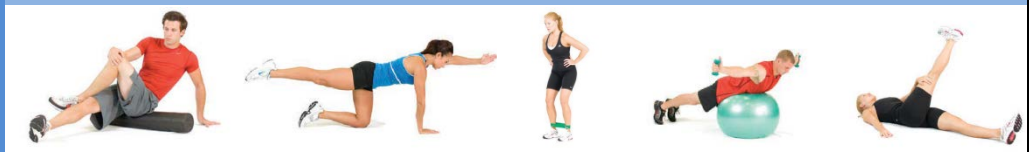
CORRECTIVE EXERCISE



Knees Move In (Valgus)

PROGRAM GUIDE

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DISCLAIMER

****Corrective Exercise works on the assumption that people tend to have poor posture and/or muscular imbalances that can lead to pain in areas such as the shoulder, hip, low back, knees, ankles etc. Corrective exercise strives to correct muscle imbalances with a goal of reducing pain as caused by muscular imbalances. If you have pain ALWAYS consult your Doctor first as your pain may NOT be caused by muscular imbalances in which case, this program will not be helpful****

Consult your Physician to assess your fitness level *BEFORE* beginning the ***Corrective Exercise Routine***---especially if you have a history of heart disease or have been diagnosed with a chronic disease or have a history of foot, ankle, knee, shoulder or spinal problems or injuries. If you are unsure, take this Program Guide and the Corrective Exercise routine to your Physician so he can discuss concerns with you. If you answer YES to ANY of the questions below, you shall **not** start the program until approved by your Physician.

**Has your Doctor ever said that you have a heart condition and that you should only perform physical activity recommended by a Doctor?
**Do you feel pain in your chest when you perform physical activity?
**In the past month, have you had chest pain when you were not performing any physical activity?
**Do you lose your balance because of dizziness or do you ever lose consciousness?
**Do you have a bone or joint problem that could be made worse by a change in physical activity?
**Is your Doctor currently prescribing any medication for your high blood pressure or a heart condition?
**Do you know of any other reason why you should not engage in physical activity?

If you feel you are exercising beyond your current fitness abilities OR you feel discomfort, pain, dizziness or nausea while exercising then stop exercising immediately and consult your Physician before continuing. This program uses weights, bands and various other pieces of equipment which if not used correctly can lead to injury. Use the equipment needed only as demonstrated in the accompanying video demonstrations. Inspect all equipment that you use prior to your workout session and follow the manufacturer's maintenance and usage guidelines. Do not use equipment that appears damaged, worn or defective. Keep hands dry when using exercise equipment.

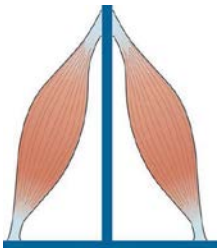
Because of the nature of the workouts, you should wear non-slip, proper fitted footwear to avoid injuries.

This is a beginner to moderate program and if, **after** consulting with your Physician, you feel you are not ready for this then do not attempt to complete the program.

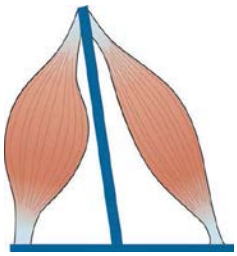
As such, you assume all risks of injury in the use of this exercise program, nutrition guide and any equipment. I will not be liable to any person or entity for any damage or loss caused or alleged to be caused directly or indirectly by any workouts, guides, advice or any other ***Corrective Exercise*** content.

Correcting Knee Valgus

What Is Corrective Exercise



All of our muscles have an optimal length in which they work best. Poor posture, repetitive movement, past injury, sitting at a desk all day and even playing sports…they all play a role in altering this optimal length. When proper length of the muscle is altered then pain, injury, inefficient movement and decreased performance are all possibilities. The picture to the right shows a depiction of imbalanced muscles around a joint. We can see where one side is shortened and the other side is lengthened. Corrective exercise is a protocol used to restore the normal length-tension relationship between muscles and improve the efficiency of your movement. The goal is to lengthen the shortened, overactive and shorten the underactive, lengthened muscle.



There are generally 4 phases in this protocol—or the ***corrective exercise continuum*** as it's called.

Phase 1 (Inhibit) uses self-myofacial techniques such as a foam roller to release tension and inhibit or "calm down" and relax overactive muscles in the body. Think of this as getting a deep tissue massage but best of all it's free!!

While you will see a demonstration video in your workout plan showing you how to foam roll, the short version is to place the part of the body you want to inhibit (relax) onto the foam roller and slowly roll until you come to a tender spot. Once you do, hold the foam roll on that spot for 30-45 seconds until you start to feel a release.

Phase 2 (Lengthen) uses stretching (such as static stretching) to increase the length and range of motion of the tissue. These stretches are held for 30 seconds each

Off-Topic Alert---if you do phase 1 and 2 before you go to bed, you are going to have a great sleep because it feels so good when it's done!

Phase 3 (Activate) is basically strengthening exercises used to activate or strengthen underactive muscles

Phase 4 (Integrate) which is a total-body exercise used to retrain the newly stretched and strengthened muscles to work correctly together. This is the "bringin' it all together" phase.

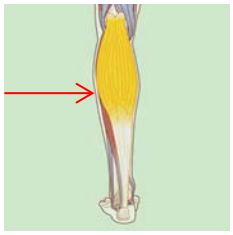
To identify these muscle imbalances, a qualified professional could use a variety of techniques. I like the overhead squat assessment and, when possible, the single leg squat assessment. There are a variety of shoulder assessments that can be done and of course just plain ol' observing someone's posture or watching the way a person walks and moves about on their own. I've seen people do great on assessments only to find imbalances later on once we hit the gym and watched clients actually performing exercises.

Causes

During a squat assessment, it will be easy to identify when someone's knees move in. We can see an example of the knees coming together in the picture to the left. As with all imbalances, certain muscles are overactive causing the knees to cave inward and certain muscles are underactive and don't have the ability to prevent the knees from caving in.

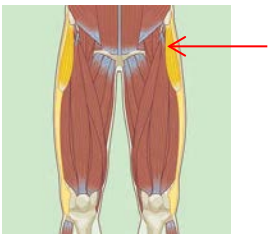
Overactive Muscles

The overactive muscles causing the knees to collapse in this case are the *lateral* calf muscle, one of the muscles found in the hamstring (called the biceps femoris) a muscle at the top of the hip called the TFL and the adductor muscles that run inside the thigh.

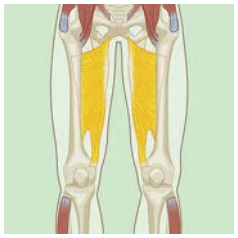


Calf

Lateral Hamstring



TFL-at top corner of hip



One of the adductor muscles

These 4 muscles, because of their shortened nature, act to turn knees inward. Since they are overactive, we will foam roll and then static stretch these 4 muscles in phases 1 and 2 with a goal of returning them to their proper length. Phases 1 and 2 will have you foam roll the calves, adductors (inside the thigh), top corner of the hip (the TFL) and the outer hamstrings (Biceps Femoris) followed by stretching the same muscles.

What Causes These Muscles To Be Overactive?

Poor posture, poor form while exercising, previous injuries, repetitive movements—they can all cause muscles to become shortened over time. For instance wearing high heels can place your foot in a plantar flexed position. When your foot stays in this position for long periods of time then the calf muscle adapts to this flexed position and it now becomes that muscle's new normal. In effect, it stays in this shortened position.

Other reasons these particular muscles become overactive are poor running mechanics, prolonged sitting and substitution for weak glute muscles. Also, women are especially prone to knee valgus simply due to their anatomy. Because women generally have wider hips, this creates an increased angle from the top of the femur to the knee joint. This is known as the Q-angle.

Underactive Muscles

The underactive muscles are the front of the shin, one of the gluteal (butt) muscles at the side of the hip called the gluteus medius and the big butt muscle, the gluteus maximus. Since these muscles are underactive, they don't have the proper strength to keep the knees from caving inward. Pictured below are the 3 culprits. Our goal would be to strengthen these muscles during the activation phase of our program. While we do certain exercises to strengthen the underactive muscles in our program, you can certainly include strengthening exercises for these muscles during your regular resistance workout days.

Injuries

Having imbalanced muscles can lead to injuries and pain down the road if not corrected. Possible injuries include plantar faciitis, patellar tendonitis (knee pain) low back pain and hamstring strains. Also, having knees that move inward can cause instability at the knee joint and lead to injuries while running or jumping. It's important to remember that just because you will have tight calf muscles or tight lateral hamstring muscle, it doesn't mean that you will feel tight in these areas. Oftentimes, you will feel pain elsewhere in the body. For instance if you have a tight calf muscle, you might feel tightness or pain in the bottom of the foot or at the front of the knee. A tight hamstring might be felt as lateral knee pain or pain in the lower back.

Just because you feel pain in one part of the body doesn't mean that is the source of the pain. Corrective exercise seeks to find the source of pain through a proper assessment to find out how well your muscles are working as a group.

The next page will outline your routine that addresses these imbalances and helps put things back to normal. The routine is called a corrective exercise sequence and it can be performed daily as a warm-up before your regular exercise routine, part of your cool-down after exercising or all on its own. NOTE--this isn't intended to be an hour workout designed to help you lose weight. These corrective sequences should be performed before or after a workout or all on its own to correct muscle imbalances. This routine will generally take 10-15 minutes

Demonstration videos are available in your app. Just go to your calendar and click on the corrective exercise

Just to review, these are the muscles that are over and under active that can cause a knee valgus:

OVERACTIVE	UNDERACTIVE
Lateral calf	**Front of shin (Anterior Tibialis)**
Lateral Hamstring (Biceps Femoris)	**Glute Medius**
Adductors	**Glute Maximus**
TFL	

Coaching Tips When Performing Your Routine

- ✓ Perform the Corrective Exercise program prior to beginning your exercise program.
- ✓ Perform the Corrective Exercise program on days you are not performing your training program to maintain optimal range of motion and strength.
- ✓ Performing the foam roll and static stretching components of your Corrective Exercise program immediately after your workout will help with overall recovery and muscle soreness.

**While the next page will show you the corrective exercise routine, don't forget to log into your app to view the demo videos and to track your exercise!

KNEES MOVE INWARD

INHIBIT			
Exercise: Self-Myofascial Release	**Sets**	**Duration**	**Notes**
Gastrocnemius/Soleus (Outer Calf)	1	30 sec	
Biceps Femoris (Outer Hamstring)	1	30 sec	
Adductors	1	30 sec	
TFL/IT-Band	1	30 sec	

LENGTHEN			
Exercise: Static Stretch	**Sets**	**Duration**	**Notes**
Gastrocnemius/Soleus Stretch (Calf)	1	30 sec	
Biceps Femoris Stretch (Outer Hamstring)	1	30 sec	
Standing Adductor Stretch	1	30 sec	
Standing TFL Stretch	1	30 sec	

ACTIVATION					
Exercise: Isolated Strengthening	**Sets**	**Reps**	**Tempo**	**Rest**	**Notes**
Resisted Ankle Dorsiflexion	1-2	10-15	4/2/2	0	Anterior Tibialis
Resisted Hip Abduction (lateral Tube Walk)	1-2	10-15	4/2/2	0	Gluteus Medius
Resisted Hip Extension (Floor or Ball Bridge)	1-2	10-15	4/2/2	0	Gluteus Maximus

INTEGRATED DYNAMIC MOVEMENT					
Exercise	**Sets**	**Reps**	**Tempo**	**Rest**	**Notes**
Squat Jumps*	1-2	5-8	Controlled	30 sec	

Resisted Ankle Dorsiflexion

Resisted Hip Abduction (lateral Tube Walk)

Resisted Hip Extension (Floor or Ball Bridge)