



**STADION**® news  
Training Info for Serious Athletes

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## What's Different about Stadion Publications?

by Thomas Kurz

*I just have received an e-mail from one of our customers, and it got me thinking about what sets our publications apart from others'. The e-mail is about our video on self-defense, but the observations apply to our other publications. Here are excerpts from the e-mail.*

"I reviewed several times your tape, *Basic Instincts of Self-Defense*.

"Your selection of techniques and the graded advancement from armlocks to clinch and throws, from defenses against grabs and holds to defenses against punches and kicks, are fantastic. [Your] methodology and explanation, simplicity and practical approach [are] what I like about this tape.

"My experience in some other systems [is all the more reason for] me to highly value your tape. I decided to include your basic [approach] in our training. It is an excellent link between Aikido techniques and practical self-defense."

*[A few days later . . .]*

"Techniques are well-accepted. Having formulated our aikido self-defense program,

we had to discard many of the aikido techniques that are too complicated or impossible to be done in a real self-defense situation. We have based our self-defense program on Tomiki Aikido (17 techniques) + techniques of clinching from Brazilian Jiu-Jitsu and Vale Tudo + ground fighting, so your tape *Basic Instincts of Self-Defense* fits excellently with our program.

"Also your order of techniques [of defenses ending with:]

—armlocks;

—throwing the opponent onto his back; [and]

—throwing the opponent to his front

is not only excellent systematization, but it is also a great teaching model in gradually introducing techniques as the student advances.

"Thank you for an excellent tape."

Ragib Karamehmedovic

Aikido and self-defense instructor

Sarajevo, Bosnia

[www.ak-osnivac.co.ba](http://www.ak-osnivac.co.ba)

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## Learn 500+ Exercises for Speed, Strength, Power, Agility, and Flexibility

We have imported a new book by Andrzej Lasocki, the long jump and triple jump coach of Poland's Olympic Track and Field Team. The book is titled *The World Atlas of Exercises for Track and Field*. Despite its title this atlas will be useful for coaches and athletes of other sports besides track and field.

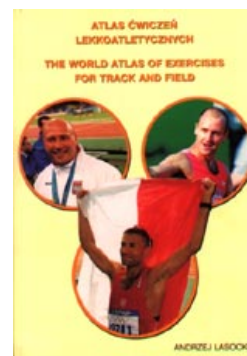
You will find in this book more than 500 exercises for developing running speed, starting speed, jumping ability, and upper body power, strength, endurance, flexibility, and agility.

The exercises include bodyweight calisthenics, exercises with partners, with medicine balls, with dumbbells, weighted belts, wrist weights, ankle weights, sandbags, and barbells. Included are gymnastic exercises, among others those involving handstands, flips, and somersaults.

Each exercise and each drill is explained and shown as a drawing. Many exercises are arranged in teaching progressions.

This book has 162 pages and more than 550 drawings. The text is written in English and Polish. To order this book visit our

Web site ([www.stadion.com](http://www.stadion.com)) or use the order form on page four.



## What's Different?

(continued from page 1)

So, what differentiates our publications from others'?

As a publisher, I have not set out to do books and videos showing winning sports techniques and how to do exercises for this or that. There are plenty of such publications already and there will be plenty more. Our publications stress methods of training—giving you the knowledge of how to select exercises for your individual needs and when to do them. This goes for both the conditioning exercises and for the sequences of teaching drills.

For teaching sequences, take the video *Power High Kicks with No Warm-Up!*, for example. On *Power High Kicks* techniques (kicks) are taught in such a succession that each next kick to be learned builds on the elements of the previous one—each teaching sequence adds a move to what was already learned, or changes a known move. Presentation of each kick includes drills for instilling the correct form and preventing errors. These drills also flow in sequence. This model of teaching the techniques applies to any sport or martial art.

I and other Stadion authors have been educated in a system of preparing coaches and p.e. teachers that stressed methods of teaching and of training and knowing which approach to choose for a given athlete in a given situation. In every sport we were required to learn, we had to know various teaching sequences for any skill so we could use them in various circumstances, taking into account the athlete's limitations and available equipment.

To teach efficiently takes more than demonstrating how a good technique looks and telling what makes it work. An instructor has to know how to help a student learn quickly, correctly, and permanently. This gave me an idea—to videotape the teaching sequences of some skills as I and my friends demonstrate them and offer such videos to our customers. If we actually do such videos, they would be taped most likely during workouts. These videos would show you how complex skills are built one exercise at a time and how these exercises flow from one to the next within a workout. I'm interested in your reaction to this proposed set of videos. Let me know what you think about the idea.

## The Pregame Meal

by Thomas Kurz

*Here is another e-mail, this with a question on what and when to eat before a ring fight.*

"I have been following your methods for flexibility and sequences of exercises and the advice you have given on nutrition [in the *Science of Sports Training*] and have had fantastic results. I fought my first novice fight in Muay Thai [Thai kickboxing] at 75 kg in March and next week I will fight my second fight at 67 kg. I am fitter, stronger, faster, and more flexible.

"Regarding diet, I have given up sugar and caffeine and cut back on starchy carbohydrate while training for this fight.

"I am wondering if I will get any benefit taking some chocolate after I weigh in and maybe a cup of coffee. Will it boost my energy reserves? Or should I stick to water and some complex carbs such as vegetables, fruit and some oats for a slow, balanced release of energy? Should I consume some protein and fat before the fight also?

"I am thinking that I should consume whatever I consume 2 hours before the fight to absorb the benefits of the food.

"Once again thanks for all the help, I am still a beginner but one who has seen great progress thanks to your methods. Your methods are nothing short of revolutionary."

**Answer:** The most important principle for prefight meals is "Nothing new before the fight." Eat foods that agree with you, that you usually eat prior to your hard workout, and give yourself similar time to digest the food as you do before such a workout. This should answer your question on consuming protein and fat as well as on the type of carbohydrates in your prefight meal.

Since you may be somewhat nervous or excited before the fight, and your guts may be irritable, I think that raw fruits are not the best choice.

Caffeine does not "boost energy reserves"—it only makes them more accessible. I would not recommend chocolate or coffee—unless you have good experience with them. Coffee can make you jittery. Chocolate with its caffeine is a picker-upper too, but because of high sugar content, it can make your blood sugar go up and then drop down below the normal level. It can also upset your intestines. A better choice is black or green tea (without sugar,

of course) if you like it and know how to make it. Tea has many benefits for athletes—it protects from free radicals (training produces a lot of these), improves the function of your immune system, and prevents depositing of plaque in the arteries.

Tea improves alertness and reaction time like coffee but without the jitters, and its effects last longer and the downsides are milder. (I speak of freshly made hot tea, not that ready-made iced perversion.) But whatever you drink, test it long before the fight day.

If you feel a caffeinated drink (coffee or tea) helps your performance, then keep in mind that such drinks dehydrate (are diuretic) and may interfere with restful nightly sleep. (More information on caffeine is in *Stadion News* Fall 2001, and on sleep in *Stadion News* of Fall 2002.)

You need deep sleep at night for recovery between workouts and you cannot afford being dehydrated in the ring.

Frequent drinking of coffee or tea can make you chronically dehydrated. To counter this you can drink water with a high concentration of electrolytes (sodium, potassium, and magnesium) because it is well retained by the cells of your body. Perhaps such water could be in your cornerman's bottle. (Electrolyte concentrate is available from [www.elytesport.com](http://www.elytesport.com).)

The effects of tea or coffee on sleep depend on how fast your body metabolizes caffeine and other alkaloids that are in tea, and that depends both on how well hydrated you are and how well your liver functions. If your liver is overwhelmed by byproducts of hard training, or bad food and alcohol, or if it does not get the nutrients it needs to function well, then one cup of coffee or tea in midafternoon may mess up your sleep.

To maximize the ergogenic (effort-helping) effects of caffeine, you should abstain from it for about four days.

Let us know what you think about our newsletter. Have you learned something that improved your or your athletes' performance or health? What would you like to learn more about? Write to us at our address: Stadion Publishing Company, Inc., P.O. Box 447-N, Island Pond, VT 05846, U.S.A. e-mail: [news@stadion.com](mailto:news@stadion.com)

## Endogenous pain control during exercise

by Piotr Drabik

When an individual stops or drastically reduces the amount of physical activity due to different circumstances (e.g., health problems or sport injuries), it may lead to a typical withdrawal syndrome, indicating that physical activity, like narcotics, forms dependence—is addictive. [One is addicted to exercise when exercise has higher priority than family, work, and health. An addicted exerciser does not want to stop even under medical advice. See questions on page four.—TK]

Physical activity leads to a good frame of mind, improvement of mood and self-esteem, and gives psychophysical comfort. Sudden ceasing of exercising creates sensations of fatigue, depression, anxiety, and other discomfort, and also increases the risk of an infection.

There is a reasonably sound body of evidence to suggest that opiatelike substances are secreted in the central nervous system during endurance exercise.

Opiates such as morphine have been used for centuries to relieve pain. Morphine exerts its pharmacological effects by mimicking molecules that are normally present in our bodies. Peptides with opiatelike activity, enkephalins and endorphins, are abundant in certain nerve terminals.

Opiates bind to specific receptors called intermembrane proteins (belonging to a large family of G-protein-coupled receptors). After docking, the opiates induce conformational changes in these receptors that is the start of a quite complicated signal cascade. The final result is the modification of the activity of ionic canals in neuron membranes, which causes the hyperpolarization of the neurolemma. The neuron's ability to interact with its surrounding is limited. This may lead to inhibiting certain neurons functioning in regions of brain that govern behavior, which can lead to emotional instability or changes of mood.

If the opiates are regularly overproduced (as during physical training), a tolerance develops to their inhibiting activity. Simultaneously, opioid dependence develops—the lack of opiates creates a drastic increase in neuron activity. These molecular changes are the basis of all behavioral symptoms connected to drug addiction.

The opioids are peptidic hormones, and their level in circulating blood is very low in normal situations, but under some circumstances (like fear, childbirth, and physical activity) the level is elevated from 3 to 10 times normal. Their level in the blood increases in response to prolonged endurance exercise of an intensity above

50% of maximal oxygen uptake, or during maximal exercises lasting more than a few minutes. This may lead to the so-called runners high, an often reported state of euphoria during exercise.

Opioids have been shown to reduce the perception of pain during prolonged high intensity exercise with a beneficial effect on performance. The reduction of pain perception effect continues into the post-exercise period. It is an interesting occurrence that exercise both causes pain and elicits an endogenous pain-blocking. Pain felt during exercise despite the exercise's pain-reducing effect may signal the exertional limits of the system or warn of an impending injury. In contrast, inhibition of pain during fight-or-flight situations may be beneficial in dealing with life-threatening danger.

Up to now there are no statistical data giving any information about how often dependence syndrome occurs in exercisers. The way of treating it is still unknown. It is possible, however, that some hormones (like cholecystokinin, a peptidic hormone generally produced by the small intestine, which is released after eating fats) are able to reverse the development of opioid tolerance.

## Crunching Sounds in Joints

Crunching or crackling sounds in joints (not occasional loud pops), when moving—for example, doing squats—usually indicate poor joint lubrication.

According to an article (Stasova, 2003) a shortage of joint fluid (synovia) results from either insufficient amounts of phosphorus and calcium in the diet or from poor absorption of these minerals.

A surgeon can make sure that the noises are not a symptom of disease of cartilage and bone. If, after taking x-rays, the surgeon determines that there is no disease, for grown-ups the usual prescription is calcium and phosphorus supplements and physical therapy.

In the case of a child, if the joint noises start with the growth spurt, the most likely cause of these noises is the child's fast growth.

The pace of growth and development of various body parts and organs is not uniform. Bones of limbs grow very visibly but synovial membranes of joints may be lagging in producing enough joint fluid.

If this is the case, one must make sure that the child eats foods rich in calcium and phosphorus.

Foods rich in calcium: milk, cheese, green leafy vegetables, dried apricots, nuts, legumes, oats.

Foods rich in phosphorus: grains, meat, liver, fish, eggs, milk, cheese, nuts.

Another possible cause of crunchy noises in joints is increasing training loads faster than joints can adapt to the increased loading and produce enough joint fluid. In this case the solution is to lower the training loads so the noises stop and then increase

the loads so gradually that the joints stay silent.

Intensive training, no matter how gradual its progression, causes loss of calcium through sweat and thus may lead to loss of bone minerals, so athletes should eat lots of calcium-rich foods too (Klesges et al. 1996).

Eating foods that supply the body with building materials for joint lubrication also helps. Such foods are fish or meat in gelatin, meat and fish gristle, and lard.

### References

- Stasova, A. 2003. *Tayna khrustyashchykh systavov. Fizkultura i Sport* no. 5/2003, p. 23
- Klesges, R. C. et al. 1996. Changes in bone mineral content in male athletes. *Journal of the American Medical Association* vol. 276, no. 3, pp. 226-30.

# Q and A on STRETCHING and TRAINING

(continued from previous issue)

Study these typical questions on stretching and training carefully. You may find information that relates to questions of yours. Questions are in *italic boldface*.

■ *I am a 32-year-old taekwondo black belt. After taking a long break from my training (4 years) I decided to make a comeback 6 months ago. I purchased your book *Stretching Scientifically* and have incorporated several of your techniques in my training. I've also added weight training to my workouts in order to strengthen my legs so that I can prevent injuries (once a week deadlifts, squats, leg extensions, ham curls, cable adductor flies, back extensions, 3 sets of 20 each). Although my legs feel strong and capable of performing the demanding taekwondo training, I've recently been experiencing slight pain and tightness in my right knee. I think it may have been caused by doing deep squats. Is this possible? I am also wondering if I should just continue training in the same way until the pain subsides or take some time off from training. Would squats without bending the knees as much prevent this?*

I suggest you stop doing leg extensions and leg curls (it is easy to overdo these exercises and put too much shearing stress on your knees) and perhaps temporarily but drastically reduce weights in squats.

Whether to squat deep or not is best decided on the basis of how it feels. Any exercise can be harmful if done too much or too often. Make sure you do not do more than your body can tolerate. Pain, a feeling of joint instability, or other abnormal sensations during or after exercise are signs that either you do it wrong or you do too much (too deep, too heavy, too many reps).

■ *I'm a 33-year-old woman who has been practicing karate for 17 months. My fitness level when I began karate was extremely low, and I was considerably overweight. Over the past several months, I've lost a great amount of weight, and gained a significant amount of lean muscle and flexibility.*

*Unfortunately, I'm still paying the price that some overweight athletes*

*pay: About 8 months ago, I developed plantar fasciitis in my right foot. I suspect the injury developed partially due to my previous weight, but also from overuse. As I'm sure you know, karate is addicting! I take classes 6 days a week.*

*I have seen a physician and a physical therapist regarding my foot problems. The PT showed me some strength exercises, as well as ways to tape my arch for better support. He also had custom orthotics made, which I wear when I'm not in class. When I am in class, I tape my foot extensively, and ice it religiously after every class. I also take ibuprofen before and after class.*

*Can you give me any additional exercises to strengthen my feet? As long as I tape and ice my foot, it is fairly pain free (except for first thing in the morning).*

The rational course of action in a case of an overuse injury is to reduce the use of the injured body part as much as it takes to heal and rehabilitate it well to prevent recurrence.

Plantar fasciitis is an inflammation of the fascia and associated structures. If you keep on loading the inflamed foot you will injure it more seriously and permanently. Also, the changed mechanics of your gait can cause problems elsewhere. I explained the gradual-onset injury in the 10th article of my column ([www.stadion.com/column.html](http://www.stadion.com/column.html)).

I suggest you exercise discipline and refrain from karate, or at least from those exercises which load your foot, until treatment is successfully completed.

You can read about your problem and how to remedy it (with your doctor's guidance) by studying books on injuries that are listed at The Athlete's Bookshelf (<http://stadion.com/bookshelf.html>). I especially recommend *Management of Common Musculoskeletal Disorders* because this book covers all musculoskeletal injuries and explains what are the lifetime consequences of not letting an injured tissue heal, not rehabilitating it fully, and reinjuring it.

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