



SWIMMING MOBILITY & FOUNDATIONAL MOVEMENTS

Simple ways to train your body for maximum performance



DEVELOPED FOR WAIS ATHLETES AND TRAINING PARTNERS

This swimming fundamental movement resource was developed by Chris Perrey (Sports and Exercise Physiotherapist) in collaboration with the Coaches at the Western Australian Institute of Sport.

This book provides ideas and exercises to improve your mobility and movement to help you perform at your peak.



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HOW TO USE THIS BOOK

Use these icons to identify what exercises may suit your body and training requirements.



Tip



Improves mobility



Injury prevention



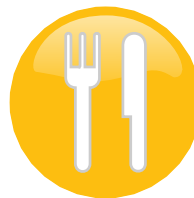
Aids Recovery



Direct impact on swimming ability



Improves your foundational movements



Nutritional component

waiss

MOBILITY

Flexibility can be defined as the ability of a joint to move through a complete range of motion.

Mobility can be defined as the ability to control the joint through this full range.



• *WHY IS IT IMPORTANT?* •

Flexibility and mobility are both important in swimming, as swimmers are required to move and control their joints through large ranges. Increased flexibility or mobility may reduce the risk of injury, as well as maximise performance, while reduced range of motion may make the body compensate elsewhere. Having strength through this full range is also important, including at the far extremes.



EQUIPMENT

Examples of equipment required for mobility session



Foam roller



Tubing



Massage ball



Therabands

• THORACIC •



Mobility in the thoracic or mid- to upper-back region is important both for performance and also to prevent extra stress on the shoulders.

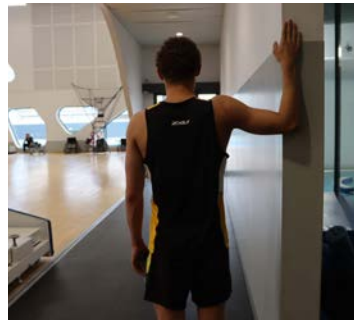
Archer

- Lie on side with bottom leg straight and top knee bent and touching the floor.
- Draw the hand back (as if drawing a bow!) then return to the start position.
- Repeat 15-20 each side



Pec Stretch

- Hold for 30 seconds or more.
- You can also do slow, gentle 'pulses' to stretch out through the front of the shoulder



• THORACIC •



World's Greatest Stretch

- Start in a lunge position, left foot forwards, with right hand down for support.
- Keeping right hand down, rotate to the left (lead with the elbow, and can have the arm bent or straight)
- Return to the start position and repeat x10.
- Now switch hands (still with the left foot forwards), and rotate to the right
- Return to the start position and repeat x10.
- Repeat for the other leg



• THORACIC •



Foam Roller

- Spend 3-5 minutes rolling all of the soft tissues along your spine, as well as the muscles to the left and the right.
- Arms can be behind head or in a streamline position.



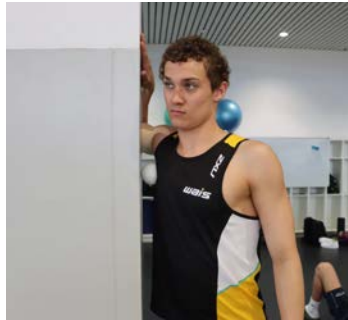
• SHOULDERS •



Rotation mobility in the shoulder joint, particularly internal rotation, is required for effective power strokes during swimming, and is also preventative of shoulder injury.

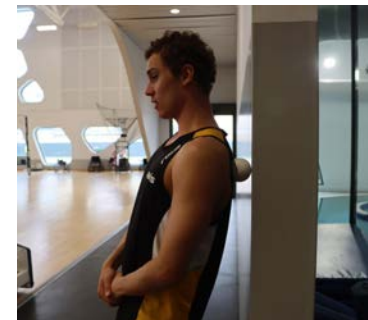
Trigger Point Ball Pecs

- Place a massage ball between your pec muscles (at the front of your chest) and the wall.
- Look away to the other side and either gently roll over your pecs (left and right), or hold on any tight spots



Trigger Point Ball Back of Shoulder

- Place a massage ball between the back of your shoulder (just up from your arm pit) and the wall.
- Either gently roll up and down, or hold on any tight spots

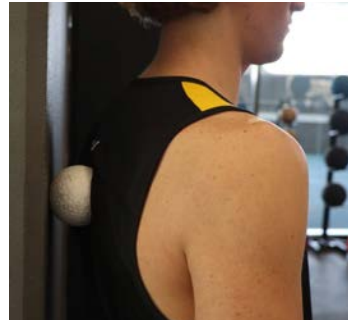


• SHOULDERS •



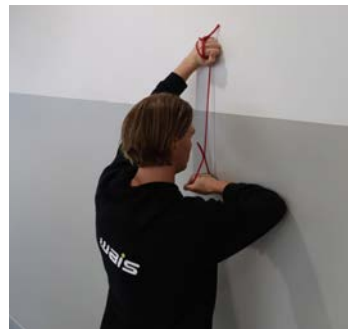
Trigger Point Ball Medial Shoulder Blade

- Place a massage ball between your back, on the inside of your shoulder blade and the wall.
- Gently roll the ball up and down or left and right, or hold on any tight spots



Banded Sleeper Stretch

- Stand facing the wall, with the elbow in front of the shoulder, holding one end of the band
- The other end of the band will be held above, with some tension on the band
- Keeping the elbow in contact with the wall, turn the hand/wrist down, and 'pulse' at the end of range. X20 each, then repeat for the other side

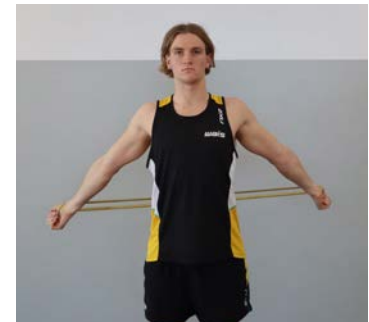


• SHOULDERS •



Banded Dislocate

- Using a long power band hold each end, the closer your hands are together on the band the harder this exercise will be.
- Keeping your arms straight and pulling the band apart to create a slight amount of tension, circle arms up and over the head and as far as you can behind you and down your back. Repeat this circular motion to return arms to front.
- Complete 10 full revolutions forward and back.



HIPS



Mobility around the hips is important for body position in the water. Restrictions in hip mobility can also lead to injury.

Hip Flexor Stretch

(+/- streamline)

- Start in a kneeling position, with your hips, knees and ankles all at 90 degrees.
- Keeping your back straight, and your hips tucked under, push your hips forwards gently until you feel a stretch in the hip flexor or the front of your leg.
- If you need a little extra stretch, you can dig your front heel in and draw backwards
- Hold for 2x20 seconds



You can have hands on hips, or up in a streamline position



HIPS



Lat Hip Hinge

- Stand at arms length from a post with feet hip width apart. Holding onto the post at chest height, bend forward from the hip with a slight bend in the knees and push head through hands. Keep your back straight.
- The further you push your head through your hands, the greater the stretch you will feel in your Lats.
- 3 x 20sec holds.



HIPS



Mobility around the hips is important for body position in the water. Restrictions in hip mobility can also lead to injury.

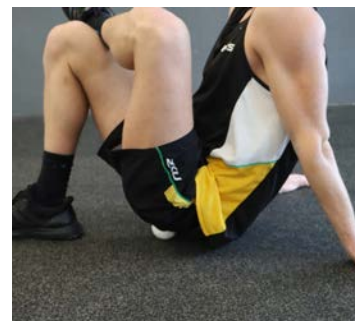
Quad Stretching

- Repeat hip flexor stretch, but with the back foot up on a wall or over a foam roller.
- Hold for 2x20 seconds



Trigger Point Ball Glutes

- Sit on the massage ball, and roll the ball around to find any tight spots.
- Then sit on these spots to help release any tightness



HIPS



Hip 90/90

- Sitting up tall with knees bent at 90 degrees, one leg in front of your body and one to your side. Fold over your front knee and stretch through your front glute.
- To stretch the other side keep feet glued to the ground, lift knees up to the sky and rotate to the other side, so now the leg that was face forward is facing the side. Lean forward and stretch through your other glute.
- 8 repetitions each side.



HAMSTRINGS



Mobility in the hamstrings is essential for position on the starting blocks. It can also affect hip position in the water. Hamstring muscle and the sciatic nerve can both be causes of hamstring tightness

Sciatic Nerve Glide

- Lie on your back, head down, holding the back of your thigh, with your hip at 90 degrees.
- Straighten at your knee as you point your toes.
- Then bend your knee back down, and pull your toes up towards you at the same time.
- Don't hold, but repeat these movements for a total of 15 repetitions each side



HAMSTRINGS



Hamstring Muscle Stretch I

- Sit with the legs out straight in front, with feet relaxed.
- Bend forwards from the waist and hold for 20 seconds.
- Repeat x2 each side



Hamstring Muscle Stretch II

- Start kneeling with the other foot flat on the floor.
- Keep back straight, move hips backwards to feel a stretch in the hamstring muscle belly.



You should also stretch your hip flexors to maximise hamstring flexibility



HAMSTRINGS



Active Straight Leg Raise

- Lie on your back, with the legs out straight
- Bring the straight leg up as high as possible, then return to the start position
- Repeat x10 each side



ANKLES



Flexibility in the ankles can aid performance, while stiffness in the ankles can make you work harder elsewhere in the body.

Sitting Back on Haunches

- Kneel back onto your feet to stretch the front of your ankles
- Hold for 2x30seconds



Banded Plantarflexors

- Sit with your legs outstretched in front of you.
- Wrap some theraband around your feet and toes, then point your toes and hold for a few seconds.
- Repeat 2x15 each side



You can use a towel under your feet to improve comfort

ANKLES



Ankle Band Mobilisation

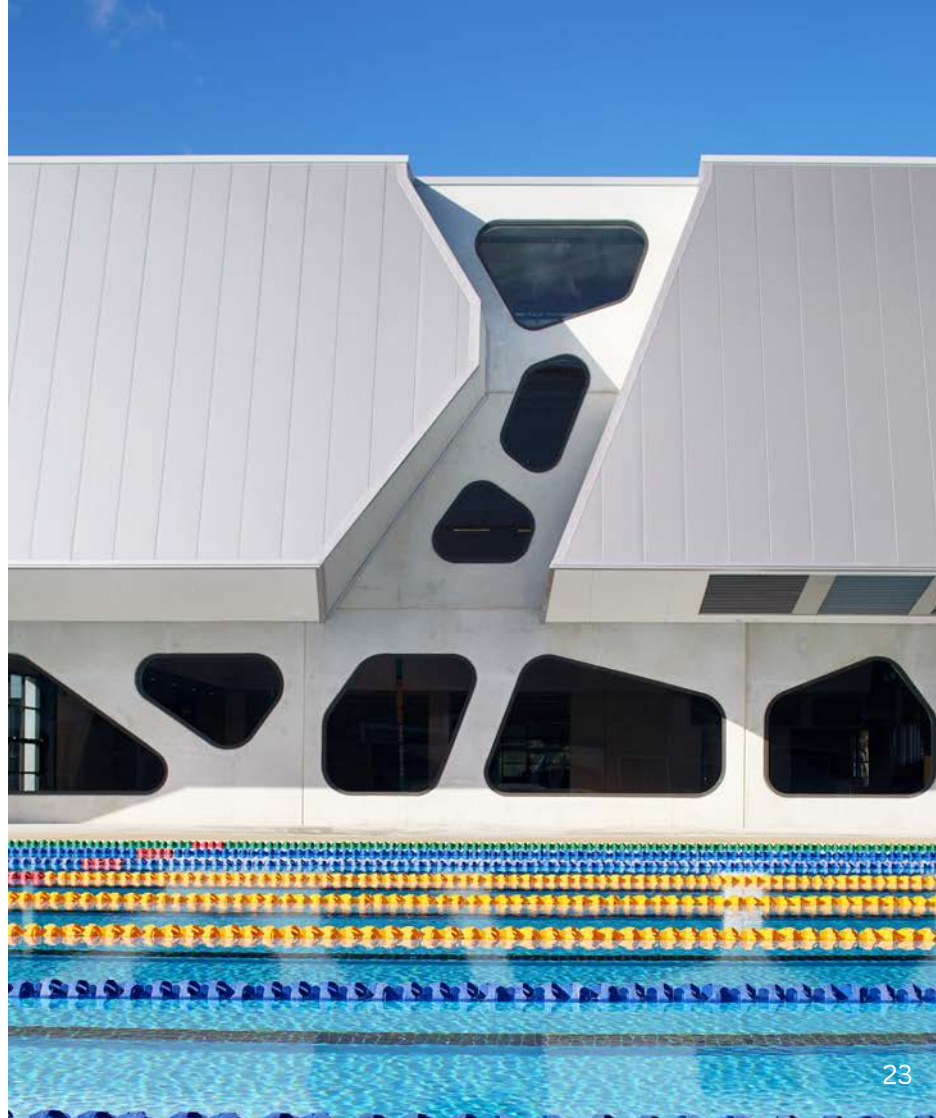
- Attach sturdy band to something solid e.g squat rack or flag pole
- Place band as low as possible around the ankle
- Keeping the foot on the floor, lunge forwards with the knee
- Pulse for 20 reps.



FOUNDATION MOVEMENTS

Foundation movements are any number of movements that are important not only for success in the pool, but are also important in the gym and in everyday life!

In this booklet we highlight those movement patterns that are most important for swimming, both pool and gym.



EQUIPMENT

Examples of equipment required for foundation movement session

Theraband



Medicine Ball



Bench



Weights



PUSH UP



Push Ups not only work the pectorals and 'lats', and aid in stability of the shoulder blades, but they also allow development of the trunk or "core", important for power in the swimming stroke

In all of the push up exercises it is important for the trunk to stay straight, and for the hips and trunk to stay in line (i.e. don't allow the lower back to arch as you push the shoulders up)

Incline Push Up

- Start on hands and feet, with hands under shoulders on a bench or bar.
- Lower the chest to the hands by bending at the arms.
- Keep the trunk straight throughout.



The higher the bench, the easier it is, so start high and get lower as you are able.

PUSH UP



Push Up

- Start in full push up position, hands under shoulders, hands shoulder width apart.
- Don't keep elbows too close to the body



Try using the belly button as a reference point, so when you push up, push up through your belly button!

Decline Push Up

- Start on hands and feet, with hands under shoulders on a bench or bar.
- Lower the chest to the hands by bending at the arms.
- Keep the trunk straight throughout.
- As you get better, you can progress to a full push up.



HIPS



The muscles around the hips (including the big gluteal muscles, the hip flexors and the groin or adductor muscles) control much of the movement both above (the trunk) and below (legs) the pelvis.

Body Weight Squat

- Start in standing, feet shoulder width apart.
- The back stays neutral as you bend your hips, knees and ankles to squat down.
- As you stand back up, keep your back neutral, and push through your legs



Hands/arms can be crossed across the chest, straight out in front or in a 'streamline' position

HIPS



Deadlift or Hip Hinge

- Stand with feet shoulder width apart.
- Bend forwards from the hips, keeping the back straight.
- Tip at the hips and push buttocks back.



Try to 'hinge' from your hip joints.
You can also do this using a stick or rod
pressed against your back

HIPS



Bird-Dog

- Start on all fours with hands directly underneath shoulders and knees under hips.
- Slowly lift one arm and the opposite leg to the sky so you form a straight line from your fingertips to the opposite toes. Slowly lower back to your starting position and repeat on the other side.
- It is important to keep your back flat the entire times, do not let your lower back sink to the ground when you lift your arm and leg, suck your bellybutton to the sky.
- 8 repetitions each side.



HIPS



Split Squat

- Start with feet shoulder width apart, but one foot forwards (foot flat) and one foot behind (on toes).
- Put about 60% of your weight on the front foot, and 40% on the back foot.
- Lower your body straight down, between your legs.
- Again, use your legs to push the ground away as you stand back up



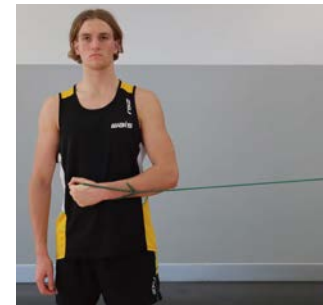
• *SHOULDER COMPLEX* •



The shoulder complex consists of the shoulder (glenohumeral) joint, the scapula or shoulder blade, and the AC and SC joints. The shoulders go through thousands of rotations during each swimming session. As such, strength in the shoulders is very important, both in terms of performance, and also in injury prevention.

Shoulder Internal Rotations

- Stand with the elbow just slightly away from the body, with a band coming in from the outside.
- Keep the elbow still but move the hand inwards.
- Control on the way back



• *SHOULDER COMPLEX* •



Shoulder Internal Rotations (Advanced)

- Stand with the elbow in line with the shoulder, with a band coming in from behind.
- Keep the elbow still but move the hand forwards.
- Control on the way back.

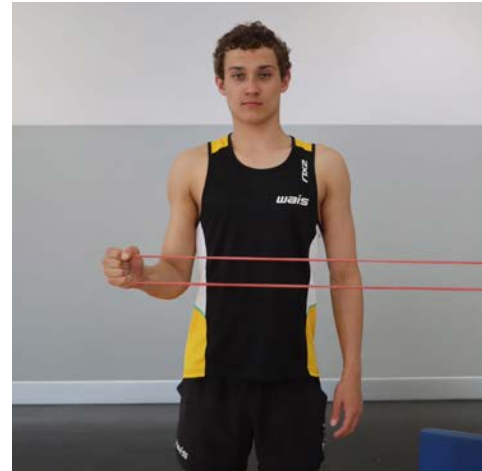


• *SHOULDER COMPLEX* •



Shoulder External Rotations

- Stand with the elbow just slightly away from the body, with a band coming in from the inside.
- Keep the elbow still but move the hand outwards.
- Control on the way back

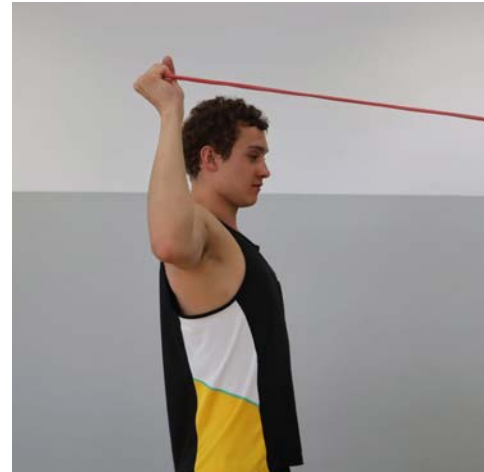


• *SHOULDER COMPLEX* •



Shoulder External Rotations (Advanced)

- Stand with the elbow level with the shoulder, hand facing forwards with a band coming in from in front.
- Keep the elbow still but move the hand backwards.
- Control on the way back



• *SHOULDER COMPLEX* •



Low Rows

- Start with the hands out in front at shoulder height holding bands or cables from in front
- Pull straight down to the sides of the body (palms first, keeping the wrist straight).
- Control on the way back up



You can also do push ups, bird-dogs and planks for the shoulder complex

• *SHOULDER COMPLEX* •



Horizontal rows (two positions)

- Hold onto a bar or bench, and pull yourself upwards.
- This exercise is easiest if you are more standing, and harder as you start more towards horizontal



You can also do this exercise holding onto a TRX or onto rings

• *SHOULDER COMPLEX* •



Single arm row

- Start with hand in front of body holding a band, thumb upwards.
- Pull hand back towards the arm pit.
- Control on the way back.



TRUNK



In swimming the trunk forms the stable base in the water that the arms and legs work off. Therefore, being strong in the trunk is important for performance

Plank (short lever)

- Start on your elbows/forearms and knees, with your toes down.
- Lift your knees off if you can, with your body in a straight line, and hold.
- If this is too difficult, you can lift one leg up, then the other, in an alternating pattern



Plank (long lever)

- As the short lever plank, but with your arms out long, hands under your shoulders



TRUNK



Hollow Hold

- Start lying flat on your back with arms stretched out overhead in streamline.
- Lift feet and shoulders off the floor and attempt to hold a flat dish type position without curling your upper back forward or lifting your lower back off the floor.
- If this is too hard, you may start by bending your knees in this position and progressively straightening your legs over time.
- 3 x 20sec holds.



TRUNK



Side Plank

- Start on your side, with your elbow on the floor, underneath your shoulder.
- Lift your hips off the floor and hold



An easier version is with the knees bent, and progress to knees straight



Dead Bugs

- Start on your back, arms above shoulders, and hips and knees bent to 90 degrees.
- Lower one leg at a time, keeping your low back touching the floor.



Knees bent to 90 degrees throughout is easier, while straightening out is harder. However, be sure to keep the low back in contact with the floor



RECOVERY

Recovery means the process of allowing adaptation to exercise.

‘Recovery’ can decrease fatigue, and aid in sleep. It can also allow the body to safely adapt to exercise stress (i.e. training!)



• *AT POOL* •



Proper post-swim recovery will set the body up for your next swim, and this starts in the pool, either with a swim-down or easier swim, followed by nutrition and warm clothing



Cool down swim



Food (snack)



Warm /compression clothes

• AT HOME •



The recovery process continues at home, most important of which is food (meal) and sleep/relaxation
If you feel that you are tightening up, you can also add in some active mobility work



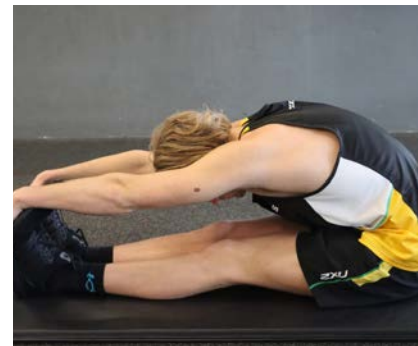
Food (meal)



Rest



Sleep



Mobility

INJURY PREVENTION

No swimmer wants to spend time not being able to swim because of injury, and so injury prevention strategies aim to keep you training and competing.



Food and Hydration

- Aim to consume a snack or meal within 30-60 min post training to optimise muscle recovery
- If your next main meal (breakfast/lunch/dinner) is soon after training a recovery snack may be less crucial
- Be prepared - always keep some recovery snacks in your training bag.
- Water should always be your first choice for hydration



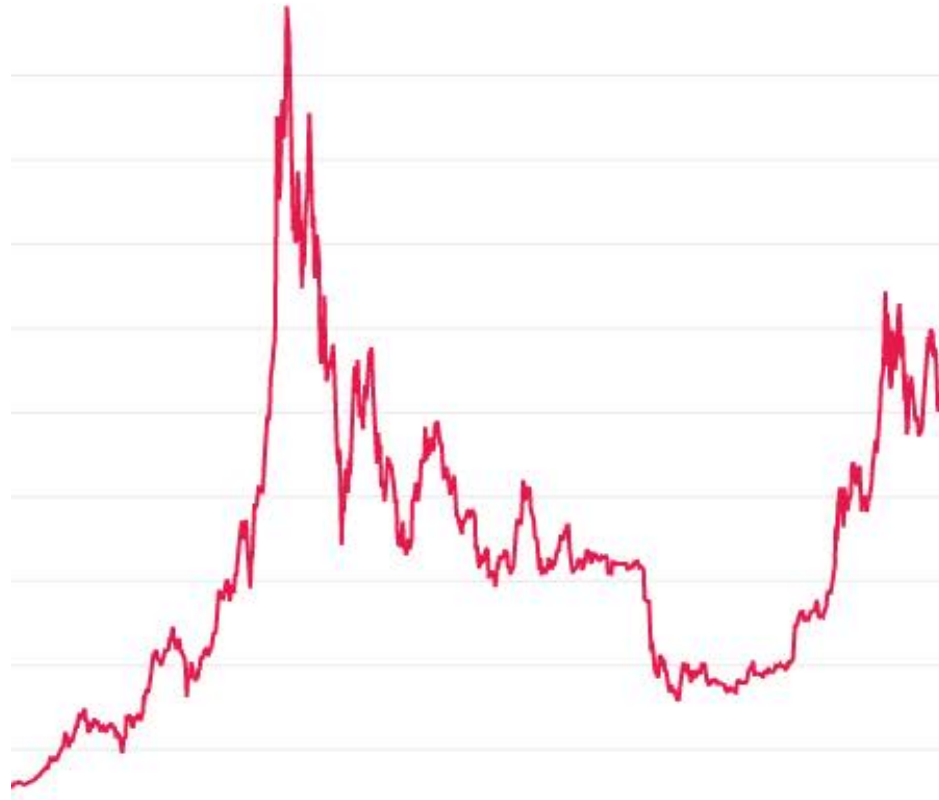
Sleep

- Sleep allows the body to repair and adapt.
- Poor sleep (quality or amount) has been shown to both decrease performance, and also increase injury risk.
- Sleep hygiene can be improved by wearing a mask, having black out blinds/curtains and no devices in the bedroom.

LOAD MANAGEMENT

Work with your coach
to develop a program
that doesn't have big
'jumps' in your training
load .

Total Distance





For individual advice, please consult
a WAIS or sports and exercise physiotherapist.