



I help people overcome and manage their pain while improving their physique and performance, all without stopping them doing the things they love!

In this ebook, I am going to share with you my top 5 tips in battling knee pain.

Please let me know if you find this guide helpful and if you have any questions send me a message on Instagram @karlbailey\_pt or email coach@karlbaileypt.com.

Karl



#### INTRO



#### In this Ebook:

We will explore my top five tips for managing and improving knee pain. Knee pain can be challenging and affects the overall quality of life. However, with the right knowledge and strategies, you can effectively manage and reduce knee pain. This can be the start of your journey in overcoming your pain.

#### The body is connected from head to toe!

When it comes to pain, it is important to understand that the body is interconnected and the origin of pain can be a completely different site of the body. The most significant areas that need be considered surrounding the knee are the ankles and the hips. Poor alignment or function of the muscles at these joints will lead to undesirable movement compensations at the knee. For example, if your ankle collapses inward due to an ankle inward alignment or collapsed foot arch, the knees stacked above will also fall inward. Now if your doing 10,000 steps a day without appropriate correction then you could be setting yourself up for issues in the long run (in this specific scenario, you are at higher risk of developing a knock knee posture due to the excessive tension of the inner thigh or adductor muscles).



#### What are common causes of knee pain?

#### <u>Tight Quads/ Front of Thigh:</u>

Excessive tension or shortening at the front of the thigh possibly pulling on the knee cap and causing discomfort.

#### Inward collapsing/Knock Knees:

Excessive inward falling of the knees due to tight adductors/ weak abductors or compromised/loose medial ligaments potentially causing vulnerability of lateral meniscus.

#### Outward collapsing/ Bow Legs:

Excessive outward falling knees due to tight abductors/ weak adductors or comprised/loose of lateral ligaments potentially causing vulnerability of the medial meniscus.

#### **Sensitive Knees:**

Previous trauma, arthritis, meniscal or ligament damage, hyperextended knees etc.





#### THE SHOES YOU WEAR MATTER

Great technique? Well structured training and recovery plan? It can all be undone with the wrong footwear.

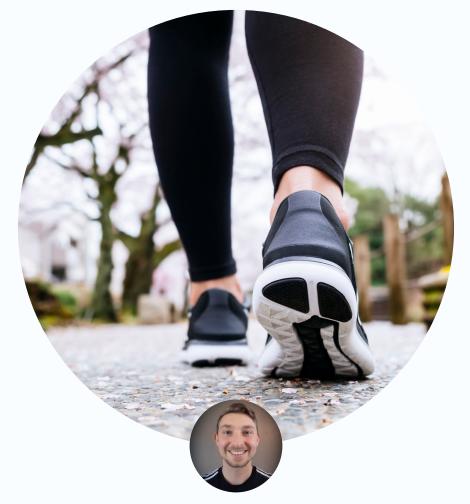
#### You cannot out train bad shoes!

It is important to address all muscular imbalance, ensure adequate mobility and strength, but you simply cannot out train a bad shoe. Poorly fitted or incorrectly selected shoe support will have an impact on the foot arch and ankle alignment. This can lead to movement compensation at the knee, such as the knock knee (inward collapsing knees). For example, when the inner leg muscles become too dominant or tense this places stress at the knees' supportive tissues. Put simply, poor footwear can cause issues at the feet and ankles, any dysfunction at these foundations can go up the chain to the knee.



#### Are you personalising your shoe selection?

Just like your exercise programme, the type of shoe you wear should be selected based on your individual needs and not because they look cool. Your footwear deserves more attention as it could be the very answer to your pain or performance struggles. A simple start is make sure they fit properly! It seems obvious, yet needs to be emphasised.



#### What shoes should you be wearing?

A few considerations in regards to shoe selection. Firstly, are your shoes too tight/ too loose? A small shoe box at the front of shoe can squeeze the foot in and not allow the toes to spread naturally placing increased stress on the bones of the forefoot. Too big or too loose at the heel may not have enough support and will not absorb shock as efficiently, possibly leading to heel pain. Secondly, if you have an ankle alignment or movement dysfunction at the ankle and lower leg it is important to explore the appropriate style of shoe for the issue (rigid, soft, flat etc.). For example, excessively tight calves can cause various concerns at the ankle, heel and arch, so you may want ensure you take away any raised heel shoe, and swap for flat shoes so you do not encourage tightening these muscles further.

#### **ACTION:**

Try to slide your index finger at the back of shoe where the heel is. If you can slide your finger in and touch bottom of shoe then you need to either tie laces tighter or the shoes may simply be too big for you! Next, measure the width of your forefoot and compare with the front shoe box. If the shoe box is smaller, then your feet are at risk of being compressed causing a variety of issues.

Aim to provide space at the front of your shoes so your toes can naturally spread.

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### **BALANCE THE UPPER THIGH MUSCLES**

#### A losing game in tug of war:

The muscles of the thigh have direct attachments at the knee.

Balancing these ensure the equal flexibility, mobility, and strength, essential for the health of the knee. Imbalance (excess dominance or weakness of one side) can turn into a game of tug of war in one direction or another. This can lead to increased wear and compromise the stability of the joint. In contrast, the opposite example of knock knee posture or bowlegs (outward falling knees) involve excessively tense or dominant outer leg/hip muscles (abductors) and too much flexibility or weakness on the inside leads to the knees being pulled out which places stress on the supporting tissue of the knee.

#### Are your hips in proper alignment?

The posture and alignment of the body matters and without the proper stacking of the body's structure, complications can occur. The muscles of the thigh play a significant role in the orientation of the knee and the hips. If the knee is outside of the ideal alignment this not only causes issues at the knee but can continue up the chain and eventually lead to injuries higher up the body.

The muscles of the upper thigh and gluteal area can influence how the hips align and how the leg bones sit at the knee causing excess wear on the ligaments or cartilage. For example, if the front of your thigh is very tight (tight quads) or inflexible and the back of thigh is extremely weak or flexible this could lead to the pelvis tilting forwards and vice versa. Think of a small elastic band (tight) at the front of hips vs a long elastic band (weak/flexible) at the back of hips, who wins this battle? When the hips are tilted outside of the ideal alignment it can affect how the upper and lower leg bones sit, this can compromise the stability of the knee. Understanding the balance in the upper leg and hips while implementing specific strategies to correct them can lead to real breakthroughs in your knee pain and reduce the risk of further injuries to the rest of the body.



#### Are you sitting down too much?

Sitting, driving, running, cycling and even walking can tighten the muscles at the front of the thigh. That does not make these bad activities, but too much dedication to such activities without equality of the opposing muscles and movements can create the imbalance that lead to alignment issues, causing aches and pains. Ensuring equal strength, co-ordination and flexibility between the quadriceps at the front and hamstrings at the back thigh is one piece of the puzzle that cannot be underestimated.

#### ACTION:

Try to touch your toes or lower shin with straight legs. Then try to bring your heel in contact with your bottom (without being forceful) in a quadricep stretch while lying on your front. If you cannot do either then you are likely very stiff but, equal. If this is the case, you should stretch both front and back of the thighs equally. However, if you find one to be easy, and the other very stiff and restricted, it is clear that there is an imbalance and you should prioritise stretching the stiffer side (front/back). You should also reduce the the volume of stretching of easier side to avoid contributing to dysfunction further. It is important to note if you are hypermobile, you want to avoid stretching and use tools such as massage or foam rolling instead.

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#### **BALANCE THE LOWER LEG MUSCLES**

Weak or imbalanced lower leg and ankle muscles can contribute to knee pain and instability. Strengthening these muscles through specific exercises can improve knee alignment and reduce the risk of injuries.





#### Do you have tight calf muscles?

Understanding the interplay between the muscles of the lower leg, ankle and their impact on knee health are essential to effectively manage knee pain and prevent further complications.

Tightness in the calf muscles and a lack of conditioning of the shin muscles can affect knee function. Many people benefit from stretching the calf muscles and incorporating dorsiflexion (toe/forefoot raising with heels down) exercises into their routines.

Incorporating single leg balance activities and single side isolated exercises cannot be underestimated for overall health of the ankles, knees and hips.



# Should you start doing single leg balance activities?

Poor ability to execute single leg balance represents a lack in ankle, knee and hip stability. In some cases this lack of stability is associated lower back pain. Regular incorporation and continued challenging of this issue can condition the muscles of the lower leg, thigh and hips, coordinating them to work in unison to create a strong lower body unit.



#### **ACTION:**

If you have tight calves, switch to flat shoes to reduce the day to day tightening that is caused by a raised heel shoe. Stretch or foam roll the calf muscles regularly, particularly before exercise and after a long day on your feet. Incorporate exercises using muscles of the shin, such as wall lean, or seated toe raises, then ensure this is isolated to the ankle or shin with no knee involvement. Try to balance on 1 leg for 1 minute. Count how many times you move, or put foot down and aim to reduce this

daily. **8 OF 12** 

# BEWARE THE TWIST

With Sensitive knees and compromised Meniscus deep bending should be avoided. Bending with any twist should be avoided like the plague!





#### What is the Meniscus?

The meniscus (or menisci as there are two at each knee) are C-shaped cartilage located between the thigh bone and shinbone. They act as a shock absorber and provide stability to the knee joint.

#### How do you damage the Meniscus?

Injury in this area can commonly occur when sudden twisting of the bent knee happens and the knee's stability is already vulnerable. When you have meniscal concerns it is important to avoided twisting and to strengthen your ability to avoid rotation.

When it comes to sensitive knees with Meniscus or ligament concerns it is important to take deep bending out of the equation to reduce pressure and crushing of the knees supportive tissues and allow adequate recovery



#### Exercising with sensitive knees or Meniscus concerns?

Limited range mini squats or step ups, single leg balance activities and antirotational strength exercises are examples of potentially beneficial options if you are at an appropriate time in your recovery. Anti-rotational exercises such as the Pallof press (a side loaded push) trains the body to brace through the trunk glute muscles and co-ordinate them to avoid rotation; this can be great to re-build resilience in the knee at an appropriate time in recovery. Hence, paired with single leg balance activities for overall stability and avoidance of deep knee bending, these can be a helpful way to strengthen the knee and set you on a recovery path.



#### **ACTION:**

Stop high impacts and deep bending. If you haven't already, discuss with your doctor a potential MRI scan so the type and severity of meniscus tear can be identified, and in doing so the clarity on how to act. When doing upper body exercises such as bicep curls, shoulder lateral raises etc. try challenging yourself and do them while standing on one leg and in doing so add extra stability training to the knee. Massaget the of the thigh and calf muscles via massage ball, foam roller or massage therapist to reduce tension at the

knee. 10 OF 12

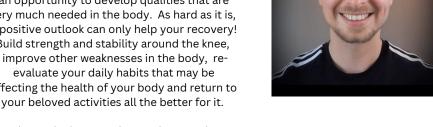


#### INJURIES ARE OPPORTUNITIES

Reducing high impact activities on the knee are essential when the joint becomes sensitive or vulnerable.

#### Stay positive, and keep moving forwards

The challenge of this can be frustrating when we are forced to stop doing the things we love, such as sport. I encourage you to take this as an opportunity to develop qualities that are very much needed in the body. As hard as it is, a positive outlook can only help your recovery! Build strength and stability around the knee, improve other weaknesses in the body, reevaluate your daily habits that may be affecting the health of your body and return to



Balance the lower and upper leg muscles, avoid deep bending and twisting, pay more attention to your footwear and do more single leg work!



#### You are unique, and so is your pain

Remember, everyone's experience with knee pain is unique, and it is essential to consult with a healthcare professional for an accurate diagnosis and personalised treatment plan. Use these top five tips as a starting point for managing your knee pain, and make adjustments as necessary to suit your specific needs. Together, we can improve your knee health and regain your mobility.

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# Congratulations!

## Congratulations on making it to the end of this E-book.

You are already much further along than most people will get, so well done for investing your time in making improvements and developing yourself!

Now is time to take action...

For anyone that makes it to the end...

I have included this secret button especially for you.



This button will give you access to a free 1:1 consultation with me and 10% OFF your first month's coaching when quoting this guide.

If you would like to get more specific help and a deeper understanding of how you can improve and manage your knee pain while getting in the best shape of your life, then click the button below and it will take you straight to my consultation booking form!