



# THE STRENGTH LAB

ONLINE TRAINING SYSTEM

# TRAINING GUIDE

# DISCLAIMER



You should always consult your physician or other healthcare provider if you have any underlying health issues prior to starting the program.

You should understand that when participating in any exercise or exercise program, there is the possibility of physical injury. If you engage in this exercise or exercise program, you agree that you do so at your own risk, are voluntarily participating in these activities, assume all risk of injury to yourself.

The information provided is not intended to be a substitute for professional medical advice, diagnosis or treatment. Never disregard professional medical advice, or delay in seeking it, because of something you have read on this website. Never rely on information on this website in place of seeking professional medical advice.

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# ABOUT HEALTH BY SCIENCE

At Health By Science, we have spent thousands of hours helping people look, feel and perform better.

Over the years, we have been fortunate to work with professional athletes from Scottish hockey, netball, Hibernian Football Club, Heart of Midlothian Football Club to recreational athletes in sports ranging from golf and triathlons to roller derby and ultimate frisbee!



# THE STRENGTH LAB

The Strength Lab was designed and has been battle-tested by Health by Science's own Sport Science and Strength & Conditioning experts, with the aim of making you bigger, faster and stronger to perform at the peak of your ability.

By the end of this programme, you will be ready to hit some personal bests and take your performance up a level regardless of where your strength was previously.

Through our guidance and coaching, we are proud to say that we help clients set personal bests and transform their body every week!



# YOUR YEAR OF TRAINING

The Strength Lab coaches you through 12 months of strength training. The programme is broken down into 4 x 12-week 'Phases', with each one building on the last to ensure you keep making progress all year.

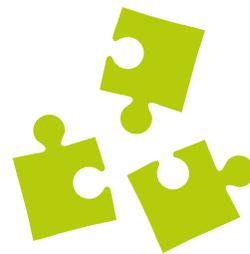
## **Phase 1 - Preparatory**

Develop a solid foundation and build habits that will ensure you make progress throughout the programme.



## **Phase 2 - Accumulate**

Introduce more complex training strategies. Learn specific techniques to maximise your strength and muscle gain.



## **Phase 3 - Intensify**

Ramp things up and develop explosive power alongside unstoppable conditioning.



## **Phase 4 - Refine**

Use the knowledge and experience you have learned through the programme to refine your training and optimise your strength, all under the guidance of our expert strength coaches.



# THE PROGRAMME EXPLAINED

At first glance, The Strength Lab may seem overwhelming, however, once you get started rest assured it is a simple but highly effective training system to follow.

Below is a guide to help you understand some of the commonly used terms and techniques.

## Exercises

Some names may be confusing or new to you. That's why we have videos for every exercise in the 'exercise videos' tab within your programme. We have also provided you with suggested substitutions should you need to swap an exercise.



# THE PROGRAMME EXPLAINED

## Reps

A repetition (rep) is one completion of an exercise. A repetition maximum (1RM) is your personal best or the most you can lift once in a single repetition of an exercise. Therefore, a 3RM is the most you can lift and successfully perform 3 repetitions with proper form.

Whenever you see rep ranges e.g. 8-12, this is a repetition window to stay within. If you're able to complete all reps and sets at the top end of the rep range, increase the weight.

## Sets

A set is a series of repetitions performed sequentially.

For example, if the programme prescribes Barbell Back Squat for 4 sets of 5 reps, this means you'll perform 5 squats 4 times in total, resting between each round. In total, you'll be doing 20 Squats.

# THE PROGRAMME EXPLAINED

## Rest Periods

There are a lot of factors that go into increasing strength and muscle growth, and rest periods are one of them.

Depending on the phase you are in and the exercise you are doing, sometimes you may want to fatigue a muscle by limiting rest periods, other times you may want ample rest to allow for a fuller recovery. Make sure you check the recommended rest time for each exercise and use a watch or timer to hold yourself accountable.

You will have a set rest period on some exercises and in others, you will have to perform in a circuit fashion. For example, in a series where you see A1, A2 & A3, do one set of A1, one set of A2, then one set of A3 before resting and repeating for the required sets.

# THE PROGRAMME EXPLAINED

## Warm Ups

Appropriate warm ups are important to gradually increase your readiness to train on the day. A well-programmed warm up will:

- increase your body temperature
- improve your short term mobility
- refine your technique
- increase psychological readiness

On the next page is a recommended warm up that starts with general mobility drills that then progresses to the barbell to prepare for a full body training session.



# THE PROGRAMME EXPLAINED

## Warm Ups

3 rounds of:

A1. Spiderman rotations x8/side

A2. Supermans x8/side

A3. Squat to crawl x8/side



Then

B. The first barbell exercise of programme x 12 reps @ 20kg

Then

C. Slowly work up to ~50% of your first working weight over 2 sets for 6 reps

Finally

D. Build up to your first working weight over another 1-2 sets for 4-6 reps.

# THE PROGRAMME EXPLAINED

## Organising Your Week

This programme is designed to be completed at least 3 days per week. As a general rule, we recommend not to do more than 2 days of strength training in a row to optimise your recovery.

However, we encourage you to target other areas of fitness on days you are not completing the strength programme.

For example, you could complete a mobility workout or a team sports training session on your rest days from the programme.



# THE PROGRAMME EXPLAINED

Below is an example of a weekly training schedule using the Strength Lab Programme:

M	T	W	Th	F	Sa	Su
DAY 1		DAY 2		DAY 3		

Below is an example of a weekly training schedule using the Strength Lab Programme along with other training:

M	T	W	Th	F	Sa	Su
DAY 1	DAY 2	CARDIO	MOBILITY	DAY 3		MOBILITY

# THE PROGRAMME EXPLAINED

## Met-Cons

Met-cons, short for Metabolic Conditioning circuits, are a very useful tool for boosting your conditioning and overall training load for the week.

They help develop muscular endurance whilst targeting your energy systems. They are short, time-efficient workouts designed to finish you off at the end of a session.



Met-cons have been included in the programme within each phase and will be progressed by increasing time, the number of exercises and the complexity of the exercises.

Stick to them as best as possible, and expect to see your conditioning re-test times improve.

# THE PROGRAMME EXPLAINED

## Bolt-On Workouts

Your Bolt-on Workouts are optional and can be found in one of the sheets at the bottom of your programme.

EXERCISE	SETS	REPS	REST	SETS x REPS @ WEIGHT	
	4	8	120 sec		Aim
Press	3	10-12	90 sec		Full
	3	10-12	60 sec		Squat
Row	2	15	-		Pull
	2	10	60 sec		Push
	2	15	-		Keep
ension	2	15	60 sec		Keep

DAY 2 - FULL BODY					
EXERCISE	SETS	REPS	REST	SETS x REPS @ WEIGHT	
	4	8	120 sec		Arch
ift (RDL)	3	10-12	90 sec		Low
	2	15	60 sec		1 sec

REST	DISTANCE	YOUR SCORE
ing (delete the other 2):		
1	TSL 1.1 Exercise Videos	Bolt-on Workouts

These haven't been strictly programmed, however they are a very useful tool for increasing your workload across 3 separate facets of your training:

- upper body hypertrophy
- lower body hypertrophy
- conditioning (short duration-high intensity)
- conditioning (long duration-medium intensity)

So on weeks where you feel you can dedicate more time and energy to training, pick an area you need to work on and select one of the many bonus workouts.

# SESSION LOG

Not logging sessions is where most people tend to go wrong. Logging your performance is key to ensure you have an understanding of what weights to select for the following week and to view your progress throughout the programme. Without logging your progress, you are leaving your results to chance.

It is key that you write down the reps and weight you used for each set of each exercise. An example workout log including session notes is shown in the Red boxes below:

DAY 1 - FULL BODY					
ORDER	EXERCISE	SETS	REPS	REST	SETS x REPS @ WEIGHT
A1	BB Back Squat	4	8	120 sec	2x8@70kg, 2x8@80kg
B1	Seated DB Shoulder Press	3	10-12	90 sec	2x12@18kg, 1x10@18kg
C1	Hamstring Curl	3	10-12	60 sec	3x10@BW
D1	DB Chest Supported Row	2	15	-	2x15@18kg
D2	Aleknas	2	10	60 sec	2x10
E1	DB Hammer Curl	2	15	-	2x15@12kg
E2	DB Lying Tricep Extension	2	15	60 sec	1x15@8kg, 1x15@6kg

**YOUR SESSION NOTES**

B1 - Harder than initially thought it would be, build up on next session to 4x12@18kg  
D1 - Start at 20kg next session  
Session Time - 55 minutes

# TRACKING YOUR PROGRESS

## Progress Tracker

Tracking progress is key for understanding how you are adapting to the programme.

It helps give you data to see how far you have come, and thus will act as a motivation booster as you progress through each phase of the programme.

Luckily for you we have simplified your progress into two areas which can both be found in Your Progress Tracker:

- PR Log Sheet
- Milestones Checklist

The PR Log Sheet will be updated each time you perform a 3-rep max test. The milestones checklist can be updated whenever you feel ready to attempt one of our 15 physical fitness milestones.

[Click here to see how to use your progress tracker sheet](#)

# TRACKING YOUR PROGRESS

## Strength Testing

Rep Max Protocol:

Step 1. Estimate a light warm up weight & complete 6

Step 2. Rest 1-2 mins

Step 3. Repeat Step 1 & 2 three times, adding 5-10kg onto your bar each time, or if this is too much, 5-10% of the current weight on the bar.

Step 4. Increase the weight to a near-max weight and complete 3 reps.

Step 5. Increase the weight to a max weight and complete 3 reps.

Did you manage to complete the 3 reps? If yes, go to Step 6A. If no, go to Step 6B.

Step 6A. Reduce the weight by 2.5-10kg and try again.

Step 6B. Increase the weight by 2.5-10kg and try again.

Step 7. Repeat Step 6A or 6B until you have hit your 3-rep max with good technique. Record the weight you lifted in your Progress Tracker.

# TRACKING YOUR PROGRESS

## Conditioning Testing

Step 1. Select one of the following depending on what your gym has available:

- Ski-erg for 1km
- Rower for 1km
- Assault Bike for 3km

Step 2. Perform 5 minutes at a low speed/intensity, gradually getting slightly quicker each minute. On the final minute, you should be working at about 60-70% of your max speed. Ensure the resistance or damper setting for the Ski-erg or Rower are at the highest level (Level 10).

Step 3. Rest for 3 minutes.

# TRACKING YOUR PROGRESS

Step 4. Perform the test, by pacing yourself at around 70% of your max speed. As you get closer to the distance, increase your speed until you are working maximally. Sustain this until you have hit the required distance.

Step 5. Log your progress in the box on the programme.

CONDITIONING TEST		
TEST	DISTANCE	YOUR SCORE
Select only one from the following (delete the other 2):		
Ski-erg (damper 10) / Assault Bike / Rower (resistance 10)	Ski-erg or Rower = 1km Assault Bike = 3km	



# WHAT YOU NEED TO GET STARTED

## Essential

Access to a barbell, plates, dumbbells, kettlebells, weights bench, pull up station. If you don't have access to any of these pieces of kit then check out the 'exercise videos' tab on your programme spreadsheet for our recommended substitutions.

## Optional

### **Squat Shoes**

These can aid your performance in a squat by giving you a raised heel and a solid base of support to push into.

### **Chalk**

To help your grip with your deadlifts.

### **Lifting Belt**

To help you brace during barbell back squats and deadlifts.

# YOUR STARTING WEIGHTS

Some programmes will prescribe the exact weight you should be lifting. The chances of that being the right weight for you is relatively slim. It also may hold you back when it comes to progressing weights.

Instead, we want to put you in charge and give you a framework to use. As long as you stick to the following guidelines then you will ensure you minimise your risk of injury and maximise your results.



# YOUR STARTING WEIGHTS

So, How much weight should I start with?

We always recommend “too light” versus “too heavy” to build your technique first. It is a lot easier to finish a set feeling it was too light and increase it for the next set, rather than selecting a heavy weight and executing the exercise with poor technique or not completing the target sets and reps.



If you are training with a barbell, a good rule is to start with just the bar, no matter the exercise (a standard barbell weighs 20 kg).

We recommend taking this approach for at least the first week of the programme and for any exercises you are unfamiliar with.

# WHEN SHOULD YOU PROGRESS?

Now that you have completed a few sessions and are happy with your 'starting weights' you may be wondering when and how to progress?

Before you increase the resistance of an exercise you should be at the top end of the rep range.

For example, the programme prescribes; Dumbbell Shoulder Press for 3 sets of between 8-12 repetitions.



# WHEN SHOULD YOU PROGRESS?

So, if you are ready to increase the weight you are using. How much weight should you add?

You should always add the minimum amount of weight you can, even if you think you can lift more. The minimum amounts will lead to more consistent progress.

Dumbbells usually increase in around 2kg increments.

This may not seem like a big jump but if we take the shoulder press as an example. In this exercise you use 2 dumbbells, so going from 10kg to 12kg means a total increase of 4kg (2 dumbbells) which is a jump of 20%!

Always keep in mind the below guidelines for progressions:

- **Barbell = Increase by 2.5kg - 5kg**
- **Dumbbells = Increase by 1 - 2.5kg**

(the increment will depend on your gym's dumbbells)

# CHECK YOUR TECHNIQUE

Video analysis is a great way to improve your form on a lift. Our expert coaches are here to provide detailed feedback along with key areas to focus on to help you improve your lift.



## How to send in your video

1. Record a short video of yourself performing your chosen exercise from an appropriate angle (this is usually side on).
2. Send your video to [coaching@healthbyscience.co.uk](mailto:coaching@healthbyscience.co.uk)



## How long should my session be?

The session length is not defined in the program because it is completely personal preference. Given the rest periods between sets and number of exercises we estimate it can take anywhere from 45mins - 1hr, any shorter and you might need to increase the intensity, and any longer and you might need to reduce it.

## What to do if I can't make 3 sessions?

For optimal results, we recommend 3 sessions per week. 2 sessions minimum will also be effective, just not to the degree of 3. As long as you are getting stronger and making the most of the 3 sessions then you will see results.

## What should I do if keep running out of time to finish?

Always set time in your diary for at least an hour to train. If you run over that, then you are probably overstretching your rest periods meaning you need to lower volume (weight or reps).

## What should I do if I'm too sore to train?

Doms are normal, especially in the first week of a new plan. If you feel too sore to train but only for a day, then we recommend the day-on day-off approach, but if you are sore for 2-3 days post session then either lower the weight in the session that is causing the DOMs, or aim for the lower end of the target rep range.

## What should I do if can't do an exercise?

A majority of the exercises in the plan are barbell and dumbbell focused because they are most easily accessible. if it is an injury or physical limitation that is stopping you, then swap it out for an alternative exercise that you are familiar with, and that targets the same muscle group. Just be cautious of compounds movements since they have the potential of over fatiguing accessory muscles.

# SHARE YOUR JOURNEY

Whether you have a question or would just like to share your success with us, please get in touch. You can reach us on our social media or email:

 [@Healthbyscience](https://www.instagram.com/Healthbyscience)

 [Healthbyscience](https://www.facebook.com/Healthbyscience)

 [coaching@healthbyscience.co.uk](mailto:coaching@healthbyscience.co.uk)

