sets. There is also nothing wrong with encouraging the social component of a workout. Taking longer rests allows one to work out with a partner or two and it also allows them to feel like they can have a conversation during the workout (not during the set but while they are resting). Generally 1–4 minutes of rest is suggested between each set.

**Warm-up Sets:** Warm-up sets can be used for older adults as needed. Older adults typically lift lighter weight and the tempo is slower, which in turn lessens the need for warm-up sets. However, older adults tend to have poorer circulation and they may be working around an injury. Those issues tend to require additional warm-up sets. Most older adults will use 0–2 warm-up sets before the working set for each exercise, but feel free to modify the guideline to

best meet the need of the individual. In addition some older adults find that a reasonable warm-up on a piece of cardiovascular equipment (consisting of 5–10 minutes) works well for them and their body functions better after that. They may also want to include stretching prior to working out, particularly if they are not able to reach the desired ROM in the exercise but they can after they stretch. Some may even wish to complete their full cardio workout first and then perform resistance training. As long they still have enough energy to get an adequate lift in this should be fine.

**Weight Progression:** Most older adults will either use ascending sets or straight sets when selecting their weights.

**Time Under Tension:** Most older adults are encouraged to lift with a slow to moderate tempo; the 2:4 count works well in most instances. The goal is not to lift so slowly that the weight is super light, again that will not build bone productively. However, it is important that the form be very good for the older adult and momentum should be minimized. Older adults are encouraged to breathe normally during the exercise and to avoid the Valsalva maneuver.

**Tricks of the Trade:** Older adults are not going to use too many intensity techniques to ramp up their workouts. Training with a partner may help adherence and having a trainer will really help find imbalances and can help with partner stretching. Older adults may want to work on balance and flexibility as well, although strength training should not be ignored. Older adults will need to work around any injuries they may have and some exercises may need to be modified to better suit them. It is possible that the ROM on certain exercises will need to be limited and that is okay, although the lifter is encouraged to find a way to standardize this new ROM. If the ROM increases over time, that is great. Generally less time is spent focusing on aesthetics and more time is spent on function. Specific tricks include:

- PNF Stretching
- Partial
- Band assisted lifting
- Tubes and Bands
- Balance Exercises
- Supersets for smaller muscles

- Circuits

## Ideal Exercises for Older Adults that are Standing, Seated, or Tim's Favorite

Body Part	Standing	Seated	Tim's Favorite
Chest	Standing Tube Press	Chest Press Machine	Smith Machine Push-up
Back	Standing Band Row	Widegrip Lat Pulldown	Seated Widegrip Cable Row
Shoulders	Standing Band Lateral Raise	Lateral Raise Machine	
Biceps	EZ Bar Curl	Seated DB Hammer Curl	EZ Bar Cable Curl
Triceps	V-Grip Tricep Pushdown	Chair Dips	Incline Band Skull Crusher
Legs Compound	Goblet Squat	Leg Press	Horizontal Leg Press
Calves	Standing Calf Raise	Seated Calf Raise	Standing DB Calf Raise
Abs	Cable Rotation	Crunch Machine	Incline Band Crunch
Lower Back	Hyperextension	Lower Back Machine	Goblet Partial Good Mornings

## Sample One Month Workout for a 75 year old male

### Day 1

Exercise	Week 1	Week 2	Week 3	Week 4
Standing Tube Press	12x3	15x3	12x3 (thicker tube)	15x3 (thicker tube)
Standing Band Row	12x3	15x3	12x3 (thicker tube)	15x3 (thicker tube)
MR Lateral Raise	8x2	8x3	10x2	10x3
Seated DB	12x8x3	12x10x3	15x8x3	15x10x3

Hammer Curl				
Chair Dips	8x2	8x3	10x2	10x3
Goblet Squat	20x8x3	20x10x3	25x8x3	25x10x3
Step Downs	8ea x2	8ea x3	10ea x2	10ea x3
Standing DB Calf Raise	25x12x2	25x15x2	30x12x2	30x15x2
Incline Band Crunch	12x3	15x3	12x3 (thicker tube)	15x3 (thicker tube)
Goblet Partial Good Morning	25x8x2	25x8x3	25x10x2	25x10x3

## Day 2

Exercise	Week 1	Week 2	Week 3	Week 4
Chest Press Machine	30x10 45x12x2	30x10 45x12x3	30x10 45x15x2	30x10 45x15x3
Seated Widegrip Cable Row	30x10 45x12x2	30x10 45x12x3	30x10 45x15x2	30x10 45x15x3
Lateral Raise Machine	20x12x2	20x12x3	20x15x2	20x15x3
Band Pull Aparts	15x3	15x3	15x3	15x3
EZ Bar Cable Curl	20x10 30x12x2	20x10 30x12x3	20x10 30x15x2	20x10 30x15x3
V-Grip Tricep Pushdown	20x10 30x12x2	20x10 30x12x3	20x10 30x15x2	20x10 30x15x3
Horizontal Leg Press	50x10 80x12x2	50x10 80x12x3	50x10 80x15x2	50x10 80x15x3
Seated Leg Curl	45x12x2	45x12x3	45x15x2	45x15x3
Seated Calf Raise	25x15x2	25x15x3	30x15x2	30x15x3
Cable Rotation	20x12ea x2	20x15 ea x2	25x12ea x2	25x15ea x2
Lower Back Machine	60x15x2	60x15x3	70x15x2	70x15x3

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**Final Thoughts:** Older adults can be an excellent population to work with. They may not train with quite the same intensity as their younger peers and they may not be as obsessed with seeing their abs or building their biceps, but their quiet devotion to training can be just as powerful. Many older adults know that it is their fitness regimen in part that is allowing them to live the lifestyle they wish, the one that allows them to stay physically independent and mentally sharp long into old age. From a practical point of view, older adults often have the finances to work with a personal trainer, they have a schedule that allows them to train at non-peak times, and they are often content to find a trainer and then stick with that trainer for the long haul rather than leaving after a short-term goal has been accomplished.

## Chapter 11

# Plug and Play

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It is time for you to create a program for your client. The goal of this chapter is to walk you through that process step by step. Of course, there are many different types of clients and many different goals. It is also worth noting that there are many different types of personal trainers and it is important to create a workout that matches your own style—this is the *art* of personal training. One of my main hopes is that if you follow the guidelines presented in this book you can avoid the pitfalls that sometimes go along with custom made plans such as improper loading, poor exercise selection, incorrect frequency, lack of specificity, etc. That is the *science* of personal training. The science we can teach, the art you must create for yourself.

To start, you need to understand the goals that your client wishes to achieve. Think of a timeframe that you are going to focus on: 2–3 months is ideal but ultimately it is up to you. What do you want your client to be able to do at the end of that time frame? It is much more useful and productive to think about specific physical abilities rather than looking or feeling a certain way. Think of the main goals outlined in this book. Do you want to work on their strength so they can lift more weight in certain exercises? Do you want to build the size of their muscles? Do you want to help them lose weight and bodyfat? Do you want to improve their muscular endurance? Are you trying to improve the client's hand/foot speed or perhaps you want to boost their power? Pick one primary goal that you want to center your attention toward.



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Now make this goal SMART—that means make it Specific, Measurable, Achievable, Realistic and put a Timeline on it. Write down this goal. Saying you want to make a client stronger is not good enough. Saying you want their bench to increase from 275 to 300 lbs in 3 months is much better. Be very

clear. A simple litmus test to apply is imagine you had a third party observing your client at the end of the program, would they easily be able to know if the client accomplished their goal or not? Using the strength example above, if the client benches 300 lbs they accomplished the goal, if they don't then they did not hit their goal. But if a client's goal is to look better or just be stronger, that can mean many different things to different people. Looking better might mean getting a tan and a haircut or buying some new duds; it is important to be specific. If looking better means they will take 2" off of their waist and they'll reduce their bodyfat by 4%—that is a specific and measurable outcome.

Make sure you know the client's actual starting point, don't guess what it is. Actually test it. Don't accept the client's answer when they tell you "I think I weigh 200 lbs", go and actually measure their weight. Test their strength or at the very least perform a rep max test (for example bench 225 for as many times as they can). Measure their bodyfat, take tape measurements, take pictures, test their 1.5 mile run time or their sit and reach. If you are interested in seeing it improve, the very first thing you must do is measure it. This is not just a suggestion, it is mandatory to chart their progress and ultimately this helps you the trainer understand how the body responds to various stimuli. That information will be used to create even more effective programs over time.

Once you have clarified the client's goal, now you need to select a routine for them to follow. This is based on 3 main factors. How many days a week are you going to train them? How intensely do they like to train (and how long have they been working out)? What frequency do you want to train each area of the body?

I would suggest you start by simply making columns indicating what days a week you want the client to train. Just list them. If you end up changing them it is not a big deal, but grab a sheet of paper and write them down. As a note, after helping more than a thousand individuals become personal trainers, I have seen students struggle with this process many times. In my experience students try to make the program perfect in their head before writing it down. Don't do this. Just start by writing your ideas down, once it is all laid out then you can you change it and ultimately finalize it.

For example, let's assume you decide you want the client to lift 3 days a week, and those days will be Monday, Wednesday, and Friday. We'll start with the columns that look like this:

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Monday	Wednesday	Friday

You then need to choose a frequency: how often do you want to train each area? Let's assume their goals are to improve strength and size and the client has been training for a few years. You must decide if you think the client responds better to higher frequency with lower intensity or if the reverse is true. You have a lot of options. Trust your gut. There is nothing wrong with following a plan like this for 2–3 months and then modifying the frequency and intensity later. Outlined below are several possible options:

Monday	Wednesday	Friday
Total Body	Total Body	Total Body
Push	Pull	Total Body
Push	Pull	Repeat
Push	Pull	Legs
Chest/Back	Legs/LB/Abs	Shoulders/Arms

*Note: The order of the days in this example could be reversible if desired*

You need to pick one of those plans or make your own. If you get the feeling the client really likes to train hard and really pushes it in the gym you'll probably lean toward choosing a lower frequency program where each area is hit just once a week. If you want the client to have more practice with certain lifts or if you want to scale back your intensity a bit then you'll probably choose a program with higher frequency. If you can't decide between the options of training each area/movement twice a week or once a week, you can always train something 1.5 times a week (twice on one week, once on a subsequent week, and then repeat).

Let's go with the last option and thus we create the following routine:

Monday	Wednesday	Friday
Chest/Back	Legs/LB/Abs	Shoulders/Arms

---

Now you must **select the number of exercises** per session. Here referring to the chart will be useful. When training for strength we normally use 4–7 exercises per session, when training for size we tend to do 5–8, so those are similar. On this type of routine we'll likely do 6–8 exercises per session.

Now we want to **select the specific exercises** that we will perform. If we want to train for a combo of size and strength we want first to see if there are ideal exercises that are in both categories. Let's list them:

**Chest:** Bench Press, DB Press

**Back:** Bent Over Row, Pull-ups, DB Row, Cable Row

**Shoulders:** No exact matches, however DB Mil Press, Barbell Mil Press, Power Lat Raises, and Power Rear Delt Raises will be great for a combo approach

**Biceps:** EZ Curl, Power Curl, DB Curl, DB Hammer Curl

**Triceps:** Skull Crushers, Closegrip Bench, DB Overhead Tricep Extensions

**Legs:** Squats, Deadlifts, Leg Press, Front Squat

**Core:** Cable Crunch, Decline Sit-up, Ab Wheel

We don't have to choose *only* these exercises and we don't have to choose *ALL* of these exercises but we should build the client's program around the central ones. If you personally have some favorite exercises that are not on this list, feel free to include them, just make sure they do indeed produce results. If the client has an injury or your gym has equipment limitations then make the most logical substitution that you can.

As we continue to flesh out the workout, it is time to select the **number of exercises per area trained**. When training for strength we choose 2–5 exercises per area, when training for size we choose 3–5. In this instance choosing about 3 exercises per area looks to be the sweet spot. One benefit of adding a fourth day per week of training is that it makes it easier to get in those extra exercises, however it does add another training day and not all clients can afford that. 2 exercises per area might work, however my worry is it would not be enough stimulus to build size. If you started with 2 exercises and you did not see the results you were hoping for my first thought would be to increase the volume.

Let's say we choose these 3 exercises per area

**Chest:** Bench, DB Incline, DB Power Fly

**Back:** Pull-ups, Bent Over Row, V-grip Cable Row

**Shoulders:** DB Mil Press, Power DB Lat Raise, Power DB Rear Delt Raise

**Biceps:** Power Curl, DB Curl, DB Hammer Curl

**Triceps:** Skull Crushers, DB Overhead Tricep Extension, Closegrip Bench

**Legs:** Squats, Front Squats, Leg Press, Deadlifts, Leg Curls

**Core:** Cable Crunch, Decline Sit-up, Ab Wheel

Now we take these exercises and we plug them into the columns we created earlier.

Monday	Wednesday	Friday
<b>Chest/Back</b>	<b>Legs/LB/Abs</b>	<b>Shoulders/Arms</b>
Bench Power Fly 45 Degree Bent Over Row V-Grip Cable Row DB Incline Pull-ups	Leg Curl Deadlifts Leg Press Squats Decline Sit-up Cable Crunch Front Squat Ab Wheel	DB Curl DB Power Lat Raise DB Power Rear Delt Raise Skull Crushers EZ Power Curl DB Hammer Curl Closegrip Bench DB Military Press

Remember, we want to stick with our goal of 6–8 exercises per session otherwise fatigue may be too great or the session may take too long. Once that is complete, we then look at how the exercises are laid out. Do you see anything wrong with this current setup? Yes—the order of the exercises is all screwed up. It is time to fix that.

**Select the Proper Exercise Order**—When training for size and strength we will generally follow the standard exercise order guidelines, which means performing the big compound free weight exercises first, then the smaller isolation machine based stuff next. Putting the exercises in the proper order will look like this:

Monday	Wednesday	Friday
<b>Chest/Back</b>	<b>Legs/LB/Abs</b>	<b>Shoulders/Arms</b>
Bench DB Incline Power Fly Pull-ups	Squats Front Squats Leg Press Deadlifts* Leg Curls	DB Military Press DB Power Lat Raise DB Power Rear Delt Raise Closegrip Bench Skull Crushers

45 Bent Over Row V-Grip Cable Row	Cable Crunch Decline Sit-up Ab Wheel	EZ Power Curl DB Curl DB Hammer Curl
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*\*Deadlifts could be performed before or after leg press if desired*

*Note: If the trainer was so inclined they could superset some of the exercises on each day, for example the chest and back could be supersets as could the shoulders and then the biceps and triceps. This would induce more fatigue but it would also save significant training time. It might be necessary to do that if the goal was to do all of this in a one-hour personal training session.*

Once you have your days planned out, you want to finish putting in the nuts and bolts of the program. That includes selecting the following variables:

- Reps per set
- Load per set
- Work sets per exercise
- Warm-up sets per exercise
- Rest time in between work sets

This information will be found in the program design chart at the start of each chapter. With the combo goals of size and strength, it is likely best to think about which specific goal you are hoping to achieve from each exercise and then program accordingly, allowing for a bit of overlap.

At this point I would suggest taking each daily workout and fleshing it out. This way each day becomes its own table (or page).

## **Monday—Chest/Back**

<b>Exercise</b>	<b>Reps</b>	<b>Load</b>	<b>W/U Sets</b>	<b>Work Sets</b>	<b>Rest Time</b>
Bench	5	85%	4	5	3:00
DB Incline	8	75%	2	4	2:00
Power Fly	12	70%	1	4	1:30
Pull-ups	6	80%	2	5	3:00
45 Bent Over Row	8	75%	1	4	2:00

V-Grip Cable Row	8	75%	1	4	1:30
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## Wednesday—Legs

Exercise	Reps	Load	W/U Sets	Work Sets	Rest Time
Squats	5	85%	4	5	3:00
Front Squats	8	75%	2	4	2:00
Leg Press	10	70%	2	3	2:00
Deadlifts	8	75%	3	2	4:00
Leg Curls	12	70%	1	3	1:30
Cable Crunch	12	70%	0	3	:30
Decline Sit-up	12	70%	0	3	:30
Ab Wheel	8	NA	0	3	:30

## Friday—Shoulders and Arms

Exercise	Reps	Load	W/U Sets	Work Sets	Rest Time
DB Military Press	6	80%	3	4	2:00
DB Power Lat Raise	8	75%	0	4	1:00
DB Power Rear Delt Raise	8	75%	0	4	1:00
Closegrip Bench	6	80%	2	4	2:00
Skull Crushers	8	75%	1	4	1:30
EZ Power Curl	6	80%	2	4	2:00
DB Curl	8	75%	1	4	1:30
DB Hammer Curl	12	70%	0	4	1:00

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The next thing to consider is how are you going to implement progressive overload for the client? Each of these plans is a good workout in and of itself, but the client can't follow them forever. You have to think: My client is at this fitness level, how do I get them up to a higher level? You must make a map or a path to follow, and that path is paved with proper overload. There are many routes available.

**Linear overload** simply adds a small amount of weight to each session. This is great for beginners and it works very well when followed for a shorter amount of time (3 months for intermediates, 4–8 weeks for advanced lifters), but you cannot implement basic linear overload forever.

**Rep range progression** is where the client increases the reps each week until they hit a goal number (while the weight stays the same), then you will increase the weight, reduce the reps, and start all over again.

Other programs like 5/3/1 cause an increase in intensity over time, usually 2–4 weeks. Then the cycle is repeated again, with each repeated week being tougher than the week before.

Finally see if it is appropriate, either at the start of the program or as one progresses through it, to implement various intensity techniques. For example in the routine we created supersets would be the most immediate logical choice. Drop sets could be used, as could forced reps or compound sets if desired.

## **FAQ**

**What if the workout is taking too long?** Then you need to either reduce rest time (not normally desirable unless the session includes a lot of wasted time), reduce the number of work sets, reduce the number of exercises, or find a way to save time (for example superset the exercises). Typically extra work sets on non-key exercises and the isolation exercises are the first things to be eliminated.

**What if I need to change the frequency?** This is generally not a problem, take the exercises you were doing and simply plug them in on the new days you are training and then shave off the excess or fill in the holes as necessary.

If we were to take the above routine and turn it into a push/pull program it would look like this:

Push (chest, shoulders, tris, abs)	Pull (Back, rear delts, bis, legs, LB)
<p style="text-align: center;">           Bench            Incline  <i>Power Fly</i>            DB Military Press  <i>DB Power Lat Raise</i>            Closegrip Bench            Skull Crushers            Cable Crunch            Decline Sit-up  <i>Ab Wheel</i> </p>	<p style="text-align: center;">           Pull-ups            45 Bent Over Row  <i>V-Grip Cable Row</i>  <i>DB Power Rear Delt Raise</i>            EZ Power Curl            DB Curl  <i>DB Hammer Curl</i>            Squats  <i>Front Squats</i>  <i>Leg Press</i>            Deadlifts  <i>Leg Curls</i> </p>

*Note: Italicized exercises become optional as now the workout is quite long*

The big negative now is these workouts are long, they will be closer to 2 hours than 60–90 minutes if the client performs all of the exercises, sets, reps, etc. as outlined previously. Some exercises are likely to be cut to save time and those would normally be the assistance based, isolation exercises.

**What if I want to increase the frequency?** If you find the client wants to train more often that is fine and generally desirable, and it makes you more money. Most higher-level athletes perform intense resistance training 4 days a week. In that case the exercises could be spread out over these days as outlined below:

Chest/Biceps	Legs/LB	Back/Abs	Shoulders/Tris
<p style="text-align: center;">           Bench            DB Incline  <i>Dips</i>            Power Fly            EZ Power Curl            DB Curl            DB Hammer Curl         </p>	<p style="text-align: center;">           Squats            Front Squats            Leg Press            Deadlifts            Leg Curls         </p>	<p style="text-align: center;">           Pull-ups            45 Bent Over Row            V-Grip Cable Row  <i>T-Bar Row</i>            Cable Crunch            Decline Sit-up            Ab Wheel         </p>	<p style="text-align: center;"> <i>Barbell Military Press</i>            DB Military Press            DB Power Lat Raise            DB Power Rear Delt            Raise            Closegrip Bench            Skull Crushers  <i>V-grip Tricep Pushdowns</i> </p>

*Note: Exercises in italics have been added*

Now you have extra time and you might want to include some exercises, although this is a pretty thorough and challenging workout as is. Some additional exercises have been added. In addition, if there were certain weak points like forearms or traps that you wanted the client to work on, 4 days a week allows added time to work on them.

There is a story that I always share with my students that I'd like to share with you if you can bear with me for a moment:

An art teacher is teaching a class on how to make clay pots. She divides the class into two groups. To the first group her instructions are simple. "I am only going to look at one pot," she says, "so make the best pot you can possibly can and that is how you will be judged." She turns to the second group. "Your task is different. You will be judged on how many pots you can make during the class." She eyes the entire class. "You each have three hours—begin."

The first group got together as a group and strategized the best way to make clay pots. They looked at pictures of completed pots, thought about the style they liked, talked about how to add fancy designs, they watched videos of others making clay pots that turned out well. Then about halfway through the class they started to make the pot but it never turned out the way they wanted it to.

The second group knew time was of the essence so they got to work right away. The first few pots fell apart but pretty quickly the group got the hang of it and they started cranking out workable and effective pots. They even were comfortable enough to add a bit of flare to the pots near the end of the session once they had mastered the basics.

I hope you are able to see the point of this story. When you are first learning a skill, you can't simply sit around and think about it to become proficient. At some point you must begin. I have seen many students try to create this perfectly constructed, completely detailed workout program in their head—except when they go to put it down on paper it never quite fits and then they scrap the whole idea. Don't do that. Simply start. Write down what you wish to do, create a workable program. As you train more—train yourself, your friends, your coworkers, your clients—you will become more proficient. One cannot jump from novice to master of a practical skill no matter how much one studies. So simply begin. Whip out your sheet of paper and start constructing that fitness routine. There is something magical about the hope

imbued into a new workout program—the “what if this program works beyond my wildest dreams.” It is one of my favorite parts of personal training.

## All About Program Design Glossary

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**1RM**—1 Repetition Maximum—The maximal weight a person can lift in that specific exercise

**Accommodating Resistance**—Attaching either bands or chains to the load so that the load changes (accommodates) during the exercise

**Active Recovery**—Performing some sort of physical activity during the rest period, such as jumping jacks, burpees, jumping rope, etc

**AMRAP**—As many reps (or rounds) as possible

**Ascending sets**—Weight increases with each set

**Back Down Set**—After the main, heavy set(s) have been performed for the exercise, the client may perform one or more back down sets. With this method the trainer will typically decrease the weight by 10–30%, 20% being the average, and then the client will do another set. Having just lifted the heavy weight, this set often feels light and allows the client to work on speed and technique, and adds extra volume to the program.

**Big 3**—The 3 powerlifts: Squat, Bench Press, Deadlift

**Circuits**—A series of exercises performed in a row, one set each, and then starting over again

**Cluster Set**—Performing one rep, resting 10–30 seconds, performing a second rep, resting, etc. until a certain total number of reps is performed. That is one cluster set, this is easier than regular training which allows more weight to be lifted

**Combination Exercises**—Performing two or more exercises combined as one—for example lunging and performing a lateral raise at the same time

**Compensatory Acceleration**—Pushing the weight as fast as possible on the concentric exercise with the hope of developing more force and power

**Complex**—A series of exercises all performed in a row, with no rest, with the same load

**Compound Exercise**—Two or more joints are moving in an exercise (ex: bench, squat, deadlift, etc)

**DB**—Dumbbell

**Descending Sets**—Weight decreases with each set (after the warm-up)

**Drop Set**—Performing one set, immediately decreasing the weight (5–50% with 10–20% being the norm) and then continuing. More than one drop set can be performed (double drop, triple drop, etc)

**EPOC**—Excess Post-exercise Oxygen Consumption—The term that describes the elevated metabolism a client experiences after an intense workout. Homeostasis may be disrupted for 1–4 hours commonly, and sometimes longer, with intense workouts, which increases their overall calorie burn. EPOC can be created through any intense activity (sports, resistance training, cardio, conditioning, etc).

**Exercise Tubes**—Thick circular tubing with handles that clients can use to create resistance during a movement. Tubes don't generate a large amount of resistance (and they can snap if pulled too far) and they are better for individuals with lower total strength.

**Fat Mass**—The part of the body that is made up of fat. Fat in the body is called adipose tissue

**Force**—Physics equation that is  $\text{Mass} \times \text{Acceleration} = \text{Force}$

**Frequency**—Term used to describe how often a client wants to train or exercise, typically given as the number of sessions per week one is doing. It can also be applied to a specific area or movement, for example a person might say they are training 4 times a week and they hitting their abs 2 times a week.

**Isolation Exercise**—Only one joint is moving in an exercise (ex bicep curl, tricep pushdown, hip thrust, leg curl, etc.)

**LB**—Lower Back

**Lean Mass**—Fat free mass in the body which is primarily composed of bones, muscles, organs, hair, skin, nails

**Load**—The amount of weight lifted, typically expressed as a %1RM

**Lower Body Routine**—A routine that focuses on training the lower body muscles of the glutes, quads, hamstrings, calves (ab/adductors can be included too). If one is doing an upper/lower routine core is usually included on the lower body day for the sake of time.

**MetCon**—Metabolic Conditioning Workout: short, rapid, intense workout designed to create a lot of fatigue without doing traditional cardio, many of the named CrossFit workouts are MetCons

**Mx**—Machine

**Negatives**—Focusing only on the eccentric contraction, typically a weight of 85–120% of the 1RM is used and the client will slowly lower the weight for a 4–10 count. They must get assistance on the concentric. Typically 1–4 reps of negatives are performed per set

**Once-a-week-routine**—A split routine that involves only training each area of the body once per week. Typically this means each major muscle group has a day devoted to it, for example a ‘chest’ day or a ‘back’ day

**Overload**—Performing more work, usually in the term of more weight, more reps, or more sets as the workouts progress

**Partials**—Using only a partial range of motion in an exercise

**Peripheral Heart Action**—Performing a circuit that alternates upper body exercises and lower body exercises with the goal of promoting blood flow and reducing specific fatigue

**PNF Stretching**—Proprioceptive Neuromuscular Facilitation—this kind of stretching involves stretching a muscle, then contracting the muscle and pushing against it (typically with a partner), then relaxing the muscle and stretching it further

**Power**—Physics formula that is Work divided by Time

**Pre-exhaustion**—Performing an isolation exercise before a compound exercise for the same muscle; it can also be created by performing a very strict exercise before a less strict exercise for the same muscle

**Pull Workout**—A workout focused on training the upper body pulling muscles which are the back (lats) and the biceps (rear delts may also be included here). If one is only doing a push/pull routine then legs and lower back are most commonly included on this time.

**Push Workout**—A workout focused on training the upper body pushing muscles which are the chest, shoulders, and triceps. Core may or may not be included on this day.

**Reps**—The number of repetitions performed in one set; one complete up and down movement of the exercise

**Resistance Bands**—Giant rubber bands that do not have handles that can be used by themselves or in conjunction with weight to provide resistance to a

client. Bands can create much more tension than tubes can and are better for stronger individuals.

**Rest**—The downtime between sets of an exercise or between exercises themselves

**Rest-pause Reps**—Performing a certain number of reps, resting briefly (5–15 seconds) and then continuing to complete a few more reps before a full break is taken

**RFD**—Rate of Force Development; how rapidly one can generate the force available in the muscle

**Rhabdo**—Short for rhabdomyolysis, when an extreme amount of physical work is performed, the body begins to break down muscle tissue and its components (myoglobin) are released into the bloodstream and start to clog the kidneys. This could be fatal from one session of exercise. Clients that express extreme weakness, unusual swelling, and brown urine after intense exercise need to be seen by a physician immediately.

**ROM**—Range of Motion

**Set**—A group of repetitions. A work set is a challenging set designed to tax the client; a warm-up set is intentionally easy and should not produce significant fatigue

**Split**—Dividing parts of the body into different groups and only training those areas in one workout session

**Straight Sets**—Weight remains the same for each set (after the warm-up)

**Superset**—Performing one set of one exercise followed immediately by another set of another exercise, then resting the prescribed amount, then repeating. Supersets can be opposing muscle groups (ex: EZ Bar Curls and Skull Crushers), unrelated muscle groups (ex: Bench Press and Standing Calf Raise) or the same muscle groups (ex: EZ Bar Curl and DB Curls). Sometimes using the same muscle group is called a compound set.

**Tempo**—The speed of lifting, the first number refers to the concentric (lifting) phase; the second number refers to the speed of the eccentric (lowering) phase (2:4 count)

**Upper Body Routine**—A routine that focuses on training the upper body muscles of chest, back, shoulders, biceps, and triceps

**Valsalva Maneuver**—This occurs when an individual closes their airway and then bears down. It increases the force that can be generated but it also increases blood pressure and decreases oxygen supply

**Wave Loading**—Increasing the load subsequently for several sets (ascending sets), then decreasing it, then increasing it again, so if one were to graph the weight lifted it would look like a wave

**Work**—Physics equation that is Force x Distance

## Exercise List

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One of my favorite things about this book, and something I really hope you receive a lot of benefit from, is the very extensive video exercise library that follows.

More than 200 of the most common and effective exercises are listed here. The first list provides some of the most important exercises and the accompanying video link is a Full Demo Video. A Full Video is typically a 5–8 min long video that describes in detail all of the pertinent information a personal trainer needs to know about that exercise. It is essentially an equipment orientation video about that specific exercise.

Following that each of the major muscle groups are listed. The exercises are then listed by name and the agonist(s), synergist(s), movement(s), and plane for each exercise are listed so you can know all of the important muscles working in every exercise. Every exercise also has a Quick Demo video. A Quick Demo is a :15-:30 long video, with no verbal instruction. It has the athlete performing the exercise with actual training weight (in most circumstances) for about 5 reps using what I believe is optimal form. I wanted to have videos of people using real weight instead of just an empty bar or a 10 lb dumbbell, because the form can and will change slightly with real weight and that is okay. If your form is significantly different from the form pictured it is possible you are not working the same muscles listed, you may not get the standard results associated with that exercise, and if your form is biomechanically unsound then you may be placing yourself at a greater risk of injury.

A playlist of all of these exercise videos has been created. You can find it under my youtube channel NPTITim1. The playlist is located here:

[https://www.youtube.com/playlist?  
list=PLeq\\_Wi59Pq5sdcFsrxiDF7u7kscyOGAsy](https://www.youtube.com/playlist?list=PLeq_Wi59Pq5sdcFsrxiDF7u7kscyOGAsy)

## Full Demo Video List

### EXERCISE

<b>Bench Press</b> <a href="https://youtu.be/vV2Cnb3z1Es">https://youtu.be/vV2Cnb3z1Es</a>
<b>Deadlift</b> <a href="https://youtu.be/-hLgRfkiOsM">https://youtu.be/-hLgRfkiOsM</a>
<b>90 Degree Row</b> <a href="https://youtu.be/LGNoP3LWNlw">https://youtu.be/LGNoP3LWNlw</a>
<b>45 Degree Row</b> <a href="https://youtu.be/KbUZTW5S7So">https://youtu.be/KbUZTW5S7So</a>
<b>How to Spot the Bench Press</b> <a href="https://youtu.be/Q1cb0dpUwMo">https://youtu.be/Q1cb0dpUwMo</a>
<b>How to Spot the Squat</b> <a href="https://youtu.be/FuGCY2KQ5hQ">https://youtu.be/FuGCY2KQ5hQ</a>
<b>How to Spot the Deadlift</b> <a href="https://youtu.be/OMQRDKLNDX8">https://youtu.be/OMQRDKLNDX8</a>
<b>How to use Exercise Tubes</b> <a href="https://youtu.be/mBhn8soVGpY">https://youtu.be/mBhn8soVGpY</a>
<b>DB Curl</b> <a href="https://youtu.be/YrXiYbMIwVE">https://youtu.be/YrXiYbMIwVE</a>
<b>Widegrip Lat Pulldown</b> <a href="https://youtu.be/fXN2011cCW0">https://youtu.be/fXN2011cCW0</a>
<b>V-grip Cable Row</b> <a href="https://youtu.be/Z9MNMkoGwBKY">https://youtu.be/Z9MNMkoGwBKY</a>
<b>V-grip Tricep Pushdown</b> <a href="https://youtu.be/NANkx1dn94U">https://youtu.be/NANkx1dn94U</a>
<b>Seated Row Machine</b> <a href="https://youtu.be/n3dKjX8dyHw">https://youtu.be/n3dKjX8dyHw</a>

**How to Test Sit and Reach**

<https://youtu.be/PhELJ71D74I>

**Hammer Strength High Row**

[https://youtu.be/doXb\\_lcK93M](https://youtu.be/doXb_lcK93M)

**Hammer Strength Incline Press**

<https://youtu.be/fe7C2tZdJKI>

**Hammer Strength Row**

[https://youtu.be/ct\\_kNqFkXZA](https://youtu.be/ct_kNqFkXZA)

**Hammer Strength Military Press**

<https://youtu.be/lv2fua65cok>

**Lateral Raise Machine**

<https://youtu.be/JYBOSJZM-WQ>

# Quick Demo Video Exercise List with Muscles Working

## BACK EXERCISES

Exercise	Agonist(s)	Synergist(s)	Movement(s)	Plane of Movement
<b>Wide Grip Lat Pulldown</b> <a href="https://youtu.be/eqK4RGO66s">https://youtu.be/eqK4RGO66s</a>	Latissimus Dorsi	Rhomboids, Brachialis, Posterior Deltoid, Lower Traps	Shoulder Adduction Elbow Flexion	Frontal
<b>Reverse Grip Lat Pulldown</b> <a href="https://youtu.be/hV3KqjkGPm6">https://youtu.be/hV3KqjkGPm6</a>	Latissimus Dorsi	Biceps, Rhomboids, Posterior Deltoid, Lower Traps	Shoulder Extension Elbow Flexion	Sagittal
<b>Seated Row Machine</b> <a href="https://youtu.be/2hrG4m6GJVg">https://youtu.be/2hrG4m6GJVg</a>	Latissimus Dorsi	Rhomboids, Brachialis, Posterior Deltoids, Middle Traps	Shoulder Extension Elbow Flexion	Sagittal
<b>V-grip Cable Row</b> <a href="https://youtu.be/_wvLXbT5fk">https://youtu.be/_wvLXbT5fk</a>	Latissimus Dorsi	Rhomboids, Brachialis, Posterior Deltoids, Middle Traps	Shoulder Extension Elbow Flexion	Sagittal
<b>Hammer Strength Row</b> <a href="https://youtu.be/zvrduuCJ7I">https://youtu.be/zvrduuCJ7I</a>	Latissimus Dorsi	Rhomboids, Brachialis, Posterior Deltoid, Middle Traps	Shoulder Extension Elbow Flexion	Sagittal
<b>Wide Grip Cable Row</b> <a href="https://youtu.be/YXZwECwtSkM">https://youtu.be/YXZwECwtSkM</a>	Latissimus Dorsi	Rhomboids, Posterior Deltoid, Brachialis, Middle Traps	H. Shoulder Abduction Elbow Flexion	Transverse

<b>Hammer Strength Lat Pulldown</b> <a href="https://youtu.be/u52iXOLAL20">https://youtu.be/u52iXOLAL20</a>	Latissimus Dorsi	Biceps, Rhomboids, Posterior Deltoid, Lower Traps	Shoulder Extension Elbow Flexion	Sagittal
<b>90 Degree Pronated Bent Over Row</b> <a href="https://youtu.be/34bICQANIQI">https://youtu.be/34bICQANIQI</a>	Latissimus Dorsi	Rhomboids, Brachialis, Rear Delts, Middle Traps	H. Shoulder Abduction Elbow Flexion	Transverse
<b>45 Degree Supinated Bent Over Row</b> <a href="https://youtu.be/MOj4j1CPs4k">https://youtu.be/MOj4j1CPs4k</a>	Latissimus Dorsi	Biceps, Rhomboids, Posterior Deltoids, Middle/Upper Traps	Shoulder Extension Elbow Flexion	Sagittal
<b>Dumbbell Row</b> <a href="https://youtu.be/hnvaQkKLLoA">https://youtu.be/hnvaQkKLLoA</a>	Latissimus Dorsi	Rhomboids, Brachialis, Rear Delts, Middle Traps	Shoulder Extension Elbow Flexion	Sagittal
<b>Pull-up (BW or Assisted)</b> <a href="https://youtu.be/QqGxValdF94">https://youtu.be/QqGxValdF94</a>	Latissimus Dorsi	Rhomboids, Posterior Deltoid, Brachialis, Lower Traps	Shoulder Adduction Elbow Flexion	Frontal
<b>Chin-up (BW or Assisted)</b> <a href="https://youtu.be/aiaN07a_0n8">https://youtu.be/aiaN07a_0n8</a>	Latissimus Dorsi	Biceps, Rhomboids, Posterior Deltoid, Lower Traps	Shoulder Extension Elbow Flexion	Sagittal
<b>Flexed Arm Hang</b> <a href="https://youtu.be/IUQhJBe9_o">https://youtu.be/IUQhJBe9_o</a>	Latissimus Dorsi	Biceps, Rhomboids, Posterior Deltoid, Lower Traps	Shoulder Extension Elbow Flexion	Sagittal
<b>Pull-up against Manual Resistance</b> <a href="https://youtu.be/JuaaS2JKfok">https://youtu.be/JuaaS2JKfok</a>	Latissimus Dorsi	Rhomboids, Posterior Deltoid, Brachialis, Lower Traps	Shoulder Adduction Elbow Flexion	Frontal
<b>Straight Arm Lat Pulldown</b> <a href="https://youtu.be/ygff2x47keE">https://youtu.be/ygff2x47keE</a>	Latissimus Dorsi	Triceps Long Head,	Shoulder Extension	Sagittal

		Posterior Deltoid, Rectus Abdominis		
<b>Pullover Machine</b> <a href="https://youtu.be/ZOwR5Ar81rg">https://youtu.be/ZOwR5Ar81rg</a>	Latissimus Dorsi	Triceps Long Head, Posterior Deltoid, Rectus Abdominis	Shoulder Extension	Sagittal
<b>Wide grip Chest Supported T-Bar Row</b> <a href="https://youtu.be/LtTTNGSvilY">https://youtu.be/LtTTNGSvilY</a>	Latissimus Dorsi	Rhomboids, Brachialis/BR, Rear Delts, Middle Traps	H. Shoulder Abduction Elbow Flexion	Transverse
<b>Old School T-bar Row V-grip</b> <a href="https://youtu.be/v0OzKMKI1Tk">https://youtu.be/v0OzKMKI1Tk</a>	Latissimus Dorsi	Rhomboids, Brachialis, Posterior Deltoid, Middle Traps, Erectors	Shoulder Extension Elbow Flexion	Sagittal
<b>2 Arm Dumbbell Row</b> <a href="https://youtu.be/yJQdqUGeol8">https://youtu.be/yJQdqUGeol8</a>	Latissimus Dorsi	Rhomboids, Brachialis, Rear Delts, Middle Traps, Erectors	Shoulder Extension Elbow Flexion	Sagittal
<b>Standing Cable Row</b> <a href="https://youtu.be/9sS01R0rM5k">https://youtu.be/9sS01R0rM5k</a>	Latissimus Dorsi	Rhomboids, Brachialis, Rear Delts, Middle Traps, Erectors	Shoulder Extension Elbow Flexion	Sagittal
<b>Smith Machine Bodyweight Row</b> <a href="https://youtu.be/YM-uaEy-4UI">https://youtu.be/YM-uaEy-4UI</a>	Latissimus Dorsi	Rhomboids, Brachialis/BR, Rear Delts, Middle Traps	H. Shoulder Abduction Elbow Flexion	Transverse

\***Note:** Teres Major always works with the Lats; The elbow flexor listed is the one most involved, all 3 are always working

## CHEST EXERCISES

Exercise	Agonist(s)	Synergist(s)	Movement(s)	Plane of Movement
<b>Chest Press Machine</b> <a href="https://youtu.be/6dXGFk_ITso">https://youtu.be/6dXGFk_ITso</a>	Pectoralis Major	Anterior Deltoid Triceps, Lats	H. Shoulder Adduction Elbow Extension Transverse	Transverse
<b>Hammer Strength Bench Press</b> <a href="https://youtu.be/qWOjP3mBKLo">https://youtu.be/qWOjP3mBKLo</a>	Pectoralis Major	Anterior Deltoid Triceps, Lats	H. Shoulder Adduction Elbow Extension	Transverse
<b>Incline Press Machine</b> <a href="https://youtu.be/-he2PifeMFo">https://youtu.be/-he2PifeMFo</a>	Clavicular Pectoralis Major	Anterior Deltoid Triceps	H. Shoulder Adduction Elbow Extension	Transverse*
<b>Hammer Strength Incline Press</b> <a href="https://youtu.be/XdctAio5aaU">https://youtu.be/XdctAio5aaU</a>	Clavicular Pectoralis Major	Anterior Deltoid Triceps	H. Shoulder Adduction Elbow Extension	Transverse*
<b>Bench Press</b> <a href="https://youtu.be/q9-nf42MKCo">https://youtu.be/q9-nf42MKCo</a>	Pectoralis Major	Anterior Deltoid Triceps, Lats	H. Shoulder Adduction Elbow Extension	Transverse
<b>Low Rack Press</b> <a href="https://youtu.be/m6x0mtyrabi">https://youtu.be/m6x0mtyrabi</a>	Pectoralis Major	Anterior Deltoid Triceps	H. Shoulder Adduction Elbow Extension	Transverse
<b>Incline Bench Press</b> <a href="https://youtu.be/txL0P36f-OU">https://youtu.be/txL0P36f-OU</a>	Clavicular Pectoralis Major	Anterior Deltoid Triceps	H. Shoulder Adduction Elbow Extension	Transverse*
<b>Dumbbell Bench Press</b> <a href="https://youtu.be/_U1962VhQDM">https://youtu.be/_U1962VhQDM</a>	Pectoralis Major	Anterior Deltoid Triceps, Lats	H. Shoulder Adduction Elbow Extension	Transverse

<b>Incline Dumbbell Press</b> <a href="https://youtu.be/PiPu2pbflW8">https://youtu.be/PiPu2pbflW8</a>	Clavicular Pectoralis Major	Anterior Deltoid Triceps	H. Shoulder Adduction Elbow Extension	Transverse*
<b>Push-up</b> <a href="https://youtu.be/v2Yaq-lwMB4">https://youtu.be/v2Yaq-lwMB4</a>	Pectoralis Major	Anterior Deltoid Triceps, Lats	H. Shoulder Adduction Elbow Extension	Transverse
<b>Smith Machine Push-up Modified Push-up</b> <a href="https://youtu.be/qxCpOLQdP3Y">https://youtu.be/qxCpOLQdP3Y</a>	Pectoralis Major	Anterior Deltoid Triceps	H. Shoulder Adduction Elbow Extension	Transverse
<b>Negative Modified Push-ups</b> <a href="https://youtu.be/z_fqzTo2AMI">https://youtu.be/z_fqzTo2AMI</a>	Pectoralis Major	Anterior Deltoid Triceps	H. Shoulder Adduction Elbow Extension	Transverse
<b>Smith Machine Bench Press</b> <a href="https://youtu.be/8KjHwE-iBWc">https://youtu.be/8KjHwE-iBWc</a>	Pectoralis Major	Anterior Deltoid Triceps, Lats	H. Shoulder Adduction Elbow Extension	Transverse
<b>Chest Fly Machine</b> <a href="https://youtu.be/hkXBIZ4asPc">https://youtu.be/hkXBIZ4asPc</a>	Pectoralis Major	Anterior Deltoid Biceps	H. Shoulder Adduction	Transverse
<b>Decline Bench Press</b> <a href="https://youtu.be/OVPaSLI4S4E">https://youtu.be/OVPaSLI4S4E</a>	Sternal Pectoralis Major	Triceps Anterior Deltoid	H. Shoulder Adduction Elbow Extension	Transverse*
<b>Cable Fly</b> <a href="https://youtu.be/B1bKfTBccrY">https://youtu.be/B1bKfTBccrY</a>	Pectoralis Major	Anterior Deltoid Biceps	H. Shoulder Adduction	Transverse
<b>Cable Incline Fly</b> <a href="https://youtu.be/BmsKYD7lvs8">https://youtu.be/BmsKYD7lvs8</a>	Clavicular Pectoralis Major	Anterior Deltoid Biceps	H. Shoulder Adduction	Transverse*
<b>Cable Crossover</b> <a href="https://youtu.be/MAIYq3U0zXg">https://youtu.be/MAIYq3U0zXg</a>	Sternal Pectoralis Major	Front Deltoid Biceps	Shoulder Adduction	Frontal
<b>Dumbbell Fly</b> <a href="https://youtu.be/mEAQBbunIHA">https://youtu.be/mEAQBbunIHA</a>	Pectoralis Major	Anterior Deltoid Biceps	H. Shoulder Adduction	Transverse

<b>Incline Dumbbell Fly</b> <a href="https://youtu.be/-oQibd8xu84">https://youtu.be/-oQibd8xu84</a>	Clavicular Pectoralis Major	Anterior Deltoid Biceps	H. Shoulder Adduction	Transverse*
<b>Ball Dumbbell Press</b> <a href="https://youtu.be/BfP5UTP6JyE">https://youtu.be/BfP5UTP6JyE</a>	Pectoralis Major	Anterior Deltoid Triceps	H. Shoulder Adduction Elbow Extension	Transverse
<b>Dips</b> <a href="https://youtu.be/x-ToZHePu5s">https://youtu.be/x-ToZHePu5s</a>	Pectoralis Major	Anterior Deltoid Triceps	Shoulder Flexion Elbow Extension	Sagittal
<b>Power Dumbbell Fly</b> <a href="https://youtu.be/mufCs56Ub-w">https://youtu.be/mufCs56Ub-w</a>	Pectoralis Major	Anterior Deltoid, Biceps, Triceps	H. Shoulder Adduction Elbow Extension	Transverse
<b>Ball Push-up Feet on ball</b> <a href="https://youtu.be/7-HiXeXLDA8">https://youtu.be/7-HiXeXLDA8</a>	Pectoralis Major	Anterior Deltoid Triceps	H. Shoulder Adduction Elbow Extension	Transverse

\***Note:** All Inclines and Declines take place in between planes, so their movement(s) and planes are the closest ones to that exercise

## BICEP EXERCISES

Exercise	Agonist(s)	Synergist(s)	Movement(s)	Plane of Movement
<b>Machine Curl</b> <a href="https://youtu.be/gfJbA_6lt8s">https://youtu.be/gfJbA_6lt8s</a>	Biceps Brachii, Brachialis	Brachio-radialis	Elbow Flexion	Sagittal
<b>EZ Cable Curl</b> <a href="https://youtu.be/AsAVbj7puKo">https://youtu.be/AsAVbj7puKo</a>	Biceps Brachii, Brachialis	Brachio-radialis	Elbow Flexion	Sagittal
<b>FM Cable Curl</b> <a href="https://youtu.be/YwWlrsYldcl">https://youtu.be/YwWlrsYldcl</a>	Biceps Brachii, Brachialis	Brachio-radialis	Elbow Flexion	Sagittal
<b>EZ Bar Curl</b> <a href="https://youtu.be/YN9E2raZkvc">https://youtu.be/YN9E2raZkvc</a>	Biceps Brachii, Brachialis	Brachio-radialis	Elbow Flexion	Sagittal
<b>Narrow Grip EZ Bar Curl</b> <a href="https://youtu.be/iR54MT2qjso">https://youtu.be/iR54MT2qjso</a>	Biceps Brachii (long head), Brachialis	Brachio-radialis	Elbow Flexion	Sagittal
<b>Dumbbell Curl</b> <a href="https://youtu.be/1s-xY2Ba-ro">https://youtu.be/1s-xY2Ba-ro</a>	Biceps Brachii, Brachialis	Brachio-radialis	Elbow Flexion	Sagittal
<b>Dumbbell Hammer Curl</b> <a href="https://youtu.be/RGV7qskDX14">https://youtu.be/RGV7qskDX14</a>	Brachialis	Brachio-radialis Biceps Brachii	Elbow Flexion	Sagittal
<b>EZ Preacher Curl</b> <a href="https://youtu.be/W3aJ7xqhbgs">https://youtu.be/W3aJ7xqhbgs</a>	Biceps Brachii, Brachialis	Brachio-radialis	Elbow Flexion	Sagittal
<b>Dumbbell Preacher Curl</b> <a href="https://youtu.be/aIXRSqYhpyM">https://youtu.be/aIXRSqYhpyM</a>	Biceps Brachii, Brachialis	Brachio-radialis	Elbow Flexion	Sagittal
<b>Dumbbell Concentration Curl</b> <a href="https://youtu.be/MpU6-Ai3RBY">https://youtu.be/MpU6-Ai3RBY</a>	Biceps Brachii, Brachialis	Brachio-radialis	Elbow Flexion	Sagittal

<b>Hercules Curl or High Pulley Curl</b> <a href="https://youtu.be/4u_L3DOcTzQ">https://youtu.be/4u_L3DOcTzQ</a>	Biceps Brachii, Brachialis	Brachio- radialis	Elbow Flexion	Frontal
<b>Spider Curl</b> <a href="https://youtu.be/VBzosia-D-g">https://youtu.be/VBzosia-D-g</a>	Biceps Brachii, Brachialis	Brachio- radialis	Elbow Flexion	Sagittal
<b>EZ Reverse Curl</b> <a href="https://youtu.be/p6gLLb0CZTs">https://youtu.be/p6gLLb0CZTs</a>	Brachio- radialis	Brachialis Biceps Brachii	Elbow Flexion	Sagittal
<b>EZ Reverse Cable Curl</b> <a href="https://youtu.be/Ylhro04d684">https://youtu.be/Ylhro04d684</a>	Brachio- radialis	Brachialis Biceps Brachii	Elbow Flexion	Sagittal
<b>EZ Strict Curl</b> <a href="https://youtu.be/j83lzC2E4Ss">https://youtu.be/j83lzC2E4Ss</a> <a href="https://youtu.be/3OXhIq2Z-bc">https://youtu.be/3OXhIq2Z-bc</a>	Biceps Brachii, Brachialis	Brachio- radialis	Elbow Flexion	Sagittal
<b>Parallel Bar Curl</b> <a href="https://youtu.be/Ry0vzPEDgXk">https://youtu.be/Ry0vzPEDgXk</a>	Brachio- radialis	Brachialis Biceps Brachii	Elbow Flexion	Sagittal
<b>Incline Dumbbell Curl</b> <a href="https://youtu.be/2_sWdhGMeYs">https://youtu.be/2_sWdhGMeYs</a>	Biceps Brachii, Brachialis	Brachio- radialis	Elbow Flexion	Sagittal
<b>Standing Dumbbell Incline Curl</b> <a href="https://youtu.be/qRk7OtVyKHg">https://youtu.be/qRk7OtVyKHg</a>	Biceps Brachii, Brachialis	Brachio- radialis	Elbow Flexion	Sagittal
<b>21's</b> <a href="https://youtu.be/qf6KO7qKFRI">https://youtu.be/qf6KO7qKFRI</a>	Biceps Brachii, Brachialis	Brachio- radialis	Elbow Flexion	Sagittal
<b>Barbell Hold</b> <a href="https://youtu.be/8NgyO_vUgfU">https://youtu.be/8NgyO_vUgfU</a>	Biceps Brachii, Brachialis	Brachio- radialis, Anterior Deltoid, Erectors	Elbow Flexion (Isometric)	Sagittal

\*Note: Muscle listed first is considered the most important, main agonist for the exercise

## TRICEP EXERCISES

Exercise	Agonist(s)	Synergist(s)	Movement(s)	Plane of Movement
<b>Machine Tricep Extension</b> <a href="https://youtu.be/CH_jMiMDQCw">https://youtu.be/CH_jMiMDQCw</a>	Triceps Long Head	Triceps Lateral and Medial Heads	Elbow Extension	Sagittal
<b>V-grip Tricep Pushdown</b> <a href="https://youtu.be/UUq9btkim_o">https://youtu.be/UUq9btkim_o</a>	Triceps Lateral Head	Triceps Long and Medial Heads	Elbow Extension	Sagittal
<b>Straight Bar Tricep Pushdown</b> <a href="https://youtu.be/I9HtqPnSoh0">https://youtu.be/I9HtqPnSoh0</a>	Triceps Lateral and Long Head	Triceps Medial Head	Elbow Extension	Sagittal
<b>Rope Tricep Pushdown</b> <a href="https://youtu.be/oyRP3RVYH58">https://youtu.be/oyRP3RVYH58</a>	Triceps Medial and Lateral Heads	Triceps Long Head	Elbow Extension	Sagittal
<b>Skull Crusher</b> <a href="https://youtu.be/n-YFW-gzjtU">https://youtu.be/n-YFW-gzjtU</a>	Triceps Long Head	Triceps Lateral and Medial Heads	Elbow Extension	Sagittal
<b>Pullover Skull Crusher</b> <a href="https://youtu.be/AvjTNkhQb2A">https://youtu.be/AvjTNkhQb2A</a>	Triceps Long Head	Triceps Lateral and Medial Heads	Shoulder Extension Elbow Extension	Sagittal
<b>Reverse Grip Skull Crusher</b> <a href="https://youtu.be/EEb0tv7rZ94">https://youtu.be/EEb0tv7rZ94</a>	Triceps Long Head	Triceps Lateral and Medial Heads	Elbow Extension	Sagittal
<b>Dumbbell Tricep Extension</b> <a href="https://youtu.be/UJy43V-7jwc">https://youtu.be/UJy43V-7jwc</a>	Triceps Long Head	Triceps Lateral and Medial Heads	Elbow Extension	Sagittal
<b>Dumbbell Tricep Kickback</b> <a href="https://youtu.be/7Q3_luBl36Y">https://youtu.be/7Q3_luBl36Y</a>	Triceps Long and Medial Heads	Triceps Lateral Heads	Elbow Extension	Sagittal

<b>Dumbbell Overhead Tricep Extension</b> <a href="https://youtu.be/bYvJCRQHg0s">https://youtu.be/bYvJCRQHg0s</a>	Triceps Long and Lateral Head	Triceps Medial Head	Elbow Extension	Sagittal
<b>Reverse Grip Tricep Pulldown</b> <a href="https://youtu.be/kPH7iodCu0E">https://youtu.be/kPH7iodCu0E</a>	Triceps Long Head	Triceps Lateral and Medial Head	Elbow Extension	Sagittal
<b>Closegrip Bench Press</b> <a href="https://youtu.be/Hf6v6200ufY">https://youtu.be/Hf6v6200ufY</a>	Pectoralis Major, Long and Lateral Triceps	Anterior Deltoid Triceps Medial Head	Shoulder Flexion Elbow Extension	Sagittal
<b>Decline Closegrip Bench Press</b> <a href="https://youtu.be/xQpgyel7LdA">https://youtu.be/xQpgyel7LdA</a>	Pectoralis Major, Long and Lateral Triceps	Anterior Deltoid Triceps Medial Head	Shoulder Flexion Elbow Extension	Sagittal
<b>Bench Dips</b> <a href="https://youtu.be/0326dy_-CzM">https://youtu.be/0326dy_-CzM</a>	Triceps Long Head	Triceps Lateral and Medial, Anterior Deltoid	Shoulder Flexion Elbow Extension	Sagittal
<b>Overhead Rope Tricep Extension</b> <a href="https://youtu.be/SSG2V2J42e4">https://youtu.be/SSG2V2J42e4</a>	Triceps Long and Medial Heads	Triceps Lateral Head	Elbow Extension	Sagittal
<b>Decline Skull Crusher</b> <a href="https://youtu.be/OPn8Az6MuKE">https://youtu.be/OPn8Az6MuKE</a>	Triceps Long Head	Triceps Lateral and Medial Heads	Elbow Extension	Sagittal
<b>Dips</b> <a href="https://youtu.be/x-ToZHePv5s">https://youtu.be/x-ToZHePv5s</a>	Pectoralis Major	Triceps Anterior Deltoid	Shoulder Flexion Elbow Extension	Sagittal
<b>Cable Skull Crusher</b> <a href="https://youtu.be/VuOWVHW2BGo">https://youtu.be/VuOWVHW2BGo</a>	Triceps Long Head	Triceps Lateral and Medial	Elbow Extension	Sagittal
<b>Reverse Grip Bench Press</b> <a href="https://youtu.be/_y5VJGik32I">https://youtu.be/_y5VJGik32I</a>	Pectoralis, Triceps Long Head	Triceps Lateral and Medial, Anterior Deltoid	Shoulder Flexion Elbow Extension	Sagittal
<b>Rack/ Board Press</b>	Pectoralis	Triceps	H. Shoulder	Transverse

<a href="https://youtu.be/aX6h4vRUXbw">https://youtu.be/aX6h4vRUXbw</a>	Major	Anterior Deltoid	Adduction Elbow Extension	
<b>DB Tricep Pullover</b> <a href="https://youtu.be/Ia19KIhxt dw">https://youtu.be/Ia19KIhxt dw</a>	Triceps Long and Lateral Head	Triceps Medial Head	Shoulder Extension Elbow Extension	Sagittal
<b>Ball Dumbbell Tricep Pullover</b> <a href="https://youtu.be/FZCWYgRPFTA">https://youtu.be/FZCWYgRPFTA</a>	Triceps Long and Lateral Head	Triceps Medial Head	Shoulder Extension Elbow Extension	Sagittal
<b>Ball Push-up Hands on Ball</b> <a href="https://youtu.be/XX17yLBr6vc">https://youtu.be/XX17yLBr6vc</a>	Pectoralis Major Triceps Long and Lateral Head	Triceps Medial Head Anterior Deltoid	H. Shoulder Adduction Elbow Extension	Transverse

## SHOULDER EXERCISES

Exercise	Agonist(s)	Synergist(s)	Movement(s)	Plane of Movement
<b>Hammer Strength Military Press</b> <a href="https://youtu.be/I3Kw8szM55o">https://youtu.be/I3Kw8szM55o</a>	Anterior Deltoid	Medial Deltoid Triceps	Shoulder Abduction Elbow Extension	Frontal
<b>H. Military Press Machine</b> <a href="https://youtu.be/EsYlpBB9O84">https://youtu.be/EsYlpBB9O84</a>	Anterior Deltoid	Medial Deltoid Triceps	Shoulder Abduction Elbow Extension	Frontal
<b>Dumbbell Military Press</b> <a href="https://youtu.be/EgH4Yt5jHcc">https://youtu.be/EgH4Yt5jHcc</a>	Anterior Deltoid	Medial Deltoid Triceps	Shoulder Abduction Elbow Extension	Frontal
<b>Dumbbell Front Raise</b> <a href="https://youtu.be/9B-05xTSiLE">https://youtu.be/9B-05xTSiLE</a>	Anterior Deltoid	Clavicular Pec Major	Shoulder Flexion	Sagittal
<b>Barbell Front Raise</b> <a href="https://youtu.be/qDTojxnbb7M">https://youtu.be/qDTojxnbb7M</a>	Anterior Deltoid	Clavicular Pec Major	Shoulder Flexion	Sagittal
<b>Cable Front Raise</b> <a href="https://youtu.be/Oyzm2CS3Nlo">https://youtu.be/Oyzm2CS3Nlo</a>	Anterior Deltoid	Clavicular Pec Major	Shoulder Flexion	Sagittal
<b>Barbell Military Press</b> <a href="https://youtu.be/tAb__InfY_A">https://youtu.be/tAb__InfY_A</a>	Anterior Deltoid	Medial Deltoid Triceps	Shoulder Abduction Elbow Extension	Frontal
<b>Push Press</b> <a href="https://youtu.be/Ytl-ohwLFdo">https://youtu.be/Ytl-ohwLFdo</a>	Anterior Deltoid	Medial Deltoid Triceps, Legs	Shoulder Abduction Elbow Extension	Frontal
<b>Cable Lateral Raise</b> <a href="https://youtu.be/rftse5RGXw4">https://youtu.be/rftse5RGXw4</a>	Medial Deltoid	Supraspinatus	Shoulder Abduction	Frontal
<b>Lateral Raise Machine</b> <a href="https://youtu.be/sv18jAsxbPE">https://youtu.be/sv18jAsxbPE</a>	Medial Deltoid	Supraspinatus	Shoulder Abduction	Frontal
<b>Dumbbell Lateral Raise</b>	Medial	Supraspinatus	Shoulder	Frontal

<a href="https://youtu.be/-4TWWCbDSiY">https://youtu.be/-4TWWCbDSiY</a>	Deltoid		Abduction	
<b>Dumbbell Leaning Lateral Raise</b> <a href="https://youtu.be/sabq6Jmf1ks">https://youtu.be/sabq6Jmf1ks</a>	Medial Deltoid	Supraspinatus	Shoulder Abduction	Frontal
<b>Dumbbell Power Lateral Raise</b> <a href="https://youtu.be/ER6afoG08k8">https://youtu.be/ER6afoG08k8</a>	Medial Deltoid	Supraspinatus	Shoulder Abduction	Frontal
<b>Lateral Hold</b> <a href="https://youtu.be/Yi-5B8NE15w">https://youtu.be/Yi-5B8NE15w</a>	Medial Deltoid	Supraspinatus	Shoulder Abduction (Isometric)	Frontal
<b>Dumbbell Rear Delt Raise</b> <a href="https://youtu.be/vmclYWurjP4">https://youtu.be/vmclYWurjP4</a>	Posterior Deltoid	Middle Trapezius	H. Shoulder Abduction	Transverse
<b>Ball Dumbbell Rear Delt Raise</b> <a href="https://youtu.be/1KF_vdZobVE">https://youtu.be/1KF_vdZobVE</a>	Posterior Deltoid	Middle Trapezius	H. Shoulder Abduction	Transverse
<b>Rear Delt Machine</b> <a href="https://youtu.be/mn2WDaR7_D0">https://youtu.be/mn2WDaR7_D0</a>	Posterior Deltoid	Middle Trapezius Latissimus Dorsi	H. Shoulder Abduction	Transverse
<b>Cable Rear Delt Raise</b> <a href="https://youtu.be/67vhdKSxpu0">https://youtu.be/67vhdKSxpu0</a>	Posterior Deltoid	Middle Trapezius	H. Shoulder Abduction	Transverse
<b>1 Arm Rear Delt Cable Row</b> <a href="https://youtu.be/K0zsje8cDO8">https://youtu.be/K0zsje8cDO8</a>	Posterior Deltoid	Middle Trapezius, Lats, Biceps	H. Shoulder Abduction Elbow Flexion	Transverse
<b>Dumbbell Power Rear Delt Raise</b> <a href="https://youtu.be/TfDm99yA8-s">https://youtu.be/TfDm99yA8-s</a>	Posterior Deltoid	Middle Trapezius, Lats, Biceps, Erectors	H. Shoulder Abduction	Transverse
<b>Rope Face Pull</b> <a href="https://youtu.be/-7SmX9C8gfl">https://youtu.be/-7SmX9C8gfl</a>	Posterior Deltoid	Middle Delt, Biceps, Middle Traps	H. Shoulder Abduction Elbow Flexion	Transverse

## LEG EXERCISES

Exercise	Agonist(s)	Synergist(s)	Movement(s)	Plane of Movement
<b>Leg Press</b> <a href="https://youtu.be/DgwKr1Gn2e0">https://youtu.be/DgwKr1Gn2e0</a>	Gluteus Maximus Quadriceps	Hamstrings	Hip Extension Knee Extension	Sagittal
<b>Horizontal Leg Press</b> <a href="https://youtu.be/QlR7vBYkni4">https://youtu.be/QlR7vBYkni4</a>	Gluteus Maximus Quadriceps	Hamstrings	Hip Extension Knee Extension	Sagittal
<b>Bridge</b> <a href="https://youtu.be/2-d8EplhKIM">https://youtu.be/2-d8EplhKIM</a>	Gluteus Maximus	Hamstrings	Hip Extension	Sagittal
<b>Hip Thrust</b> <a href="https://youtu.be/SecHgmIVUTc">https://youtu.be/SecHgmIVUTc</a>				
<b>Smith Machine Squat</b> <a href="https://youtu.be/EEJS2n2D97A">https://youtu.be/EEJS2n2D97A</a>	Gluteus Maximus Quadriceps	Hamstrings	Hip Extension Knee Extension	Sagittal
<b>Straight Arm Goblet Squat</b> <a href="https://youtu.be/oLgUMxUtCco">https://youtu.be/oLgUMxUtCco</a>	Gluteus Maximus Quadriceps	Hamstrings	Hip Extension Knee Extension	Sagittal
<b>Goblet Squat</b> <a href="https://youtu.be/a4XCj8BARAc">https://youtu.be/a4XCj8BARAc</a>	Gluteus Maximus Quadriceps	Hamstrings	Hip Extension Knee Extension	Sagittal
<b>Barbell Squat</b> <a href="https://youtu.be/HyTlrozicyo">https://youtu.be/HyTlrozicyo</a>	Gluteus Maximus Quadriceps	Hamstrings Erector Spinae	Hip Extension Knee Extension	Sagittal
<b>Box Squat</b> <a href="https://youtu.be/pTcj50luW3I">https://youtu.be/pTcj50luW3I</a>	Gluteus Maximus Quadriceps	Hamstrings	Hip Extension Knee Extension	Sagittal
<b>Negative Pause Squat</b> <a href="https://youtu.be/qaMofQYHh_Y">https://youtu.be/qaMofQYHh_Y</a>	Gluteus Maximus Quadriceps	Hamstrings	Hip Extension Knee Extension	Sagittal
<b>Lunges</b> <a href="https://youtu.be/D7KaRcUTQeE">https://youtu.be/D7KaRcUTQeE</a>	Gluteus Maximus Quadriceps	Hamstrings	Hip Extension Knee Extension	Sagittal

<b>Bosu Ball Lunge</b> <a href="https://youtu.be/Zuhjc8zfiHU">https://youtu.be/Zuhjc8zfiHU</a>	Gluteus Maximus Quadriceps	Hamstrings	Hip Extension Knee Extension	Sagittal
<b>Sissy Squat</b> <a href="https://youtu.be/79wIoDJ_4Zl">https://youtu.be/79wIoDJ_4Zl</a>	Gluteus Maximus Quadriceps	Hamstrings	Hip Extension Knee Extension	Sagittal
<b>Step-Ups</b> <a href="https://youtu.be/8tuM4n2jFWg">https://youtu.be/8tuM4n2jFWg</a>	Gluteus Maximus Quadriceps	Hamstrings	Hip Extension Knee Extension	Sagittal
<b>Butt Blaster</b> <a href="https://youtu.be/yT0bqaJfZqU">https://youtu.be/yT0bqaJfZqU</a>	Gluteus Maximus	Quadriceps Hamstrings	Hip Extension Knee Extension	Sagittal
<b>Front Squat</b> <a href="https://youtu.be/1xUZUtt6FNY">https://youtu.be/1xUZUtt6FNY</a>	Gluteus Maximus Quadriceps	Hamstrings Erector Spinae	Hip Extension Knee Extension	Sagittal
<b>Pistol</b> <a href="https://youtu.be/8tqKpdY7_vE">https://youtu.be/8tqKpdY7_vE</a>	Gluteus Maximus Quadriceps	Hamstrings	Hip Extension Knee Extension	Sagittal
<b>H. Leg Extension</b> <a href="https://youtu.be/x0EVmFag3zQ">https://youtu.be/x0EVmFag3zQ</a>	Quadriceps		Knee Extension	Sagittal
<b>Hip Abductor Machine</b> <a href="https://youtu.be/wW0ohUV7HMQ">https://youtu.be/wW0ohUV7HMQ</a>	Glute Medius	Glute Minimus TFL	Hip Horizontal Abduction	Transverse
<b>Hip Adductor Machine</b> <a href="https://youtu.be/O7aaw0ngBCE">https://youtu.be/O7aaw0ngBCE</a>	Adductors (3)	Pectineus, Gracilis	Hip Horizontal Adduction	Transverse

\***Note:** The Adductor Magnus is also a synergist in all hip extension activities

## HAMSTRING EXERCISES

Exercise	Agonist(s)	Synergist(s)	Movement(s)	Plane of Movement
<b>Prone Leg Curl</b> <a href="https://youtu.be/CswlWvZEWtw">https://youtu.be/CswlWvZEWtw</a>	Hamstrings	Gastroc	Knee Flexion	Sagittal
<b>H. Seated Leg Curl</b> <a href="https://youtu.be/9LYZfLdffCE">https://youtu.be/9LYZfLdffCE</a>	Hamstrings	Gastroc	Knee Flexion	Sagittal
<b>Single Leg Leg Curl</b> <a href="https://youtu.be/Z053-kKjesQ">https://youtu.be/Z053-kKjesQ</a>	Hamstrings	Gastroc	Knee Flexion	Sagittal
<b>Ball Leg Curl</b> <a href="https://youtu.be/Kk8dpH4ZPos">https://youtu.be/Kk8dpH4ZPos</a>	Hamstrings, Glute Maximus	Gastroc	Hip Extension, Knee Flexion	Sagittal
<b>Glute/Ham Raise</b> <a href="https://youtu.be/1EjRAhjg2vM">https://youtu.be/1EjRAhjg2vM</a>	Hamstrings	Glute Maximus, Gastroc, Erectors	Knee Flexion Hip Extension (Isometric)	Sagittal
<b>Negative GHR</b> <a href="https://youtu.be/2edf2PRdISE">https://youtu.be/2edf2PRdISE</a>	Hamstrings	Glute Maximus, Gastroc, Erectors	Knee Flexion Hip Extension (Isometric)	Sagittal

See Lower Back Exercises

## CALF EXERCISES

Exercise	Agonist(s)	Synergist(s)	Movement(s)	Plane of Movement
<b>Seated Calf Machine</b> <a href="https://youtu.be/7TQhdOY5Y6Q">https://youtu.be/7TQhdOY5Y6Q</a>	Soleus	Gastrocnemius	Ankle Plantar Flexion	Sagittal
<b>Standing Calf Machine</b> <a href="https://youtu.be/IsrWDhkUJyQ">https://youtu.be/IsrWDhkUJyQ</a>	Gastrocnemius	Soleus	Ankle Plantar Flexion	Sagittal
<b>Rotary Calf Machine</b> <a href="https://youtu.be/3UAhqTBoqKA">https://youtu.be/3UAhqTBoqKA</a>	Gastrocnemius	Soleus	Ankle Plantar Flexion	Sagittal
<b>Standing Barbell Calf Raise</b> <a href="https://youtu.be/3UWi44yN-wM">https://youtu.be/3UWi44yN-wM</a>	Gastrocnemius	Soleus	Ankle Plantar Flexion	Sagittal
<b>Leg Press Calf Raise</b> <a href="https://youtu.be/gJ1wh5rBt-g">https://youtu.be/gJ1wh5rBt-g</a>	Gastrocnemius	Soleus	Ankle Plantar Flexion	Sagittal
<b>Smith Machine Calf Raise</b> <a href="https://youtu.be/aExXrszQRw0">https://youtu.be/aExXrszQRw0</a>	Gastrocnemius	Soleus	Ankle Plantar Flexion	Sagittal

## LOWER BACK EXERCISES

Exercise	Agonist(s)	Synergist(s)	Movement(s)	Plane of Movement
<b>H. Lower Back Machine</b> <a href="https://youtu.be/foTWMpGwsZw">https://youtu.be/foTWMpGwsZw</a>	Erector Spinae	Quadratus Lumborum	Trunk Extension	Sagittal
<b>Conventional Deadlift</b> <a href="https://youtu.be/hVgHiaBkzw0">https://youtu.be/hVgHiaBkzw0</a>	Erector Spinae	Hamstrings, Trapezius, Grip, Gluteus Maximus, Quadriceps	Trunk Extension Hip & Knee Ext	Sagittal
<b>Negative Deadlift</b> <a href="https://youtu.be/a_0-M-jWA14">https://youtu.be/a_0-M-jWA14</a>	Erector Spinae	Hamstrings, Trapezius, Grip, Gluteus Maximus, Quadriceps	Trunk Extension Hip & Knee Ext	Sagittal
<b>Sumo Deadlift</b> <a href="https://youtu.be/64llb5i2j7U">https://youtu.be/64llb5i2j7U</a>	Erector Spinae	Gluteus Maximus, Adductors, Trapezius, Grip, Hamstrings, Quadriceps	Trunk Extension Hip & Knee Ext	Sagittal
<b>Negative Sumo Deadlift</b> <a href="https://youtu.be/Zxrt0ZldfnQ">https://youtu.be/Zxrt0ZldfnQ</a>	Erector Spinae	Gluteus Maximus, Adductors, Trapezius, Grip, Hamstrings, Quadriceps	Trunk Extension Hip & Knee Ext	Sagittal
<b>45 Degree Hyperextensions</b> <a href="https://youtu.be/BzX2YPLdWx4">https://youtu.be/BzX2YPLdWx4</a>	Erector Spinae Hamstrings	Gluteus Maximus	Trunk Extension	Sagittal
<b>90 Degree Hyperextensions</b> <a href="https://youtu.be/5BuSXmKRfQw">https://youtu.be/5BuSXmKRfQw</a>	Erector Spinae Hamstrings	Gluteus Maximus	Trunk Extension	Sagittal
<b>Reverse Hyperextension</b>	Erector	Glute	Hip Extension	Sagittal

<a href="https://youtu.be/x2-eREN1vkQ">https://youtu.be/x2-eREN1vkQ</a>	Spinae	Maximus Hamstrings		
<b>Stiff Legged Deadlift</b> <a href="https://youtu.be/1uDiW5--rAE">https://youtu.be/1uDiW5--rAE</a>	Hamstrings Erector Spinae	Trapezius, Grip, Gluteus Maximus	Trunk Extension Hip Extension	Sagittal
<b>Romanian Deadlift</b> <a href="https://youtu.be/w7EcOyMNa5A">https://youtu.be/w7EcOyMNa5A</a>	Hamstrings Erector Spinae	Trapezius, Grip, Gluteus Maximus	Trunk Extension Hip & Knee Extension	Sagittal
<b>Rack Pull</b> <a href="https://youtu.be/3Hqofsbc1is">https://youtu.be/3Hqofsbc1is</a>	Erector Spinae	Hamstrings, Trapezius, Grip, Gluteus Maximus, Quadriceps	Trunk Extension Hip & Knee Ext	Sagittal
<b>Deadlift off a step (Deficit Deads)</b> <a href="https://youtu.be/ayaHKmT84bY">https://youtu.be/ayaHKmT84bY</a>	Erector Spinae	Hamstrings, Trapezius, Grip, Gluteus Maximus, Quadriceps	Trunk Extension Hip & Knee Ext	Sagittal
<b>Good Morning</b> <a href="https://youtu.be/Me-GB36PsY0">https://youtu.be/Me-GB36PsY0</a>	Erector Spinae, Hamstrings	Gluteus Maximus	Trunk Extension Hip Extension	Sagittal

\*Note: Quadratus Lumborum is always working with the Erector Spinae

## TRAP EXERCISES

Exercise	Agonist(s)	Synergist(s)	Movement(s)	Plane of Movement
<b>Dumbbell Shrugs</b> <a href="https://youtu.be/cJRVVxmytaM">https://youtu.be/cJRVVxmytaM</a>	Upper Trapezius	Grip	Scapula Elevation	Frontal
<b>Barbell Shrugs</b> <a href="https://youtu.be/pqYr_lb04O4">https://youtu.be/pqYr_lb04O4</a>	Upper Trapezius	Grip	Scapula Elevation	Frontal
<b>Smith Machine Shrug</b> <a href="https://youtu.be/jSuSu_p_uUE">https://youtu.be/jSuSu_p_uUE</a>	Upper Trapezius	Grip	Scapula Elevation	Frontal
<b>Trap Bar Shrugs</b> <a href="https://youtu.be/dAq1Kaeuqj0">https://youtu.be/dAq1Kaeuqj0</a>	Upper Trapezius	Grip	Scapula Elevation	Frontal
<b>Protractions*</b> <a href="https://youtu.be/0mSAeOOaAuc">https://youtu.be/0mSAeOOaAuc</a>	Serratus Anterior	Pec Minor	Scapula Protraction	Transverse
<b>Retractions</b> <a href="https://youtu.be/3AZ_iF_RFE">https://youtu.be/3AZ_iF_RFE</a>	Middle Trapezius	Rhomboids	Scapula Retraction	Transverse
<b>Depressions</b> <a href="https://youtu.be/F9I16nVwo4o?t=42s">https://youtu.be/F9I16nVwo4o?t=42s</a>	Lower Trapezius		Scapula Depression	Frontal

\*Note: Protractions do NOT work the traps

## CORE EXERCISES

Exercise	Agonist(s)	Synergist(s)	Movement(s)	Plane of Movement
<b>Crunch</b> <a href="https://youtu.be/S3Xj-JhDOu8">https://youtu.be/S3Xj-JhDOu8</a>	Rectus Abdominis	Obliques	Spinal Flexion	Sagittal
<b>Ball Crunch</b> <a href="https://youtu.be/IHKXB8BKWjQ">https://youtu.be/IHKXB8BKWjQ</a>	Rectus Abdominis	Obliques	Spinal Flexion	Sagittal
<b>Decline Ab Wheel</b> <a href="https://youtu.be/OwjK9MQ65zs">https://youtu.be/OwjK9MQ65zs</a>	Rectus Abdominis	Obliques Transverse Abdominis Hip Flexor	Trunk Flexion (isometric)	Sagittal
<b>Decline Situp</b> <a href="https://youtu.be/8SxqD0TDM20">https://youtu.be/8SxqD0TDM20</a>	Rectus Abdominis Hip Flexor	Obliques	Trunk/Spine Flexion	Sagittal
<b>Crunch Machine</b> <a href="https://youtu.be/PNyOHrVCeag">https://youtu.be/PNyOHrVCeag</a>	Rectus Abdominis	Obliques	Spinal Flexion	Sagittal
<b>Rope Cable Crunch</b> <a href="https://youtu.be/bHuewduvKBKc">https://youtu.be/bHuewduvKBKc</a>	Rectus Abdominis	Obliques Hip Flexor	Trunk/Spine Flexion	Sagittal
<b>Sit-up</b> <a href="https://youtu.be/gC6KGH8ISxE">https://youtu.be/gC6KGH8ISxE</a>	Rectus Abdominis Hip Flexor	Obliques	Trunk/Spine Flexion	Sagittal
<b>Hanging Leg Raise</b> <a href="https://youtu.be/ja31RXmC2zA">https://youtu.be/ja31RXmC2zA</a>	Rectus Abdominis Hip Flexor	Obliques Rectus Femoris	Trunk/Spine Flexion Hip Flexion	Sagittal

## CONDITIONING EXERCISES

Exercise	Video Link
<b>Frog Jump</b>	<a href="https://youtu.be/9Wie6qRFQ6o">https://youtu.be/9Wie6qRFQ6o</a>
<b>Ski Erg Upper Body</b>	<a href="https://youtu.be/yjqdzmA6jIU">https://youtu.be/yjqdzmA6jIU</a>
<b>Jumping Pull-ups</b>	<a href="https://youtu.be/WqYMchnp5nw">https://youtu.be/WqYMchnp5nw</a>
<b>Overhead KB Farmer's Walk</b>	<a href="https://youtu.be/IfiBGbCbKHI">https://youtu.be/IfiBGbCbKHI</a>
<b>Burpee</b>	<a href="https://youtu.be/q1rj3j24tt8">https://youtu.be/q1rj3j24tt8</a>

## OLDER ADULT EXERCISES

Exercise	Agonist(s)	Synergist(s)	Movement(s)	Plane of Movement
<b>Foot Elevated Knee Extension</b> <a href="https://youtu.be/BaJWuu_0V0k">https://youtu.be/BaJWuu_0V0k</a>	Hip Flexor Quads	Adductors	Hip Flexion Knee Extension	Sagittal
<b>Seated DB Good Morning</b> <a href="https://youtu.be/SU8i3PMudfc">https://youtu.be/SU8i3PMudfc</a>	Erectors	QL	Trunk Extension	Sagittal
<b>Seated Calf Raise with Weight</b> <a href="https://youtu.be/ZVdJF4o775Q">https://youtu.be/ZVdJF4o775Q</a>	Soleus	Gastroc	Plantarflexion	Sagittal
<b>Seated Tube Fly</b> <a href="https://youtu.be/udcvivwMtw">https://youtu.be/udcvivwMtw</a>	Pec Major	Front Delt Biceps	Shoulder Horizontal Adduction	Transverse
<b>Seated Tube Chest Press</b> <a href="https://youtu.be/vBbXPYKIQwI">https://youtu.be/vBbXPYKIQwI</a>	Pec Major	Front Delt Triceps	Shoulder Horizontal Adduction Elbow Extension	Transverse
<b>Seated Tube Row</b> <a href="https://youtu.be/B9e3MH7LoN8">https://youtu.be/B9e3MH7LoN8</a>	Lats	Rear Delt Biceps	Shoulder Extension Elbow Flexion	Sagittal
<b>Standing DB Good Morning</b> <a href="https://youtu.be/JTa-zirXCnw">https://youtu.be/JTa-zirXCnw</a>	Erectors	QL Hamstrings Glutes	Trunk Extension	Sagittal
<b>How to get on and off a physioball</b> <a href="https://youtu.be/Sg_TTpwRVak">https://youtu.be/Sg_TTpwRVak</a>				
<b>Incline Sit-up</b> <a href="https://youtu.be/9cY3bAPy1Y0">https://youtu.be/9cY3bAPy1Y0</a>	Rectus Abdominis	Obliques Hip Flexor	Trunk/Spine Flexion	Sagittal
<b>Tube Tricep Pushdown</b> <a href="https://youtu.be/qdq_bv7Ex8s">https://youtu.be/qdq_bv7Ex8s</a>	Triceps		Elbow Extension	Sagittal
<b>Ball Wall Squat</b> <a href="https://youtu.be/wObpvFmfQ-8">https://youtu.be/wObpvFmfQ-8</a>	Glutes Quads	Hamstrings	Hip Extension Knee Extension	Sagittal

<b>Ball Wall Goblet Squat</b> <a href="https://youtu.be/ehl3NYPJy8">https://youtu.be/ehl3NYPJy8</a>	Glutes Quads	Hamstrings	Hip Extension Knee Extension	Sagittal
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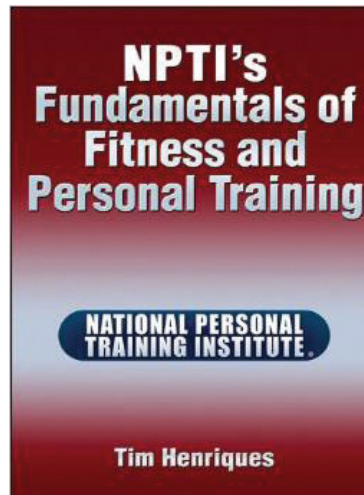
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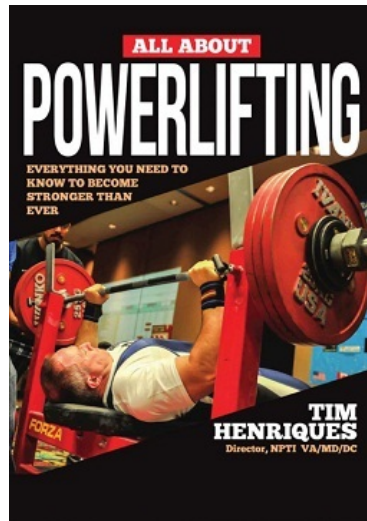
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You can find the book, along with most of my articles online, here:

<http://allaboutpowerlifting.com/>

## About the Author

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Tim Henriques has been teaching people to become personal trainers since 2001. He has personally guided over 1000 students through the extensive and rigorous 600 hour-long curriculum at the National Personal Training Institute (NPTI) in Virginia. He believes in the power of fitness to change lives and he loves sharing his knowledge with others.

*All About Program Design* is Tim's third fitness book. He has also authored the textbook for NPTI: *Fundamentals of Fitness and Personal Training* as well as the book *All About Powerlifting*, both of which have been well received. He has authored more than 200 articles online for such organizations as <https://www.theptdc.com/>, <http://schwarzenegger.com/>, <https://www.t-nation.com/>, <https://www.livestrong.com/>, <http://allaboutpowerlifting.com/>, <http://nptivirginia.edu/>, and many more. He is currently working on a sword and sorcery based fantasy series which will be his first foray into the world of fiction writing.

Initially a rather poor athlete, he found weights and applied himself to the iron discipline. He graduated as Health and PE Student of the year from Fairfax High School in VA. He went on to James Madison University where he received his degree in Kinesiology with minors in Psychology and Coaching. He became a Collegiate All-American Athlete while at JMU. He continued to powerlift for the next 20 years, setting the National Record in the Strict Curl and deadlifting 700 lbs at a bodyweight of 198. He is lifetime drug free.



Tim lives with his wife, Christina, and their 3 boys: Nathan, Ryan, and Collin and their dog Pongo in Oakton, VA. He regularly writes, lectures, and presents on the topic of health and fitness. He continues to coach and train his students, athletes, and clients in the never ending and always fulfilling search for that next personal best.