

*We are continually appreciative of the kind comments received regarding Synergy's online newsletter. A number of you have asked how to sign up others for this e-newsletter. You can either forward them this link -- <http://synergyhealthmedical.com/signup/> -- or simply sign them up yourself and consider it a gift of health and wellness.*

**Comments from Medical Editor, James Fox, MD:**

Synergy welcomes the input of Frank Wilhelmi, whose experience and interest in senior fitness will further all of our knowledge. We have asked Frank to make available his web based column, and each month we will reference this for our readers. Do you have a particular topic or issue you would like to see in an upcoming edition of our newsletter? If so, feel free to contact our Medical Editor at [jfox@synergyperformancehealth.com](mailto:jfox@synergyperformancehealth.com) with your ideas.

## TAKE ME OUT TO THE BALLGAME...

*Tina Schwager, PTA, ATC, Editor  
James M. Fox, MD, Medical Editor*

As we turn our attention to the beauty of spring, recreational and competitive athletes alike have turned their attention to the All-American past time--baseball. According to the National Sporting Goods Association, over 14 million people in the US participate in baseball and softball (1). Between little league, travel ball, club teams, senior leagues and school sports programs, there are ample opportunities for anyone who's interested to slip on a glove and "play ball!"

For competitive ballplayers, the season is well under way. And with any luck, solid pre-season training will result in a strong and successful showing. For aging athletes or recreational players looking to get in the game, however, inadequate preparation may pose higher risk of something going wrong. A throwing-related injury could create a long-term problem or, at the very least, significantly disrupt your regular fitness program. As with any sport or activity, it's important to know the demands being placed on your body before you begin so you can prepare yourself to be injury proof and have a great time playing.



The Center for Disease Control (CDC) estimates that more than 10,000 people go to the emergency room each day due to a sports or exercise related injury, accounting for one in every five ER visits. Children under 15 account for about 40% of all sports-related ER visits, possibly due to "immature or underdeveloped coordination, skills and perception," (2) and adolescents and young adults under 25 suffer almost 1/3 of all sports injuries. (2) While an unexpected collision with a baseball, bat or fellow player may result in an ER worthy event, most of the over 50,000 estimated baseball and softball injuries per year from youth up to the professional level (3) are the result of overuse, training errors, or poor technique. Synergy's Barry Shafer, PT, Athletic Trainer and Vice President of Operations, finds that poor off-season conditioning is often the culprit. The amount of playing time young athletes endure is often a problem, too. Notes Synergy physician Scott Powell, MD, "There has been a dramatic increase in shoulder and elbow injuries in young athletes over the past ten years as players increasingly select to participate in one sport and to play it on a year-round basis."

Throwing a ball is inherently trying on the body, especially the shoulder. When you wind up to throw, the muscles surrounding the shoulder (particularly the rotator cuff, which centralizes the humerus or upper arm within the shoulder socket, and the scapular muscles, which control the position of the shoulder blade on the upper back portion of the ribcage), must work in tandem to rotate and accelerate your arm in preparation for ball release (4). As the baseball leaves your hand, tremendous distraction forces occur, potentially pulling your arm right out of the socket. It's once again the job of the rotator cuff and scapular muscles to keep things in check and prevent that from happening. Finally, these structures must instantaneously switch to a braking mode and slow down your arm once the throw is complete. The interplay between these muscles, the timing of their actions, and the relative elasticity of all involved structures are critical for the execution of a good throw that places minimal strain on the arm. This assumes, of course, the use of proper throwing mechanics, and that the large muscles of the back, chest, trunk and legs are doing their part to provide support, maintain balance and generate power. And, by the way, it all happens in a mere

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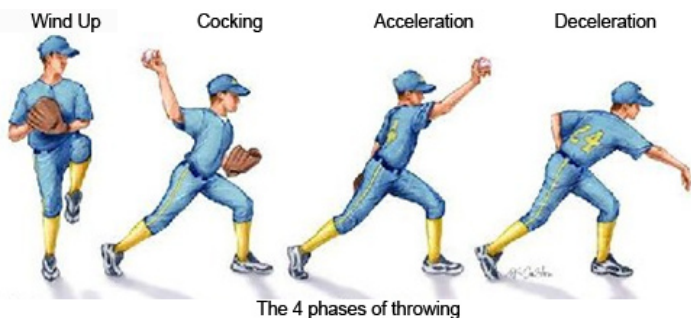
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fraction of a second; for pitchers, we're talking 0.15 seconds from the moment the front foot hits the ground until the ball is released (5). Given the intricacies, it's no wonder things can go wrong.



The rotator cuff consists of the supraspinatus, infraspinatus, teres minor and subscapularis muscles, and is highly susceptible to injury in throwers. The tip of the shoulder, or the acromion, forms the top of a narrow tunnel under which the rotator cuff tendons pass. As the arm rotates and passes through the "arm slot" (the path it follows for each throw), the rotator cuff tendons squeeze through the tunnel and roll over one another. If the throwing motion is off in any way, or if a particular muscle is forced to work too hard or becomes too tired due to instability in the shoulder, weakness or imbalance, the tendons themselves become irritated. This irritation causes swelling and inflammation, increased tendon diameter, and less room in the already narrow tunnel. Subsequent throws further squish the tendons in this crowded environment, causing impingement syndrome, an overuse condition frequently seen in ballplayers.

Impingement is the first phase of a cycle which can lead to much more severe problems, if unaddressed. Chronically inflamed tendons become weaker and more traumatized every time they're impinged. Prolonged swelling, impingement and overwork of the rotator cuff tendons make it difficult for them to function properly. And, as Dr. Powell points out, excessive movement within the shoulder joint (called instability) which can develop from the stress of repetitively throwing with inadequate strength or poor technique, can ultimately cause the tendons to fray or tear. Rotator cuff tears vary in degree, from mild (comparable to a muscle strain where several fibers are torn), to a full-blown tear requiring surgical repair.

While the spectrum of potential damage to the muscles involved in throwing is great, prevention comes down to these basic concepts:

1. Adequate mobility. A lot of controversy surrounds the concept of stretching and warming up. While one doesn't ever want to apply a bouncing, dynamic stretch to a cold muscle, a lack of mobility can definitely be a problem for a thrower. So what's a ballplayer to do? Warm up first, stretch after. Ask one of Synergy's trainers or physical therapy staff to help you determine which stretches will be most beneficial to you, without overstressing your throwing arm.
2. Proper mechanics: There is no one "right" way to throw, but there are lots of wrong ones. Executing a throw should take into account your own physical capabilities and limitations, as well as the safest and most efficient way to get your arm from point A to point B. Consult with an Athletic Trainer who specializes in baseball or work with a qualified baseball coach to determine whether your throwing mechanics are on target. Ask a Synergy staff member for a recommendation.
3. Addressing minor problems before they turn into major ones. Since most rotator cuff injuries are the result of micro trauma that has progressed to something worse, early recognition is essential to preventing a serious injury. Doing exercises to restore balance in your throwing muscles sure beats riding the bench. See a Synergy physician if you think you're developing an injury; with proper treatment you'll get back in the game in no time.
4. Pitch limits. Nothing spells injury like throwing with a tired arm. To avoid potential problems, young ballplayers should limit the number of times they throw during a game. According to Dr. Powell, The American Sports Medicine Institute recommends the following number of pitches per week for Little League ballplayers:
  - Age Under 10: 75 pitches
  - Ages 11-12: 85 pitches
  - Ages 13-16: 95 pitches
  - Ages 17-18: 105 pitches

With a maximum of two games per week and mandatory recovery time between games. Little League Baseball adopted these guidelines starting in 2007.

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## SYNERGY NEWS:



Welcome to the newest member of the Synergy Performance Health Team, BodyRX Physical Therapy. Originally founded by Daniel Farwell, PT, DPT, BodyRX P.T. is committed to treating patients using a team approach, combining the efforts and expertise of the physician, the patient and the therapist for comprehensive care that is focused on getting you back in action.

Dan Farwell earned his MS and Doctoral Degree in Clinical Physical Therapy from USC, where he currently holds the posi-

tion of Adjunct Clinical Professor and teaches Patient Management courses. BodyRX P.T., located in Glendale, offers rehabilitation programs for all types of orthopedic and sports injuries, core and sports training, wellness programs, isokinetic testing, ergonomic assessment and training programs, and more.

As the latest addition to the Synergy team, BodyRX P.T. is another great choice for your physical therapy and rehabilitation needs. For more information about services or to schedule an appointment, contact BodyRX Physical Therapy at (818)241-252. BodyRX Physical Therapy, 601 E. Glenoaks Blvd., Suite 101, Glendale, CA 91207 <http://www.bodyrxpt.com>

Older players need to listen to their bodies. If you start to experience pain, a significant decrease in velocity, or difficulty reaching the mark when making a play, it's time to shut things down for the day.

REFERENCES: 1. <http://www.nsga.org/public/pages/index.cfm?pageid=150>. National Sporting Goods Association 2005 Participation, Ranked by Total Participation 2. CDC Injury Research Agenda – Preventing Injuries in Sports, Recreation and Exercise. [http://www.cdc.gov/ncipc/pub-res/research\\_agenda/05\\_sports.htm](http://www.cdc.gov/ncipc/pub-res/research_agenda/05_sports.htm). 3. Myers Joseph B. et al. On-the-Field Resistance-Tubing Exercises for Throwers: An Electromyographic Analysis. Journal of Athletic Training. 2005; 40(1): 15-22 4. Pezzullo Dave, Karas Steven, and Irrgang James. Functional Plyometric Exercises for the Throwing Athlete. Journal of Athletic Training. 1995; Vol. 30, No. 1: 22-26. 5. Gambetta, Vern. A Big Windup. Training and Conditioning. March 2003: 42-47.

### TO GRUNT IS HUMAN...

Anyone who's stepped into a gym has heard at least one, possibly more. Sports fans have heard them, too. It's the well timed, very prominent "grunt" that's emitted as exercisers or athletes exert effort to lift a barbell, smack a heavy bag or return a blazing tennis serve. Sometimes this noise can be attributed to intense effort, but other times it seems to be more for effect. Believe it or not, some gyms have actually banned the grunt and kicked people out because of it!

Any good trainer will advise "exhaling with the effort," meaning you shouldn't hold your breath during exercise, particularly while lifting weights. In "Those gym grunts have a purpose (LA Times Health, 12/11/06)," Janet Cromley explains that although breath holding creates increased internal pressure "which, in turn, stabilizes the abdominal and chest cavities during heavy lifting," (known as the Valsalva maneuver), it can also endanger vessels and adversely affect blood pressure. A sudden release in that pressure is what results in the grunt.

Weightlifters will tell you the grunt gives them an edge in exerting a max effort, but a 1999 study at Hardin-Simmons University in Abilene, Texas, showed that "grunting while performing a dead lift did not increase maximal force production." According to Mike Grondahl, CEO of Planet Fitness (which has a strict policy about this stuff), "When somebody's in there and they grunt and they grunt loud, it's trying to bring attention to themselves to show everyone how strong they are."

We all know that letting out some noise while doing something difficult is only natural--ask any woman who's been through childbirth and she'll tell you that it just can't be helped. From a practical standpoint, however, the fact remains that being too loud while you're working out annoys other people. Kickboxing class demands it. A rousing match of racquetball warrants it. And on the line in a gridiron game...of course. At the gym, however, it comes down to common courtesy. Even the hardest worker in the weight room should be as conscientious about the noise they make as they are about wiping off their sweat before the next person comes along.

### CHRONIC SINUS IRRITATION OR ALLERGIC FUNGUS? WHICH IS IT?

Spring sniffles may be due to something other than chronic sinus infections or hay fever, according to researchers at St. Louis University's division of allergy and immunology. While experts have long attributed recurrent sinus problems to chronic rhinosinusitis, inflammation of the nasal sinuses, a recent study suggests that an allergic reaction to the presence of a fungus may also play a role.

According to Patricia S. Hutcheson of St. Louis University Medical School, "Allergic fungal sinusitis may account for up to 10% of chronic rhinosinusitis." The University's study involved the examination and culturing of the nasal exudates from 84 patients with chronic sinus irritation or infection. Their findings indicated the presence of specific antibodies consistent with an allergic response to fungi, which was also found in the samples.

While these findings are preliminary in nature, they do point to a completely separate diagnostic category when it comes to determining a treatment plan for patients with chronic sinus problems. Raymond Slavin, MD, head of the research team at St. Louis University, explains that for "...allergic fungal sinusitis, certainly the most successful treatment has been long term prednisone," but he cautions that there is "...great controversy about antifungal treatment of chronic rhinosinusitis." He further states that several studies are currently underway examining the effect of this type of treatment for chronic sinus problems, "following the Mayo clinic proposition that the vast majority are due to fungi."

For those suffering from congestion and sniffing that just won't let up, the outcome of these studies may open a whole new door in terms of approaching the problem. Perhaps it will soon be time to put that ever-present box of Kleenex away!

#### LINKS

##### WEIGHT CYCLING AND GALLSTONES

The ups and downs of yo-yo dieting have long been associated with a lack of success in reaching health and fitness goals, as well as wreaking psychological havoc on those struggling to look—and feel—better. A recent study at the University of Kentucky now points to another by-product of weight cycling: increased risk of gallstone disease. The study examined the long-term effects of weight loss and subsequent gain on a group of men, and found a significant number of occurrences of gallstones. This study provides yet more evidence that, when it comes to weight loss, slow and steady wins the race. <http://www.medpagetoday.com/tbprint.cfm?tbid=4594>

##### LEARN AND LIVE QUIZ

The American Heart Association has limitless resources and information to help you learn about heart disease prevention, recognition and management. One such tool is their Learn and Live Quiz. By taking this quiz you can learn your risk for heart disease, obtain access to resources such as free health programs, and find out what questions to ask your doctor on your next visit. Check out their website, <http://www.americanheart.org/presenter.jhtml?identifier=1200000> to take the quiz.

## QUICK BITES

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QUICK BITES: TRAIN TO THROW

### TRAIN TO THROW

Unlike pushing off the line in football or carving a turn in deep powder, throwing a ball isn't just about strength. Throwing demands power—the ability to exert strength in a very short period of time—and coordination, to do so repetitively. Therefore, preparing your arm requires a specific type of training, targeted at the energy systems responsible for this type of motion. Consider these tips for your training regimen:

1. Build a foundation of strength. While throwing is a power-based motion, establishing a solid foundation on which to exert that power requires strength. Start with a balanced weight-training program that addresses all the muscles surrounding and supporting the throwing arm, paying extra attention to the postural muscles in the upper back. Since the throwing motion is forward directed, the muscles in the back must be very strong to counter that movement. In addition, maintaining good alignment of the scapula on the ribcage, the humerus in the shoulder socket, and the head on the cervical spine is essential to enabling the throwing muscles to do their job. If the shoulders are rounded and the chin juts forward, the posterior shoulder muscles are at a mechanical disadvantage and can't function properly. The result will either be reduced throwing velocity, compromised performance, or, ultimately, an injury. Be sure your weight-training program includes:
  - Rowing (wide, narrow, high and/or low)
  - Lat pull downs to the front
  - Shoulder circles to the back

Since the anterior portion of the shoulder undergoes tremendous stress during the cocking and acceleration phases of throwing, avoid any weight exercises that put additional stress on this area. Several exercises to avoid include:

- Incline barbell presses and incline dumbbell flies
- Military presses
- Preacher curls
- Dips

The muscles targeted with these exercises can easily be trained with other weight exercises far less stressful to the throwing shoulder. See your Synergy trainer for some recommendations to duplicate the muscle activity of these exercises while limiting stress on the anterior shoulder.

2. Tubing. The rotator cuff and shoulder muscles work much like a slingshot during throwing, first getting stretched to the max (during wind-up and cocking), then instantaneously switching from an accelerating movement (during acceleration and initial release) to a decelerating motion (at the moment of release and during follow-through.). This, combined with the fact that the load on the muscles is relatively low but applied

quickly, makes tubing a very effective means of conditioning for throwing. Emphasis should be placed on the rotator cuff, both in a neutral (at your side) and "90/90" position (arm elevated so the elbow is at shoulder level). Working the biceps and scapular stabilizing muscles with tubing lends additional support and mimics the action these muscles undergo when propelling a ball at high speeds. Tubing is available in Synergy's weight room, and your trainer can show you exercises that simulate the demands of throwing.

3. Core strength. With all this talk of the rotator cuff and shoulder muscles, we mustn't forget the glue that holds all the pieces together—the core. The muscles of the trunk, low back, abdominal region and hips are critical for setting the foundation on which a well-executed throw can take place. The hips start the motion with a properly directed stride and rotation of the lower body, creating subsequent rotation of the trunk and shoulders. The trunk, back and abdominal muscles hold the body in position as the arm reaches the release point, and then flex the torso to follow the motion of the hand and absorb the forces of forward propulsion. And finally, the core insures that the shoulders are rotated and aligned just right so the arm can slice through the proper slot and ultimately, release the ball toward the target. Just as in hitting a ball, swinging a golf club, or executing a tennis serve, it is the combined effort of the entire body held together by a strong core that delivers the ultimate result.
4. Adequate mobility. A lot of controversy surrounds the concept of stretching and warming up. While one doesn't ever want to apply a bouncing, dynamic stretch to a cold muscle, a lack of mobility can definitely be a problem for a thrower. So what's a ballplayer to do? Warm up first, stretch after. Some areas to address include:
  - Internal rotation (measured by how high up your back you can reach), which becomes tight as a result of the throwing motion
  - External rotation (imagine a stop motion photo of a pitcher, when their hand is hanging back as they prepare to release the ball), which should be limber but not overstretched
  - Triceps and inferior aspect (stretched by bringing the arm overhead, hand between shoulder blades, and pressing the elbow down and across)
  - Posterior shoulder (bringing the arm across body)

Ask one of Synergy's trainers or physical therapy staff to help you determine which stretches will be most beneficial to you, without overstressing your throwing arm.

For a comprehensive program designed specifically for the throwing arm, talk with your Synergy trainer or a member of our Physical Therapy staff.

## Nutrition to Support Strength and Fitness in Your Fifties and Up

by Frank Wilhelmi

Frank Wilhelmi is my name, and at age 67, senior fitness is my abiding interest – how to stay strong, agile, motivated and disease-free for the rest of my life. I promote strategies for getting into and maintaining excellent health and fitness for life. I pass on what I have learned using my website – [www.seniorfitness.com](http://www.seniorfitness.com) – and became a minor partner in Synergy Performance Health early in January 07. I hope to teach and demonstrate the elements of dynamic health until I fall over dead. The starting point for health and fitness is nutrition, so we'll begin there.

Food provides the basic materials that build and sustain the body. In our prime we can seemingly eat anything and digest, absorb, assimilate and utilize it. But as we age, stomach acid and enzyme production decrease, digestion worsens, absorption and assimilation of nutrients becomes less effective. Mechanisms for getting nutrients into, and waste products out of, our cells slow down. The starting point for any anti-aging effort is to eat all the necessary nutrients and enhance the mechanisms for digestion, absorption and assimilation.

We tend to think of ourselves as the same today as we were yesterday. Nothing could be further from the truth. We are constantly tearing down and rebuilding every organ, cell and DNA molecule. Even our bones are constantly replacing themselves. The material for all this renovation is food. Any deficiency in the needed materials, even short term, and our body will cleverly sacrifice one part to repair another, like scavenging muscle for protein to repair sunburned skin.

So, how should we eat so that we get all the nutrients we need to maximize our health and life span, and avoid functional decline (and pain) as long as possible? Here are some basic principles for obtaining, digesting, absorbing and assimilating all the right nutrients:

Eat a wide variety of real, whole, unprocessed foods. Eat almost nothing that comes in a bag or a box. Science has recently rediscovered that colored fruits and vegetables are loaded with anti-oxidants; the cabbage family of vegetables, for example, is rich in cancer-fighting sulforaphanes. Grass-fed beef is high in omega-3 fats, like fish and fish oils, and actually reduces inflammation. Make baked goods (cakes, crackers, cookies, desserts and white breads) and oil-cooked goodies (all 'chips' and snack things) a rare part of your diet. Drink real water, and give up sugared or diet soft drinks altogether.

Supplement stomach acid and digestive enzymes because their production decreases as we age. Digestion worsens, and

absorption and assimilation of nutrients is less effective. Try taking a capsule of Betaine HCl with Pepsin and a good digestive enzyme formulation with your meals and see how much faster they digest, with no heartburn. Acid indigestion or heartburn are signs that we are producing insufficient hydrochloric acid (HCl) and/or pepsin. It means food is staying in the stomach because it is not digesting. The problem is not too much acid, but too little. The world will have you believe you need antacids or Prilosec to shut down acid production, but those strategies make it virtually impossible to assimilate proteins. With proper sized meals, adequate HCl, and digestive enzymes, you should overcome most digestive issues and improve all bodily functions because nutrients are more available at the cellular level. Some bacteria, such as H-pylori, will bloom to destructive levels unless the stomach is regularly bathed in strong HCl. Frequent use of antacids gives these critters the opportunity to infect the stomach lining and promote ulcers.

Supplement with Probiotics. If you overuse alcohol or take antibiotics, you have likely damaged the bacterial population that should beneficially inhabit your digestive track. These bacteria are an important part of the digestive process, and create certain vitamins and enzymes for us. They play a vital role in our immune function. They inhibit overgrowth of harmful bacteria such as Salmonella and E-coli, fungi and parasites. Periodically taking a wide-spectrum probiotics preparation can replenish this population.

Sensible portion size is a major part of eating right; rarely eat until you're full. Eating five or six small meals a day is essential for fat control and muscle growth. Most people over 40 have a protruding belly; the primary cause is eating three large meals a day. A good gauge to portion size is that your protein serving (meat, fish, fowl or vegetarian) should be about the size of the palm of your hand or smaller. Pair that with an equal-size serving of fibrous, non-starchy vegetables. In-between your three traditional meals eat water-rich fruit or nutrient-dense, oil-rich foods like nuts, avocados and sardines. Five or six small meals a day will reduce blood sugar, shrink your stomach to fit your abdominal cavity without a bulge, prevent muscle loss, and let you shed body-fat easily.

These changes will help keep blood sugar low, inflammation under control and antioxidant levels high, and thereby quell the major causes of aging. Remember, you can find nutritional guidance to answer your specific needs with Synergy's nutrition staff – ask and you shall receive. Much more to come in future articles.

Good Living - Frank