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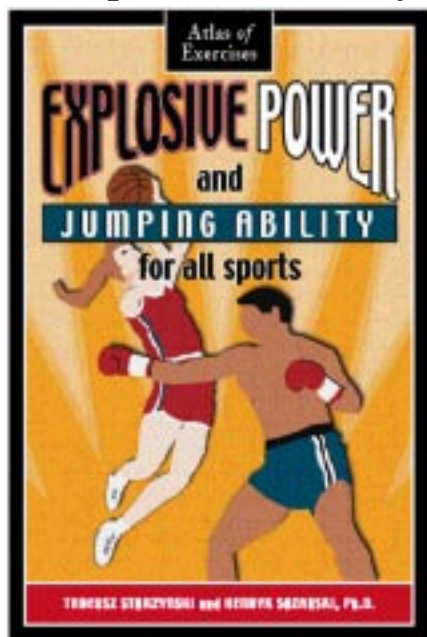
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Explosive Power and Jumping Ability for All Sports: Atlas of Exercises Is Here



- How to prepare for intensive plyometric exercises
- What are the right loads for you in a workout
- What are the right loads for you in a yearly training cycle
- How to prevent injuries to your ankles, knees, and arms
- Ready-made progressions of exercises for an amazing variety of major sports, including basketball, taekwondo, and 30 more.

This book gathers the very latest research from two authors, one a top-notch coach and the other a world-recognized theoretician who has made it his life's work to systematize existing knowledge about training for sport-specific forms of explosive power or jumping ability.

Tadeusz Starzynski is a world authority on training for jumps. Athletes he coached have won two Olympic gold medals, two European Championships, and set national records.

Henryk Sozanski, Ph.D., a track-and-field coach, is now a professor and a president of AWF (University School of Physical Education) in Warsaw, Poland.

To develop your explosive power, order *Explosive Power and Jumping Ability for All Sports* (see order form on page four).

How well you jump and how powerfully you punch, pull, or throw depends on your explosive power, on your special endurance for explosive movements, and on your speed, coordination, and flexibility. *Explosive Strength and Jumping Ability for All Sports* tells you how to develop each of these abilities.

You will learn all there is to know about developing explosive power and jumping ability.

Flexibility and Strength

"Thanks for your stretching book [*Stretching Scientifically*] and video [*Secrets of Stretching*]. They really work! My son [Javan] can do it naturally, I had to work at it. Thanks to your methods, I am the only one so far in my studio that can do this. Everyone asks how I can kick so high and be so flexible. I tell them consistency and the right method, *Stretching Scientifically*! It took me 8 months to get

to this point because I lapsed on my training. But after 4 months I was within 6 inches of a split. I am more flexible now than I ever was in college and professional football. Thanks for the best stretching method I have ever seen. Keep the info coming!

"God Bless!
"Another satisfied customer!"

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Jeff Joslin, 1st Degree Black Belt, 36 years old, Johnson City, Tennessee

Sports Skills and Strength Training IV

by Thomas Kurz

In this installment on sports skills and strength training, you will learn how to develop explosive strength and how to select plyometric exercises.

Explosive strength can be developed by very fast movements against resistance. These movements can be standard resistance exercises such as squats or arm exercises with barbell (very fast, though), or jumps, including depth jumps, usually without additional resistance beyond that of your own body weight.

Fast lifts stress your body less than plyometrics and thus you should use them most in your work on explosive strength. In the previous issue of *Stadion News* (Fall 1998) this matter is explained in depth. In that issue also you can learn how to decide which of these two types of exercises is right for you.

Many years' experience developing explosive strength for jumps through squats and half-squats with a barbell shows that the greatest effects were obtained when the athlete did them very fast in sets of 5 or 6 repetitions. To ensure sufficient speed of movements, these sets were done within strictly determined time limits. It also turns out that such a program of exercises positively influences strength-endurance and sport-specific endurance.

Three effective methods of setting time limits, tested in practice, are recommended by the authors of *Explosive Power and Jumping Ability for All Sports*. These methods are used to control training load and program its intensification.

1. The first method uses three zones of duration for one set of exercises. These zones are slow zone, from over 11.0 to 14.5 seconds; medium speed zone, from over 8.5 to 11.0 seconds; and fast zone, from 6.5 to 8.5 seconds.

Exercises are done in sets of 5 repetitions, starting with an initial weight equal 50% of one's maximum, and then increasing the weight in each next set.

The coach can extend a zone's duration by one second (1 s) if the weight is very heavy.

In the preparatory period, intensification of work during a workout is based on mov-

ing from a slower zone on to the faster, when the athlete's improved shape warrants it. For example, the athlete can move from the slow zone to the medium speed zone, or from the medium to the fast zone, or through all three zones in succession. If the duration for the zone is exceeded, the work with this exercise stops. In this manner every athlete performs work according to his or her individual capability of maintaining the assigned intensity.

2. The second method is based on determining intensity individually for each athlete, for each subperiod of the preparatory period. An initial trial is conducted at the beginning of an annual or semiannual training cycle. The timed trial consists of 5 or 6 squats or half-squats with 50% of the athlete's maximum weight, at maximal speed. To the obtained time, one second is added. Practical experience shows that adding one second to that time usually ensures proper performance of at least six sets of the given exercise in a workout. During a workout, the weight of the barbell is increased but the duration for the set is not changed. If the duration is exceeded, the work with this exercise stops in this workout. The athlete's task is to increase the number of sets of the exercise. If the athlete does not manage an increase during a given workout, he or she will attempt to do so during the next one.

3. The third method is based on determining an individual intensity for each athlete during each workout. Norms for intensity are determined by measuring maximal speed in performing the first set of squats before the main part of each workout. For example, a set of five repetitions with a barbell weighing 60 kg (132 lb.) took 5.95 seconds during the first workout. After adding a one-second margin, a time limit of 6.95 seconds was established for performing a set of five repetitions of squats during this workout. If the athlete exceeded this set limit, he or she stopped any further performance of these squats. During the next workout, the new time limit for this exercise is determined in the same way.

Examples of poundages used in these three methods by various athletes are shown in *Explosive Power and Jumping Ability for All Sports*.

At the same time you perform standard resistance exercises with time limits as just described, you can do plyometrics. You gradually increase the amount and intensity of plyometrics at the expense of other resistance exercises as you approach your competitive season.

In selecting your plyometrics, you need to be guided by the knowledge that jumps are done differently in different sports. Track-and-field's high jump, long jump, and triple jump use heel-to-toe push-offs while ball games or martial arts do not. This is because fighters and ball players often jump in reaction to unexpected situations, not after a prerin of many steps like track-and-field jumpers. For this reason track-and-field jumpers need to do heel-to-toe push-off exercises and ball players do not.

In selecting plyometric exercises, use two criteria: their similarity to movements in your sport and their difficulty. Exercises that closely reproduce the form and dynamics of your sports action may be difficult and require gradual preparation by simpler or less strenuous plyometrics. For example, before attempting bouncing push-ups with your feet supported a foot or more above the floor, you need to do bouncing push-ups with your feet on the floor. Before attempting depth jumps, you need to prepare yourself by starting with simple bounding exercises and gradually progressing to more demanding ones.

Before doing complex plyometric exercises you may need to prepare yourself with simpler exercises that let you perfect the crucial components of the complex exercises one at a time. Progressions of plyometric exercises are shown in the book *Explosive Power and Jumping Ability for All Sports: Atlas of Exercises*.

References

Starzynski, T. and Sozanski, H. *Explosive Power and Jumping Ability for All Sports: Atlas of Exercises*. Island Pond, VT: Stadion Publishing, 1999.

Our Authors at World Congress on Mental Training

The 3rd World Congress on Mental Training will take place in Salt Lake City, Utah from May 19th to 23rd. This is a once-in-four-years meeting of a "Who's Who" of sports psychologists and psychologists concerned with peak performance in other fields.

Sports coaches and top sports psychologists from 40 countries will be there to exchange information on their practical experience with improving athletic performance through mental training.

Stadion Publishing's authors, [Artur Poczwadowski, Ph.D.](#), and [Dariusz Nowicki](#) will be lecturing there and conducting workshops. Their presentations at previous congresses were well-attended because they are not only sports psychology experts but also very accomplished competitive athletes.



Dariusz Nowicki, one of the top East European sports psychologists

The author of *Gold Medal Mental Workout*, Dariusz Nowicki, a taekwondo competitor and coach, a member of the Technical Committee of the World Taek-

wondo Federation (WTF), is the chief coordinator of psychological preparation for all Polish Olympic teams training for the Sydney Olympics in 2000.

During the congress Nowicki, together with Jan Blecharz, will deliver a lecture titled "Mental Preparation of Polish Olympic Athletes for Sydney 2000."



Artur Poczwadowski, Ph.D. (right), on his way to winning a gold medal in open category at Utah Summer Games in 1994

[Artur Poczwadowski, Ph.D.](#), was a national-level judo competitor, now is a sports psychology consultant and also teaches the methodology of sports training at the University of Utah. His articles on mental training were published in *Stadion News* (Fall 1996-Fall 1997, Spring 1998).

Together with Jadwiga Klodecka-Rozalska, Ph.D., from Institute of Sport, Warsaw, Poland, Poczwadowski will deliver a lecture on "Consulting with Olympic Athletes."

Together with David E. Conroy, and Keith P. Henschen, Ph.D., from the University of Utah, U.S.A. he has prepared a

lecture titled "Language of Success and Failure in Elite Athletes and Performing Artists" on how an athlete's thoughts and opinions of others influence that athlete's confidence and thus the quality of his or her performance, and on how to use this knowledge in designing mental training.

Poczwadowski also organized two symposia on success and failure in sports. The first symposium, "Faces of Excellence in Sports: Peak Performance, Integrative Instruction, Coaching, Interpersonal Relationships, and Healing," deals with methods of creating positive experiences, setting goals that athletes can achieve quickly, and the specifics of using praise and constructive criticism. In his lecture on "Athlete-Coach Relationship" within this symposium, he will explain how a coach's attitude toward an athlete can determine the athlete's confidence, and also how to foster a good athlete-coach relationship.

During the second symposium organized by Poczwadowski, David E. Conroy, and Keith Henschen—titled "Emotional Responses to Failure and Success"—participants will discuss a research project that examined how athletes respond emotionally to failure and success. They will discuss how these findings relate to the fear of failure and fear of success. This symposium will attempt to draw practical implications for coaches and consultants from what was learned from elite athletes and performing artists about fear as a motivating factor.

Self-Defense Tip

This is a continuation of the article in *Stadion News* for Fall 1998 on selecting a self-defense system. Essential information for this issue's tip was provided by Mr. Jazz Gill, instructor of Southern Praying Mantis Kung-Fu, Slough, Great Britain, and Mr. Ron Beaubien, editor of "The Martial Arts Consumer Protection Site" (<http://www2.crosswinds.net/japan/~consumer/>).

Be suspicious of schools that claim ancient Asian lineage but allow anyone to join, because most ancient Asian systems are very selective in admitting students. Some examine thoroughly a prospective student, many require introduction, some ancient Japanese systems are by invitation only. For most Chinese systems, if the individuals manage to find the school, they are admitted only if the teachers consider them trustworthy.

A case in point: A Japanese system with a fancy-sounding name ending in *ryu* that allows walk-ins warrants deep caution. *Ryu* is a feudal term that can

be approximately translated as "a martial tradition, perpetuated by a line of headmasters, with its members protected by Shinto gods." (There are a few legitimate karate systems that have *ryu* in their name, such as Wado-ryu, Shito-ryu, Goju-ryu, but these are exceptions.) Now, think just how likely it is for a foreigner, not being of the Japanese warrior-class, to learn an ancient warrior art. According to Ron Beaubien, in the United States legitimate schools of ancient Japanese systems "are very, very hard to find. They are limited to a handful of instructors who have been given teaching ranks and have been given permission to open a school (usually limited to a three or four students). Basically all these instructors know each other and have lived in Japan for close to 10 years or more each."

To find out whether a given school truly teaches a classical Japanese martial art you can contact Japanese Classical Martial Arts Promotion Society (Nihon Kobudo Shinkokai). The address is:

Nihon Kobudo Shinkokai

Kamitakada 4-17-1-805
Nakano-ku, Tokyo 164-0002, Japan
Telephone: 81-3-3386-4764

Here is what Mr. Ron Beaubien says about this organization: "This organization is run entirely by the different classical organizations themselves. Membership is restricted to classical schools that have applied and have been accepted (i.e., their teachers' ranks and the history of the school has been verified by the organization's board of directors) here in Japan. They primarily deal with the headmasters and students of the classical schools in Japan. Some of the individual schools within the Shinkokai may have branches overseas, but students training overseas are not members of the Shinkokai. The organization likewise does not provide any information about any of the branch schools the individual schools may have to people asking about them."

The subject of selecting a self-defense system will continue in the next issue.

QandA 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 **boldface**.

■ **I have never been a bodybuilder, but I am heavily muscled due to my genetic background. Lifters sometimes talk about touching their butts to their heels in the squat. I don't think I'll ever be able to do that, because my hamstrings press firmly against my calf muscles in my deepest squat.**

This occurs in lifts done at full speed and with considerable weights. At slow speed it can happen only when squatting with your heels raised.

■ **I was wondering if it was safe to wear light leg weights and throw kicks. My friend does that and I tried it once. We threw our kicks full power and full speed through the taekwondo class. I didn't feel any ill effects afterwards, just that "I've just had a workout" feeling. Is this a bad thing to do? or is it a good strength exercise?**

Wrist and ankle weights can hyperextend your joints. Other weights, such as those attached above the knee, are safer, but any type of weights if too heavy will distort your technique.

■ **The most effective stretching technique I have been able to devise in my weightlifting techniques is to do full squats with a moderate weight and simply sit and relax in the bottom of the squat for several seconds. This has helped me to do my back squats deeper, but it has had little or no effect on my ability to rapidly, voluntarily assume a near-full squat before receiving the bar.**

I have thought about rapidly moving into the squat position without a bar, as a sport-specific dynamic stretch. I have not tried this, because I am concerned that it would necessarily be a ballistic stretch and that I would be likely to hurt myself. There is no way to do that movement without using my fully-stretched muscles to

decelerate my body at the end. That would necessarily be a ballistic stretch, wouldn't it? Of course I understand that my goal is to be able to decelerate much more than my body weight in that position—but only after I've achieved enough flexibility so I'm not at my limit, right? Does this imply that I really should be working on my static passive flexibility, in order to raise the limit?

This would not necessarily be "ballistic," and you would not necessarily "hurt" yourself. You can increase your velocity and range of motion progressively until your neuromuscular system learns to deal with velocities and ranges of motion needed for your technique.

Depending on how much range of motion you are lacking, you might have to work on your passive flexibility by doing deep, wide squats with progressively heavier weights.

Practice makes perfect... what is practiced. You practice sitting relaxed in a deep squat with a moderate weight, and so you can sit in a deep squat with that weight. To squat deep before receiving the weight, you have to practice with a very light weight or even an empty bar. Sitting and relaxing with even a heavy weight is *not* what a weightlifter needs. You need to squat deep and then tense at the bottom of the squat to raise up with the weight.

■ **You don't like hanging back stretches because of possible ligament stretching, but you recommend stiff-leg deadlifts. So, do you recommend only bending over to a certain extent when deadlifting, i.e., the weight lowered only to knee or midcalf?**

When done correctly, the deadlift does not stretch lower back ligaments nor even the lower back muscles. Information on how to do a deadlift is in Summer 1996 issue of *Stadion News* downloadable from our site and from the book *Super Squats* by Randall J. Strossen, Ph.D. Information on shoulder exercises is in *Report 9, How to Improve Your Flexibility and Prevent Injuries with Strength Training*.

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