Goblin's Gym

Strength and Health Secrets for Growing Goblins

Founder's Edition

Disclaimer

This book is intended for use by Goblins only. We disclaim liability for injury or property damage resulting from training. Consult a medic if you have health concerns.

Use your head, listen to your body, and train with appropriate caution.

We also disclaim liability for consequential damage when overly vigorous growing Goblins empty your refrigerator, outgrow their clothes prematurely or demand more weight plates. You have been warned.

No Goblins or Humanlings were harmed in the making of this book.

Founder's Edition ?

This is the first, most assuredly not perfect edition. Please don't take everything written here (or elsewhere, for that matter) as divine gospel. Founders sometimes take their chances.

I look forward to your questions, comments and flames at pdornier@yahoo.com .

Contents

Introduction

Would you like to be strong for a strenous Goblin life ?

Would you like to be better at your sport ?

Would you like to learn about training and nutrition ?

Or would you like to get "jacked" for a career as a muscular Gargoyle or Gargirl (see below), and qualify for an IFGG* pro card ?

Then huddle around my cave lantern and pay attention to this tale of physical empowerment.

* International Federation of Growing Goblins, *not* to be confused with the Humanling IFBB.

Once Upon a Time...

… there was a rather wimpy kid. The thought of P.E. class did not exactly fill his heart with joy. He had no talent or interest for ball games, and lacked the strength for many gymnastics moves.

That was **me**.

Two things saved me from staying that way forever (even if I still can't throw balls to save my life):

- I regularly rode the bike to school and back.
- I lifted weights at home, later at a gym.

I will tell you the things I should have known as a wee one, starting out on my training journey about 40 years ago. Don't worry if you don't understand some topics at first. They will eventually make sense to you.

Some things you will like to hear, others may not sound so sweet to your sensitive ears. What did you expect, a politically correct Goblin ?

Form follows Function

Your body is a shape-shifting marvel.

If you often run long distances, your body will adapt and make your legs, hips and lungs stronger. Anything not needed for running will get lighter.

If you lift weights, your body will reluctantly adapt by getting stronger, and if you *really* insist, bigger.

If you mostly sit on the couch and munch potato snacks, your body will cheerfully shift to its couch potato shape.

Where you end up depends on these factors:

- Your **training** tells your body how it should adapt.
- Your **nutrition** provides the building materials for the adaptation.
- Your **recovery** (for example sleep) gives your body time to adapt.
- Your **genetics** are the blueprint for your development.

  If your parents were short Goblins, you probably won't grow up to be a tall basketball player. If they were both sprinters, I doubt you will be the best marathon runner. Just don't use genetics as an excuse for poor training and nutrition.

Why should I get strong ?

First of all, being weak is overrated.

- Strength helps in your sport and everyday life.
- Being strong relative to your weight is particularly useful.
- Movement and weight training helps build stronger bones.
- Muscles make your body more sturdy and "harder to kill".
- Strong back muscles help avoid back pain.
- Strength training helps improve your body awareness and control.

Lifting weights is the most effective way to get stronger.

Is this for me ?

Yes.

Parents, please refer to the chapter "Notes for Big'uns" at the end.

I'm too young !

Tell that to the brothers Giuliano and Claudio Stroe. They started training at the tender age of 2. Look up their impressive feats of strength some time.

You can train if you can listen to your own body, and (at least on rare, *special* occasions) to teachers.

I'm a girl !

Then of course you should stay meek ? *(ducking away swiftly)*

The weights and your muscles don't care about your gender. You may not get the same hormone surge as boys in puberty, but you will still get results if you train hard. Many women can train harder than men.

I'm too weak !

We all started small and weak. At first you could barely hold your head up. Then you started crawling. Then took some cautious steps. Then ran off with your Big'uns in pursuit.

If you can't do a single push-up or pull-up, there are easier versions. In strength training we start with a manageable load, then progress.

I hate P.E. or group sports !

Welcome to the club. Train at your level, not what a teacher or coach thinks you should be able to do.

I suck at sports !

Move more, suck less.

I don't have time !

You don't have time, you take it. A basic bodyweight routine should not cut too much into your ~~e-sports practice~~ homework time.

I don't want to get out of bed !

You can do abdominal crunches in the comfort of your bed.

I'm too young to get a gym membership !

"I would never join a club that would accept me as a member."

Train at home. (quote by Groucho Marx)

I don't have training equipment !

You already have a floor, your own weight, a nearby playground…

Add other items step by step. Some will be free or cheap, like two six-packs of water bottles. Others will be a bit more expensive, like a weight set or a good bench. See the chapter "Your Iron Playground" for more details.

You can't train effectively at home !

While your iron playground will never have the variety of equipment available at a gym, you can do some pretty gnarly training at home.

Kids can't grow muscles !

You might not get big at first, but you **will** get stronger. If you train hard enough, your body will grow. Look at young gymnasts. If you learn how to train, you will get a running start when you hit puberty.

Eww gross, I don't want to get too muscular !

Fear not, it won't happen. Your idea of "too muscular" may also shift.

I don't want to look like a man !

Look up Julia Vins. She is a strong powerlifter, but still looks feminine.

Muscles will make me slow !

Look at how muscular sprinters are. Acceleration = force / mass.

Muscles will make me inflexible !

Depends on how you train.

Lifting weights will stunt my growth !

Eat right, don't lift insane weights, don't use steroids, and you will grow normally.

I could hurt myself !

Statistics show that lifting weights is much safer than running or playing soccer. You know better than to drop heavy things on your toes or hands, right ?

But isn't this all horribly complicated and difficult ?

Not really. Read this book, visit the book website www.goblinsgym.com for videos and other references, and do it.

Move it !

Even if we hide in our caves, classrooms or coal mines most of the time, Goblins should move every day:

- Play.
- Run.
- Climb – stairs, trees, mountains…
- Give your friends a piggyback ride.
- Have friendly fights with your friends.
- Take the family monster for a walk.
- Carry tired siblings – either piggyback, or in a good carrier. Get strong, warm and loved at the same time.
- Carry heavy things. Help your Big'uns carry the amazing amount of grub that you devour.
- Or do some good old-fashioned physical work, for example in the family garden.

☞ Let your worried Big'uns read "Free Range Kids" by Lenore Skenazy.

☞ Read "Little Britches" by Ralph Moore to get an idea of how independent and resourceful kids were in the past.

Goblins on two Wheels

If you want a fast, stealthy way to move among Humanlings, ride a bicycle. It will give you the freedom to roam far and wide. Why wait for a bus or mama taxi, when you can take off right now, and get some fun exercise at the same time ?

I find it immensely satisfying to get solid acceleration from the power of my own legs. Going up hills still sucks. As they say, embrace the suck …

Too "analog" ? Add a phone holder to your bike, and put your Pokemon hunt into overdrive.

Just keep in mind:

- It's your hide. Be careful and alert.
- Move in a predictable way and give clear signs.
- Just because you're not paranoid, does not mean that drivers in their noisy vehicles are not out to get you. Assume that they really didn't see you, and keep out of their way.
- Always wear a helmet to protect your precious Goblin bumps.
- Bare feet and bicycle chains don't mix.
- Hide in plain sight – wear bright colored clothes, and use a bike light when it gets dark.
- Keep your (t)rusty steed well oiled, aired and groomed, and it will not throw you down.
- Watch road conditions. When I was in high school, I once wiped out on sand left over from construction. I delivered myself to the nearby hospital ER. On to school a few stitches later and wiser.

10

Recovery

Let me introduce you to two little heroes living inside you.

The inner squirrel

The squirrel is all "go go go". It will relentlessly pursue the acorn of its dreams, or zip around a tree trunk in blatant disregard of gravity.

The inner sloth

The sloth is very laid-back, a master of rest and recovery. It will hang off its cosy tree branch, only moving to feed or – about once a week – visit the bathroom at the bottom of its tree.

Best frenemies

You would expect that they would be bitter enemies. Not so – deep down they know that you need both of them. Without the inner squirrel driving you, life would be pretty boring, and your training ineffective. Without the inner sloth, you would not know how to rest.

And **rest you must**, if you want to recover and grow.

Vitamin Z

Let me list all electrical and electronic devices that you need for a good night of sleep:

- Light switch

I understand the almost inescapable draw of free unlimited Humanling Wifi, but you just don't need the excitement when going to bed.

Some more thoughts on sleep:

- Many Big'uns say that growing Goblins need 8 to 10 hours of sleep each night. Get as much sleep as you can, but keep in mind that sleep quality is just as important as quantity.
- Go to bed and wake up at a consistent time.
- Your alarm clock should be a backup. If you time your sleep right, you should wake up a little before the infernal time bomb goes off. If it gets you all the time, go to bed earlier.
- Growing Goblins may not take up much space, but they can be quite heavy relative to their surface area. Don't blindly rely on standard weight recommendations - try a mattress on the firm side.
- Hammocks are overrated. Your mattress should be supported by a solid surface, not something springy and supposedly compliant. When sharing your bed with another Goblin, their weight will deform a flexible support in ways that your back may not appreciate.
- You don't have to spend a fortune on nesting material. I sleep well on a DIY platform and an inexpensive pocketed coil mattress from Aldi.
- Pick the right blanket for your body temperature. I cover up with a light fleece blanket, and wash it weekly. Time to make the bed: almost zip. Spend the time on training instead …
- Find the right pillow (probably on the thin side, or none) to keep your neck happy.
- Reading in bed ? You sit enough all day – lie down on your belly to give your back and neck a little workout.
- Naps aren't just for baby Goblins. A 20 to 30 minute nap can give you new energy. Set a timer so you don't end up in deep sleep.
- Be careful about eating or drinking too close to bedtime.

Training

This should be a mandatory part of Goblin P.E. lessons. Until they adjust the curriculum - don't hold your breath, that could take a few more centuries - let me give you my take on what you need for successful, effective strength training. The same principles apply, no matter whether you train with your own bodyweight, dumbbells, barbells or machines.

Progression

In ancient Greece there was a legendary wrestler, Milo of Croton. There are many stories about his amazing strength and interesting eating habits. One of them sticks out:

> *He is said to have started lifting and carrying a newborn calf every day, until he was lifting a full-grown bull four years later.*

That, my dear Goblins, is progression, the corner stone of strength training.

Start with a manageable load, add more in small steps as you get stronger.

Small steps ? One extra pound per week will add up to over 200 pounds after four years.

Repetitions

Each time we do a specific exercise is called a **repetition** or **rep**.

- We lift the weight from the bottom position (muscle extended) to the top position (muscle contracted). This is called the **concentric** or **positive** movement.
- Then we let the muscle resist the weight as we lower it back down under control. This is called the **eccentric** or **negative** movement. Your muscles are significantly stronger in this direction.

Breathing

For most exercises, **breathe in** while you lower the weight, **breathe out** while you lift it back up. You can breathe out against pressure to help brace your core and stabilize your back. Please do not hold your breath (Valsalva maneuver) unless you are an advanced lifter.

Tempo

Exercise tempo refers to the pace of movement.

- Normal speed. Maybe a bit more than a second each up and down.
- Slow speed. This naturally happens when you strain to lift a heavy weight. You can also lower the weight intentionally slowly to make an exercise harder (slow negatives).
- Fast speed. This can make an exercise easier, as you can use momentum to get past sticking points, and there will be less time under tension.

You can pause at the top or bottom to make an exercise more challenging.

Sets

A set consists of multiple reps done in a row. After each set we take some rest before starting the next set. For most exercises, we do multiple sets:

- First we do one or two light **warm-up sets** to wake up the muscle. For heavy lifts, do additional warm-up sets with increasing weights.
- Then we do one or more heavier **work sets** to challenge the muscle. I usually do two to four work sets for each exercise.

Rest periods

The rest period between sets is important. Your muscles need some time to restore their energy supply. You may also have to catch your breath and let your heart rate slow down.

For "light" exercises, you will be ready for the next set soon. For "heavy" exercises, you will need more rest. Powerlifters training for maximum strength often take very long rest periods. Most others should train at a faster pace.

I like to pace my workout with a stopwatch to keep up training "density" and stay focused. I start a new set every 45 to 90 seconds for light exercises, every 2 to 3 minutes for heavy exercises. I write down the rest periods so I can compare my performance over time.

If you have time to mess with your Weapon of Mass Distraction (phone), you may be resting too long. I have more effective finger exercises for you.

Workout

What will a good workout look like ?

- Warm up with a few minutes of moderate activity such as running, biking, skipping rope, light bodyweight exercises - whatever gets you going, but does not tire you out.
- I do heavy exercises early in the workout when I am still fresh.
- Then do other, less demanding exercises.
- You can stretch at the end of the workout, but **not** at the beginning.

Then get out of the dungeon, feed your inner beast, and rest.

Intensity

Bust yours to kick theirs.

Effective training will be hard. We need to train with sufficient intensity to tell our bodies to adapt.

We strive for failure to succeed. "Good failure" means that we cannot do another repetition in good form. As a beginner, don't push too close to failure yet. To avoid injury and excessive fatigue, we usually stop 1 to 3 repetitions before this point (**repetitions in reserve**).

For me, a good level of intensity gets me breathing hard at times, and leaves me "pleasantly tired" at the end of the workout, but not beaten down. **Stimulate, don't annihilate.**

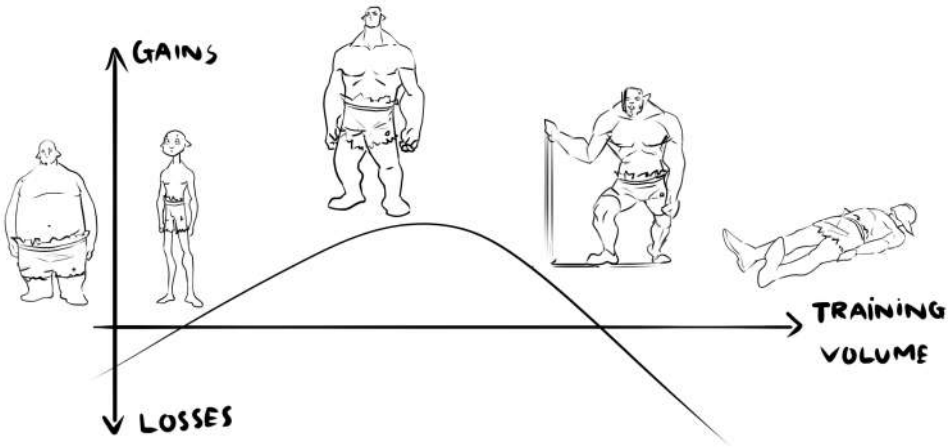
Training Volume

How much should we train ? Is more always better ?

The total number of work sets per work-out, per muscle group, or per week indicates the overall training load. Warm-up sets are not counted, as they are not much of a challenge. Training scientists refer to different levels:

- **Maintenance Volume** (MV) is the training volume needed to maintain your current strength and size. Good news, your body loves stability. It usually takes very little to keep up what you have achieved. But remember - use it or lose it !

- **Minimum Effective Volume** (MEV) is the smallest training volume that will give you appreciable gains. Bad news, your body loves stability. If you pussyfoot around with timid training, not much will happen. You have to send a stronger message to get things moving.
- **Maximum Adaptive Volume** (MAV) is the volume that gives you the fastest growth over time. Considering the accumulation of fatigue, I prefer to stay below this point. If you train more than this, you will get less growth for more sweat. Why kill yourself, when you can get better results with less effort ?
- **Maximum Recoverable Volume** (MRV) is the highest training volume that your body can recover from. If you train more, you risk overtraining and injury, or just get sick. Your body will tell you when you get there.



These levels will change over time. As you get stronger, your MEV will increase. As you get fatigued, your MRV will come down. Adjust your training volume as needed.

Talking of killing yourself – you can get your muscles to break down by training with ridiculously high volume, and mess up your kidneys in the process (Rhabdomyelosis, indicated by brown urine).

☞ Advanced Goblins read "Scientific Principles of Hypertrophy Training" by Dr. Mike Israetel.

Frequency

Frequency refers to how often we train a muscle group.

After training, a muscle is tired and weaker. During recovery, it is rebuilt stronger. After a few days it will be time to train it again. If you train a muscle too often, it cannot recover properly. If you don't train it often enough, your body will start to shrink the "unnecessary" muscle by the time you train it again.

Beginner workouts should not be all that taxing, and at your age you should recover quickly. Frequent training will give you more opportunity to practice good lifting technique.

I recommend training each muscle group about twice a week.

I don't feel like training today...

The hardware is willing, but the software is weak.

Look inside yourself. Is your inner sloth smothering your inner squirrel ?

Do you feel sick ? Then take a day (or week) off.

Are the muscles you want to train still sore ? Wait another day, or train with lighter weights. If this happens often, add a rest day, look at your nutrition, or just go a bit easier.

Are you constantly beat down ? Then it may be time to **deload** – do a week of really light training – or even take a week or two off completely.

Otherwise, "shut up and lift". Go light or stop if it doesn't feel right, but don't be surprised if this turns into a great workout after all.

Oh no, I missed a Workout...

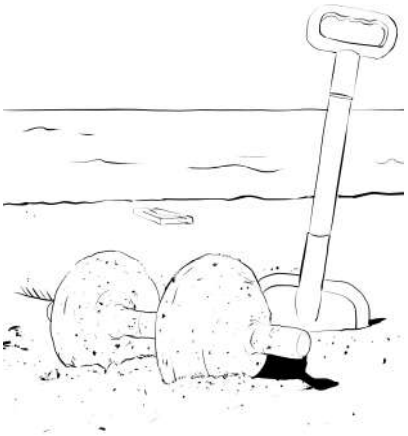
When you get in the right groove, your body will often be itching for the next workout. If anything, you may have to hold your inner squirrel back a little so you can recover properly.

Sometimes life gets in the way of your well-laid devilish plans.

If you missed a day, just do the planned workout a day later.

If you missed training for a longer time, restart with lighter weights. Fear not - your strength will come back very quickly.

Headed for a vacation ? Unleash the squirrel and bust ass the week before (overreaching). Then enjoy active rest. Try not to be a Nudnik Goblin, and go along with family activities proposed by your Big'uns once in a while. Or do nothing until it hurts.



Train alone or with a Partner ?

It depends. I have always trained by myself, but this does not mean that training partners don't have their value.

Train alone:

- You never have to wait for your partner to arrive.
- You can train at your own pace, and keep shorter rest periods.
- You don't have to change weights for a weaker or stronger partner.

Train with a partner:

- A good training partner can fire you up.
- Your training partner will be *upset* if you don't come. You *will* come.
- If your strength is similar, you can have some friendly competition.
- One can change weights while the other lifts.
- Your partner can help you with the initial lift-off, and spot you when you get close to your limit.
- Some exercises (e.g. barbell bench press) can be dangerous if you train by yourself.
- Your partner can give you immediate feedback on your technique. You can keep each other honest.

Execution

Form refers to how an exercise is performed. To learn a new exercise:

- Look at the drawings, and read the exercise descriptions.
- Watch videos showing correct form. You can find a collection at www.goblinsgym.com .
- If possible, let a professional trainer or experienced lifter coach you.
- Let a friend or Big'un observe you, and watch them. Or film yourself, then review the video. Your movement should be consistent from rep to rep, not "all over creation".
- Try to find the "groove" that is comfortable for you, and properly trains the intended muscle. Sometimes small changes can make a big difference. Let the weights and your body teach you.
- Always let the target muscle initiate the movement. If you want to train your biceps with curls, don't initiate with a hip bounce.
- Use a realistic load (not too light, not too heavy) to really feel the movement.
- Try not to learn too many exercises at once.
- Practice makes perfect.

Keep in mind that every body has different proportions. Your ideal movement may not look the same as it does for others. Some exercises may not work well for you, or even risk injury. Then you will have to find an alternative. As you grow, you may have to change your form to adapt to your longer limbs.

Range of Motion

For each exercise, there is a possible Range of Motion (ROM). For example, some squat down completely ("ass to grass"), and stand up completely (knees locked out) at the top. Others only use a partial range.

Opinions are strongly divided on what is best. The champions of both camps are strong and well built, and have valuable things to teach.

In the blue corner we have "Team Full ROM" represented by Dr. Mike Israetel. He proclaims that exercises should always be taken through a full and consistent range of motion.

In the red corner we have the "Gallantians" represented by Jason Gallant. He proclaims to train the muscles, not the joints. Exercises should be performed through the most effective ROM with constant tension. The ends of the range should be avoided.

My advice ? Listen to your body.

As a young Goblin, you may feel like you are made of rubber and steel. Please heed these things to avoid future problems:

- **Always lower the weight under control.** Never "dive bomb" to the bottom position. The negative movement is valuable for growth.
- Don't go too far at the bottom. The load should remain on the target muscle, not transfer to other muscles or your joints and ligaments.
- For many exercises it is perfectly safe and beneficial to get your muscle into a stretched position. Be careful when your muscles are at a mechanical disadvantage at the bottom, for example with preacher curls, chest flyes and pull-ups. See the chapter on biomechanics.
- Don't be a jerk - accelerate back up in a controlled fashion. If you can throw it up, maybe you need more weight on the bar. Intentional explosive movements can be useful if they are done under control.
- At the top end (muscle contracted), don't go so far that other muscles (such as the shoulders) have to take over to finish the movement.
- My elbows and knees tell me that they are not fond of locking out or hyperextending. Be particularly careful if you have hypermobile joints that can extend beyond completely straight.
- Locking out the joint at the top offloads the muscle you want to train. Stop just short of this point for more constant tension. The opposite can also be true at times, this brief pause can enable you to handle a heavier load.
- Don't hyperextend or arch your back on deadlifts or overhead presses.
- Train with a consistent ROM so you can compare your performance over time.
- If you cannot perform a reasonable ROM at the start of a set, the weight is too heavy.
- Grinding out partial reps at the end of a set can be OK, as long as you don't use other muscles to cheat.

Confused ? **Welcome to "Team Good ROM" …**

Cheating

In real life, exercise form will not always be as crisp and pristine as what you see in textbooks and videos. It is easy to demonstrate perfect form with lighter weight. As you get closer to your limit, there may be conscious or unconscious changes to form.

As you get more experienced, there can be reasons to deviate from official form and use some applied violence. For example, when I do heavy dumbbell rows, I use a bit of momentum to forcefully pull the weight up to my chest. On the way down, I lower the weight under control, getting good loading on the negative movement. I still get a full range of motion.

Strive to perform exercises with good, repeatable form. When you "cheat", it should be conscious and under control.

How much Weight ?

The heaviest weight that you can lift for one repetition is called your **1RM** (**one repetition max**). The more repetitions you do in a set, the less weight you can handle. If your 1RM for an exercise is 100 lbs, you might be able to do 5 reps with about 90 lbs, 10 reps with about 75 lbs, or 20 reps with about 60 lbs (see www.strengthlevel.com for a table). Actual percentages vary from person to person, and from muscle to muscle.

With lighter weights, it takes many repetitions to reach failure. Your muscles will start to "burn" well before they (or more likely, you) give up.

As a beginning lifter, **do not test your 1RM**. The injury risk is too high. Leave lower reps with heavy weights to older, more experienced lifters. Stay in the range of 8 to 15 reps for "heavier" exercises, 12 to 20 reps for "light" exercises.

While it can be fun to chase big numbers, remember that the weight is just a tool to gain strength and size, not the goal itself. Olympic weight lifters and powerlifters are an exception, but they should have a coach watching them.

As a beginner, start with lighter weights, and focus on good form.

Once you have mastered an exercise, you can challenge yourself.

For the first work sets, I usually stick to a constant number of reps, and don't try to reach failure. If I fail to reach the target number of reps on the last work set, I will try to lift the **same weight** for more reps in the next workout.

If I reach or exceed the rep target on the last work set, I will **increase the weight** next time. Don't get greedy – increase the load in **small** steps, even if you feel that you could handle more. You will find your limit soon enough.

It is normal that you will not be able to do as many reps with the new, heavier weight. If I increase the load by 10%, I will probably have to go from 12 down to 8 or 9 reps. Work back up to a higher number of reps and "own" the weight before you increase it again.

Tracking and Planning

Even beginners should keep training records. Can you remember what you lifted last week ? I can't, so I write it down. This lets me track my progress. Look back after a year to see how far you have come.

*Proper Prior Planning Prevents P*** Poor Performance*

Instead of doing a random collection of exercises, I plan each workout in advance, either in the morning or just before the workout. This does not mean that I have to slavishly follow this plan. I write down:

- Date of the workout
- Name of the exercise, together with the weight and number of repetitions to aim for based on the last similar workout.
- As I train, I write down the actual weights and reps lifted.
- I also note whether the weight felt about right (~), try for more weight next time (+w), try for more reps next time (+r) etc.
- (optional) I also note the rest period or interval. @120 = start every 120 seconds.

Sample entries from my training log:

farmer's walk 44x2 -> 44 x 2 rounds @120 11/14/2020

decline bench 60..65x8 -> 20 40 60x6x8 @65 +r

(6 sets of 8 reps)

bench 60x8 -> 20 40 60x6x8 @60..70 +r

Voluntary Hardship

To get good results, you have to be consistent. Don't expect magic to happen from a few workouts. It takes years of work and progression to achieve great things. You are not entitled to a strong, healthy body - there is a price of admission:

- Regular, hard, sometimes repetitive training.
- Consistent nutrition.
- More rest, less screen time.
- Be "uncool" at times, keep doing your thing.

Besides getting stronger, you might develop some old-fashioned qualities in the process:

- **Grit**

  In hard training, you push the edge of your comfort zone. The last few reps near failure are the hardest – but they are the ones that count the most. Grit can take you far in life.

- **Persistence**

  After your easy initial gains, progress will not always be so steady. There will be "high gravity" or off days. Sometimes you have to ease off a bit, then progress again. Keep pushing on.

- **Resilience**

  If you train, eat and recover right, you should not be as susceptible to the usual sniffles.

  A bit of cold exposure can also help. If your body never has to work to regulate your temperature, it will eventually lose this skill. Our ancestors did not live in caves with central heating and A/C.

  When you "decontaminate" in the shower, why wait for warm water ? The room temperature water in the pipes will wake you up, and get you wet just as well. Warm water will come when it is good and ready. End with 30 to 90 seconds of cold water for bonus refreshment.

  When it is cold outside (say around freezing, not Siberia), I don't always bundle up. For a brief excursion outside, my t-shirt will be just fine. The family steed will protect me from wind and warm up eventually. I take a jacket with me, just in case.

When I bike, will be out for long, or when there is wind, I will put on more clothes. Misery, frostbite or hypothermia are not part of my program.

☞ Read up on "Iceman" Wim Hof for icy chills.

Pain and Suffering

That, which does not kill me, hurts. *(not quite Nietzsche)*

Effective training can be uncomfortable. Suck it up, Buttercup.

Good pain:

- Muscles can "burn" when you do a lot of repetitions (accumulation of lactic acid).
- Muscles can get sore, often starting about a day after the training (DOMS = Delayed Onset of Muscle Soreness). Soreness is more likely when you change your program. After a while, your body adapts, and will not get sore as quickly. While you don't have to chase after soreness, it is a sign that you are doing something right. You can train your upper body when your legs are sore. Being completely inactive may slow down recovery.
- The skin of your hands also needs to adapt. Over time you will get some callouses. Wear them with pride.

Bad pain:

- If you feel sharp, acute pain during an exercise, **STOP immediately**. If you have to, drop the weights…
- … but not on your feet. Injuries caused by dropped weights are not uncommon, for example when plates or dumbbells are not put back properly, or as a result of horseplay.
- Low back pain can be caused by poor exercise form. Did you round your back, instead of keeping it straight as you should ?
- Tendons can get inflamed (tendonitis). This develops over time, and may be caused by excessive volume or overload. Poor nutrition could also contribute to this.

- If your joints feel unhappy, look at your exercise form. Use your joints in their natural motion. Don't load them sideways or twist them under load.

If you are injured – train what you can, carefully move what you cannot train. I avoid pain-killers. Even small doses are bad for the liver, and masking pain can lead to further injury.

☞ Fallen Goblins should read "Rebuilding Milo" by Dr. Aaron Horschig.

(inspired by the knife scene in Terminator 2 – don't try this at home)

Goblin Anatomy 101

Learn about your anatomy to make your training more effective and safer. Explore your body: Flex individual muscles, or push / pull against resistance to see and feel which muscles are active.

The coordinated teamwork of your muscles, bones and tendons moves your body. Muscles often have multiple functions, and work together.

Each **muscle** has two ends, the origin and the insertion. The **origin** of the biceps is at the shoulder. The **insertion** of the biceps is just below the elbow.

Muscles can only pull on the tendons connecting them to bones, not push. The biceps contracts to bend your elbow. The **opposing** triceps contracts to straighten the elbow, while the biceps relaxes.

Muscles consist of many thin **muscle fibers** working in parallel. Take a close look at the texture of a piece of meat – you see bundles of muscle fibers. Depending on how much force is needed, your nervous system tells a different number of fibers to contract.

When a muscle contracts, the muscle fibers shorten. The muscle will bulge, as the volume of the fibers remains the same.

Muscles convert chemical energy into movement. For the strongest contractions, the energy supply only lasts for a few seconds. It takes some time (seconds to minutes) for the muscle to "recharge" and be ready for another maximum effort. Lighter loads use a different energy system with better endurance.

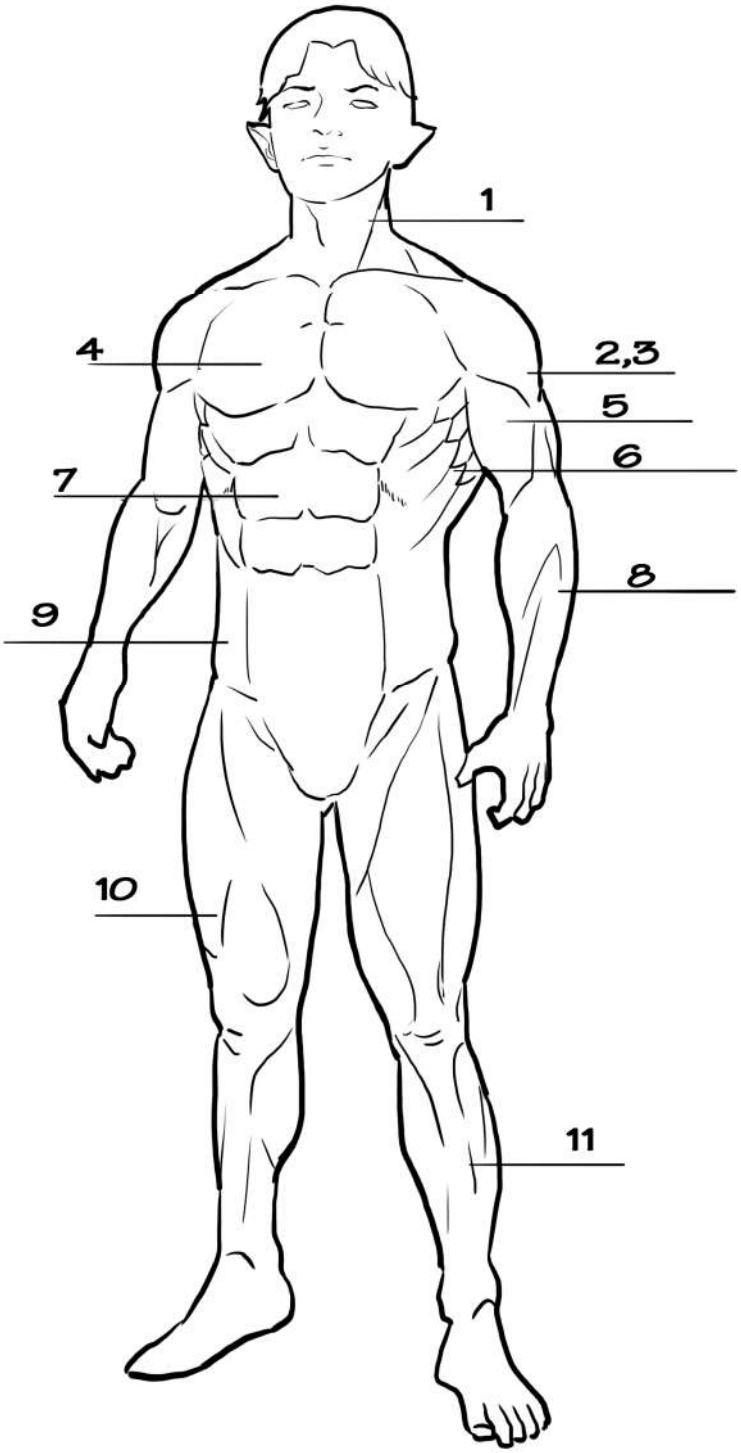
Tendons are like cables, and connect muscles to your bones. Kangaroos can hop very well thanks to their long, elastic tendons that store and return a lot of energy. Your tendons are not quite as springy, but still help you save energy when you run or bounce around.

Tendons are very strong, but adapt and heal more slowly than muscles. Give them some time, don't be in a hurry to get too strong too fast.

Joints like your elbows or knees connect different bones like a hinge. Be kind to them.

Ligaments bind your joints together. Torn ligaments are quite common in joint injuries, and often force athletes to retire. Don't be one of them.

Anatomy



This is greatly simplified – medical students have to learn anatomy details for years.

Your **neck muscles (1)** keep your heavy Goblin noggin upright, and protect the sensitive cervical spine.

Your front **shoulder muscles** (**2, deltoid muscles** or **delts**) help lift your arm overhead, and also contribute force for pressing movements like the bench press.

Your **lateral (side) delts (3)** lift your arms sideways.

Your **biceps (5)** bends the arm at the **elbow** joint.

Your **forearms (8)** include many smaller muscles that move hands and fingers.

Your **hands** and **fingers** are complicated structures that can move with a light, precise touch, or hold heavy weights with a crushing grip.

Your **pectoral** (**4, pecs**) or chest muscles pull your arms together in front of you. They originate at your breastbone (sternum), and insert on your upper arm bone (humerus).

If you are lean, the anterior **serratus (6)** muscle shows up as a sawtooth pattern. It pulls the shoulder blade to the outside, and holds it close to your back.

Your **rectus abdominis** (**7, abdominals** or **abs**) and **oblique** muscles (9) are always there, even if they are covered up by a layer of fat. They help stabilize the core of your body, and are important for proper bracing when you lift heavy weights.

The **transversus abdominis** (**TVA**) muscle is hidden beneath your abs, and pulls in your tummy. It is important for bracing and helps with exhalation.

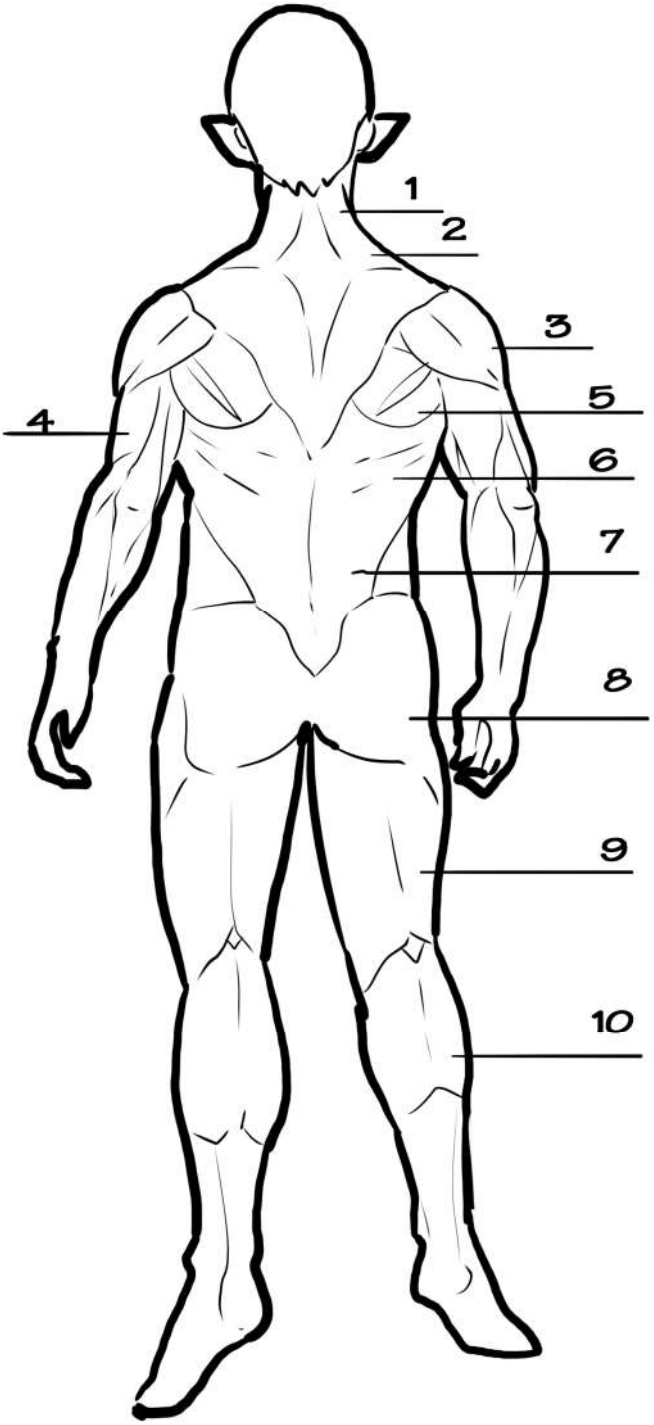
The **quadriceps** muscles (**10, quads**) at the front of your upper legs straighten your leg at the knees.

The **tibialis anterior (11)** muscle at the front of the lower legs bends your ankle, and lifts your toes.

Finally, we have your **feet**. They are another complex marvel, easily able to support your weight (and then some).

☞ For more details on your muscles, and how they are used and targeted in weight training, read "Strength Training Anatomy" by Frédéric Delavier.

Anatomy



Your **neck muscles (1)** go all around the neck.

The **upper trapezius** (**2, traps**) muscles straighten your neck, and move your shoulder blades up and together.

The **posterior deltoid** (**3, rear delt**) muscle pulls back your arms.

The **triceps (4)** extends your arm at the elbow, and also helps stabilize the shoulder.

The **rhomboids (5)** pull your shoulder blades together, and hold them close to the back.

The **latissimus** muscles (**6, lats**) make your back "wide". They are important for climbing and rowing movements, pull down the shoulders, and bend your trunk sideways.

The **spinal erectors (7)** are a group of muscles that straighten your back and protect your sensitive spine.

The **gluteus maximus** (**8, glutes**) are some of your largest muscles. They straighten the hip, and allow you to stand or walk.

The **hamstrings** (**9, hams**) bend your legs at the knees, and also help straighten the hip.

The **calves (10)** pull your heel up for walking or running, or to get on your tippy toes. They pull on the Achilles tendon, a vulnerable spot not just for ancient Greek heroes.

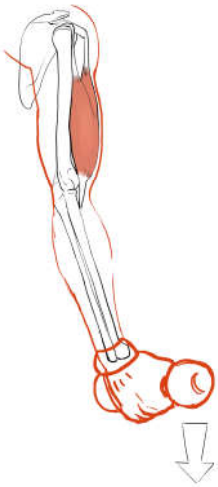
Finally, your **feet** have a large number of smaller muscles to support standing and walking.

Biomechanics

Your body works like a system of pulleys and levers.

As an example, let us look at a biceps curl. Assume that your upper arm remains vertical, and your elbow stays locked in place. Your hand holds the weight, and moves in a semi-circle around the hinge, your elbow. Your forearm acts as a lever. The weight always pulls down vertically to the ground.

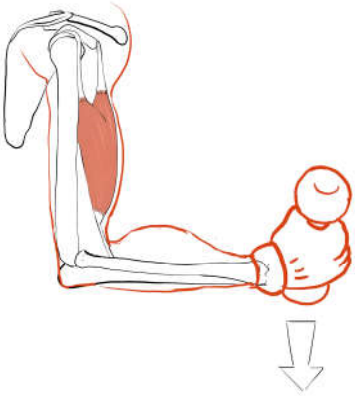
Near the bottom position, the weight moves almost parallel to the ground. The weight is mostly hanging from your elbow. Your biceps only has to contribute little force to start the movement.



Most muscles are strong in full extension. However - please look closely at how the biceps tendon attaches to the forearm. The lever arm between the attachment point and the rotational axis of the elbow is very small. The biceps is at a **mechanical disadvantage** in this position.

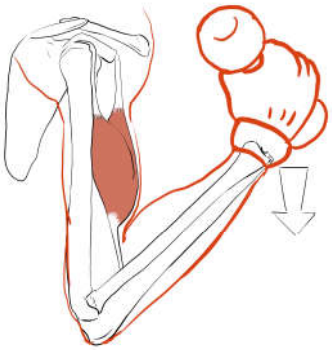
At the 90 degree position, your forearm is parallel to the ground. Your biceps has to support the full weight.

As the tendon attaches close to the elbow, you have something like a 1:10 lever. Your biceps has to pull up with 10 times the force to hold the weight up.



Near the top, your biceps only has to pull up about 70% of the weight. The biceps is a bit weaker in this contracted position.

Since you are not a Stick Goblin with zero inch arms, you can never fully make it to the top. The forearm will push against the biceps, and the lever of the tendon attachment also doesn't help.

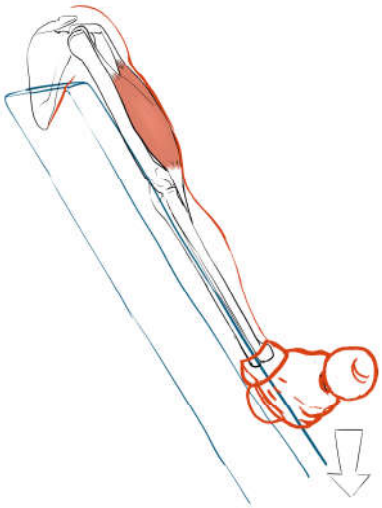


Barbell preacher curls on an inclined bench can be risky.

At the inclined angle the starting load is about half of the actual weight. The problem is that you start the movement with straight arms, with the biceps at a mechanical disadvantage.

Given the heavy load on the biceps muscle and tendon, muscle or tendon strains or tears are a real risk for stronger lifters.

What to do ? Don't use the full ROM on this exercise.



Good exercises (or machines) will apply more load where the muscle is strong, and less where it is weak.

☞ Advanced Goblins read "The Physics of Resistance Exercise" by Doug Brignole.

Protect your Back

Your **spine** or **backbone** is a flexible column made out of bone segments, the **vertebrae**. It goes up from your tailbone to your neck. Besides supporting your body, the spine also protects your vulnerable **spinal cord**, the primary bundle of nerves going down from your brain.

Between the vertebrae, you have rubbery **discs** and small joints. They make the spine flexible. When you stand straight with a neutral back, you can support heavy weights. If you round your back while lifting or sitting too much, the discs can get squeezed, or even slip.

How can you keep your back healthy and strong ?

In everyday life:

- Watch your posture. Don't round your shoulders forward – it is harder to breathe that way. Stand tall, don't slouch. When your pelvis is tilted forward just a little bit, there will be more room for your internal organs, and your spine does not have to curve as much.
- Don't sit too much, and try to vary sitting positions. Try sitting on the edge of the chair – difficult to slouch that way.
- Your neck and eyes were not made to look down on a miniature screen all the time. Hold your phone out in front of you to avoid getting "digital native vulture neck".
- To lift things from the floor, squat down and let your strong legs and glutes do the work, instead of rounding your back. Or bend over with a straight lower back, and let your hips and hamstrings do the work.
- Wear flexible pants that give you freedom to move. Try a deep squat before buying.
- Drink enough water. Dehydration can be bad news for your back and joints.
- When you lie down on your bed, stretch out. Maximize the distance between your feet, your butt, your upper back and your head. Don't be shy to also spread your shoulders and buttocks sideways.
- The early morning is a bad time to put heavy load on your spine. Your discs will be full of fluid, and may not compress as much as later in the day.

When you work out:

- Keep your back neutral, not rounded.
- Don't arch your back, e.g. on deadlifts or overhead presses.
- Avoid twisting or bending your spine under load.
- Do exercises that strengthen your spinal erectors and your upper back.
- Learn to brace with your abdominals and proper breathing.
- Don't increase training loads too quickly. Let your grip be the limiting factor, not your back.
- Don't do too many heavy exercises like squats, deadlifts or loaded carries in one workout. Instead, spread them out over multiple workouts.

Heavy exercises are not necessarily "the" back killer. You can also hurt yourself on abdominal exercises etc.

☞ See the book web site for additional references on posture and your spine. Good posture may seem old fashioned and tedious at first, but it will pay off in the long run.

Your Iron Playground

I'm afraid small Goblins are not popular in the playgrounds the Humanlings call gyms. They say you are too small to fit the torture devices they call "machines". They worry you might hurt yourselves or others. They might also object to feisty little Goblins taking up their space. Or maybe they are just jealous when they see how much energy you have ?

Let the World be your Gym

You can exert your body almost anywhere.

- Lift your own body weight.
- Add the weight of your friends or siblings.
- Traverse monkey bars.
- Use playground equipment in creative ways.
- Climb friendly trees. Leave the unfriendly, brittle ones alone, especially Whomping Willows (ask Harry Potter, he found out the hard way).
- Pull-ups and chin-ups are hard, but good for you.
- Find a street workout rack and do calisthenics.

Equipment for your Dungeon

Of course you can also set up your own iron playground in your cave.

You can start small and get used items first. Some very strong people started out with improvised equipment – for Larry Wheels it was a broomstick and some cinder blocks.

Humanlings often give up on training too soon, and will offer up their almost new equipment for little silver. Try to infect your Big'uns with the iron bug, so they will invest in good quality gear that will last for a lifetime or two of lifting.

This list shows the most important items first. See the book website for additional details.

Space

Maybe you have space somewhere in your cave, a cozy dungeon in the underworld, or a covered porch.

You could also ask the noble family steed nicely whether it would be willing to sleep under the stars. Then take over its rightful spot in the garage.

Carpet or Mat

While you should not make a habit of it, sometimes weights do get dropped. Use a suitable carpet, rubber mat (beware – they can be smelly) or foam puzzle mats to protect the floor of your cave, and keep the subterranean creatures living below you happy.

Pull-up / Chin-up Bar

You can of course do pull-ups and chin-ups at a nearby playground.

A pull-up bar mounted in your doorway is a good way to exercise, and will keep Big'uns from entering your cave without bowing down politely first. Just don't bounce around too hard on them, they don't always hold up. Look up "pull-up fails" on Youtube…

A suitable rafter will also do. Round or pad edges to protect your finger tendons, or attach a sturdy steel pipe to it.

If you have more space and silver, there are nice wall-mounted "monkey" chin-up bars that allow different hand positions.

(picture: ATX / megafitness.shop)

Something heavy to carry

If you are a Farm Goblin, you probably carry heavy buckets of feed or smelly stuff all the time. If you don't, there are other options:

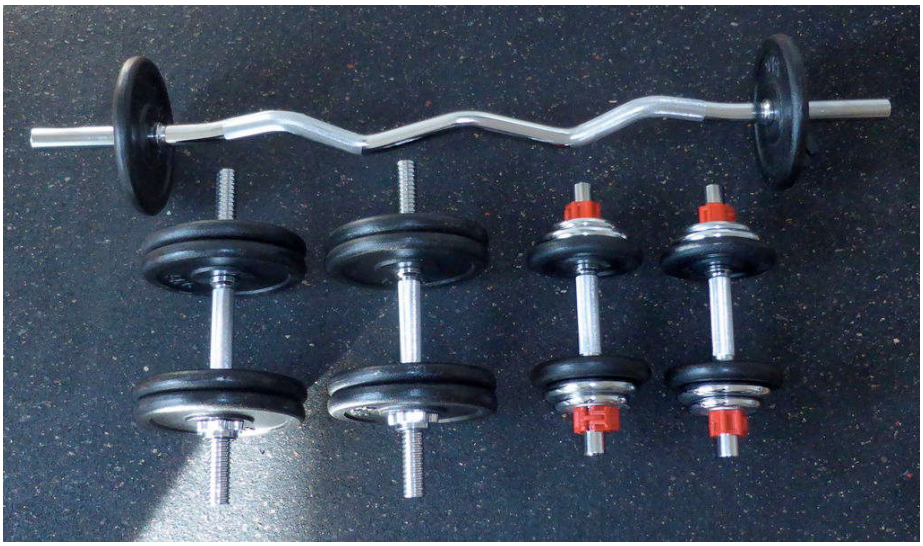
- Two packs of water bottles (6 x 1.5 or 2 liters = 9 or 12 kg). If this is too heavy, pack individual bottles into a shopping tote.
- Two sturdy shopping totes filled with heavy stuff. Inexpensive, but stylish blue Ikea Brattby bags held up to 50 kg of weight plates in my brief "Göblinfakta" stress test. I would not expect them to hold up forever with this much load, though.
- Fill two construction or paint buckets with heavy stuff such as gravel, sand, concrete pavers or bricks, depleted uranium or your pet black holes. Oval or D shaped buckets are easier to carry at your side.
- If you have enough weight plates, just load up your dumbbells and carry them. They are a challenge to hold as you have to keep them in balance.
- Stack weight plates on metal loading pins, and attach a handle. I found mine at Aliexpress – they can take up to 35 kg worth of 5 kg plates, and are a bit noisy to carry.

Whatever you carry - the handles should be low enough so you don't have to shrug your shoulders.

Dumbbells

Dumbbells let you hold weight in your hands. Each hand can move independently through space, so there are many possible exercises you can do with them. Since you have to stabilize the weight, they will make you strong all over.

Adjustable dumbbells consist of a metal handle, weight plates and some sort of locking collars. Changing weights can be a bit tedious.



Selectable dumbbells make it easier to change the weight – place the dumbbell in a special holder, select the new weight, pick up. Unfortunately, they are expensive, don't like to be dropped, and often don't allow adjustment in the small weight steps that a small Goblin needs. Look carefully, and if possible try before you empty your bag of silver.

Fixed dumbbells are the most convenient option. A set of smaller weights (e.g. 1 to 10 kg) is not too expensive. A full rack of dumbbells as you find in a gym takes up a lot of space, literally weighs a ton and is very expensive.

Dumbbell handles

The handles are usually made of chrome plated steel. The space for the weights is either smooth or threaded (spinlock). The middle area is knurled to allow you to hold the dumbbell securely.

The handles should be long enough to allow loading a good number of weight plates. This may not seem so important when you start out, but for some exercises like dumbbell rows you will progress to heavy weights sooner rather than later.

If you have enough plates, get a second pair of handles so you can set up the weights for your warm-up and work sets in advance, and "stay in the flow".

Locking collars

In the interest of your "pearly yellows", you don't want the dumbbell to come apart while you hold it over your head. The weight plates are secured in place by collars. There are different systems:

- Spring collars. Convenient, but not secure.
- Screw collars. They are held in place by a small screw, fastened either with an Allen key or with a fixed lever. They can be secure if you tighten them well, but are annoying to use.
- Spin-lock collars screw on threaded bars. They are pretty secure, but not fool proof. Sometimes they will work themselves loose, sometimes you almost need pliers to get them off (hint: turn the plates next to the collar).

  Careful observers will note that I put these collars with the star in rather than out. Rest a heavy dumbbell on your thigh and you will understand.
- Quick-lock collars are made of plastic. They allow for quick weight changes, but I don't trust them when moving weights overhead. You can find them at Aliexpress (dumbbell quick lock).

Weight plates

For home use, I recommend simple black painted or chrome plated cast iron plates. They will last forever if you keep them dry. If they get wet, they will rust, but still be heavy. Gripper holes are not necessary for smaller plates. Make sure the plates have the right hole size for your handles.

Plastic-coated, sand filled plates will eventually break, and take up too much space on the handle. Gym grade rubber or polyurethane coated plates are expensive, and also take up more space.

Start with 4 each of 5 kg, 2.5 kg, 1.25 kg, 0.5 kg plates so you can adjust the weights in small steps. Add more 5 kg plates as you get stronger. Larger plates are not practical for use with dumbbells. For 'murican Goblins, make that 10 lb, 5 lb, 2.5 lb and 1.25 lb plates.

Optional: EZ-curl bar

The squiggly shaped (cambered) bar is an inexpensive, wrist-friendly addition for curls and shoulder presses.

Adjustable bench

You can start out with a suitable size, sturdy wood box. Screw some wood on top to spread the load. Pad with a towel. Worked for me.

A good, solid bench is the centerpiece of your iron playground. The angle of the back section should be adjustable – flat or inclined. The bench should not budge when you load it on one side. It should be strong enough to hold at least 400 lbs, preferably much more. Anything with lower capacity will be a flimsy, wobbly toy. Don't get a bench with stands for barbell bench presses, or rickety attachments for leg extensions – these frills just take up space and get in your way.

(picture: profihantel.de)

Optional: Dip bars / stands

Dips are a great exercise to build your chest and triceps. Maybe you can find parallel bars at a nearby playground. Two sturdy high-backed chairs will work if they don't slide or tip over (place some weight on the seats).

If you have more silver, you can get dip bars for wall mounting, or free standing dip stands. Look carefully – some are rather rickety, or too low for taller people.

Optional: Cable Pulley

Use for lat and triceps pulldowns, or cable crunches. The DIY version works remarkably well, and allows weight adjustment in smaller steps than the pulleys you find in gyms.

Hang a pulley (Aliexpress) from a rafter or sturdy chin-up bar. Use a metal loading pin, weighted bag or bucket, together with rope (used, slightly elastic climbing ropes are perfect) and one or two handles. You will need some

carabiners, usually included with the handles and metal loading pins. Protect your floor with a mat or old towel.

Optional: Ab Roller

The ab roller is a wheel with two handles. It is an inexpensive gadget to train your abs. Harder than it looks ! Find it at sporting good stores or online.

Things you don't need yet

- **Fancy shoes**. You don't need shoes to lift. Your bare feet will enjoy the freedom and grow strong, too.
- **Fancy clothes**. Any flexible, comfortable clothes such as gym shorts and a T-shirt will do.

  "No shoes, no shirt, less sweat"

  Publisher's note: *The Official Goblin's Gym T-shirt is available for purchase at the exit of the cave.*
- **Gloves**. Goblin hands are not meant to be soft. Grow some callouses, and wear them with pride.
- **Lifting straps**. I don't recommend them for beginners.

  "If you can't hold it, don't lift it."

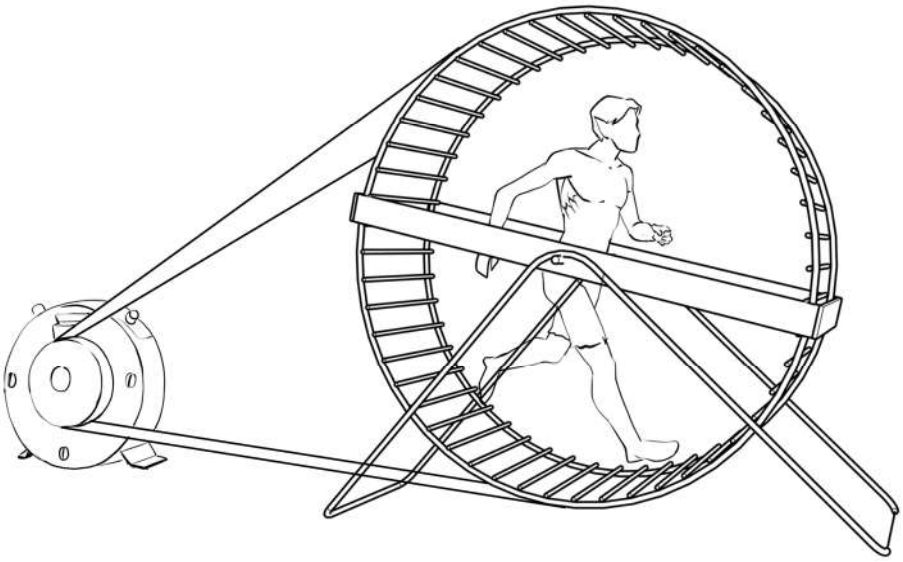
  That said, straps are useful when your back becomes stronger than your grip. I only use them for the heaviest sets. I use a clone of Versagripps, easier to use than traditional straps.
- **Lifting belt**. It will not magically protect your back, only when you breathe and brace properly. A Troll with a bit of a paunch will probably get more out of it than a skinny Goblin.
- I don't like **elastic exercise bands**. The resistance of a rubber band depends on how far it is stretched and its age. You can use them as assistance for body weight exercises like pull-ups or dips. For other exercises, they often give too little resistance at the beginning (where you are strong), and too much at the end of the movement (where you are weak).
- A **trap bar**. Trap bar deadlifts are a good introduction to conventional deadlifts.

- An **Olympic barbell and a power rack**. While they are fantastic later on, the power lifts (squat, bench press, deadlift, overhead press) should be learned under the watchful eye of a skilled coach or experienced lifter. The bars are long and may be difficult to balance for small Goblins.

  Don't do barbell bench presses without another person spotting you !

- **Hamster mills** (also known as cardio equipment). You can walk, run, jump, bike, swim or climb without them. Most equipment will not fit your size well. I find threadmills particularly despicable. They gobble up electricity to move a belt while you walk or run on them.

  If your Big'uns do want to invest, I would suggest a good quality rower (e.g. Concept 2). It uses most muscles, can be used by Goblins of any size, and will swiftly transform you into a puddle of sweat if you row hard enough.



Exercise Descriptions

In the following sections, I will describe the exercises I recommend for home training. Please keep in mind that ideal form is not the same for everyone. You may have to make adjustments depending on your anatomy and individual constraints.

I use the following symbols:

✓ Do this

✗ **Don't do that**

() Variations

Things to watch out for

Things to *really* watch out for !

Information on loading

Stuff of legends

Bodyweight Exercises

There are many exercises that you can do with your own bodyweight.

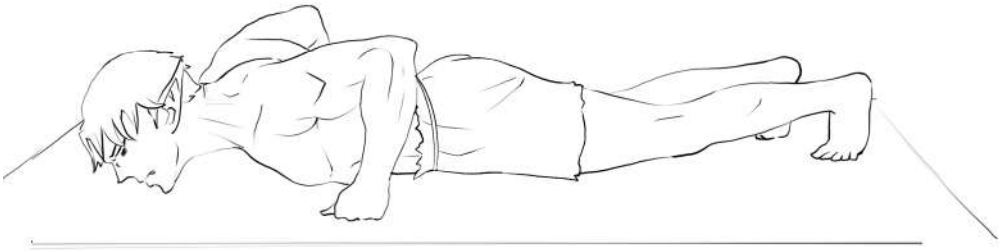
Don't let this fool you – some of these exercises can be *very* hard and merciless. Please read the exercise descriptions for hints on how you can work your way up to performing them. Once you have mastered them, there are more difficult variations, such as one-armed push-ups and pull-ups.

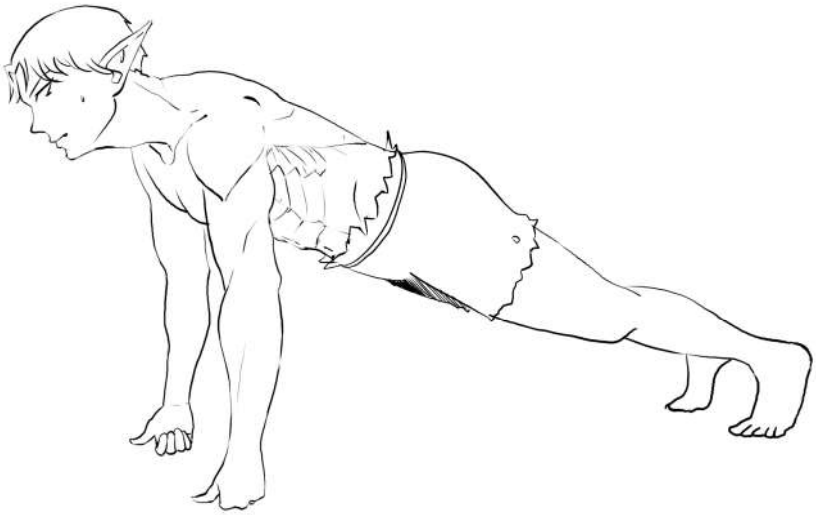
You can do all exercises with a pull-up bar, a sturdy table (for inverted rows), and two chairs for dips.

Read the page "Bodyweight Program" for a possible training sequence.

☞ For more on calisthenics, read "Convict Conditioning" by Paul "Coach" Wade.

Push-ups





Push-ups

Muscles: Chest, triceps, core

Gear: Floor or mat

Give me 10 !

Pushups are a great way to train your chest and triceps. Focus on quality over quantity – don't butcher them as often seen in school gyms and dojos all over the land.

✓ Hands a bit more than shoulder width apart.

✓ Keep your elbows angled out slightly from your torso, but *not* straight out – you want to train your chest, not your shoulders. Hold your arms like you would to punch somebody.

✓ **Don't be a limp noodle – keep your back, hips and legs in line !**

✓ Keep your glutes and abs tight.

✓ Full ROM: Touch the floor with your nose, chest or ribcage, or at least go down until your upper arm is parallel to the floor.

Go up until your arms are straight. I don't fully lock out the elbows.

✗ Don't shrug your shoulders.

() Palms flat on the floor.

() Martial artists (and those with inflexible wrists like me) do pushups on their fists, knuckles or fingers.

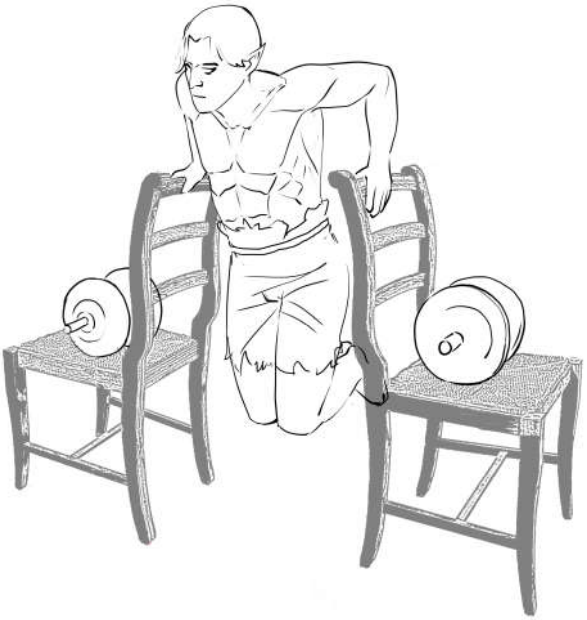
Too difficult ?

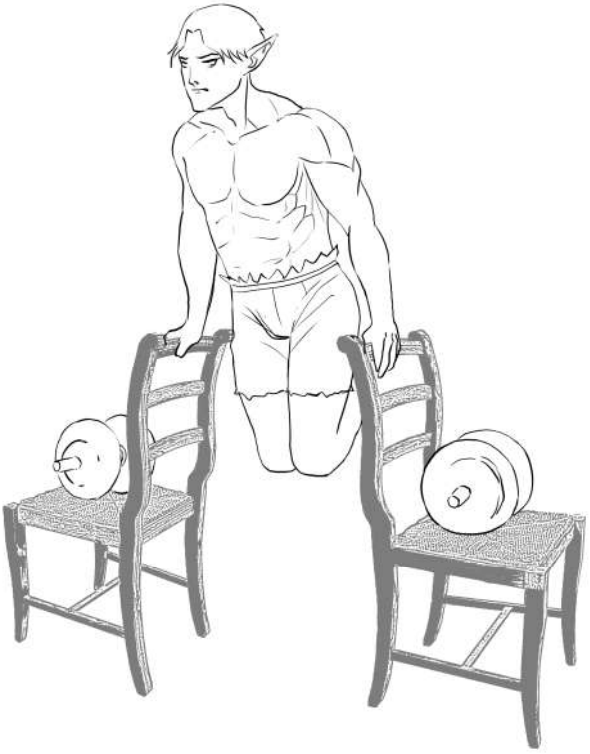
Place your hands on a table or wall, then the back of a couch, finally the low seat of a couch, until you can do normal pushups from the floor.

Too easy ?

- Place your hands close together (diamond pushups, more triceps involvement).
- Add weight - let a little monster take a rollercoaster ride on your back.
- Do them intentionally slowly.
- Push off explosively.
- Push up with both hands, go down with one hand (alternate left and right).
- When you can do true one-handed pushups, you will be one strong Goblin.

Dips





Dips

Muscles: Chest, triceps

Gear: Two sturdy chairs or dip bars

Dips are a great bodyweight exercise to train your chest and triceps.

With dip bars, I start with a small jump to the top position. With chairs, I start at the bottom. For each rep, lower under control, then go back up until your elbows are nearly locked out.

If you lean forward, the focus will be on your chest. If you are more upright, the focus will be on your triceps.

Be careful about your shoulders.

Don't do dips if you have shoulder problems.

✓ Do dips when you are warmed up, not at the beginning of your workout.

✓ Don't go too deep. Elbow around the level of your shoulder is low enough.

✓ Pull the shoulder blades together. Keep your shoulders locked.

✓ Look forward, not down.

✓ If you don't have dip bars, two sturdy high-backed chairs work well. Place them on a non-slip surface, and place some weights on the seats for stability.

✗ Don't do bench dips. They are risky for your shoulders, and don't allow for a good range of motion.

Too difficult ?

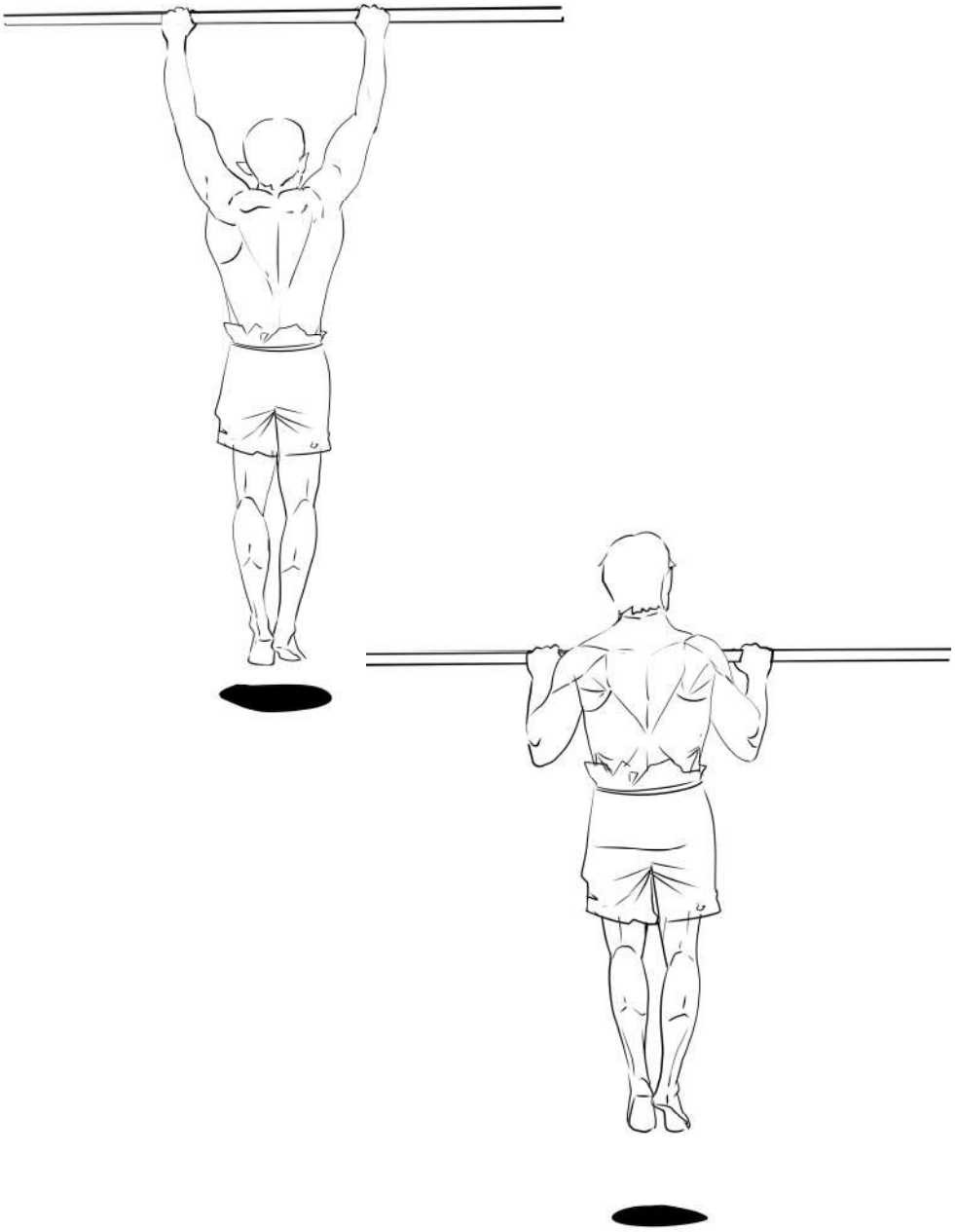
- Just hold yourself in the top and bottom positions.
- Support your knees with an elastic band.
- Let your legs help you up, lower without assistance.

Too easy ?

- Go slow.
- At the top position, lift your legs in front of you. This gymnastic position is called an L-Sit.
- Ring dips are more difficult, as you have to stabilize.
- Add a weighted belt to your waist.

48

Pull-up



Pull-up

Muscles: Lats, upper back, biceps, abs

Gear: Pull-up bar

Pull-ups are simple, but hard.

Hang from the bar with your palms facing forward (overhand grip). Pull yourself up until your chin gets over the bar. Lower under control.

✗ **Don't hang on your joints.**

Keep some tension on your muscles at the bottom position. I don't let my arms extend completely, even if "strict" pull-ups call for it.

✓ Pull your shoulder blades down and together a bit as you start the movement.

✓ Hands a bit more than shoulder width apart. At the top, your forearms should be about vertical.

✓ Keep your legs straight, feet together or crossed.

✓ Alternate hand positions (see next page).

✗ Don't cheat with momentum or kipping.

Too hard ?

- Hang from the pull-up bar to build your grip strength.
- Hold different positions of the movement.
- Do "Australian pull-ups" (similar to inverted rows).
- Reduce your weight with an exercise band, a partner or your legs.
- Use assistance to go up, go down without (negative reps).
- Practice makes perfect - do a pull-up each time you pass by the bar.

Too easy ?

- Try to pull yourself higher, e.g. to your clavicles or chest.
- Go down slowly.
- Add a weighted belt to your waist.

50

Chin-up

Chin-up

Muscles: Lats, biceps

Gear: Pull-up bar

Chin-ups are very similar to pull-ups, but make more use of your biceps.

Hang from the bar with your palms facing you (underhand grip), with your hands about shoulder width apart. Pull yourself up, until your chin passes the bar. Lower under control.

✘ **Don't hang on your joints.**
Keep some tension on your muscles at the bottom position.

✘ Keep your wrist straight, it cannot pull you up.
Your hand is just a hook holding you.

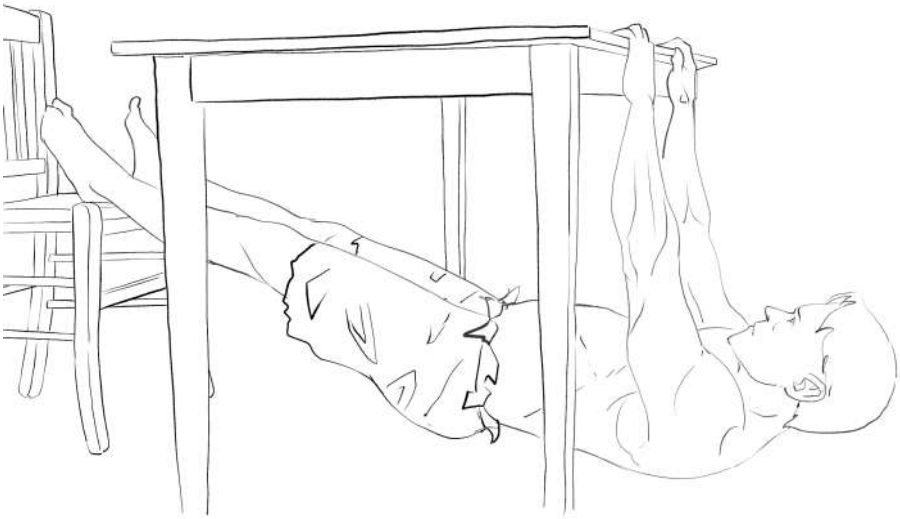
Too hard ?

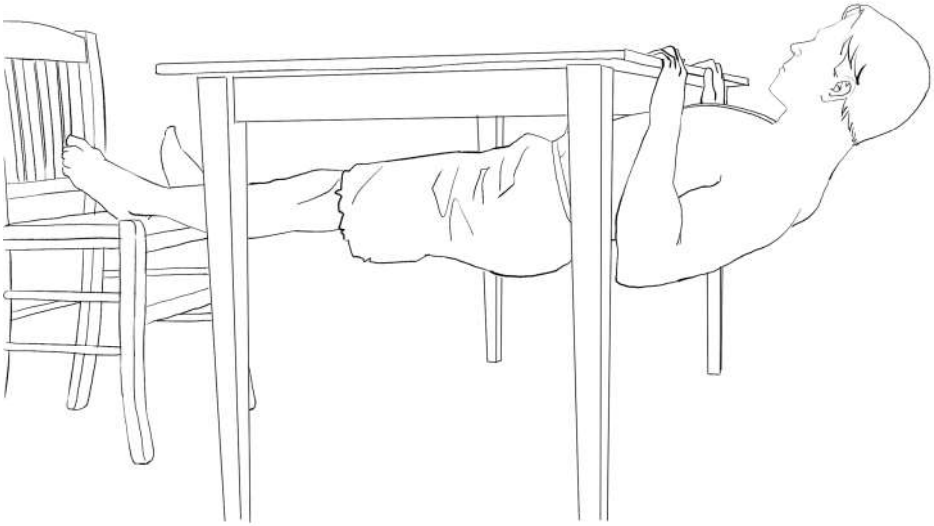
- Hang from the bar to build your grip strength.
- Go up with assistance, hold the top position as long as you can.
- Offload some of your weight with an exercise band or your legs.
- Go up with assistance, lower without (negative reps).
- Practice makes perfect – do a chin-up each time you pass by the bar.

Too easy ?

- Go down slowly.
- Add a weighted belt to your waist.
- Go up with both hands, go down with one hand.
- When you can do one-armed chin-ups, you will be one strong Goblin.

Inverted Row





Inverted Row

Muscles: Lats, upper back

Gear: Sturdy table or dip bars

Inverted rows are the little known twin of the push-up.

Lie down under a table or dip bars. Reach up with extended arms. Pull yourself up, lower under control.

✓ Hands a bit over shoulder width apart.

✓ Feet on the floor or, more difficult, on a chair.

✗ Don't be a limp noodle, keep your body straight.

( ) You can also do this exercise hanging from rings or a suspension trainer.

Too easy ?

- Hold the top position for a moment.
- Go down slowly.
- Go up with both hands, down with one.
- Hang from a bar or two parallel bars. Scrunch or lift your legs to move your center of gravity, then pull yourself up. This is called a pull-up row, and gives a delicious pump. See below.

Air Squat

Air Squat

Muscles: Quadriceps, glutes

Gear: Floor

Take the time to learn this key movement. Unfortunately, many of us have forgotten how to squat properly. For perfect squatting form, look at a toddler (lamb chop optional).

Squat down under control. To always keep the center of gravity over the middle of your feet, your hip will move back, and your knees forward at the same time.

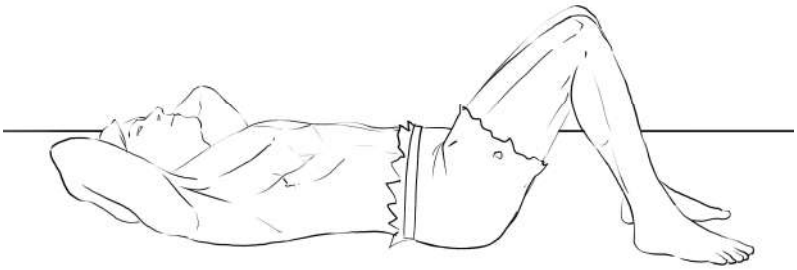
While in the deep squat position, your muscles should remain under some tension. Your hips should be lower than your knee. Your torso will lean forward a bit. Your lower back should *not* round.

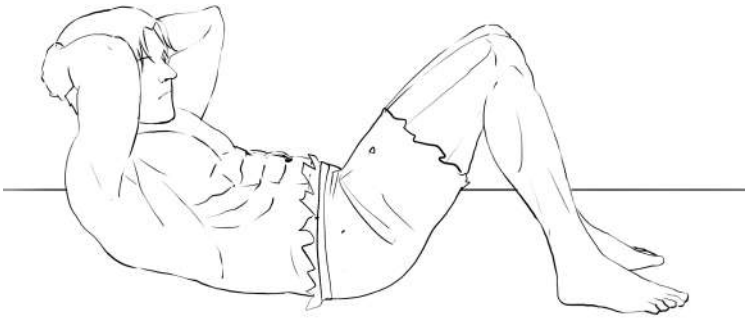
Stand up with the united force of your hips and quads. Chest and hips should rise at the same rate. Otherwise you will lean forward too much, and put unnecessary load on your back.

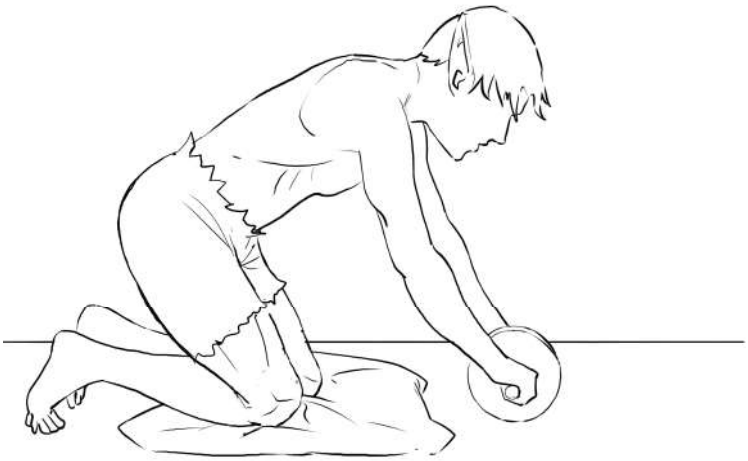
- ✓ Feet about shoulder width apart, at the same angle as your humerus bone (otherwise knees or ankles have to twist).
- ✓ Look forward.
- ✗ Your knees must not cave in – push them out a little.
- ✗ I don't like to fully lock out my knees at the top.
- ✓ Lose the shoes and socks – let your toes spread out.
- ✓ Your heel must always remain on the ground.
- ✓ Your feet are like tripods, with your weight on your heels and the balls of the big and small toes.
- ✓ Keep a neutral back, not rounded, hyperextended or hunched.
- ✗ Don't let your shoulders roll forward.
- ✓ Hold your hands in front of you for easier balance at the bottom.
- ✓ Try to sit in the squat position for a long time.
- ✓ Air squats are a good warm-up, e.g. 3 x 20 reps.
- ( ) I like to come out of the squat explosively – this helps build power at the bottom position.
- ( ) Strong Goblins can do one-legged "pistol squats", but I am wary of them – rounded back, sideways loading of the hips.

☞ Read "The Squat Bible" by Dr. Aaron Horschig for everything about squats.

Abdominals







Abdominals

Muscles: Abdominals

Gear: Bed or mat, optional ab roller

Abs are chiseled in the kitchen.

Seriously – if you want a nice "six pack", your nutrition is more important than endless situps or crunches. You can grow abs like a ninja turtle, but they will only show when you are lean.

If you do heavy carries, deadlifts and squats, your abs won't need a lot of direct training or a large variety of exercises.

The rectus abdominis muscle does just one thing – pull between the bottom of your rib cage and your pubic bone to stabilize your core, or to round your spine. Take care to contract your abs, not just your hip flexors.

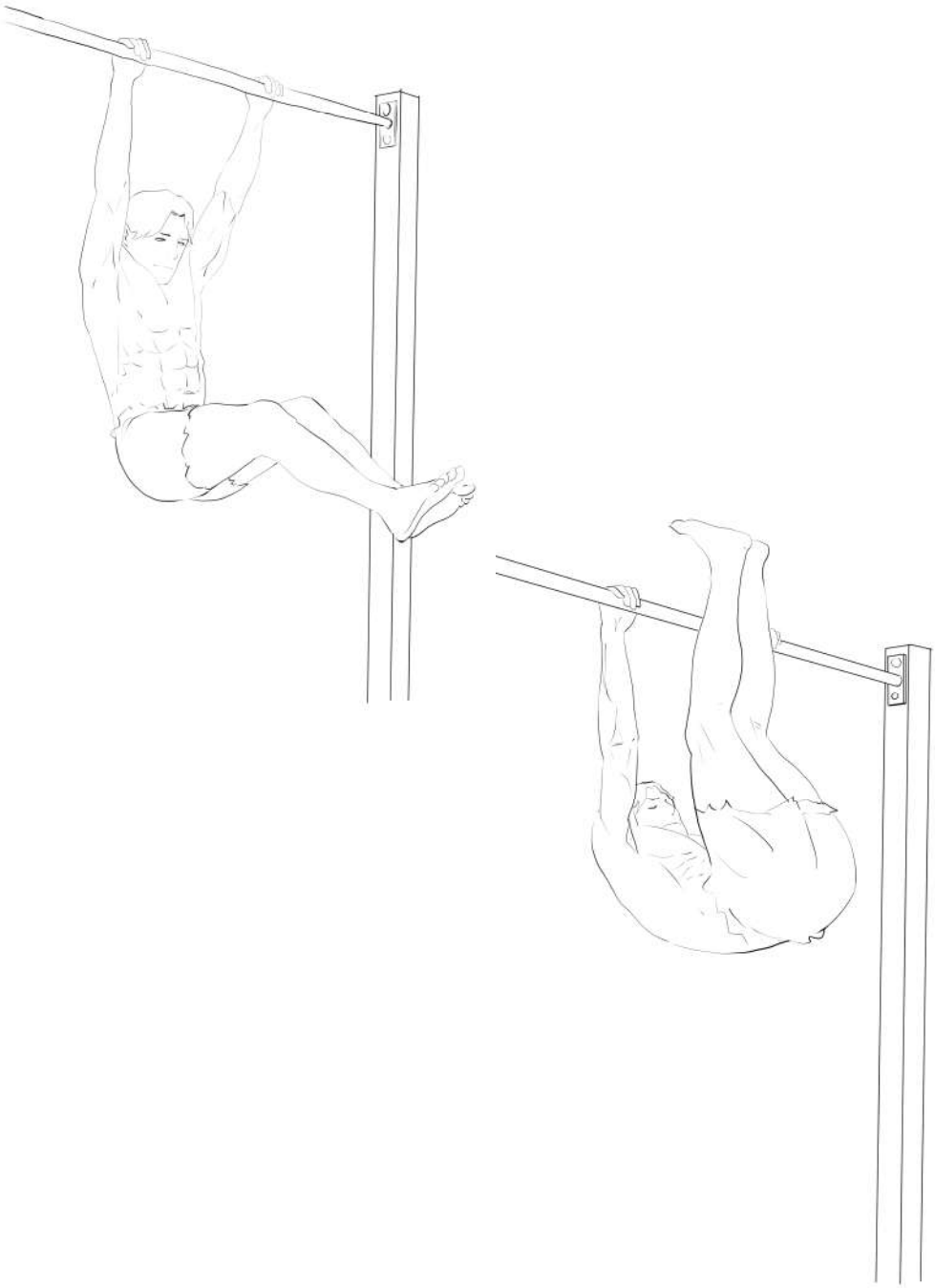
You can do **crunches** while lying on your bed or a mat. Contract your abs to pull up your upper body. A small range of motion is enough. I like to alternate straight and sideways crunches. Hold your hands behind your head or in front of your chest. If you dig in your heels a bit, your hamstrings will keep your hip flexors from crashing the party.

Cable crunches can be done with a pulley and two handles. Go down on your knees, pull down the handles. Focus on letting your abs round your spine a little bit at the end of the movement.

Try **stomach vacuums** – exhale and let your transversus abdominis muscle slim down your waist as far as it goes.

The **ab roller** looks like fun, but your abs should stop giggling rather quickly. Get on your knees (mat or pillow recommended) and hold the roller with your hands. Start folded together, carefully roll out until your nose hits the ~~grindstone~~ floor. If you are strong enough, let your abs pull you back together. If your abs are still laughing at you, get on your toes rather than on your knees.

Hanging Leg Raise



Hanging Leg Raise

Muscles: Abdominals, hip flexors, lats, shoulder mobility

Gear: Pull-up bar

Hang from the pull-up bar, hands with palms facing away from you, a bit more than shoulder width apart. Pull your knees, or (harder) your extended leg up.

If you can, initiate the movement with your abs.

You can pull your knee up to horizontal, pull your extended leg up to horizontal, or raise your leg until your toes touch the bar.

Try not to swing with your hips.

Bodyweight Program

Try this program two to three times per week. Start with fewer exercises, and add more as you master new ones. The farmer's walk (see next section) would be a good addition.

air squats or goblet squats
push-ups
dips
pull-ups / chin-ups
inverted or pull-up row
abdominals

Loaded Carries

Carrying heavy loads is a very simple, yet strenous exercise. It will stress most muscles of your body at the same time, and get you warm in no time flat.

Farm Goblin's Walk

Farm Goblin's Walk

Muscles: Most of them

Gear: "Heavy things"

This exercise is commonly known as the Farmer's Walk or Farmer's Carry.

Farm Goblins already know the drill. Pick up two heavy buckets filled to the brim with a fragrant, steaming pile of you-know-what, and carry them wherever they are supposed to go.

Pick the weights up, walk for a set distance, or as far as you can. Then set the weights back down. Rest a bit, then carry on.

✓ Stand between the weights.

✓ Don't bend down - squat down to lift them up. Don't jerk.

✓ Despite the heavy weight in your hands, stand as tall and proud as a little Goblin possibly can.

✓ Look forward, not down.

✓ **Keep your back straight at all times !**

✓ **Keep your arms straight !**

Your hands and arms are just hooks to hold the weight.

× **Don't let your shoulders round forward.**

× **Don't shrug your shoulders** – waste of energy.

✓ Take small, smooth ninja steps.

× The more you bounce, the harder it will be to hold the weights.

Your grip will probably give out first. Plan ahead where you can put down the weights without messing up your cave floor.

You can progress to heavy weights on this exercise. Aim to carry half your bodyweight in each hand. Strongmen (Nordic Battle Trolls in disguise ?) walk with 150 kg in each hand.

Suitcase carry – carry a weight on one side only. As your body has to stabilize, you cannot carry as much weight. This will train your obliques.

Fire Goblin's Carry

Fire Goblin's Carry

Muscles: Most of them

Gear: A friend

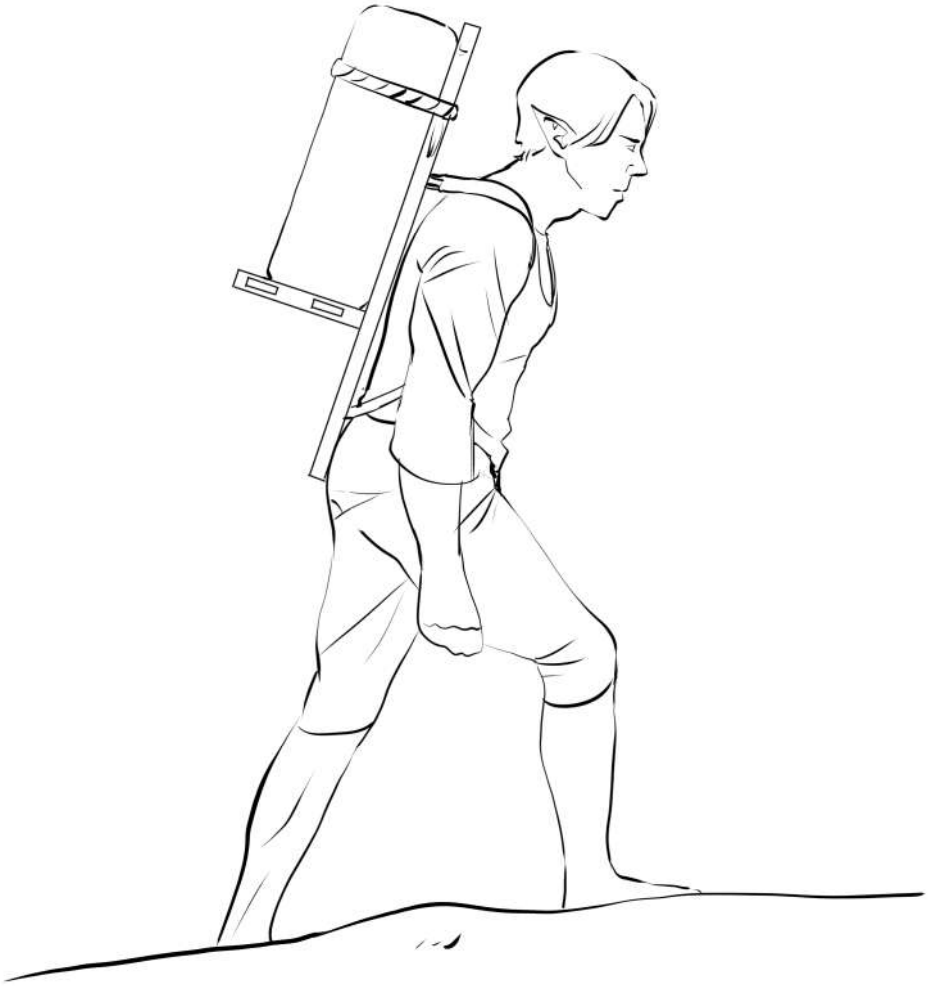
Fire Goblins have to be strong so they can carry victims to safety.

This exercise is more widely known as the Fireman's Carry. It is very simple – carry a friend "piggyback" or slung over your shoulders as far as you can.

- ✓ **Keep your back straight.**
- ✓ Piggyback is fairly easy, carrying somebody on your shoulders more difficult.
- ✓ Bonus points for climbing stairs.
- ✓ Carry feet first to avoid hitting your friend's head somewhere, and have one or both hands free.
- Avoid going down stairs with added load. You don't want to go down "ass over teakettle".
- The strong Goblins of yore carried the take of their hunt, wild pigs or bulls (dead or alive) on their shoulders. At least that's what the legend says. Please take a shower afterwards.

If you both weigh about the same, you can have a little competition. Take turns carrying each other as far as you can. Whoever makes it further gets a point. Repeat until you collapse into a Heap of Giggling Goblins.

Rucking



Rucking

Muscles: Legs, glutes, core, traps

Gear: Heavy backpack, music IV

Rucking is a workout by itself. Just take a brisk walk with a heavy load.

A 40 kg wheel of cheese won't fit in my refrigerator or my calorie budget. I carry some less nutritious concrete pavers in a backpack instead. I pad them with an old towel to protect the pack and my back. A sturdy bag of sand or gravel will also work.

✓ **Keep your back straight.** To maintain your balance when carrying a heavy load, you will lean forward, but your low back must not round. Bend at the hip.

✓ Keep your shoulders straight, resist the pull of the load.

✖ **Don't pull your shoulders forward or shrug them, or hold the straps with your hands.**

This wastes energy and makes it harder to breathe.

Be careful going down stairs or steep grades. Soft knees - let your quads do the work.

Other writers recommend starting with 10% of your bodyweight. Your school bag probably weighs more than that, so you can use it as a starting point. When the load gets heavy, your traps will feel it. Embrace the suck.

Sherpas in Nepal often carry more than their own weight on rugged mountain paths. They hold their heavy burden in a basket hanging from a strap around their forehead. This takes a strong neck, but it is easier to breathe thin mountain air or move your arms than with a backpack this heavy.

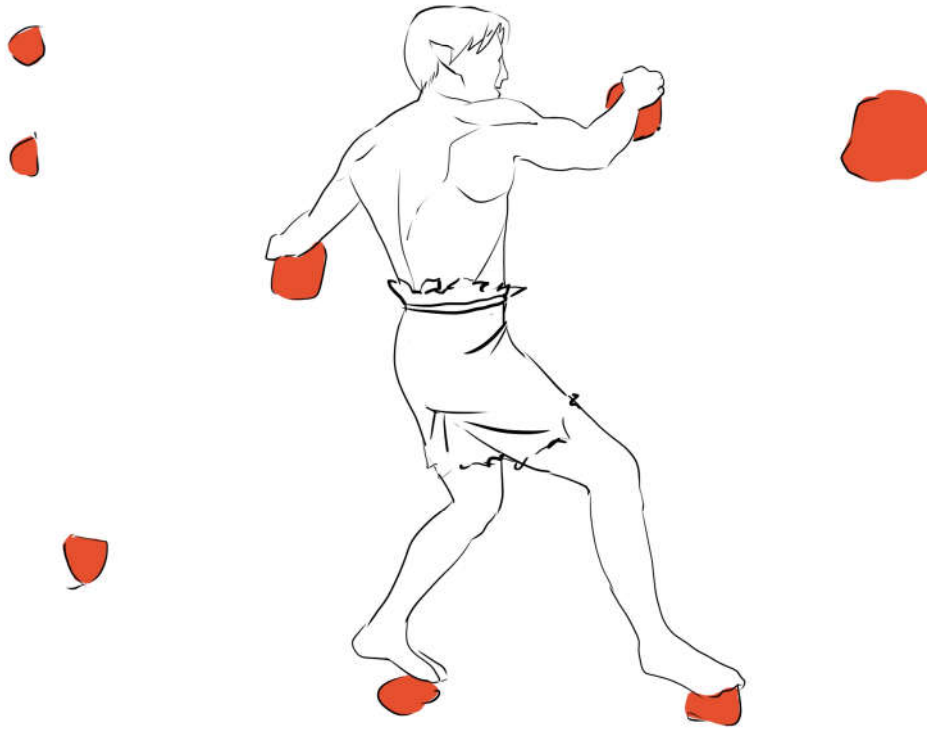
Grip Training

Your forearms should get plenty of work from heavy carries, pull-ups, Romanian deadlifts, dumbbell squats and rows.

If you want to train your fingers and grip, try the following exercises:

- Hang from a pull-up bar as long as you can. When that gets easy, hang from kitchen towels, or from one hand.
- Do fingertip pushups.
- Carry a heavy bag by the fabric rather than the handles.
- Knead power putty.
- Climb or boulder until your fingers smoke.

☞ For more inspiration, read "Convict Conditioning 2" by Paul "Coach" Wade.



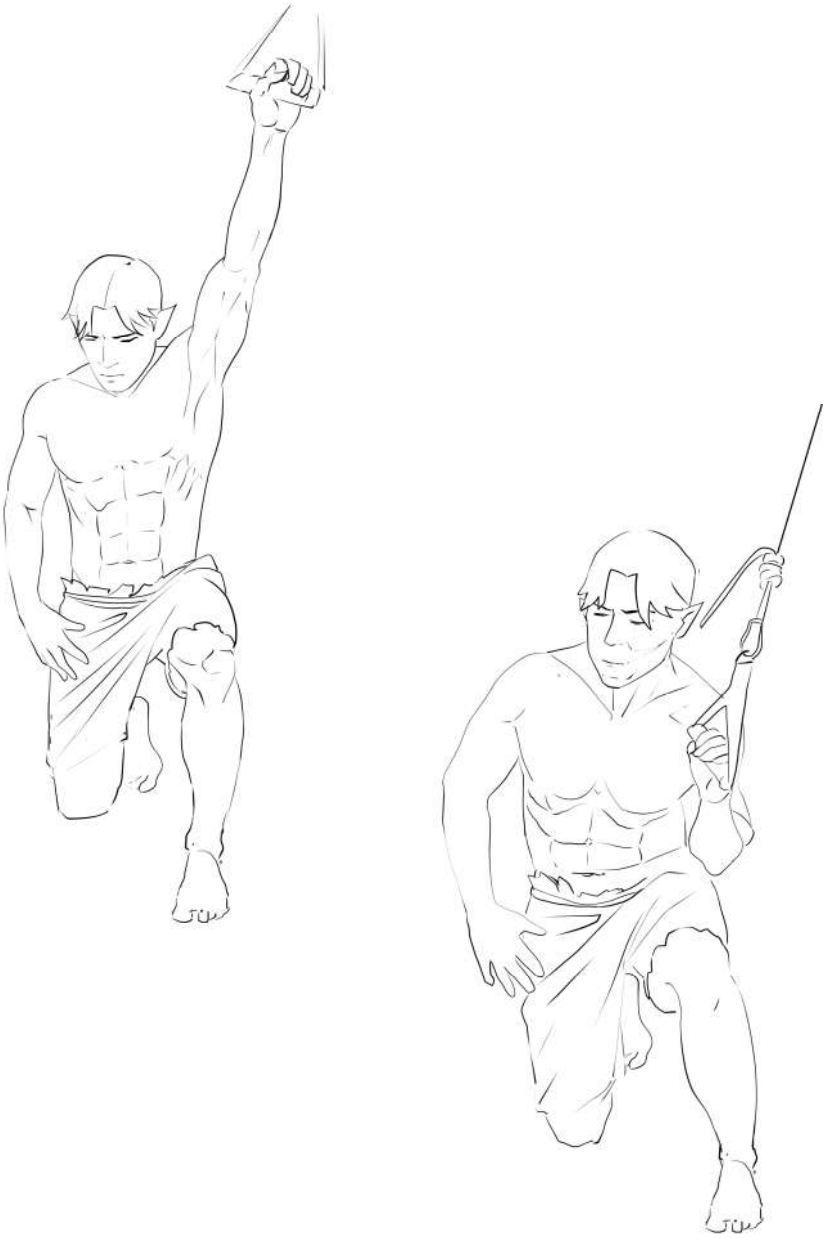
Back and Biceps

Just because you can't easily see your back, doesn't mean that you can neglect it. A good balance of pushing (chest) and pulling (back) exercises is important to keep your shoulders happy, and will do wonders for your posture.

Many back exercises also stress the biceps. I like to train biceps after back work. If you do enough chin-ups, you can skip direct biceps work.

49	**Pull-up**	bodyweight
51	**Chin-up**	bodyweight
53	**Inverted Row**	bodyweight
71	**Lat Pulldown**	basic
73	**Dumbbell Row**	power
75	**Pull-over**	active stretch
77	**Biceps Curl**	power
79	**Dumbbell Curls**	basic
81	**Preacher Curls**	basic
83	**Incline Curls**	basic

Lat Pulldown



Lat Pulldown

Muscles: Lats

Gear: Pulley, rope, handle, weights

Lat pulldowns are good when you are not yet strong enough to do proper pull-ups or chin-ups.

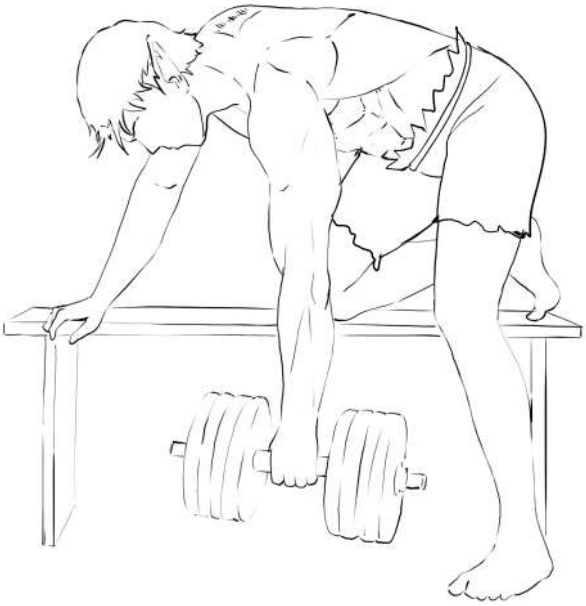
At the gym pulldowns are usually done with a wide handle, both sides at once. The machines have a pad to put your legs under, so you can lift heavy without going airborne.

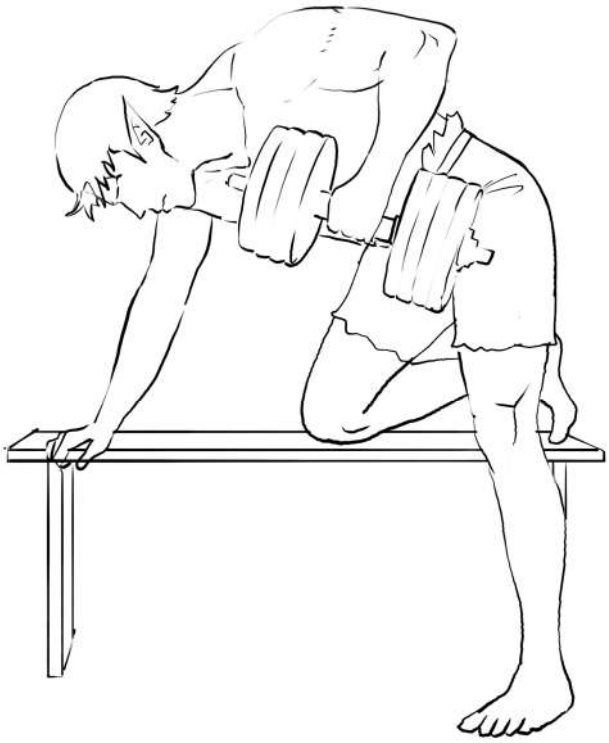
At home train them one side at a time. By changing the angle, you can better target your lats.

Get down in a slightly sideways half-kneeling position. Start high - your lats should feel a stretch. Pull down the handle. Let your lats do the work, not your biceps.

Hold the top position for an active stretch.

Dumbbell Row





Dumbbell Row

Muscles: Lats, upper back, core, grip

Gear: Flat bench, dumbbell

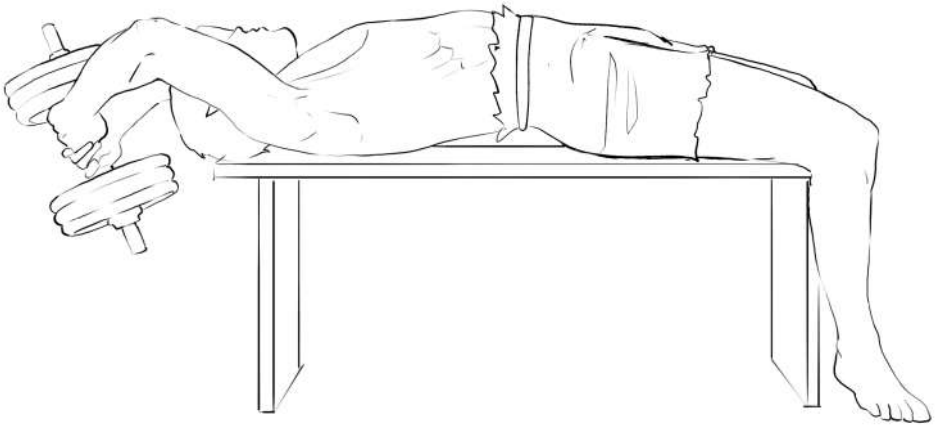
This excellent exercise will not just train your back, but also core stability and grip. Imagine trying to start a monster lawnmower.

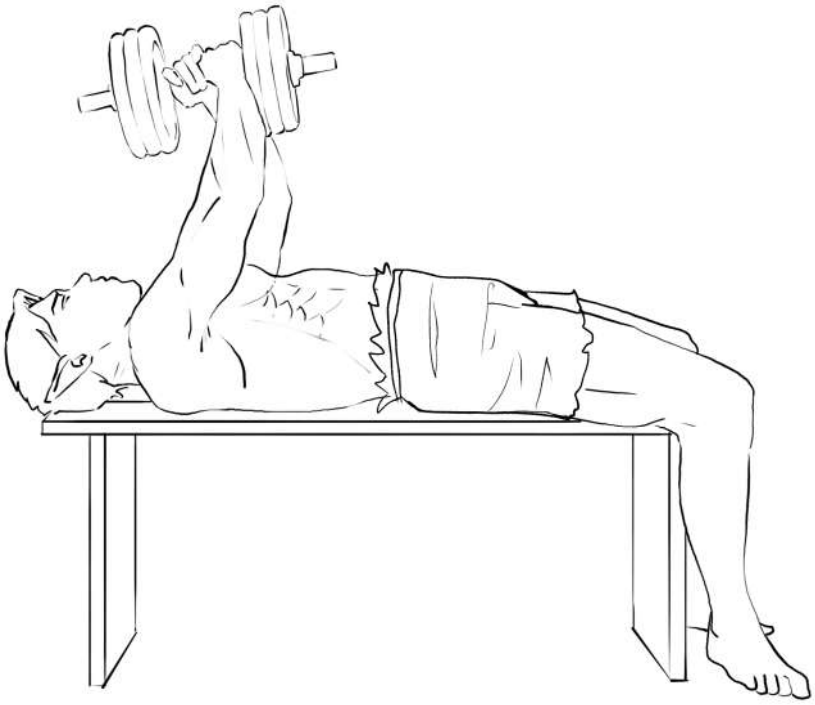
Kneel down on the bench with your right leg. Brace your right arm on the bench. Your left foot is on the floor. Your left arm is extended straight down and holds the weight. Pull the dumbbell up and slightly back, until it hits your chest. Lower under control.

Turn around and attack the right side.

- ✓ Your forearms always hang straight down, and your wrists remains straight. Your hands and forearms are just hooks to hold the weight.
- ✓ Keep your elbows close to your torso.
- ✓ Power should come from your lats and your upper back, not leg drive or torso rotation.
- Let your biceps relax – the weight is too heavy.
- ✓ Keep your back as straight as possible.
- ✓ I pull up the weight with a bit of momentum, and try to mash it into my chest.
- **Always lower the weight under control !**
- **Don't overextend your elbow.**
- ✓ Full range - at the bottom you should feel a stretch.
- **Give your body time to adapt to heavy weights.** My record is about 75% of my bodyweight.

Pull-Over





Pull-Over

Muscles: Lats, chest, shoulder mobility

Gear: Flat bench, dumbbell

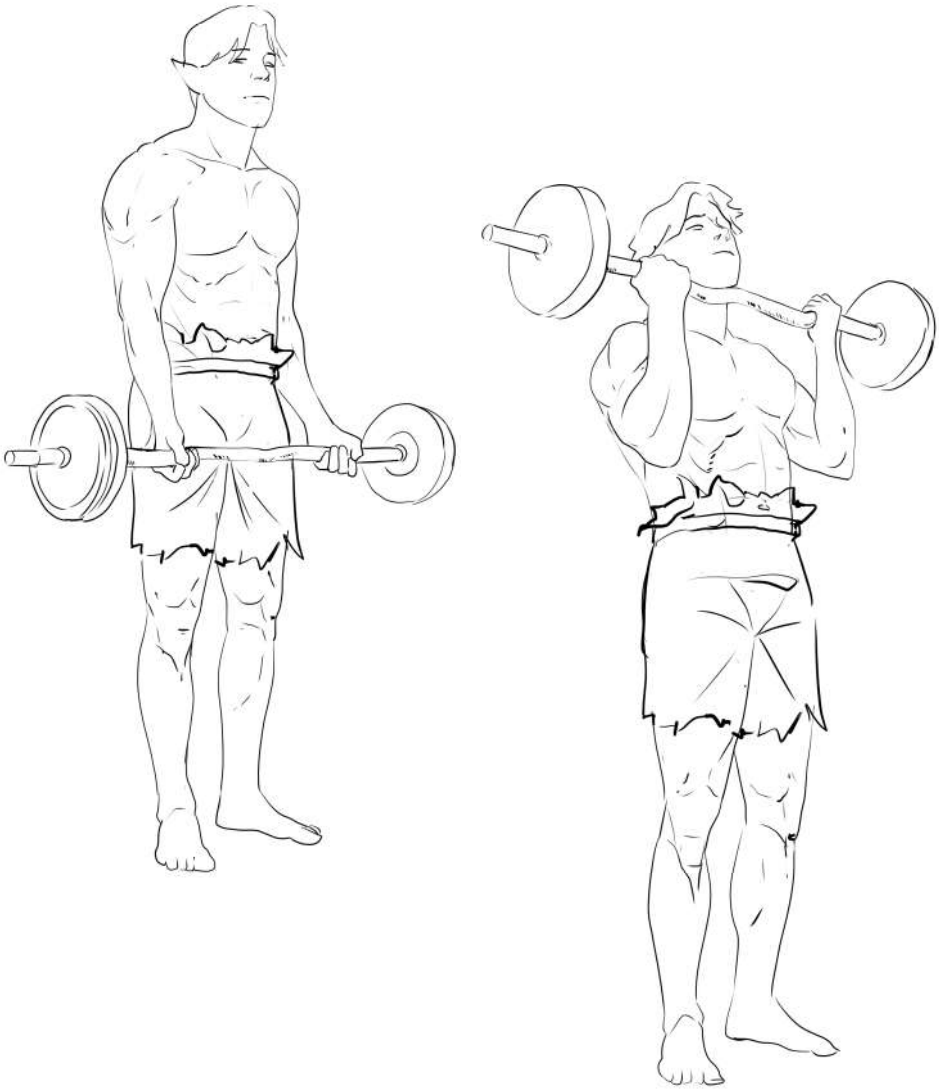
I like this old-school exercise.

Sit down on the bench, place the dumbbell on one thigh. Hold the dumbbell with both hands. I use a stacked grip. Lie down and lift the weight over your chest. Carefully lower the weight behind your head in a wide arc, until you feel a good stretch. Lift back up until your arms are near vertical.

- **Be careful about your shoulders.**

  Don't do this exercise if you are not flexible enough.
- The locking collars of your dumbbell must be 100% reliable – you are lifting the weight over your head !
- ✓ For the stacked grip, alternate left and right hand on top to avoid imbalances.
- ✓ Clamp the bench between your knees for better bracing if possible.
- Most people do this exercise with a goblet style grip. My wrists object.
- Some lie down sideways across the bench for a better stretch of the ribcage. I find this setup awkward and painful.
- ✓ This exercise could help expand your ribcage, especially when your skeleton is still growing. Try to do it immediately after a heavy exercise that got you breathing intensely.

Biceps Curls



Biceps Curls

Muscles: Biceps

Gear: EZ curl bar, weights

Find the most comfortable hand position for you. Pick up the loaded bar. Start with your arms almost straight, with the elbows by your side. Curl up the weight, lower under control.

- ✓ Your biceps should work, not your hips.
- ✓ Your elbows should only move at the top of the movement, if at all.
- ✓ Keep your wrists straight.
- ✓ Stick to moderate weights, do more reps instead.
- ( ) Wrists permitting, you can also use a straight bar.

Dumbbell Curls

Dumbbell Curls

Muscles: Biceps

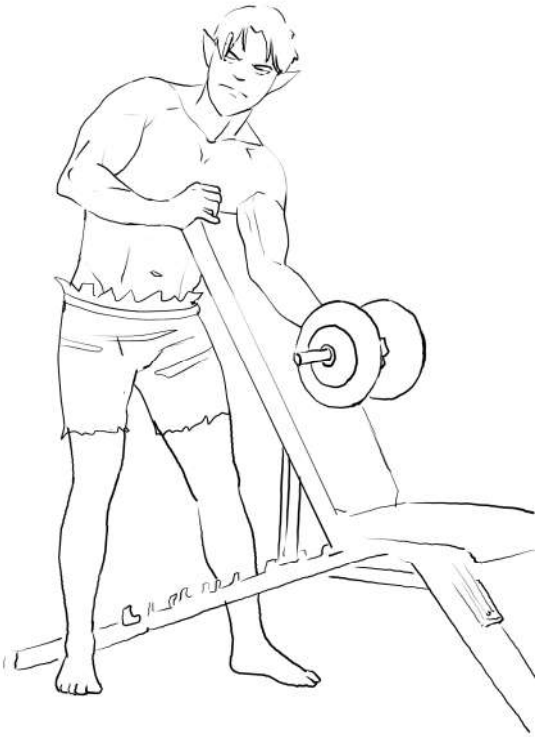
Gear: Dumbbells

Grab the dumbbells and stand up. Both arms should be nearly straight, with your palms facing in. Alternating the left and right hand, curl up the weight on one side, and simultaneously lower the weight on the other side.

Turn your hand out as you go up. At the bottom your hand will be "thumbs up", at the top "thumbs out".

- ✓ For a better contraction, hold the dumbbells off center, with your thumb touching the weight plate.
- ✓ Bonus points for a squeeze at the top.
- ✓ Keep your wrists straight.
- ✓ Keep your upper body tight to minimize cheating.
- ✓ Minimize elbow movement at the bottom.
- () A similar exercise is the **hammer curl**, where your hands always remain "thumbs up".

Preacher Curls



Preacher Curls

Muscles: Biceps

Gear: Adjustable bench, dumbbell

At the gym this exercise is done on a special bench with a straight or EZ-curl bar. Home benches are too narrow, so we train each arm separately with dumbbells.

Set the back of your bench to a high incline angle. Stand behind the bench and rest your upper arm on the bench. Lower the weight until your arm is almost straight, then curl it back up. Do one arm at a time, alternate sets for the left and right arm.

☠ **Please note the "almost straight" position at the bottom. In full extension, your biceps is at a mechanical disadvantage. Heavy barbell preacher curls can be risky. See the section on biomechanics for more detail. If in doubt, reduce the range of motion.**

When training with dumbbells, the diameter of the dumbbell should limit the ROM to a safe range.

Incline Curls

Incline Curls

Muscles: Biceps

Gear: Adjustable bench, dumbbells

This curl variation lets you train the stretched position safely.

Set the back of the bench to about a 45 degree angle. Sit down on the bench and rest the weights on your thighs. Carefully lower the weights to the bottom position. Curl up the weight until your elbow is bent about 90 degrees, lower under control.

- ✓ Try to minimize elbow movement, but leave some "give" at the bottom.
- ✓ To keep constant tension, lift until your elbow is about at a right angle. If you go higher, your forearm will be nearly vertical at the top, with zero loading on your biceps.
- ✓ Keep your wrists straight.
- ( ) You can hold your hands thumbs up like hammer curls, or rotate them to palms up like regular dumbbell curls.

Breath

Strong lungs are vital for your health and performance.

Your lungs pull in oxygen (O_2) from the ambient air, and expel carbon dioxide (CO_2) generated by your metabolism.

Since breathing is so vital, it continues without conscious control.

The lungs expand to inhale, and are compressed to exhale. This is driven by a number of muscles. In particular, the diaphragm pushes down on the abdominal cavity for belly breathing. The intercostal muscles on the inside and outside of your ribs (together with many others) expand and contract your rib cage for chest breathing.

When lifting weights, you can help brace your core and lower back by keeping your lungs under pressure. The diaphragm pushes down on the abdominal cavity, and helps the abdominal and back muscles keep your core tight.

Pay attention to your breath when you have some time. Many people take quick, but shallow breaths. Try to breathe slowly. For example: inhale slowly – wait – exhale slowly – wait – repeat.

Your normal breathing should always be through the nose. The nose filters, moisturises and prewarms the air you breathe. Breathing through the mouth should be an exception, for example when you exhale against pressure while lifting a heavy weight.

☠ **Mouth breathing can lead to poor development of your airways and jaw, sinus problems, crowded teeth, snoring and sleep apnea. Learn to breathe through your nose, and consider mouth taping at night if necessary.**

Native Americans were particularly insistent on nose breathing. One exercise they did was running while keeping some water in the mouth. This forces breathing through the nose, and helps avoids excessive water loss while running through desert heat.

☞ Please see the book website for references.

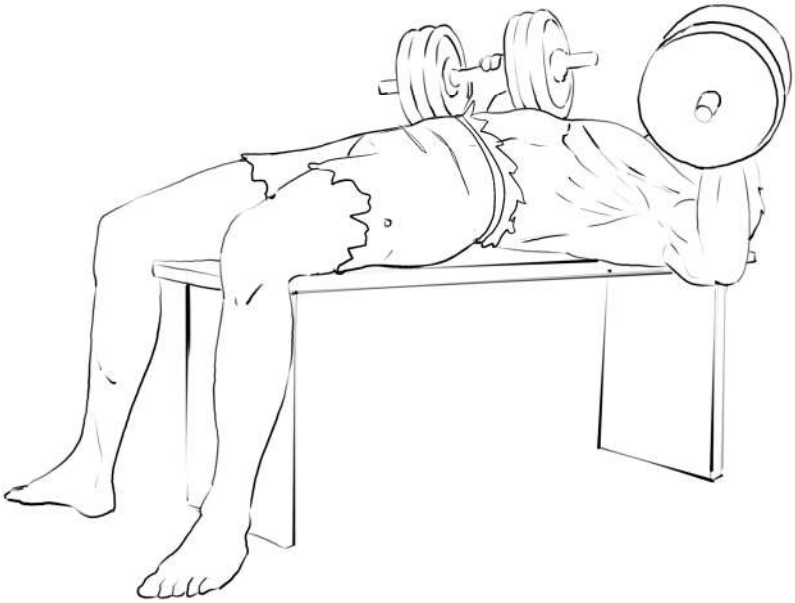
Chest and Triceps

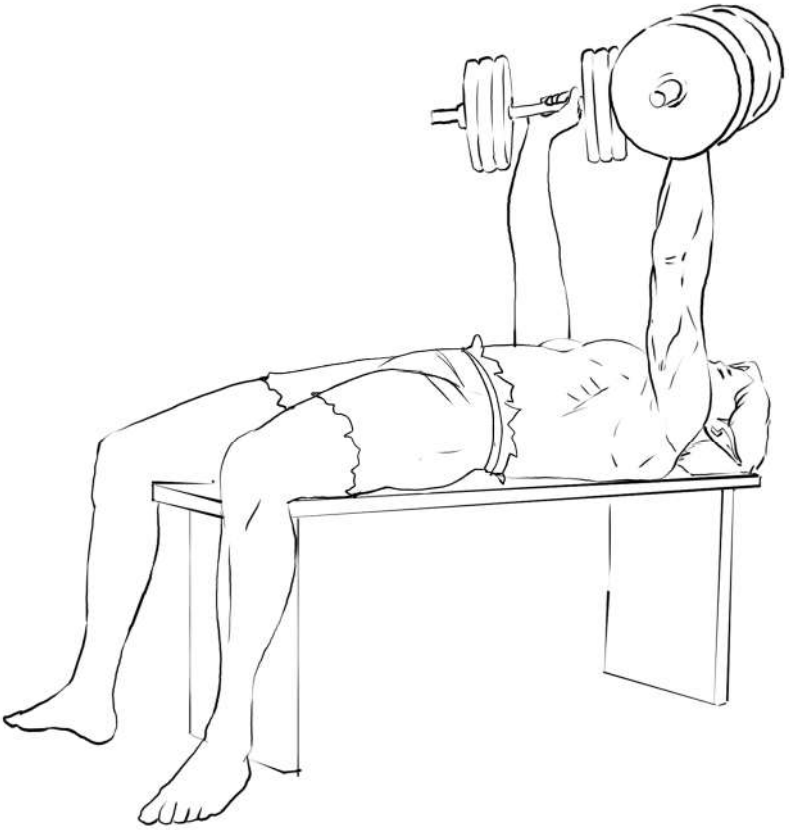
Power Goblins strive for an impressive, armor-plated chest.

The triceps straighten the elbows, and are directly involved in most pushing exercises. They are actually bigger than the biceps - don't neglect them if you want "big pipes". You can skip direct triceps work if you do enough chest exercises such as bench presses, push-ups and dips.

45	**Pushups**	bodyweight
47	**Dips**	bodyweight
87	**Flat Bench Press**	basic / power
89	**Incline Bench Press**	basic
91	**Dumbbell Flyes**	basic
93	**Triceps Kickbacks**	basic
95	**Lying Triceps Extension**	power
97	**Triceps Pushdown**	basic

Flat Bench Press





Flat Bench Press

Muscles: Chest, triceps

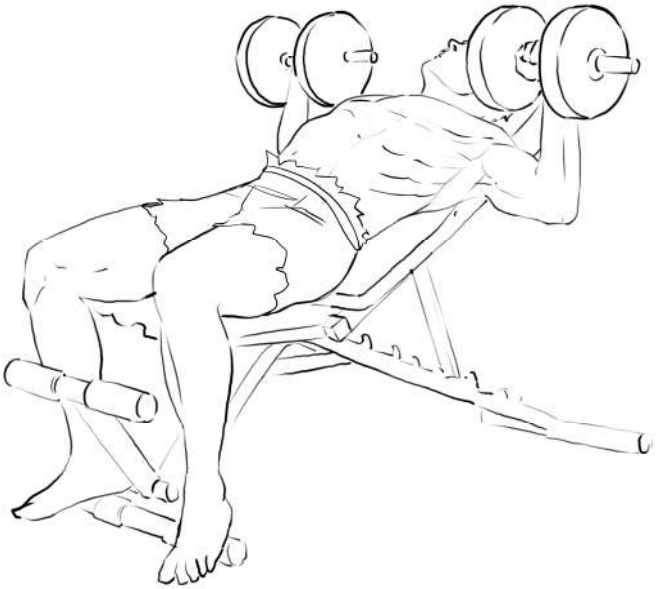
Gear: Flat bench, dumbbells

At the gym, the barbell bench press is done on a special bench. If you fail to lift the weight, and don't have a good spotter, you could get pinned down. Not a nice way to end your young, innocent Goblin life. Start with the dumbbell bench press instead – you can drop the weight if you must.

Sit down on the bench. Place the weights on your thighs so that your arms are nearly extended. Lift your legs with the weights as you lie down on the bench. Lower the dumbbells under control, until your elbows are around shoulder height, then press them up until your arms are nearly extended.

- ✓ Keep your elbows angled out slightly from your torso, but *not* straight out – you want to train your chest, not your shoulders. Hold your arms like you would to punch somebody.
- ✓ Keep your wrists straight, forearms always vertical above the elbow. Otherwise you will struggle to stabilise the weights.
- ✓ Try holding the dumbbell a bit off center (thumb nearly touching the inside) – I find this easier on the wrists. No need to overgrip.
- ✓ Let your hands and the dumbbells turn to their natural orientation.
- ✓ Feet on the floor. Keep your behind on the bench.
- ✓ Repeatable movement, not "all over creation".
- ✗ I don't like to lock out my elbows completely.
- ✓ End the set while you can lower the weight safely.
- ✗ **Don't drop the weights at the end of the set.** This is bad for the dumbbells and your cave floor, and can be risky for your shoulders. Lift your legs, let your extended arms move forward until the weights touch the legs, then let gravity bring you back up to the sitting position.
- ( ) You can arch your upper back a bit.
- ( ) Bench press at a decline angle shifts the focus. If your bench does not allow a decline angle, place a block or weight plates under the foot end of your bench. Be careful, controlling dumbbells on a decline can be tricky.

Incline Bench Press



Incline Bench Press

Muscles: Chest, triceps, front delts

Gear: Adjustable bench, dumbbells

This exercise is similar to the flat bench press, but the back of the bench is placed at an angle. With the incline, more emphasis is placed on your upper chest and the front of your shoulders.

Again, let your legs help you get the weights into the starting position, one side at a time. Lower the dumbbells until you feel a light stretch in your chest. Lift up until your arms are nearly extended.

- ✓ The focus should be on your chest, not on the shoulder. Try different angles to find your sweet spot.
- ✓ Don't set the bench angle too high. I like around 30 degrees.
- ✓ If your butt wants to lift off the bench, try a lower angle or less weight.
- ✓ Keep your wrists straight, forearms always vertical above the elbow. Otherwise you will struggle to stabilise the weights.
- ✓ Try holding the dumbbell a bit off center (thumb nearly touching the inside) – I find this easier on the wrists. No need to overgrip.
- ✓ At the end of the set, carefully place the weights on your thighs.
- ✗ Don't overextend your elbows.

Dumbbell Flyes

Dumbbell Flyes

Muscles: Chest

Gear: Flat bench, dumbbells

Lift the weights into position like for the flat bench press. Start at the top, with your arms almost extended. Lower your arms **slowly** and carefully, until your chest feels a light stretch. Lift your arms back up.

Be careful in the lower, stretched position.

Your chest is at a mechanical disadvantage there.

✓ Focus on contracting and squeezing your chest on the way up.

✓ I hold my arms tilted a little towards my feet. This pre-tension offloads my shoulders. Small angle, big difference.

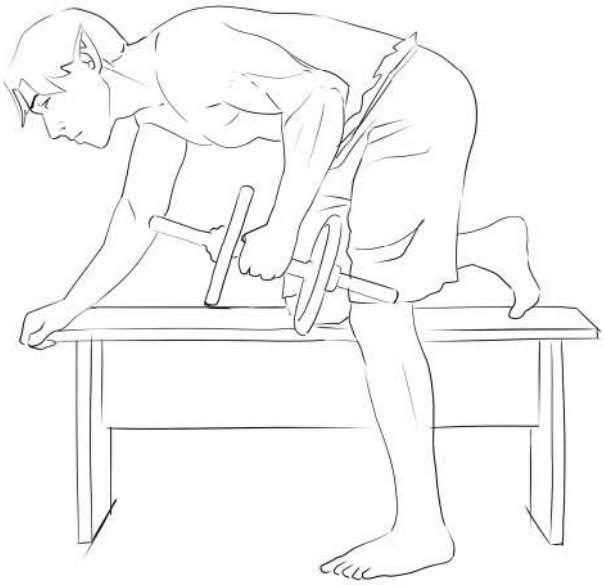
✓ Keep your elbows locked at a slight angle.

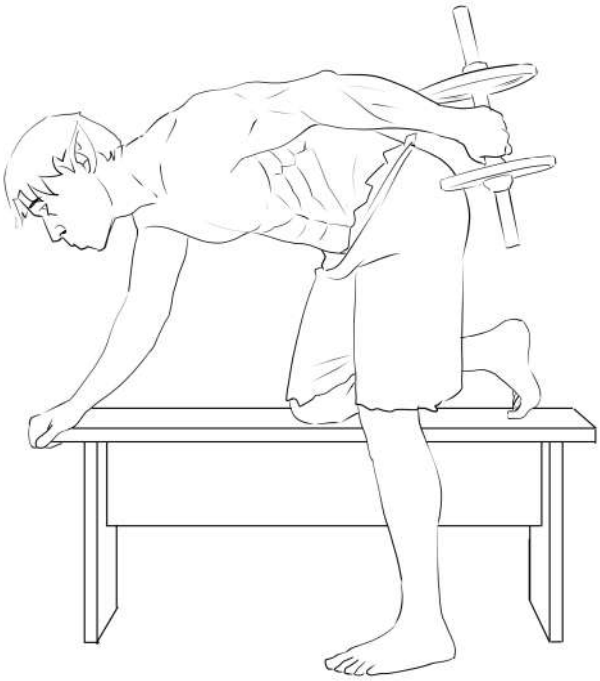
✓ Pull your shoulders back, don't let them roll forward.

✓ Don't go too heavy !

You can do an active stretch with a light weight. Hold the bottom position as long and as deep as you can. Do this stretch last, after all other chest exercises.

Triceps Kickbacks





Triceps Kickbacks

Muscles: Triceps

Gear: Flat bench, dumbbells

Kneel with your right leg on the bench, stand normally with your left foot. Brace your right arm on the bench. Hold the weight in your left hand. Your upper arm should be nearly horizontal. At the start the forearm hangs down vertically.

Let the triceps extend the arm and lift the weight until your arm is almost straight, then lower under control.

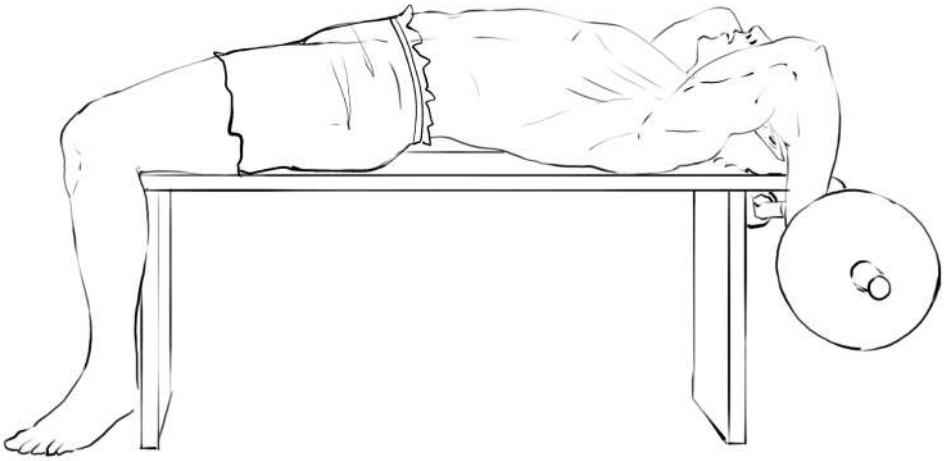
✓ Bonus points for a squeeze at the top.

✗ Don't overextend your elbows.

✗ **Don't swing !**

Your arm should stop in the vertical position, and forcefully change direction there. This way, your triceps will have to work at an angle that would normally be zero load.

Lying Triceps Extension



Lying Triceps Extension

Muscles: Triceps, lats

Gear: Flat bench, EZ curl bar, weights

Sit down on a bench with the loaded EZ curl bar on your thighs. Push up the bar with your legs while lying down, keeping the arms straight.

Bring the bar down behind your head, similar to a pull-over. Your elbows will be bent in this position. Push the bar back up, with power coming from your triceps and lats.

✓ Clamp the bench between your knees for better bracing if possible.

✓ This exercise is done with a bit of momentum !

() A similar exercise is lovingly called skullcrushers: The upper arm remains vertical, and the bar goes down close to your forehead. I find this harder on the elbows, and not as effective.

Triceps Pushdown

Triceps Pushdown

Muscles: Triceps

Gear: Pulley, rope, weights, handles

At the gym, people usually do this exercise with a rope attachment (too short), or an inverted V-shape handle (my wrists hurt just looking at it).

Your improvised pulley setup will work just fine, if not better. Attach two handles with a longer strap or a bit of rope, so your arms can move independently.

Start with your hands up near your shoulders. Let your triceps push the handles down and slightly out until your arms are almost straight.

- ✓ Keep your elbows near your torso.
- ✓ Your elbows should not move too much, otherwise your lats will take over.
- ✓ Don't stand too close to the pulley. Step back and lean forward for a more effective angle.
- ✓ I prefer a split stance for better balance.
- ✓ You can also do the exercise on your knees, less opportunity for cheating.
- ✓ Keep your wrists straight.
- ✓ Bonus points for a squeeze at the bottom.
- ✗ Don't overextend your elbows.

.

Strong Feet

Goblin feet are strong, flexible and beautiful (maybe a bit dirty at times).

- Don't wear shoes that squish your toes together, no matter how cute or fashionable they may be.
- Stand on a piece of thin cardboard. Draw the contour of your feet, then cut it out. Try to get the cutout into your shoes. Good luck.
- Tell your Big'uns early enough when it is time to buy bigger "galoshes" for your growing feet. They don't have x-ray vision to see how your shoes fit.
- **Go barefoot when you can.**
- Lose the socks. Your feet will be plenty warm without them, even on fairly cold surfaces. Snow feels nice and refreshing (not too long, of course).
- At home, you can train barefoot.
- Most gyms don't allow bare feet, but you could try "deadlift socks" (glorified stopper socks).
- Does your school require shoes ? If they don't let you go barefoot, try open sandals. For example, I like Teva Hurricane XLT 2 sandals, which give plenty of freedom for my toes.
- If you have to wear closed shoes, look into minimal "barefoot shoes" with a wide toe box, thin flexible sole and no heel rise.
- Thick "damping" heels are not necessary, and can influence your running style in a bad way. Your feet, tendons and muscles should provide all the damping you need.
- Try to pick up things with your toes to keep them nimble.
- Don't take running technique for granted. Runners have a surprisingly high injury rate.

☞ Read "Born to Run" by Christopher McDougall to learn about the Tarahumara Indians, the world's best long distance runners.

☞ See the book web site for more reading tips. Keep in mind that changing your running technique takes time and practice.

Legs

Your legs move you around, and should be strong.

Unfortunately, they are not so easy to train effectively in a home gym. Daily movement will be just as important.

100

Goblet Squat

Goblet Squat

Muscles: Quadriceps, hips, core

Gear: Dumbbell

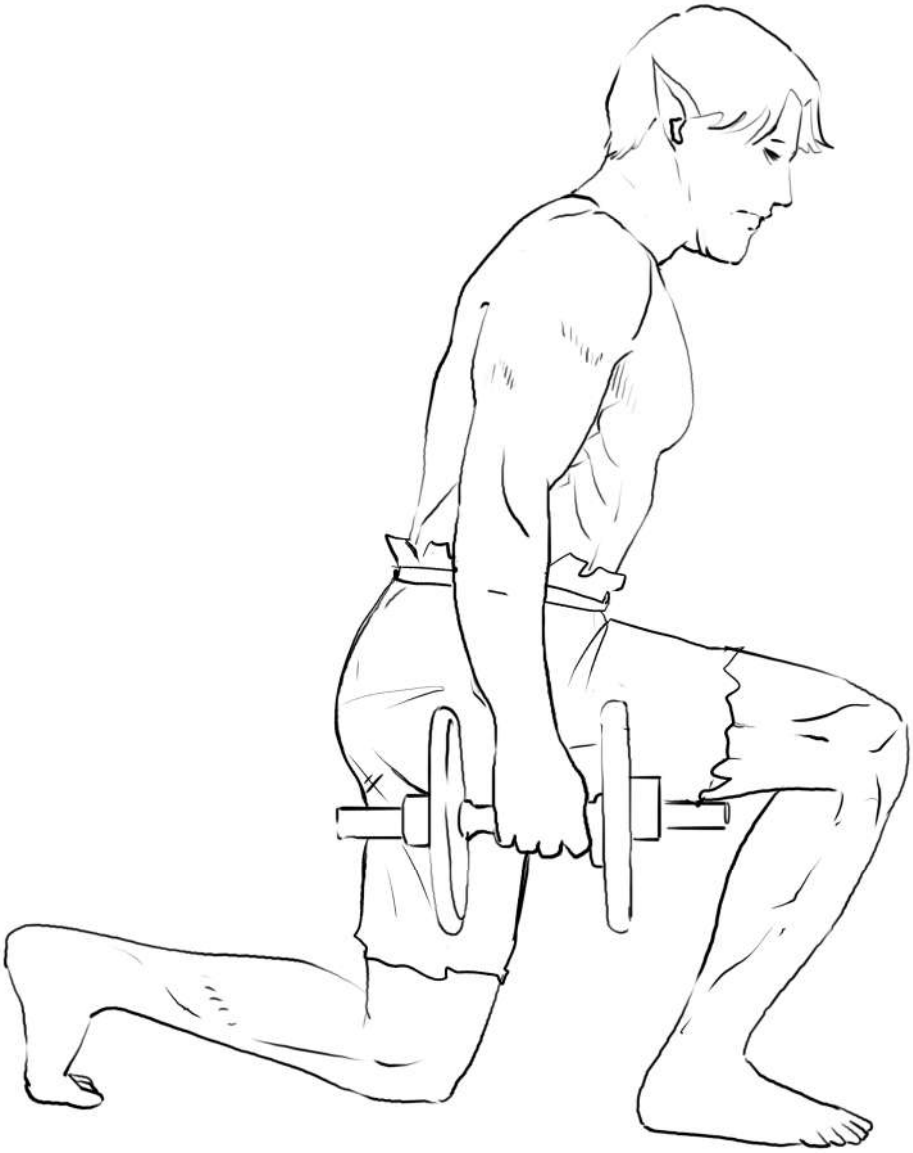
No, not "Goblin Squats"… The basic movement is the same as for air squats. With goblet squats, you add resistance by holding a weight in front of you.

Most people hold a dumbbell vertically like a goblet. This works with welded gym dumbbells, or dumbbells with spin-lock collars (top position shown).

When the locking collar is not 100% secure – the full weight is hanging on **one** of them - hold the dumbbell horizontally (more like a front squat, bottom position shown). I find this variation easier on my wrists. How to get the weight up into position ? Don't try to curl a heavy weight, use a bit of hip bounce and momentum instead.

- ✓ Proud chest, shoulders back, upright spine.
- ✓ Look forward.
- ✓ Keep the weight close to you, or you will fall forward.
- ✓ Push the knees and feet apart
- ✓ Keep your elbows together, they have to go between your knees.
- ✓ Squat down until your elbows touch the **inside** of your knees – "sit down between your legs".
- ✓ Your heels must stay on the floor.
- ✓ Don't let your lower back round.
- ✓ Since it is difficult to hold heavy weights on this exercise, aim for higher reps instead.

Lunge



Lunge

Muscles: Quadriceps, glutes

Gear: Dumbbells, optional mat

Stand with your feet about shoulder width apart. Pick up two dumbbells (start without added weight).

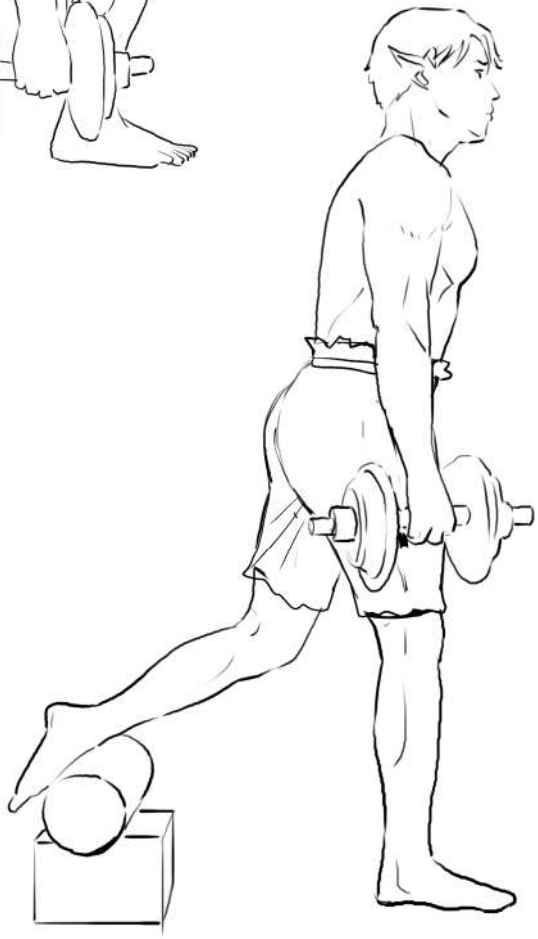
Back step lunge: Step back with one leg, get down on that knee (almost touching the ground). Return to original position.

Front step lunge: Step forward with the leading leg, get down on the back knee. Return to original position.

Walking lunge: Step forward with the leading leg. Get back up, step forward with the other leg.

- ✓ Start without added weight, or just the dumbbell handles. It takes practice to get the step length and balance right.
- ✓ Your upper body should remain nearly upright. Shoulders, hips and back knee are in a straight line.
- ✓ Your leading shin should be nearly vertical.
- ✓ The back heel will lift off the floor.
- ✓ Keep your hip balanced, left and right side should be at the same level.
- ☺ I like to do this exercise on a soft mat to spare my tender knees. Or turn to the next page …

Bulgarian Split Squat



Bulgarian Split Squat

Muscles: Quadriceps, glutes

Gear: Dumbbells, box, foam roller

The split squat requires some balance, and is more difficult than it looks.

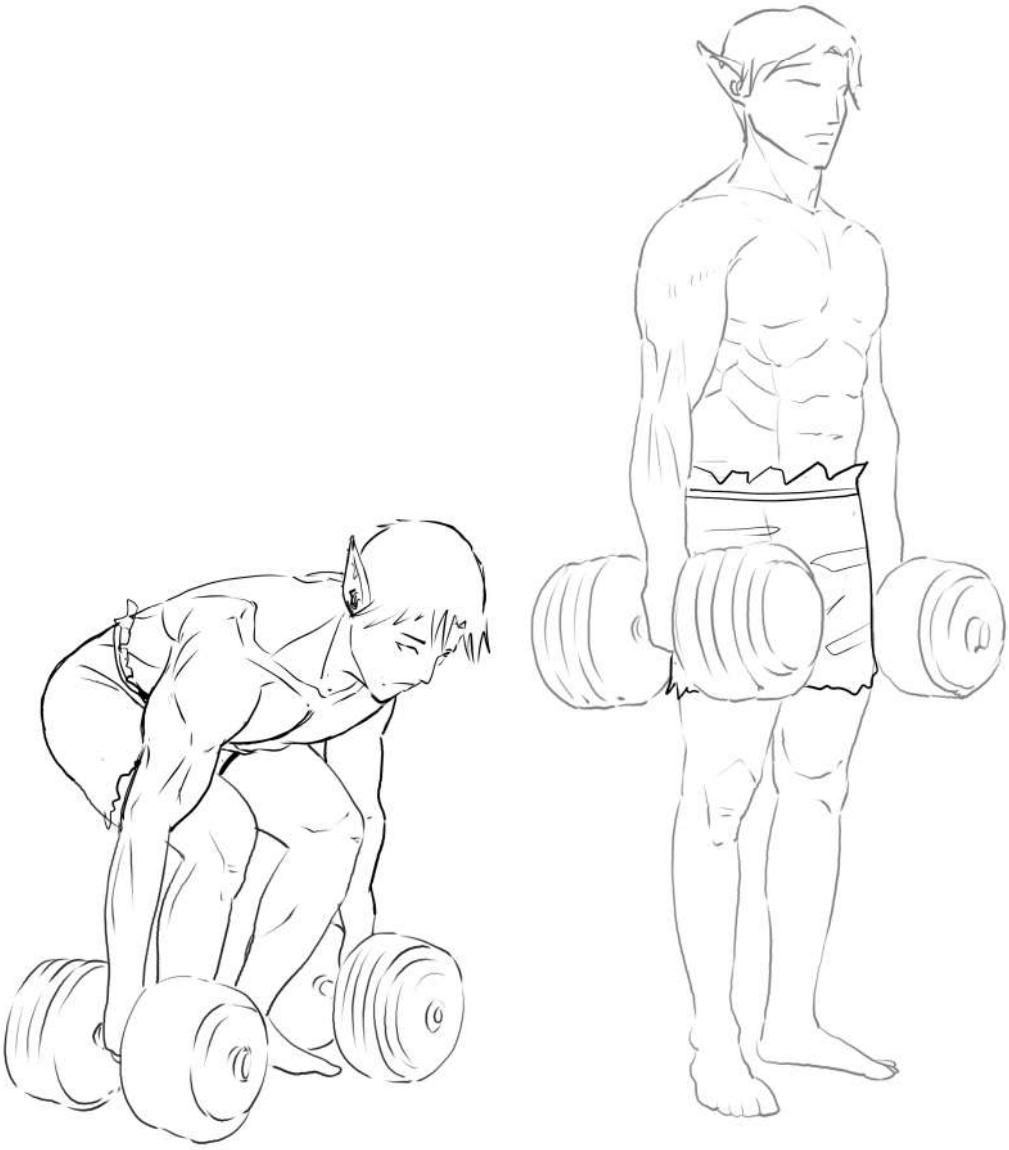
This exercise is usually shown with the back foot on a normal bench. This is too high for me, and my feet are not comfortable. I want to focus on the active leg, not on precarious balance. I use a small Ikea Samla box turned upside down, and a foam roller as used for self massage.

First, set up without added weight. Place the box and foam roller behind you. Stand with one foot forward, shin about vertical. Rest the instep of your back foot on the foam roller. Place the dumbbells at your sides.

Then do the exercise. Get to the bottom position, pick up the dumbbells (start without weights). Stand up on your front leg, lower under control. Alternate sets for your left and right leg.

- ✓ Your torso remains fairly upright.
- ✓ Look forward, not down.
- ✓ Keep your front knee in place during the movement, just above the foot.
- ✓ Power comes from the quads and the glutes of your front leg. The back leg is mostly for balance.
- ✓ Keep your hip balanced, not tilted to one side.
- ✗ Don't let your knees cave in.
- ✗ A little weight goes a long way. Since most of your weight is on one leg, even strong lifters can get enough loading with normal dumbbells.
- ( ) You can mark the position of your front foot with a weight plate.

Dumbbell Squat



Dumbbell Squat

Muscles: Quads, glutes, spinal erectors, grip

Gear: Dumbbells or "heavy things"

This movement is similar to a trap bar deadlift.

Use dumbbells or the weights you use for the Farmer's Walk. Set up the weights at your sides. Squat down, keep your back straight, and stand up. Lower under control.

☠ **Keep your back straight !**

💣 Mind your feet when you put the weights back on the floor …

✓ Your arms hang straight down, with the weight and your center of gravity always over the middle of your feet.

✓ Power should come from your legs and glutes.

✗ Your spinal erectors should not move, just keep your back straight.

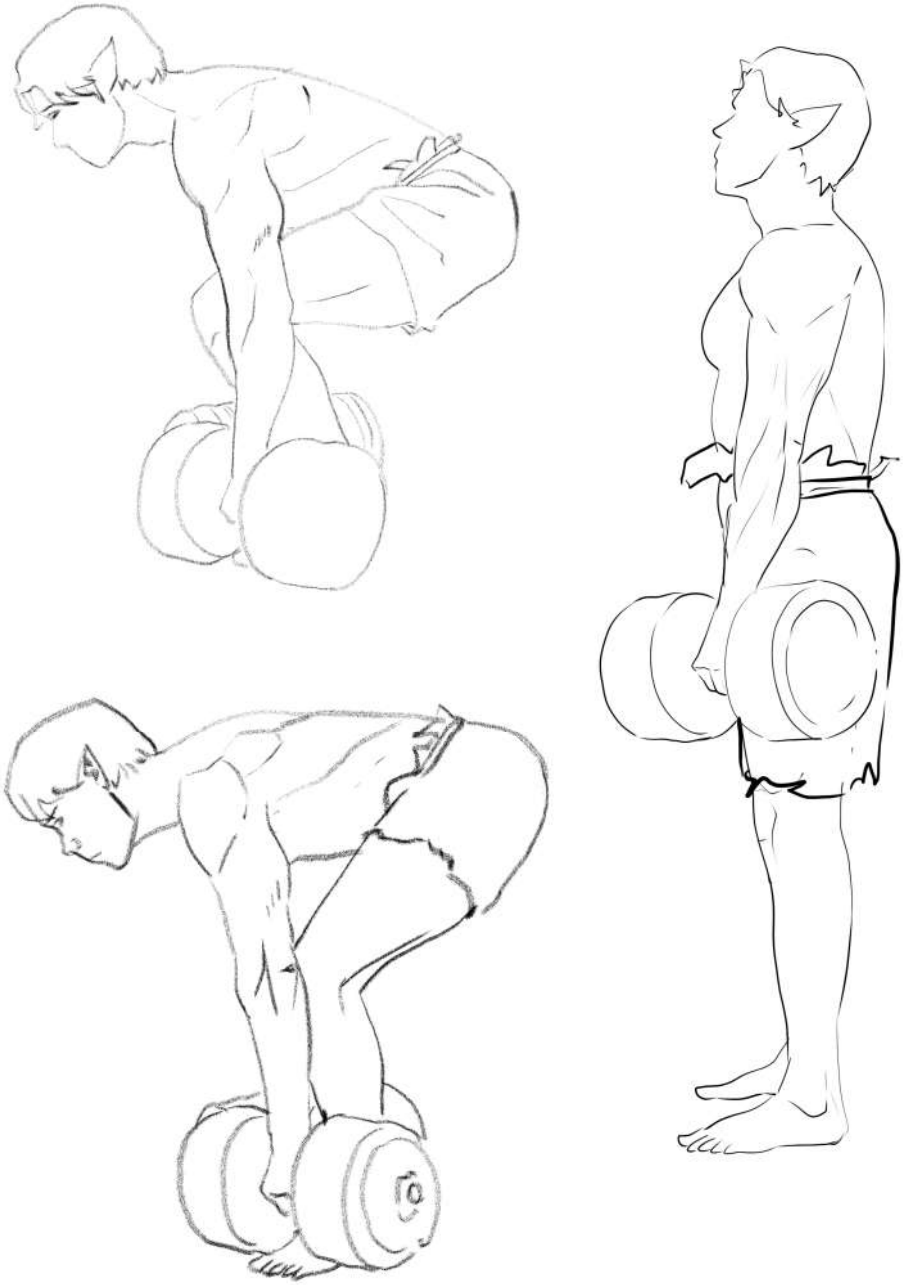
✗ At the top, don't lean back or hyperextend your spine.

💣 If your form goes bad, **stop immediately**.

✗ Don't do too many repetitions.

() If your weights have the handle too high up, stand on a small platform.

Romanian Deadlift



Romanian Deadlift

Muscles: Hamstrings, glutes, spinal erectors, grip

Gear: Dumbbells

The original exercise is done with a barbell, but you can get close with dumbbells. The stiff-legged deadlift is similar.

This is an advanced exercise. Read the instructions first, then watch videos to understand the movement. Start with lighter weight.

Place the dumbbells in an inverted V around your feet. Your feet should be a bit less than shoulder width apart, with your arms just outside your knees. Squat down and grab the dumbbells (top left drawing). Stand up with the dumbbells until you stand straight (right drawing). From now on, your knees should remain more straight (but not locked out).

Lower under the control of your glutes and your hamstrings until you feel a stretch in your hamstrings (bottom left drawing), then go back up. To keep your balance and a straight back, your hip will move back during the movement.

After the last rep, go down like you started (squat down), and carefully place the dumbbells on the floor. Or just set them down in the bottom position.

☠ **Don't round your back ! Bend at the hip !**

💣 **Mind your feet when putting down the weights !**

💣 Failure is not an option - use weights that you can fully control. Remember your feet and lower back …

✓ Your arms hang straight down, with the weight and your center of gravity always over the middle of your feet.

✓ Power should come from your glutes and your hamstrings.

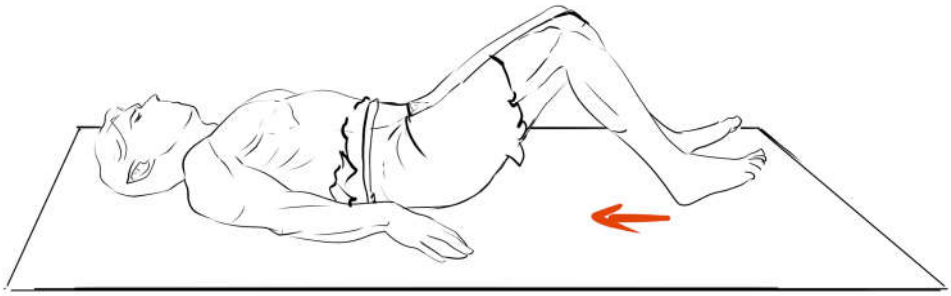
✗ Your spinal erectors should not move, just keep your back straight.

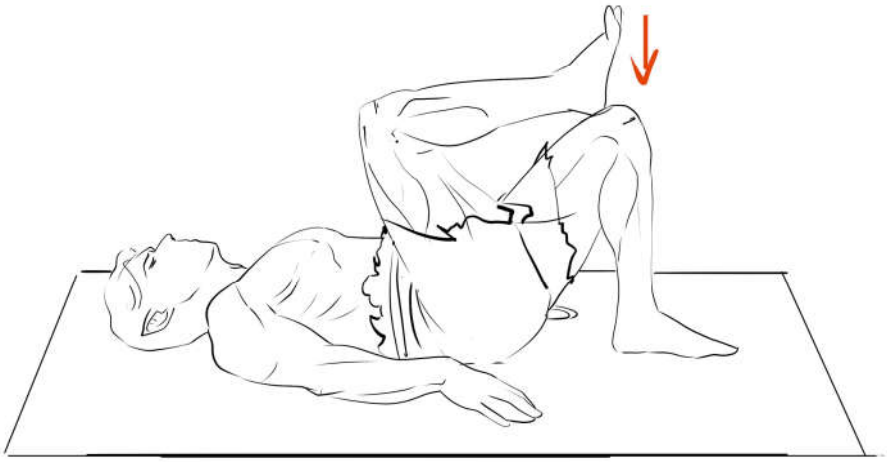
✗ At the top, don't lean back or hyperextend your spine.

💣 If your form goes bad, **stop immediately**.

✗ Don't do too many repetitions.

Hamstrings





Hamstrings

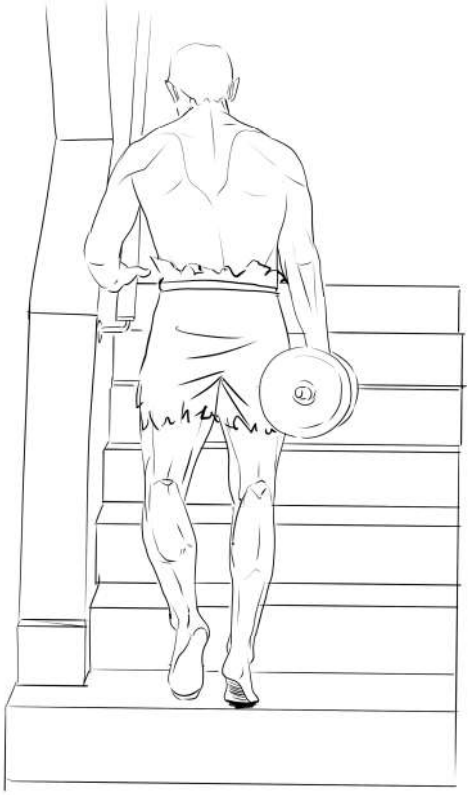
Muscles: Hamstrings

Gear: Bed or non-slip floor

Your hamstrings are difficult to exercise at home. Besides Romanian Deadlifts, you can try isometric training. See the chapter on isometrics for basics. I do two rounds of this sequence:

1. Lie down on your bed or a non-slip surface. Have your knees almost straight. Dig in your heels and let your hamstrings try to pull your feet towards you for 30 seconds. Your feet must **not** move.
2. Repeat with your knees at a right angle.
3. Place one foot near the knee of the other leg. Let your hamstring and glutes try to pull the foot towards you.
4. Finally, repeat for the other side.

Standing Calf Raise



Standing Calf Raise

Muscles: Calves

Gear: Step, something to hold on to, weight

Since you bounce around on them all day, your calves are stronger and have more endurance than you would imagine.

Stand with your right foot on a step or high threshold. Hold a weight in the right hand (start without added weight), and hold on to something with the left hand for balance. Lower into the bottom position under control, then let your calves drive you back up to the top position.

Repeat to torch your left calf.

- ✓ Try to do 15 to 20 reps per set. Burn, calves, burn …
- ✓ Wear shoes if need be.
- ✓ The balls of your feet should be at the edge of the step.
- ✗ **Don't crash into the bottom position** – your Achilles tendons thank you.
- ✓ Your calves should be stretched in the bottom position. Bonus pain if you stay in the bottom position for a second or two.
- ✓ More bonus points for a "squeeze" at the top.
- ✓ Keep your knees almost straight.
- ✓ Power comes from your calves, not from your quads.
- ✓ Progress the weight carefully to let your tendons and feet adapt to heavy load.
- ✓ Do this exercise towards the end of your leg workout.
- ✓ Too hard ? Use both feet.
- ⓘ No suitable step ? Make your own platform out of a board and a scrap piece of 2x4 or 4x4 with rounded corners.

Donkey Calf Raise

Donkey Calf Raise

Muscles: Calves

Gear: A friend, stair or table + block

A fun old school version if you have a training partner.

Stand with the balls of your feet on the first step of a stair, or a suitable block. Lean with your forearms on a higher step. Keep your back tight and nearly horizontal. Let your friend get on your low back. Do calf raises as described before.

Yeehaw !

✓ **Keep your back straight and tight !**

🏋 Too easy ? Do more reps, or find a heavier rider.

Arnold Schwarzenegger did this exercise with two people on his back.

Traps and Neck

The traps (trapezius muscles) give a strong, "yoked" look. Some lifters train them with endless shrugs. In my opinion, this precious training time is better spent on developing real strength with heavy carries, deadlifts, rows and overhead presses. Balanced trap development will follow.

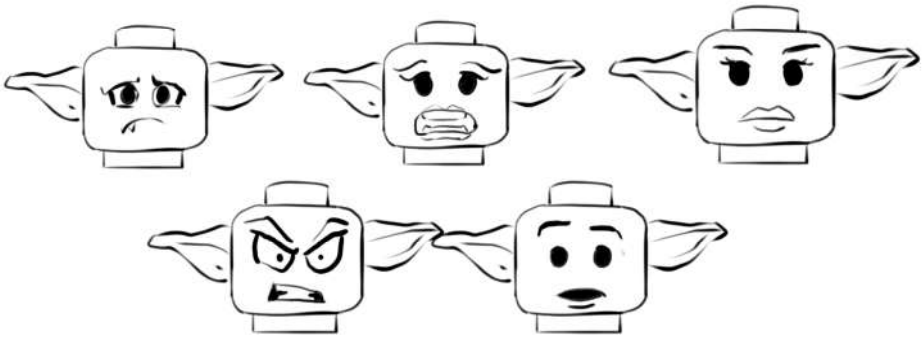
I also don't see a need to train your neck unless required for your sport (e.g. wrestling). Follow the instructions of your coach for specific exercises.

Be careful what you wish for - overly thick necks may be connected with breathing problems during sleep (sleep apnea, commonly treated by sleeping with a CPAP / Darth Vader style mask).

If you want your neck to be stronger without adding much size, try simple isometric exercises. Let your neck resist your hand pushing against your head – to the left, to the right, to the front, to the back. Carefully push 10 to 15 seconds in each position, as hard as your neck can resist **without moving**.

If your head pops off, please have it sent to me for my collection.

☞ If you still want to train your neck, read "Convict Conditioning 2" by Paul "Coach" Wade.



Shoulders

Your shoulders are very mobile to give your arms a large range of motion, for example to throw a spear or ball.

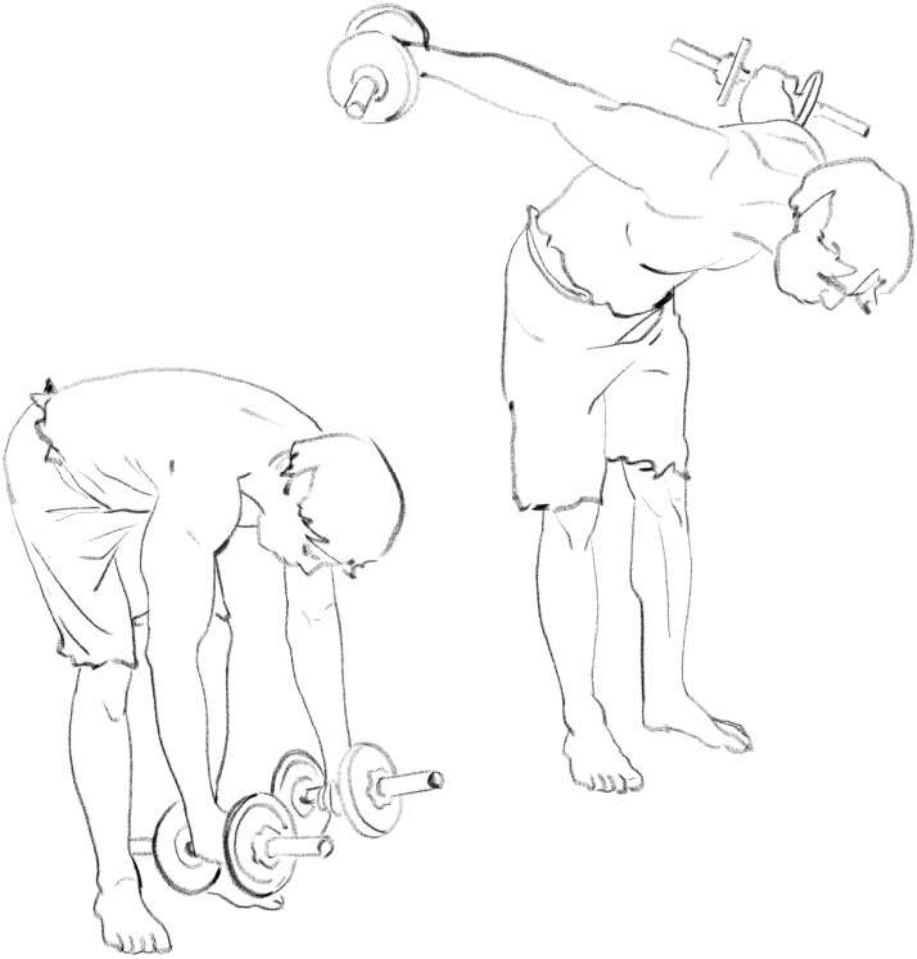
This mobility makes your shoulders vulnerable. The rotator cuff muscles are easily strained. When you move the wrong way, tendons can get squeezed and get inflamed (shoulder impingement).

Pay attention to your form, especially on chest / pushing exercises.

Keep a good balance between pushing and pulling exercises. My shoulders gave me grief for a long time until I started more intensive back training.

I like to start with the rear delts to warm up the shoulder area, then continue with front delt and finally side delt exercises. The front delts also get worked on chest exercises, so you may not have to train them all that much.

Rear Delt Flye



Rear Delt Flye

Muscles: Rear delts

Gear: Two dumbbells

Hold two dumbbells in your hands. Bend down until your upper body is almost horizontal. Pull your extended arms up and out until your rear delts are fully contracted, lower under control.

✓ Arms move out, not too far back.

Otherwise different muscles (e.g. traps and rhomboids) will take over.

✓ Bonus points for squeezing and holding at the top.

✓ Your shoulder blades should not move much.

✗ Don't go down all the way.

There is no load when your arm hangs straight down. Stop short for constant tension.

✓ Less weight, more reps.

✓ At the end of the set, you can bend your elbows a bit to reduce the load, and do some more reps. Or start moving more to the back, which will let other muscles join in.

() If your lower back hurts, or for better focus, support your head on an adjustable bench.

() You can also do this exercise lying face down on an inclined bench.

Barbell High Row

Barbell High Row

Muscles: Rear delts, upper back

Gear: Straight or EZ curl bar

Hold the barbell with a wide grip. Your forearms should be about vertical to the ground in the top position.

Bend over so your torso is near horizontal. Pull up the bar towards your clavicle as far as you can.

✓ Keep your back straight !

() When you pull the bar lower (e.g. to your chest), the focus will shift from the rear delts to the upper back.

() If your lower back hurts, or for better focus, support your head on an adjustable bench.

Dumbbell Press

Dumbbell Press

Muscles: Front delts, triceps

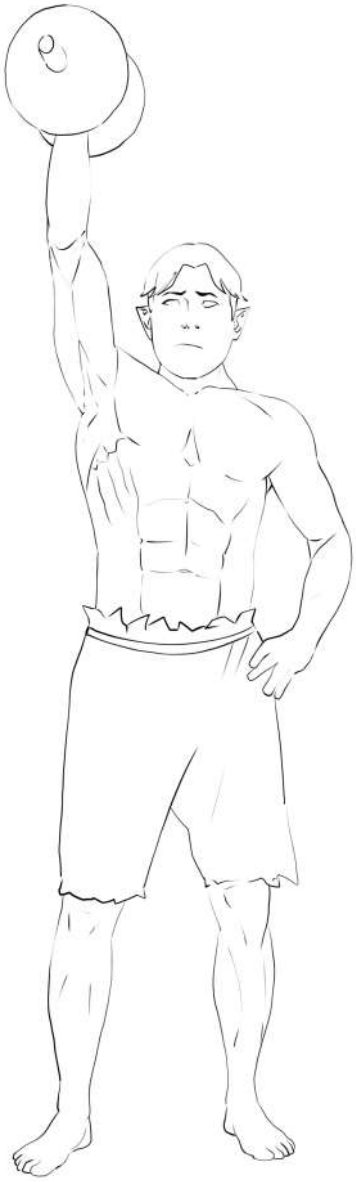
Gear: Dumbbells, optional flat bench

If you have an adjustable bench, set the back to a high angle. On a flat bench, your core will have to stabilize your position.

Sit down on the bench with the dumbbells resting on your thighs. Kick up the dumbbells one at a time to get to the starting position. Press up until your arm is almost straight. Lower under control.

- ✓ Keep your hands directly above your elbows, otherwise you will struggle to stabilize the weight.
- ✓ Keep your elbows a bit to the front, not straight out to the side.
- ✓ I don't fully lock out my elbows at the top.
- ✓ Less weight, more reps.
- ✓ ROM: Some stop with their elbows a bit below their shoulders, others go down until the dumbbells almost touch their shoulders.
- ( ) Standing. Keep your core tight, don't arch your back.

Standing Dumbbell Press



Standing Dumbbell Press

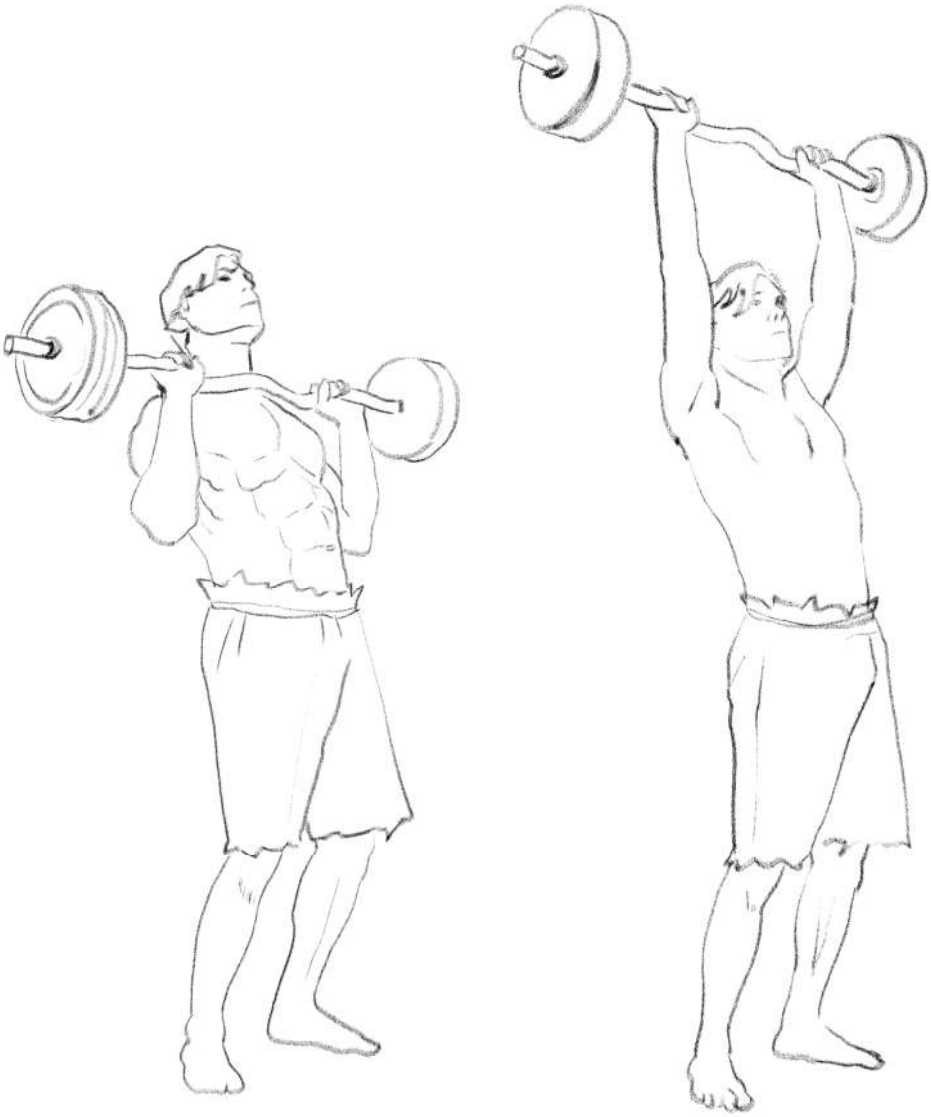
Muscles: Front delts, triceps, obliques

Gear: Dumbbell

Hold a dumbbell near your shoulder. Press up until your arm is almost straight. Lower under control.

- ✓ Keep your hands directly above your elbows, otherwise you will struggle to stabilize the weight.
- ✓ Keep your elbows a bit to the front, not straight out to the side.
- ✓ Less weight, more reps.
- ✓ Your obliques will have to stabilise your torso.

Overhead Press



Overhead Press

Muscles: Front delts, triceps, traps

Gear: EZ curl or straight bar, weights

Hold the bar with your hands a bit more than shoulder width apart. Use an overhand grip (palms facing away from you). Lift to the bottom position in front of your clavicles. Press up until your arms are fully extended. Lower under control.

- ✓ The barbell should move along a straight path. Move your head back if necessary to let it pass.
- ✓ Don't lock your shoulder blades – they need to move freely. Your traps will help at the top of the movement.
- ✓ Flex your glutes, keep your body straight.
- ✓ I recommend to keep the wrists straight.
- ✓ The model goblin should work on his shoulder mobility some more. Try to get your shoulders more straight in the top position.
- ✗ Don't arch your back.
- ✗ Don't drive with your legs (that would be a push press).
- 💣 **Young lifters, don't go overboard with heavy weights.**
- () Seated on a bench, with or without back support.

Behind the Neck Press

Behind the Neck Press

Muscles: Front delts, triceps, shoulder mobility

Gear: EZ curl or straight bar, optional bench

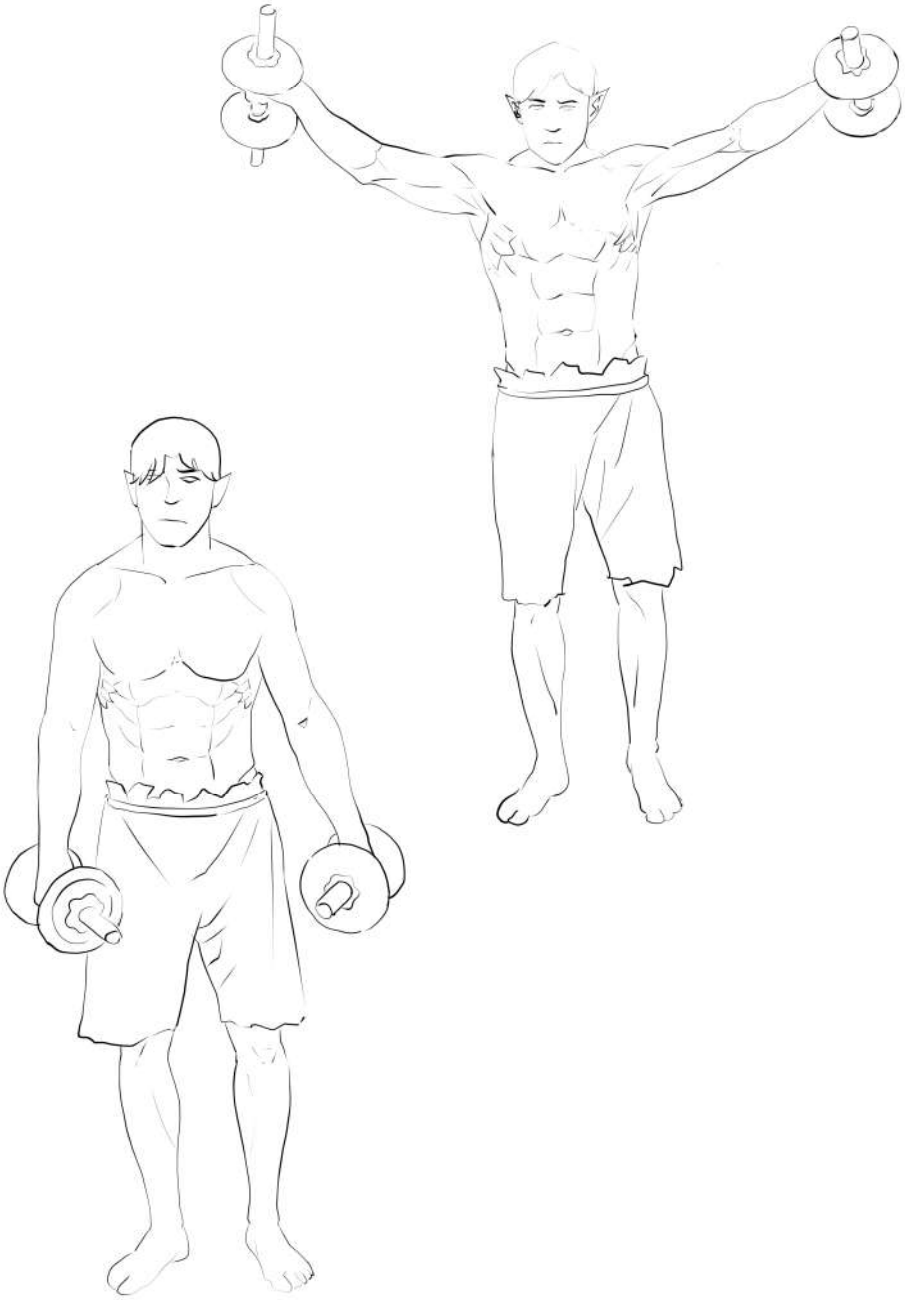
This exercise is controversial, as it puts your shoulders into a vulnerable position. Do NOT try if you have shoulder problems or your shoulders round forward. Do NOT use heavy weights.

Reality check: Lifters do low bar squats all the time, with the barbell sitting lower and further back than you would go on the behind-the-neck press. The shoulder mobility needed is not outlandish.

Start like the overhead press. From the top position, carefully lower the bar behind your neck. Press it back up. Return to the front position at the end.

- ✗ Don't go too deep: stop at the level of your ears, or the base of your neck.
- ✓ Start without weight (PVC pipe or broomstick) to safely explore the range of motion.
- ✓ Sit down on a bench - focus on your shoulders, not on balance.
- ✓ Do this exercise towards the end of the workout, when your shoulders are warmed up.

Lateral Raise



Lateral Raise

Muscles: Side delts

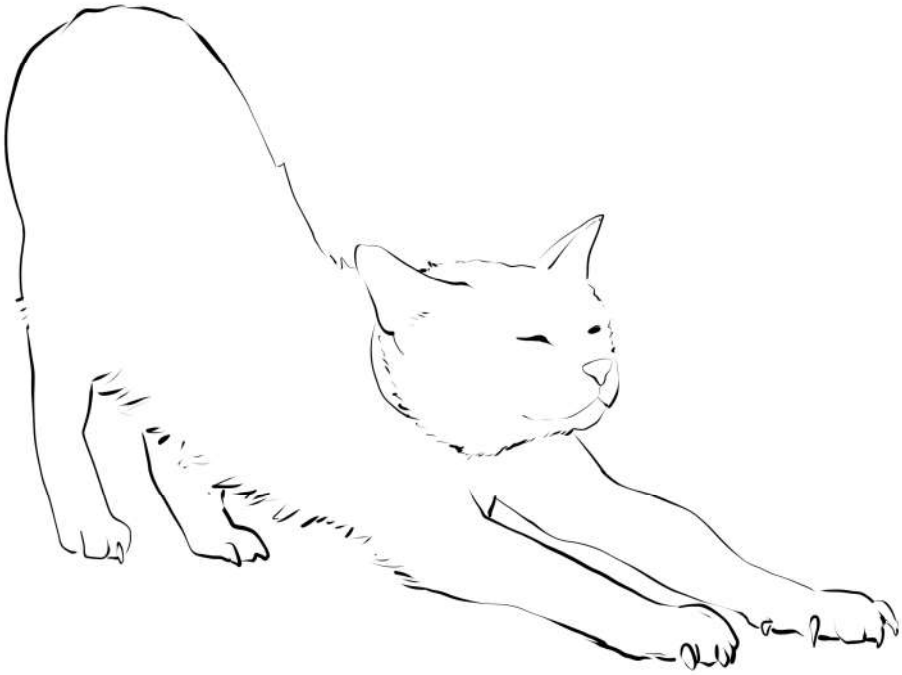
Gear: Dumbbells

Pick up two light dumbbells. Lean forward a little bit. Raise your almost straight arms to your sides until they get a little above horizontal, lower under control.

The devil is in the details:

- ✓ Focus on pushing the weight out, not lifting it up.
- ✓ The movement should be initiated by your side delts, not other muscles.
- ✓ Start with just the empty dumbbell handles.
- ✓ Less weight, more reps.
- ✓ Hold the weight with your palms down, thumb neutral or slightly up.
- ✓ Bonus points for holding the top position briefly.
- ✓ Try different angles to find your sweet spot.
- ✗ Don't shrug your shoulders.
- ✗ Don't lock your elbows - a completely straight arm will stress your shoulders and elbows.
- ✗ Don't bend your elbow too much – this will lighten the effective load.
- ✗ Don't use too much momentum or swinging.
- ✗ Don't go down all the way – there is no load on your side delts when your arm is hanging straight down.
- ( ) You can also try this movement while lying on your side, either flat or on an incline. This will make the bottom position harder, and the top position easier.

Stretching



Stretching

Muscles: Flexibility

Gear: Bed or mat

Passive stretching means that you apply external force, for example pull back your hand with the other hand.

Active stretching means that you use one muscle group to stretch another. For example, let your wrist extensors pull your hand back as far as it goes.

Some people say that kids should not do any passive stretching at all. Young joints tend to be pretty loose. If your joints are hypermobile (for example if you can bend your elbow back a little), don't stretch your ligaments any further unless you want to perform in "Cirque des Gobelins" as a walking pretzel.

Working out with a good ROM will help you maintain good flexibility.

Stretching before the workout is not recommended any more. It can make your muscles weaker and easier to injure. If you stretch, do it after weight training.

Whatever you do, stretch your muscles, not your joints and ligaments.

☞ Still want to stretch ? Read "Becoming a Supple Leopard" by Kelly Starrett. A bit overwhelming at first, but a wealth of information. Get this one on paper, not as an e-book.

☞ Curious why not to stretch ? Read "Minimize Injury, maximize performance" by Dr. Tommy Jones.

Isometrics

You can train without equipment by pushing or pulling against unmovable objects or your own body.

What isometrics are good for:

- Get stronger without adding much size or weight.
- You can target specific joint angles to get stronger in "sticking points" of conventional exercises.
- You can directly train holding strength, for example your wrists or your neck.
- When you don't have much time or equipment. Combine isometrics with body weight exercises if possible. The world is your gym - you can do isometric holds almost anywhere and any time.

How to do isometric holds:

- Apply force gradually, not abruptly. Hold as hard as you can for 5 to 30 seconds. Release. Repeat as desired.
- There should be **no movement** ! Your muscles may shake a bit.
- Breathe normally, don't hold your breath.
- Mind your joints, don't apply force in crazy positions.

Examples:

- Hold your arms together in front of your chest. Let your chest muscles push your hands together as hard as they can.
- Waiting in line ? Stand on a non-slip floor, with feet about shoulder width apart. Try to pull your feet apart, or push them together.
- Put your hands flat on a table. Let your triceps push them down against the table.
- Kneel down on your bed or a mat. Lean back until your quads feel a stretch, support yourself with your hands behind you. Let your quads try to pull you back up. If you did make it back up, you just did a Nordic Squat.
- Take a towel, and try to "rip it apart" in different positions.

Use your imagination, there are many possible exercises.

Gotchas:

- Vary the joint angles that you train. You will gain the most strength around the angle you trained. Isometric holds in a stretched position are particularly useful.
- Go easy at first, see how your body reacts. Be careful with smaller muscles or abs, you could strain them. A Goblin's gotta know his limitations !
- Given the considerable forces that you can develop, proper position and bracing is important to protect your back and joints.
- Be careful with "unmovable objects", you may be stronger than you think …

☞ Read "The Ultimate Isometrics Manual" by Paul "Coach" Wade.

Your Training Program

You're probably wondering why this page was blank.

> *If you give a Goblin a fish, he will have something to eat for a day.*
> *If you teach a Goblin how to fish, he will never be hungry again.*

I'm afraid my crystal ball is broken. I sent it back to the factory for recalibration many times. It still cannot predict tomorrow's price for pork bellies, so how do you expect it to understand something so wondrous and complicated as your body ?

Do you want somebody else to tell you what to do ?

What could possibly go wrong ? Either not much (ineffective light training), or you could try to follow some crazy WOD (workout of the day), and injure yourself.

You have to take control yourself.

There is no "perfect" program for everyone. Try, learn, adjust. If you fall down, dust off your Goblin's Gym cap and get up again. To get on the right path, ask yourself the following questions.

When and how often do you have time to train ?

When can you regularly carve time out of your busy schedule of hard learning and playing ?

Are you playing other sports ?

Plan your workouts so they don't interfere with your practice sessions.

Your coach can give you recommendations on sport-specific exercises. If he says "don't lift weights", please give me his address so I can present him with a surgical 2x4 and a copy of this book.

How much time do you want to spend ?

Start with short, but frequent and regular workouts. When the iron bug bites you, step it up.

What equipment do you have ?

Please take a look at the chapter "Your Iron Playground".

Do you have any physical limitations / weaknesses ?

If you have problems somewhere, you may have to avoid certain exercises, or emphasize others.

What exercises do you like doing ?

If you are good at something, this may be a strength worth developing further. Just make sure that you keep things balanced, for example do both pushing (chest) and pulling (back) exercises to keep your shoulders happy.

What exercises do you dislike doing ?

There can be exercises that just don't fit you well. Try to find alternatives that work for you. Just keep in mind – some of the exercises that you hate, can be the ones that you need the most.

Full Body Training

Beginners are often given programs where they train all body parts in each workout. I find that this makes for overly long workouts, especially when you consider the time it takes to change weights in a home gym.

Bodyweight exercises don't need much changeover time, so a full body program is more practical with them. See an example on page 60.

Body part splits

Some lifters train individual muscle groups on separate days. I don't like these "bro splits", as the muscles don't get trained often enough. I would rather stimulate a muscle group with a reasonable volume twice a week, than blast it into oblivion once a week.

How many exercises per bodypart ?

Up to you. Try to pick exercises that are not too similar. You can alternate exercises between workouts, e.g. have workouts A and B.

How often should I change things up ?

Not too often. If you change your training too often, it will be hard to track whether you actually make progress.

Exercise "snacks"

You can break up your homework by dropping on the floor for a set of push-ups, or do a chin-up each time you pass by the bar.

You won't get much of a warmup. Be like a tiger - they can pounce on their prey at any time.

Still lost ?

See some example workout **patterns** on the next pages. Start with fewer exercises, add on once you master them. Feel free to change things around, but try to keep things balanced.

Upper / Lower Split

Once you have your Iron Playground, this program is a good starting point. It splits your muscle groups across two workouts.

The program repeats every 3 to 4 days. Alternate workouts A and B.

Upper = Back, Chest,Arms A	**workout B**
farmer's carry	Romanian deadlift
pull-up / chin-up	pull-up / chin-up
flat bench press	incline bench press
dumbbell row	inverted or pull-up row
ez curls	alternating or preacher curls
lying triceps extension	dips

Optional rest day

Lower = Legs, Shoulders A	**workout B**
air squats (as warmup)	air squats (as warmup)
dumbbell or goblet squat	Bulgarian split squat
standing calf raise	standing calf raise
high bar row	rear delt flyes
overhead press	dumbbell press
lateral raise	lateral raise
abdominals	abdominals

Rest day

Pull / Push / Legs Split

Are you looking for something gnarly ? Split your training over three workouts. This is too much volume for a beginner, but it works well for me. Do this program with dumbbells, or substitute barbell squats and deadlifts.

Push / pull / legs is more well known, but I prefer to give my lower back some recovery time between back and leg workouts.

The program repeats every 4 days, but you could skip one rest day to fit in a 7 day cycle.

Pull = Back, Biceps workout A

air squats (as warmup)
Romanian deadlift
pull-up / chin-up
dumbbell row
pull-over
ez curl

workout B

air squats (as warmup)
Romanian deadlift
pull-up / chin-up
inverted or pull-up row
pull-over
alternating dumbbell curl

Push = Chest, Triceps workout A

farmer's carry
push-ups (as warmup)
flat bench press
dumbbell flyes
dips

workout B

farmer's carry
push-ups (as warmup)
incline bench press
dumbbell flyes
lying triceps extension

Legs = Leg, Shoulder workout A

air squats (as warmup)
goblet squat
standing calf raise
high bar row
overhead press
lateral raise
abdominals

workout B

air squats (as warmup)
Bulgarian split squat
standing calf raise
rear delt flyes
dumbbell press
lateral raise
abdominals

Rest day

Yeah, but...

Beware of the infamous "German Rabbit".

Looks like you are proposing bodybuilding ?

I don't have the IFGG labor contract for Growing Goblins on hand right now, but I remember that the job description included the words "learning" and "growing". You don't have to oil up and get on stage, but you could certainly realize a bit more of your physical potential than most people do.

I want to gain strength, but not size !

Ah, so you want to get secret super powers ? Your initial strength gains will come from more efficient use of the muscles you already have. Your body will only grow additional muscle tissue when it can justify the frivolous expense of energy and nutrients.

For additional strength gains without adding much size, look into isometric training.

Will I just get pretty boy muscles ?

If you don't shy away from heavy exercises like loaded carries or deadlifts, you should build some respectable functional strength and work capacity.

Case in point: I can deadlift nearly twice my weight for reps. I can also sort 6 shipping pallets worth of boxes without being all tired and sore afterward.

Your joints seem to be pretty temperamental ?

I'm 55. Learn from my experience.

These exercises are boring !

I picked easy to learn exercises that will build a good base of strength, and prepare you for barbell lifts. If you want excitement, try to get **strong** at them. There are many other exercises, but I keep coming back to these "meat and potatoes" basics.

☞ See weighttraining.guide for a large library of exercises.

Weight training is too much work !

If you don't accept your "life sentence" of hard lifting, please get some other regular activity in, and take the next chapter to heart.

Care and Feeding of Growing Goblins

Your nutrition has a big influence on how you feel and develop. If you want to look and perform like an athlete, maybe you should eat like one ?

Important Note

If you have food allergies or other medical conditions, please discuss dietary changes with your doctor or a dietitian. There are many individual variations, one size does not fit all. Just a few keywords of what can go wrong:

> lactose intolerance, gluten intolerance / celiac disease, food allergy (e.g. peanuts), diabetes, histamine intolerance, fructose intolerance, sensitivity to fermentation in the gut, irritable bowels …

I cannot see what happens inside you, or give you a set meal plan. You have to take control. Learn and think about nutrition, and find out how you feel after eating (or not eating) certain foods.

☞ See references and additional comments on the book web site.

You are what you eat

Everything that makes up your body comes from what you eat and drink.

You can't pull nutrients out of thin air. By extension, you are what your prey ate. If the animals you eat were fed garbage, they will pass it on to you.

SAD Nutrition

Look around you – obesity, diabetes and heart disease are all too common among Big'uns. Way too many kids need braces and don't breathe properly, as their jaws did not develop properly to leave space for their teeth. Cavities in your teeth may be a sign that you are not getting the minerals you need. Was this nature's plan for us ? I doubt it.

Food should nourish you, not leave you ravenous or sleepy afterwards.

SAD ? "Standard American Diet". Chances are that the new generation will *not* live as long as its ancestors. Don't be a part of this statistic.

Modern Times vs. Tradition

It is impossible for scientists to determine what is the best nutrition. Experiments are not practical. They would take too long – years or decades - and are difficult from an ethics point of view. You cannot knowingly feed people a harmful diet. There is an alternative: observe what has worked in real populations, and what didn't.

In the 1930s, dentist Dr. Weston A. Price undertook expeditions all over the world - not an easy thing to do back then - to explore the dental health and bone structure of many different tribes. He found that people eating a modern diet often had dramatically worse teeth and facial structure (which influences breathing) compared to those eating their traditional, ancestral diet. He pinned the blame on deficiencies of micronutrients (mainly vitamin D, activator X = vitamin K2, calcium, phosphorus, etc).

He may have underestimated the influence that breast feeding and chewing tough traditional food have on the development of the jaw. Nose breathing and good oral posture may be additional pieces of the puzzle.

For example, the traditional lifestyle in the Swiss mountain valley of Lötschental included the following:

- Sourdough rye bread. This was often stored for months, think "oversize hockey puck". Chewing this hard bread gave the jaw a good workout.
- Cheese and fresh dairy. Plenty of minerals and fat-soluble vitamins.
- Veggies and some potatoes – whatever they could grow on their meager soil.
- A little meat, maybe once a week. They couldn't afford to waste anything, so they probably ate "nose to tail", not just choice cuts.
- Plenty of mountain sun, no vitamin D deficiency here.
- Plenty of hard farm work on steep mountainsides.
- Mineral-rich spring water.

By contrast, people down in the main valley ate soft, white bread, sugary jams and the like. They brushed their teeth religiously, but guess who got the cavities and crooked teeth ?

☞ Read "Nutrition and Physical Degeneration" by Dr. Weston A. Price. See the book website for a link to an electronic version.

Food as Fuel

Our bodies are amazing chemical factories. We can extract energy and building materials from a wide range of foods. When old cells are broken down, the amino acids and fats they are made off are recycled. Even waste products such as lactic acid are converted back into glucose that your body can use. Nothing to eat ? Your body can convert fat into ketones to fuel your energy-hungry brain, and convert fat and amino acids into glucose (gluconeogenesis).

Macros

Short for **macronutrients**. These are the nutrients that we consume in large amounts (tens to hundreds of grams per day). Your food is composed of these main components:

- Protein
- Carbohydrates
- Fats
- Fiber

Micros

Short for **micronutrients**. These are **vitamins** and **minerals** that we consume in small amounts (micrograms to grams per day).

For example, if you don't get enough vitamin C, you could develop scurvy. Without sufficient vitamin D, your bones will not grow properly (rickets).

I will make the bold assumption that you will grow better if you get an ample supply of essential nutrients from a nutrient-rich diet.

Energy balance

Food gives us energy to live. This energy is usually measured in calories (kcal). We use energy to:

- Just stay alive and warm (**BMR** = basal metabolic rate).
- Do everyday activities (**NEAT** = non exercise activity thermogenesis).
- Exercise (**EAT** = exercise activity thermogenesis).

- Digest food – some energy is needed to digest what you eat (**TEF** = thermic effect of food).
- Grow – just your normal growth, or growth stimulated by your training.

There is a balance between the energy we take in by eating, and the energy we use in our daily life.

If you don't eat enough, your body will slow down your metabolism to save energy, and break down body fat (good) and eventually muscle (not good) for energy. Once you have used up all reserves, you die from starvation.

If you eat just enough, your weight will remain stable.

If you eat more than you need, your body will speed up your metabolism a little bit, invest some energy in growth, and squirrel away the rest as body fat to keep you warm through the next snowstorm or famine.

Today snowstorms are countered by central heating, and famines are rare with food depots overflowing with "nutritious" choices.

It is a fine line… Fortunately, your body will tell you what you need, if you haven't forgotten to listen to its signals.

There is a famous nutrition study done by pediatrician Dr. Clara M. Davis. She let a group of young children decide by themselves what and how much to eat from a selection of *healthy* foods. While their choices were not always what Big'uns would put on a menu, the kids instinctively ate a well-balanced diet when averaged out over time, and thrived very well.

Overfed, but Undernourished

Your body will try to get the essential nutrients that it needs. Not enough protein, essential fats, vitamins or minerals ? You will be hungry for more. If you eat processed food that is energy dense, but poor in nutrients, you will have to eat an excessive amount of calories to get essential nutrients, and get fat in the process.

Energy density ? I could demolish a 100g bag of potato chips rather swiftly, and be ready for more. Eating 700g of boiled potatoes would give me the same amount of energy (but more nutrients), and leave me stuffed.

If you eat **real food** that is dense in nutrients, but not in energy (e.g. meat and vegetables), you will probably be healthier and lean. Your choice !

Healthy Bodyfat ?

While too much body fat is considered unhealthy, and can hinder your athletic performance, trying to be too lean is not desirable either. Males can stay healthy at a very low bodyfat percentage. Females need a bit more body fat to maintain a normal menstrual cycle.

Keep in mind that individual builds vary greatly. Don't let simplistic numbers like the **body mass index (BMI)** drive you crazy. According to this formula, I am slightly overweight at times. As a lifter I take this as a personal challenge – add more muscle to qualify as obese …

If you have a sturdy frame with some Troll blood mixed in, please don't try to turn into a skinny Elfin doll. Stay fit and find your own sweet spot that lets you feel and perform well.

As a growing Goblin, try not to get fat, but don't obsess about having a shredded six-pack all the time either. Your body will grow better when you don't starve it. If you want to get ripped, you can do so later. An old bodybuilder saying goes:

> *You can't polish a pebble.*

Inertially Challenged ?

If you really do have excess inventory to lose: Always get a generous supply of protein and sufficient essential fats to allow for growth of lean body mass. Reduce the overall energy consumed just a little below your stable or maintenance point. For long term fat loss, try to lose around 0.5% of your bodyweight per week. Slow and steady wins the race.

Lift weights regularly to tell your body that you want to keep your muscles. If you train as hard as you should, fat losses could be offset by muscle gains.

Ignore short-term weight fluctuations ! Do *not* change your diet based on a single weighing. Your weight can vary quite a bit depending on your bowel contents, hydration, glycogen storage, salt etc. Get on the scale each morning after your first visit to the "loo" and calculate a weekly average.

Be *very* patient, and trust the process !

Exercise to lose Weight ?

How much energy would it take to lift a ~ 40 kg / 90 lb Goblin from sea level to the top of Mt. Everest ?

400 N x 8848 m ~ 3.6 MJ

This is equivalent to just one kilowatt hour of electricity, or about 860 calories. The energy in less than three pounds of body fat would be enough to lift our hapless Goblin to the edge of space (about 100 km up, assuming you have a suitable bean stalk and oxygen mask handy).

Your body is not 100% efficient, but that's a *lot* of climbing to lose a little bit of weight. Activity is good, but I hope you will agree with this saying:

You can't out-exercise a bad diet.

Instead of doing hours of ~~slave labor~~ cardio exercise, eat sensibly and lift weights to build muscle, which will raise your base metabolic rate and use energy all the time.

Eat to Grow ?

To add muscle, your body needs:

- Protein
- A little bit of fat
- Some energy
- Water

If your body thinks that it is starving, it will not expend scarce energy on growing muscle that will use up even more energy. It will be more willing to grow when you are in a slight energy surplus.

If you find it difficult to get enough energy in, you can take in more energy-dense fats, and drink calories (e.g. whole milk + protein + some fruit + a little nut butter).

Keep in mind that growing muscle is not a fast process. If you overeat consistently, you will just add more fat. Muscle tissue contains surprisingly little energy compared to body fat. Again, slow and steady wins the race.

Protein

I love animals – they're delicious. *(seen on a bumper sticker)*

Your body cannot thrive, and certainly not grow muscles, bone and skin, without a sufficient supply of essential amino acids supplied by protein. Active growing Goblins should aim for 1.5 to 2g of protein per kg (0.7 to 1g per lb) of body weight.

Protein provides 4 calories of energy per gram, but it takes a lot of energy to digest it. Your body will use amino acids as building blocks first, as they are not an efficient energy source.

Good protein sources include:

- Meat (most species, preferably grass fed, not processed or cured - even better if you have to chew a bit, or gnaw it off the bone)
- Fish (often rich in good Omega 3 fats)
- Eggs (whole, e.g. as scrambled eggs)
- Milk, cheese, yoghurt
- Lentils, beans, peas

Protein sources that I avoid:

- Processed meat (some consider the added nitrates a cancer risk)
- Pork (they don't get the best feed – you are what your prey ate)
- Soy (some consider soy to influence hormone balance)
- Protein bars (expensive candy, witches brew of ingredients).
- Ready-to-drink protein (expensive, rarely the best quality protein, packed with preservatives and other nasties).

Protein first - include a protein-rich food with each and every meal.

If you cannot get enough protein with your regular meals, drink a good quality protein powder mixed with water or milk.

- Whey protein digests quickly, for example before or after training. Casein / milk protein digests more slowly, and may be better at night.
- Vegans should consider a protein blend (e.g. pea + rice protein). Single component vegetable proteins usually don't include all essential amino acids in the right proportions.

Carbohydrates

Carbs (short for carbohydrates) are easy to digest, and give quick, but not always long lasting energy. Each gram of carbs provides 4 calories of energy. Carbs are *not* essential – your body can thrive without them.

Your body can only store limited amounts of carbohydrates in the form of glycogen. A Big'un can store about 100g in the liver, and about 500g in the muscles. Glycogen is a heavy fuel, as each gram of carbs is stored with about 3 grams of water.

A good time to eat carbs is after your training, when your muscles are ready to refill their depleted glycogen stores.

If you take in too many carbs at once, your blood sugar will go too high. Your pancreas will release insulin to promote storage of carbs into your muscles or for conversion into fat. Then your blood sugar level could crash, prompting low energy and hunger. This is one roller coaster I don't like to get on. I prefer carbs that are low density and slow digesting.

Good carbs include:

- Vegetables
- Fruit and (sparingly) fruit juice
- Potatoes
- Milk sugar (lactose) contained in milk – if you tolerate it.
- White or brown rice *
- Lentils, beans, peas *
- Oatmeal * (* see the section about antinutrients)

Carbs that I avoid or minimize:

- Sugar, dextrose, corn syrup etc.
- I eat few grain-based products such as bread, pasta and pizza.
- Carbs combined with fat, such as french fries, potato chips and sweet baked goods. Food manufacturers tend to use cheap, low quality fats. They are usually extra yummy and extra fattening. It is just too easy to overeat on these highly processed foods.

Fats

If olive oil is made from olives, what is baby oil made from ?

Fat is a very dense energy source – each gram provides 9 calories of energy. A single pound of fat can keep a Goblin going for about two days. Even a lean person – say 10% bodyfat – still has plenty of energy in reserve.

Kids can metabolize fats at a faster rate than most Big'uns, comparable to well-trained athletes. Maybe this is a superpower you should try to keep ?

Besides protein, we need essential fatty acids to survive. Omega 3 fats are particularly important for your health and brain development. Omega 6 fats are also considered essential, but they should be in a reasonable balance to Omega 3 – usually we get more than enough.

Good fats:

- Fat from fish (high Omega 3 content)
- Fat from meat (preferably grass fed)
- Fat from whole eggs
- Milk fat (butter, milk, cheese, preferably raw and not homogenized)
- Extra Virgin Olive oil
- Avocado and coconut
- Nuts and nut butters (use sparingly, like a condiment). Read the labels: peanut butter should be made of peanuts and salt, *nothing* else.
- Seeds such as sunflower, pumpkin, flax seed. Watch out for phytic acid (see the page on antinutrients).

Fats that I avoid:

- Hydrogenated / hardened oils like margarine and shortening. They are pure evil, a source of harmful trans-fats.
- Vegetable oils like peanut, sunflower, canola etc. They are heavily processed, and considered by some to promote inflammation. They contain Omega 6 fats that we get more than enough of.
- Most fried foods, as they are typically made with the cheapest fats.

I use butter and olive oil for my cooking. I don't deep-fry anything.

Fiber

Food fiber is a form of carbohydrates that is not easily digestible, and does not provide much energy. That does not mean that it is useless !

- The bacteria in your gut love fiber.
- Some fiber in your diet provides bulk for easier elimination, and helps keep your colon clean.
- Fiber-rich foods are more filling, and slow down digestion of carbohydrates.

Some good sources:

- Vegetables
- Whole fruit

Fiber sources to be careful with, as they contain antinutrients:

- Lentils, beans, peas
- Nuts and seeds
- Whole grains such as oatmeal

Antinutrients

There is an important "gotcha" about some foods widely considered healthy, such as whole grains. Minerals and vitamins are concentrated in the husk and germ of grains. Unfortunately, so is **phytic acid**, which hinders the absorption of minerals like iron.

The phytic acid content can be reduced through traditional cooking techniques like soaking, germination or fermentation. For example, the process of traditional sourdough bread making greatly reduces phytic acid. Another way is to get rid of the fiber altogether, e.g. by milling white flour or polishing white rice.

The effect of phytic acid can be reduced by taking in some vitamin C (ascorbic acid from food or supplement sources) at the same time. Eat oatmeal with fruit, add some kimchi to your rice etc.

Plants don't necessarily want to be eaten, so they create toxins like **lectins**. Lentils and beans must be soaked and cooked properly.

Some veggies are also out to get you. Spinach and swiss chard are loaded with **oxalates**, especially when raw. Sweet potatoes and dark chocolate (sigh) are also high in oxalate. A sufficiently large dose could actually kill you. A smaller, but frequent dose could contribute to kidney stones (deposits of calcium oxalate) – they won't kill you, but you might wish you were dead. Minerals like calcium and iron will bind to oxalic acid and get excreted, so the nutritional value of spinach is overrated. If you can squeeze open the can with your hands like Popeye, you probably won't need any boost from the spinach …

Water of Life

Just like Humanlings, Goblins cannot survive for long without water.

The color of your urine gives you "too much information" on your hydration status. If it is water clear, you may be drinking too much. If it is light yellow, you are doing fine. If it is darker, drink more.

Good drinks:

- Mineral-rich water (tap, bottled water, or remineralized filtered water).
- Diluted fruit juice. A little dash goes a long way.
- Herbal tea.
- Fruit and vegetables include a lot of water.
- Milk, if you tolerate it. Don't "go mad = Gallon of Milk a day".

Avoid:

- "Dead" reverse osmosis or demineralized water.
- Soft drinks of any kind. You don't need the sugar or extra acid. Diet soda may not have any calories, but the acid will still attack your teeth.
- Straight fruit juice – sugary rocket fuel, even if it is 100% natural.
- Sports drinks with lots of sugar and artificial coloring. If you want electrolytes, you can get them for less silver in the form of salt and minerals.
- Energy drinks, "pre-workout" supplements or coffee – as if small Goblins weren't lively enough ?
- Alcohol of any kind.

I recommend drinking water with a high mineral content. Read the labels. Some examples from my local market:

- Eptinger: 475 mg Calcium / 107 mg Magnesium per liter.
- Gerolsteiner: 348 mg Ca / 108 mg Mg per liter.
- Evian: 80 mg Ca / 26 mg Mg per liter – weak stuff.

At my office, the tap water is somewhat icky, so I drink bottled water. At home, I drink chilled tap water. If you ask your local water works nicely, they will tell you the average mineral content of their water.

Vitamins, Minerals and your Bones

Once upon a time, Goblins could get all the nutrients they needed from their natural foods …

… until Humanlings came along and industrialized agriculture.

Researchers say that the mineral content of many foods has declined precipitously over the last century due to soil depletion.

Your body needs a steady supply of minerals like calcium and magnesium, combined with adequate levels of vitamins D and K2 to grow strong bones and teeth. What you build in youth and early adulthood is important. Afterwards bone loss is more typical than growth.

Besides your nutrition, your physical activity also influences the strength of your bones. If you mechanically stress them through vigorous movement or weight training, your body will adapt by making them stronger.

In my opinion, the growth of your fingernails is a good indicator on whether you get the protein and minerals that you need. Nail biting may just be a nervous habit, but it could also be a sign that your body is desperately trying to get minerals any way it can.

If you drink milk, calcium supply should not be a problem. A magnesium deficiency is more likely. Vegetarians and vegans need to pay more attention, as the phytic acid in many plant foods will hinder the absorption of minerals.

Pay particular attention to vitamin D. It is vital for the health of your bones and teeth. Your body can create it in your skin if you get enough direct sunlight. Most of us are holed up in our caves and covered up with clothes too much of the time. I'm afraid the blue light from screens doesn't cut it. If you have dark skin, it will take a **lot** of sun exposure for your body to make enough vitamin D – consider supplementation mandatory.

When you are not covered up, worried Big'uns will often slather you with a chemical marinade (also known as sunscreen) before putting you out on the ~~grill~~ beach. This may stave off sunburn to a point, but will also hinder the natural production of vitamin D.

Please note that excessive doses of vitamin D can be toxic. Don't go overboard. If you are worried, take a blood test to check your vitamin D level, and use a vitamin D calculator to adjust your intake accordingly.

Supplements

But surely you should be able to get everything you need out of a balanced diet ? I have a challenge for you …

Use a nutrition tracker app like Cronometer, and try to put together a daily diet that covers the recommended intake of all vitamins and minerals, without supplying too many calories. It can be done, but it isn't that easy (especially if you are veggiephobic).

Besides real, wholesome food, I would suggest:

- Natural vitamins from food are probably superior, but I take a daily multivitamin as insurance against deficiencies. If you don't like pills, you can get them in gummy bear disguise.
- Supplement vitamin D3 and K2 separately. The dosage in typical multivitamins is too conservative. I get them in oil form, and take them with whole milk.
- Unless you eat lots of fatty fish, take good quality fish oil capsules (or yummy cod liver oil) for Omega 3 fats. Vegetarians can try algae oil.
- Add protein powder if you don't get enough from your regular food.
- If you train hard, creatine monohydrate could be useful.

Other supplements ? Save your silver, and leave the proudly priced, gaily packaged pills and powders to grown-up Humanlings.

RTFL (read the friendly labels)

Humanling feed usually comes with a nutrition label on the package. If you know how to read them, you can avoid the most evil foods, even if they are not marked with the skull and crossbones sign like they should.

As an example, let's look at the chocolate food group (here in Switzerland it almost counts as one) in more detail.

On the left, milk chocolate as favored by most Lil'uns. It consists of mostly sugar, and about 30% cocoa. Most of the cocoa is in the form of cocoa butter = pure fat.

In the middle, we have "high octane" 80% dark chocolate. Most kids shy away from the intense, not so sweet taste. Let it be known that antioxidants and other goodness are in the dark cocoa mass. Come join me on the dark side !

Finally, the cocoa powder that I use to flavor my protein drinks. Who would have thought that this is a decent source of fiber and protein ?

100g Milk Chocolate	**100g 80% Dark Chocolate**	**100g Cocoa powder**
Energy 528 kcal	Energy 583 kcal	Energy 316 kcal
Fat 30 g	Fat 46 g	Fat 11 g
(saturated) 18 g	(saturated) 29 g	(saturated) 7 g
Carbs 57 g	Carbs 27 g	Carbs 14 g
(sugars) 56 g	(sugars) 20 g	(sugars) 0.3 g
Protein 7 g	Protein 9 g	Fiber 31 g
Sugar, cocoa butter, skim milk powder, cocoa mass, sweet whey powder, butter fat, hazelnuts, soy lecithin, natural flavoring.	Cocoa mass, sugar, cocoa butter, soy lecithin, vanilla extract.	Protein 25 g
		Cocoa powder.

Energy – this tells you how many calories / energy this food gives you.

Carbohydrates – often split out in sugars (beware) and fiber (good).

Protein – bring it on.

Fat – depends on what kind it is. Read the ingredient list …

The ingredient list shows the different contents in order of percentage. They often hide the ugly truth by including different kinds of sugar as separate items. E numbers refer to assorted wondrous food additives. Some are harmless, others not so much.

Take a close look at the labels the next time you forage for grub. Some ingredients that make me put the box back on the shelf:

- partially hydrogenated or hardened fat, such as shortening
- too much sugar (sugar, dextrose, corn syrup etc)
- preservatives - if it won't rot, can you digest it ?
- artificial food coloring
- carageen (considered by some to be inflammatory)
- mono sodium glutamate / MSG

There, I emptied the basket for you. You're welcome !

Power Food Secrets

Some nutrition tips by a lazy and frugal cook:

- **Shocking news:** Vegetables are actually fit for consumption by Goblins of all ages. No cooking skills required. For a nice "V Bomb", cut up some zucchini, leek, broccoli, *non-toxic* 'shrooms, red onions and bellpeppers. Feel free to substitute, everyone is entitled to hating *some* veggies. Use a bamboo steamer (available at Asian food stores or online) over a pot of boiling water. Goes down easy with a little sour cream, hummous, guacamole, whipped cream cheese or nut butter. Use some spice salt if you want to save calories.
- Instead of sugar bomb "fruit" yoghurt, add a teaspoon or two of high fruit / low sugar jam to plain yoghurt.
- Get raw milk if you have access to it. In some places it is illegal, known as "moo-shine". I regularly bike to a farm store with a milk vending machine. As this is "living food", there is a small risk of bacterial contamination. I am still alive and kicking despite not heating it to 70°C like you are supposed to. Just think of what mothers feed their babies with – *raw* breast milk – the horror !
- Cottage cheese is a good and inexpensive high protein snack.
- Liver (beef, chicken, lamb) is cheap, packed with nutrients, and tasty if not overcooked. I eat it about once a week.
- Commercial salad dressing is made with the cheapest possible ingredients. I make it fresh – 3 teaspoons of extra virgin olive oil, about 1 teaspoon of balsamic or apple cider vinegar, garlic powder, freeze dried herbs, chili flakes and salt.
- I don't eat out for lunch. That would be an expensive habit here, and I prefer to control what I put into my body. I cook some turkey or ground beef in the morning, and warm it up in the microwave. Season with some salt or whole grain mustard. Add some salad and feta cheese for a high protein, low carb lunch.
- Lest you think I'm some sort of Goblin monk – on many days I eat 50g of dark chocolate (80% cocoa, so this is just 10g of sugar), and I also have a little stash of chocolate ice cream in my freezer. A *little* bit of sugar should not kill me.

Food Empowerment

I sense a little bit of unrest in the audience.

Do you actually eat like that ? Sounds kind of boring…

Yes, really. I can't be bothered to spend a lot of time in the kitchen to prepare my daily fuel ration.

By eating a fairly consistent diet, I don't have to count calories. To lose weight, I just reduce or eliminate a few things. To gain weight, I add more yummy and nutritious stuff.

You are welcome to add more variety, spice foods up a bit more etc.

I want pizza !

You can eat it, just not all the time.

Don't fall into the "all or nothing" trap. Look at what you are eating, and consider healthier alternatives. You don't need perfection, just reasonable consistency.

I starve if I don't eat carbs !

You didn't eat anything all night, so your body should be ready to burn fat. Try a breakfast rich in protein and fats, but low in carbs, e.g. scrambled eggs with some meat or fish. You may be pleasantly surprised by how long your energy will last.

If you stuff yourself with carbs all the time, your body will rarely see a reason to burn fat.

I don't like eating breakfast !

No problem. Try not to get on the carb roller coaster with snacks, and make sure you get enough protein over the course of the day.

We only have junk food at home !

Your Big'uns don't like to throw out perfectly good food all the time. If all you ask for and eat is junk food, then they will buy perfectly bad food for you.

Ask, and ye shall receive …

… wholesome food, that is. Just make sure to actually eat some of it, otherwise you will soon be back to square one.

I don't want to eat dead animals !

Then don't. If you eat a vegetarian diet with some dairy and eggs, you will get a good supply of nutrients and protein.

As a kid, I was a bit ahead of my time and ate a vegetarian diet for environmental reasons. I would have grown better on a more nutrient rich diet. I hope you will do your nutritional homework better than I did.

I eat plant based !

Who will eat all the grass we can't digest ? What about grassland that is not suitable for plant crops ? Who will fertilize the soil with their generous droppings ?

If you eat a vegan diet, you *really* need to do your homework. Use a nutrition tracker to see what micronutrients you take in. In the end, what matters is what your body actually *absorbs*. Typical issues:

- You will need to supplement Vitamin B12, which is mostly found in animal foods.
- Vitamin D is mostly found in animal sourced food. You will need to supplement unless you are out in the sun a lot.
- Vitamin K2 – eat some natto. It tastes even worse than it looks.
- Calcium – it is difficult to get enough from plants. Keep in mind that phytic acid and oxalates contained in many plant foods will hinder the absorption of minerals. Special cooking techniques like soaking or fermentation should be used to reduce their impact. Otherwise your bones and teeth could suffer.
- Iron - the absorption of iron from plant sources is much worse than from animal sources / heme iron, further diminished by phytic acid.
- Omega 3 essential fats. You can get a good amount of ALA (alpha linoleic acid) from flax seeds, but the conversion to the forms that count for brain development (EPA and DHA) is not good. Consider algae oil.
- Protein – plant based foods just aren't very protein dense, which means that you have to eat a lot to get enough protein. You need to combine different protein sources to get a balanced supply of all essential amino acids.

Are you still determined to stick to a vegan diet ? I admire your conviction, and hope that your body won't have to pay a price for it.

We don't have silver for healthy food !

Compare the price of plain oatmeal (about $0.70 per lb in expensive Switzerland) to the much higher price of sugary breakfast cereal packed in a colorful cardboard box. Healthy staples don't have to be expensive, and simple home made food will be less expensive than eating out.

I rarely buy proudly priced brand name "foods" with ominously long ingredient lists, expensive advertising and a suspiciously long shelf life.

Bulk whey protein powder (in 1 kg or 2 lb bags) is less expensive per gram of protein than meat.

My Big'uns don't cook !

Then head to the kitchen, and get busy. You don't have to make an elaborate production of it.

School lunches are evil !

Take control - you decide what you eat. Bring your own food.

Cooking takes too much time, let's go get "Instagrub" !

Please add up the time:

- Go to the fast food place.
- Wait in line, get your order taken.
- Wait for the food.
- Go back home.
- Eat, then throw away a mindboggling amount of packaging.
- Spend more time at work to earn the silver needed to feed and groom the noble family steed, buy Instagrub, and pay the medic when Instagrub wasn't that healthy after all.

How do you save time ?

(Slow food aficionados, please close your eyes)

Overlap cooking and eating.

- I empty the dishwasher while I prepare my lunch in the morning.
- My rice cooker can cook while I lift.
- Get the water boiling while I prep the veggie bomb.
- Eat a salad while the steamer and the skillet are working.
- Eat ~~dead animal~~ protein.
- Eat veggies when they are ready.
- If you get bored while cooking, you could always knock out some pushups or pull-ups while the food cooks.

Some people cook ahead for a week. I am a bit sensitive to histamine, so I prefer to cook fresh each day.

☞ Cookbooks for your Big'uns:
"Nourishing Traditions" by Sally Fallon for ancestral slow food.
"It takes Guts" by Ashleigh VanHouten about cooking with organ meats.

Body Image

You have probably seen plenty of images of impossibly fit, strong and muscular men and women. Let them inspire you, but *please* don't compare yourself to them.

- They have been training and eating consistently for years on end. Tristyn Lee says that he had no cheat meals for 4 years. I believe him.
- They picked the right parents, and are "genetically gifted".
- They eat a very restrictive diet to get "shredded".
- They don't look like this all the time. The photos were taken with optimal lighting when they looked their best.
- Some of the photos are filtered or edited.
- They may also be taking magic potions of dubious legality.

Instead, compare yourself to what you looked like a year or two ago. Are you getting stronger ? Can you perform better ? Then you are on the right track.

Magic Potions

Steroids or similar ? Don't even think about them, at least until you are well past puberty, and have trained seriously for 10 years or so.

There is no need to flood your body with extra hormones that will quickly disrupt your hormonal balance, sometimes permanently.

Despite my age and modest genetics, I can still get natural gains with hard training and good nutrition. If I can do it, you can. Resist the quick fix.

Puberty

Youth is wasted on the young.

Consider it your own, personal, free supercharge cycle - do not waste this once-in-a-lifetime opportunity.

Eat, train and rest right to build a strong foundation for the rest of your life.

Moving on to the Gym

To boldly go where few Goblins have gone before.

Have you been training in your iron dungeon for a while, and are ready for the next step ? Humanling gyms can be intimidating and bewildering places. Let me give you some hints on what to do when you enter the hallowed halls.

- Ignore the rows of hamster mills, where Humanlings spin their wheels. Spin your own two wheels on the way to the gym and back.
- With a few exceptions, ignore the shiny, complicated contraptions they call "machines". Don't take your muscles the freedom and responsibility to move a weight through space.
- Instead, let the free weight area be your new home. If they don't have power racks, exit and find a proper gym.

  A Goblin's place is in the rack.
- Find a professional coach or an experienced lifter to show you how to perform the sacred barbell exercises new to you, such as the squat, the bench press and the deadlift.
- Train hard, and you will be respected, no matter how small you may be compared to older members.
- Unlike some utterly despicable Humanlings, you will have the sense to put back weights in their rightful spot after you use them, and not leave them for others to stub their toes on or chase after.
- Unlike dumbbells, unbalanced barbells can tip over. Beware when loading or unloading them.
- Don't disturb others, especially when they are in the middle of a set.
- Don't be shy to ask others for a spot, and be ready to give one to others.
- Leave your Weapon of Mass Distraction in the locker room. If you really can't separate yourself from your music IV, set up a motivating play list for uninterrupted training.

Notes for Big'uns

There are many myths related to weight training for young ones. Let me clear up some of them.

Lifting weights will hurt growth plates, and cause stunted growth !

Lifting weights with proper form will not do this. Impact forces in football or other contact sports are much higher than those experienced in *heavy* weightlifting.

Lifting weights is dangerous !

Statistics show that the injury rate of strength training is much lower than that of other sports. Having a solid foundation of strength may also reduce the injury risks of other sports.

Doesn't my kid have P.E. classes at school ?

Please take a stopwatch and observe them during a lesson. Track how little of the time they are actually moving with meaningful intensity.

Kids should train with their bodyweight !

Yes – if they are strong enough. Can your kids (or you, for that matter) do pushups or pullups with decent form ? If not, lifting weights can help them progress to being able to do so.

Kids can't grow muscle before puberty !

Neither can women ? (**Clang. Ouch, that hurt !**)

The initial response to strength training is neurological, making proper use of the muscle that is already there. You have to get beyond these "easy" gains for the body to have a reason to grow.

Without the hormonal storm of male puberty, growth may be slow – but the body will adapt to the demands placed on it once training gets hard enough.

Finally, knowing how to train properly will give your kids a headstart when puberty hits.

Our local gym doesn't allow kids below 14 or 16 years !

All exercises shown in this book can be done at home. You can set up a home gym for your whole family to enjoy. I point out options to start small and at minimal cost.

Kids could develop eating disorders !

Learning about healthy nutrition and what a growing body needs is a good way to avoid drastic diets and unsound eating habits. I recommend a nutrient-dense diet based on ancestral experience.

Vitamins and protein are expensive !

The old doctor's tale says that you can get all you need from a balanced nutrition. When you crunch the numbers, you may find that it is not so easy to achieve, especially when your Lil'uns don't eat everything. Multivitamins are insurance, just like seatbelts.

Vitamin D and minerals to ensure proper bone growth are much less expensive than braces and glasses. Quality fish oil for Omega 3 fats is not cheap, but also supports the development of the brain and nervous system. Whey protein powder is less expensive than meat when you compare the cost per gram of protein.

Will I need to constantly supervise my kids ?

Depending on their age, you should work with them on proper exercise form in the beginning. Later on they should be able to exercise by themselves.

Won't working out take a lot of time ?

Yes, regular training could cut into their gaming time. Don't get your hopes up too much – short, intense workouts can be very effective.

Will I have to push my kids to work out ?

Please don't. The point of this book is to empower kids to take care of their health. Think of it as a "free-range" approach to fitness.

My kids would never be that disciplined !

There is only one way to find out …

Can I join in ?

Absolutely. Training also works for Big'uns. I do these exercises myself. Please adjust based on your recovery capacity.

Where's the research ?

This is not a scientific treatise. Exercise and nutrition scientists are not known for coming to consensus. This book is based on about 40 years of training experience and something rather uncommon (common sense).

Find some references at www.goblinsgym.com .

Lift long and prosper !

Life is a marathon, not a sprint.

I started out as a rather wimpy kid. No athletic talent to speak of, messed-up eyes didn't help. I couldn't throw a ball worth a damn (still can't). Looking back, my gym teacher should have realised my complete lack of talent at group sports, and sent me off into a weight room. Riding the bike to high school helped a bit. Going 120 meters uphill on the way home was a good way to blow off steam after school, and gave me time to think up devilish plots to blow up said edifice.

Around 14 or 15 I got fascinated by bodybuilding, and picked up a copy of "Bodybuilding for Men" by Arnold Schwarzenegger. I got myself some adjustable dumbbells, and started lifting on a wooden box. Later, in university, I was still too shy to enter the university gym, and kept working out at home.

After my graduation as an electrical engineer I moved to Hollywood for Engineers (also known as Silicon Valley). After some time I joined a proper gym (Gold's Gym in Santa Clara, CA), and put on a little bit of size (going from pencil-neck geek to just geek). Later on I started climbing (mostly on plastic, a little real rock).

Eventually the weather in California got too predictable, so I moved back to Switzerland. The best gym in town would have been at the other end of the city, so I got an alumni membership at the nearby university gym instead. Dumbbells topped out at 30 kg, once you managed to find the matching pair. Racking them in a proper sequence would be too trivial for academics, I guess.

More climbing, many evening walks with a young son, and a hardcore home remodel (build a house, lose a spouse) kept gym time down for a while.

Fast forward a few more years: I now live a short bike ride away from a decent gym, and also ride the bike to work when the weather and my inner sloth cooperate. An inspiring gym environment and better nutrition pay off with visible gains.

With age come some niggles, such as temperamental joints. I aim to stay fit and strong so I can carry the next generation on my shoulders some day.

Acknowledgements

This book could not have been created without a lot of help.

A little bat transmitted a virus, closed down gyms for some time, and nudged me to think about training at home more seriously.

Many experienced trainers took the time to spread the gospel on exercise science and technique on Youtube and podcasts. There is some chaff, but also a lot of gold to be found.

Our Vietnam based team of artists, Light Comic Studio, made this book come to life – without them you would have to look at muddy photographs instead of clear drawings.

Thank you to the reviewers who waded through early, half-baked versions.

A big thank you to my son for being patient with me when I was glued to the computer writing this book.

Thank you to the staff and my friends at Clever Fit gym in Dietlikon, as well as to my neighbors, who put up with things that went bump in the evening when I trained at home during lockdown.

We also shouldn't forget the foundry workers making weight plates in China. Their hard work gives us heavy things to lift.

Pascal, September 2021

10 Commandments of Goblin's Gym

1. Move every day.
2. Train with good form.
3. Train with a good range of motion.
4. Challenge yourself with progressive loading.
5. Adapt your training volume and intensity.
6. Recover well.
7. Feed yourself right.
8. Listen to your body.
9. Be patient and persistent.
10. Bust yours to kick theirs.

Rated G - for
Goblins aged
8 - 888
ONLY !

The complete guide to getting STRONG in and around your cave:

- ✓ Training Principles
- ✓ Set up your Iron Playground
- ✓ Goblin Anatomy
- ✓ Exercises
- ✓ Nutrition
- ✓ Recovery

… and much more !