MudaGym® academy

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1.About MudaGym theory

1.1 Who are we?

At an early age, we began our—unintended—rowing career. As our aspirations to row competitively grew, so did our dreams about participating in the Olympic Games. After thousands of kilometers of rowing, hundreds of hours of weight-training and countless rowing competitions, we earned our first bronze medal at the World Championships.

We started MudaGym in 2016 with the ambition to become your inspiring personal trainer, where your dream becomes your goal. Our knowledge, experience and eagerness to learn continuously are the foundation and formula for your success.

1.1.1 History of the rowing machine

For more than 120 years, rowing has been an Olympic discipline, and it has been a leading sport since 1896. Because rowing is an official competition sport, the rowing machine was invented around 1900. To date, the rowing machine can be found in almost every gym. Unfortunately, not many people use this fitness machine, and the daredevils who do use it barely control the technique.

Given that the rowing machine is an under-appreciated fitness tool, we decided to change this image through MudaGym. We bring technique, variation, stamina and strength training under attention for trainers. Aside from the interest in working out on a rowing machine, we feel the need to share all our thoughts.

1.2 Vision, Mission and Goal

1.2.1 Vision

We aim not only for gold but also to expand knowledge and experience. Every day is a day to learn and improve to finally rise above yourself. With our accumulated knowledge, experience and insight, we offer a course with a view to

1: Deliver a safe and grounded training methodology in a group setting, but with a focus on individual improvement.
2: Make the unattractive rowing machine a challenging, enticing and accessible piece of equipment for everybody.
3: Share new training insights that not only increase the efficiency and effectiveness of the workout but also foster a different mindset around working out.

1.2.2 Mission

From our intrinsic motivation, we strive to improve classes that can be followed safely and by everyone. The possibilities are endless and accessible to every level:

1: With the triangle communication structure, we ensure the foundation is laid for a safe, high-quality, informative and effective training structure.
2: We do not think of it as rowing but rather as a full body workout.

1.2.3 Goal

The goal is to deliver trainers an alternative full-body workout that can be performed by anyone. Furthermore, the course brings quality where stamina and strength training will be combined. Customer orientation, fun and a focus on technique will be crucial factors to success.

1.3 MudaGym Triangle

We have set up a structure, namely the MudaGym triangle, to achieve our vision and mission. Using this communication triangle, we realize a safe, high-quality training environment through visual, auditory and feeling elements.

The MudaGym triangle will be the driving structure throughout the course as well as during all of the training sessions that you will deliver. We always want to see the triangle communication structure in your development.

1.3.1 Triangle structure:

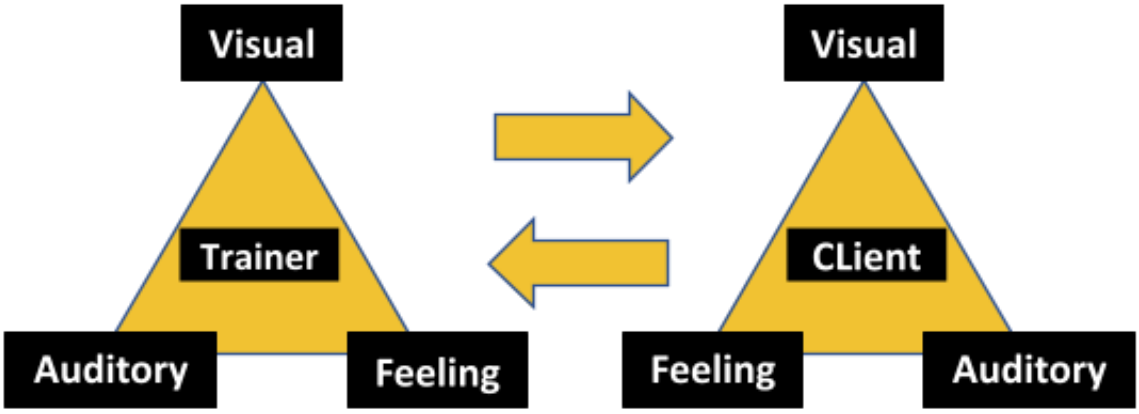


Figure 1: triangle communication structure

This triangle is a mutual communication structure that you as a trainer apply to convey information to the client. However, as a trainer, you are not only sending but also receiving information.

1.3.2 What the client sees—the visual element of the MudaGym triangle

During the workout the eyes are observing a lot of stimuli; like a trainer demonstrating the movement, training-data that appears on the rowing machine and other attendees. however, what we are looking at is often unclear. As trainers, our task is to provide an image that the client can imitate. We must also determine whether the client is imitating us properly. This provides feedback which we can use to guide the client better through the workout.

1.3.2.1 The trainer

The client looks at the trainer; in theory, the trainer is the moving, talking mirror for them. To be as clear as possible, we expect you as a trainer to demonstrate each movement as best you can. Later, we discuss the rowing movement, exercises and posture of the client.

1.3.2.2 The time span of the training

The time span that the trainer follows and that the client can see is the red line of the training. In it, we will display all exercises, training forms and block durations. Each training has its own structure and focus, which we present in Chapter.....

1.3.2.3 The displays of the rowing machine

In addition to the trainer and the time frame, clients also have a tablet in front of them that displays their own data. This data includes the power output, curve line and tempo. We consider these three components the most important because we can anticipate them.
In Chapter ……, we discuss the display, rhythm and curve line.

1.3.3 The auditory element of the MudaGym triangle

Sound, in addition to visuals, is a source of information that offers plenty of information during the workout. Sound is subdivided into voice, noise and music.

Voice:

Our voice tells a story and provides additional information to the image we are projecting. It describes what we are doing or what is projected on the screen or display of the rowing machine.

Noise:

Using the rowing machine provides noise and therefore information. It can help in adjusting the rowing technique. Think also of faster breathing or moaning: we must process these factors in order to make the right decisions during training.

Music:

Music is a stimulus to motivate, uplift or unwind. It is an important component of the workout and connects the whole workout together. Volume and tempo changes also signal to the client what they are supposed to do in the workout. This will be explained in more detail later in the course.

1.3.4 The feeling element of the MudaGym triangle

Sport is a feeling that is difficult to define. When it comes to feeling, we mainly pay attention to the muscles that are activated during the training. What does the client feel, where does the client feel it, and what does the client feel when you correct them? As trainers, we should know which muscles are being used. During the activation of the muscles there will be tension on it. By asking the client where they feel tension, we can check if it is correct or not.

"While applying the MudaGym triangle, we expect you as a trainer to combine at least 2 aspects at the same time, for example explaining the rowing movement while demonstrating the movement yourself."

2 Before the training starts

Before the actual training begins, you are already working as a trainer. proper preparation before the workout starts is recommended. But what do we want to see in you as a trainer? The 3 main qualities that "always" emerge are safety, high quality and personal.

The course is structured in several levels and divided into several documents. We divide the course into different stages and will increase the levels per stage.

Stage of the course	Focus of the workout	Level of the trainer
Stage 1	MudaGym's vision, mission and goal sharing	Level 1 In this phase, we share our values and our triangle approach. This is the foundation of the course and shows our identity.
Stage 1.1	Safety above all	Level 1 As trainers, we are responsible for the client's safety. Safety is the first priority of MudaGym. We create safety by following our values and the triangle approach.
Stage 2	Safety requirements Level 1 trainer	Level 1 1. Welcome the client 2. Adjust the rowing machine 3. Adjust the resistance of the rowing machine 4. Build up the workout The stage comprises the first steps the trainer will take when the client arrives to prepare for the training.
Stage 2.1	The workout from a–z	Level 1 1. The warm-up 2. The workout 3. The cool-down 4. After care This is the point where we share our training set-up, including the workout we have designed. This is also an identification set-up.
Stage 2.2	The rowing technique	Level 1

		In this phase, we share the rowing technique and the sequence of the motion. This establishes the basics well to ensure a safe rowing technique.
Stage 3.1	Focus on the projected timeline of the workout	Level 1 1. Follow the timeline 2. Monkey eating a banana *keep it simple This is the combination of everything above to create a smooth, stimulating and fun workout. The basics ensure that one can safely work out.
TESTING KNOWLEGDE	**Questions about**	**All we have done in Level 1**
Stage 3.2	Technical rowing	Level 2 Explain technical rowing and what the requirements are. Here, we share more information about the posture and breathing, and we start talking about different exercises.
Stage 3.3	Technical exercises	Level 2 1. The exercises 2. Explain “why” we do the exercise The exercises make it easier for the client to understand the rowing motion and where the client’s focus should be. This improves the training quality and safety and increases efficiency.
Stage 4	Rhythm row	Level 2 1. Balance row 2. What is contrast row 3. Breathing option
TESTING KNOWLEGDE	**Questions about**	**All we have done in Level 2**
Stage 4.1	Stroke detection	Level 3 1. Line curve reading 2. Data analysis Here, we focus on individual progress. You will learn to read the tablet and understand

		where the client can improve their technique.
Stage 4.2	Detecting injuries	Level 3 1. What are the most common injuries? 2. Know the symptoms We share the most common injuries with rowing.
TESTING KNOWLEGDE	**Questions about**	**All we have done in Level 3**
Stage 4.3	Injury control	Level 4 1. How to avoid injuries 2. Basic exercises for avoiding injuries
Stage 5	Injury control—individual	Level 4 1. Explain the exercise differently (talking) 2. Adjust client's posture by touching
TESTING KNOWLEGDE	**Questions about**	**All we have done in Level 4**

Now that you know the structure of the course and what the levels entail, we will start at the beginning and master the basics so we can provide safe, high-quality training for our clients.

3 Safety

MudaGym considers safety to be a key pillar, if not the most important one. Therefore, it is our priority to strive for safety at all times. But how do you know when you have created a safe training environment? As a trainer, you are responsible for your client and must take all signals seriously. In this section, we cover the following aspects to ensure a stable foundation:

1. Welcoming the client before the training begins—asking them how they feel and if there is something you need to be aware of
2. Adjusting the rowing machine as it should be
3. Coping with resistance
4. Building up the training

3.1 Welcome the client (Personal)

Clients are more than a revenue source; they are individuals who enjoy coming to train with you. If you want them to come back, then a respectful, friendly and open attitude is vital. Your attitude as a trainer determines whether the training is successful.

The training is successful when

1. You cause no injury (or you try to avoid it).
2. You have communicated what you want to teach your client.
3. The client leaves the gym happy.

4. The client attends your next training.

Above all, look at what you can do for the customer. This starts with welcoming the person into your class. The following are some guidelines to personally approach the customer.

Step 1: Check how they feel

It sounds logical to ask how someone is doing. But the art is not in the question but in how you open up to someone. Of course, we must also deal with time pressure and large groups, so it is often difficult to make a connection with your customer. Nevertheless, try to make this connection. Above all, this gives you information and leads to return customers. You create your own fan base.

Prepare a short talk to be able to connect with the client. Consider the following questions to ask clients: Where are you from? What kind of sports do you normally do? What kind of work do you do? Also consider age because someone your own age will respond differently to questions than someone in a different age group. This also allows you to ask more specific questions; for example, are you going out this weekend or to a fun festival? These questions are superficial but help to make a contact. Try to remember the answers so you can ask follow-up questions next time.

Step 2: Check for injuries

Knowing the client's physical and mental states at the moment of the workout is important. Therefore, always ask about injuries or how they are feeling physically or mentally.

By making adjustments already before the training starts (read the chapter on injuries), you signal that you care about a safe training environment. You consequently gain the client's confidence and trust in you as a trainer. Often, the client will not tell you about their injury, so you must be able to observe injuries. We discuss this in Level 3.

3.2 Adjust the rowing machine to the client's posture

This section mainly covers the common situation you will encounter. It shows the desired situation. In the chapter on uncommon situations, we describe alternatives that can be applied and what these options entail.

In theory, it makes sense to check your equipment before you start your training. However, this is not always done in practice. Next, we present a number of steps to take so that everyone can start the training right away.

Determine the foot position

Check the height of the footboard and adjust the feet to the correct height. The entire foot should be on the footboard. If the toes are above the NON-adjustable part of the footboard, then the client must slide down the adjustable part (indicated with numbers from 1 to 6). As a result, the heel of the foot will drop closer to the ground, such that the foot will stand more fully on the footboard. This applies to the most accessible rowing machines, such as Concept2, RP3, TechnoGym and Waterrower. (*Figure 2: model footposition on the rowing machine)*

Another way to check if the feet are positioned correctly is to look at the straps. The strap should be positioned at the level of the forefoot. This is exactly where the toes start.

It is important to check each client's foot position and correct it if necessary. To save time and help each of them, you can share the following information.

Shoe size	Position feet
36–37	Number 1
38–39	Number 2
40–42	Number 3
43–44	Number 4
45–46	Number 5
47>	Number 6

Feet position—high adjustment

Advantage	When to make higher adjustment
Efficient pressure on the feet	Better performance
Longer stroke	Better stroke distribution

Feet position—low

Advantage	When to make lower adjustment
Less tension on the lower back, knees and hamstring	When there is pain in the lower back
Easier to move towards the display	When there is pain in the knee
Low risk of injuries	When the client has a short Achilles tendon

Ideal adjustment

Advantage	When ideal adjustment
Low risk of injuries	Safe for the client
No stress on joints and muscles	Straps are in the right position on the foot

Figure 2: model footposition on the rowing machine

After you have explained foot position to the customer, please always check the height of their feet. It may vary due to the thickness of the sole of the shoe or because they are barefooted.

Extra tip:

Check the flexibility of the person's Achilles tendon by squatting. If their heels are not flat on the ground, their Achilles tendon is too short. We then recommend that they adjust the footboard to a more downward position. This will reduce the strain on the back during the workout (see *Figure 3 Testing Achilles tendon flexibility*).

Flexible Achilles tendon	Shortened Achilles tendon
	

Figure 3 Testing Achilles tendon flexibility

3.3 How to handle resistance

In gyms, you will often see many inexperienced people using rowing machines with the resistance set to the heaviest level. For perspective, **Olympic rowers rarely train with the heaviest resistance.**

Training at the highest resistance brings risks and can lead to injuries. The rowing motion is by itself a difficult technical movement, and injuries can occur due to incorrect posture, improper movement or overload on the muscles or joints. Always start with technique before increasing tempo or resistance.

Once the client has mastered the correct rowing technique, they will already experience that resistance increases on the muscles. It is the amount of energy delivered on the rowing machine that translates into wattage: the higher the wattage, the more energy is produced (*see the chapter on technique—mastering the rowing motion and knowing how to communicate this to the client as a trainer*).

Step 1: Adjust the resistance

When starting the workout, we always start on the lowest resistance. This ensures that the muscles are not overloaded during the warm-up. Different rowing machines allow you to set the resistance in different ways. (See *Figure 4: different rowing machines)*

Type of rowing machine	Resistance slider
	The RP3 uses air resistance that can be adjusted by means of a slider above the handle on the rowing machine. The resistance is indicated by a number between 1 and 10. The higher the number, the higher the resistance.

	The TechnoGym rowing machine uses drag and magnets to increase resistance. The resistance can be increased by turning the button in the middle of the rowing machine to the right.
	The WaterRower uses resistance from water. It contains a reservoir that can be filled to the desired level. The more water, the higher the resistance.
	The Concept2 uses air resistance. A grid on the side can be slid up or down. The resistance is indicated by a number between 0 and 10. The higher the number, the higher the resistance.

Figure 4: different rowing machines

Resistance can be adjusted per individual depending on their experience, as indicated below. Please note, someone is not necessarily skilled at rowing if they have rowed at a resistance of more than 20 in the rowing class. Conversely, someone who has only had 3 lessons and has mastered the technique can afford to row at a slightly heavier resistance.

We can group clients according to three different titles:

1. The explorers (1–10 times)
2. The confident (11–20 times)
3. The achievers (≥21 times)

3.3.1 The explorers (1–10 times)

The beginner starts at resistance 1 (lowest resistance of the training) and maintains this level for the duration of the training. If the person's technique is good and conforms to all of the following requirements, then they can add resistance:

1. Applies the sequence of rowing movements correctly (see Chapter….);

2. Is able to achieve the correct posture and maintain it during the workout; and
3. Is able to control the rhythm (see Chapter….).

How much should resistance be increased, and what would be the best way to phrase this?

Beginners will not go straight to the desired resistance of someone who is more experienced. It is recommended to go up one level at a time, and if you are doing this in a group, it is best to specify this as well.

Example:

1. ***Everyone may increase the resistance by 1 level.***

Or

2. ***Everyone can go to resistance level 4, but beginners go to level 2.***

3.3.2 The confident (11–20 times)

This group is more familiar with the rowing motion and knows what to expect. However, this does not guarantee that they can do everything; therefore, we continue to be cautious with increasing resistance. See requirements for the explorers. We always start with resistance 1, and after the warm-up, we can adjust the resistance to the desired training type (see the chapter on training types).

3.3.3 The achievers (≥21 times)

The achievers who often come over to train; they have enough experience with the rowing machine and can usually row more rhythmically. To continue to challenge this group, you can slightly increase the resistance during the warm-up. Do this up to a maximum of level 3; only increase the training resistance later in the training.

However, even with this group, there is no guarantee that they can row well. They must thus also meet the requirements that we set for the explorers.

Type of training	Level experience	Maximum resistance during the training
Technical endurance resistance	The explorers	Resistance 1 (full training)
Technical endurance resistance	The confident	Resistance 1 (start), max resistance 3
Technical endurance resistance	The achievers	Resistance 4 (full training)
Power training	The explorers	Resistance 1 (start), max resistance 5
Power training	The confident	Resistance 3 (start), max resistance 5
Power training	The achievers	Resistance 4 (start), max resistance 7

HIIT	The explorers	Resistance 1 (start), max resistance 3
HIIT	The confident	Resistance 3 (start), max resistance 5
HIIT	The achievers	Resistance 4 (start), max resistance 6
Strength endurance	The explorers	Resistance 1 (start), max resistance 3
Strength endurance	The confident	Resistance 3 (start), max resistance 5
Strength endurance	The achievers	Resistance 4 (start), max resistance 6

Figure 5: level experience

During the training, you are free to increase or decrease resistance as long as the customer rows well and has the minimum risk of injuries.

4 The workout

A workout at MudaGym always consists of the same steps. This uniform structure offers stability, a clear transition in the workout and focus. As trainers, it is important to ensure continuity that is recognizable in any workout. Furthermore, we have the responsibility to reduce the risk of injuries and enable the client to train efficiently, effectively and above all safely.

The training has 4 steps that we always work through in this specific order:

1. the warm-up
2. the training
3. the cool-down
4. after care

4.1 The warm-up

The warm-up is a common phenomenon in every sport. We, too, take it seriously and see it as the start of the workout. The ultimate goal of the warm-up is to allow the body to gradually adapt to the effort. With the warm-up, we try to achieve the following effects:

1. Increasing the heart rate and the volume of the heart chambers, thereby allowing the heart to pump more oxygenated blood per minute through the muscles.
2. Widening the airways, which increases lung capacity. At the same time, the circulation of blood through the lungs also increases so more oxygen can be absorbed.
3. Increasing the body temperature in the muscles, thereby speeding up metabolism.
4. Warming up the muscles in a careful and controlled way.

These effects avoid overloading the muscles by being cold:

"Visualize a rubber band that feels cold and stiff; if you pull it hard apart, it eventually tears due to excessive tension. When the rubber band is stretched gently, the temperature rises, and as a result, the flexibility increases."

Flexibility provides more freedom in movement, eliminating impediments and preventing excessive tension in the body. At MudaGym, we also use the warm-up to go through the rowing motion.

At MudaGym, three components are evident in the warm-up, and they take place in sequence:

1. technical warm-up
2. increasing warm-up
3. intensive warm-up

4.1.1 Technical warm-up

The technical warm-up is constructive and gives you, the trainer, time to walk through the movement. The rowing movement consists of 2 phases: the relaxation phase (also recovery) and the tension phase (also the stroke).

As trainers, we build up the movements, starting with the arms, then adding the body and lastly including the legs in the motion. See the chapter on the relaxing phase of the rowing motion for a more detailed description.

During the technical warm-up, you as a trainer may explore every detail of the body, movement and execution. Use this warm-up to clarify everything and bring your client into the secure sequence of movement. Because we expand the range of motion step by step, the client can become familiar with the expansion of the motion. This applies to everyone, not just the beginners.

In the technical warm-up, we also bring awareness to the tension phase, or the stroke. This motion is the reverse of the relaxation phase. Here, we start pushing the legs flat down; then, we link the movement to the torso, which makes a swinging movement, and complete it by pulling the hands to the chest (***read chapter 8 technical row***).

4.1.2 Increase the intensity of the warm-up

During the technical warm-up or immediately after it, we recommend slowly increasing the intensity. After all, our muscles, heart and lungs need time to get used to the intensity as it builds. By gradually increasing the intensity of the warm-up, we also ensure that the muscles are warm, flexible and ready for the workout. In addition to ensuring that we start the workout safely, a constructive warm-up has further advantages. Always remember,

"Technique is always the same regardless of the intensity or rhythm we are in. The technique of the rowing movement remains the same, and there should be no difference in the motion when the pace is increased. During a constructive build-up, we increase the pace up and down with control. In this stage of the workout, we are still focusing on the technique and the sequence of the rowing motion (read chapter on rowing motion)."

4.1.3 Specific warm-up

The specific warm-up is the last step in the warm-up. Each session has its own specific focus, which can vary from power training to cardio training or strength endurance training. The goal of the workout is immediately visible in the warm-up.

The intensive part of the warm-up can be applied in many forms. We normally build up speed and increase the pace step by step. This can take around 1.5 to 3 minutes. The rower's heart rate will increase, and they will begin to breathe heavily.

Depending on the type of training, we will adjust the setup of the intensive warm-up. If you plan to do a strength workout, then focus more on strength than on cardio, and keep the pace (stroke pace) low but increase strength or add resistance.

5 The training

In this chapter, we describe the different types of training that can be performed using the rowing machine. Each training program also has 3 different levels, from explorer to achiever. This is defined by the client's background, age, and physical and mental condition. Each training form has its own energy supply. We divide the training programs into long endurance training, intensive endurance training, different interval training and strength training. Technical focus is important for each.

During the warm-up, the purpose of the workout is clearly identified. Moreover, we strive for clear communication between the trainer and the client at all times. For the client, knowing what is going to happen next is useful; it teaches them to divide their energy optimally during the workout.

5.1 Forms of intensities

The workouts involve different blocks, different intensities and different focusses. The following table (see figure 6 lists all the words and cues we use to clarify the exercises or intensities. Furthermore, a variety of blocks are provided from MudaGym, each reflecting a different function. By recognizing these blocks, you can also deliver a more focused workout.

Professional jargon	Color	Meaning	Focus
Technical focus on the rowing machine	Orange	A technical exercise with a technical focus for the group	Technical blocks are designed for clients to understand what good posture is, what rhythm does, how the rowing motion is built and which muscles to feel during the rowing motion. The following technical exercises are described below.
Ground exercises	Blue	The focus is on the rowing machine	Here, we do ground exercises with dumbbells, kettlebells, weighted balls, elastics or body weight.
Intensity	Red	The focus is on power, rhythm and intervals	Here, we focus on speed, rhythm and power. We work heavy and light resistance.

Figure 6:

6 Cool-down

We always end with the cool-down, which allows the client time to recover. By having everyone calmly unload, the worst of the lactate buildup is drained away, allowing recovery to begin. In addition, we also use the cool-down to stretch the muscles that were engaged during the workout.

6.1 Types of stretch exercises

In general, we can stretch all the muscles after the workout because rowing activates 86% of all muscles in the body. As a trainer, you must tailor the stretch exercises to the type of training you delivered. If the focus was mainly on the arms and upper body, then these muscles should receive more attention. If the focus was more on the legs, then the leg muscles should be stretched.

The following muscles are always good to stretch after rowing:

1. *Hamstrings*

This muscle is essential to stretch because you will notice that many clients have difficulty stretching their backs. This is due to hamstring and gluteal muscles that are too short, which puts pressure on the (lower) back. After a workout, the hamstrings are well warmed up, giving clients the opportunity to stretch these muscles effectively. The stretching also stimulates blood circulation, which in turn helps to speed up recovery.

	Stand with slightly bent knees and roll down until you feel a stretch in your hamstring. If you cannot touch the ground, do this exercise every day for 1 minute.
	Sit on your bum with slightly bent knees. Reach out to your toes and grab your ankles; then, pull yourself downwards to feel a stretch in your hamstrings. You might also feel a stretch in your lower back.

Figure 7: hamstring stretch

2. *Glutes*

The gluteal muscles are trained intensively in rowing. They are also connected to the hamstrings and lower back muscles. To ensure that the muscles remain flexible, it is wise to stretch them regularly to prevent back problems.

	While sitting on the rowing machine, place your right foot on the left knee. Keep the back straight and hinge forward to feel a stretch in the right glutes. Do the same for the left glutes.
	While standing, place your right foot on your left knee. Push your bum backwards and drop down (like a squat) on one leg. You will feel a stretch in the glutes.
	While sitting on the mat, stretch your left leg and take your right foot over the left leg. Place the sole of the foot over the leg on the ground. Bring the heel close to the bum, and press the right knee to the left shoulder.

	Place the soles of your feet together, and bring the heels to the bum. Then, place your elbows on the knees, and gently press them down.

Figure 8: Glutes stretch

3. Back muscles

The back muscles have a tough job not only during sports but also in daily life. We pay extra attention to these muscles to ensure that they do not lock due to excessive sitting or overstraining during training.

By stretching the glutes and hamstrings, we reduce considerable burden on the lower back. We present an overview of different back stretching exercises below.

	Take both hands above your head, and gently bend backwards. Feel the stretch in the whole back.
	Take both hands above your head; gently bend sideways, and stretch yourself as far as possible.
	Lie down on your belly, and keep the feet relaxed. Gently press yourself upwards, ensuring that your pelvis is always touching the floor.
	Lie down on the mat; put both feet flat on the ground, and place the legs outside. Then, rotate the knees to the left and right until you cannot go any further or until your knees touch the ground.

Figure 9: back muscle stretch

4. Shoulders

The shoulder area is key concern not only during training but also during normal life. In daily life, most people have improper posture due to extended periods sitting in front of a computer or long bouts of time on the phone with a bent head or due to lifting heavy objects incorrectly.

Even after training on the rowing machine, the shoulders have been under tension. Partly because we want to but also because of incorrect posture or heavy lifting. With various stretching exercises, we want to not only prevent neck tension causing headaches but also maintain mobility in the shoulder area.

	Stretch the right arm out in front of you; the left arm goes under the right outstretched arm and pulls the right arm in towards the body. For your view: the right arm will be pulled to the left. Repeat for the opposite arm.
	Bring the right arm behind your head between the shoulder blades; the elbow points out above the head. With the left hand, pull the elbow of the right hand further behind the head. Repeat for the opposite arm.
	Take with the right hand your left ear, you are facing to your right toes and gently you pull the head down into a stretch.

Figure 10: shoulder stretch

7 Additional cool-down activities

During the cool-down, all clients are moving at a relaxed pace, and you have time as a trainer to motivate your clients to attend your next class. You do this by giving them a general compliment about the workout. You can also highlight some technical focus for the group in general to prepare clients for the next workout. In addition, you could also go around giving each client a high five or pat on the shoulder to signal that they did a good job. If you are able to and have the time, you may want to offer some personal feedback on technique. However, be sure to check everyone and be positive and constructive in your feedback.

7.1 Aftercare

Aftercare is the last step before the client leaves the studio or gym. It can be likened to good service at the bakery where the person serving you asks, “anything else?”

We like to see good aftercare because it builds a fan base and signals that you are there for the client not only during the workout but also afterwards.

At the start of the training, when welcoming the client, always ask how they are doing and make small talk. Memorize what they say so you can engage with them on a personal level when they leave. This could mean wishing them well for something they have to do for work or wishing them a happy vacation. If they need to work on their technique, you could recommend an extra exercise for them to do at home. For physical issues, you can provide stretching exercises or, in the worst case, refer the client to a physiotherapist.

Aftercare is an acknowledgement to the client that you have listened to them and are sincere. Building a personal relationship with the client takes time, but you will earn their loyalty in return.

8 Technical rowing

The rowing movement can be performed using various techniques. MudaGym uses the technique that Vincent and Tycho Muda brought to the Olympics.

From this point on, you will become a trainer who focuses on a full body workout.
We will continue to focus on technique, as this ensures safe training and prevents injuries. In addition to improving technique, we will also increase effectiveness and efficiency. Before we discuss technique and posture, we cover what the rowing motion looks like and what muscles are being worked.

The rowing movement is a looped sequence that is constantly repeating. We divide the movement into 2 phases, each of which is further divided into 3 steps. The 2 repeating phases are the recovery, also called the preparation phase, and the power phase, also called the stroke. For us, the preparation phase is the most important because during the relaxation, before the next power explosion, we as trainers can adjust posture, technique and rhythm. This adjustment cannot be done during the power explosion.

In the following chapters, we describe the sequences of the recovery and the power explosion.

8.1 The sequence of the preparation phase

We call it the preparation phase because, as the saying goes, good preparation is half the battle. The preparation phase is broken down into 3 stages: the stretching of the arms, the flexing of the torso and the raising of the legs. Before commencing with these three stages, we assume the starting posture.

8.1.1 Starting posture

The starting position to enter the preparation phase is as follows: the legs are stretched out, the upper body is leaning back slightly, and the hands are in towards the chest. We like to see a strong posture and an active, ready attitude. You will notice that many clients have little to no control over their core and therefore lack the ability of sitting strong and proud. They will consequently also appear to be slouched.

There are many different back posture mistakes, which we will discuss in detail later. For now, it is important that your client activates their core.

Figure 11: posture at the finish

When is a posture strong and active?

A strong posture is characterized by a strong torso (see *Figure 11: posture at the finish*): the chest faces forward, and the client need to use the abs to hang backward. Despite a backward lean, the entire foot is pressed firmly against the footboard. For this, it is necessary to flex the toes (see photo). In this pose, it is wise not to lean too far into the back. To avoid this, check that the client is not hanging on to the straps but still pressing their feet fully against the footboard. The elbows point back and away from the sides of the body. This keeps the wrists completely straight in line with the forearm and chain of the rowing machine. The shoulder blades pull together, and the chest pushes forward strongly. The client now has an active posture.

Step 1 in the preparation phase

The movement is initiated from the arms. When the handle of the rowing machine touches the chest, the arms move away from the chest first. At this point, the rower continues to lean back with legs stretched out. Even though they move back to the display, the feet continue to push against the footboard.

When the arms are almost fully extended, the torso bends forward from the hips. The back remains straight and active, with the shoulder blades still pulling together and the chest pushing forward. The legs are still straight, and it is even possible to feel tension in the

hamstrings. Because the legs are still extended and the rower is bending in, they can feel tension in the glutes and hamstrings, which feels like a stretch.

Step 2 in the preparation phase

When the arms are extended and the torso is flexed, the abs as well as the chest, shoulder and back muscles remain activated. This is because during the bending of the body, which takes place through the hips, the full active position should be held before the legs come up. Here, the position of the hands is important. They remain at chest height and in line with the chain of the rowing machine despite the bending (see photo). In practice, you will find that many clients lower the arms and lose their active posture. Advise them not to pull the shoulders up towards the ears but to keep their arms at the right height through the chest and shoulder muscles.

Step 3 in the preparation phase

The posture is strong, the arms are at chest level, and the body is bent to approximately 20 degrees. Now it is important that the client progressively tightens all the muscles in the upper body as the legs come up toward the display. Because the upper body is under tension, they hold the position until the legs are fully raised and the shins are vertical. The heels are allowed to come off the footboard at the point when the shins are vertical.

What position is required after we are fully in front of the display?

The shoulder blades are pulled slightly together, there is tension in the chest and wing muscles, and the torso is flexed 20 degrees, while the buttocks point back and the heels have come off the footboard. The client is ready to start the power explosion!

Steps in the preparation phase

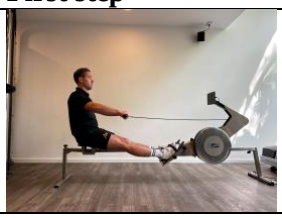
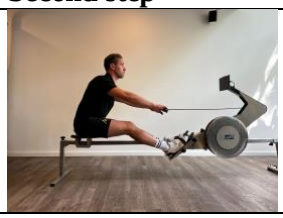
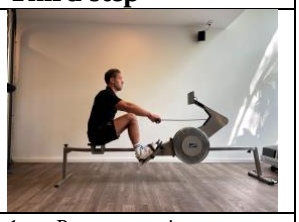
Starting posture	First step	Second step	Third step
			
1. Strong, upright posture 2. Chest points upward to the front 3. Elbows are wide on the sides of the body, moved towards the back 4. Shoulder blades are contracted 5. Legs are straight (but with a slight bend at the knees) 6. Toes are flexed towards the rowing machine	1. Strong, upright posture 2. Chest points upward to the front 3. Arms are stretched out 4. Shoulder blades are still contracted 5. Legs are straight (but with a little bend in the knees) 6. Toes are flexed towards the rowing machine	1. Posture remains strong and upright 2. Chest points forwards 3. Arms are stretched out 4. Chest muscles become more tensed 5. Hinge forward until the hands pass the knees 6. The legs can come up slightly 7. Feet are fully on the footboard of the rowing machine	1. Posture remains strong and upright 2. Chest points forwards 3. Arms are stretched out 4. Chest muscles become more tensed, and shoulder blades are contracted 5. The hinge remains the same, and the chest moves towards the knees 6. THE WHOLE BODY IS READY TO START THE STROKE

Figure 12: steps in the preparation phase

8.2 The sequence of the explosion phase (the stroke)

After the preparation phase, the movement will immediately turn into the power explosion. In practice you will find that the force explosion is not obvious to many clients. The only

explanation for this is that the client is not prepared well enough in the preparation phase. As a trainer, it is up to you to better instruct the client and provide feedback. We cover how to improve technique and give feedback in detail later in the course. We use the strategy LIFO, which stands for: ***Last in, first out.***

Step 1 in the explosion phase

At the moment of the explosion, no corrections or adjustments should be made to the client's posture, rhythm and movement. These should be done in the preparation phase, where you clarify that the client must maintain that posture during the power explosion.

If the client completes the preparation phase properly, they will only have to tighten their core, chest and back muscles to explosively push down their legs. If they do this well, they will feel much resistance from the rowing machine. The harder the force is, the higher the wattage will be. The client's body will experience a high degree of tension during the explosion of force. During the kick of the legs the upper body need to be active and need to carring the load to bring the handle away from the display.

Step 2 in the explosion phase

When the legs are almost fully extended, the trunk takes over the movement. We call this the body swing. The torso takes over the full tension and swings the trunk backwards. The client continues to constantly push against the footboard with their feet. They will feel a healthy tension in the abdominal muscles, chest muscles and shoulder muscles during the swing. It is important that the arms remain extended during the body swing.

Step 3 in the explosion phase

Once the torso has swung backwards, the arms become engaged in the motion. The arms will carry the last of the force backwards and ensure that the handle of the rowing machine comes against the client's diaphragm. Ensure that the client ends their pull in such a way that they come to sit exactly in the starting position (see attachment…).

8.3 Last in, first out (LIFO)

We have explained each step and respective movement separately, but during LIFO, you will see that the movements flow closely into one another. The order we have described is the only correct order—if you start doing anything else, you increase the risk of injuries.

If you end with your legs raising in the preparation phase, then the legs will automatically go down first in the power explosion. The body swing always takes place second in both the preparation phase and the power explosion. The arms will end up last during the power explosion, but they will immediately flow through into a recurring movement in the preparation phase.

LIFO format:

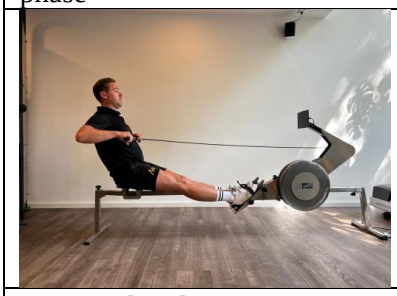
Preparation phase	**Preparation phase**	**Preparation phase**
Arms start in the preparation phase	Body hinges towards the front	Legs end in the preparation phase.
		
Arms end in the power explosion	Body swing takes over the power explosion	Legs start in the power explosion
Power explosion phase	**Power explosion phase**	**Power explosion phase**

Figure 12: LIFO

8.4 Handle position

The handle of the rowing machine, which the client holds, is the connector between the rowing machine and the client. Because the client is holding the handle, they can push against the rowing machine, thereby creating resistance.

As we want to make the movement as clear and easy as possible, we say that the handle is always at diaphragm height. This means the handle is at this height at the start position and when the rower nears the display for the power stroke.

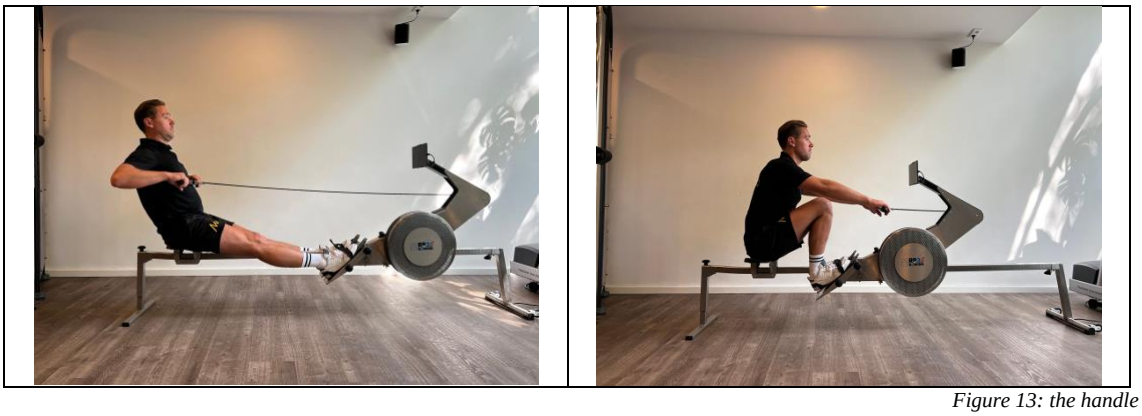


Figure 13: the handle position

9 Monkey eating banana

In theory, we should speak such that everyone understands us. However, in reality, we often communicate in ways that are easy for **us** to understand. As trainers, we should not assume that our customers speak our language. Instead, we should have the knowledge, experience (soon) and preparation to provide an understandable lesson.

To develop a safe but accessible sports environment, we want to avoid using difficult terms, professional jargon and non-understandable sentences. Therefore, we introduce the concept of a “monkey eating a banana.” What makes monkeys eating bananas so valuable not only for

you as a trainer but also for the client? In figure 14 you find our simplified language to explain the technique, posture and the meaning of the exercises.

9.1 MudaGym language:

Exercise	How to sit	Meaning of exercise	Description from trainer to client
Arms only	Legs straight, toes down, shoulder blades compressed	Strengthen the body posture in the finishing stage by maintaining the power through the legs	Chin up, chest forward, shoulder blades to the back, relaxed fingers around the handle
Arms & body swing	Legs straight, toes down, shoulder blades compressed	Strengthen the movement between the upper body and the arms; find a dynamic transition between those two body parts	Chin up, chest forward, fingers relaxed around the handle, wrists straight, shoulder blades to the back
Check 1	Legs straight, toes down, shoulder blades compressed and handle against the chest with straight wrists and wide elbows	You practice a strong finish with the right posture	Chin up, chest forward, toes pushing down into the footplate, fingers relaxed around the handle, wrists straight, elbows in line with the handle
Check 2	Legs straight, toes down, shoulders behind the hips with compressed shoulder blades, arms straight	The first movement in the recovery phase is hands away; here, we practice slow handling through the arms	Chin up, chest forward, toes pushing down into the footplate, fingers relaxed around the handle, hang on your abs
Check 3	Legs straight, hinge forward through the hips with compressed shoulder blades and straight arms	The next movement after break 2 is the hinging forward through the hips. We break when we feel tension in the hamstrings or when the handle is halfway down the shins	Look forward, keep shoulder blades compressed, hold the handle relaxed in the fingers

Strapless feet	Without the straps around your feet	We practice this to keep pressure under the feet Toes should always be attached to the footplate	Push your toes down; you will feel pressure in the calves
One-arm row	Hold the handle in the middle with one arm; the rest is normal rowing	We practice this to hang long on the arms and lock the core to remain facing straight forward	Hold the handle in the middle; keep arm straight during the leg drive
Underhand grip arms only	For the triceps, keep legs straight, hanging to the back on the abs.	Focus on a straight body posture and the pressure between the shoulder blades and the triceps	Chin up, chest forward, shoulder blades together to the back, toes pushing down into the footplate
Legs only	Straight arms, hinged forward, light fingers around the handle, compressed shoulder blades	Focus on the power through the legs; jump through the toes, and hold that pressure there	Compress the shoulder blades; keep light fingers around the handle; lock your core; feel the calves and hamstrings during the push
Legs & body swing	Straight arms, just pushing with the legs and the movement with the upper body	Focus on the connection between the leg drive and the body that takes over when the legs are almost down	Chin up, chest forward, shoulder blades together to the back, toes pushing down into the footplate, fingers relaxed
One-leg row	Take one leg off the footplate, stretch that leg to the outside of the machine to avoiding hitting your shin against it	Focus on the leg drive; keep the knee in line with the toes, and push through the toes the whole way; lock your core to stay straight	Keep the knees in line with the toes; pull shoulder blades together to the back; lock the core to stay straight; hang on the arms for maximum pressure on the legs
Speed ladder	Normal position	In this exercise, we focus on rhythm and increasing it. We climb in rhythm and speed together	Focus on the leg drive; the power comes from the lower parts, and the rhythm is created by relaxation in the hands

			and movement towards the tablet
Pyramid	Normal position	Same exercise as the speed ladder. However, here both the rhythm and speed decrease	Focus on the leg drive; the power comes from the lower parts, and the rhythm is created by relaxation in the hands and movement towards the tablet
Power ladder	Normal position	Focus mainly on power. The rhythm stays the same, and the power will increase with each step	Focus on light fingers around the handle, compressed shoulder blades and a tight core. Push through the toes, and maintain the pressure until the end of the movement
Rhythm row	Normal position	Focus on rhythm, and try to row as one team	As the trainer, you will count exactly to the rhythm
One-arm row	Using only the left or right hand, hold the handle in the middle	Focus on the hang movement of the arm	Hold the handle lightly in the fingers. Wait with the pull of the single arm until the end of the leg drive

Figure 14: MudaGym languages

9.2 How to become a monkey eating a banana

To apply the principle of a monkey eating a banana, preparation and knowledge about how the workout will go are key. They ensure peace of mind and give us focus and control over what we do.

As the trainer, prepare yourself to ensure a smooth workout for the client by

1. Knowing the type of training you are giving;
2. Knowing the time frame of the training and what you want to highlight; and
3. Choosing your technical focus point for the workout.

9.2.1 Know the type of training

We have developed several forms of training that are accessible to everyone, as described in the table below. The idea is that we always offer a full body workout.

<table>
<tr><th>Type of training</th><th>Goal of the training</th><th>Focus</th></tr>
<tr><td>Technical training in combination with endurance training</td><td>Increasing stamina
Improving technical skills in rowing

Training format:
1 - Longer distances row
2 - Exercises during the row</td><td><table><tr><td>Technique</td><td>General</td></tr><tr><td>Body posture</td><td>Low resistance</td></tr><tr><td>Movement</td><td>Longer distance</td></tr><tr><td>Rhythm</td><td>Low rhythm</td></tr></table></td></tr>
<tr><td>Power training</td><td>Strength and explosiveness

Training format:
1 - Power row / low rhythm with high resistance

2 - Start training / high rhythm with high or low resistance</td><td><table><tr><td>Technique</td><td>General</td></tr><tr><td>Power through legs</td><td>High resistance</td></tr><tr><td>Movement</td><td>Power/watts</td></tr><tr><td>High & low rhythm</td><td>Short distance</td></tr></table></td></tr>
<tr><td>HIT—High interval training</td><td></td><td></td></tr>
<tr><td>Strength endurance</td><td></td><td></td></tr>
</table>

Figure 15: Different type of trainings

9.2.2 The timeframe with highlights

The trend today is a to-go society where people tend to live by an agenda and often plan tightly. We therefore have the responsibility not only to take the client through the training properly but also to start and stop on time. The time frame is thus the common thread in the training, and once you start the training, you cannot stop.

The time frame is made up of 4 parts, each with its own meaning. In the time frame, you can also see that the blocks are not all of the same height; the differences indicate the intensity. As a trainer, you decide what your focus is and what you want to say per block. Ensure that the focus area aligns with the block in question and that you apply the MudaGym triangle at all times.

9.2.3 Choose your overall technical focus

As a trainer, you should prepare your training well and know the course of the program. During the training, you know what you want to say and where you will work on the whole training. A focused plan in your training is useful because it affords you security, allows you

to prepare information that you can share and always gives you something to fall back on during difficult training sessions.

Different technical focusses are as follows:

- Strong posture
- Maintaining resistance until the end of the stroke
- Rhythm rowing

9.3 Do not think of the pink elephant

When we deliver training, we only want to share information about what we want the client to see, do or feel. We tell them in a simple language what we want them to achieve during the exercise, during a specific segment of the training or when we offer technical feedback.

When the client is tired and working up a sweat, it is important that you are sharp and clear about what you want from them. If they need to go faster, you say, “GO FASTER” instead of “DON'T GO SLOWER.” Words such as “NO” or “DO NOT” cause confusion. Therefore, avoid these words at all costs, and focus on what you want from your customer. If they need to sit in a stronger position, then that is what you want to share with them.

In the following chapters, we describe the technical aspects of giving the training, client attitude and rhythm rowing.

10 Technical focus

You now know what the training structure is, what the 6 steps of a complete rowing movement are and how we want you to communicate with the client. This means you have passed the intermediate test and are now an official Level 1 trainer. To become a successful trainer, you must understand how to combine safety with high-quality training while delivering a fun and challenging workout.

In this chapter, we focus on the technique of rowing and exercises that will provide improvement in technique. We share technical exercises that apply to the rowing machine as well as ground exercises. Feel free to return to this information as and when you need to.

Please continue to remember the concept of a monkey eating a banana. (Chapter 9)

Technique mastery is a form of expertise in any sport and cannot be achieved overnight. We must understand this and take our time. To this end, we apply technical exercises during every training session.

10.1 Exercises on the rowing machine

In this section, we describe the technical exercises and what we want clients to feel when they perform each one.

Exercises			
1. Arms only	2. Arms & backswing	3. Legs-only pulse	4. Legs only
5. Legs & backswing	6. First break	7. Second break	8. Third break
9. Quarter bench row	10. Half bench row	11. One-arm row	12. Underhand grip row
13. Bicep curls	14. Hinge	15. One-leg row	16. Strapless row

Figure 16: exercises

1. Arms only

Using only the arms to row, we proceed through the preparation phase. When we use only the arms, we have a strong pose, where the legs are stretched, the toes are pushing against the footboard and the chest is pushed up and forward.

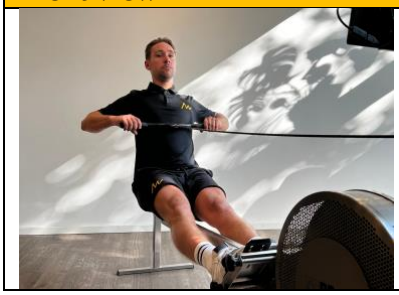
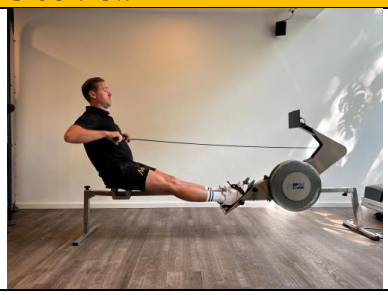
Front view	Side view	Back view
		

Figure 17: Arms only

While extending our arms, we hold the handle at chest height; when the arms are extended, we pull the handle back to the diaphragm (middle of the body). Ensure that the elbows are moving away from the body and the shoulder blades are coming together until you tap your diaphragm with the handle. The wrists should always be in line with the forearm.

What do you feel?
Your core is tightened, and you feel contraction between your shoulder blades, chest muscles and arms. As you pull the handle towards you, you feel your feet pushing against the footboard.

Watch video: Arms only

2. *Arms and backswing*

After the arms, the back comes into play. Because you are demonstrating the movement to clients, make the movement static so they can clearly see the transition of the movement. However, move like a human, not like a robot.

As we move our backs towards the display, we bend over from our hips to the front. Our back remains strong, the shoulder blades remain slightly drawn together, and the chest remains in an intimidating position.

Front view	Side view	Back view
		

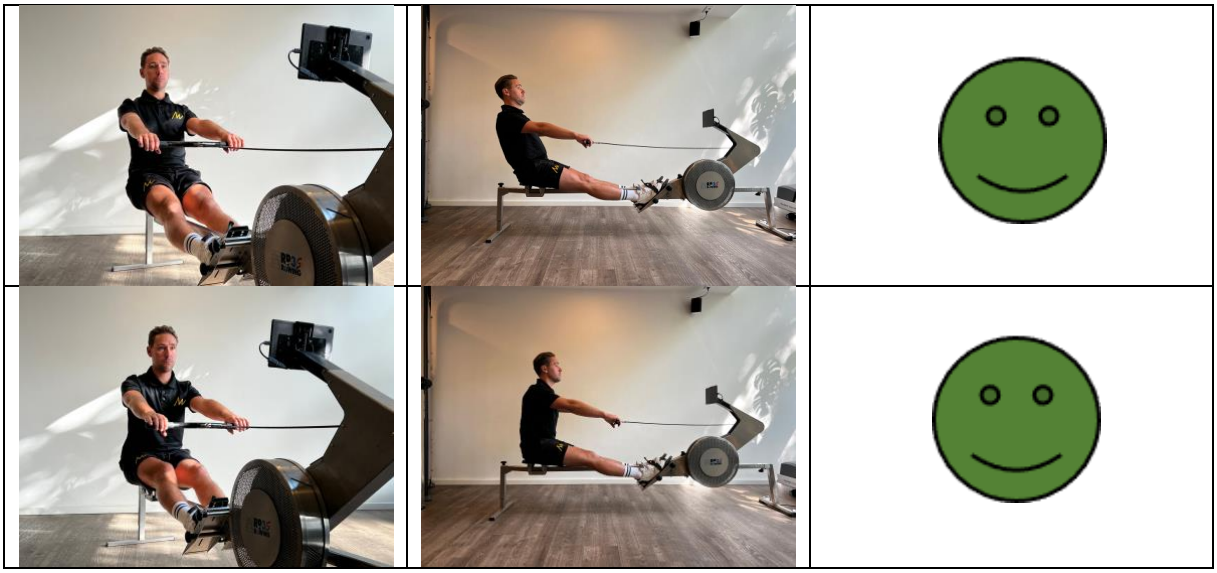


Figure 18: Arms and backswing

When the arms and legs are extended, we are ready to initiate the backswing movement. During the swing, the chest, shoulders, back, abs, buttocks, thighs, hamstrings and calf muscles are tightened. The feet press even harder against the footboard than they do with the arm movement alone. Finally, the handle's end position is the same as in the arms-only rowing motion.

What do you feel?
The whole-body experiences resistance, and the feet push against the footboard. The abs as well as the back, shoulder and chest muscles are tightened as you make the swing back and pull the handle towards the middle of the body.

Watch video: Arms and backswing

3. Legs-only pulse

This exercise is difficult because we ask the client to maintain a strong posture, sitting fully prepared in a position that will cause a high amount of muscle tension on the back. The reason for this is that the hamstring and glute muscles tighten. This pulls the back muscles into a tighter position, which causes fatigue if this exercise is performed for too long.

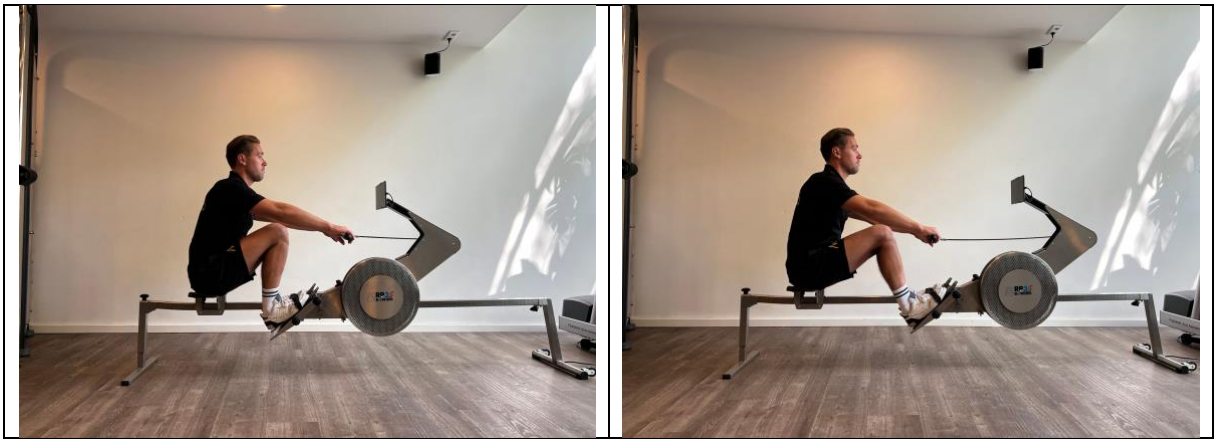


Figure 19: Legs only pulse

In this exercise, we want to see full activity in the upper body: the arms should be stretched out and just above the knees. For clear language, you can also instruct the client that their arms should be at chest height. Then, the client pushes their legs 5 cm away from the display and stops. In this 5-cm push away, the client should feel resistance. After the 5 cm, the explosion of force stops, and the client sits still for 1 second before moving gently back to the display.

The exercise shows that, even in the first part of the stroke, resistance must be felt, and an active posture is necessary for this.

What do you feel?
Tension will be felt in the hamstrings, legs, buttocks, calves, back, shoulders, chest and abs. The tension should feel like lifting something heavy off the ground, as in a deadlift.

Watch video: Legs-only pulse

4. Legs only

In this exercise, we continue to focus on the legs only. After the legs-only pulse, we now fully stretch out the legs. In doing so, the entire upper body remains fully under tension. During the extension of the legs, we produce the most power. After all, 70% of the power is supplied by our legs.

Remember that an active posture, a straight back, tightened abs and contracted shoulder blades are essential for optimal acceleration of the legs. When the acceleration has been completed and you are still bending forward with straightened arms, you have a 1-second break before moving slowly back to the display.

Front view	Side view
	
	

Figure 20: Legs only

What do you feel?
Tension will be felt in the hamstrings, legs, buttocks, calves, back, shoulders, chest and abs. The tension is pressure on the muscles, which feels like squeezing. The whole upper body must be active and strong.

Watch video: Legs only

5. Legs and backswing

The backswing comes after the legs. In this exercise, the connection is made between the legs and the backswing. Here, we focus on the trunk taking over the energy created by the legs. This movement must be performed powerfully and is similar to the Romanian deadlift. When the legs are almost straightened out, the torso swings backwards. The hip extensors take over, and the created energy can be transferred to the trunk. The arms do not participate for the time being.

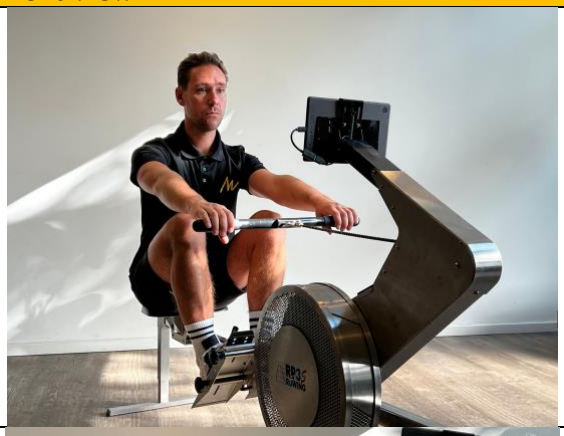
Front view	Side view
	
	

Figure 21: Legs and backswing

What You Feel
As with leg rowing alone, there is resistance throughout the body. You can especially emphasize keeping the body strong and the back straight. With this instruction, you make it clear to the client that the posture of the trunk is important.

Watch video: Legs and bodyswing

6. First, second and third checks

During this exercise, we go through the preparation phase in steps, which we refer to as a CHECK. This exercise is only suitable in the preparation phase, because we interrupt the movement by stopping the motion.

The first check is a short break from the entire rowing motion. After the stroke, stop with the hands at the diaphragm and pause for 2 seconds. In this position, we pay attention to the posture of the body, ensuring that the body is strong and the toes are pressed against the footboard. Use this exercise to take the speed out of the movement in order to step through the preparation phase.

The second check is a pause after you have stretched the arms. The body is still leaning back, the toes are pressing against the footboard and the arms are extended. The hands are at chest height, and we look forward with a proud, intimidated torso. Hold this pose for 2 seconds

before bending over, allowing the knees to rise up for another stroke. Make clearly visible the movement in which you as a trainer bend over from your pelvis.

The third check is a short pause after you have extended the arms and bent them in. In this position, the handle is still at chest height, the shoulder blades are slightly contracted, the chest is pointing forward in an intimidated position, and the legs are flat. The hands will come to a stop halfway up your shins. Next, hold a pause for 2 seconds before allowing the legs to come up. Ensure that the body remains active and is ready to push powerfully with the feet against the footboard.

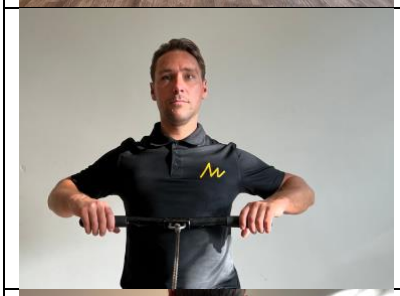
First check	Second check	Third check
		
		
		

Figure 22: 1st, 2nd & 3rd check

Watch video: First check

Watch video: Second check

Watch video: Third check

7. *Quarter and half bench row*

In preparation for the stroke, it is important to complete the stretching of the arms and the flexing of the torso early. By rowing the quarter bench, we shorten the raising of the knees. When rowing a quarter bench, the stretching of the arms and the flexing of the torso are the same as in normal rowing, only now we only raise the legs slightly. During this slight raising, keep an eye on your hands. When your hands come to the level of your feet, then you should start the stroke and apply a significant amount of force.

The half bench row is almost the same as the quarter bench row, but this time the legs are allowed to come up a little further, and the hands come up past the feet. The shins are angled, and the heels of the feet are still touching the footboard.

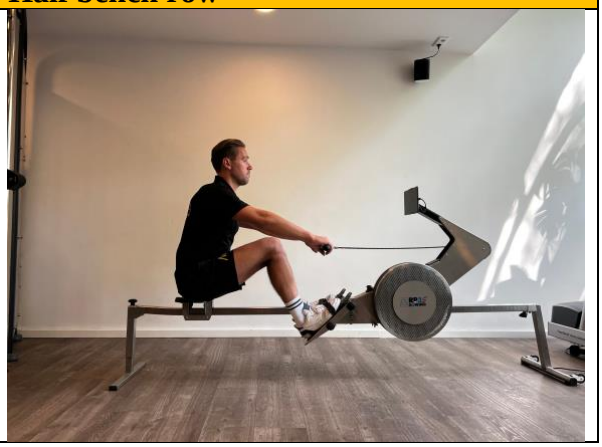
Quarter bench row	**Half bench row**
	

Figure 24: shorter bench row

Watch video: Quarter bench row

Watch video: Half bench row

Watch video: Three-quarter bench row

Why this exercise?
This exercise is designed to clearly improve and accelerate the preparation of the rowing motion. Furthermore, we also use this technique to increase the pace to quickly work towards a peak wattage. Try to perform the exercise as fluidly as possible where you, the trainer, initiate the movement as best you can.

8. *One-arm row*

In the one-arm row, we hold the handle with one hand. We bring one hand to the middle of the handle and place the other hand on our back. During this exercise, we apply a full rowing motion.

The rowing motion is the same, only now we focus primarily on the core. As you strongly push the legs down, you will notice that the arms will be under full tension and therefore remain naturally extended. As a trainer, you must instruct clients to activate their upper body by themselves and therefore be able to cope with the resistance that the legs build up and push through.

By tightening the core autonomously, there will be no twisting in the torso. The client will experience that everything around the core must be strong, otherwise no resistance can be built up, and the power will be low.

Figure 25: one arm row

Watch video: One-arm row

9. *Underhand grip pull*

Normally, we hold the hands-on top of the handle, but in this exercise, we turn the hands around and grasp the handle from underneath. This exercise is meant to emphasize bringing the shoulder blades together when we bring the hands to the diaphragm. By doing this, we also demonstrate the proper forward movement of the chest. An intimidating, proud and open posture is desired. Rowing with an underhand grip teaches the client to have a better posture and exerts an extra load on the bicep and triceps.

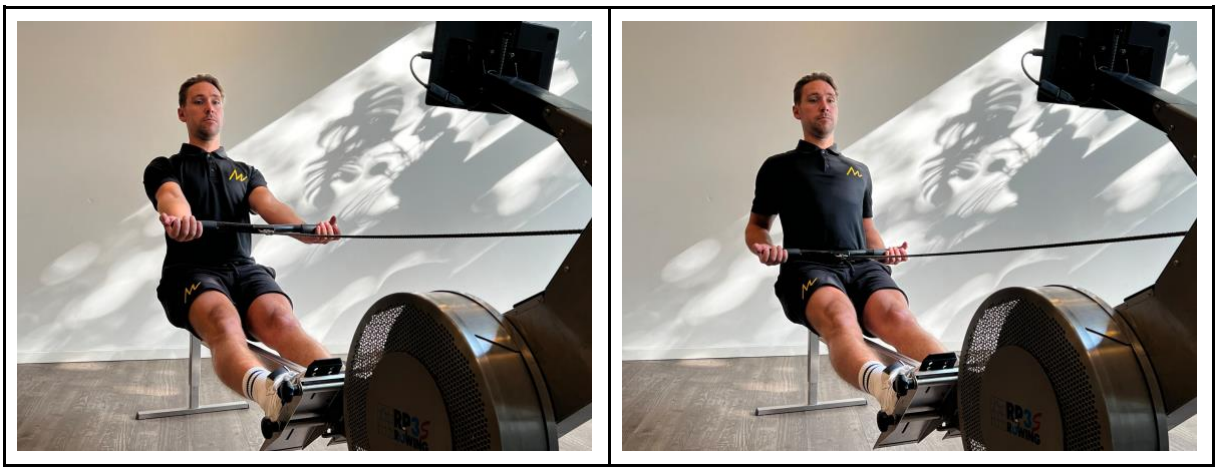


Figure 26: underhand grip pull

Watch video: https://www.youtube.com/watch?v=pXxKxvKZLLs

10. *Bicep curls*

Grasp the handle using an underhand grip, and put your elbows in your sides. Then, hinge at your elbows to bring the handle towards your throat. Pay close attention to your posture; it should be strong, with the chest intimidating, proud and open. The ab muscles should be tightened to prevent movement in the upper body.

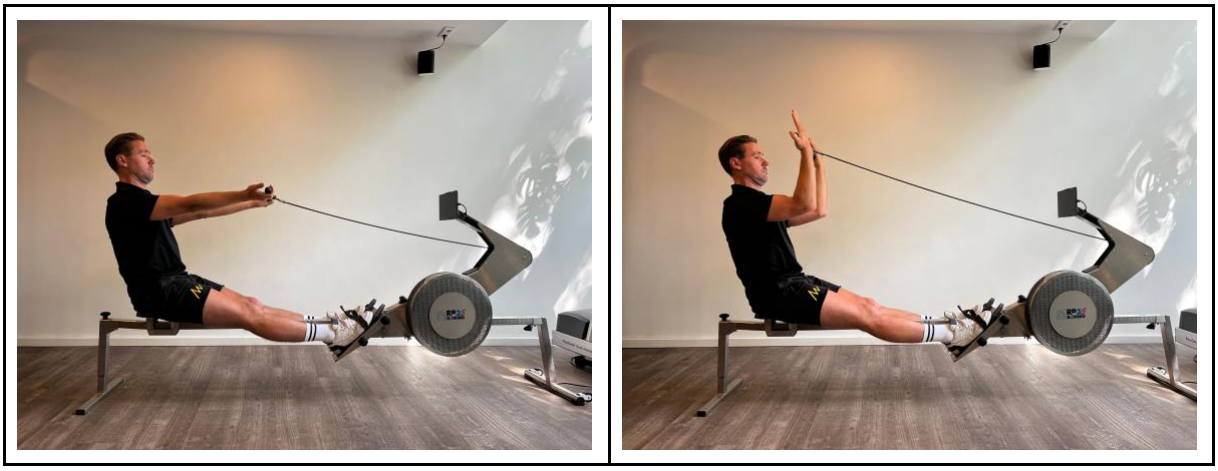


Figure 27: Bicep curls

Watch video: Bicep curl pulse https://www.youtube.com/watch?v=ptO2Wclx_eI

11. Hinge

This exercise is intended to properly initiate the hinge movement of the torso. The arms and legs are extended, and we keep the handle at chest height at all times. The only thing moving now is the torso hinging up and down.

From the pelvis, we hinge forward and keep the torso strong and ready. It is important that the hands remain exactly at chest height because the moment the torso swings back, there must be immediate resistance.

To demonstrate the height at which the hands should be, you can make the client feel the difference by asking them to bring their hands to the shins when bending in. They will immediately experience that there is no resistance on the chain and therefore none in their body. Then, ask them to bring their hands to chest height and have them try the movement again; they will now experience resistance. By feeling a clear difference, the client will gain a better understanding of the motion. The hinge is mainly meant to keep the back straight; the tilt should occur from the pelvis, and the hands should be kept at the right height.

Watch video: Hinge

12. One-leg row

When performing one-leg rowing, we initially ensure that the client is rowing without straps. This is because we want to ensure that they not only keep pressure with the feet at all times but also can change legs quickly.

When performing the exercise, always start at the beginning of the preparation phase. Both legs are extended, and the leg that is off the machine should also be as far enough to the side as possible. Place the latter foot on the ground and stay in the same place at all times regardless of whether you are moving towards or away from the display.

What we focus on is maintaining a strong posture and that the core remains straight. Clients should avoid a twisting motion by tightening the shoulder blades, chest and core muscles. The client might feel like they are sitting out of alignment on the rowing machine, but if they maintain an active posture, this will not be the case; they will be sitting straight.

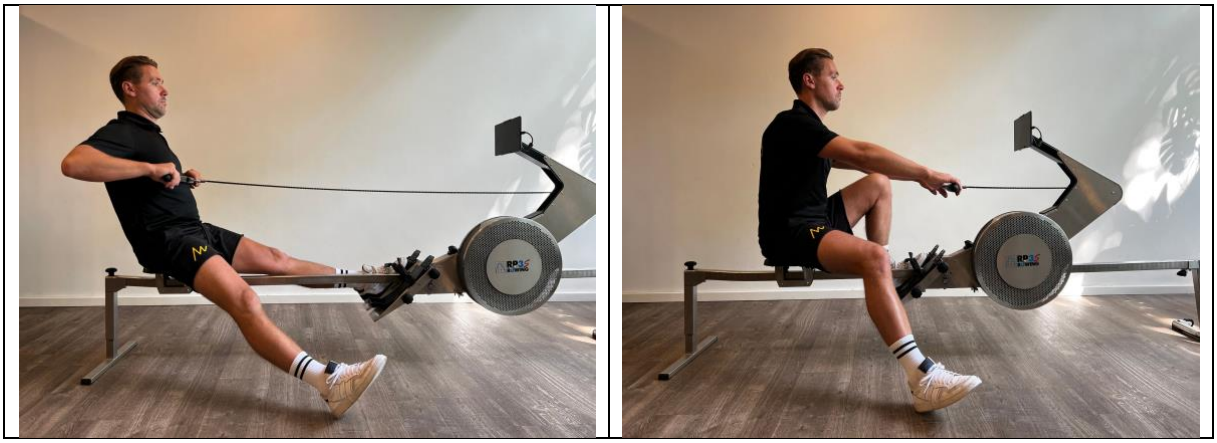


Figure 28: One leg row

Watch video: One-leg row

What do you feel?
Clients will feel a heavier load on the leg, buttock and hamstring muscles. It is important to instruct the client to maintain an active core and an upright posture.

13. Strapless row

Rowing with loose feet provides much information. You can combine this exercise with other technical exercises. The main reason for rowing with loose feet is to ensure that the client continues to feel resistance until the end.

Another reason is that the client continues to work within the range of motion and cannot fall too far back—when the client does this, there is a chance that they will fall off the machine. Therefore, ensure that they continue to push against the rowing machine with their toes at all times. Flexing the toes properly keeps active tension on the core, and the client will experience resistance until the end of the stroke, which keeps them on the machine.

The final reason for rowing with loose feet is that the client learns to apply a calm rhythm and understands that the steps of the rowing movement must be clearly followed. Performing the movement step by step allows the client to fully complete the preparation phase to make another stroke.

Watch video: https://www.youtube.com/watch?v=QoxsmYHxLgs

11 Row in balance

Technical movement is important to prevent injuries, increase training effectiveness and create focus to increase concentration. Technique includes posture, movement pattern and rhythmic movement. Now that you are familiar with posture and movement patterns, this

chapter covers rhythm rowing, or how to row in balance. We discuss a number of aspects that influence rhythmic movement: baseline tempo, contrast rowing and breathing rhythm technique.

11.1 Baseline tempo

Compared to a bicycle pace, the RPM is 4 to 5 times higher than rowing. A complete rowing movement at a basic pace takes approximately 3 seconds. This involves moving for 2 seconds in the preparation phase to the display and using 1 second to make the stroke. This is a comfortable basic pace for most people, but it allows you as a trainer to give clear technical instructions and to demonstrate the rowing movement as well as possible.

Our basic pace will always be around 20 strokes per minute. We can only control our rhythm in the preparation phase. The moment that we start the stroke, we can push as hard as we like, but the time endurance of the stroke will always be the same.

Type of sport	Low RPM	Normal RPM	High RPM
Racing bike	60 rpm	80 rpm	90+ rpm
Rowing	16–18 rpm	20–22 rpm	30+ rpm

Figure 29: baseline table

When we are in a relaxing movement or focusing more on technical rowing, then we always return to 20 strokes a minute. In the warm-up, the rhythm will be low in the beginning, but it will increase as the warm-up becomes more intensive.

11.2 Contrast in rowing

You will start to notice that throughout the workout, we raise and lower the rhythm. This is often difficult for clients to follow, but it is useful to know what we mean by different contrasts.

We can build up the tempo, but we can also fully devote ourselves to a power explosion. With different contrasts, you can go through everything, and you will be able to apply it at all times in your training. When we talk about contrast, we refer to the client's pace and power. There are three variants that recur in training: high, medium and low contrast.

Rate	Power	Type of contrast
16–24 (strokes a minute)	Maximum power	High contrast
24–30 (strokes a minute)	Maximum power	Medium contrast
>30 (strokes a minute)	Maximum power	Low contrast

Figure 30: Contrast

High contrast

When we talk about high contrast, we are actually talking about strength training. We want the client to deliver more power while they maintain a low rhythm. During the time that the client completes their preparation phase, the flywheel of the rowing machine has slowed down to the point where it takes extra power to get it going again. You will encounter this form of movement primarily during power rowing. The client will feel extreme pressure on their muscles and will require a great deal of strength.

Medium contrast

Medium contrast is particularly evident during conditional training. This involves continuing to do the same thing during a prolonged block. The tempo is slightly higher than the basic tempo, but it is still maintainable and can hence be kept up for a longer time. It is important that the client keeps moving constantly and does not lose strength halfway through the block.

Medium contrast can be found in speed ladders, in longer conditioning blocks and during the warm-up. In the warm-up, we want to load the muscles carefully, and it is hence best to focus on rhythm rather than strength.

Low contrast

Low contrast is when power and pace are both very high. This is particularly evident in sprints or short, explosive pieces where explosive power is the main concern.

The higher the pace, the easier it is to maintain a high wattage, since the flywheel has little time to slow down. An indication is that the client takes approximately 0.7 seconds over the stroke instead of 2 seconds.

11.3 Breathing rhythm

To maintain an optimal rhythm, we maintain a breathing rhythm. Unfortunately, music is not an ideal rhythm indicator, because the pace of music is much higher than that of rowing, which makes it too heavy.

Breathing is a pleasant working method for the trainer because the client can quickly get their breathing under control. The rhythm is as follows: during the preparation phase, we breathe in until the moment we start the stroke; during the stroke, we breathe out. This is an important rhythm because we always want to breathe in when the body is relaxed to avoid injuries.

We always try to maintain a breathing rhythm that aligns with our pace. If we are applying 22 strokes a minute, we will breathe in and out around 22 times. If the rhythm increases, the breathing rhythm should also increase. Thus, if we row 30 strokes a minute, then we will breathe in 30 times as well.