



## **Incorporate an easy, fun exercise program into youth sports to help prevent injuries**

More than 3.5 million youth (ages 14 and younger) receive medical treatment for sports injuries each year. The Center for Disease Control estimates about one-half of these injuries are preventable. Since children's bodies are still growing, they are more susceptible to injury. They even can damage their growth plates and affect their growth process. As adults, it is our job to help prevent youth injury by teaching proper technique and building muscle strength throughout the in-season. With proper warm-up, finishing and conditioning exercises, we can help prevent injuries and keep our children healthy and active.



Young athletes do not have the same capacity to build muscle mass and strength as older athletes, but warm-up, finishing and conditioning exercises can improve overall performance and decrease the risk for injury. Even the youngest athletes can benefit from exercises before practices and competitions to dynamically warm up the different muscle groups in preparation for strenuous activity. A regular schedule of finishing and conditioning exercises following practice and games can maintain strength, balance, agility, core strength and conditioning while in-season and decrease the risk of injury.

Additionally, most youth sports are coached by parents whose knowledge and experience with exercise physiology, strength or conditioning is limited, so they welcome some direction on in-season conditioning activities. Therefore, Dr. Steven Chudik, orthopaedic surgeon, sports medicine physician and founder of the Orthopaedic Surgery and Sports Medicine Teaching and Research Foundation (OTRF), along with Larana Stropus, MS, ATC/L, and Keith Tesch, CSCS, CNT, developed a general exercise program consisting of warm-up, finishing and conditioning exercises designed to be used for all youth sports.

This in-season program consists of a 10-minute warm-up with 15 exercises to be done before every practice and game. They are easy for youngsters to understand and allows them to learn proper body position and technique. It is important they do these exercises to warm-up each muscle group and get the blood flowing throughout the body. This warm-up allows the body to prepare for the strenuous activity that accompanies practicing and playing and helps prevent an injury. The program also includes five finishing exercises to be done after every practice and game. These help athletes of all ages build strength and have fun in the process. Studies show that often times older athletes' injuries are due to micro-injuries that occurred when they younger. With this exercise program, we can work to prevent those micro-injuries, along with more serious injuries and keep young athletes healthy and in the game.

## 10 Minute Warm Up Exercises

Warm-Up Exercises	Distance, Time or Repetitions	No.# or Sets	Frequency
Jumping Jacks	10 to 25 Reps	1	Before every practice & game
Split Jacks	10 to 25 Reps	1	Before every practice & game
High Knees	10 to 25 Reps	1	Before every practice & game
Straight Leg Kick	10 to 25 Reps	1	Before every practice & game
Knee Hugs	10 yards	1	Before every practice & game
Forward Lunge	10 yards	1	Before every practice & game
Bear Crawl	10 yards	1	Before every practice & game
Inchworm	10 yards	1	Before every practice & game
Tapioca (alternate crossing feet)	15-20 yards	1	Before every practice & game
Carioca (alternate crossing leg with trailing knee)	15-20 yards	1	Before every practice & game
Skipping Forward	15-20 yards	1	Before every practice & game
Skipping Backward	15-20 yards	1	Before every practice & game
Butt Kicks	15-20 yards	1	Before every practice & game
Sprint Builds	70%, 80%, 90%, 100%	1	Before every practice & game



## Finish Exercises

Finish Exercises	Distance, Time or Repetitions	Sets	Rest Time	Frequency
Shuffle	5 yards/ 30 seconds	2	30 seconds	After every practice & game
Burpee	30 seconds	2	30 seconds	After every practice & game
Squat Hold	30 seconds	2	30 seconds	After every practice & game
Frog Hop	30 seconds	2	30 seconds	After every practice & game
Push-Up Hold	30 seconds	2	30 seconds	After every practice & game

## Optional Conditioning (Choose/Run Only One)

Optional Exercises	Distance, Time or Repetitions	Sets	Rest Time	Frequency
Ladder Sprints “Suicides” ★	5/5/10/10/15/15//10/10/ 5/5 Yards	2	30 seconds	End of practice every day
	10/10/20/20/30/30/20/ 20/10/10 Yards	2	30 seconds	End of practice every day

★ Use longer distanced for athletes age 12 and older

### Important Notice

Not all exercises are suitable for everyone. Consult your physician before beginning this or any other exercise program. Also, always warm up for several minutes before beginning any workout and **NEVER** exercise beyond the level at which you feel comfortable. If at any time you feel you are exercising beyond your current fitness abilities, or feel discomfort, discontinue exercise immediately and reconsider your participation in this program.

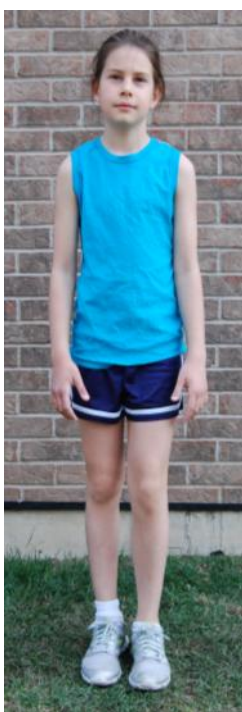
The youth strength and conditioning program provided in this publication should not be attempted by anyone who does not meet minimum fitness requirements or who has a history of hip, knee, ankle, shoulder, elbow, wrist or spinal (neck or back) problems. **THIS WARNING IS NOT TO BE DISCOUNTED.** There are many other fitness alternatives if you have weaknesses or are prone to injuries. The user assumes all risks of injury in the use of this program.



# Warm-Up Exercise

## Jumping Jacks

Distance, Time or Repetitions	Sets	Rest Time	Frequency
10 to 25 Reps	1	None	Before every practice & game



- Stand up straight with both legs together and arms at your sides.
- Jump up and simultaneously spread your legs apart and bring both hands overhead.
- Jump again and simultaneously lower both arms down to your sides and bring both feet back together.
- Continue to repeat this sequence for the determined number of repetitions.





# Warm-Up Exercise

## Split Jacks

Distance, Time or Repetitions	Sets	Rest Time	Frequency
10 to 25 Reps	1	None	Before every practice & game



- Use a line (or an imaginary line) on the ground, as a guide.
- Place your right foot in front of the “line.”
- Hop up and switch feet position so your left foot is in front of the “line.”
- Keep your head and chest up.
- Continue to repeat this foot hopping sequence to complete the required repetitions specified above.

# Warm-Up Exercise

## High Knees

Distance, Time or Repetitions	Sets	Rest Time	Frequency
10 to 25 Reps	1	None	Before every practice & game



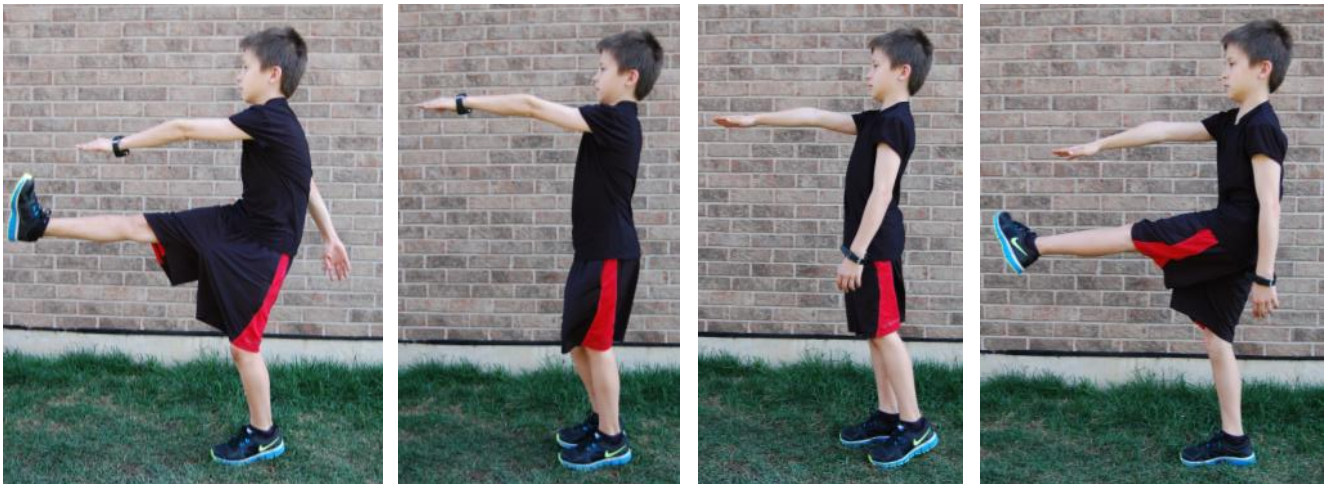
- Stand on your left leg and drive your right knee up to chest level.
- Bring your right leg down and repeat the exercise with your left leg.
- If needed, place both arms out in front and try to tap each hand with your knees.
- Continue to alternate legs for the specified number of repetitions.
- Maintain the proper posture during the entire exercise making sure to keep your head up, chest up and back straight.



# Warm-Up Exercise

## Straight Leg Kick

Distance, Time or Repetitions	Sets	Rest Time	Frequency
10 to 25 Reps	1	None	Before every practice & game



- Stand tall with your feet slightly spread apart.
- Begin walking forward kicking your right leg up in front of your body as high as you can and as straight as you can.
- As you kick your right leg forward, reach forward with your left hand and try to touch the toes of your right leg.
- Lower your right leg and repeat with your left leg.
- Attempt to keep your head up, chest up and back straight.
- Bend forward at the hips and not your upper back and neck.

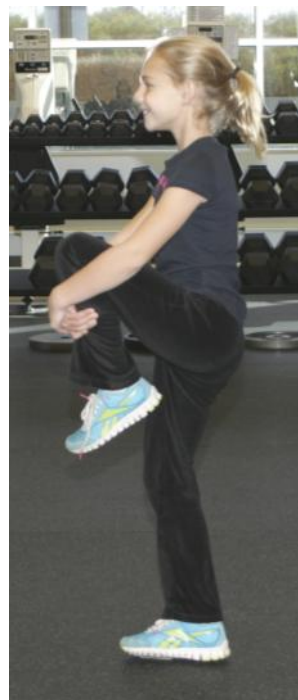
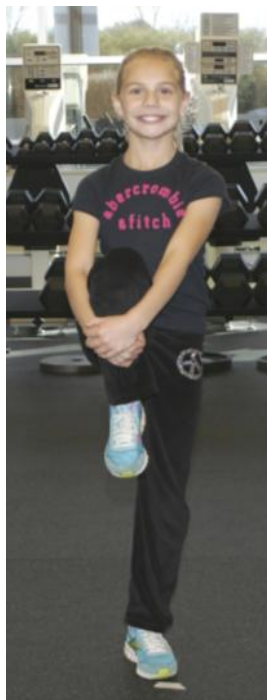




# Warm-Up Exercise

## Knee Hugs

Distance, Time or Repetitions	Sets	Rest Time	Frequency
10 to 25 Reps	1	None	Before every practice & game



- Stand straight with your feet shoulder-width apart.
- Slowly bring your right knee up to your chest.
- Grab your right knee with both hands and squeeze it towards your chest.
- Lower your right leg and repeat the exercise with your left leg.
- Maintain the proper posture during the entire exercise making sure to keep your head up, chest up and back straight.
- Continue to repeat this sequence for the determined number of repetitions.

**Note:** This exercise also can be performed as a stretch and to improve balance.

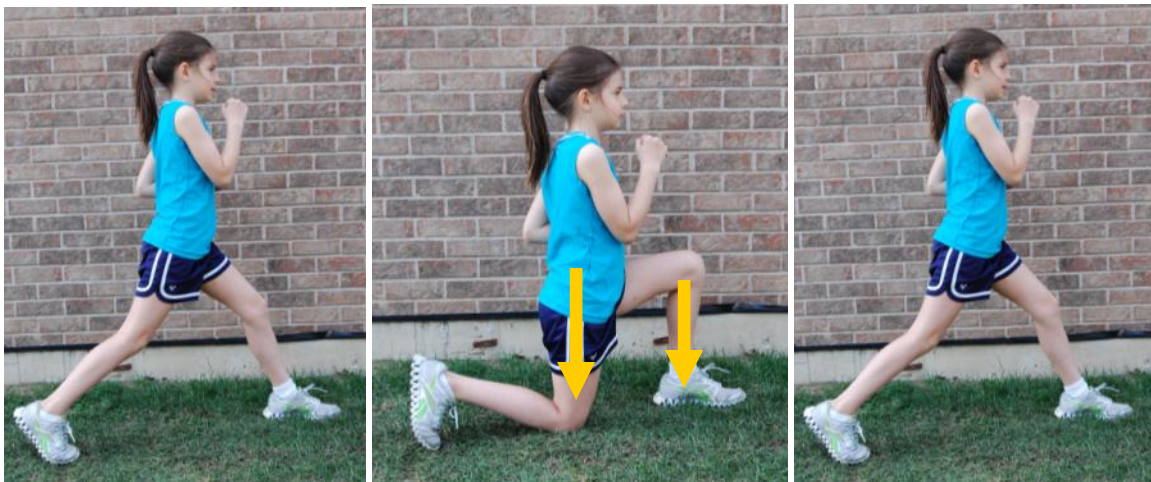




# Warm-Up Exercise

## Forward Lunge

Distance, Time or Repetitions	Sets	Rest Time	Frequency
10 yards	1	None	Before every practice & game



- Stand up straight and stride forward with your left leg.
- Bend both knees until your left thigh is parallel with the ground.
- Remember to keep the front of your knee behind your toes.
- Push off with your right foot and return to a standing position.
- Repeat the same sequence with your right leg.
- Continue alternating legs and striding forward to complete the specified distance, then change and stride forward with your right foot for the specified distance above.

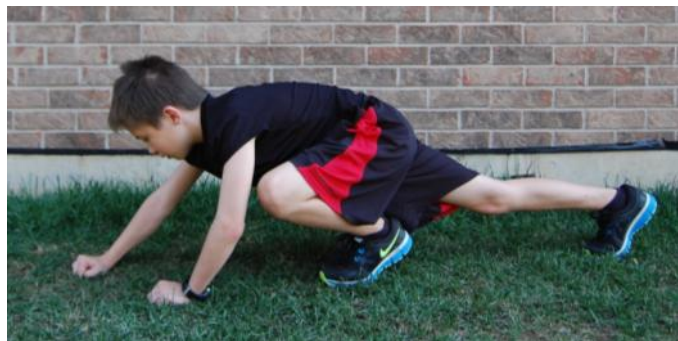


# Warm-Up Exercise

## Bear Crawl

Distance, Time or Repetitions	Sets	Rest Time	Frequency
15-20 yards	1	None	Before every practice & game

- Squat down on your hands and knees.
- Place your hands directly under your shoulders.
- Slowly reach forward with your right arm and left knee at the same time.
- Once your right hand and knee are planted on the ground, pull yourself forward and repeat the same motion with your left hand and right knee.
- Continue to alternate this crawling sequence for the specified distance above.



# Warm-Up Exercise

## Inchworm

Distance, Time or Repetitions	Sets	Rest Time	Frequency
10 yards	1	None	Before every practice & game



- Stand with your feet together or slightly apart.
- Bend forward from your hips while keeping your knees straight and your back flat until your hands touch the ground. If your hamstrings are tight, you may need to bend your knees slightly.
- With both hands on the ground in front of your feet, slowly begin to walk your hands forward, away from your feet. Your feet stay in place.
- Continue walking your hands forward until you reach a full plank position.
- While keeping both hands on the ground and knees straight, slowly walk your feet forward towards to your hands. Your hands stay in place.
- Once your feet reach your hands, stand up and repeat the sequence.



# Warm-Up Exercise

## Tapioca

(Alternate crossing feet)

Distance, Time or Repetitions	Sets	Rest Time	Frequency
15-20 yards	1	None	Before every practice & game



- This drill involves moving laterally while alternating foot movements in front of and behind your body.
- Stand tall with both feet together.
- Cross your left foot in front of your body.
- Step to your right with your right foot.
- Cross your left behind your right leg.
- Step to your right with your right foot.
- Continue this sequence for the determined distance.
- Reverse the exercise by moving laterally to your left.
- Do not allow your hips to rotate during this exercise.



## Warm-Up Exercise

# Carioca

(Alternate crossing leg with trailing knee)

Distance, Time or Repetitions	Sets	Rest Time	Frequency
15-20 yards	1	None	Before every practice & game



- Stand tall with both feet together.
- Lift your left leg and cross it over your right knee.
- Place your left foot on the ground and step laterally with your right until you are in a straddle stance.
- Repeat the sequence again with your left leg crossing the right knee.
- Reverse the exercise by moving laterally to your left.
- Allow your hips to rotate freely during this exercise.

# Warm-Up Exercise

## Skipping Forward

Distance, Time or Repetitions	Sets	Rest Time	Frequency
15-20 yards	1	None	Before every practice & game

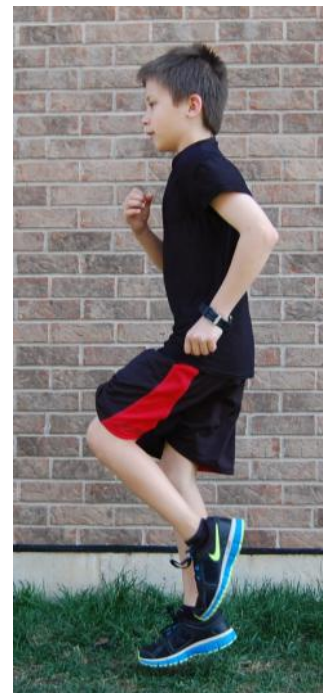
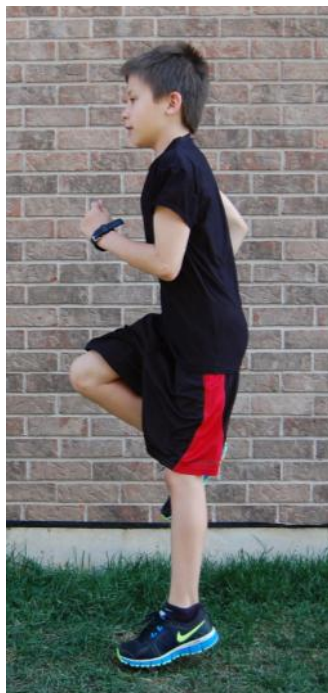
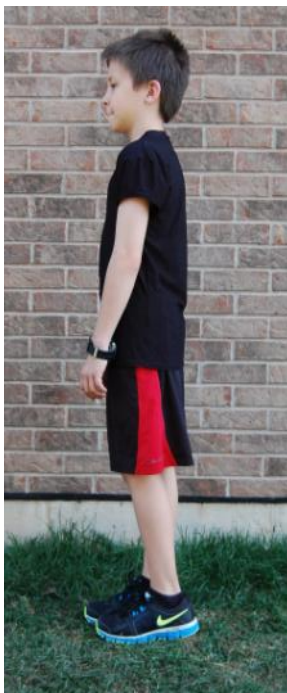
- Stand with both feet together.
- Bend your left knee and bring it forward while hopping forward on your right leg.
- Quickly step on your left leg, bend your right leg and hop on your left leg repeating the hopping forward and stepping motion.
- Swing the opposite arm forward of your bent leg on each hop.
- Try to push off your toes to get a bounding effect.
- Keep your head and chest up during the entire exercise.



# Warm-Up Exercise

## Skipping Backward

Distance, Time or Repetitions	Sets	Rest Time	Frequency
15-20 yards	1	None	Before every practice & game



- Stand with both feet together.
- Bend your right knee and raise your bent leg upwards toward your waist.
- Perform a hop on your left leg, then quickly place your right leg on the ground behind you and repeat.
- Swing your opposite arm forward with each hop.
- Try to push off your toes to get a bounding effect.
- Keep your head and chest up during the entire exercise

**Note:** When skipping backwards, slow down the speed to maintain proper form.

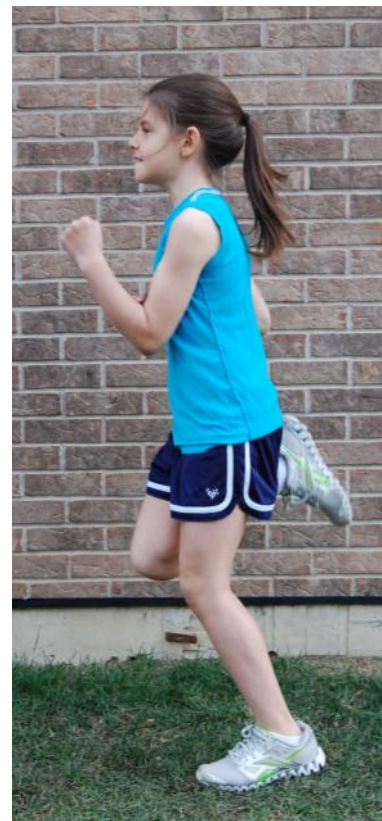




# Warm-Up Exercise

## Butt Kicks

Distance, Time or Repetitions	Sets	Rest Time	Frequency
15-20 yards	1	None	Before every practice & game



- Assume the running form.
- Keep your head and chest up during the entire exercise.
- At every stride attempt to bring your heel as close as you can to your buttocks.
- While performing the exercise try to keep your bent knee facing towards the ground.





# Warm-Up Exercise

## Sprint Builds

Distance, Time or Repetitions	Sets	Rest Time	Frequency
70%, 80%, 90%, 100%	1	None	Before every practice & game



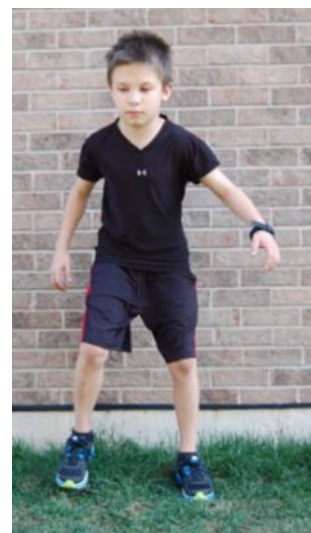
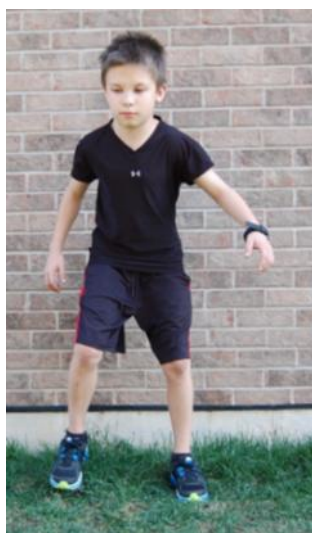
- Assume the proper running stance.
- Keep your head up, eyes forward and your chest up.
- Begin with a jog and build up to a sprint.
- Maintain proper form during the entire exercise.



# Finish Exercise

## Shuffle

Distance, Time or Repetitions	Sets	Rest Time	Frequency
5 yards/30 seconds	2	30 seconds	After every practice & game



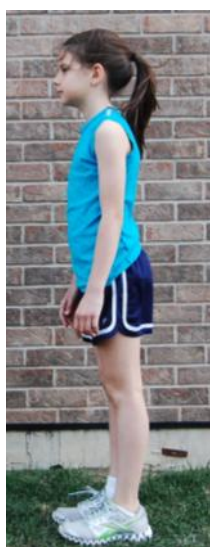
- Stand with both feet shoulder-width apart.
- Slightly bend your knees.
- Keep your head and chest up.
- Step to the left with your left foot, followed closely behind with your right foot.
- Repeat this sequence for the determined distance or time.



# Finish Exercise

## Burpee

Distance, Time or Repetitions	Sets	Rest Time	Frequency
30 seconds	2	30 seconds	After every practice & game



- Stand with your feet shoulder-width apart.
- Quickly lower yourself into a squat.
- Place your hands beside your feet.
- Kick both of your legs behind you so you are in the push-up position.
- Jump your feet towards your hands.
- Jump back up into the starting position.
- Repeat exercise for the specified time duration to complete one set.



# Finish Exercise

## Squat Hold

Distance, Time or Repetitions	Sets	Rest Time	Frequency
30 seconds	2	30 seconds	After every practice & game



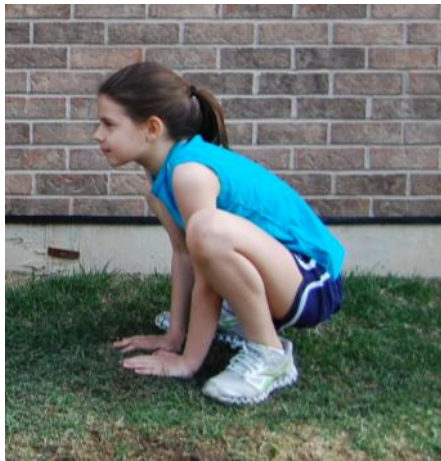
- Stand with your feet about shoulder-width apart.
- Slowly bend your knees until your thighs are parallel to the ground.
- Pause briefly and then slowly return to the starting position.
- Keep your back flat while performing the exercise.
- Perform the entire exercise in a controlled manner.



# Finish Exercise

## Frog Hop

Distance, Time or Repetitions	Sets	Rest Time	Frequency
30 seconds	2	30 seconds	After every practice & game



- Bend your knees and lower your body into a deep squat.
- Place both hands on the ground between your feet.
- Push off the ground with your toes and leap forward. Use your arms to help you jump as high as you can.
- Upon landing, return to the original frog stance.
- Repeat the exercise for the time specified to complete one set.

**Note:** Maintain proper form throughout the entire exercise.

# Finish Exercise

## Push-Up Hold

Distance, Time or Repetitions	Sets	Rest Time	Frequency
30 seconds	2	30 seconds	After every practice & game



- Lay face down on the ground.
- Place your feet slightly apart and your hands next to your shoulders.
- While keeping your back straight, slowly push your entire body up by extending at the elbows.
- Hold this position for 5 seconds then return to the starting position.

**Note:** An easier version is to perform planks on elbows instead of hands.



# OPTIONAL Exercise

## Ladder Sprints

Distance, Time or Repetitions	Sets	Rest Time	Frequency
5/5/10/10/15/15//10/ 10/5/5 Yards	2	30 seconds	End of every practice
10/10/20/20/30/30/ 20/20/10/10 Yards	2	30 seconds	End of every practice

Also referred to as wind sprints or suicides, this exercise is performed in short spurts at varying distances.

- Use the line on a football field, or mark your own lines spacing them approximately 5-yards apart.
- Start at the first line and sprint to the second line, bend down and touch the line with your hand, sprint back to the starting line and touch that line with your hand.
- From the starting line, sprint to the second line, bend down and touch that line with your hand. Sprint back to the start touching that line with your hand.
- Repeat this sprinting pattern until you have touched all the lines and returned to the starting line. Completing this series is 1 set.

**Note:** Use longer distances in the bottom box above for athletes age 12 and older.

## **Sports Medicine, Injury Prevention Expertise Provided by Team Chudik**

The goal of Dr. Steven Chudik and his health performance team, Larana Stropus and Keith Tesch, is to provide you and your athletes with reliable and proven training information to help athletes compete and perform at their highest level and ability.

This program is based upon research which found athletes need to incorporate specific exercises into their weekly training schedules to not only maintain strength, but more important, help minimize injuries. To maximize the benefit of this program, it is important for players to follow the recommended number of sets and repetitions while maintaining proper form at all times. Failure to do so could result in an injury.



### **Steven C. Chudik, MD**

Board-certified physician in orthopaedics and sports medicine, and a *US News & World Report* Top Doctor in orthopaedics with the Steven Chudik Shoulder and Knee Injury Clinic, Dr. Chudik is the founder and president of the Orthopaedic Sports Medicine Teaching and Research Foundation (OTRF) and associate professor at Loyola School of Medicine.



### **Keith Tesch, CSCS, CNT**

For more than ten years, Keith has been in the fitness industry working as a personal trainer and sports performance specialist, a position he currently holds with ATI Physical Therapy in Naperville, Ill. For the past five years, he has helped individuals regain their strength and range of motion through research-based programs.



### **Larana Stropus, MS, ATC/L**

A certified and licensed athletic trainer, Larana holds a B.S. in Kinesiology and M.S. in Exercise Science. She has more than 11 years of experience in athletic training, personal training and teaching. She also served as the athletic trainer for the Olympic Development Women's Soccer program and helped develop exercise prescriptions and training programs for elite athletes including the Chicago Blackhawks.





## Sports Injury Medicine Clinic

As further assistance to coaches, athletic trainers, players and parents, Dr. Chudik has a Monday evening Sports Medicine Injury Clinic in his Westmont office. During this time, athletes can be seen and treated by Dr. Chudik, a board-certified orthopaedic surgeon and sports medicine physician. An added benefit to athletes seen in the Clinic is the availability of an X-ray suite and an open-bore, high-field magnetic resonance imaging (MRI) machine. This onsite diagnostic capability eliminates the need of added appointments and delayed diagnosis and treatment. To schedule an appointment with Dr. Chudik call 630-920-2350.

## Injury Hotline

Dr. Chudik and his staff understand the importance of school athletic personnel needing access to reliable sports medicine and training information outside the hours of the Sports Medicine Injury Clinic. To accommodate that need, Dr. Chudik has an Injury Hotline just for athletic trainers. Athletic trainers interested in learning more about this special service should email Dr. Chudik at [stevenchudikmd@gmail.com/](mailto:stevenchudikmd@gmail.com/).

## About OTRF

Dr. Steven Chudik, orthopaedic surgeon and sports medicine physician with the Steven Chudik Shoulder & Knee Injury Clinic, Westmont, Ill., founded the Orthopaedic Surgery and Sports Medicine Teaching and Research Foundation (OTRF) in 2007. OTRF is a nonprofit, 501(c)(3) organization dedicated to funding research and education for the purpose of keeping people active and healthy. In an effort to prevent injury and remain active—especially for young athletes—Dr. Chudik saw a growing demand from patients,

clinicians and other healthcare professionals for up-to-date medical information and unbiased research on injury prevention, arthritis and wear and tear on the musculoskeletal systems—joints, cartilage, tendons, ligaments, etc. In response to these requests, OTRF produces and distributes a monthly newsletter, shares information about health performance-related issues such as nutrition and fitness, hosts athletic training educational programs and conducts seminars for healthcare providers and the community. The Foundation also funds unbiased orthopaedic research and technologies in emerging areas such as arthroscopic and minimally invasive surgery for shoulder and knee sports injuries. For additional information or to learn about charitable donation opportunities, contact Dr. Chudik at 630-794-8668.

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**Incorporate an easy, fun exercise program into youth sports to help prevent injuries**

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## Little Leaguer's Shoulder can be prevented

By Steven Chudik, MD

Shoulder injuries are common in throwing athletes. One injury unique to the shoulder of early adolescents is termed Little Leaguer's Shoulder. It is important to recognize this condition early to allow proper healing and safe return to play. Little Leaguer's Shoulder is a stress injury to the growth plate of the upper arm bone (the humerus). The growth plate, known as the physis, is the weakest part of a bone. Overhead throwing creates

rotation and traction stresses on the growth plate. Repetitive stress can injure the growth plate resulting in a stress fracture and pain.

Little Leaguer's Shoulder primarily develops in baseball players age 11 to 15, but it has been reported in softball, swimming, tennis, volleyball and gymnastics. Patients complain of pain in the outer shoulder and upper arm when the arm is overhead. Pain increases during practices and games. Eventually pain causes weakness and an inability to throw.

The main cause of Little Leaguer's Shoulder is overuse with an excessive amount of throwing. Other contributing factors include poor throwing mechanics, weak core and hip muscles, and especially weak scapula stabilizing muscles. Inflexibility of the back, hip and hamstring muscles also are contributing factors.

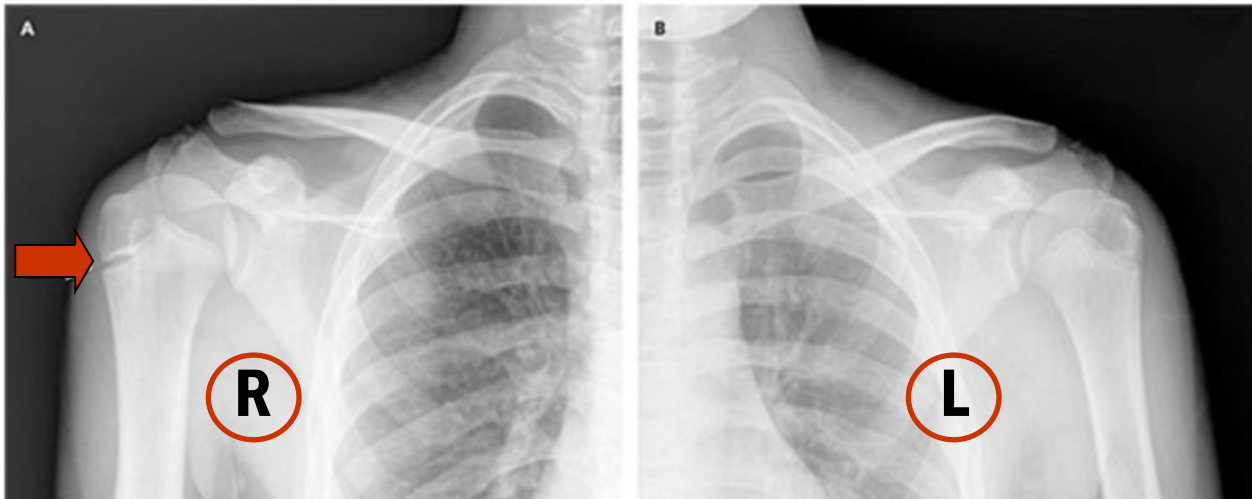
Little Leaguer's Shoulder usually is diagnosed by a physician taking an injury history and performing a physical examination of the shoulder and arm. Typically, the growth plate is tender to palpation and pain occurs with cocking the arm as if to throw a ball. Sometimes, a simple X-ray can confirm the diagnosis (see Figure 1 ). Initial X-rays are often normal so magnetic resonance imaging (MRI) may be ordered. It is more sensitive in detecting the condition, but it is not always necessary (see Figure 2 ).

Treatment for Little Leaguer's Shoulder includes rest from throwing for three weeks to three months depending on the severity and length of time the condition is present, followed by rehabilitation and a **gradual return to throwing** (an additional six weeks or longer). To prevent re-injury or permanent damage, the athlete's throwing mechanics should be carefully evaluated and modified, if necessary. Areas of muscle weakness or tightness also should be addressed.



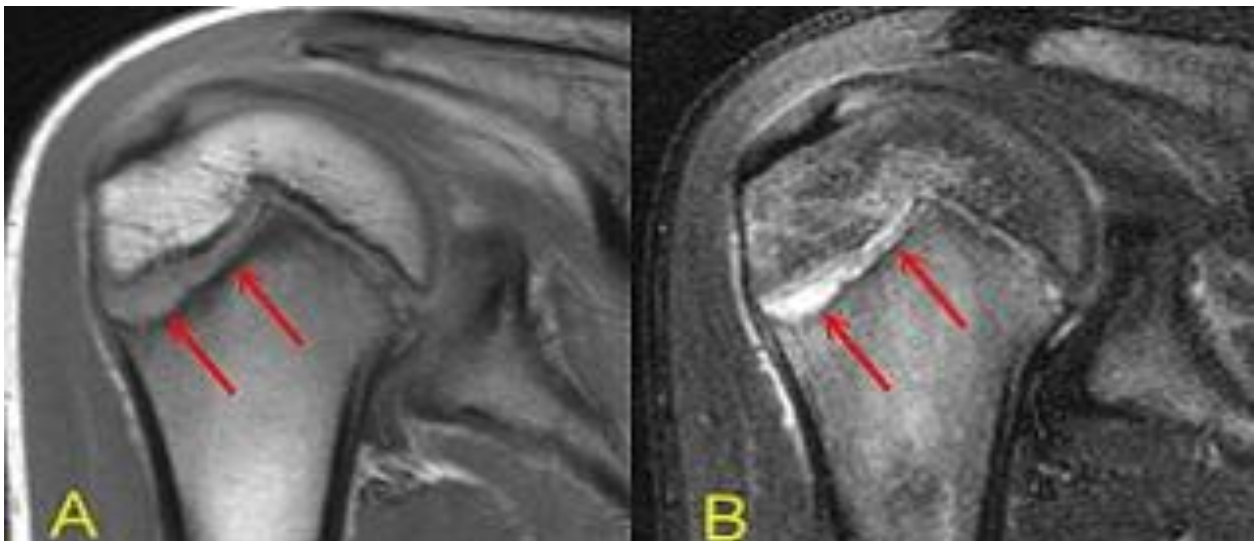
Your physician should guide this rehabilitation process and the **gradual return to throwing**. With complete athlete compliance to the throwing restrictions and gradual progressive return to throwing, the condition should not recur or cause permanent problems.

**Figure 1**



X-rays show the right humeral physis (shown on the left) reveals a widening consistent with Little Leaguer's Shoulder as compared to the left humerus physis (shown on the right).

**Figure 2**



MRI (A) above shows widening of the humeral physis. MRI (B) shows inflammation. Both are indicators of Little Leaguer's Shoulder.



**ORTHOPAEDIC SURGERY AND SPORTS MEDICINE  
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If your school, park district or sports organization, would be interested in having Dr. Steven Chudik, board-certified orthopaedic surgeon, sports medicine physician and *US News & World Report* Top Doctor present a program on sports injury and prevention, conditioning and training, please contact him at 630-794-8668, or [stevenchudikmd@gmail.com](mailto:stevenchudikmd@gmail.com)/.

Some of the topics Dr. Chudik recently presented:

- Sports concussions
- ACL and other knee injuries
- Shoulder dislocations and other shoulder injuries
- Throwing and overuse injuries
- Baseball injuries and prevention
- Football injuries and prevention
- Heat illness—prevention and recognition
- Steroids—Not in the game plan

