

ROPE JUMPING FITNESS

The Complete Guide To Jump Rope Fitness



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Introduction

Jumping rope is a super cardio exercise modality suitable for just about anyone and everywhere. It requires only you and a jump rope, which is incredibly inexpensive compared to other equipment *and* the workout fun and results:

Jump Rope Fitness improves

- **Fatburning (fat loss and weight maintenance)**
- **Body composition**
- **Cardiovascular fitness**
- **Stamina (endurance)**
- **Coordination (motor skill)**
- **Agility (speed work)**
- **Mobility**

It is simple! Even it looks impressive and challenging, it is easy to learn to learn the basic moves, even if some say it is not (...), and you reap the benefits immediately.

It is fun! Rope jumping is more than jogging, hopping and jumping, there are lots of variations! And you can do it with family and friends.

It is fast! 10-15 min. of rope jumping burns as many calories as 30 min. of jogging!

It is inexpensive! Jump ropes cost next to nothing compared to other equipment.

It is convenient! All day, inside, outside, at home, the gym; all you need is a little space.

It is compact! Jump ropes can easily be carried around where ever you go (travel).

It is effective! Improves endurance, coordination, agility and body composition.

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Rope Jumping Vs. Rope Skipping

Rope jumping has been around for many years as a recreational activity for kids and for physical exercise, e.g. in warm-ups and cardio for boxers. But you can do it, too. In basic rope jumping, you just jump over the rope, first slowly, then faster, with small and quick movements.

Rope skipping (also called rope jumping) is a gymnastic competitive sport, for individuals and teams, which requires – in some cases – even extreme agility. It is extremely enjoyable to watch and very inspirational. Check out 'rope skipping' and 'Buddy Lee' on the internet.

However, even if exercisers may be able to use some of the tricks, rope skipping is not for everyone, as you need to be fit and sturdy to perform many of the movements, e.g. hopping on your back or doing air turns.

Rope jumping for fitness has been around since the 90's and has been promoted in different types of programs by e.g. Buddy Lee, USA, and Mindy Mylrea, USA – check out their videos for more inspiration – and rope skipping expert Kirsti Riis Madsen, DK, who developed the concept Rope Aerobics.

Jump Rope Fitness is a new 'rope jumping for fitness' concept – the main idea is to get

More fun, more fitness, more flow

Maximal benefit, minimal time, optimal success!

Jump Rope Fitness

Jump Rope Fitness intensity and energy expenditure, calories burned, or training effect, depends on:

- **Bodyweight** (can be changed by a weight vest, heavier shoes ... and weight loss)
- **Rope weight** (plastic, leather, rubber)
- **Jumping speed**, or number of rope revolutions per minute, usually around 120-140 – range from 90-180 – revolutions per minute, RPM.
Note: You can jump faster or slower than the swing, half time or double (time) jumps.
- **Jumping height** (number of inches (centimetres) above the floor)
- **Travelling**, moving horizontally, while jumping

My personal Jump Rope Fitness program, **JuRoFit™**, is aimed at:

- **Stamina** – continuous endurance training (with interval work for variation)
- **Variation** – many different movements – at a doable level for more motivation
- **Flow** – smooth non-stop action and balance between the activity and skill level

Choosing the Right Rope

A rope is a rope? No, it is not. There are so many different types of jump ropes, that just changing ropes will change your workout.

The ropes come in a multitude of shapes, sizes, weights, lengths and colours ranging from leather ropes with wooden handles, light plastic or heavy rubber ropes with weighted or un-weighted plastic handles and light or heavy cotton ropes with or without handles.

The price ranges from 3-50 USD.

My personal rope preference for Jump Rope Fitness is a speed rope, a light-weight rubber rope, but for variety I use different kinds of ropes from time to time.



Photo: Edwin Pijpe

Jump Rope Type

Beaded Jump Rope: Rope with plastic beads that are strung on a piece of thin nylon. Colourful and nice. For demos, shows and competitions. Noisy, when the beads hit the ground; this can be a help, though, if you need help for finding the rhythm. A bit 'difficult', slow, to swing and hence not that effective or fun for fitness.

Fabric Jump Rope: Cotton ropes or braided ropes made of cotton or nylon cords. Some come without handles. With handles these ropes rotate quite slow because of the friction. They are an option, but are not optimal, because they are 'difficult', slow, to swing and hence not that effective or fun.

Leather Jump Rope: Leather ropes with plastic or wooden handles. They are relatively heavy and fast. They are prone to twisting, which may irritate your wrists. As it is heavy, it is more difficult to swing and it hurts, if you get whipped. Leather ropes are not optimal for beginners.
Note: May shrink, if they get wet.

Plastic Jump Rope: Popular 'for play' ropes. They are made of plastic, PVC, and are light and long lasting. Depending on the design of the handle, they may twist up. Check it out, the rope should move freely and easily. They are very inexpensive.

Speed (Jump) Rope: Speed ropes are made for competition and are excellent for fitness rope jumping. They are made of plastic, PVC, and are very light. The thickness varies. They are fairly inexpensive. They have been designed, so they don't easily twist up compared to other ropes. Recommended for both beginners and advanced jumpers.



Weighted Jump Rope: There are two kinds of weighted ropes with fixed handles or traditional handles. Weighted ropes are mostly made of a thick plastic-coated cable and weighs from 1-5 lbs (~ ½-2½ kg). The main part weight can be in the handles or in the rope itself. Weighted ropes differs in price and can be somewhat expensive.

The weight has the purpose of providing additional work, burn more calories and give extra upper body work e.g. for forearm and grip strength.

Due to the weight, it is more difficult to swing and it hurts, if you get whipped.

Weighted ropes are not optimal for beginners. Learn technique first, build stamina, then add weight.

Note: Weighted ropes are often recommended for fat burning. However, as the rope weight goes up, the speed (and jumping time) often goes down, so the weight rope may not always be the best choice for fat burning, but for variety. Test it and decide.



Wire Jump Rope: Or cable jump ropes. The rope is made from a piece of wire, with or without plastic cover, and have plastic handles. The price is moderate.

Wire jump ropes can swing very fast and are good for speed work.

Due to the weight, though, it is more difficult to swing and it hurts, if you get whipped.

Wire ropes are not optimal for beginners. Learn technique first, then increase speed.

Jump Rope Handles

Handle design and the connection, coupling, between the rope and the handle is important.

The coupling decides how easy it is to swing the rope, also a fixed or dragging coupling may induce stress on your wrists.

The look of the handle can vary in shape, length, thickness and weight. Try holding and using ropes with different handles to feel, how they are for grip and handling, to decide which you prefer.

For enjoyable rope jumping the swing is paramount, so check out how the rope is connected to the handle:

Choose a rope that spins freely within the handles, when you jump.

If the rope is fixed or cannot spin freely, it will drag or twist up and make rope jumping harder – also on the wrists – and less enjoyable.

Jump Rope Length

The jump rope length should fit you; the jump rope should not be too short or too long, either one will hinder optimal rope fitness fun. The wrong length may impair your mechanics and make you trip.

Too short: You have to keep your arms low and duck your head!
Results in poor posture.

Too long: You have to lift your arms and still the rope hits the ground too far in front of you and catches your feet.
Results in poor performance.

General guidelines for rope length

Height of rope jumper		Length of rope	
feet/inches meters, centimetres		feet/inches meters, centimetres	
< 4'0"	< 1,22	6 ft	1,80
< 5'0"	1,52	7 ft	2,13
5'0"-5'5"	1,52-1,68	8 ft	2,44
5'5"-6'0"	1,68-1,80	9 ft	2,74
6'0"-6'5"	1,80-1,98	10 ft	3,05
> 6'5"	> 1,98	11 ft	3,35

Optimal length will depend on how and where you hold the rope during rope jumping. Test the rope and adjust accordingly, if possible (some ropes have a fixed length).

Easy rope length test – before purchase or rope jumping:

- Stand on the middle of the rope with feet shoulder-width apart
- Pull the handles up to horizontal position
- The handles, when in horizontal (ends of the rope) should be around nipple to armpit height.

Technique and Safety

Rope jumping is easy to learn, it is all about getting started and getting some practice.

For starters make everything as easy and comfortable as possible:

- **Casual dress.** You can wear your every day clothes or any kind of training clothes, however light-weight, preferably sweat-transporting, workout clothes will often result in a better workout experience (women should wear a support-bra). Wear properly fitted cross-training, or athletic, shoes with good fore-foot padding.
- **Stay safe.** Clear ample space around you (indoor and outdoor); 4-by-6-foot area and about 10 inches above your head (webmd.com). Check that the rope will not get caught above or behind you!
- **Light-weight, right.** Use a light (easier) rope of the right length for you. Check: When standing on the middle of the rope, the handles should come to armpit height, otherwise rope jumping is more difficult.
- **Don't worry.** Trouble coordinating the swing and the jump?
No worries, everybody can learn.
It is only a question of your prior motor skill level and amount of practicing.
Sometimes you have to start at a low(er) level, but will then progress fast(er).
- **Part-to-whole approach.** If you are a novice, you can practice foot and arm movements separately:
 - 1) Hold the handles in one or both hands and swing the rope at your side to develop a feel for the rhythm.
 - 2) Jump rhythmically without the rope.
 - 3) Now combine the swinging and the jumping.

- **One step at a time.** Put the rope behind you.
Swing the rope forward, and jump over it.
Start with one revolution, stop, repeat.
Or: Do one revolution and continue, two, three, four ...
Listen for the rope touching the ground lightly for each revolution, it can act as a cue for jumping.
- **Easy does it.** Jump at a moderate (to slow) tempo initially and gradually increase the tempo.
- **Less is more.** Make as small movements and jumps as you can initially; smaller movements makes it easier and allows you to jump faster.
Later on you can do variations with larger movements.
- **"Done in 60 seconds".** Jump only for a short time initially, 1, 2, 3, 4 or 5 minutes in total. If you start slow, you will minimize fatigue and soreness in your calves, lower legs, and forearms. If needed do a few jumps, rest, jump again, and so forth. Gradually increase jump roping duration over time.
- **Use music.** The right music, according to you, with a driving beat and a fairly fast tempo, around 130-140 beats per minute, can be very motivation and will help you to work at a higher intensity for a longer duration.
Note: When outdoors listen to nature sounds, this is motivating, too.
Note: When using earphones (mp3) be careful not to turn up the volume too high, as this causes injury to your ears and leads to hearing loss over time.
- **Energize.** Keep breathing, oxygen is energy, throughout the workout:
Do **not** hold your breath.

Technique

The rope jumping basics at a glance:

- 1. Stand tall**
- 2. Shoulders relaxed**
- 3. Arms relaxed**
- 4. Hands around hips or waistline**
- 5. Use your wrists to turn the rope**
- 6. Land softly**
- 7. Keep knees and feet aligned and knees soft**
- 8. Jump low**
- 9. Start slow**
- 10. Keep the rhythm**

On the following two pages you can find more important information on each area, so you will get an even better rope jumping workout.

1. Stand tall. Erect, upright, posture, torso relaxed. Keep neck in neutral and look straight forward.

Do not put the head forward or look down at the feet as this impairs your posture and workout.

2. Shoulders relaxed. Do not contract your neck or shoulders. Keep shoulder blades in neutral position.

3. Arms relaxed. Let arms hang low and relaxed, elbows slightly bent, 45 degrees, and close to your sides.

4. Hands around hips or waistline and a slightly out from your sides. Hand position also depends on the length of the rope you have. Adjust position or change rope. Hold handles firmly with a comfortable grip.

5. Use your wrists to turn the rope

The rope jumping swing should be generated primarily by the wrists moving in a small circular motion (approximately 2 inches).

The swing should seem effortless. Avoid using your shoulders and arms, no excessive movements.

6. Land softly

Land softly on the balls of your feet. Jump and land without making any noise; it keeps the impact down.

In general: **Jump on the balls of your feet**, especially for speed work. However, (for longer sessions) vary your steps and use toe-ball-heel (super-smooth roll) landings to absorb the impact evenly across the feet. If you are always on your toes, your calves are working constantly and it is hard on the muscles and joints.

7. Keep knees and feet aligned and knees soft (slightly bending and extending).

Pay attention during jumping jacks and scissors or jumping lunges; keep the knees and feet aligned and avoid twisting the knees. Do not lock the knees during jumping or hopping.

8. Jump low

In general and for speed don't jump too high, keep it low, 1/4 to 1/2 inches (½-1½ cm) off the ground, and relaxed. Keep your movements small for most of the time, especially during speed work.

For variety you can jump higher and mix different jumping heights, e.g. with double swings or without swings.

9. Start slow

Initially, when doing your first rope jumps, and when warming up, take it easy. Start with slow easy jogging or hopping, whatever is the easiest for you. Spend a couple of minutes raising the heart rate, get the blood (and oxygen) flowing, and raise the body temperature, as this makes all work easier and improves performance.

Pick up the pace, and maybe range of motion (depending on moves), when warm.

10. Keep the rhythm

You can jump rope with or without music:

Music can help you keep the rhythm and is very motivating, if you find the right music for you and with the right tempo, not too slow and not too fast.

Suggestion: 140 BPM, beats per minute, for mixed moves.

No music makes it easier to listen to your body (and nature sounds) – and you have to get into a rhythm yourself. Listen to the rope touching the ground and make that sound into an evenly paced rhythm.

To make certain you keep an even rhythm, complete the same number of jumps every minute, e.g. 120.

Timing

Rope jumping success depends on timing. Timing is a motor skill, coordination, and it can be learned.

Over time you train your brain and motor system to analyze and react to rope position and speed.

Initially some exercisers find rope jumping challenging, but that is only natural: When rope jumping is new to you, you do not have the necessary technique and timing and coordination, which leads to tripping up.

And of course that is frustrating, luckily jumping like a pro is just a matter of practice.

Most things – including rope jumping – can be mastered, if you start with a slower tempo. So take it slow and easy and pick up the pace, when you are ready.

Srdjan Popovic (Jump Rope Manifesto) has a trick for improving timing:

"Start off by holding both handles in one hand, with the rope to your side. Begin swinging the rope on that one side (kind of like a helicopter). Make sure you let the rope hit the ground on each revolution so that you can hear the rope making contact (... a beaded rope work well for this). Now, the objective is to try to hop every single time the rope makes contact with the ground.

At first, it will seem like the most awkward thing in the world. But, the reason why it works is that you can't trip up. By listening to the rope hitting the ground and trying to time your hops to match, you'll slowly begin to improve your timing, coordination and overall feel for the skipping rope without ... Once you feel like you got the timing down, try proper skipping. You should feel a big difference."

Training tips

To have fun jumping rope, and continue to jump rope, the most important tips of all are to:

- **Start** – swing the rope from behind and jump over it, jogging or jumping style.
- **Keep going** – if this works, keep swinging and jumping over the rope. If you trip, start again.
- **Practice** – the basics are easy to master and do not require a lot of practice, but if you want to progress and learn more difficult moves, this is easy too, it just takes more practice ...

Tip: To master double unders (double swing, one jump) and crossovers:

Start with one repetition followed immediately by easy rope jumping. Then two consecutive repetitions followed by easy rope jumping. Then three and so forth.

If this works well, you can make small combinations, e.g.:

One crossover (two jumps) followed by two 'normal' jumps. Keep repeating this.

One double under and three 'normal' jumps. Keep repeating this.

- **Keep doing it.** Don't just try rope jumping once, trip up, stop, and miss out on all the benefits of rope jumping. For most people it only takes a couple of sessions and then the basics are mastered.

Even if you have to stop, because you lose the rhythm or are out of breath – this happens at first – you can start again, over and over again, just keep trying, and you will have a good workout after all.

Safety

Injury prevention

Rope jumping is a safe activity with hardly any risk of injury. You may get a little whip of the rope from time to time, but that is all. However, overuse injury, shin splints, is possible and should be avoided:

To continue having fun jumping rope, start out with caution and progress gradually. Even if the impact is not as high as during running, because you only jump about one inch off the ground, it is still stressful, if you do too much too soon. Therefore: Initially start with as little as 3-5 minutes of rope jumping, maybe even just 30 seconds and a pause and then again. Gradually build up your training volume by using the small increment technique.

Rope jumping should feel good. You should not experience any kind of pain or extreme fatigue. Listen to your body, take a break if needed. Build strength and stamina over time.

Choose a softer surface initially and wear good workout shoes.

Avoid injury!

- Do **not** jump on your heels, as this is very hard on your heels (and knees) – an unnecessary variation.
- Do **not** hop on one, same, leg for extended periods. 8 repetitions are maximum for general fitness.
- Do **not** jump constantly on the balls of your feet, 'bounce' and unload, shift the weight, to reduce impact.
- Do **not** perform the exact same jumping movement, e.g. jumping jacks, for long periods of time. It can be done, but is harder and more fatiguing. 8-16 consecutive repetitions is recommended for general fitness.

Surface

Different surfaces, textures, cause the rope to bounce and slide differently, which requires some adjustments in your rope jumping mechanics. This is o.k. for variation, but for optimal performance and minimal risk of overuse injury, some surfaces are better than others.

Hard surfaces results in greater impact forces on your joints than soft surfaces. Impact is good, because it strengthens your bones. However, too much impact and too much too soon is very bad and can lead to overuse injuries, e.g. painful and chronic 'shin splints'.

If possible jump rope on a wooden sprung floor, as seen in gymnasiums and dance studios. This is the ideal surface for reducing impact forces and jumping with speed and easy, with minimal friction from the floor.

Wood or rubber. Gym floors with rubber padding, on wooden floors, or plastic tiles are also easy on your joints and do not cause too much friction.

Carpet. Carpeted (thin) floors reduces impact, but thicker softer carpets makes rope jumping harder and, depending on the texture, the friction between carpet and the shoes and the rope is greater and may bring the rope to a stop or be stressful to the knees.

Asphalt is hard on the joints and wears the rope much faster. However, working out outdoors is wonderful, so when you are used to jumping rope and used to running on asphalt, you should take you rope jumping outside from time. Start with short sessions, 1-5 minutes, and build up over time, around ½ hour.

Concrete is the hardest surface and very hard on the joints, also it wears the rope very fast. When you want to jump rope outside, if possible choose asphalt or other softer surfaces.

If concrete is the only option, start with very brief sessions, 1-5 minutes in total, and build up gradually over time to 15-30 minutes.

Shoes

Wear cross-training fitness shoes with a sole that cushions your feet – not only the heels, but also the fore-foot – and reduces the impact on your joints.

On soft surfaces and for shorter periods of time you can of course jump rope bare-footed, however, when you jump rope, especially for longer periods of time, it is recommended, that you wear shoes with some cushioning to protect your feet – mostly it does feel better ...

... but as soon as the jumping is over, kick of your shoes and walk bare-footed – it is the natural thing and healthy!

Warm-Up And Cardio Work

Warm-Up

For superior workout experiences and results you need to do a warm-up. This simply means raising the heart rate gradually in order to pump blood with oxygen to the working muscles.

If you start too quickly, your muscles do not get sufficient oxygen in time and you will become out of breath – gasping for air (oxygen) – so the workout will feel harder and you will not be able to perform as well or work as intensely as planned.

Also, when you get warmer, when the tissues (muscles and tendons) get more resilient, the risk of an injury, pulling a muscle, e.g. during a jumping lunge or a high kick, is reduced markedly.

A warm-up, for traditional rope jumping, does not require 'special' movements. All you have to do is:

3-5 minutes Easy jogging without the rope or easy slow or moderate tempo 'rope jogging' (hold the jumping).

If the weather is cold, if it is early morning, if you feel a bit tense, you can warm up for longer, 5-10 minutes, and do:

A series of easy stretches to loosen up the joints before and/or after some easy jogging without and with the rope.

Ready to Go!

Cardio Work

Rope jumping is excellent for cardio work; it improves both your metabolic fitness, health, and cardiovascular fitness. The intensity is moderate to high, which results in more fitness and health benefits than low intensity activities. And yet the impact on your joints is relatively low (compared to e.g. running), but high enough for an effective 'bone workout' and osteoporosis prevention.

Rope jumping is superb for fatburning, too, because you burn calories faster than you can with your average jogging program, and it does not feel as hard as jogging. Also jogging is quite hard, if you are overweight.

If you have too much body fat rope jumping, however, may not be the best activity either, because the more you weigh, the higher the impact and jumping may feel uncomfortable, even if you don't jump very high. If so, start with low impact activities like walking and Nordic walking and maybe some crosstrainer cardio machine work.

Rope jumping benefits:

- **Stronger heart**
- **Improved cardiovascular system (more capillaries)**
- **Increased lung capacity (stronger muscles)**
- **Improved metabolism**
- **Increased energy expenditure**
- **Reduced body fat mass**
- **Improved body composition**

To enjoy all of these benefits, **all you need to do is basic rope jumping:**

After the warm-up continue with easy jogging and jumping with the rope for 15-30 minutes*.

For more than just basic rope jumping, the purpose of this guide (the moves, variations and principles form the basis of my **JuRoFit™** Jump Rope Fitness program) is to provide additional ways to vary and combine rope jumping moves, so that you have more options and can continue to vary your programs in a multitude of ways and stay inspired and motivated..

** Most exercise recommendations are 'result-oriented' or 'goal' recommendations. If you have never exercised or jumped rope before, you need to start with a lot less than that for optimal results.*

Check the guidelines at the end of this chapter.

Continuous and Interval Training

You can improve your level of cardiovascular fitness with either:

- **Continuous training**, non-stop cardiovascular work
- **Interval training**, intermittent work (one modality only, e.g. cardio)
- **Circuit training**, non-stop work with mixed modalities

You can design your rope jumping workouts using the above 'templates'.

Which is better? They serve different purposes and you can use them all at different times. Interval training is very effective for anaerobic work and fatburning and is highly recommendable, while continuous training is great for endurance work and workouts with more coordination involved.

Examples of continuous rope jumping with variations (slightly 'fluctuating' intensity):

6 minute basic quick rope jumping routine

3 minute warm-up easy jogging

1 minute: Jump with two feet for 15 seconds, easy jog for 45 seconds.

1 minute: Hop, two hops each leg, for 15 seconds, easy jog for 30 seconds.

1 minute cooldown walking on the spot, swinging the rope

8 minute intermediate express rope jumping routine

3 minute warm-up easy jogging

15 sec.: Jump (two feet) + 15 sec.: Jog with hand crossover

15 sec.: Jump front/back + 15 sec.: Jog with hand crossover

15 sec.: Jump side to side + 15 sec.: Jog with hand crossover

15 sec.: Jump twist left/right + 15 sec.: Jog with hand crossover

15 sec.: Jumping jack + 15 sec.: Jog with hand crossover

15 sec.: Scissors (lunging) + 15 sec.: Jog with hand crossover

2 minute cooldown walking on the spot, swinging the rope

Rope Jumping and Optimal Fatburning

For 'optimal fatburning' do an enjoyable and doable activity, e.g. rope jumping. Start slow and progress gradually, 'small steps', so it feels good and fun all the way. Persevere and conquer ... reach your goal.

Many exercise recommendations mention High Intensity Interval Training, HIIT, High intensity, heavy, weightlifting and CrossFit as superior means of burning fat (and getting in shape). They are ... if you are fit already. If you are a novice exerciser or are (even moderately) overweight, these modalities will probably 'break' you down, result in injury, stop from activity, de-motivation and hence no fat loss. In reality any modality, which gets you in shape, induces fat loss, could be considered 'optimal'. So choose something that motivates you.

You do not need expensive cardio machines or exhausting runs to lose weight: You can lose weight with just a jump rope and you and simple jogging.

Jumping rope at a moderate to high pace can help you burn about 0.1 calorie per jump or over *10-20 calories (kcal) per minute*:

50-100 kcal in 5 minutes

100-200 kcal in 10 minutes

150-300 kcal in 15 minutes

300-600 kcal in 30 minutes

According to the National Institute of Health a 150 lb person can burn 750 kcals per hour doing rope jumping, so depending on your bodyweight and tempo you can burn more than 1000 kcals per hour of jumping rope.

However, an hour is a long time; the longer you go on, the more tired you get and the less effort you can put into the rope jumping. So it is not always a matter of multiplying 20 kcal x 60 minutes = 1200 kcal!

Factors at play: Your bodyweight, jumping height, number of jumps (swings) per minute and fatigue.

I would recommend that you primarily jump for 30 minutes at a faster tempo. And if you are up to it, you can vary with longer workouts with more variations, but at a slightly lower intensity – you will burn fat both ways.

As a general recommendation it is a good thing to vary your workouts. So try crosstraining: Mix rope jumping with other activities.

Why? Because the body gets used to an activity and no longer responds as well. You should continue to stimulate and challenge the muscles with unaccustomed, 'surprising' or 'chocking' activities.

On the next page you find some general estimates for calories burned during rope jumping. If possible, try to **do your own measurements with a heart rate monitor** as this can be very motivating: You will get to know your body and exercise modality better and the results can help you in planning better future workouts.

Note: MET is short for Metabolic Equivalent of Task (or just Metabolic Equivalent). It is used to express the intensity and the energy expenditure of an activity. 1 MET is the energy cost, energy expenditure, at rest, corresponding to 3.5 ml O₂/kg/min.

Calories burned during slow rope jumping (8 MET)

Bodyweight/time	15 minutes	30 minutes	45 minutes	60 minutes
40 kilo / 88 lb	80 kcal / 335 kJ	160 kcal / 669 kJ	240 kcal / 1004 kJ	320 kcal / 1339 kJ
50 kilo / 110 lb	100 kcal / 418 kJ	200 kcal / 837 kJ	300 kcal / 1255 kJ	400 kcal / 1674 kJ
60 kilo / 132 lb	120 kcal / 502 kJ	240 kcal / 1004 kJ	360 kcal / 1506 kJ	480 kcal / 2008 kJ
70 kilo / 154 lb	140 kcal / 586 kJ	280 kcal / 1172 kJ	420 kcal / 1757 kJ	560 kcal / 2343 kJ
80 kilo / 176 lb	160 kcal / 669 kJ	320 kcal / 1339 kJ	480 kcal / 2008 kJ	640 kcal / 2678 kJ
90 kilo / 198 lb	180 kcal / 753 kJ	360 kcal / 1506 kJ	540 kcal / 2259 kJ	720 kcal / 3012 kJ
100 kilo / 220 lb	200 kcal / 837 kJ	400 kcal / 1674 kJ	600 kcal / 2510 kJ	800 kcal / 3347 kJ

Calories burned during moderate tempo rope jumping (10 MET)

Bodyweight/time	15 minutes	30 minutes	45 minutes	60 minutes
40 kilo / 88 lb	100 kcal / 418 kJ	200 kcal / 837 kJ	300 kcal / 1255 kJ	400 kcal / 1674 kJ
50 kilo / 110 lb	125 kcal / 523 kJ	250 kcal / 1046 kJ	375 kcal / 1569 kJ	500 kcal / 2092 kJ
60 kilo / 132 lb	150 kcal / 628 kJ	300 kcal / 1255 kJ	450 kcal / 1883 kJ	600 kcal / 2510 kJ
70 kilo / 154 lb	175 kcal / 732 kJ	350 kcal / 1464 kJ	525 kcal / 2197 kJ	700 kcal / 2929 kJ
80 kilo / 176 lb	200 kcal / 837 kJ	400 kcal / 1674 kJ	600 kcal / 2510 kJ	800 kcal / 3347 kJ
90 kilo / 198 lb	225 kcal / 941 kJ	450 kcal / 1883 kJ	675 kcal / 2824 kJ	900 kcal / 3766 kJ
100 kilo / 220 lb	250 kcal / 1046 kJ	500 kcal / 2092 kJ	750 kcal / 3138 kJ	1000 kcal / 4184 kJ

Calories burned during fast rope jumping (12 MET)

Bodyweight/time	15 minutes	30 minutes	45 minutes	60 minutes
40 kilo / 88 lb	120 kcal / 502 kJ	240 kcal / 1004 kJ	360 kcal / 1506 kJ	480 kcal / 2008 kJ
50 kilo / 110 lb	150 kcal / 628 kJ	300 kcal / 1255 kJ	450 kcal / 1883 kJ	600 kcal / 2510 kJ
60 kilo / 132 lb	180 kcal / 753 kJ	360 kcal / 1506 kJ	540 kcal / 2259 kJ	720 kcal / 3012 kJ
70 kilo / 154 lb	210 kcal / 879 kJ	420 kcal / 1757 kJ	630 kcal / 2636 kJ	840 kcal / 3515 kJ
80 kilo / 176 lb	240 kcal / 1004 kJ	480 kcal / 2008 kJ	720 kcal / 3012 kJ	960 kcal / 4017 kJ
90 kilo / 198 lb	270 kcal / 1130 kJ	540 kcal / 2259 kJ	810 kcal / 3389 kJ	1080 kcal / 4519 kJ
100 kilo / 220 lb	300 kcal / 1255 kJ	600 kcal / 2510 kJ	900 kcal / 3766 kJ	1200 kcal / 5021 kJ

Rope jumping versus running

Often rope jumping is compared to running, which is better?

Running is considered a superior form of cardiovascular training; it is 'hard' work to carry your body, mass, through space, and during running you are not restricted by equipment or apparatus, so you can move very fast ...

Running strengthens your heart, lungs and bones.

Rope jumping is mostly fairly stationary and close to the ground with small range of motion movements. However, jumping speed can be high and extra muscles are working, e.g. the arms performing continuous specific movement of the arms.

Rope jumping strengthens your heart, lungs and bones.

Running, all else being equal, will burn more calories.

However, the impact is higher, especially if you are overweight, and this will be painful for some and will reduce the amount of running.

Also, if you find running boring, this will reduce the frequency and duration of runs.

So rope jumping may be better for you.

Maybe it should not be a question of running versus rope jumping, because you can have both if you like!

Crosstraining is great for all-round fitness and motivation.

F.I.T. Training Recommendations

You can design your workout by sets and **repetitions** (volume) – *some jump ropes can count your swings and say the number out loud* – or **time**, duration.

Below are some general guidelines for weekly volume. There may be some individual differences depending on your bodyweight and if you are used to weight-bearing activities like running, jumping and dancing.

It is wise, however, to start out at a fairly low volume and progress with caution – this is in order to avoid overuse injuries, which are hard to get rid of.

Rope Jumping Volume Guidelines

Novice:	Start with 1-2 minutes. 3-5 times a week. Work up to 3-5 min. in 3-6 months.
Beginner:	Start with 3-5 minutes. 3-5 times a week. Work up to 5-10 min. per workout in 3-6 months.
Intermediate level:	Start with 5 minutes, 3-5 times a week. Work up to 10-15 min. per workout in 2-4 months.
Advanced exerciser:	Start with 5-10 minutes, 3-5 times a week. Work up to 15-30 min. per workout in 2-3 months.

3-5 times per week is a general guideline for cardiovascular workouts. You can combine different cardio workouts for great results, eg. one week: Rope jumping, cycling, rope jumping, rowing, running, rest.

Repetition guidelines (example)

Start with 5 to 10 jumps per set initially for a total of up to 10 sets per training session. Jump for 5 minutes and rest as needed between each set. Gradually increase the amount of repetitions for each set by 10 to 25 reps as timing and jump capacity improve (Buddy Lee).

The Total Volume of your training week looks like this, the **FIT Formula**:

- F Frequency** How many times per week
- I Intensity** How hard per training session (load and speed)
- T Time** How long per training session

Sometimes you add an extra T for:

- T Type** The kind of exercise you are doing

Have all parameters in mind and get maximum results and avoid overtraining or undertraining.

The next two pages present the American College of Sports Medicine, ACSM, evidence-based recommendations for training volume.

It may look like a lot of training, however, often you can combine more areas in one workout, so you are able to get a good all-round fitness training in 2-4 times per week of 20-45 minutes of duration. Note that all planning should be done according to your health and fitness status and training goals.

Cardiovascular Training Recommendations (ACSM, 2011)	
Variable	Recommendations
Frequency	≥ 5 days/week training with moderate intensity* or ≥ 3 days/week training with high** or ≥ 3-5 days/week with a combination of both
Intensity	Moderate and/or high (for apparently healthy adults).
Time (duration)	30-60 minutes at moderate intensity or 20-60 minutes of high intensity or a combination of both.
Type	Relevant, continuous, rhythmical movement involving the major muscles of the body.
Plan	A continuous workout per day or several workouts of ≥ 10 minutes to attain the desired duration.
Progression	Frequency, intensity and duration are gradually increased until the desired goal has been reached.
<p>* Moderate intensity training is relatively easy to fairly hard corresponding to 12-13 at the Borg 6-20 scale. ** High-intensity training is fairly hard to very hard corresponding to 14-17 at the Borg 6-20 scale.</p>	

Neuromotor Training Recommendations (ACSM, 2011)	
Variable	Recommendations
Frequency	≥ 2-3 days/week.
Intensity	Not established at this time.
Time (duration)	≥ 20-30 minutes/day can be necessary.
Type	Exercises improving balance, agility, coordination and gait, especially for elderly with a need to improve/maintain function and to prevent falls.
Volume	Optimal number of repetitions and sets has not been established yet.

Strength Training Recommendations (ACSM, 2011)	
Variable	Recommendations
Frekvens	2-3 days/week training for large muscle groups with 48 hour recovery between workouts for the worked muscle groups.
Intensity	Strength: 40-50 % of one-repetition maximum (1RM) or very easy to easy load for the elderly or inactive adult novices (beginners). 60-70 % of one-repetition maximum (1RM) or moderate to heavy load for novices to moderately trained adults. ≥ 80 % of one-repetition maximum (1RM) or heavy to very heavy load for experienced weightlifters.
	Endurance: <50 % of one-repetition maximum or light to moderate load.
	Power: 20-50 % of 1RM or extremely light to light load for the elderly.
Repetitions	10-15 repetitions to increase strength for novices, older adults and elderly. 8-12 repetitions to increase strength and power for most adults. 15-20 repetitions to increase endurance for most adults.
Sets	Single-set training (one set) for novices and the elderly. 2-4 sets to increase strength and power for most adults. ≤ 2 sets for muscle endurance.
Recovery	2-3 minutes rest-pause between sets in training with multiple sets.

Flexibility Training Recommendations (ACSM, 2011)	
Variable	Recommendations
Frequency	2-3 days/week training for large muscle groups; greater results are achieved with daily stretching.
Intensity	Stretch to a point of mild discomfort or sense of tightness in the muscle.
Time (duration)	30-60 second static stretches for the elderly. 10-30 second static stretches for most adults.
PNF stretch	3-6 seconds of contraction at 20-75 % of maximal intensity followed by 10-30 second assisted stretch.
Repetitions	2-4 repetitions of each stretch.
Volume	60 second total stretch duration for every muscle group for every method.

Energy expenditure

Increase energy expenditure and fat burning via these factors – always with your current health and fitness level as a guideline:

Variations for intensity

- **Speed** slow (not too many or the heart rate will drop)
 moderate
 fast moves

 – jumping/swing speed is from 90-180 (120-140) per minute.
- **Load** bodyweight is an important factor – and you can add
 weighted ropes, a weight vest, heavy shoes
- **Vertical 'travelling'** moving your Centre Of Gravity, COG, up (and down)
- **Horizontal travelling** moving forward, backward, sideways, diagonally, in circles
 and patterns, squares, stars etc.
- **Lever length** short (bent, flexed joint), long (straight, extended joint)
 e.g. from short lever jogging to high straight leg kicks
- **Amplitude** go from small moves to bigger moves,
 low jumps to higher jumps (double unders)
- **Active muscles** involve more muscles e.g. by going from low jogging to
 skipping.

Rope Jumping Base Moves

Traditional rope jumping mainly consists of on-the-spot small range-of-motion easy jogging and jumping, moves like hopping on one leg one or more times or jumping on both feet.

For variety, however, there are a number of moves you can do to involve more muscles and increase intensity. And these moves can be changed again by doing variations and even combinations.

You can vary your workouts in numerous ways and without it getting too complex and challenging. If you want advanced challenges, search for 'rope skipping' on the internet.

The base moves are:

- **Walk or easy jog**
- **Jog or run**
- **Skip**
- **Kneelift**
- **Kick**
- **Jack and jump**
- **Lunge**

They are classified according to their joint movement and intensity level.

At the following page you can see how they are done properly with correct form for optimal results and minimal risk of overuse injury.

You can watch the YouTube video (2:30) for a demo of the base moves and a few variations: **Jump Rope Jumping 1 | Rope Fitness Fun**

Follow the link: <http://youtu.be/5nXjK7IbDRU>

Base Moves

- **Walk or gallop** (low jog (and toe taps and heel digs), legs in front, hip and knee flexion)
Keep an upright posture, strong and ready.
- **Jog, run, one leg hopping** (hamstring curl) (knee flexion, hip extension or flexion)
Easy jogging, fast jogging or running in place or travelling.
For fitness: Limit one-leg hopping to 8 repetitions maximum to reduce lower leg stress.
- **Skip** (a low kick, from hamstring curl to knee extension)
Contract your thigh muscles, quadriceps, to protect the knee, no uncontrolled kicks.
- **Kneelift** (hip flexion and knee flexion)
Keep an upright posture, do not lean forward, when lifting the knee (leg).
- **Kick** (straight knee, knee extension and hip flexion) and **abduction** and **extension**
Keep an upright posture, stabilize, do not lean forward, when lifting the leg.
- **Jumping and Jumping jack** (hip abduction and adduction)
Keep knees and feet aligned at all times.
For fitness limit continuous jumping, e.g. 8-16 jacks max., vary your moves.
- **Lunge or scissors** (hip flexion and hip extension)
Warm up properly. Lower your back heel with control, protect the Achilles tendon.

You can watch the YouTube video demo (9:01) of the base moves and some popular variations: **55 Rope Jumping Exercises | SUPER Shape With Rope Jump Fitness**

Follow the link: http://youtu.be/IT6_cz3krMA

Variations and Combinations

Variations

- **Speed** slow
moderate
fast
- **Rhythm** different speeds in different combinations and syncopations
repeaters, e.g. doubles and triples etc.
- **Direction** turning the body to the front, back, side, diagonally
all directions in between.
Direction of rope – swinging the rope forward or backward,
or at sides or in front.
- **Travelling** forward, backward, sideways, diagonally, in circles and patterns;
squares, stars, figure-eights etc.
- **Joint movement** flexion, extension, abduction, adduction (crossovers), rotation,
symmetry/asymmetry
- **Planes** sagittal (front/back) (e.g. staggered jog, one foot in front).
frontal (sideways) (e.g. step out jack, left and right)
transversal (horizontal/twisting)
- **Active muscles** adding arm-work like arm cross,
crossovers, (left, right alternating in front of torso) or side swings.

Combinations

Apart from all the variations you can also combine the base moves and/or variations of the base moves. This results end almost endless possibilities.

- **Can can** – right leg kneelift and kick, left leg kneelift and kick
- **Pendulum mix** – swing legs right and left tempo, tempo, half tempo, repeat – side to side, front and back
- **Jig** – heel dig side, toe cross in front, heel dig side, jump together, repeat other side.
- **Rocking** – heel dig front, lean back, toe tap back, lean forward, alternate. Turn 1/1, repeat other way.
- **Curl combo** – hamstring curl (1) to low skip (2) to kneelift (3) to jump feet together (4), repeat other leg.
- **Tap combo** – tap front (1), tap side (2), tap back (3), jump feet together (4), repeat other leg.
- **Running man** – jumping lunge (scissors) to kneelift right, jumping lunge to kneelift left, repeat. Stylize.

You can watch the YouTube video demo (7:14) of same base moves, variations and more travelling and rhythm added: **Jump Rope Jumping 3 | Super Rope Fitness**

Follow the link: <http://youtu.be/BV5trVgTVc>

Of course rope jumping can also be combined with other cardio modalities:

Walking, powerwalking, jogging, running, aerobics, stepping, sliding, cycling, etc.

Rope Jumping Circuits

Circuit training is mostly a combination of cardio and strength work (can also be just cardio or just strength).

Rope jumping fitness is an excellent cardiovascular workout, for your heart and lungs. However, even if you are using your calves, thighs, glutes, hamstrings, core, shoulders and arms while jumping, this is muscle endurance at best and you do need some strength work for optimal fitness and anti-aging benefits.

You have two options:

- Rope fitness and strength training, e.g. on alternate days, or
- Rope fitness circuit; strength work in your rope fitness cardio workout.

Create your own circuit with whatever equipment you have, dumbbells, barbells etc.

Design your own workout from this model:

Stations: 4-12 different stations (e.g. with alternating cardio and strength work).

Station time: ½-1 minute strength, 1-5 minutes of cardio, at each station.

Rounds: 1-3 rounds, circuits.

Rest-pauses: None; keep moving until finished.

It is possible to do only cardio or only strength circuits, but combined circuits is the preferred option for general fitness, especially if you have limited time for working out.

Note: Even if most ropes will not increase your strength, you can use the rope as a fun addition to bodyweight exercises; hold and position the rope in different places, maybe use it to hold a limb. Exception: 1-6 lb weighted ropes can of course be used for some upper body, shoulder, exercises with some strength effect.

Circuit sample workout

5 min. Warm-up Easy jogging and/or rope jogging.

10 min. Circuit

1. 2 min. Cardio: Jogging with tempo changes
 ½ min. Strength: Push-ups

2. 2 min. Cardio: Skipping and/or kicking, alternating or 4-8 of each
 ½ min. Strength: Back extension

3. 2 min. Cardio: Scissors and jumping jacks, alternating or 4-8 of each
 ½ min. Strength: Pull-ups, e.g. modified, body in horizontal heels on the
 ground

4. 2 min. Cardio: Kneelifts and leg curls, alternating or 4-8 of each
 ½ min. Strength: Abdominal curls

5 min. Cool-down Easy jogging and calf, hamstring and hip flexor stretch.

Rope Jumping Intervals

Interval training means intermittent training. The purpose is to do more work (higher intensity and energy expenditure), than otherwise possible, for short periods of time followed by a rest-pause. Even if you have rest-pauses, you will burn more calories, than during continuous training of the same duration.

Interval training can be done in hundreds of ways to cater for every body and every training goal.

A common misconception is, that interval training is performed (only) at excruciating intensity and is for athletes only. This is not so. Interval training is any exerciser, who wants better results faster.

Interval terminology and basics

- **Work interval** Exertion, seconds/minutes
- **Recovery interval** Active rest, seconds/minutes
- **Repetition** One work and one recovery interval, also called a cycle
- **Set** Series of work and recovery intervals
of same or different duration
- **Rest-pause** Active recovery period between sets

Interval Workout Design

Total work in an interval training workout can be increased via:

- **Increased intensity, speed or load**
- **Increased number of repetitions and sets**
- **Reduction of recovery interval duration**
- **Reduction of rest-pause duration**
- **Reduction of number of rest-pauses** (between sets)

Work to recovery ratio in fitness interval training (examples)

You can train with specific outcomes in mind or for general fitness and fat loss. No matter the purpose, you can always vary your interval workouts by changing the format, the work to recovery ratio:

Aerobic interval training **1 : <1** (e.g. 1:0,5) 5-7 repetitions (work/rest)

Aerobic/anaerobic interval training, **1 : 1** 8-12 repetitions (work/rest)

Anaerobic interval training **1 : >1** (e.g. 1:2, 1:3 or 1:4) 8-20 repetitions (work/rest)

Interval Workout Format

Do a 5-10 minute warm up and chose one of the below formats for your workout. After the intervals do a 3-5 minute cooldown to lower your heart rate and perform relevant stretches as needed.

Interval rope jumping fitness program I (aerobic)

1 min. Jog sprint, as fast as possible
30 sec. Easy jog, slow to moderate tempo
Repeat 5-10 times.

Interval rope jumping fitness program II (aerobic/anaerobic)

30 sec. Jog sprint, as fast as possible
30 sec. Easy jog, slow to moderate tempo
Repeat 8-12 times.

Interval rope jumping fitness program III (anaerobic)

15 sec. Jump tempo, as fast as possible.
45 sec. Easy jog, moderate tempo
Repeat 10-20 times.

Beginning to intermediate level interval training workout

Jump rope for short intervals and gradually lose the rest-pauses. Example:

Warm-up slowly for 5 minutes of easy rope jumping

Active rest for ½-2 minutes (as soon as you can, eliminate this first rest period)

Jump rope with jogging, skipping, hamstring curls and jumping for 1-3 minutes.
You should be breathy heavily.

Active rest for ½-2 minutes, walk on the spot or around the room

Repeat 1-5 times depending on your level of fitness

Cool-down for 3-5 minutes, walk around and shake your legs and stretch as needed.

High Intensity Interval Training Model

A popular fitness interval training principle is HIIT, High Intensity Interval Training. Below is a HIIT model, which can be used with different cardio training modalities, including rope jumping:

- 5-10 minute warm-up
- Beginning level, 8 x 30 sec. sprint : 60 sec. low-moderate intensity activity.
- Intermediate level, 12 x 30 sec. sprint : 60 sec. low-moderate intensity activity.
- Advanced level 12 x 45 sec. sprint : 60 sec. low-moderate intensity activity.
- 5-10 minute cool-down.

Rope Jumping Cooldown

Cooldown after rope jumping has an important physiological and mental purpose:

The heart rate should gradually be lowered: Continue moving your legs, so the blood is pumped upwards and back to the heart, which prevents blood pooling in the lower extremities and dizziness.

You experience a nice conclusion to your workout and become relaxed.

Cooldowns can be of short or long duration, 3-10 minutes; longer cooldown if the workout has been intense. The heart rate should be lowered to about 50-60 % of maximal heart rate before sitting or lying down on the floor for stretching or relaxation.

A rope jumping cool-down does not require 'special' movements. All you have to do is:

3-5 minutes Easy slow jogging with or without the rope (no jumping).

For cooldown you use the principles of the warm-up only in reverse order:

Intensity should be gradually *lowered* by going from travelling movements to stationary movements and from large range of motion movements to small range of motion movements. Music- and movement tempo should be made slower.

After this you can do stretching, some standing stretching for the major muscle groups. If you keep the body moving slowly and let the movements flow, bind them together, you will have a kind of rhythmical stretching.

Standing balance work on the floor can also be included as part of the cooldown: Single-leg balances, on all of foot or on the toes; the free leg is lifted outward, forward or backward. Single-leg stretches, eg. standing thigh or hip flexor stretch on one leg.

The cool-down can be extended, and the heart rate is lowered to the same level as before the workout, with more stretching and relaxation.

Stretching and Relaxation

A relaxing and mindful cool down and stretching session after jumping rope helps in gradually reducing your heart rate to resting level and relaxes your muscles.

Stretching duration could be 3-10 minutes.

Stretching can be a series of easy stretches for the major muscle groups; focus on muscles, which are generally tight, eg. calves, hamstrings, hip flexors and thigh muscles.

The standing calf stretch is a recommended stretch after a jump rope session.



Also **keep your spine mobile** by slowly extending, bending, sidebending and rotating your torso.

Stretches can be of long or short duration according to your goal.

Intense stretching is not necessary; for an easy stretch you can hold each stretch for 15-30 seconds.

The primary goal is to maintain mobility, a functional range of motion.

If you have enough time, you can hold your stretches for longer. When stretches are held for longer than 30-60 seconds, you may increase your flexibility and experience a deeper relaxation.

Stretching can be performed standing, seated or lying on the floor.

During the stretches, focus on deep breathing through the nose. At the same time relax the muscles.

Stretching should make you feel good

It is a general misconception, that stretching hurts. However, this can happen if the stretching exercise is wrong for you, e.g. in a group exercise class, when everybody is trying to do the same stretch, which is not ideal.

Stretches should be selected on an individual basis.

Stretching should feel good, not painful!

You should feel a 'firm' sensation in the muscle belly, a gradual release of tension and an increased feeling of well-being. Deep breathing will facilitate relaxation.

Stretch with or without the rope

You do not need the rope for stretching. However, you can use it as an 'assistant' in some stretches, e.g. a supine hamstring stretch with the middle of the rope positioned around one straight leg, on the back (calf) of the lower leg, while you gently pull at the handles drawing the leg closer to your torso.

For rope jumping workouts it would be natural and in tune with the workout to include stretches, which in some way involves the rope.

To stretch or not to stretch

There is some debate about the effectiveness of stretching, but there should not be. It is very important to keep your mobility and this can be accomplished by simple stretching exercises for the relevant, tight, muscles.

Stretching tight muscles will keep the muscles from getting shorter and shorter over time and will reduce a general feeling of being 'tight', e.g. in the morning.

However, it will not prevent DOMS, delayed onset muscle soreness, which occurs when you embark on a new activity or train more or harder than usual.

This reaction is natural and o.k. It tells you, that the body is recovering and getting stronger. Rest or take it easy until you are less sore.

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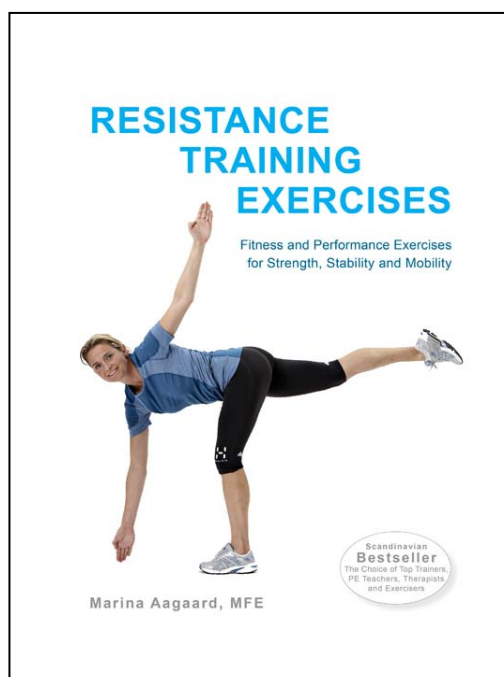
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