

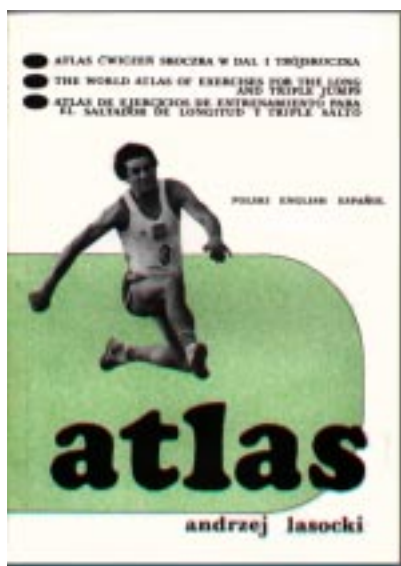


**STADION**® news  
International Sports Insider  
<http://www.stadion.com>

Volume 5, Number 1, Winter 1998

\$3.00

## Learn Essential Strength and Jumping Ability Exercises for Any Sport



### *The World Atlas of Exercises for the Long Jump and Triple Jump*

Don't let this title deceive you. From this book you can learn essential strength and jumping ability exercises for any sport even though it is written for coaches of the long and triple jump.

This book contains strength exercises and technical drills essential for triple jump

and long jump. These are the same drills Zdzislaw Hoffman, 1983 World Champion in triple jump, used in his training. Each exercise and each drill is explained and shown as a drawing.

You will see 101 strength exercises with a barbell, medicine ball, and shot for developing both your overall strength and explosive power, some with a partner.

You will see two types of technical drills: 114 for jumping ability and jumping skills and 49 for the speed of approach run and the speed of takeoff. You will also find in this book 11 endurance exercises, both general and sport-specific for jumpers, and 58 agility and flexibility exercises.

The author of the book, Andrzej Lasocki, is the long jump and triple jump coach of Poland's Olympic Track and Field Team.

The book is printed in three languages: English, Spanish, and Polish. It costs \$29.95, has 136 pages and over 500 drawings. To order *The World Atlas of Exercises for the Long Jump and Triple Jump*, use order form on page four or call our toll-free number: 1-800-873-7117.

## Highlights

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## Flexibility and Strength

“After having the tape [*Secrets of Stretching*] for two weeks I made excellent progress and told my friends about it. Next thing, they asked if I would lend them the tape, and so the tape wandered from one guy to another and that's the last time I ever saw it.

“Later my job schedule was so bad that I had to stop my training and with it went my stretching.

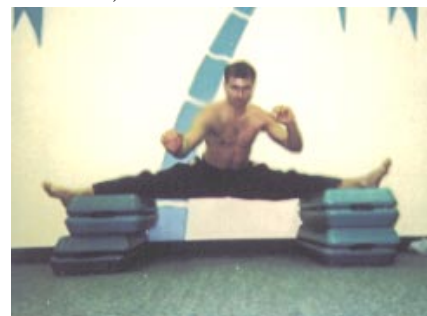
“Now, after a few years, I am able to return to my training and so this time I

ordered your book [*Stretching Scientifically*].

“In mid-October, 1997, I decided to follow every step outlined in this book and I write to you with pleasure to inform you I have accomplished my goal: a split between chairs, by mid-November, 1997. At any given time or place, if anybody asks me to do the split (it happens often), I do it in a split second with no warm-up whatsoever.

“I just want to thank you for the valuable info in your book as well as on the video. The main thing behind it is to follow the

outlined steps and stick to it. That way anybody can accomplish maximum flexibility. I know I did.”—Adam Bobak, Kitchener, Ontario



## Nutrition and Performance: Carbohydrate Drinks, Children and Pasta

### Carbohydrate drinks

#### How to spare glycogen?

Muscle glycogen is necessary for both anaerobic and aerobic efforts. Depleting its stores makes it impossible to continue an intensive effort even though you may have a sufficient supply of free fatty acids and blood glucose. This is because muscle glycogen is necessary for “burning” free fatty acids and can be used only by those muscle fibers in which it is stored.

Several studies on soccer players have shown that depleting stores of muscle glycogen lowers maximal strength and aerobic endurance, shortens the distance of sprints, impairs balance, causes cramps, and lowers the quality of their technical and tactical actions.

Even though a highly trained soccer player can store up to 600 grams of glycogen, in the course of a match nearly all this glycogen is exhausted.

Drinking carbohydrate drinks with 7% glucose content during the match helps to spare stores of muscle glycogen and thus increase the distance players can run with maximal speed during the match. The average pace of playing and the speed of recovery are also improved.

Drinks with a higher glucose content, for example 10%, instead of helping have a detrimental effect on performance because high glucose content increases the release of insulin, which lowers blood sugar level and the amount of free fatty acids needed for aerobic efforts.

An experiment conducted during 20 matches of the European Soccer League showed the real-life consequences. In ten matches players were allowed to take carbohydrate drinks, and during the following ten matches they were not allowed. During the first ten matches the teams scored more goals and kept a higher game pace, especially during the second half of the match.



#### How to replenish glycogen?

The best method to replenish stores of muscle glycogen depleted by exercising is to eat a meal containing carbohydrates soon after the exercise.

Muscle glycogen synthesis occurs in two phases, a first phase of rapid synthesis within 4-6 hours after exercise and a second phase of much slower synthesis for the next 24 hours. Within two hours after an effort, the pace of rebuilding muscle glycogen is at its highest, reaching 5-7% per hour. Immediately after intensive exercise, insulin release in response to eaten carbohydrates is low, so you can eat more of them and even of higher glycemic index than usually. This is because of the high activity of the glycogen synthase, an enzyme that controls rebuilding of glycogen after it is depleted by exercise. Thanks to that activity glucose enters muscle so fast that it does not set off a high insulin release.

This means that there is no diet good or bad for everybody at all times, with set-in-stone percentages of carbohydrate, protein, and fat. There are only individually suitable diets that let one perform well and stay healthy and unsuitable diets that lower performance. You need to eat different meals before exercises and after exercises.

How to tell if your last meal was good for you? It is simple—if you feel well, alert and energetic, and not hungry four hours after the meal—then the meal was suitable and good for you. If you are hungry four hours or less after the meal then it was not suitable.

Adjust the amount and quality of food you eat to match your needs. Barry Sears, Ph.D., explains how in his book *Mastering the Zone*.

#### References

- 1) Chmura, J. 1997. Bioenergetyka wysiłku piłkarza podczas meczu/Energetics of soccer player's effort during the game. *Sport Wyczynowy* nr 11-12.
- 2) Sears, B. 1997. *Mastering the Zone*. New York: HarperCollins.

### Children and Pasta

“The best way to fatten cattle is to feed them excessive amounts of low-fat grain. The best way to fatten humans is also to feed them excessive amounts of low-fat grain, in the form of pasta and bagels.”—Barry Sears, Ph.D., *Mastering the Zone*.

Pasta is a high glycemic food, that is, one that quickly raises blood sugar level. It is a mostly starch carbohydrate with negligible mineral, vitamin, and fiber content as compared to most vegetables and fruits.

If you ate a big pasta meal and after three to four hours felt sluggish and sleepy you were experiencing the effect of pasta's high glycemic index. A plate of pasta quickly raises blood sugar. This triggers excessive insulin release that in turn causes a drop in blood sugar and sluggishness. A low blood sugar level makes you crave more of the quickly digestible carbohydrates, often candies, and you enter a vicious circle of raised insulin, lowered blood sugar and hunger cravings every two to three hours (Sears, B., *Enter The Zone*, p. 28-29).

According to Dr. Richard F. Heller and Dr. Rachael F. Heller (*Carbohydrate Addicted Kids*, p. 70), in children the blood sugar highs and subsequent lows occur much sooner than two hours after a high carbohydrate meal or snack. The more the children eat of the carbohydrates they crave, the more insulin they release and the greater and more frequent are their cravings.

Several scientific studies show that excess levels of insulin released in response to a high carbohydrate diet causes learning problems in children, bad behavior, moodiness, poor attitude, and in many cases being overweight. In their book *Carbohydrate Addicted Kids*, the Hellers quote, among many others, an article titled “Psychobiological Effects of Carbohydrates” in the *Journal of Clinical Psychiatry* (vol. 50, no. 5, suppl. 1989, pp. 27-33): “Fatigue and impaired performance on tests of concentration and speed occur approximately 2 hours after carbohydrate consumption.”

(continued on page three)

## Nutrition

(continued from page 2)

According to the Hellers (*Carbohydrate Addicted Kids*, p. 96), up to 74% of overweight children suffer from hyperinsulinemia (too much insulin) that causes them to crave carbohydrates.

Knowing all that, would you advocate feeding children the carbohydrate-rich and vitamin- and mineral-poor pasta instead of low glycemic and healthy vegetables and fruits? You maybe wouldn't, but the Council of Physical Education for Children (COPEC) does.

COPEC in its newsletter *The Right Moves* (Winter 1998) in the article "Celebrate Pasta" praises pasta: "Kids across America love pasta... because it is delicious ... because the variety of shapes ... makes it fun to eat.... Moms and Dads love pasta because it fits easily into a family's fast-paced lifestyle." and so on.

Why does the newsletter for p.e. teachers push pasta? Because it is sponsored by *Hershey Foods Corporation*, one of the USA's leading manufacturers of pasta and sweets.

### References

- 1) Heller, R. F and R. F. Heller. 1997. *Carbohydrate Addicted Kids*. New York: HarperCollins.
- 2) Sears, B. 1995. *Enter the Zone*. New York: HarperCollins.
- 3) Sears, B. 1997. *Mastering the Zone*. New York: HarperCollins.

All the books quoted in this article can be ordered on the Web at *The Athlete's Bookshelf* (<http://www.stadion.com/bookshelf.html>).

## Skills: Less is more

Evidence from recent neurological research proves the soundness of limiting teaching skills to one new skill per workout.

Until now the reasons for doing so were only the practical experience of coaches and guesses about what happens in an athlete's mind during and after a workout in the course of learning.

Many of these reasons are explained by Józef Drabik, Ph.D., in *Children and Sports Training*. This book has a lot of information on methods of technical and tactical training because laying good foundation of essential skills must happen at the beginning of a sports career. (Adults who take up a new sport can equally benefit from this information.) Here are some reasons for teaching one skill per workout: it allows for arranging warm-up exercises so the athletes warm up just right for this one skill; it gives athletes time to digest the information and then apply the results of their deliberations in their next workout; and it keeps the athletes practicing rather than standing and listening.

Apart from the obvious reasons given above, research now reveals one more: It takes several hours after learning a new skill for the neurological changes needed to "move" it to permanent memory. If during that time another new skill is taught, then the first skill might be "erased."

Research by Shadmehr and Holcomb shows that it takes six hours after completion of practice for the changes in the brain needed to make the skill permanent. Those subjects who learned one new skill and immediately began learning another skill

lost proficiency when tested on the first skill.

Earlier research by Brashers-Krug, Shadmehr, and Bizzi shows that four hours must elapse between learning two skills to prevent disruption of the first skill.

So what should you do during a workout after you learned a new skill to keep it from being disrupted? Do exercises you are thoroughly familiar with: skills that you have mastered or conditioning exercises. After learning a new footwork pattern, for example, a boxer can spar, work on the timing ball or speed bag or heavy bag, jump rope, or run—as long he or she can do it "habitually" so that none of these activities involves learning any new skills.

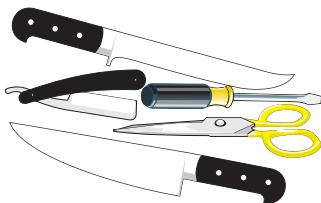
What if you want to teach (or learn) two similar skills? Don't! Not only can you slow down learning, but also you can get them mixed up.

Limiting instruction to one technique or variation at a time helps retain the skill. Although it may seem to slow down the pace of learning, this measured rate of instruction actually facilitates progress because you learn the skill more reliably.

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- 1) Brashers-Krug, T., Shadmehr, R., Bizzi, E. 1996. Consolidation in human motor memory. *Nature* 18;382(6588):252-255.
- 2) Czajkowski, Z. 1997. Celem cwiczen nie jest 'dawanie w kosc' ale podwyzszanie umiejetnosci ucznia/Exercises are not for "giving a hard time," but increasing skills of a student. *Sport Wyczynowy* 11-12(395-396):106-109.
- 3) Drabik, J. 1996. *Children and Sports Training*. Island Pond, VT: Stadion Publishing Co., Inc.
- 4) Shadmehr, R. and Holcomb, H. H. 1997. Neural correlates of motor memory consolidation. *Science* 8;277(5327):821-825.

## Self-Defense Tip



If you think that knife attacks look anything like those typically seen in martial arts classes—you can be dead wrong.

Real attacks, by people who are familiar with a knife's properties and true potential, are a blur of short, noncommitted stabs and cuts that are practically impossible to stop.

An attacker, with any idea of what he or she is doing, will overwhelm you with a hail of cuts that will start at the nearest body part and end in a vital target. Within a second you may lose your fingers, have severed tendons of your arms, and be finished with a stab to your eye, or throat, or trunk.

If someone has taught you to block knife cuts and stabs, or to grab a knife-holding hand, you need to see the reality for a change.

The video *Surviving Edged Weapons* by Dennis Anderson and Charles Remsberg shows the reality of edged weapons (knives, screw drivers, forks, glass shards) attacks. YOU MUST SEE IT!

See how prison inmates and knife experts practice knife fighting. See what really works and what doesn't against a knife attack!

See reenactments of actual knife attacks and how

they could have been avoided. See officers "slaughtered" in spite of fancy police baton defenses and "killed" (stabbed and slashed) with a knife at distances in which they thought they could draw their guns and were safe.

This intense action-packed 85-minute video features two of the foremost American knife fighting experts: Leo Gaje, Jr. and Dan Inosanto, as well as police officers who survived knife attacks. It is the most useful police training video ever made.

To order this video, call 1-800-942-8273 or fill out the order form on the world wide web at <http://www.gunvideo.com/order.html>.

Note! To order this video on the web you need to put its item number (K0001) and price (\$49.95) in the order form. Shipping and handling is \$4.50.

## QandA on STRETCHING (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 boldface.

This first question is a continuation of one from the [Fall 1997 issue of \*Stadion News\*](#).

■ ***I am in an organization that encourages you to pick up things on your own and when they see your mistakes, correct them. It is to build confidence and teach you to gain insight into the techniques. I have gone from white to yellow [belt] (including breaks with front kick - 2 boards) in 2 months and then to green and side kick in the next 7 months. I've done very well with the katas and enjoy what I'm doing.***

This confirms my "diagnosis," that your problems are a fault of the instructor. You went from the white belt (zero) to breaking two boards with front kick in two months. (By the way, breaking two standard pine boards is hardly a feat of anything.)

Before you learn the front kick you must master the knee kick (hiza geri). To master the knee kick you need to do many hundreds of knee kicks from at least two fighting stances, and be able to set up your opponent for these kicks with punches and footwork. Getting proficient with two fighting stances, two punches, two or three blocks, and the knee kick takes about six months if one practices 3-4 days per week.

■ ***On another topic, you answered that dropping the knee while kicking may be caused by a weak psoas. What is that and how should I build it up?***

This muscle—often called a "runner's muscle"—originates in front of the spinal column and attaches to the thigh bone. It moves your thigh forward and up if you stand and raises your trunk if you lie down. Exercises for strengthening it are shown on the video [Secrets of Stretching](#).

This question is another beauty—if your instructor doesn't know the answer, what does he or she know? It is an instructor's job to know functional anatomy. After all, the psoas muscle is often overworked by kickers, so knowing about

it, how to strengthen it, and how to recognize its weakness, is essential if you want to be counted as one who pays attention to what he or she does. Even if the instructor never studied anatomy—why would such a person be an instructor?—he or she could learn about it in the course of practice.

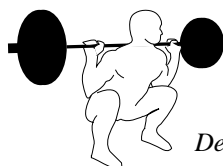
■ ***I have read your special report on Stretching (as well as Stretching Scientifically) and am familiar with the biomechanics you emphasize repeatedly concerning the side split and the forward tilt (flexion) of the pelvis. (Thanks for expanding on this subject in the special report.)***

***One question concerning this: I cannot yet walk myself into the side split from a standing position—which I know has to do with more strength in the related areas—but when sitting on the floor I can bend forward and touch my stomach, chest, and chin to the floor.***

***What I can't really do is keep my pelvis flexed and have my trunk upright at the same time. It is also much more comfortable for me to have my toes point up as I go into the side split (while bending forward and using my forearms to take the weight on my way down).***

***Does this mean I need more work on unwinding those capsular ligaments, or will more strength do that for me in time?***

More work on the horse stance should help. In the process of practicing an increasingly lower horse stance, you will "learn" how to tilt your pelvis forward while keeping the trunk upright. The horse stance is shown in report #1. Practicing it may make your legs stronger, but if you want to make faster progress, do deep squats with weights. When doing these squats, stand with your feet a shoulders-width apart and try to keep your toes pointing forward.



Deep squat

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Please circle the video system: NTSC (North and Central America) or PAL (Europe, Asia, Australia).

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