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In Motion

A PUBLICATION OF THE AMERICAN ORTHOPAEDIC SOCIETY FOR SPORTS MEDICINE

WINTER 2013

Provided in Conjunction with Town Center Orthopaedic Associates, P.C.

Even Just Minimal Exercise Can Make a Big Health Impact

By John D. Kelly IV, MD

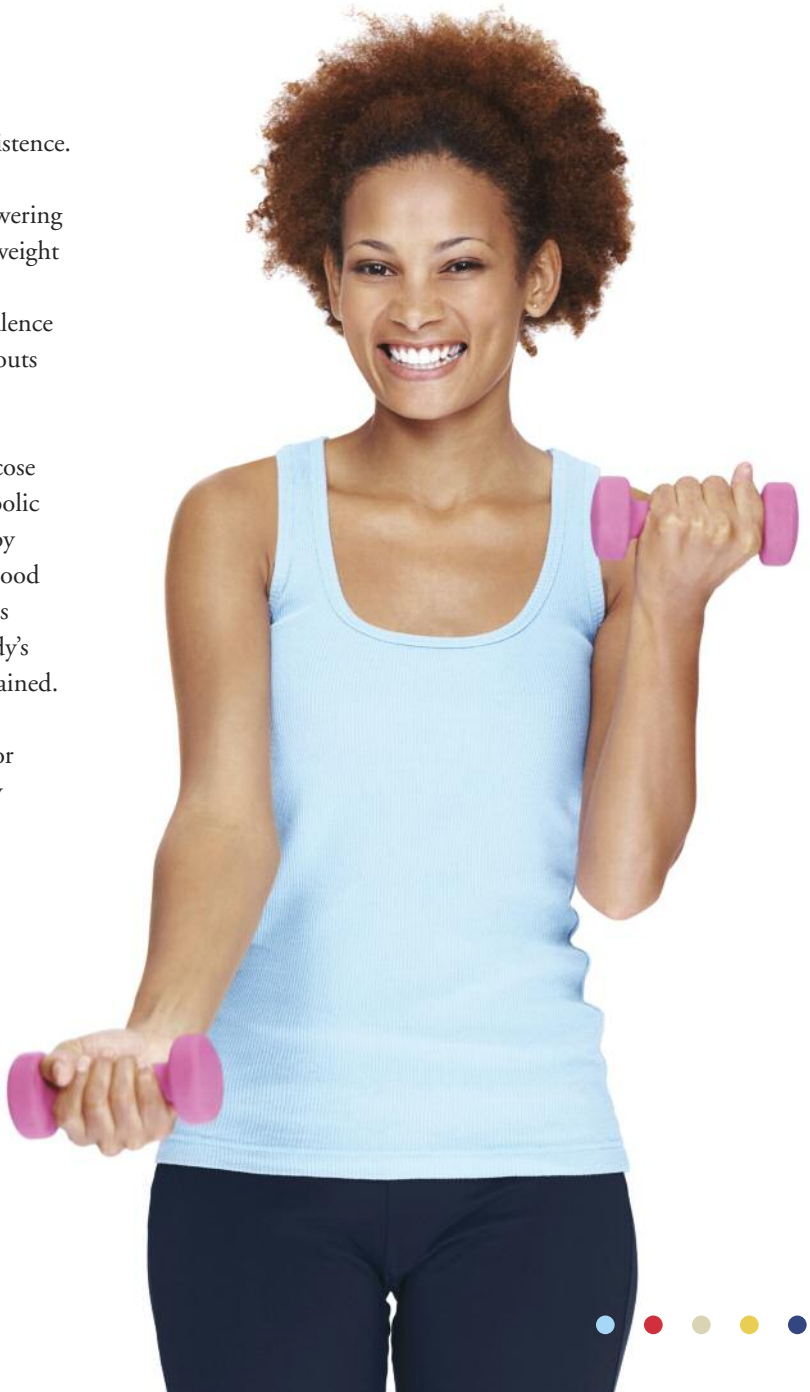
Exercise is perhaps the closest thing to a miracle drug in existence. The benefits of exercise are numerous and include easing depression, lessening heart disease and cancer risk, and even lowering infection risk. Especially important is the effect of exercise on weight loss and on regulation of blood sugar. Obesity and diabetes are perhaps the leading two health threats to Americans with prevalence rates of both conditions skyrocketing. Thankfully even small bouts of exercise can keep pounds off and greatly lessen diabetes risk.

Both aerobic (e.g., jogging, cycling) and anaerobic (e.g., weightlifting) exercise can increase the body's utilization of glucose and increase insulin sensitivity. A well-known condition, metabolic syndrome, is considered a prediabetic condition characterized by insulin resistance, central obesity, hypertension, and elevated blood lipids. Exercise, if instituted early and regularly, may reverse this condition. Both aerobic and anaerobic exercise increase the body's metabolism several hours *after* exercise and lean body mass is gained.

The cumulative weekly length of exercise seems to be most important, with 90 minutes minimum serving as a threshold for substantive positive health effects. That is, those with very busy lifestyles can accrue more minutes on weekends and still reap significant benefits.

Most patients will respond well to the habit of two aerobic and two anaerobic workouts per week, each consisting of approximately 30 minutes. Small changes in lifestyle, such as taking the stairs, walking at lunchtime, and even calisthenics when a free moment arises, will translate to significant health dividends.

Get moving—your life depends upon it!



Safe Off-Season Conditioning Creates Future Wins

By Lance LeClare, MD

Each year, millions of children and adolescents participate in organized sports in the U.S. But after the season comes to a close, many athletes use the off-season to improve fitness, increase strength, and address areas of their game that need improvement. Although many off-season conditioning programs involve sports specific drills and exercises, there are several principles to keep in mind when designing any off-season conditioning program. Adhering to these principles can keep your child safe and healthy and may actually reduce the risk of injury once the season begins again.

According to the American Academy of Orthopaedic Surgeons, 3.4 million youth athletes aged 14 years or younger are treated for sports injuries annually in the United States.[1] Of these injuries, the vast majority are soft tissue bruises, sprains, and strains. Many of these injuries occur at the beginning of the season and athletes who have not maintained fitness and activity levels in the off-season may be more at risk. A recent study that reviewed more than 150 clinical papers concluded that preseason condition and education programs are essential for preventing injuries in youth athletes.[2]

Off-season conditioning programs may differ by sport and skill level. But there are key components to any successful conditioning program. First and foremost, an off-season program should include adequate time for rest. This is important from not only from a physical standpoint, but a mental standpoint as well. Providing athletes with adequate time away from sports and conditioning can help prevent burnout.

When designing an off-season program, always practice the 10 percent rule.[3] The 10 percent rule states that increases in mileage, training time, weights lifted, or overall activity should not be increased by more than 10 percent from one week to the next. The overall design of any program should include gradual increases in activity and intensity from week to week, with the peak coming just before the season.

Many experts recommend specific phases to off-season conditioning programs. Initial efforts should focus on core strength and balance.[4] Once these aspects are optimized, the focus should turn to cardiovascular fitness and endurance. Strength training then follows, and the program should conclude with sport-specific drills. Ideally these drills will address specific weaknesses that the athlete may have in their sport. Seeking advice and feedback from the coach can be invaluable when designing this component of the program.

A well-designed off-season conditioning and strengthening program should have a balance of gradually increasing intensity but appropriate rest. An effective off-season program will help prevent overuse injuries, muscle strains, and tendonitis injuries that are so common at the outset of a new athletic season. Consult your local strength and conditioning expert and work with your coach to design a program that can get you ready for your best season yet!

For more information on how to prevent youth sports injuries visit www.STOPSportsInjuries.org.

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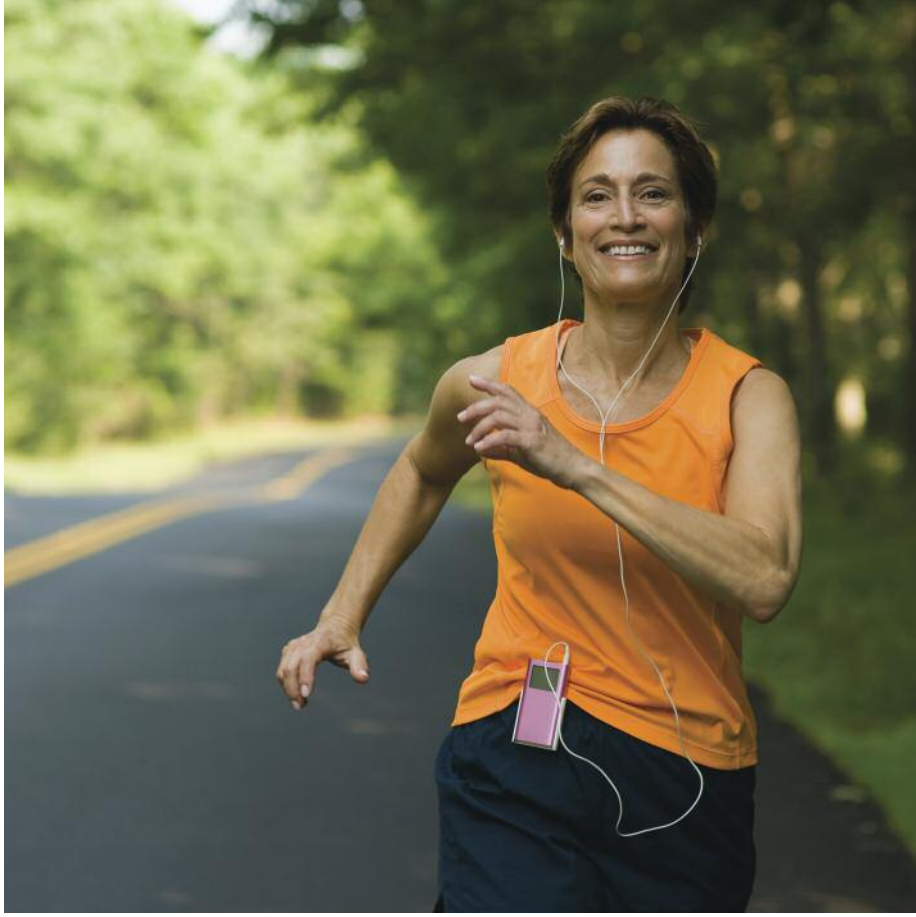
10% rule

When designing an off-season program, always practice the 10% rule—activity should not be increased by more than 10% from one week to the next.

Don't Overdo the Ibuprofen

by Robert Gallo, MD



Non-steroidal anti-inflammatory drugs (NSAIDs), a class that includes naproxen (Aleve), ibuprofen (Motrin, Advil), celecoxib (Celebrex), and diclofenac (Voltaren) among others, are the most commonly used medications among active adults. While many NSAIDs are available over-the-counter, these medications are not completely benign, especially when taken beyond recommended dosages.

NSAIDs work by limiting the body's ability to produce prostaglandins, chemicals important in the body's ability to mount an inflammatory response. While this characteristic makes NSAIDs popular in treatment of pain due to both acute injuries and chronic conditions, such as osteoarthritis, prostaglandins have important roles in maintaining proper gastrointestinal, renal, and cardiovascular function. NSAID use has been linked to increased risk of ulcers, kidney failure, and heart attacks and is responsible for nearly 30 percent of all hospital admissions due to drug-related adverse events.[3]

Stomach upset is the most common side effect from NSAIDs and ranges in severity from mild to severe. One study reported an eight percent incidence of peptic ulcers,[1] while another revealed that those taking NSAIDs have a 1.3 percent chance of hospitalization due to severe gastrointestinal complications.[4]

Kidney issues associated with an increased use of NSAIDs often result from a decrease of blood flow to the kidney caused by loss of prostaglandins. This effect appears to be dose-dependent and more detrimental in those with underlying heart, liver, and kidney disease and in chronic NSAID users. In order to prevent irreversible kidney damage, routine blood work to monitor kidney function should be considered in those taking NSAIDs chronically.

NSAID use has recently also been linked to an increased risk of heart attacks. While the relative risk is much lower than stomach issues, cardiovascular toxicity remains a major safety concern and caused the withdrawal of several NSAIDs from the market. However, naproxen and low-dose ibuprofen have been demonstrated to have the least side-effects among NSAIDs.[2]

Despite these shortcomings, NSAIDs remain effective pain relief for the treatment of arthritis and many other common athletic ailments. To limit potential complications, avoid exceeding maximum recommended dosages and consider discussion with a physician if using an NSAID consistently for longer than six weeks.

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About AOSSM and *In Motion*

As a world leader in sports medicine education, the American Orthopaedic Society for Sports Medicine (AOSSM), we have designed the publication to highlight relevant information for multiple age groups from exercise and rehabilitation to nutrition and psychology.

This important educational tool is published quarterly and distributed electronically.

AOSSM members can add their practice name and logo to *In Motion*. Personalizing *In Motion* is an easy way to get pertinent, patient-friendly sports medicine information to your patients with just a click of a mouse. For more information, please e-mail Lisa Weisenberger at lisa@aossm.org or contact the Society at 847/292-4900.

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Stay Safe Riding in Winter Terrain

By Lance LeClare, MD

As winter approaches, the preparation and excitement for winter sports begins to build. While fun and exhilarating, snowmobiling can also be dangerous if proper safety procedures and precautions are not followed. In 2006, the U.S. Consumer Product Safety Commission attributed 127,643 injuries to snowmobiling.[2] A large percentage of these injuries include concussions and fractures.

Before You Ride

- **Take a safety course**
  A safety course often includes classroom and field training for you and your children, and in many states are required for youths and underage drivers.
- **Plan your route**
  Become familiar with local terrain, landmarks, fence lines, and hazards before you go out. Additionally, check the local forecast for potential temperature drops and updates on current avalanche risks.

- **Check your equipment**
  Ensure that all lights work properly, test your brakes, and check that you have adequate fuel. Packing an emergency kit is also essential and should include, a tool kit, a knife, spark plugs, drive belt, first aid kit, rope, waterproof matches, a flashlight, and an extra ignition key.[3]

Staying Safe While on the Road

Once you've gone through all of your safety checks, it's time to hit the trails! During your ride, there are several things to keep in mind that will help you stay safe:

- Wear proper equipment—an approved helmet is required at all times.
- Layer your clothing and have an outer layer that is water and windproof to stay warm
- Wear gloves that keep your hands warm but allow for safe operation of the controls
- Wear goggles or another form of eye protection
- Avoid loose clothing or scarves since they can get caught in moving parts of the machine or passing brush or branches
- Travel at safe speeds and obey local rules and trail signs
- Never go out alone and always be courteous to other drivers
- Use appropriate hand signals and stay alert while practicing defensive driving

For more information on snowmobile safety, check out AOSSM's tip sheet on snow sport helmet safety in the patient section at www.sportsmed.org.

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