THE NEWSLETTER FOR WINNERS

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What's New with Our DVD on Tumbling?

Our forthcoming DVD on acrobatic tumbling nears completion—and we can hardly wait to see it. We want to begin selling it so athletes can benefit from its instruction and learn the right way to tumble. Here is one of many inquiries we get about this DVD.

How is the gymnastics DVD project going? My son has shown great interest in XMA lately, and the gymnastics DVD looks like a great primer for the both of us. We have both been in taekwondo for the last 3 years, so I can appreciate how this would be a good fit for some complementary father and son activities.

BTW: Your techniques in Stretching Scientifically *and your strength building exercises on Stadion.com have improved my TKD form dramatically. Some of the instructors in our school have commented on my improvements.*

Thanks, Carl

Here is what's new with our DVD on tumbling:

The whole instruction was videotaped on May 6 and 7 in Poland. I translated the instructions and selected takes. That last task I really disliked—most takes were good, just slightly different, so I had to review the tapes over and over to decide which of the good ones were the better ones. It would have been easy if all I had to do was dump the bad takes—no such luck. But now editing of the video is finished, and the DVD is being authored. A few more weeks and you will be able to order it and use the know-how of our instructors.

Here is what you will find on this DVD.

Step-by-step teaching, discussion of typical errors, and ways of spotting the following acrobatic tumbling techniques:

- Cartwheel on two hands and on one hand
- Round-off
- Front handspring
- Back handspring, also called a flic flac (we show both the gymnastic version and the breakdancing version of the back handspring, with two different ways of learning these two versions)
- Aerial cartwheel (a cartwheel without putting hands on the floor)
- Front somersault, also called a front flip
- Back somersault, also called a back flip

Each of these techniques on our DVD is taught in the correct and most effective way, but typical errors and ways of fixing them are shown too.

Highlights

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Other News

Recently, from May 30 to June 2, Stadion's Discussion Forum (to join visit www.stadion.com/phpBB2/) was disabled. This was done to stop a massive attack by spammers. We work on making the forum inaccessible to all such scum. It may involve changing the software. In any case, the content of the forum will be preserved. I will keep you posted.

In May I did not send any mailings with answers to questions from my readers. I was too busy, first supervising shooting the video on tumbling in Poland, then translating the instructions and selecting takes.

During my stay in Poland I met with Dariusz Nowicki, author of the *Gold Medal Mental Workout*. We will soon have a few interesting articles he wrote on sports psychology, especially on dealing with precompetition stress and on dealing with stress in children's sport.

Our meeting happened a few days before he was to leave for the World University Taekwondo Championship in Valencia, Spain. You can read about how the athlete he coached performed at www.stadion.com/author_nowicki.html.

I Told You So... About Warm-Up

by Thomas Kurz

An article in the August 2006 issue of *Journal of Strength and Conditioning Research* describes a study comparing the effect of a dynamic warm-up with the effect of a static stretching warm-up on three tests of power and agility (McMillian et al. 2006). The study proved, as could be expected, that the dynamic warm-up resulted in better test performances than either static stretching or no warm-up.

Now about the specifics of the study: Thirty cadets of the U.S. Military Academy (14 women and 16 men) performed a T-shuttle run, an underhand medicine ball throw for distance, and a five-step jump after a dynamic warm-up or a static stretching warm-up or no warm-up. Performance scores on all three tests were better after the dynamic warm-up than after the static stretching or no warm-up. So nothing new—these results are as expected by readers of my book *Stretching Scientifically* or any intelligent student of exercise physiology.

Further, for two tests (the medicine ball throw and the shuttle run) there were no significant differences between performances after the static stretching and after no warm-up. For the five-step jump, however, the static stretching was better than no warm-up (but not better than the dynamic warm-up). That aroused my curiosity. After reading the researchers' description of their static stretches, I think I know why their subjects did better on the five-step jump after static stretching than after no warm-up.

Except for the calf stretch, techniques of relevant static stretches (rear lunge and reach, hamstring stretch, quadriceps stretch, posterior hip stretch) were such as to make acute (intense) stretching of the targeted muscles unlikely. Only in the calf stretch were the subjects likely to intensely stretch their calves.

All tests were done at 06:00 (6 a.m.), with no prior exercise, so those mild static stretches warmed up somewhat the muscles most stressed in the five-step jump and increased range of motion in the hip joints. This helped the subjects do better on this test than when they had no warm-up at all.

Performance on other tests (T-shuttle run and medicine ball throw) was not improved by static stretching as compared with no warm-up. I guess this was because (a) most of the static stretches were not relevant to these tasks and (b) those that were relevant (turn and reach, trunk flexion/extension stretch, overhead arm pull) were done in positions so easy to hold that they did not warm up the targeted muscles even as little as needed to do better than after no warm-up. (Readers who want to read a description of all the stretches, as well as of the dynamic warm-up and the tests, should obtain the original article—McMillian, D. J., J .H. Moore, B. S. Hatler, and D. C. Taylor. 2006. Dynamic vs. static-stretching warm-up: The effect on power and agility performance. *Journal of Strength and Conditioning Research* vol. 20, no. 3, pp. 492–9.)

But there is more to that article—and it's not good. I didn't know whether to laugh out loud or just smirk when I read it. I will quote from that article so you can see why I felt that way.

Here are the quotes (my italics, added for emphasis):

"United States Army Physical Fitness School (APFS) developed a Dynamic Warm-Up (DWU) for individuals and military units. . . . *This DWU was used* [for 9 weeks in 2003] *before each exercise session* as a part of an intervention to decrease injuries and improve physical performance among soldiers in a basic training battalion. . . . Static stretching, *a prominent feature of the warm-up for generations of soldiers,* was not included."

Further: "[As an effect of this DWU] injury rates over the 9-week training period were significantly decreased compared with both a control battalion and historic trends. Performance on physical fitness testing generally was improved."

No wonder—if the previous warm-up routine was designed and conducted by people dull enough to put static stretching in it!

But the real beauty is that this one DWU routine was used unchanged for every exercise session during 9 weeks of army training—no matter what the task of the session. I am so glad I was not trained by experts from United States Army Physical Fitness School (APFS).

Here is a quote from page 60 in *Science of Sports Training:*

"A good [instructor] will rarely repeat the same sequence of warm-up exercises in different workouts. The tasks of the workouts change and the warm-up has to be built of the exercises that best prepare the athletes for the current task. Usually the task-specific part of the warm-up lasts five to ten minutes. A specific warm-up should blend with the main part of the workout. If several tasks have to be realized during a workout (for example, gymnastic techniques on different apparatus), then each task may be preceded by its own specific short warm-up."

This applies to military exercise sessions too. After all, not every exercise session is the same, even in the military. The content of sessions changes as recruits become conditioned and skills change.

It is foolish to push trainees' limits in all tasks in one session and expect them to improve, so different tasks need to be covered in separate exercise sessions. If recruits have to run obstacle courses, they are not likely to learn combat skills in the same session. If recruits have to practice swimming, they are not likely to train for a 2-mile run test in the same session.

Various systems affecting the functional abilities of the body recover after exercise, and thus can reach supercompensation, in different lengths of time. This allows a person to work out daily or even several times a day, without overtraining, provided that the content of each consecutive workout stresses the system that has sufficiently recovered and does not adversely affect the recovery of other systems. The content of each workout depends on the previous workouts, on the workouts that will follow it, and on the type and amount of rest.

More information on designing warm-ups for various types of workouts and for competitions can be found in the subchapter Structure of a Workout on pages 59–64 of *Science of Sports Training.*

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 news@stadion.com

Weightlifting and Belts, Knee Straps, and Blocks

by Thomas Kurz

Wearing Lifting Belts During Resistance Training

In gyms one can often see people wearing lifting belts as they go through their weight exercises. Many put them on before doing sets with even moderate weights—well below their maximum. It seems that some put them on as a way to let everyone know they are serious weightlifters, or that from now on the serious lifting begins. Or perhaps they want to look like record-breaking powerlifters or Olympic-style weightlifters—or just furniture movers. If they wear their belts for looks, then it is working. If they wear them to make themselves stronger, then it is not working.

If you wear a weightlifting belt during most of your lifts, then these lifts do not strengthen your trunk as much as they could without the belt. Electromyograms of back erector muscles show that when a lifting belt is worn during exercise, the back muscles' activity declines as compared with exercising without the belt (Durall and Manske 2005).

It makes sense to use the belt for record lifts. The lifting belt increases stiffness of the spine and also provides tactile feedback, helping the lifter keep the spine in the optimal position (under record loads) (Durall and Manske 2005). But if you need a belt for most of your lifts, then you are lifting too much in relation to your trunk's strength.

A lifting belt may help an athlete when lifting record weights. It may also help laborers who have to lift and carry heavy objects during work and not in a course of systematic resistance training.

Squats with Blocks under the Heels

Some lifters do squats on blocks or with wedges under their heels. These wedges help them keep the lower back from flexing forward as they descend to the low position and then raise up. (Flexing the lower back means arching the lumbar section of the vertebral column forward and not just bending at the hips while keeping the spine in neutral position.) Forward flexion of the spine when squatting with weights is a common cause of lower back injuries among lifters. It may be a way of compensating for shortness of calf muscles (soleus and gastrocnemius), which keeps the lifter from squatting with the trunk upright (Durall and Manske 2005).

Squatting on blocks is a short-term solution that does nothing for the short calves, which keep the lifter from doing squats through the fullest range of motion.

A better solution is to stretch the calves by squatting without weights, with feet fully on the floor while trying to keep the trunk upright, or by trying to squat progressively lower without lifting the heels off the floor. In this second method one may use light weight—such that does not make one flex the spine.

Squats with Knee Wraps

When doing squats with knee wraps on, the knee wraps do some stabilizing work that should be done by muscles and ligaments of the knee. If you consistently reduce the stress on the tissues that are supposed to stabilize your knees, then these tissues will not become as strong as they could be.

If you need to use knee wraps when doing squats, then you are squatting with weights too heavy for your knees. Well-trained athletes do deep squats with huge weights—without belts, without knee wraps, and without spotters. For example, three reps with 270 kg (594 lb) by Ivan Chakarov (91 kg [200 lb] weight class) or one rep with 320 kg (704 lb) by Stefan Botev (110 kg [242 lb] weight class).

When attempting to lift record weights, it makes sense to use all permitted aids, such as belts, blocks, knee wraps, and tight suits. In training, however, frequent use of such aids may weaken the "aided" body parts in relation to those unaided. The strength imbalances may eventually be such that even the aids will not compensate for them, and you will get injured.

References

Durall, C. J., and R. C. Manske. 2005. Avoiding lumbar spine injury during resistance training. *Strength and Conditioning Journal* vol. 27, no. 4, pp. 64–72.

World University Taekwondo Championship, Valencia, Spain

A Polish taekwondo fighter trained by Dariusz Nowicki (the author of our *Gold Medal Mental Workout*) and Waldemar Lakomy has won a medal at the World University Taekwondo Championship in Valencia, Spain.

Jacek Jarzynski won a silver medal in a very tough contest and while hampered by a broken hand. Jarzynski defeated Oden Salim from the U.S.A. (in this fight, Jarzynski broke a bone in his hand), then Ming-Che Wu from Taiwan, and then faced Mauro Sarmiento from Italy. Amid deafening cheering from the spectators he did his best, but the broken hand and the height advantage (see photo below) were too much to overcome, and Jarzynski had to settle for silver.

Medalists of the 84 kg weight class

Coaches Dariusz Nowicki (right) and Waldemar Lakomy (left) with Jacek Jarzynski (center), silver medalist at the 9th World University Taekwondo Championship in Valencia, Spain

This coaching success came soon after fighters trained by Dariusz Nowicki won the National Junior Taekwondo Championship of Poland for the ninth time, and Dariusz was named 2006 Coach of the Year in the northeast region of Poland for his achievements in taekwondo.

Q and A on TRAINING

Study this question on training carefully. You may find information that relates to questions of yours. Question is in ***italic boldface.***

■ ***I have been discussing with different martial artists and others the 'good' and 'bad' exercises. One that came up was the knee over toe in a forward stance (or lunge position). Many years ago I remember training in Shotokan karate, and we always used to have the knee over the toe. Later this was changed so the knee was in line with the ankles. Later again I attended various aerobic classes to be told by the instructors not to bend the knee over the toes as it would, in the long term, damage the knees.***

I was wondering is this another myth or not?

If true how does this reflect on Hindu squats, which I find help my knee strength? Is there any research available on this subject? I have looked through a lot of texts and on the Internet and can't find anything on this.

I have also recently been incorporating a neck bridge into a short workout after my dynamic stretches in the morning. I have found only Matt Furey advocating them, and there seems little other information on the subject. Do you have an opinion, or could you direct me to some research?

Also, hurry up and put out some more books/videos! I'm running out of Stadion products to buy! :-)

Thanks in advance.

Matt

PS. I have also plucked up the courage to give your books/videos to my instructor. I am waiting to hear what he thinks (as currently warm-ups include static stretching and little dynamic stretching), but he knows that your method works as I am probably the most flexible in the classes I attend!

There is no exercise that is universally good or bad. Every exercise can be bad for somebody at some time. Here is what I wrote in the 29th article of my column: "Pain, feeling of joint instability, or other abnormal sensations during or after exercise are signs that either you are doing it wrong or you are doing too much. Whether an exercise is good for you or not depends on your preparations and in some cases on peculiarities of your body. If you feel good during and after the exercise then it is most likely good for you and won't hurt you. Make sure you do not do more than your body can tolerate."

I do not pay much attention to general "prohibitions" on certain exercises. "Knees over the toes" do not cause me any problems—not in squats, not in lunges, and not in karate stances. I guess in poorly trained individuals the knee over toes may put more stress on the quads and on the ACL (anterior cruciate ligament) than they can take. Making general proclamations that such a position is bad because the least fit may be harmed by it is stupid. You know it, as you yourself wrote that Hindu squats help your knee strength.

I am not aware of any research on neck bridging, but if it were bad for the neck then all wrestlers of styles that utilize such bridging in ground fighting (Greco-Roman, freestyle, and sambo) would be suffering from neck problems—but most of them do not. Wrestlers not only do neck bridges until they kiss the mat but also carry weights on their chests or hips in these bridges. I do neck bridges as a part of my stretching and whenever my neck tenses up from overdoing some exercises, such as headsprings. Back neck bridges with face on the mat, and front neck bridges with chin touching the chest, relax the neck nicely.

About new products: As you can see on the first page of this newsletter, we are working on our DVD on acrobatic tumbling. It should be released in the fall of this year.

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