

ACTIVE P.T. SOLUTIONS
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APTS Monthly



VOLUME X, ISSUE VIII

AUGUST 2020

Office Hours:

Monday - 8:00am - 5:30pm

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Preventing Throwing Related Injuries

Baseball season at the major league level is finally in full swing due to the COVID-19 pandemic but the high school level never had a chance to play this year. Our opportunity to implement comprehensive injury prevention strategies has passed since that should have begun in November. That doesn't mean we cannot continue to prevent some throwing related shoulder and elbow injuries. The strategies available at this stage of the season require players, parents, and coaches to be educated about the current available science regarding throwing injuries in the high school baseball player. It also requires them to utilize this available science.

In the last 10+ years there has been a strong focus on pitch-counts as a method to reduce arm injuries in Little League players. While some states and high school leagues have implemented pitch counts, others have lagged behind and continue to allow the overuse of high school aged throwing arms. When pitch-counts are adhered to they can and have reduced the number and severity of throwing related injuries. What pitch-counts do not take into account are bullpen pitches, warm-up pitches between innings, and multi-league play.

A recent research study published in the Journal of Orthopedic Sports Medicine looked at the idea of unaccounted workload factor including bullpen pitches and between-inning warm-up pitches. While it did not look into multi-league play, it did shed light on the role that bullpen warm-up pitches, between-inning warm-up pitches, and acute spike in pitching volume play in throwing fatigue and subsequent injury. It also outlined the threshold for throwing-related fatigue and its role in throwing-related injuries.

This study of 34 high schools in North Central Florida in 2017 showed that bullpen and between-inning warm-up



pitches can add a minimum of 60 pitches to the in-game pitch count. If you are a 15-year-old high school pitcher allowed to throw 95 pitches (the USA Baseball game allowance) and you throw a total of 60 warm-up pitches, your total workload factor is really 155 pitches, not the 95 counted. One of the questions raised in the study was whether or not the average pitcher trains at the same volume at which they compete. The answer is that most of the time a high school baseball pitcher trains at a volume lower than that of competition. The guidelines also allow the 95 pitches to be thrown in 7 innings, not 9. Therefore the total workload intensity is much higher at the high school level than it is at levels playing 9 innings.

Workload spikes such as a "big inning" (throwing greater than 25 pitches in one inning), will predispose the pitcher to injury if they continue to pitch to the allowed pitch count. This type of situation creates early fatigue and is therefore a contributing factor to shoulder and elbow injuries in high school baseball pitchers.

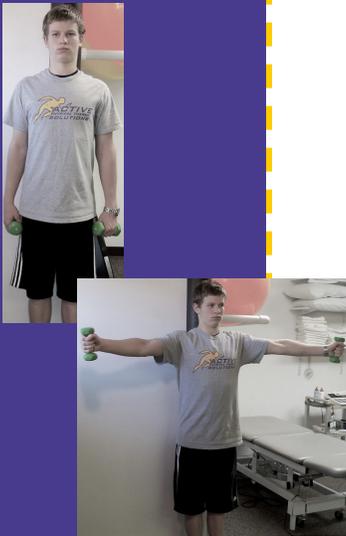
This study continued to reinforce that throwing-related fatigue, kinetic chain defects, hip strength deficits, reduced shoulder range of motion, altered throwing mechanics, rotator cuff weakness and fatigue, forearm fatigue, alteration of scapular and arm position, and reduced joint position sense will have a negative effect of the pitcher's arm slot.

We have incredible scientific data and information to help reduce the number and seriousness of throwing related injuries. But all of this information does us no good when coaches, players, and parents refuse to educate themselves and become current on this wealth of information. Instead of utilizing the expertise of those available, they rely on the arrogance of archaic coaching principles.

Here are some simple things to keep in mind when trying to prevent throwing related shoulder and elbow injuries: You can't prevent throwing injuries unless you have good pitching mechanics. You can't have good pitching mechanics without strong hips and the ability to balance on one leg. You can't reduce arm strain without a consistent arm slot. And you can't have a consistent arm slot without a strong rotator cuff. You can't do any of this unless you have a pre-season program that specifically addresses these common areas of breakdown. If all of these aspects of mechanical fault are addressed, the concept of pitch-counts, pitch monitoring, and proper rest can now be more effective at reducing arm injuries.

With all of the information available to us and with the variety of programs that have been developed, the number of "Tommy John" surgeries to repair the torn ulnar collateral ligament of the throwing elbow has risen six-fold. With everything we know, how could this be? The simple answer is that coaches, players, and parents continue to ignore the science and rely on training gimmicks. Keep this in mind: a regulation baseball weighs 5 ounces, so being able to bench press a house won't help you throw it faster. Pitching is about strategic strengthening and efficiency.

Article by Dale Buchberger, DC, PT, CSCS



Standing scaption, start and end position (l), exercise position (r)



Exercise of the Month: Standing Scaption

Scaption refers to lifting the arms from the sides in a slightly forward alignment. The normal resting position of the scapula is 30-45 degrees as it lies on the ribcage; therefore, scaption is performed at a 30-45 degree angle to your body. It is used to improve strength in the rotator cuff, deltoid, and upper back muscles. The benefits of this exercise include improved posture and increased shoulder strength.

To perform this exercise, stand against a corner or a doorframe. Start with your thumbs pointing out, palms in toward your thighs.

Squeeze shoulder blades together, concentrating on squeezing down and back. Lift your arms at that 45 degree angle to your body just to the height of your shoulders. (You should make a “Y” formation with your arms.) Keep thumbs pointing up/palms in and keep squeezing your shoulder blades as you slowly lower your arms to the starting position. Be sure to not raise your arms past the height of your shoulders.

Perform 10 repetitions of this exercise 2 times per day. As you get stronger, gradually increase your repetitions up to 30 by reps

of 5. Once you can do 30 repetitions comfortably, drop your reps back down to 10 and hold a 1-pound weight in each hand. As before, gradually increase your repetitions up to 30 before increasing weight. Remember: “high reps, low weight.”

As with any new exercise, stop when you feel increased pain, numbness, or tingling during or after performing the exercise. If your symptoms become worse or more intense, call your health care provider for an evaluation.

The Downtown Auburn Mile Goes Virtual

This year, the Auburn YMCA is sponsoring a Virtual Mile from August 21-23; “Find Your Y—Your Way” and create your route in the shape of a Y. Post the screen shot of your map on the Y’s Face-

book (@auburn.ymca) or Instagram (@auburnnymca) page. Cost is \$5/ person with a maximum of \$20/family. Register online at auburnymca.org or by calling the Y at 315-

253-5304. All participants will receive a T-shirt and prizes will be given for creativity. Please consider participating in this Active Physical Therapy Solutions sponsored event.

APTS Installs a Whole Air Purification System

In July 2020, Active PT Solutions installed a HALO-LED whole home air purification system in the office. This system proactively treats every cubic inch of air-conditioned space, thereby reducing airborne and surface microbials, bacteria,

viruses, mold, smoke, and volatile organic compounds (VOCs). It provides an added benefit of reducing airborne allergens, dust, and particulates through bi-polar ionization and revolutionary, patent pending, REME-LED technology. It is the indus-

try’s first LED in-duct, whole home air purification system that is both mercury free and zero ozone compliant. For more information on this product, contact RGF Environmental Group, Inc., at 800-842-7771 or visit www.rgf.com.



Little League Injuries



Little league baseball is finally in full swing after delays from the COVID-19 pandemic. This article will focus on some simple

observations that players, parents and coaches can use to help prevent a minor arm injury from becoming a catastrophic injury.

Every year, in every league, there seems to be one player that is just physically more advanced than the other players. While they are physically bigger and stronger, this size difference may hide and mask their faults and weaknesses. Because this player is big and strong they usually throw very hard. They also accumulate a bunch of strikeouts making everyone gasp in amazement. Lets look inside that statistic for a moment. Why is it that this player that is so much better commonly reaches their maximum pitch count in less than 6-innings? How many of these strikeouts occur swinging or looking? How many are swinging on pitches out of the strike zone in "self defense"?

This is the first observation and earliest observation that tips us off that something is starting to go wrong. Poor control is evidenced by high pitch counts in a small number of innings. First of all 75 pitches in 6 innings is an incredibly large number of pitches in a very short time. So if they are reaching their limit before the 6th inning, something is wrong with their mechanics and it needs to be

addressed. So keep an eye out for this scenario; poor control is the first sign of breakdown.

The second observation is a gradual decrease in velocity. A player that previously threw very hard is now struggling with the fastball. Back in "our day," catchers were not only educated on how to call a game but also on how to watch their pitcher and assess any fall off in control and/or velocity. It would not be uncommon for the manager to ask the catcher their opinion and for the catcher to tell the manager if the pitcher was throwing "creampuffs," meaning there had been a reduction in pitch velocity. With coaches and managers calling pitches from the dugout catchers are not being taught the finer points of the position at an early age. This is a hidden potential contributing factor in pitching related arm injuries.

The third and last observation is the onset of pain. Unfortunately this is the terminal sign. If a player gets to the third observation that means the first two were missed. This means the road to recovery will be much longer than it could have been had someone said something at observation one or two. What is also amazing is that parents and coaches will suggest that this player continue to play medicated with an anti-inflammatory. There is a simple rule in youth sports: if you need to play medicated, you should not be playing especially at 12 years old! The other aspect to throwing related arm pain is that while the pain will resolve with rest and discontinuance of throwing, the pain will most likely return as soon as throwing resumes if the biomechanical faults such

as pitching mechanics, rotator cuff weakness, hip weakness, etc. are not corrected prior to resumption of throwing.

The x-factor, if you will, with Little League aged throwers is the presence of "growth spaces" in the shoulder and elbow. So while our physically advanced athlete looks larger than life exteriorly, on the inside they still possess the weak link they cannot see, the open or immature growth space. In the common condition known as Little League shoulder or Little League Elbow the growth space has actually fractured and is classified as a Salter Harris I growth space fracture also referred to as widening of the growth space. This injury does not resolve fast and the athlete should not attempt to "play through it". For the record the growth space typically closes in girls between 14 to 17 years of age and 16 to 18 years of age in boys. Fortunately in patients that are still growing, Youth Thrower's Elbow typically resolves with proper treatment but may progress to chronic elbow pain as an adult if not properly addressed.

Players, parents, and coaches have incredible resources available to them to help prevent throwing related injuries. Sometimes those resources are in their backyard. They usually have missed several signs along the path to the athlete experiencing pain and injury. We all know the simple rules of a young throwing arm. They should not throw any type of breaking pitch (curveball, slider, etc.). Develop a fastball and learn how to control it. It really is that simple.

Article by Dale Buchberger, DC, PT, CSCS

While throwing-related arm pain will resolve with rest and discontinuance of throwing, the pain will most likely return as soon as throwing resumes if the biomechanical faults such as pitching mechanics, rotator cuff weakness, and hip weakness are not corrected prior to resumption of throwing.

APTS Recipe Box: Bacon Pineapple Chicken Kebabs

This is the perfect summer grilling recipe!

Ingredients: 2 large boneless, skinless chicken breasts (about 2 pounds); 1 pineapple, cut into 1-1/2 inch chunks; 2 red bell peppers, cut into 1-1/2 inch pieces; 1 large onion, cut into 1-1/2 inch pieces; 12 strips of thick cut bacon, cut in half lengthwise. **Hawaiian Marinade:** 1-1/2 cups pineapple juice; 1/2 cup honey or coconut sugar; 2 tbsp fish sauce; 1-1/2 tsp arrowroot powder or cornstarch; 2 cloves garlic, minced; 1/2 tsp salt and freshly ground black pepper; 6 long skewers.

Instructions: For the Marinade: Combine all ingredients in a medium saucepan and stir until the arrowroot powder is dissolved. Bring the mixture to a boil, reduce the heat to medium and simmer for 2 minutes. Place chicken in a zip lock bag and pour half of the marinade on top. Place pineapple, red bell pepper & red onion in another zip lock bag and pour the other half of the marinade. Marinate for at least 30 minutes (for best results marinate for several hours or overnight). Meanwhile, if you use wood skewers soak them in water for about 20 minutes. **For the Kebabs:** Thread the

skewers. Weave the bacon around each piece of chicken. You'll need two strips of bacon per skewer if using 4 pieces of chicken. Add pineapple, stick the bell pepper and onion together. Use 3-4 pieces each of pineapple, bell pepper and red onion per skewer. Brush some olive oil evenly over each kebab. Preheat the grill to medium high. Grill the kebabs for 10-15, turning a couple of times until done. Serve immediately and enjoy!

Source: <https://www.deliciousmeetshealthy.com/bacon-pineapple-chicken-kebabs/>



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Get Well...Get Active...Be Active

Newsletter Edited by Carolyn B. Collier, PTA

At Active Physical Therapy Solutions, we utilize the most cutting edge treatment and management techniques available. Our goal is to deliver the best possible healthcare in a friendly, caring, and well-organized environment. Our staff is here to provide active solutions to achieving your personal goals!

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Nutrition 101: Ten Day Detox Diet Jump Start Guide

Do you think you can change your life in just 10 days? “Probably not!” Well, Dr. Mark Hyman, a functional medicine specialist, thinks otherwise! He created a successful 10-Day Detox Diet that he has used for 20 years on over 10,000 patients to teach them how easy, fast, and delicious it can be to lose weight and be healthy. It helps to reset your metabolism, get rid of cravings, and lose weight. You may even “turn the tide” on chronic health problems such as type 2 diabetes, asthma, joint pain, digestive problems, autoimmune disease, headaches, brain fog, allergies, acne, eczema, and even sexual dysfunction. “Great! I’m in! What do I have to do?”

Step One: Take measure of yourself—your weight, your waist size, and take the Toxicity Quiz at <http://www.doctoroz.com/article/toxicity-quiz-are-you-sick> to see if you have “Feel Like Crap” Syndrome. This quiz takes inventory on your digestive tract, ears, emotions, energy/activity, eyes, head, heart, joints/muscles, lungs, mind, mouth/throat, nose, skin, and weight. Mild toxicity is a score of 10-50. Severe toxicity is a

score of over 100.

Step Two: Out with the bad—get rid of all the junky food in your house! Anything that is not real food; any food or drink that contains added sugar; anything that contains hydrogenated oils and refined vegetable oils; any foods with artificial sweeteners, preservatives, additives, coloring, or dyes; anything sugar- or flour-based; grains and all foods made from flours; starches; beans and legumes; dairy; coffee and anything caffeinated; and alcohol.

Step Three: In with the good—for 10 days, you’re going to flood your body with the nutrients it depends on to feel and look its best! (Stay tuned for next month’s article on the meal plan!)

Step Four: Add simple lifestyle practices for best results—sleep 7-8 hours a night; do deep breathing for 5 minutes a day; drink 8-10 glasses of water a day; walk or do another physical activity for at least 30 minutes a day; take fiber before every meal to cut cravings and help balance blood sugar; take a good multivitamin, 2000 IU of vitamin D3, and 2 grams of fish oil a day; and take the Ultra-Detox Bath (2 cups of Epsom salt, 1/2 cup of

baking soda, and 10 drops of lavender oil).

What makes you sick can make you fat, and what makes you fat can make you sick. Everything is connected! This 10-Day Detox Diet can reset your metabolism to “factory settings”. You can lose weight without going hungry, and possibly clear up a whole list of health problems. After the 10 days, go back to step one and record your weight, waist size, and quiz score. You’ll be amazed at the difference!

You can do it!

For more detailed information on the 10-Day Detox Diet, visit <http://www.doctoroz.com/article/10-day-detox-diet-jump-start-guide>

Next month, we will share the 10-Day Detox Diet Meal Plan. Can’t wait? Find it here: <http://www.doctoroz.com/article/10-day-detox-diet-one-sheet>

Article by Tom Zirilli, PT, and
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