Wayne HealthSports

Rehabilitation & Sports Medicine

Athletic Trainers, Rehabilitation, and Orthopedic Services

Athletes in Action

All photos are courtesy of BlueBag Media.

Upcoming Events

PASP Course

The next PASP Courses will be on
Monday, February 22nd, 2016
from 6:00pm to 8:30pm.

The following PASP Course is
Monday, May 16th, 2016
from 6:00pm to 8:30pm.

Course location
Wayne HealthCare Outpatient
Rehabilitation Center
1111 Sweitzer St.
Greenville, OH 45331

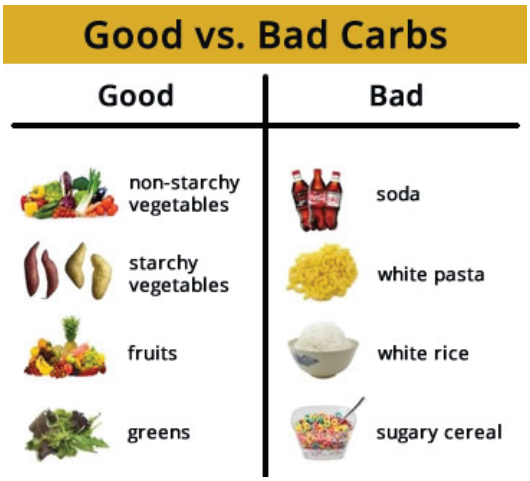
Please call Jim Beyke, PT at
(937) 547-5941 or email
james.beyke@waynehealthcare.org
to register.

Sports Physicals

There will be two sports physical dates in May.

Nutrition for Athletes

When playing sports, there is more than competition and offseason conditioning. To play at your highest level it is also important to sustain healthy nutrition. What you consume on a daily basis affects healing, athletic performance, and the amount of energy you have to perform task. To reach optimal potential, it is important that athletes recognize when and what they should be consuming each day. Also, proper nutrition helps to keep athletes healthy and participating in their sports instead of spending time out of school and out of practices at a doctors office.



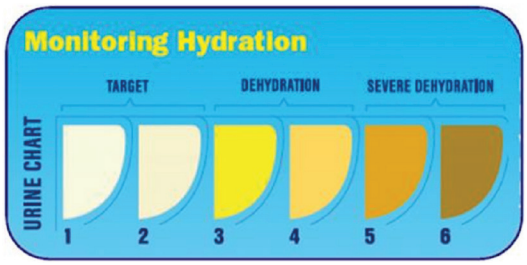
As an athlete, carbohydrates, fats, and proteins are the nutrients that should be eaten on a consistent basis. Carbohydrates are very important in the diet. They are the main energy source and, according to the Institute of Medicine, children and adults should consume 45 to 65 percent of their calorie intake as carbohydrates. For athletes, this should be around 65 percent. Complex carbohydrates come from foods such as spaghetti, potatoes, lasagna, cereals and other grain products. Simple carbohydrates are found in fruits, milk, honey and sugar. During digestion, the body breaks down carbohydrates to glucose and stores it in the muscles as glycogen.

Proteins have many different jobs within the body. The body not only uses proteins for energy, it is also used for building, maintaining and repairing muscle, skin, blood, and other tissues. The recommended protein intake for athletes or physically active people is 12% to 20% of the total calories consumed (Paul 1989). It is essential for endurance athletes to ingest about 0.5 to 0.6 grams of protein per pound of body weight daily. However, 0.6 to 0.7 grams per pound is beneficial for strength athletes. Conversely, too much protein may be harmful to the body. Excessive amounts of protein in the diet may put stress on the kidneys and liver as they try to disassemble and remove extra protein. Sources of protein include meat, poultry, fish, dairy, eggs, soy, nuts, grains, fruits, and vegetables.

The final major nutrient in the body is fat. About half of the total energy expenditure is derived from free fatty acid metabolism during moderate exercise. Using fat as fuel for the body depends on the event's duration and the athlete's condition. Fit athletes use fat for energy quicker than untrained athletes. Fats should make up around 20 to 35 percent of your calories. Restricting fat into the body can hinder performance. Fat may contribute as much as 75 percent of the energy demand during prolonged aerobic work in the endurance athlete. Bad fats increase cholesterol and your risk of certain diseases, while good fats protect your heart and support overall health.

Nutrition for Athletes

Vitamins and minerals also play a very important role with the athlete's body. In the diet of athletes, calcium, vitamin D, the B vitamins, iron, zinc, magnesium, as well as, vitamins C and E, β-carotene, and selenium are usually of the most concern. Many vitamins contribute in the building and repair of muscle tissue, energy production, production of red blood cells, and protein synthesis. Fruits and vegetables are particularly high in vitamins. In addition, minerals influence calcium absorption, regulate phosphorus levels, promote bone health, and protect cell membranes from oxidative damage. Athletes should get enough vitamins and minerals in their body as long as they eat well balanced meals daily. However, there are times when extra consumption is recommended. Teenagers should increase iron and calcium ingestion in times of rapid growth. For endurance athletes, iron, vitamins B, C and E Increases losses through physical demands on the body. When recovering from illness or surgery, Zinc and vitamin C is important for wound-healing and fighting infection.



Hydration is also a major influence in the health of athletes. It is recommended to drink two to three cups of water for each pound lost during exercise. When not training, take your weight in pounds and divide that number in half. This gives you the approximate number of ounces you should drink each day. Water can help control calories, help energize muscles, keep skin looking good, maintain normal bowel function, and assist with kidney function. During training and competition avoid products that contain caffeine such as pop, coffee, and tea. These substances actually contribute to dehydration.

Teenagers are into the fad of energy drinks. These drinks are especially dangerous for athletes to consume because of the high amounts of caffeine that they include which can severely dehydrate athletes. Other main ingredients in energy drinks like caffeine have an affect on the body that causes your heart rate to increase significantly. Athletes are already increasing their heart rates during exercise so further increase could be potentially harmful to them.

It is important to plan meals around moderate or intense exercise. Eating well before an event ensures you have energy to perform at your best, while a good post-workout meal helps you recover. It is recommended to eat 3 or 4 hours before workouts and games for optimal digestion to occur. It has been suggested that the small meals consist carbs and protein and are about 500 to 1,000 calories. Some options include breads, cold cereal, pasta, fruits and vegetables.

After workouts and competition it is beneficial to consume a small meal within thirty minutes. A meal consisting of good carbohydrates, protein, and fats is the most valuable. Such foods include peanut butter, chocolate milk, fish, fruits and vegetables, Greek yogurt and eggs. A peanut butter sandwich is something easy and self stable for high school athletes to throw in their gym bag in the morning to consume after school or right after practice.

Supplements

When thinking of sports and fueling our body for competition, nutrition becomes a major part of our performance. Many individuals look to supplements to try and gain that competitive edge. The conversation of supplements and their effectiveness can be a very touchy subject amongst specialists in medical and exercise professions. This article is not aimed to persuade individuals, but is meant to educate parents and athletes before making their decision prior to purchasing or not purchasing certain products. By definition, a supplement is taken orally and contains at least one dietary ingredient. These ingredients include vitamins, minerals, herbs, botanicals or amino acids. Unlike prescription and over-the-counter drugs, supplements are not required to meet FDA standards for efficacy, potency or safety before going to market. The FDA can only remove a dietary supplement after the FDA has proven that the supplement is unsafe or does not work as intended. Since there is a vast amount of supplements on the market and the research needed for proof, it takes a great deal of time and money for the FDA to remove dietary supplements from the market.

As a consumer it is very important to research the labels of these products. These products often consist of fillers, binders and flavoring. In addition to this, several studies have shown unintentional contaminants such as pesticides, heavy metal, traces of mercury, and nuts in the product. A study by the International Olympic Committee found that 18.8 percent of the 245 supplements analyzed from the United States were found positive for designer steroids. It is important to remember that supple-ments may interact with medications or pose a risk for individuals who are going to have surgery. Never substitute dietary supplements for medication and always tell your health care providers which supplements you may or may not be taking. Just remember more isn't always better and you can always ask questions. It is generally suggested that you stop taking supplements during the sports season due to products affecting hydration levels. When it comes to getting the appropriate amount of nutrients for the general population and athletes, most can get all they need from a good diet. There is a really good book about nutrients and guidelines to optimize dietary intake for sports competitors, you can access it at the following website.

http://www.usada.org/wp-content/uploads/optimal_dietary_intake_nutrition_guide.pdf

There hasn't been a lot of research on the benefits and harms of certain products. However, with some recent studies, products that individuals consumed in the past have now been banned by the FDA due to harming the body. So before you decide to take any supplement, ask yourself:

1. Do I need this supplement?
2. Do I know that this supplement is safe?
3. Does this supplement interact with any drug or food I am consuming?
4. Does this supplement works?
5. How may this supplement affect my body in the future?

Supplements

Even the best supplements are no substitute for good nutrition. However, According to the Harvard School of Public Health, there are situations where extra nutrients may be needed for the body. These individuals include:

- Women of childbearing age (need extra calcium and iron)
- Pregnant or lactating women
- Children and teenagers with irregular eating habits
- Senior citizens
- Vegetarians or vegans (may be deficient in key nutrients)
- Dieters or people avoiding certain food groups (may be deficient in key nutrients)
- People with eating disorders or medical conditions (deficiency diseases, absorption problems, lactose intolerance, etc.)
- People who often eat processed and fast food

When taking any supplement, whether you are taking it for your general health or to attempt to gain a competitive edge, always do your research. There are several websites for the consumer to take advantage of when making the decision.

The Dietary Supplement Label Database allows individuals to search products to gain knowledge on a product information, supplement facts, and label statements. You can access database at the following link: **http://www.dsld.nlm.nih.gov/dsld/**

The following website allows you to look up specific drug information.
http://www.mayoclinic.org/drugs-supplements

Finally, if you have any further questions about dietary supplements you can retrieve answers at:
http://www.fda.gov/Food/DietarySupplements/UsingDietarySupplements/ucm480069.htm

Youth Resistance Training

Early participation in resistance and strength training and activities has been a controversial subject within the healthcare community. The benefits and drawbacks of strength training in childhood and early adolescence remain a topic of debate between those who believe that it develops muscular strength, endurance, and coordination, and those who believe that it is potentially dangerous and poses unnecessary injury risk to bony growth plates. In actuality, a resistance training program that is appropriately designed and supervised can provide a safe and effective method of training for children and adolescents that are mature enough to follow directions.

There is an increasing number of children and adolescents participating in various sports every year. Many of these sports are extremely physically demanding and require extensive biomechanical coordination throughout the body in order to be successful. In many instances, these athletic activities would be challenging for fully developed, orthopedically mature adults. For children and adolescents who may be participating in competitive sports for the first time, these types of activities can be exponentially more challenging from a physical standpoint. One of the most effective ways to adequately prepare a child's body for the physical challenges that accompany most sports is to teach their body to adapt to the increasing stresses that are placed on it within the controlled confines of a resistance training program.

Before discussing the specifics of a youth strength training program, it is first important to note that coaches, parents, and athletes must always keep in mind the fact that a youth athlete is not simply a smaller version of their adult counterparts. The body of a child is much different from an orthopedic and physiological perspective and has particular limitations that must be understood and taken into consideration when developing a resistance training regimen for this age group. The bones, muscles, tendons, and ligaments of a child are generally going to be less mature than those of an adult and for most children, any resistance training that they participate in could be the first time they've ever performed those types of activities. Most strength training programs that are adult-specific will be inappropriate for use with a young population because the intensity and volume of activities will be too great and the recovery periods will be insufficient for a child's needs.

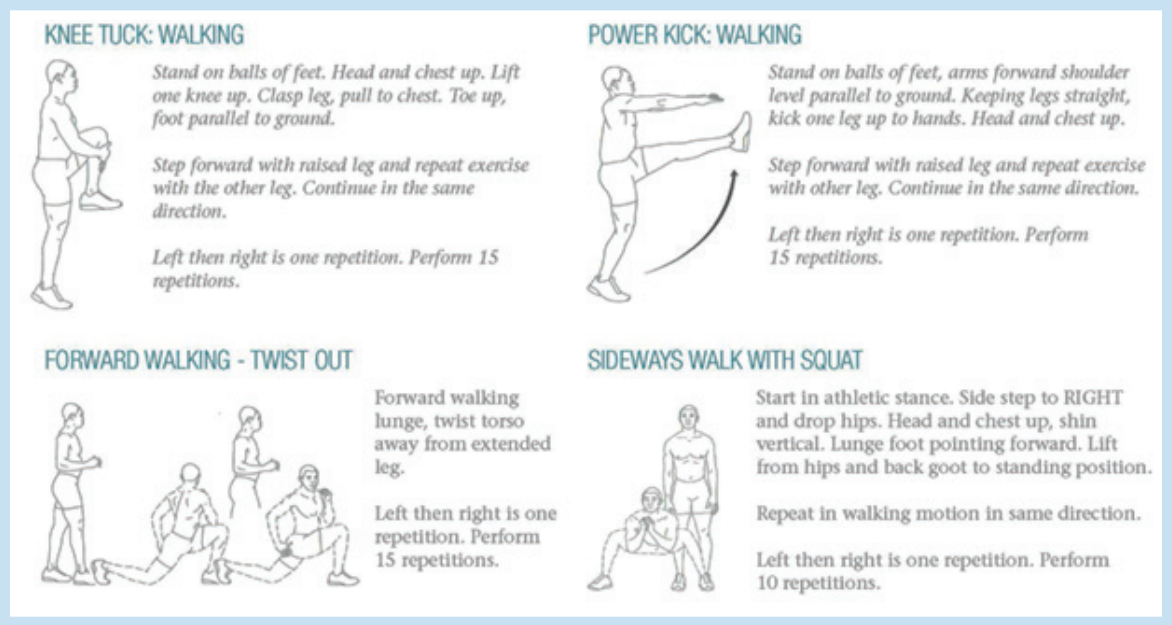
One of the greatest potential benefits of a youth resistance training program within the realm of athletics is the significantly reduced risk of injury that is often associated with off-season and pre-season strength training regimens. The better prepared a young athlete's body is before beginning a sport, the less likely they are to sustain injuries during the season. Resistance training can be especially beneficial in the prevention of overuse injuries in young populations. If the muscles within an athlete's body are trained to possess greater strength, power, endurance, and coordination prior to the start of sports activities, they are less likely to struggle with the increased workload that accompanies practices and games. Another obvious benefit that will almost always accompany a youth resistance training program is an increase in athletic performance. This improvement cannot be solely contributed to the resistance program because most athletes will naturally improve in their particular sport the longer they participate and the older they get.

Appropriately designed and supervised youth resistance programs generally present a significantly reduced risk of injury compared to most other athletic activities that children and adolescents participate in. In reality, the stresses that are placed on orthopedic structures during most sports are potentially far greater that those placed on the body during strength training. Traditionally, the most

common injury concern during a youth resistance program has been epiphyseal, or growth plate fractures. Studies have shown, however, if children are shown the proper way to resistance train and are properly supervised, the risk of this type of injury is very minimal.

A safe and healthy youth resistance training program should be utilized as one part of a well-rounded exercise regimen that focuses on a variety of fitness goals. Focusing too heavily on strength training alone can be detrimental to a young athlete's athletic progress as well as their physical development. Although there is not a consensus minimum age at which it is appropriate to begin a youth resistance program, children should have the ability to follow directions and should possess an enthusiasm about beginning this type of a program. If a child is not socially and emotionally mature enough to follow the directions of a coach, then they will probably not gain a great deal from the addition of resistance training to their overall fitness regimen. A child will be much less likely to follow through with a full strength program if they have to be pushed into by parents or coaches and they don't have a genuine interest in the program and its potential benefits. It is vitally important to properly educate children and adolescents about all factors involved in a resistance training program before they begin. This can include factors such as why the program can be beneficial for them, changes that they may experience through the duration of the program (ex. physically, mentally, emotionally), the realistic expectations they can have for the overall results of the program, and any potential red flags that they should be looking for so they can alert coaches and parents in the event of a possible injury.

There are some general guidelines to keep in mind when developing an appropriate youth resistance program. The program should always include a proper warmup and cooldown routine to help reduce the risk of injury and increase flexibility. A good warmup routine should include a variety of dynamic exercises and stretches designed to increase the body's core temperature, increase the elasticity of the muscles, activate both primary muscle movers as well as the secondary stabilizing muscles, and generally prepare the child's body for the increased stresses that will be placed on it. Figure 1 shows only a small sample of the possible drills that could be included in a dynamic warmup.



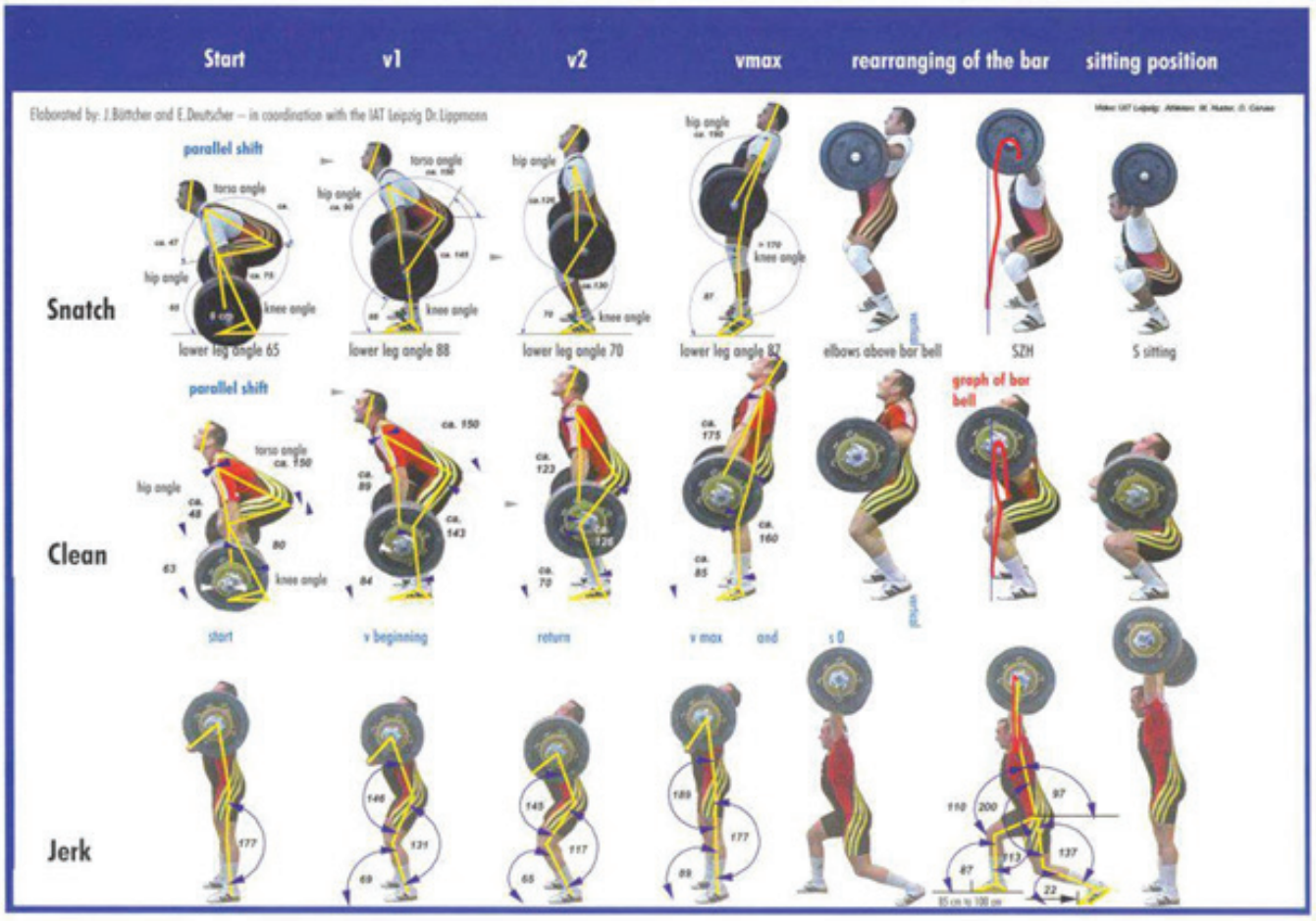
Youth Resistance Training

An appropriate cool down routine will generally include light aerobic activities for 10-15 minutes followed soon after by static stretching for the major muscles groups. Lactic acid will build up within the muscles during the short duration, primarily anaerobic exercises that are the primary focus of most resistance training programs. The aerobic exercise will help to reinvigorate the muscles with oxygenated blood and facilitate the removal of lactic acid out of the fatigued muscles to improve recovery. Static stretching for the major muscle groups should be performed as soon as possible after the aerobic activities while the muscles are still warm in order to ensure maximum efficacy. The stretches should include, but are not limited to, muscle groups such as the biceps, triceps, pectorals, trapezius, hamstrings, quadriceps, and calves. The stretches should be performed for 5-6 sets and each stretch should be held for a count of 15-20 seconds.

As mentioned earlier, it is very important to constantly supervise the child throughout the resistance program and monitor their response to each exercise. Quality communication is the key for ensuring that they are tolerating the program well from a physical and mental perspective. The program should begin light loads for each exercise relative to the child's age and development. An honest assessment of the child's overall fitness level should be conducted before beginning to aide in establishing an appropriate starting weight for the exercises they will be performing. It is far better to err on the side of caution and begin with lighter weights than what they are fully capable of exercising with than to start with heavier weights and risk injury. Throughout the program, it will be possible and appropriate to gradually increase the weight utilized for each exercise as the child gets stronger, however, these increases should be made in increments no greater than 5-10%.

The specific exercises used in the strength training program will depend heavily on the fitness needs and goals of the child relative to their sport or other chosen activities. A general recommendation for training volume for most youth strength training activities is to perform 1-3 sets of 6-15 repetitions for each exercise. An appropriate recommendation for training frequency is no more than 2-3 nonconsecutive days per week. The program should include a good mix of single- and multi-joint exercises and each training session should be varied to a small extent. The overall routine for each training session should stay very similar from day to day to allow the child to get accustomed to the routine and make compliance to the program and the following of directions easier for them. It is important to add new and different exercises to the program as the child progresses in order to keep the program from getting stale or boring for them. The child should be taught all exercises thoroughly and the instructor or coach should perform the exercise for the child multiple times as an example of proper form to ensure full understanding. With all exercises, especially advanced multi-joint exercises (ex. snatch, clean, and jerk in Figure 2), it is vital that appropriate weights are utilized and close attention is always paid to proper form. To ensure the child's safety during heavier lifts and new exercises, an adult spotter should always be present if the child is unable to complete a repetition.

Youth Resistance Training



A resistance training program can be a healthy and beneficial addition to any child's natural development and athletic progression. When incorporated appropriately, a strength program can effectively increase a child's muscular strength, power, endurance, and coordination as well as improve their performance in a variety of sports. There is a multitude of resources available online for coaches and parents looking for ideas for potential exercises to include within a child's training regimen, but it important to distinguish between reputable and non-reputable information. As long as a website is from a well-respected source within the health and wellness community it is probably just fine to incorporate that information into the program, but if there are any questions or concerns they can most often be effectively addressed by a certified athletic trainer or a certified strength and conditioning professional.

Power lifting

Power lifting is a sport that has recently grown in popularity, but has been around for many decades. Many people have seen some variations of the sport through televised events such as the World's Strongest Man. The sport took off in the 1970's with American Larry Pacifico and Bill Kazmaier leading the way. Also, with the growth of football in America it has lead to an increase in strength training in high schools across America. This has lead many kids who are training for football to enter power lifting competitions while in high school during off seasons. The highest level of power lifting is referred to as Elite which ranks you in the top 1% in the sport. You can begin competing at age 15 in the sub junior category and continue to compete all the way up to the Masters 4 category that includes 70 and older.

The sport compromises of three lifts which are the bench press, squat, and deadlift. The athlete gets three attempts to lift as much as they can in three lifts to try and total as many pounds or kilograms as possible. Power lifting is broken up by gender and weight classes as well as equipped or raw lifting. The use of equipment comes in forms of a bench shirt and squat or deadlift suit. The equipment comes in different thicknesses known as single ply or multi ply. These suits and shirts are designed to aid the athlete in lifting more weight as well as giving them some sort of protection while doing so. Raw power lifting can vary slightly based on the competitions and rules, but most require the athlete lift with no wraps or sleeves on any joints or extremities. The sport is judged during each lift where the athlete must follow all rules in regards to depth of the lift as well as holding the weight after the lift until the judge allows them to rack it. Any violation of the rules during the lift will disqualify the attempt.



Contact Info

For more information about Wayne HealthSports or Wayne HealthCare Outpatient Rehabilitation, please contact Jim Beyke at james.beyke@waynehealthcare.org or (937) 547-5714.

Visit us online at www.waynehealthcare.org.

Meet Our New Director of Emergency Services

Lindsey Terrace RN, BSN

Hello!

My name is Lindsey Terrace and I am the new director of Emergency Services and CDU at Wayne HealthCare. I was actually born at Wayne Hospital and delivered by Dr. James E. Appleman. A majority of my life has been spent in Darke County. My parents were also born and raised in Darke County and farm in various communities. I have attended Pleasant View Missionary Church most of my life. While in high school, I was a candy striper here at the Wayne HealthCare. It was a great program and helped to "open my eyes" to the medical field. I graduated from Arcanum High School in 2002 and then started to pursue my childhood dream of becoming a nurse at Indiana University East.

When asked why I chose nursing, my response was simple. I am a people person; I love children, and helping others. My grandmother was a Nursing Aide at Wayne HealthCare in the 1960s and my aunt was a nurse at Reid Hospital in Richmond. I was inspired by each of them to become a nurse. I knew in kindergarten I was going to be a nurse when I grew up! My mother has it documented in a book and the same career field was repetitive every year until my dream came true.

While obtaining my Bachelor of Science in Nursing from IUE, I was employed at Dayton Children's Hospital as a patient care tech in the Emergency Department. My love for children inspired me to become a pediatric nurse. Following completion of my nursing program I became a registered nurse in the Soin Pediatric Trauma and Emergency Department. While at Children's, I practiced not only as an ED nurse, but also a trauma nurse leader and mobile intensive care nurse. I was able to impact many different "little" lives while working at Dayton Children's.

I started as the Director of the Emergency Services and CDU at Wayne HealthCare in July 2015. Since then I have continued to stay busy, learn the importance of my new role and get to know my staff. In my spare time I spend time with my 5 year old son, Aiden. He is very active and keeps mommy very busy. Aiden likes that mommy's "new work" is close to home. We enjoy the outdoors; boating, swimming, going to the lake and beach. He enjoys basketball and baseball, so I anticipate my future will be spent at sporting events. We spend a lot of time with our family and friends.

It is nice to be able to come back "home" to serve my friends, family, and the community in which I was raised. I look forward to working with the ED staff to improve your patient experience in our local Emergency Department.