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OLYMPIC COACH

SPRING 2004 • VOLUME 16 • NUMBER 1



Message from the
DIRECTOR OF
COACHING and
SPORT SCIENCES



LONG-TERM
ATHLETE
DEVELOPMENT:
**Trainability in Childhood
and Adolescence**



WORKING TOWARD
PERFECTION:
**Interview with
Martha Karolyi**

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COVER PHOTO

19 year-old Sasha Cohen on ice at the State Farm U.S. Figure Skating Championships January 11, 2004 at Philips Arena in Atlanta, Georgia. (Photo by Matthew Stockman/Getty Images)

CORRECTIONS

John Lucas wrote to us to make the following corrections to the Olympic Coach magazine Volume 15, No. 4: Charley Paddock was not in the photo on page 5 and Frank Wykoff's name was mis-spelled. John is a historian of note of the Olympic Games. We appreciate his thorough reading of the *Olympic Coach* and his corrections.

Message from the
USOC's
DIRECTOR OF COACHING
and SPORT SCIENCES

by
PETER DAVIS, Ph.D.

In this issue of *Olympic Coach*, we have some of the leading experts of children in sport with Dr. Istvan Balyi, Dr. Maureen Weiss along with Ann Hamilton. We then added the voice of a familiar coaching name—Martha Karolyi to give us the perspective of a coach from early specialization sport. You will find her interview interesting regardless of the level that you coach. Mike Niederpruem provides some sound advice in dealing with the difficult topic of a coach's responsibility in preventing drug usage.

Many of you may think that focusing on Youth Sports is really out of the realm of elite athlete development and the Olympic Committee. However, we realize that an athlete does not become an elite athlete overnight. There is an "Athlete Development Pipeline" for Olympians in many of the sports. This is a well-defined progression that

an athlete will take, but for some sports it is dependent on the training and experiences that children have at an early age that determine the path they will take.

CHILDREN MEET SPORT AT THE COACH. The coach becomes the most important factor in sport development. If children have fun and receive social support as Dr. Istvan Balyi, Ann Hamilton and Dr. Maureen Weiss indicate in their articles, that child has a better chance of continuing in sport and developing their skills.

The concept of being well-rounded is important in sport as well as life. A child needs a variety of athletic experiences. The idea of "matching the child to the sport, not the sport to the child" that Dr. Weiss raises supports having a variety of experiences. This is augmented by Balyi and Hamilton when they explain that "for late specialization sports, specialization *prior to age ten* is not recommended since this contributes to early athlete burn-out, drop-out and retirement from training and competition."

We would like to know what you think of our "new" approach to *Olympic Coach* magazine. You may or may not have noticed that we have gone thematic with the last three issues. The email address for any person at the USOC is simply their first name.last name @usoc.org. We would love to hear from you.



LONG-TERM ATHLETE DEVELOPMENT:

Trainability in Childhood and Adolescence



“It takes 10 years of extensive training to excel in anything”—Herbert Simon, Nobel Laureate

ing with an attitude best characterized as “peaking by Friday,” where a short-term approach is taken to training and performance with an over-emphasis on immediate results. We now know that a long-term commitment to practice and training is required to produce elite players/athletes in all sports.

A specific and well-planned practice, training, competition and recovery regime will ensure optimum development throughout an athlete’s career. Ultimately, sustained success comes from training and performing well over the long-term rather than winning in the short-term. There is no short-cut to success in athletic preparation. Overemphasizing competition in the early phases of training will always cause shortcomings in athletic abilities later in an athlete’s career.

This article discusses trainability during childhood and adolescence. Coaches worldwide currently design long and short-term athlete training models as well as competition and recovery programs based on their athletes’ chronological age. Yet, research has shown that chronological age is not a good indicator on which to base athlete development models for athletes between the ages of 10 to 16. There is a wide variation in the physical, cognitive and emotional development of athletes within this age group.

Superimposing a scaled down version of adult athlete training and competition models is not a good alternative either. Ideally, coaches would be able to determine the biological age of their athletes and use this information as the foundation for athlete development models. Unfortunately, there is no reliable procedure to identify biological age non-invasively. So what can be done to remedy this situation?

“WINDOWS OF OPPORTUNITY, OPTIMAL TRAINABILITY”¹

by ISTVAN BALYI, PH.D.

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INTRODUCTION

Scientific research has concluded that it takes eight-to-twelve years of training for a talented player/athlete to reach elite levels. This is called the ten-year or 10,000 hour rule, which translates to slightly more than three hours of practice daily for ten years (Ericsson, et al., 1993; Ericsson and Charness, 1994, Bloom, 1985; Salmela et al., 1998) Unfortunately, parents and coaches in many sports still approach train-

One practical solution is to use the onset of Peak Height Velocity (PHV) as a reference point for the design of optimal individual programs with relation to “critical” or “sensitive” periods of trainability during the maturation process.

Prior to the onset of PHV, boys and girls can train together and chronological age can be used to determine training, competition and recovery programs. The average age for the onset of PHV is 12 and 14 years for females and males respectively. The onset of PHV is influenced by both genetic and environmental factors, including climate, cultural influences, and social environment.²

The onset of PHV is a reference point that provides valuable information for training the athletes’ energy systems and Central Nervous System (CNS), regardless of chronological age. Using simple measurements, PHV can be monitored and training can be related and optimized to exploit the critical periods of trainability. This approach can enhance the development of short and long-term individually optimized training, competition and recovery programs such the optimal window of accelerated adaptation to stamina (endurance), strength, speed, skill and supplement training—or the Five S’s of training and performance.

One of the most important periods of motor development for children is between the ages of nine to 12. During this time children are developmentally ready to acquire general overall sports skills that are the cornerstones of all athletic development.

It should be pointed out that all energy systems are always trainable, but during the so-called “critical” periods accelerated adaptation will take place if the proper volume, intensity and frequency of exercise are implemented.

THE MODEL OF LONG-TERM ATHLETE DEVELOPMENT

Sports can generally be classified as early specialization or late specialization sports. Early specialization refers to the fact that some sports, such as diving, figure skating, gymnastics, rhythmic gymnastics, and table tennis require early sport-specific specialization in training.

Late specialization sports, including athletics, combat sports, cycling, racquet sports, rowing and all team

sports require a generalized approach to early training. For these sports, the emphasis during the first two phases of training should be on the development of general motor and technical-tactical skills. Early specialization sports require a four-phase model, while late specialization sports require a six-stage model:

EARLY SPECIALIZATION MODEL

1. Training to Train Stage
2. Training to Compete
3. Training to Win
4. Retirement / retainment

LATE SPECIALIZATION MODEL

1. FUNdamental Stage
2. Learning to Train
3. Training to Train
4. Training to Compete
5. Training to Win
6. Retirement/Retainment

These models are generic in nature and will require adjustment on a sport-specific basis.

Since there are only a few sports that can be categorized as early specialization sports, this article focuses on late specialization sports. Each early specialization sport should develop a sport-specific model of its own. A generic model would lead to serious oversimplifications. The challenge for early specialization sports is to find a way to either combine the “FUNdamental” and “Learning to Train” stages or to amalgamate them into a single stage. For late specialization sports, specialization prior to age ten is not recommended since this contributes to early athlete burn-out, drop-out and retirement from training and competition.

THE SIX-STAGE MODEL OF LATE SPECIALIZATION SPORTS



THE FUNDAMENTAL STAGE™

AGE: Males 6–9 / Females 6–8 years
OBJECTIVE: Learn all fundamental movement skills (build overall motor skills)

Fundamental movement skills should be practiced and mastered before sport-specific skills are introduced. The development of these skills, using a positive and fun approach, will contribute significantly to future athletic achievements. Participation in a wide range of sports is also encouraged. This emphasis on motor development will produce players/athletes who have a better trainability for long-term, sport-specific development.



¹ This article is based on the presentation given at the Scottish Strength and Conditioning Seminar in Largs, in May 2003.

² It should be noted that there is a female pubertal acceleration, as much as two years, while there is little if any male pubertal acceleration.



Fundamental movement skills are observable as locomotor, manipulative and stability skills. There are three stages of fundamental movement skill development: initial (2–3 years), elementary (4–5 years) and mature (6–7 years).

The “FUNdamental” phase should be well structured and fun! The emphasis is on the overall development of the player/athlete’s *physical capacities* and *fundamental movement skills*, and the ABC’s of athleticism—Agility, Balance, Coordination and Speed. Participation in as many sports as possible is encouraged. Speed, power and endurance are developed using FUN games. Appropriate and correct running, jumping and throwing techniques are taught using the ABC’s of athletics.

The first ‘*window of accelerated adaptation to speed*’ or ‘*critical period of speed development*’ will occur during this phase, age 6–8 for girls and 7–9 for boys respectively.

Linear, lateral and multi-directional speed should be developed and the duration of the repetitions should be less than 5 seconds. This is often called the ‘*agility, quickness, change of direction*’ window. Again, fun and games should be used for speed training and the volume of training should be lower.

Strength training during this phase should include exercises using the child’s own body weight; medicine ball and Swiss ball exercises. Children should be introduced to the simple rules and ethics of sports. No periodization takes place, but all programs are structured and monitored.

Activities revolve around the school year and during summer and winter holidays, multi-sport camps are recommended. If children and parents have a preferred sport, participation once or twice per week is recommended, but participation in other sports three or four times



THE LEARNING TO TRAIN STAGE

AGE: Males 9–12 / Females 8–11 years
OBJECTIVE: Learn all fundamental sports skills (build overall sports skills)

Specialized movement skills are developed from age seven to age eleven, and are specialized sports skills. By passing the fundamental and specialized skill development phase is likely to be detrimental to the child’s future engagement in physical activity and sport. Early specialization in late specialization sports can also be detrimental to the proceeding stages of skill development.



One of the most important periods of motor development for children is between the ages of nine to 12. During this time children are developmentally ready to acquire general overall sports skills that are the cornerstones of all athletic development.

This is the ‘*window of accelerated adaptation to motor coordination*.’ All fundamental movement skills should be further developed and general overall sports skills should be learned during this phase.

If fundamental motor skill training is not developed between the ages of eight to 11 and nine to 12 respectively for females and males, a significant window of opportunity has been lost, compromising the ability of the young player/athlete to reach his/her full potential.

Strength should be developed by medicine ball, Swiss ball and own body-weight exercises as well as hopping-bounding exercises (or routines). Endurance should be developed further by games and relays. Basic flexibility exercises should be introduced during this phase, while speed can be developed further with specific activities during the warm-up, such as agility, quickness and change of direction. Competition should be well structured. The most suitable framework is single periodization for this phase, however for a few sports, sport-specific needs will warrant double periodization (e.g. swimming, tennis). A 70:30 training/practice to competition-ratio is recommended.



THE TRAINING TO TRAIN STAGE™

AGE: Males 12–16 / Females 11–15 years
OBJECTIVES: Build the aerobic base, build strength towards the end of the phase and further develop sport-specific skills (build the “engine” and consolidate sport specific skills).

During the “*Training the Train*” stage young athletes consolidate basic sport-specific skills and tactics. This phase is a ‘*window of accelerated adaptation to aerobic and strength training*.’ Optimal aerobic trainability begins with the onset of Peak Height Velocity (PHV) or the major growth spurt during maturation. Aerobic training should be

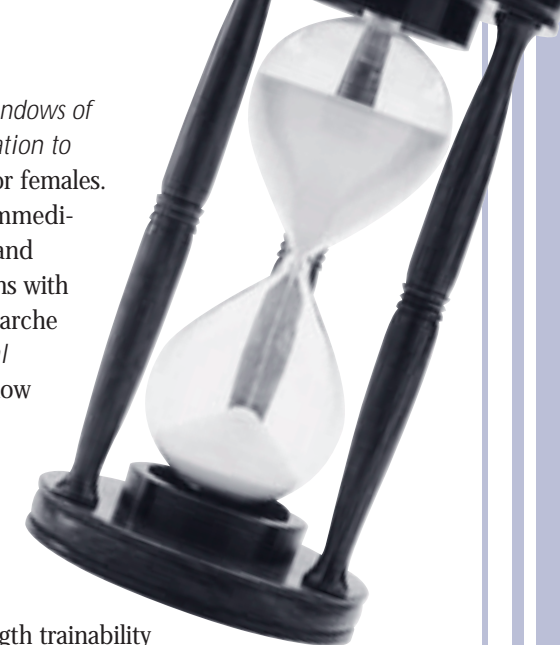
prioritized after the onset of PHV, while skill, speed and strength should be maintained or developed further. Special emphasis is also required for flexibility training due to the sudden growth of bones, tendons, ligaments and muscles.



It should be noted that both aerobic and strength trainability is dependent on maturation levels, thus early, average or late maturers need different timing of the training emphasis. At present most of these decisions are made on chronological age (age groups) and not on individual, maturation level needs.

There are *two windows of accelerated adaptation to strength training* for females. Window one is immediately after PHV and window two begins with the onset of menarche (*the first menstrual period*). This window for males begins 12–18 months after PHV.

It should be noted that both aerobic and strength trainability is dependent on maturation levels, thus early, average or late maturers need different timing of the training emphasis. At present most of these decisions are made on chronological age (age groups) and not on individual, maturation level needs.



Single, double and occasionally (depending on sport-specific demands) triple periodization is the optimal framework of preparation during this phase. During competitions athletes play to win and to do their best, but the major focus of training is on learning the basics as opposed to competing. Training and competition ratios are optimized because too many competitions waste valuable training time and conversely, not enough competition inhibits the practice of technical/tactical skills and learning how to cope with the physical and mental challenges presented during competition.

A 60 percent training to 40 percent competition ratio is recommended by experts during the “*Training to Train*” phase and the 40 percent competition ratio includes competition and competition-specific training. However, these percentages vary according to sport and individual specific needs. Athletes undertaking this type of preparation will be better prepared for competition in both the short and long-term, than those who focus solely on winning. During this phase, athletes train in competitive situations daily, in the form of practice matches or competitive games and drills.

The “*Training to Train*” phase addresses two of the *critical* or *sensitive* periods of physical development. Athletes who miss this phase of training will not reach their full potential, as these critical periods have been missed. The reason why so many athletes plateau during the later stage of their careers is primarily because of an over emphasis on *competition* instead of on *training* during this important period in their athletic development.

The "Learn to Train" and "Training to Train" stages are the most important phases of athletic preparation. During these stages 'we make or break an athlete!'

STAGE 4

THE TRAINING TO COMPETE STAGE™

AGE: Males 16–18 / Females 15–17 years
OBJECTIVES: Optimize fitness preparation and sport, individual and position-specific skills as well as performance (optimize "engine", skills and performance).

This phase of development is introduced after the goals and objectives of the "Training to Train" stage have been achieved. The training to competition and competition-specific training ratio now changes to 50:50. Fifty percent of available time is devoted to the development of technical and tactical skills and fitness improvements, and fifty percent is devoted to competition and competition-specific training.

During the "Training to Compete" phase, high intensity individual event and position-specific training is provided to athletes year-round. Athletes, who are now proficient at performing both basic and sport specific skills, learn to perform these skills under a variety of competitive conditions during training.

Special emphasis is placed on optimum preparation by modeling training and competition. Fitness programs, recovery programs, psychological preparation and technical development are now individually tailored to a greater degree.

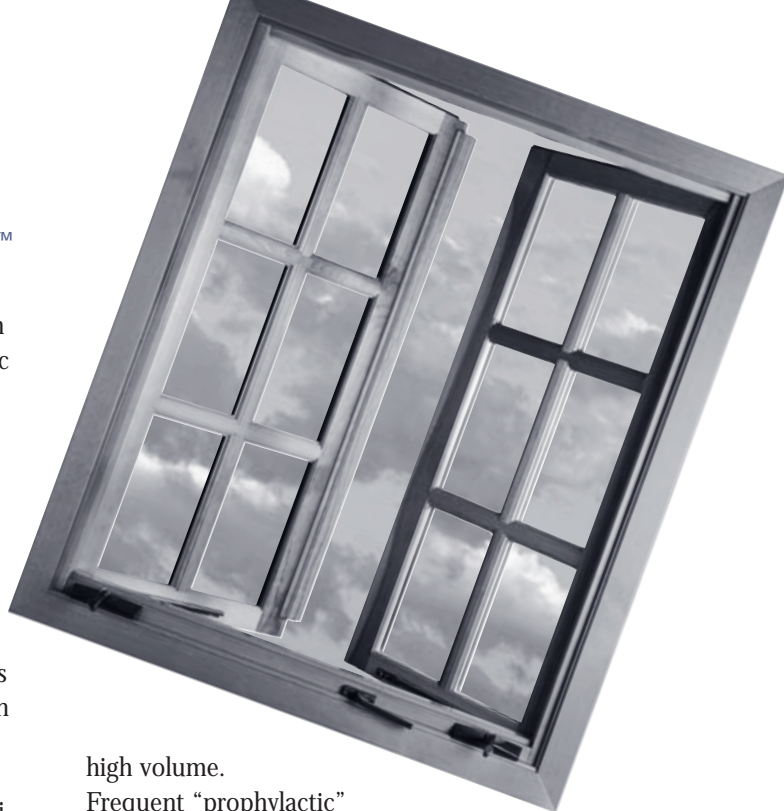
This emphasis on individual preparation addresses each athlete's individual strengths and weaknesses. Double and multiple periodization is the optimal framework of preparation.

STAGE 5

THE TRAINING TO WIN STAGE™

AGE: Males 18 years and older / Females 17 years and older
OBJECTIVES: Maximize fitness preparation and sport, individual and position specific skills as well as performance (maximize "engine", skills and performance)

This is the final phase of athletic preparation. All of the athlete's physical, technical, tactical, mental, personal and lifestyle capacities are now fully established and the focus of training has shifted to the maximization of performance. Athletes are trained to peak for major competitions. Training is characterized by high intensity and relatively



high volume. Frequent "prophylactic" (preventative) breaks help to prevent physical and mental burnouts. Training to competition ratio in this phase is 25:75, with the competition percentage including competition-specific training activities.

STAGE 5

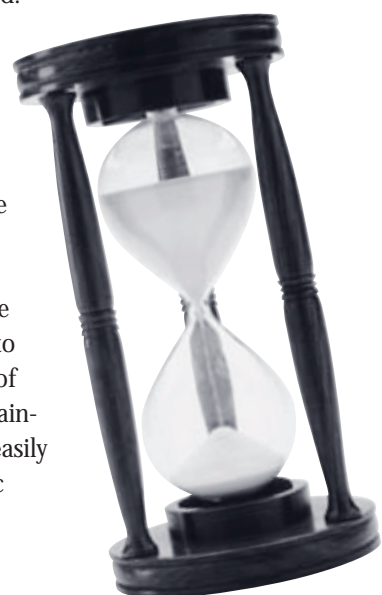
THE RETIREMENT / RETENTION STAGE

OBJECTIVES: Retain athletes for coaching, administration, officials, etc.

This phase refers to the activities performed after an athlete has retired from competition permanently. During this final phase, some ex-athletes move into sport-related careers that may include coaching, officiating, sport administration, small business enterprises, master's competition, media, etc.

Table 1, provides a generic outline of trainability. It identifies the various windows of trainability, showing chronological age, general and specific training age, the five stages of long-term athlete development, trainability windows and the moving scales of aerobic and strength trainability during the maturation period.

In this table, no arrow indicates chronological age, while arrows indicate moving scales, depending on the onset of PHV. Before the onset of PHV, and after maturation (post puberty) simple testing can determine training priorities, taking into consideration the windows of accelerated adaptation to training. This generic table can easily be adjusted to sport-specific norms and demands.



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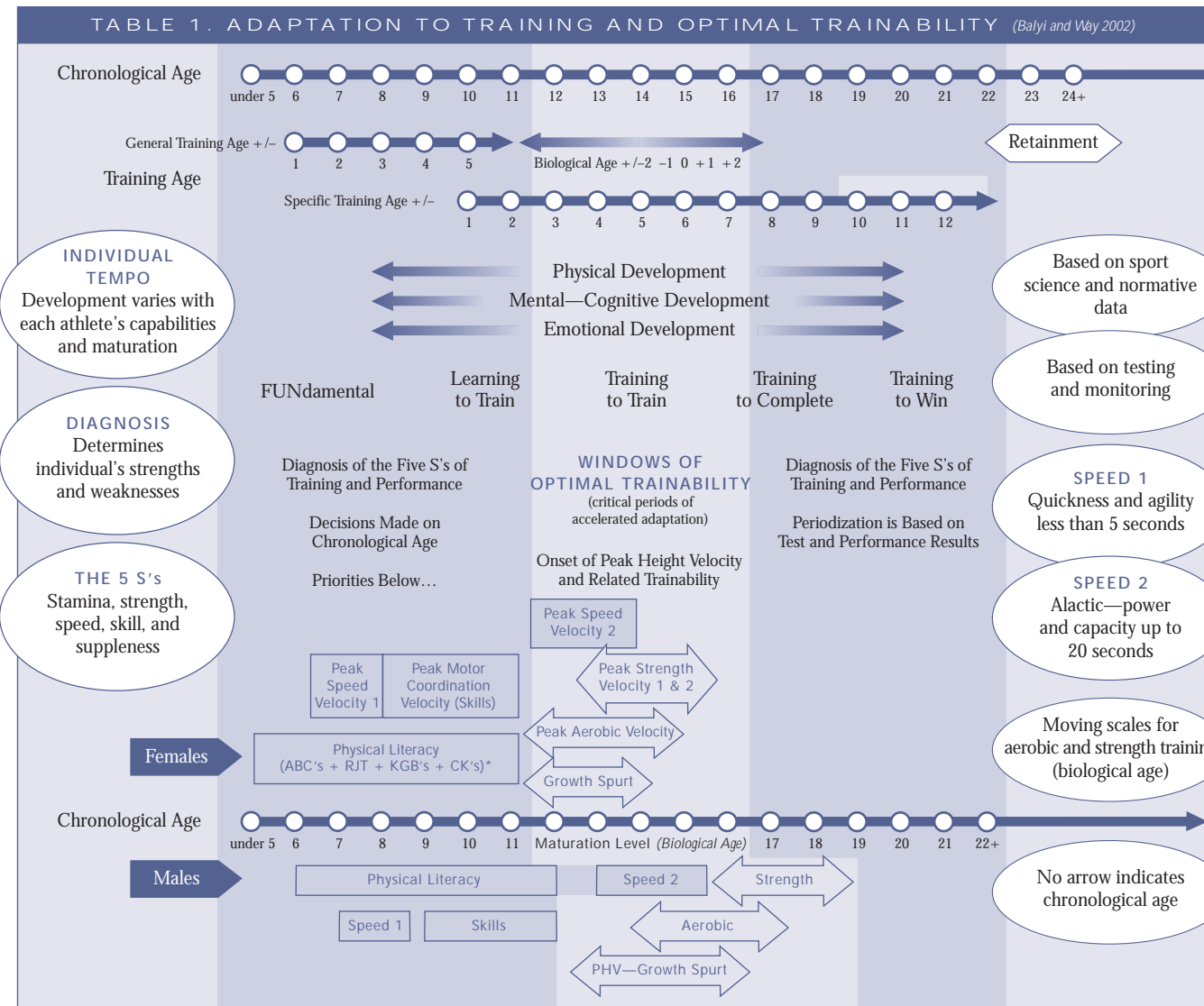
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*ABC's = Agility Balance Coordination Speed + RJT = Run Jump Throw + KGB's = Kinesthesia Gliding Bouyance Striking with objec + CK's = Catching Kicking Striking with body

THE KAROLYI NAME is synonymous with women's gymnastics. Most spectators are familiar with Bela Karolyi, but Martha (pronounced Marta) Karolyi, Bela's wife and coaching partner of forty years, is now in the leadership role for women's gymnastics. Martha Karolyi was named the United States Women's National Team Coordinator in January 2001. We were able to catch up with her just after one of the National team training camps at the Karolyi ranch.

Working Towards PERFECTION

by Catherine Sellers, USOC Manager of Coaching



Gymnastics is considered an early specialization sport. This interview provides us with some insight into the training of young athletes in an early specialization sport.

beat some of the top clubs. We then got involved with the higher level and we were invited to work on the first specialized training center for gymnastics training (in Romania). That is how the process went.

Sellers: How did you get involved in gymnastics?

Karolyi: I was myself a gymnast. I went to a Physical Education Institute in Romania and was on the gymnastics team. It was there that I thought about getting involved with coaching.

Sellers: It is easy to get involved in coaching, but how did you decide that you really wanted to work with athletes at the elite level?

Karolyi: That has a process; you don't just decide to work at a level. In my situation, we started working with really young children. The main thing was that we did selections at schools where we were working (a small mining settlement in the Carpathian Mountains of Romania). This involved a large number of young kids, who we provided basic training to when they reached a certain level.

We actually started the selection process with a large number and gradually narrowed the number down as the development started happening. With children, some of them improved and some of them looked like they would not, so it is a process of elimination.

We started with these young kids and achieved very good results. We were a little regional school, where we had improvised equipment. We started our program and we were able to make it to Nationals with our team and we

Sellers: You started with a large number of students and then narrowed them down. Did you have a set of tests that you used to narrow them down or was it kind of a visual evaluation? Did you watch them, see what they were doing and said "say—this kid has some talent and they can do more?"

Karolyi: In the selection process, particularly after we joined the specialized training center, we checked out an extremely large number of young kids. We spent a lot of time watching children, even on the playground, to see how they moved and how much courage and aggressiveness they had. We then organized and invited this number of kids to go through physical abilities testing.

The physical abilities we measured included strength, speed, flexibility and enthusiasm. We also wanted to see their fear factor. We were even asking the young kids to get on the high beam and vault; those were things that we were looking for.

Based on the stats, we were able to say that this student possibly had the ability to become a gymnast. You start to watch those children in their gymnastics training. You give them a basic preparation for the sport and then you learn more about their ability. It happens sometimes that a child is very strong or they have extremely good speed, but her coordination wasn't as excellent, which a gymnast need also.

Gymnastics needs very good coordination in order to perform certain skills, so without coordination it just doesn't work out. You cannot find out based on physical abilities alone, you must put them in a training situation. That is a faulting point of physical abilities testing, *(it does not show you what the athlete can do in training)*. You must give specialized, basic gymnastics training and then do verifications, and you check out how their standings are and then gradually narrow down to the people who have all of the components, which possibly allows you to become an elite gymnast. That is what we did in Romania.

Right now in the U.S., after a little bit of a suggestion by me, we started the Talent Opportunity Program (TOPS). I had mentioned several years ago about the process that we used in Romania, because the base *(in the United States)* wasn't so large. It works a little bit in the same way, all kinds of clubs can participate on a certain date and the selection process, which is based on physical abilities, are tested and they can qualify to a training camp once a year based on this.

Sellers: Is there a critical age? Is there a certain age group that you want to try to test? Is there a certain age that after this point it is very difficult for an athlete to come into gymnastics?

Karolyi: The ages of six, seven and eight years of age are very good. In Romania, we did the six to seven year old age groups and then selected people starting in the first grade for the specialized program. Here I believe with the TOPS program, the starting age is seven or eight year olds. In gymnastics, you start with early ages, some may get involved when they are three years old by going to little "tiny tots" programs. At that age, they do more in the form of games and little contests and you get them accustomed to being with the team. You identify some talent, but there are big differences between those little kids. The real selection is more around seven years old, which is when you can really tell.

Sellers: With a six to seven year old, how does your training with that age group compare to an eleven or twelve year old?

Karolyi: It has to be different. The children's attention span is not as big as it would be at eleven or twelve, or later on. With the younger age groups, you have to include something that catches their interest and you can't have extremely high numbers of repetitions. They do not have the patience to do skills over and over again. You explain and to make corrections you have to point out the certain things—the most important thing. Do not give several corrections at the same time, because they cannot register that feedback. I am positive that these little kids have a huge capability of work, so they really do not get tired. You can do more than you would believe. I remember when we started we got a tiny bit of criticism in the

beginning that we overworked the kids. They were not overworked. It was proven later that they developed perfectly and were physically able to handle even some strength exercises. We did not work the weights; we had them use their own body weight to develop strength.

Sellers: Do you use smaller periods of training, so that you have smaller blocks of time?

Karolyi: We always like to split the training into two parts during the day. We do not recommend anything longer than a maximum of three and one half hours of training—even with our top elite athletes. With the little kids it is the same thing, you might have two hours and two hours at the beginning of a day and then go on to three hours at one of the workouts and then up to three and one half hours in the morning. Nowadays, to be able to compete at an elite level, it takes about seven hours of training a day.

Sellers: In periodization, they always talk about intensity, volume and contact times, do you work at keeping up with that or do you structure your workouts with that in mind?



"YOU EXPLAIN and to make corrections you have to point out the certain things—the most important thing. Do not give several corrections at the same time, because they cannot register that feedback."



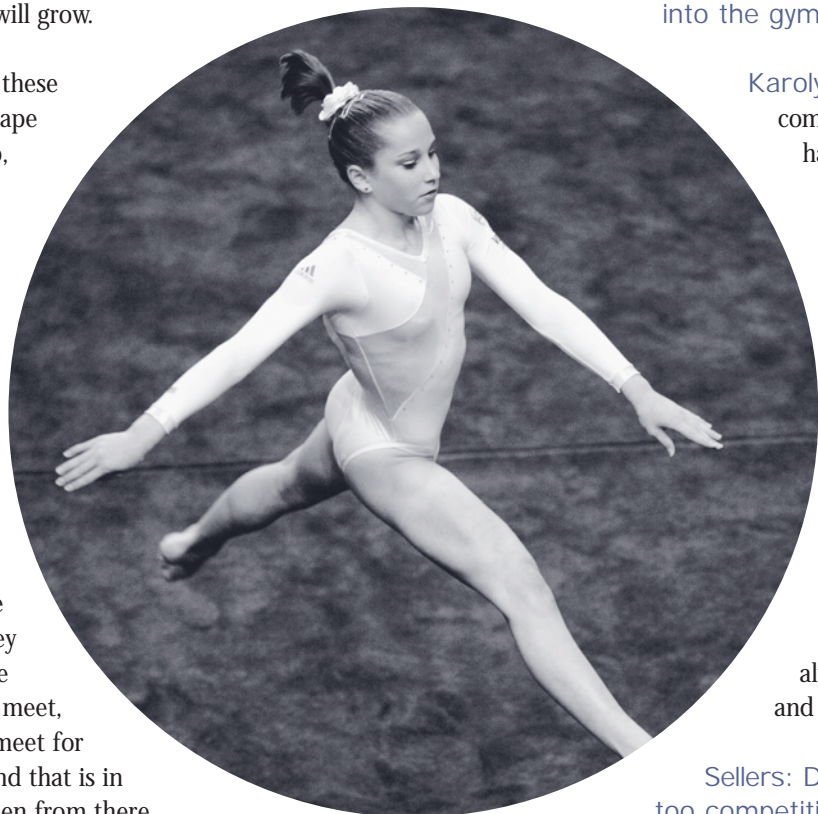


"YOU WANT TO PEAK and you can not hold your peak form for an extremely long period of time, so you want a little period of down time, sometimes you are able to do it. Ideally, I would do one peak."

Karolyi: With periodization you try to do it. I am in charge of planning out the Olympic preparation right now, but sometimes my hands are tied by requirements of participation in certain competitions. You want to peak and you can not hold your peak form for an extremely long period of time, so you want a little period of down time, sometimes you are able to do it. Ideally, I would do one peak. This year, it is not possible with most of the top athletes, because you have to participate in the American Cup right on the first day of March.

We will have to be in shape, because I do not encourage participation in gymnastics competition when you are not in good shape, that is just too dangerous for injuries. Any time that you participate without success, it throws off your self-confidence. When you go out you have to be in good shape, have a successful competition and your confidence will grow.

What we will do with these athletes is to get in shape for the American Cup, and maybe another competition near that date, not later than mid-March, and then a tiny bit of down time, not completely getting out of shape. We will do a little backing out from the full routine execution or hard landing execution, because we can protect them. They then get back in shape for the second classic meet, which is a qualifying meet for the Championships and that is in May, mid-May, and then from there you have to gear up for the Games.



Sellers: Do you do a periodization model with your young gymnast as well?

Karolyi: Yes, I usually recommend that after the competition season is over, that they spend extra time on physical abilities in general training. Another possibility is technical training on particular skills instead of doing the full routine. Then later on, get in routine shape. You have to periodize. In Romania, it was a little different and we really did more clearly these kinds of periodization. In the wintertime,

we spent two weeks in the mountains up in high altitude and we did endurance, running, skiing, running in ski boots and strength training with very little gymnastics work. This was extremely good physical development. You charged your batteries and then we came back to the training center and did work. After the competition season was over, we would go to the Black Sea and again it was a transition time and we did dance training, we did runs on the beach in the sand or in the water and strength training—not doing any real gymnastics. That is very good for the mind also, to get away for a while, but also keeping extremely fit.

Sellers: I am not sure that many people would have equated gymnastics with altitude training. At what age, when working with these young children, do you instill the concept of winning? Is it from the first day they walk into the gym?

Karolyi: The kids are very competitive. I think that you have to use that quality and not make a big deal of it encouraging who can jump higher, who can be more perfect in this little competition and other competition elements keep it very interesting for the kids. We don't want to put them down. We let them know from the very beginning that they must always try their very best and that's very good.

Sellers: Do they ever become too competitive in training?

Karolyi: The kids do not. The only thing that I can see is that sometimes the parent's may be too pushy in trying to push their kids. We do not encourage those types of situations. I think the kids' pushing themselves is good, if they have that nature. If they don't have that nature, then it is very hard to change it. Some people are more competitive and some don't like the pressure, and in those situations, I think it is better for a certain group of individuals to just re-direct the goals and don't shoot for the highest level. Sometimes they cannot handle too much competitiveness.

Sellers: What do you think makes your program so successful? I realize that this is a tough question.

Karolyi: It is hard to say, but probably the consistency, you always—always respect the program, the preparation, and the discipline in the workouts and the dedication to the sport. I think those are the most important factors. Some people work hard, but they are not able to work hard consistently. They are able to be easily distracted by other things that they would like to do, or take a nice long break through the holidays and do not respect the discipline of coming rested for the workout or eating the right foods. The athlete must have enough nutrition to give him/her the right energy. It is all a lot of discipline.

Sellers: Is it hard when they hit a certain age and they fall in love?

Karolyi: [Laughter.] Well, we cannot put that as a priority. It is clearly everybody's choice. [Laughter.] They have to understand, we are always very open and explain about what it takes to get to a certain level. You set a goal to try out for the Olympic Games, we lay out the plan. This is what we think is ideal for your preparation.

The teenage years are the hardest periods of time, as I have observed throughout my coaching career because they are neither kid nor adult. The kids are totally dedicated and then as teenagers, they think twice and they say, "Whoa—I want to do many things" and then when they get a little older they understand so much. They need to go with the plan laid out to them, because we have the experience and we know how to direct them and we know what it takes.



Sellers: To be an Olympian is not an easy task.

Karolyi: No, we always spell this out, even with pretty young kids who are going in that direction, even with Juniors (12-16 years old). We are not hiding it; to be an Olympian costs years in the sport.

You have to perfect everything in your movement. In order to do that you need to have lots of hours of training in the right technical execution, and then your body has to be strong enough to handle all those hours and all those repetitions. Your body has to be strong. For that, you must be fresh and rested for each workout.



We just talk about these things openly and we ask them to analyze truly what they came for. The little kids say I want to go to the Olympics and then when they see the training required, they might change directions. I think that is important, you do not need to hide these things from them, you must be very, very open and then it should be the choice of the young athlete.

Sellers: No, it can't be the choice of the parent.

Karolyi: No, No.

Sellers: What do you do when you have an athlete who gets injured? How do you deal with the injured athlete?

Karolyi: Injury—it will be there when you talk about high-level sports—it happens. Many times injuries don't happen by fault or any thing like that, but just by using your body. Number of repetitions, landing on hard surfaces, these types of injuries can happen.

In those times, we try to have the athletes understand that this is nothing tragic in these situations, it has happened before to athletes and will happen to anyone who is working toward the highest level. They just have to

"ANY TIME THAT YOU PARTICIPATE without success, it throws off your self-confidence. When you go out you have to be in good shape, have a successful competition and your confidence will grow."



"WE ARE SO LUCKY that we are doing something that we love, because this is not like a job for me. Gymnastics is my profession, but it is also my hobby. I enjoy doing it. I really do not feel burnout, even when sometimes it happens that the results in a major competition were not exactly what I expected..."



have the patience to go through this period of time. The coaches' creativity in this period of time is very important. If they have a sprained ankle and cannot work on that leg, there are so many other things that they can improve on in that period of time. You can improve your upper body strength, you can work a lot of dance

preparation and you can do the bar work. It is important that you be creative and find exercises they can still do, and get some work and not totally be sitting out and not losing the general preparation. They may lose in one area, but not in their whole body getting out of shape.

Sellers: They can still keep focused on their task as well.

Karolyi: Absolutely, absolutely. The coach should try to check things in some areas and show the athlete how much they have improved in that area, so the athlete feels good about themselves.

Sellers: You have coached at the elite level for an amazing number of years.

Karolyi: Since 1976 Olympics, I have had an athlete in every Olympic Games.

Sellers: As a coach, how do you maintain your level—gymnastics is not a seasonal sport it goes year round. How do you maintain your energy level and your focus?

Karolyi: I have no problem with that. If you like what you are doing, it is no

problem. It has never been a problem. I enjoy time with friends or family.

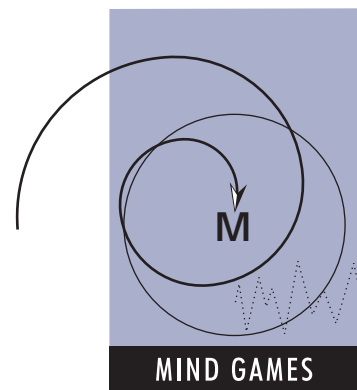
We are so lucky that we are doing something that we love, because this is not like a job for me. Gymnastics is my profession, but it is also my hobby. I enjoy doing it. I really do not feel burnout, even when sometimes it happens that the results in a major competition were not exactly what I expected, but I was able to go back and reach to the next generation and started bringing up athletes for the next Olympic cycle.

I think that is how coaches should be. I see some young coaches thinking that I work a little bit hard and I set this goal and now it's not happening and I am so frustrated. Those kinds of processes in the long run will not work. You just have to believe that you are doing the right thing and have to be satisfied with what you did.

These are the results and they did not come out exactly perfect. Sure, you look into it and see if you can do something different, but you don't lose your confidence or your enthusiasm.

Sellers: After an Olympic Games, do you ever go through, for the lack of a better word, a sort of postpartum depression like you have delivered this team and the stress is off of you? Or do you feel stress during an Olympic Games?

Karolyi: I think everybody feels stress. If someone says no, that they do not feel stress—that is not true. The stress can be completely different on different people. The stress does not put me down, it is there, but maybe it makes me to be more alert and I am paying attention to everything that I have to do. I have to evaluate the situation and make decisions in the moment. It is an extremely good feeling when you complete one Olympic cycle and you say it was good we did it. Maybe for a short period of time you want to do something completely different and then you go back and work.



Coaching Children to Embrace a "Love of the Game"

by Maureen R. Weiss, Ph.D.

Linda K. Bunker Professor of Education,
University of Virginia

Coaches occupy multiple roles in children's lives as sport participants. Coaches must be excellent instructors so that youth learn and improve skills, increase knowledge of strategies and tactics, and achieve their goals. Coaches can also inspire children to maintain motivation for participating in sport and, in so doing, allow them opportunities to accrue such benefits as positive self-esteem, enjoyable experiences, long-lasting friendships, and a positive attitude toward the value of lifetime physical activity. In short, coaches can ensure that youth want to continue their sport involvement—that is, participate for *intrinsic* reasons—rather than participate for primarily external reasons such as *feeling obligated to others* to continue. *How* can coaches maximize their positive impact on youths' motivation in sport?



INGREDIENTS OF CHILDREN'S MOTIVATION IN SPORT

Children participate in sport for multiple reasons, the most prominent among them being *developing physical competence* (learning and improving skills), *attaining social acceptance and approval* (be with and make friends, interactions with parents and coaches), and *enjoying one's experiences* (having fun, doing something interesting). Coaches can maintain and promote greater motivation by engaging in behaviors and structuring practices to meet these motivational needs. The three main reasons children participate in sport means that coaches should be mindful of enhancing players' perceptions of competence, ensuring positive social influence, and keeping practices and games fun and enjoyable. These three ingredients of motivation—perceived competence, social support, and enjoyment—are necessary for sustaining children's "love of the game."

We can depict all the ingredients of motivation in the diagram shown in Figure 1 below. This visual shows that coaches, parents, and peers (teammates, close friends) directly influence children's perceived competence or beliefs about their ability in sport. Perceptions of compe-

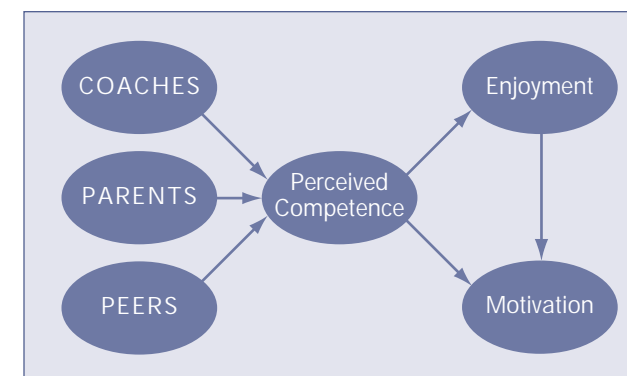


FIGURE 1. The ingredients of motivation.

tence, in turn, influence feelings of enjoyment and motivation in the form of intrinsic/extrinsic reasons, effort exerted, and persistence following mistakes. If we hone in on coaches as the source of social influence, we can identify specific coaching behaviors and principles that will maximize the probability that perceived competence, enjoyment, and motivation will thrive.

PROVIDE OPTIMAL CHALLENGES

Coaches can satisfy athletes' need for developing and demonstrating physical competence by carefully matching the difficulty of skills or activities with the child's capabilities. I like to think of optimal challenges as ones that *match the activity to the child, and not the child to the activity*. In short, optimal challenges are those that are at the cutting edge of a child's potential. Goals that are too easy are boring and simplistic; goals that are too difficult are likely to invoke anxiety and fear of failure. Coaches can ensure optimal challenges by setting hard but realistic goals for all participants, outlining developmental skill progressions

that allow children to systematically achieve goals, and modifying facilities, equipment, or activities to optimize task difficulty relative to the child's skill level.

MAXIMIZE SOCIAL SUPPORT

Acceptance and approval by adults and peers strongly influence children's perceptions of competence, enjoyment, and motivation. Coaches can make an impact on these elements in several ways. First, they can provide *frequent and contingent informational feedback* on how to improve skills. The term *contingent* means specific to or directly related to level of performance. For example, a baseball coach might praise a player for executing correct technique in hitting a ball to the opposite field, and then follow-up with information on how to get out of the batters box and up the line to first base more quickly. In response to a skill error, focusing on information for improving on the next attempt, rather than punishing the error, is a contingent and effective means of motivating players to sustain their effort. The literature clearly shows that frequent, contingent instruction by the coach to enhance sport skills and strategies sends a message to players that they have the ability to improve, and this is a motivating factor.

A second means of coaches providing social support is through *contingency and quality of praise and criticism*. Contingent praise might be our baseball coach *reinforcing* a player for making the correct decision in response to a fielder's choice, while contingent criticism might be *constructively questioning* a player for committing a mental error on a play he/she has mastered many times before. This latter behavior should suggest to the athlete that the coach believes he/she has the ability to do better. This brings us to the term *quality of praise and criticism*. Quality refers to the appropriateness of the feedback. Is it too much or too

little? For what level of performance or task difficulty is it given? The general rule to ensure quality or appropriate feedback is: (a) don't give excessive praise, (b) don't give praise for mediocre performance, and (c) don't give praise for success at easy tasks that everybody can do.

MAKE SURE SPORT EXPERIENCES ARE FUN

Fun does not have to solely mean pizza or McDonald's after the game. Enjoyment can be part of the fabric of practices and competitions. Children and adolescents experience fun when there are opportunities for high levels of action, personal involvement in the action, and affirming friendships. Activities during practice could be structured to maximize action by eliminating waiting in line, ensuring sufficient equipment, and keeping things moving with short but intense and varied activities. Children also enjoy having some input to their experiences. Although coaches certainly make up the practice plan and orchestrate the pace and content of activities, children can be part of the decision-making process such as choosing warm-up drills or an activity at the end of practice. Providing some opportunity for autonomy translates to greater fun and enjoyment.

CREATE A MASTERY MOTIVATIONAL CLIMATE

The motivational climate refers to how the learning environment is structured, what behaviors are valued, and how individuals are evaluated. A *mastery motivational climate* is one in which success and valued behaviors are defined in self-referenced terms such as learning, effort, and improvement, and mistakes are viewed as part of the learning process. By contrast, a *performance motivational climate* is one that emphasizes norm-referenced definitions of success such as comparison to teammates' performances and game



outcome. The sport environment is one that contains some mixture of both mastery and performance climates. The key is for coaches to recognize, praise, and emphasize athletes' personal improvements because such actions are under athletes' control and thus more motivating than emphasizing peer comparisons. The acronym TARGET identifies elements of a mastery motivational climate, and also reinforces some of our earlier coaching concepts. TARGET includes:


- T ask (optimal challenges v. standardized goals),
- A uthority (player choice v. coach-directed only),
- R ecognition (reinforcing effort and improvement, not only outcome),
- G rouping (cooperative teamwork v. competitive orientation),
- E valuation (assessing improvement v. normative criteria), and
- T ime (adequate time for learning and improvement).

HELP CHILDREN HELP THEMSELVES

Coaches can also motivate athletes by teaching them self-regulated learning strategies, which allow children to depend on themselves, not only adults, to monitor and evaluate their skill improvement and performance. Self-regulated learning consists of *self-observation*, *self-judgment*, and *self-reinforcement*. These processes refer to monitoring one's behaviors to assess progression toward skills, comparing one's current performance with desired goals, and reacting positively or negatively concerning progress toward goal achievement. Strategies such as goal setting, reframing negative to positive self-talk, and encouraging adoption of effort attributions for performance setbacks allow children a constructive means of evaluating their progress and readjusting their sights, maintaining a positive mental attitude

rather than getting down on themselves, and seeking out alternative strategies as a means of problem solving rather than ascribing skill errors to factors outside of their control.

TAKE-HOME MESSAGES

Coaching to embrace a "love of the game" means understanding that multiple reasons underlie children's participation patterns. The major reasons children play sports is to develop and demonstrate physical competence, experience positive social interactions with adults and peers, and have fun and enjoyable times. These three reasons form the ingredients of intrinsic motivation—one that is synonymous with an inherent desire to continue involvement. To maximize motivation, coaches can positively affect children's sport experiences by providing optimal challenges, maximizing social support, ensuring enjoyable activities, creating a mastery motivational climate, and helping children help themselves. Each of these principles can be easily customized with sport-specific examples, and applied during practices and competitive events to maintain, sustain, and enhance children's "love of the game." 

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Interventions for Coaches

by Mike Niederpruem,
MS, CSCS,

is the National Director of Certification and Registry Programs at the American College of Sports Medicine. Also an Elite Coach with USA Cycling, Mike received the 1997 USOC "Development Coach of the Year" in Cycling.

For better or worse, participation in sports by many young athletes has evolved beyond healthy activity. Indeed, in 2002, Blue Cross/Blue Shield conducted a survey which indicated that one million adolescents, aged 12 to 17 years of age, had used ergogenic aids and/or supplements (ES).

More recently, even the President of the United States felt the topic worthy of mention in his 2004 State of the Union Address, saying:

"To help children make right choices, they need good examples. Athletics play such an important role in our society, but, unfortunately, some in professional sports are not setting much of an example. The use of performance-enhancing drugs like steroids in baseball, football and other sports is dangerous, and it sends the wrong message—that there are shortcuts to accomplishment, and that performance is more important than character. So tonight I call on team owners, union representatives, coaches, and players to take the lead, to send the right signal, to get tough, and to get rid of steroids now."

Fortunately, none of the other professionals President Bush calls upon to "send a signal" is in a greater position of influence for young athletes than coaches. In this time of heightened awareness, athletes will look to their coaches for leadership. The opportunity and responsibility is yours to make a difference now with respect to ES use among young athletes. Here is how you can create and implement your plan:

1. RECONNAISSANCE

You can't expect to be effective at educating others until you educate yourself first. Learn all that you can about the different types of ES, especially for the ones that may be common for your sport(s). Ask other coaches about what they are seeing on the field or in the gym.

Next, familiarize yourself with the signs and patterns of use, especially for the two most pervasive types of ES: anabolic steroids and diuretics. NOTE: The presence of one or more of the following signs is an indication of, but not a guarantee that a young athlete is using ES:

ANABOLIC STEROIDS (Such as Nandrolone and Dianabol—used to improve muscular strength; common in football and other strength/power sports)

- Rapid onset of acne
- Rapid change in body build (significant increases in lean body mass), especially as compared to peers
- Mood changes (short temper, getting into/causing fights)

According to the American College of Sports Medicine Position Stand on steroids, "the use of anabolic-androgenic by athletes is contrary to the rules and ethical principles of athletic competition as set forth by many of the sports governing bodies. ACSM supports these ethical principles and deplores the use of anabolic-androgenic steroids by athletes."

DIURETICS (Such as Lasix—used for rapid weight loss; prevalent in wrestling or other sports where weight is a handicap)

- Frequent urination (with minimal fluid intake)
- Rapid weight loss
- Noticeable change in facial appearance

2. CREATE OR ESTABLISH A CODE OF CONDUCT

Defer to league rules and position stands from professional associations, like ACSM, to help establish the foundation for your code of conduct. When beginning a new season with new athletes, ask both the athlete and the parent to complete a training, lifestyle and medical history questionnaire, preferably with your help.

Some leagues also require that athletes and coaches adhere to additional rules, which may specifically address the use of supplements. For example, in college sports, NCAA bylaw 16.5.2.2 regulates the nutritional supplementation of collegiate athletes. Specifically, "an institution may provide only non-muscle building nutritional supplements to a student athlete at any time for the purpose of providing additional calories and electrolytes, provided the supplements do not contain any NCAA banned substances."



Furthermore, it is the position of ACSM that "nutritional ergogenic aids should be used with caution, and only after careful evaluation of the product for safety, efficacy, potency and whether or not it is a banned or illegal substance."

State high school athletic associations and national governing bodies of sport may or may not have similar rules or codes, so be sure to check if you don't already know.

3. EDUCATE PROACTIVELY

Once your conduct code is created, take this opportunity to begin educating both the parents and the athlete at the same time. It's also a great way to make your standards known about what is or is not acceptable with respect to supplement use, as well as the ramifications for not adhering to the team or league's code of conduct.

Establish regular sessions to educate your athletes and parents about ES use, based on the results of your reconnaissance and the athlete/parent questionnaires. Ask your athletes and their parents to prepare questions in advance. Use handouts and guest speakers to improve retention, and use incentives to maximize attendance.

4. INFORM RESPONSIBLY

You may already have one or more athletes who have experimented with or are currently using supplements. The objective is to establish an environment where the athletes are willing to share what they are doing with you (ideally, their parents as well). If you are approached, either by an athlete taking something or considering taking something they have recently found out about, be prepared with additional resources (summaries, articles, reputable web sites, etc.).

If necessary, be able to refer the athlete and his or her parents to a registered dietician with a strong background in sports nutrition and/or a physician familiar with health issues related to young people and young athletes.

If the athlete hasn't yet talked to their parents, encourage them to do so directly, or obtain permission from the

athlete before approaching the parent. Finally, to the best of your ability, refrain from being negative or overly critical.

5. REDIRECT

As a coach, one of your responsibilities is to improve the performance of your athletes. There are many ways to facilitate physical development, improve recovery, and enhance skills that don't involve supplementation, but involve optimizing training methods and their progression. If you are not a master of all trades, talk to other coaches about helping in one or more of these areas. Numerous health and fitness professionals are available to help with resistance training programs, aerobic development, and skills and techniques of the game.

Remember, the same references you make available to your athletes are also available to you. Use positive and thoughtful discouragement when re-directing young athletes away from experimenting with supplements. This works well when you are introducing new training methods at the same time.

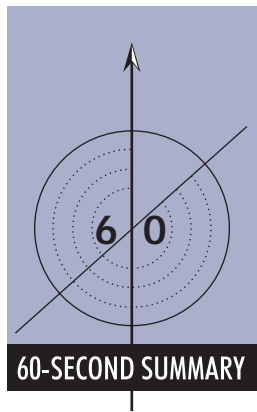
6. FOLLOW-UP

An effective plan includes consistent follow-up with your athletes until an acceptable resolution is found. Plus, it shows that you are genuinely interested in their ongoing development as an athlete, and that you care about their well-being as a human being.

To a young athlete, you are more than just a coach. You are also a friend, mentor, role model, authority figure, and perhaps even a surrogate parent at times. Because of this, you have a unique opportunity to make a positive impact on a young athlete's development, both physically and psychologically. Commit to using your skills and your heart to mold the young athletes of today into the professional athletes of tomorrow.

The use of supplements may be one way to improve performance, but they are certainly not the only way, or the best way. Perhaps one day, the signal will not only be sent, but also received. 📧





60-SECOND SUMMARY

Exercise— Heat Tolerance of Children and Adolescents

by Lawrence E. Armstrong
and Carl M. Maresh

Pediatric Exercise Science, 1995, 7, 239-252

This excellent review of literature regarding children and exercise-heat tolerance provides some insights that coaches of youth sports should be familiar with. “The greatest risk of health illness for children is heat exhaustion and not heat stroke.”

REVIEW

“Exercise-heat tolerance (EHT) is defined as the ability to tolerate exercise in a hot environment.” “Despite two reports in the 1960’s of heat illness in infants, exercise-heat tolerance has not been explored extensively in children and adolescents. This is surprising because children are habitually more active and spend more of their active hours outdoors than adults do.”

The following statements represent the consensus of opinion regarding studies of children and adolescents, which Armstrong and Maresh evaluated and qualified their meaning:

1. “Children have a greater mass-relative submaximal oxygen demand than adults, during walking or running, but a lower anaerobic capacity.
2. Children have a smaller mass-to-surface area (M/SA) ratio.
3. Children have a smaller sweating rate and total cardiac output, but a higher heart rate and core temperature (however, Armstrong and Maresh point out that core temperature is not supported by scientific evidence).

4. Children are not capable of complete heat acclimatization and thus acclimatize at a slower rate.
5. Children report a lower rating of perceived exertion during exercise in the heat.
6. Adolescents exhibit EHT similar to that of adults, but specific organ systems have not matured to full function or size.”

Some investigators have reported that children exhibit adequate thermoregulation and EHT that is similar to that of adults, while others have reported decreased EHT and inadequate thermoregulation in children. It is also significant that children thermoregulate as effectively as adults in cool conditions of 20 to 25 degrees C, and in warm conditions when the ambient temperature exceeds the skin temperature by five to seven degrees celsius and humidity is below 50% relative humidity. However, in a very hot environment, when the ambient temperature exceeds the skin temperature by more than 10 degrees celsius, the EHT of children is reduced.

1. CHILDREN HAVE A GREATER MASS-RELATIVE SUBMAXIMAL OXYGEN DEMAND THAN ADULTS, DURING WALKING OR RUNNING, BUT A LOWER ANAEROBIC CAPACITY.

Drinkwater et al. in one of the few studies that focused on the cardiovascular responses of both children and adults who had similar VO_2 max. The girls, age 12, exhibited overt indications of cardiovascular difficulty when they stopped exercising. Two other investigators have reported similar cardiovascular insufficiency in boys.

The primary risk of heat illness for children appears to be heat exhaustion, not hyperthermia or



heatstroke. Because there are virtually no reports of heatstroke among children at outdoor contests, it appears that children, or coaches and parents, selectively halt exercise when cardiovascular insufficiency results in great discomfort, dizziness, or extreme fatigue.

2. CHILDREN HAVE A SMALLER MASS TO SURFACE AREA RATIO.

“M/SA is a theoretical means of identifying who is susceptible to heat injury, because mass is proportional to heat production and surface area is proportional to heat dissipation. If both boys and girls have smaller mass than adults, theoretically they should dissipate exercise-generated heat more efficiently via radiative and convective heat loss, because the ratio of heat-generating mass is lower per unit of skin surface area.”

However, there is an overlap in the M/SA values of children and adults. This indicates that the classic M/SA explanation above must be qualified by describing factors such as the age, fitness level and body composition of children.

3. CHILDREN HAVE A SMALLER SWEATING RATE AND TOTAL CARDIAC OUTPUT, BUT A HIGHER HEART RATE AND CORE TEMPERATURE.

The sweating rate of prepubertal boys is significantly lower than in men.

Prepubertal girls, however, exhibit sweating rates similar to those of women. When groups that differ markedly in maximal aerobic power (VO_2 max) are given a task with the same relative exercise intensity ($\%VO_2$ max), the effect of age can be confounded because sweating rate is proportional to the absolute metabolic rate. This research design is common, however, because core temperature and heart rate are proportional to $\%VO_2$ max.

There have been no scientific studies that have observed large exercise-induced differences between the rectal temperature of children and adults. This is important because rectal temperature is one of the standards by which exercise-heat tolerance and heat acclimatization historically have been evaluated.

4. CHILDREN ARE NOT CAPABLE OF COMPLETE HEAT ACCLIMATIZATION AND THUS ACCLIMATIZE AT A SLOWER RATE.

This is an area for more research. The studies that have shown that children thermoregulate like adults in cool environments but have limited thermoregulatory capacities in hot environments had flaws. In fact, at least six studies did not observe adult responses in identical tests. The current literature does not support the concept that exercise in a hot environment is dangerous for them.

5. CHILDREN REPORT A LOWER RATING OF PERCEIVED EXERTION DURING EXERCISE IN THE HEAT.

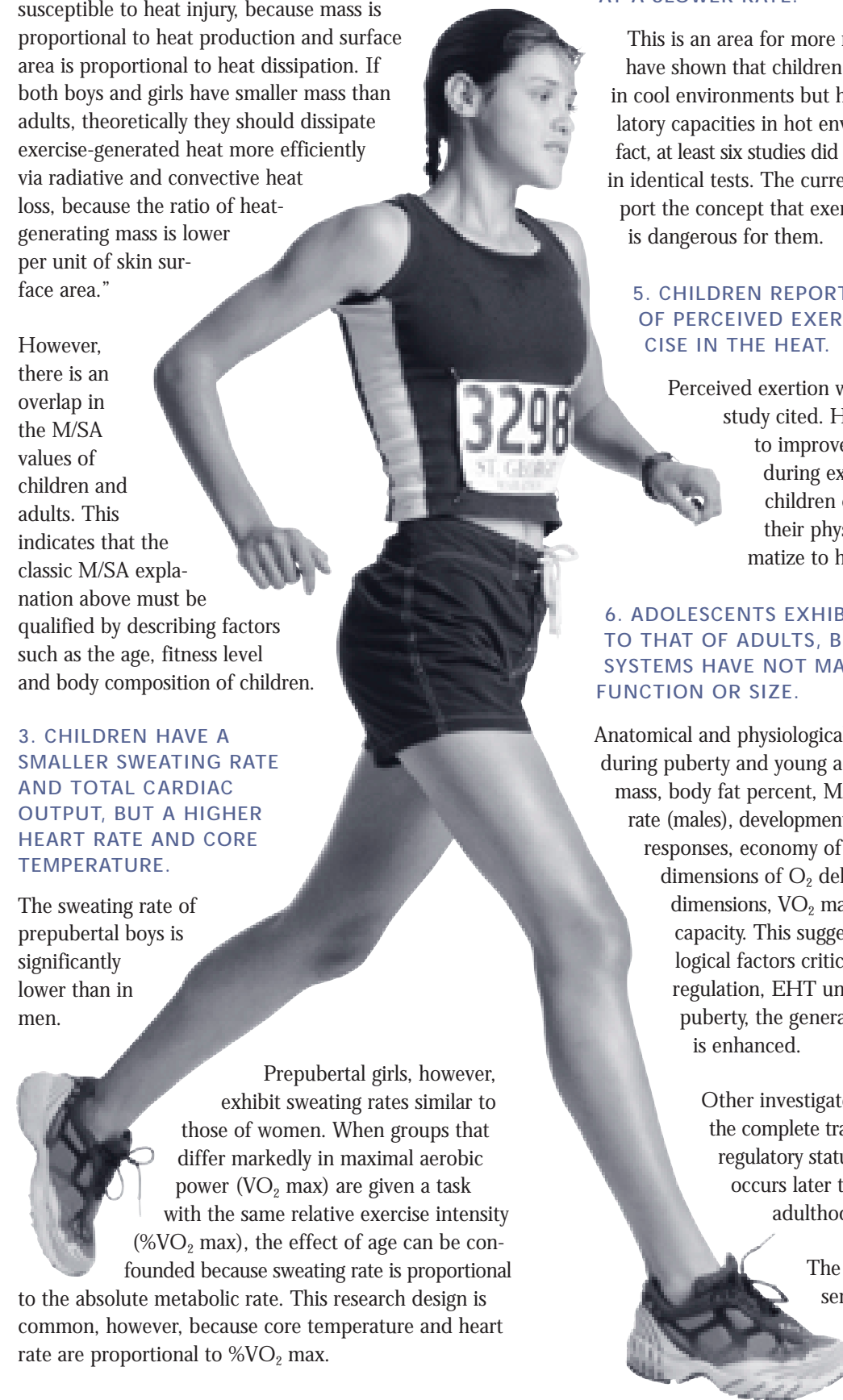
Perceived exertion was not focused on in any study cited. However, it was noted that to improve cardiovascular dynamics during exercise-heat exposure, children could either enhance their physical fitness or acclimatize to heat.

6. ADOLESCENTS EXHIBIT EHT SIMILAR TO THAT OF ADULTS, BUT SPECIFIC ORGAN SYSTEMS HAVE NOT MATURED TO FULL FUNCTION OR SIZE.

Anatomical and physiological factors that change during puberty and young adulthood include muscle mass, body fat percent, M/SA, whole-body sweating rate (males), development of sweat glands, hormonal responses, economy of upright exercise, cardiac dimensions of O_2 delivery chain, pulmonary dimensions, VO_2 max, and anaerobic metabolic capacity. This suggests that all of the physiological factors critical to homeostasis, thermoregulation, EHT undergo change during puberty, the general result being that EHT is enhanced.

Other investigators have concluded that the complete transition to adult thermoregulatory status and trainability probably occurs later than puberty-in young adulthood.

The authors conclude with a series of research questions and a well-developed list of references.





HOT OFF THE PRESS

WEBSITE ARTICLES FOR YOUTH SPORT:

Normal Weight Gain in Growing Children by Robert Malina, Ph.D., <http://www.healthyweightnetwork.com/zart13.htm>

PREVENTING HEAT ILLNESS IN SPORT

http://www.ausport.gov.au/fulltext/2001/sma/Heat_policy.pdf

ACSM—YOUTH SPORTS AND HEALTH

<http://acsm.org/health+fitness/pdf/fitsociety/fitsc203.pdf>

NUTRITION FOR CHILD AND ADOLESCENT ATHLETES:

<http://www.gssiweb.com/reflib/refs/235/sse77.cfm?pid=96&CFID=807220&CFTOKEN=3408257>

WEBSITE FOR A LARGE VARIETY OF SPORTS RELATED CALCULATORS:

<http://www.martindalecenter.com/Calculators.html>

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This quarterly publication designed for coaches at all levels can now come to you via e-mail. The quarterly e-mail provides a summary of each article in the magazine with a link that takes you directly to the full-length article. The E-magazine contains the same content as the print version of the magazine. The best news is that OLYMPIC COACH E-MAGAZINE is available to all coaches and other interested individuals free of charge. To receive your complimentary subscription, go to the web site at <http://coaching.usolympicteam.com/coaching/ksub.nsf>, and sign up. The subscription information that you provide will not be shared or sold to any other organization or corporation. Please share this opportunity with other individuals in the coaching community. The PDF version of past editions of the Olympic Coach magazine are available at: <http://coaching.usolympicteam.com/coaching/kpub.nsf>

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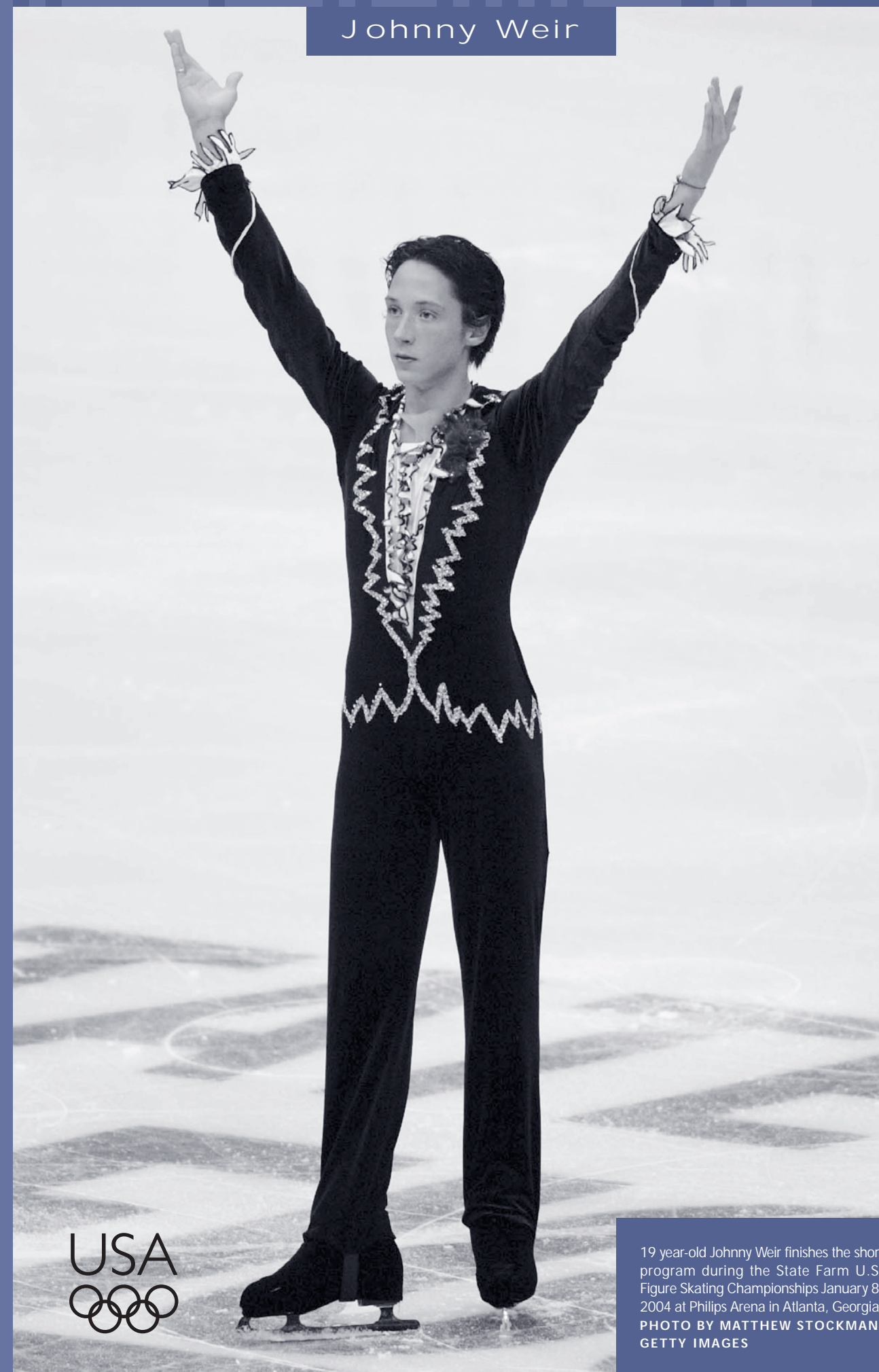
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Johnny Weir



19 year-old Johnny Weir finishes the short program during the State Farm U.S. Figure Skating Championships January 8, 2004 at Philips Arena in Atlanta, Georgia. PHOTO BY MATTHEW STOCKMAN/GETTY IMAGES



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