

# KAHPERD

## *journal*



**VOLUME 48 , NUMBER 1**

**The 6th Annual  
Student Leadership Conference  
Morehead State University  
Morehead, KY**

# Guidelines for Manuscript Submission

The KAHPERD Journal is published twice yearly (spring and fall) by the Kentucky Association for Health, Physical Education, Recreation and Dance. Deadlines for submitting materials for consideration for inclusion should meet the following deadlines. For the spring issue it is March 1st and fall issue September 1st. Manuscripts should be sent as an email attachment to Dr. Steve Chen at Morehead State University at [s.chen@moreheadstate.edu](mailto:s.chen@moreheadstate.edu).

## Manuscripts

Manuscripts should follow the form of the guidelines for publications outlined in the 5th edition of the Publication Manual of the American Psychological Association, ISBN #1-55798-810-2. Articles should not exceed 10 dou-

ble-spaced pages. Authors of articles should submit, on a separate piece of paper, a brief biographical sketch which should include your current position, title, and other information that you would like your readers to know about you.

## Illustrations

Illustrations such as pictures, graphs and drawings are valuable additions to articles. Any pictures, graphs, and drawings must be submitted photo ready and reproduced to fit into a standard print column of 3 ½ inches. Only one copy of each illustration is required, and captions should be typed on a separate piece of paper and not the figure itself. Proper citation of pictures, graphs, and tables is the responsibility of the author(s) of the article.

## Reviewing and Editing

Each article is reviewed by three members of the editorial board. To be accepted for publication in the journal, the article must be approved by no less than two of the members. Criteria forms for inclusion can be sent to interested parties by contacting Dr. Steve Chen at [s.chen@moreheadstate.edu](mailto:s.chen@moreheadstate.edu).

## Article Submission

Articles are accepted via an attachment through email to the editor before the deadline date. Articles must be in Microsoft Word format. If you have any questions regarding submitting a manuscript, please contact the journal editor, Dr. Steve Chen.

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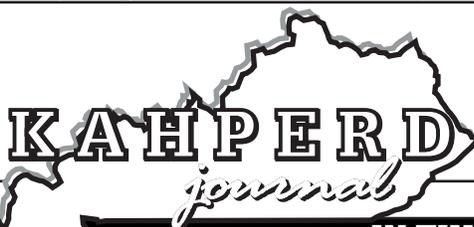
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In submitting an article, the author accepts responsibility that is has not been published or accepted for publication elsewhere, unless otherwise state d in writing.

# A MESSAGE FROM YOUR PRESIDENT

Greetings, I hope this finds everyone well and getting ready to attend the fall convention at Embassy-suites in Lexington on November 14-16th. I've enjoyed my stint as interim-editor of the KAHPERD journal for this issue and hope you enjoy the fall journal which is being placed fully online for the first time in KAHPERD history. Through this experience I have made many new friends and am amazed at the number of people we have in KAHPERD that are willing to share their expertise. I have no doubt that our state association is one of the best-if not the best.

I am pleased to be able to share some exciting news about the journal. Beginning with the spring 2011 issue, Dr. Steve Chen will be our new journal editor. Dr. Chen is an Assistant Professor of Sport Management in the School of Business Administration at Morehead State University. He has served several rotations as research and sport management section chair on the KAHPERD board and most recently planned the student research posters at the 2010

convention. Prior to coming to Morehead State, Dr. Chen was an Assistant Professor at the United States Sport Academy and has been with several teams as basketball coach. Through his academic career he has written and published over 30 blind peer/editorial reviewed articles, 2 book chapters, given 52 oral and poster presentations at various venues and has been awarded 3 grants. His research interests include: sport marketing, diversity and gender issues, sport economics, sport sociology, sport coaching, and administration in intercollegiate athletics. He will be a wonderful contributor to the research rich tradition of the KAHPERD journal and I know he will serve the professional interests of KAHPERD to his highest capabilities. To contact Steve with questions about the journal, email him at [s.chen@moreheadstate.edu](mailto:s.chen@moreheadstate.edu). For information on submitting a manuscript, please see the article on Guidelines for Manuscript Submissions.

## AAHPERD CONVENTION INFORMATION



### Information is available online!!

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- ★ AAHPERD Membership
- ★ Exhibitor Lists and Session Schedules
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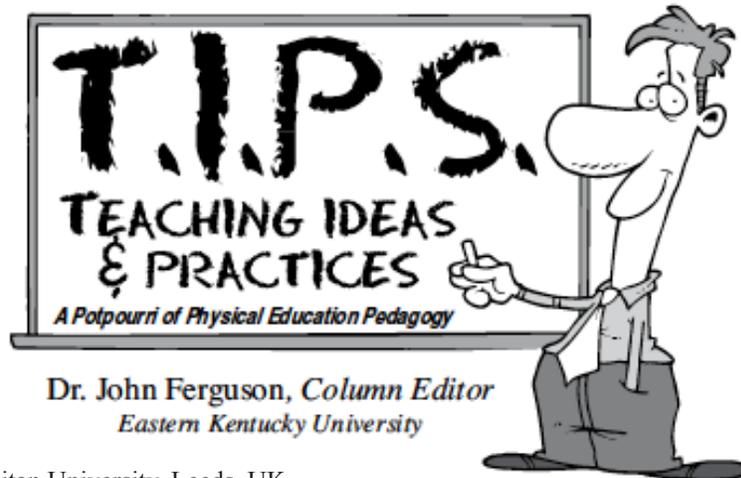
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### Future AAHPERD Convention Dates

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- ★ 2012 ★ March 13-17 ★ Boston ★

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# Teaching Styles in Physical Education and Mosston's Spectrum



Jonathan Doherty - Centre for Physical Education, Leeds Metropolitan University, Leeds, UK.

If you think back to when you were taught physical education in school, undoubtedly you will have been taught by a number of different teachers and these teachers may have had quite different instructional techniques. What is likely is that certain types of teaching appealed to you more than others, which in turn may have colored your own thoughts about that particular sport or physical education activity. So, for example in hockey or soccer, the teacher may have used a lot of skill-drill activities where you were encouraged to practice various skills relevant to the game. In gymnastics perhaps the teacher's approach was more formal and you were expected to do exactly as that teacher instructed.

The debate centers around the notion of "teaching styles" and this brief paper sets out firstly to clarify some of the confusion that exists regarding the term itself and secondly, shows how one model of teaching styles (Mosston, 1986) is an effective and creative way of teaching physical education today. What is meant by "teaching styles"?

The term itself has no agreed definition but the more widely accepted definitions refer to it as "a set of teaching

tactics" (Galton et al, 1980) "instructional format" (Siedentop, 1991). In PE circles the definition of it as "the general pattern created by using a particular set of strategies" (BAALPE, 1989, p.9) provides a neat working definition.

Over the last thirty years a number of writers in the United Kingdom have identified particular teaching styles and related them to philosophies of teaching or to specific learning outcomes (Bennett, 1978). Emerging from this work and that of other writers specifically in PE (Kane, 1974) are two important findings. Firstly, that integral to teaching styles is its effect on the involvement of students in the learning process. Secondly, while it is acknowledged that many teachers have their own individual styles of instruction, relying on personal preference is an unstable basis for effective teaching and that selection of a teaching style must be done on a more logical and scientific basis.

By far the most detailed analysis of teaching styles and behaviors came from work originated in the United States by Mosston (1966). His ideas on the interactions between teacher and student have been developed since

his initial publication and have provided a framework for teaching physical education in different contexts all over the world. So influential was it that the work that it was described as "the most significant advance in the theory of physical education pedagogy in recent history" (Nixon & Locke, 1973, p.1227). So why is it so successful? What is it about Mosston's ideas that make them so enduring? The answer lies in the framework for teaching which he called the Spectrum of Teaching Styles.

## *The Spectrum of Teaching Styles*

The Spectrum established a framework of possible options in the relationship between teacher and learner (Mosston & Ashworth, 1986) and was based on the central importance of decision-making. He grouped these into pre-impact, impact and post-impact categories and proposed that these govern all teaching. The pre-impact set is concerned with decisions made before teaching; at preparation phase and involves subject matter, learning objectives, organization and presentation. The impact set includes decisions relating to performance and execution while the post-impact set includes

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Originally published in the column "The New P.E. Dimension" – issue November 2003/ <http://www.sports-media.org/sportapolisnewsletter23newlook.htm>

evaluation of performance and feedback from learner to teacher.

The Spectrum incorporates ten landmark styles based on the degree to which the teacher or the student assumes responsibility for what happens in a lesson. This describes a continuum, where at one extreme is the direct, teacher-led approach and at the other lies a much more open-ended and student-centered style where the teacher acts only in a facilitator role.

*The teaching styles are:*

1. Style A Command - teacher makes all decisions
2. Style B Practice - Students carry out teacher-prescribed tasks
3. Style C Reciprocal - Students work in pairs: one performs, the other provides feedback
4. Style D Self-check - Students assess their own performance against criteria
5. Style E Inclusion - Teacher planned. Student monitors own work.
6. Style F Guided Discovery - Students solve teacher set movement problems with assistance
7. Style G Divergent - Students solve problems without assistance from the teacher
8. Style H Individual - Teacher determines content. Student plans the program.
9. Style I Learner Initiated - Student plans own program. Teacher is advisor.
10. Style J Self Teaching - Student takes full responsibility for the learning process.

The Spectrum offers a range of op-

tions to teachers that can accommodate students' diverse learning styles and meet the learning intentions of a teaching session more accurately. The table below shows the range of styles in the Spectrum and illustrates one of its key aspects: matching the appropriate teaching style to the learning intentions (outcomes) of a lesson.

*Variety is the spice of life*

The Spectrum provides a sound basis for analysis of one's teaching and the effectiveness of selected styles to meet particular learning intentions. It emphasizes relationships between the different styles, rather than their differences. It follows that effective instruction in PE takes account of this variety in teaching styles and an ability to use the style that is most suited to the teacher (Coates, 1997). By the same token it would be misplaced to assume that a given style is associated with a particular physical activity area or sport. The Spectrum was never intended as a straitjacket: quite the reverse. It permits a huge degree of freedom and celebrates the creativity of the individual teacher. In this way teaching is both art and science.

In teaching physical education the effective teacher is involved in adjusting and reviewing tasks set according to the needs and responses from the students. Being able to use various teaching styles identified in Mosston's framework creates an optimum working environment, maintains good discipline, sets high standards, facilitates pupils' thinking and achieves the mul-

iple learning objectives integral to PE. Surely worthy of serious consideration in our teaching.

## References

- Bennett, N. (1978) *Recent research on teaching: A dream, a belief, and a model.* *British Journal of Educational Psychology*, 48, p.127-47.
- British Association of Advisers and Lecturers in Physical Education (1989) *Teaching and Learning Strategies in Physical Education.* Leeds: White Line Press.
- Coates, B. (1997) *Refining your Style.* Sports teacher. Spring edition
- Galton, M., Simon, B. & Croll, P. (1980) *Inside the Primary Classroom.* London: Routledge & Kegan Paul.
- Kane, J.E. (1974) *Physical Education in Secondary Schools.* Schools Council Research Studies, London: Macmillan.
- Mosston, M. (1966) *Teaching Physical Education.* Columbus, OH: Merrill.
- Mosston, M. & Ashworth, S. (1986) *Teaching Physical Education.* Columbus, OH: Merrill.
- Nixon, J. & Locke, L. (1973) *Research on teaching physical education.* In R. Travers (Ed.), *Handbook of research on teaching*, pp.1210-1242. Chicago: Rand McNally.
- Siedentop, D. (1991) *Developing Teaching Skills in Physical Education.* Palo Alto, CA: Mayfield.

Spectrum Style	Learning Intentions	PEexample
Command	Physical: Motor skill sequisition.	Performing a somersault on a tram-poline.
Practice	Physical: Motor skill development.	Groups of four practice the "dig" in volleyball.
Reciprocal	Social: Working with others. Cognitive: observing, analysis.	In twos, practice the set shot in basket-ball.
Self-check	Social: Helping others assess their own perforamnce.	Shot putt in athletics. Success criteria on a teaching card.
Inclusion	Social: Maximizing involvement. Assisting others to succeed.	Using hurdles set at different heights & distances.
Guided discovery	Cognitive: Discovery learning.	Pupils try different start positions for the forward roll in gymnastics.
Divergent	Cognitive: Independent thinking. Social: confidence, group work.	Devising a new co-operative game using a rnage of equipment.
Individual	Cognitive: Planning.	Making individual decisions about a dance routine.
Learner initiated	Cognitive: Selection & application. Social: Personal and Responsibility.	Discussion with teacher/tutor about research topic.
Self teach	Cognitive: Understanding. Social: Independence	Little application to PE in schools.

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# What Every Teacher and Parent Should Know About Children's Brains and Exercise

Jack Rutherford, Eastern Kentucky University

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As a child I grew up in an age where there were no computers, video games or cell phones. My kids call it the Dark Ages, though I remember it as a glorious time. I would come home from school and immediately head for the playground with friends or hop on my bicycle and ride around the neighborhood. Growing up in Canada in winter, we would play hockey at the community ice rink for hours on end. In summer, when we were off school, my mother would shoo me out the door and I often wouldn't be back in the house until dinnertime.

We didn't have pedometers back then, but if I had to guess, I would say I took at least 30,000 steps a day. We don't yet have data yet on kids, but from my own research in the area of youth fitness I would estimate that the average child today gets less than 10,000 steps a day. That's not nearly enough and one reason why our nation and this state face a worsening obesity problem.

But there's another, perhaps more critical reason why children and all of us need to be active. Something that parents, teachers and legislators should understand—the important connection that exists between exercise and brain growth and development. John Ratey, a Harvard psychiatrist, researcher and author of *Spark: the Revolutionary New Science of Exercise and the Brain*, explains the science behind this connection (Ratey & Hagerman,

2008).

The brain is flexible or malleable; neuroscientists call it plasticity (Bruehl-Jungerman, 2005). We can literally shape our brain by using it in various ways— crossword puzzles, problems, games, and exercise. Like building a muscle by lifting a barbell, the more you use your brain, the stronger it becomes. Exercise modifies the brain through its powerful effect on the neurotransmitters—serotonin, norepinephrine, and dopamine—which serve as messengers in the brain. Exercise essentially balances the neurotransmitters, along with the rest of the chemicals in the brain. One in particular, brain-derived neurotrophic factor (BDNF), builds and nourishes the brain circuitry itself. Ratey likens it to brain fertilizer, calling it Miracle Gro for the brain. When researchers sprinkle BDNF onto neurons in the lab, the cells spontaneously sprout new branches (Vaynman et al., 2004). An exciting finding from animal studies on BDNF show that exercise elevates Miracle Gro throughout the brain. In other words, for the first time, there was now direct evidence that exercise strengthened the brain's cellular machinery for learning.

What does this mean for our nation's schoolchildren? It means that exercise is closely connected to academic performance (see Naperville Story). Because the number of brain cells can't be counted in children for

obvious reasons, Ratey studied the neuroscience behind the correlation and found more electrical activity in the brains of fit kids, suggesting that more neurons were being used for a given task. In other words, "better fitness equals better attention and, thus, better results," Ratey explained (Sattelmair & Ratey, 2009).

Further testing showed that when fit kids make a mistake, they slow down to avoid making another. The ability to learn from experience is controlled by the prefrontal cortex, another link in the brain – exercise connection. Learning from our mistakes is important in daily life, one that can be influenced by regular exercise.

Ratey also says, "If we don't use the newborn neurons, we lose them." Like muscle cells, brain cells that aren't used are lost. This was confirmed in the animal studies. As for evidence with people, Ratey cites a 2006 study where magnetic resonance imaging (MRI) showed that aerobic exercise actually reversed the brain shrinkage that usually occurs in older people (Hillman et al., 2006).

The implications of this brain research for how education is delivered in schools are mind-boggling. At the very least, it suggests that we beef up physical education programs, do movement activities in the classroom, and have daily recess (see City Park Story for how one school is putting this idea into action).

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Dr. Jack Rutherford is professor and chair of the Department of Exercise and Sport Science at Eastern Kentucky University. He is a frequent contributor to the KAHPERD Journal and occasionally presents at the KAHPERD Convention

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# What Every Teacher and Parent Should Know About Children's Brains and Exercise

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## *The Naperville, IL Story*

A ground-breaking PE program has helped to make 19,000 kids in a suburban Chicago school district perhaps the fittest in the nation—and first in the world in science. The core of the program in Naperville, IL is “Zero Hour PE,” a physical education class scheduled before first period (PE4life, 2007). “The object of Zero Hour was to determine whether working out before school gives these kids a boost in reading ability and in the rest of their subjects,” Ratey explained. The curriculum is on fitness, not sports, and includes everything from rock climbing to aerobic dance. The idea is for students to find something they like. Grades are based on effort, not skill. And to make a long story short, they got fitter and smarter.

The program showed immediate improvements in test scores and in its 17th year in place, the “New PE” curriculum produced eye-popping results district-wide. On a test designed to compare students’ knowledge levels from different countries in math and science (TIMSS), the Naperville students finished sixth in math and number one in the world in science.

Two of the PE teachers summed it up this way: “In our department, we create the brain cells. It’s up to the other teachers to fill them.” Obviously, both did their job very well.

## *The City Park Collegiate Story* (Bernhardt, 2008)

Kids struggling at school may feel like they’re running on a treadmill. For students in one classroom in City Park Collegiate in Saskatoon, Saskatchewan, Canada, they are—literally. Teacher Allison Cameron has integrated treadmills and stationary bicycles into her 8th grade classroom. Instead of pencils, she passes out anti-perspirant and encouragement.

In language arts class, students do 20 minutes of aerobic exercise, while reading or watching a documentary. In math class, they pump iron in the weight room while pondering an arithmetic problem. Cameron has done something unique to schools in Canada—combined exercise and learning together. Less than 2 months into the program, her students’ attention and time on task have improved. That alone is a victory as Cameron’s students wrestle with a number of issues that threaten to derail their education.

The school offers alternative programming for those who don’t fit into traditional school settings because of learning disabilities, domestic or personal issues. Many of Cameron’s students suffer from Attention Deficit Hyperactivity Disorder (ADHD), which makes it difficult for them to pay attention. She has found that 20 minutes of exercise allows students 2 hours of sustained concentration. In addition, discipline problems have decreased by 67 percent and the use of Ritalin has plummeted. Cameron pitched the concept to her principal and the public school division. Then she contacted parents. Despite some skeptics, the plan was approved and a grant for the exercise equipment was secured. At-

tendance has improved since implementation of the program. “There are still some issues in their lives but if I can keep them coming to school, we’re on the right track,” Cameron said.

## **Brain – Exercise Facts** (Ratey & Hagerman, 2008)

- Humans make new brain cells when they exercise. Aerobic exercise is the most effective.
- Exercise thickens the cerebral cortex, increases the number of cells responsible for memory, and increases BDNF (Brain Derived Neurotrophic Factor), known as Miracle Gro for the brain.
- Play is important for brain development. Children learn to control emotions in play.
- The more recess children have, the better behaved and more attentive they are.
- Exercise inhibits impulsivity and increases serotonin, norepinephrine and dopamine. It’s like taking a little Prozac and Adderall.
- The more fitness standards kids meet, the better they do in math and language arts, regardless of gender, race or income.
- Standing improves brain function by 10 percent.
- The same part of the brain responsible for higher order thinking is used to control moving.

## **National Association for Sport and Physical Education Guidelines for Children’s Physical Activity** (NASPE, 2010)

1. Children should accumulate

# What Every Teacher and Parent Should Know About Children's Brains and Exercise



at least 60 minutes, and up to several hours, of age-appropriate physical activity on all, or most days of the week. This daily accumulation should include moderate and vigorous physical activity with the majority of the time being spent in activity that is intermittent in nature.

2. Children should participate in several bouts of physical activity lasting 15 minutes or more each day.

3. Children should participate each day in a variety of age-appropriate physical activities designed to achieve optimal health, wellness, fitness, and performance benefits.

4. Extended periods (two hours or more) of inactivity are discouraged for children, especially during the daytime hours.

## References

Bernhardt, D. (2008). *School on the run*. *The Star Phoenix*, March 24.

Bruel-Jungerman, E., Laroche, S., & Rampon, C. (2005). *New neurons in the dentate gyrus are involved in the expression of enhanced long-term memory following environmental enrichment*. *European Journal of Neuroscience*, 21, 513-21.

Hillman, C., Motl, R., Pontifex, M. Posthuma, D., Stubbe, J., Boomsma, D., & de Geus, E. (2006). *Physical activity and cognitive function in a cross-section of younger and older community-dwelling individuals*. *Health Psychology*, 25, 678-87.

National Association for Sport and Physical Education. (2010). <http://aahperd.org/naspe/standards/nationalGuidelines/PA-Children-5-12.cfm>

PE4life. 2007. *Results*. <http://www.pe4life.org/sub/Results/index.cfm>

Ratey, J. & Hagerman, E. (2008). *Spark: The revolutionary new science of exercise and the brain*.

Sattlemair, J. & Ratey, J. (2009). *Physically active play and cognition: An academic affair*. *American Journal of Play*, 1(3), 365-374.

Vaynman, S., Ying, Z., & Gomez-Pinilla, F. (2004). *Hippocampal BDNF mediates the efficacy of exercise on synaptic plasticity and cognition*. *European Journal of Neuroscience*, 20, 2580-90.

Note: This article will be printed in an alternate form in the *Richmond Register Health Beat* magazine, August, 2010.

## Dates to Remember!!

December 15, 2010  
Deadline for Spring Newsletter  
[charlow@windstream.net](mailto:charlow@windstream.net)

January 21–22, 2011  
KAHPERD Leadership Development Conference  
Lexington Embassy Suites Hotel, Lexington, KY  
Friday, 7:00 pm

January 22, 2011  
KAHPERD Board Meeting  
Lexington Embassy Suites Hotel, Lexington, KY  
Saturday, 1:00 pm

February 5, 2011  
National Girls & Woman's Sports Day

February 16–19, 2011  
Southern District Convention, Greensboro, NC

March 1, 2011  
KAHPERD Journal Deadline for Spring  
2010 KAHPERD Convention Program Proposal  
Deadline

March 5, 2011  
KAHPERD Board Meeting

March 29 – April 2, 2011  
AAHPERD National Conference & Exposition,  
San Diego

May 2–8, 2011  
National Sport & Physical Education Week

May 15, 2011  
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[charlow@windstream.net](mailto:charlow@windstream.net)

June 5, 2011  
KAHPERD Board Meeting, Highland Hts, KY,  
1:00 pm

June 6–7, 2011  
Physical Education Summer Workshop  
Northern Kentucky University

August 6, 2011  
Presenter Notification Deadline – By Vice Presidents

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# “One Step at a Time,” 2010- Schedule at a Glance

## KAHPERD Convention

### Sunday, Nov. 14, 2010

6:30-9:30 pm

Pre-convention Workshop  
Program Review: What you need to know  
ALS 5K Walk/Run

3:30-5:30 pm

Dance Gala  
7:00-10:00 pm  
Monday Night Fever

### Monday, Nov. 15, 2010

8:00-8:50 am

Dance and Fitness Activities  
Australian Football  
Kin-Ball and Cooperative Games  
Lessons Learned in Community Case Studies  
Facility Security

Nutrition Bull's Eye for Teachers

Let's Laugh at Stress

9:00-9:50 am

Dancing Away Stress

SPARKfamily.org

Choosing Health Student Focus Group

A Risk Mitigation Model for Sport

Economic/Marketing 2010 Sport Events

Health Projects for Middle/High School

More Than Miles

10:00-10:50 am

Me Moves

Play with a Purpose

Bicycling to Lifetime Fitness

Increasing Intellect Through Exercise

Power Thinking

Physical Activity and Academic Achievement

11:00 am-12:30 pm

General Session Coach Matthew Mitchell

12:40-1:30 pm

American Jazz Dance

Relationships today are?

C'motion

Gaining Muscle Decreasing Fat

Teaching Physical Education and Coaching

How to Become a Kentucky NBCT

1:35-2:25 pm

Superstars Competition

2:30-3:20 pm

Managing Movement Tasks

Interscholastic Sports and Academics

Rowan County Wellness Program

Current Policies in P.E. Dress Code

Advocacy-Diabetes Day

### Tuesday, Nov. 16, 2010

8:00-8:50 am

Dance Accountability  
Activities and Assessments in P.E.  
Integrating Physical Activity in Classroom  
Impact of Nutrition and P.E. in College  
Year Round Weight Training for All Sports  
Including Autistic Students in P.E.  
The Paralympics- The Total Experience  
9:00-9:50 am  
Salsa for Elementary Students  
Skatetime  
Training for a Healthy Back  
Advocacy-A Campaign for Change  
ALCOPOPS  
Community/Middle School Health Collaboration  
Resistance Training for Triathletes

10:00-10:50 am

Self Defense Techniques to Learn and Teach  
Crime Scene

Super Balls, Super Games

Big Tobacco's New Marketing Campaign

Creating a Healthier School Environment

P.E. Participation and Persistence

11:00 am-12:30 pm

General Session Dana Brooks

12:40-1:30 pm

Leaping into Locomotor Skills

Meaningful, Relevant, Interactive Health

Jump Rope and Hoops for Heart

Prison-Based Exercise

Sport Marketing Industries

Securing Grants for your School

1:40-2:30 pm

Jump Rope for Heart Demo

Three Domains in Adaptive PE

Comparison of Middle School Walking Programs

The Paralympics- The Athletes Perspective

Sports Build Character

2:40-3:50 pm

Banquet

# Moving or Learning--- Must There Be a Choice?



Carol Christian, ABD/Rank I Kentucky Department of Education

Students need to both move and learn. No physical education teacher would argue the benefits of just moving...even when kids do not understand why they are being asked to engage in a physical activity. Students benefit from the mere compliance of being physical through movement. But when the mind and the body are being exercised simultaneously, it is then that educators begin to teach kids how to become truly fit human beings.

If students move because they are being asked to...but do not understand the why of it... they do so out of compliance and not out of the understanding of how the activity is of benefit to them. So the movement benefits the body...for the moment. The knowledge or the learning beyond the movement can benefit students... for a lifetime.

Isn't this what physical educators really strive for? True learning takes place when the mind and body are getting a work-out, together.

I asked a student teacher assigned to me once, "Were you a physical educator today or just a recreational leader?" He was taken back by the question. I continued to share with him many of the wonderful things going on in his class. The students were engaged. The culture of the classroom was positive. There was no down time. Students rotated to each of the stations with differentiated activities. The teacher was organized and prepared. But I asked, "What did the students learn? The students were all active and moving... but what did you teach them today and how do you know if they learned

it?" He did not answer. He could not answer because the students passively and compliantly moved through the activities. They did not actively think.

How do you know if your students are learning while they move? The answers are found within our assessments. Formative, summative, performance events, learning targets, exit slip questions and higher order questioning are all various forms of assessments. Physical educators historically are known for developing performance events or skills test type assessments. Written assessments are equally as important.

Yes, written assessments take precious time away from moving. Yes, written assessments take time to grade, return and go over with students. But how do teachers know if students are learning the content? Teachers can "see" and record how well students perform on skills and drills that address the core content. But how can teachers "see" the results of a student's thinking...unless physical education teachers intentionally plan for assessing student learning in addition to assessing through performance assessments? The answer to this question may require some student writing and some intentional teacher planning in order to develop different ways in assessing what students know and are able to do.

Six easy steps to assessing student learning in different ways:

1. Start the day's lesson with a bell ringer activity that reviews the learn-

ing targets from the previous day's lesson.

2. Post the day's learning targets that are congruent to the state standards in student friendly terms.

3. Through the day's lesson plan, design activities that are aligned to the state standards and learning targets.

4. Develop exit slip questions that are aligned to the day's learning targets that are aligned to the state standards. Exit slips questions enable teachers to check student understanding of each day's lesson.

5. Begin with the end in mind. Before each unit begins, develop the unit in its entirety and develop the culminating assessment covering the state standards to be addressed in that unit. The final unit assessment should drive the instruction. What the teacher ultimately wants students to know and be able to do should be apparent through the questions on the final assessment.

6. Differentiate the activities and differentiate the assessment. (Could a student on occasion for example answer all of the questions on a traditional culminating unit assessment of a dance unit by "performing" the questions of the test? In performing various dances, students could demonstrate their knowledge of various dances, dance steps, the elements of dance etc. If the teacher provided the student a rubric with the components of the written assessment, a student could demonstrate their student knowledge through performance.)

# Moving or Learning--- Must There Be a Choice?



## *Examples of the (6) Steps:*

Have the Bell Ringer that is aligned with the previous day's targets posted as students enter the gym.

Bell ringer question: Identify the (4) benefits of physical activity and give an example of each.

- Students can respond on an index card as they enter the gym.
- Large chart paper can be posted around the gym and students can be given the charge to post (1) of the benefits or one example. The next student cannot name the same thing.
- Have kids line up in rows of (5). The first person tells what they know of the benefits of fitness and examples and shares that information with the person behind them. That person then turns to the person next to them and shares that information and adds something...and so on down the line. The last person shares out what they heard.
- The teacher can orally question students on the previous day's material (a disadvantage of oral questioning is that the teacher does not know who does or does not know the material other than the student responding).

## *Learning Targets Posted:*

Post the day's learning targets in student friendly terms. This is what you want students to know and be able to do through your teaching and activities at the end of the class period that day unless it is a target that may take a couple of days to cover fully.

1. Today, I will be able to list, identify and describe the (5) components of fitness.
2. Today, I will be able to explain and apply the FITT principle.
3. Today I will begin the process of

applying the components and FITT principle to develop a comprehensive fitness exercise plan.

Differentiate activities: Set up stations in the gym or classroom, cooperative work groups, physical participation, have a computer in the gym or classroom to access websites and United Streaming videos that compliment a lesson etc.

Exit Slip Questions aligned to the targets:

## *Multiple Choice Examples:*

1. Which of the following is NOT one of the components of fitness? DOK 1 (CC/PLVS 2.3.01)
  - a. Cardio-respiratory endurance
  - b. Flexibility
  - c. Intensity
  - d. Body composition
2. People need to remain active at all ages to maintain a healthy body. However, as one ages, which of the FITT principles becomes least important for "senior citizens." DOK 2 (CC/PLVS 2.3.01)
  - a. Time
  - b. Frequency
  - c. Intensity
  - d. Type

## *Culminating, End of Unit Assessment:*

### *Open Response Question Example:*

(CC/ DOK 3 PLVS 2.3.01)

Justin is the star quarterback for Kentucky County High School. He has been sidelined due to a pulled hamstring muscle. The team is anxious that he will not be able to play in the up and coming championship game.

Justin regularly lifts weights, runs sprints, and runs a (3) mile run. His upper and lower body muscle mass are well proportioned for an aspiring

scholarship athlete, however, the colleges looking at him want him to further develop his extremities.

- a. Describe (3) of the (5) components of fitness)
- b. Analyze and explain what component(s) Justin is lacking in his workout that may have contributed to his injury.
- c. Prescribe a comprehensive exercise plan for Justin using the FITT principle with the goal of not only minimizing the chances of a pulled hamstring in the future ...but also with the goal of helping to improve upper and lower body development.

Differentiate activities as well as assessments: Physical educators will likely use more performance assessments than in health classes and other core subjects...but do not totally eliminate written assessments. Whether we assess student knowledge through written, oral or physical activity, it is always best to "mix it up" to value the learning styles of the students in our classes.

In conclusion, encourage teachers to not make students have to choose between learning and moving. Both are so critical in promoting total health and fitness and in assessing student knowledge of that in the hope that they learn to apply the content as a lifestyle. SB1 places great emphasis on math and reading as the key to learning. These may be key core subjects, but health and physical education classes are key... and core to our subjects. Without your health, you have nothing! WE impart knowledge that can help kids become adults who live long, healthy, productive lives. Be proud to be a health and physical educator!

# Health and Fitness Professionals' Knowledge, Attitudes, and Behaviors toward Dietary Supplements

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Dietary supplements are used at increasing rates in the US and it is estimated that over half of the population is using at least one supplement regularly (Thompson & Newton, 2005). Motivations to use dietary supplements are complex and can reflect social, psychological, knowledge-based, and economic factors. They can be related to improving health or reducing disease or risk of disease, enhancing athletic or sexual performance, or improving appearance. In some cases, individuals do not know exactly why they are using a particular supplement as use may be socially influenced by a friend or family member or part of a cultural norm (Dwyer, 2008).

Dietary supplements are defined by the 1994 Dietary Supplement Health and Education Act (DSHEA) as: "a product (other than tobacco) intended to supplement the diet that bears or contains one or more of the following ingredients: a vitamin, a mineral, an herb or other botanical, an amino acid, a dietary substance for use by man to supplement the diet by increasing the total daily intake, or a concentrate, metabolite, constituent, extract, or combinations of these ingredients". Furthermore, dietary supplements "are intended for ingestion in pill, capsule, or liquid form, cannot be represented for use as a conventional food or as the sole item of a meal or diet, and must be labeled as a 'dietary supplement'" (USFDA, 2010). These definitions of dietary supplements have produced

a broad spectrum of products on the market. Recent reports estimate that 27,000 dietary supplement products are currently available with sales exceeding over 20 billion dollars a year (Radimer, et al., 2004). With a growing industry, it becomes difficult for consumers to stay informed of the newest products and current research.

Most consumers of dietary supplements assume supplements to be safe since they are readily available at almost any local market or drugstore, and contain "natural" ingredients. However, since supplements are not strictly regulated by the Food and Drug Administration (FDA), product safety and efficacy are growing concerns. Dietary supplements may contain powerful chemicals, much like prescription drugs, although they are available without a prescription. Furthermore, dietary supplement manufacturers are not mandated to conduct rigorous testing prior to being marketed and released to consumers. Although research and efficacy on common supplements such as vitamins and minerals are well known, other products such as herbal remedies and performance enhancement products remain obscure and supporting research is sparse or methodologically poor. Even seemingly "harmless" supplements such as vitamins and minerals can be harmful if taken in excessive doses (Murphy, White, Park, & Sharma, 2007). Other precautions surrounding dietary supplements include

quality, contamination, fraud, interactions with other supplements and drugs, and consumer misuse (Coates, 2008).

Dietary supplements that are marketed as a way to enhance performance and appearance, improve health, and reduce the risk of illness and injury recovery time brings the health and fitness professional to the forefront as a potential leader in supplement information. Malinauskas, Overton, Carraway, and Cash (2007) examined college athletes' primary sources of dietary supplement knowledge and found that a majority of the athletes solicited information from their athletic trainers and strength coaches. Athletes also reported reliance on information from physicians and strength coaches but to a lesser degree.. Another study conducted with adolescent males indicated that physical education teachers, coaches, and health professionals were among the sources identified when asked where they derived their weight gain information, which included dietary supplementation (O'Dea & Rawstorne, 2003). Based on these findings, health and fitness professionals are in a prime position to educate the public on issues surrounding supplement use. Clients of personal trainers and health educators, and athletes working with coaches or physical educators can benefit from the knowledge of the dietary supplement industry and the dangers of misuse.

It is well known that some health

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and fitness professionals recommend, prescribe, and in some cases sell dietary supplements. However, there is a lack of research on the health and fitness professional's attitude toward different types of supplements, knowledge of the supplement industry, and patterns of prescription to clients and personal usage. Therefore, the purpose of the current study was to examine health and fitness professionals' dietary supplement knowledge, attitudes, and behaviors.

## Methods

This research was conducted during a state-wide health and fitness conference. Human Subjects approval was obtained prior to implementing the study. The cross-sectional, descriptive research design study utilized surveys and discussions to collect qualitative and quantitative data. A convenience sample of health and fitness professionals who attended a session regarding dietary supplement usage were recruited for inclusion in this study. Participants were given a cover letter explaining the purpose and protocol of the study, as well as an informed consent form. Only participants who signed the informed consent form participated in the study. Participation was strictly voluntary and no incentive was given for participation.

Prior to the start of the dietary supplements conference session, participants completed a questionnaire developed by the researchers. The variables measured were gender, average nutrient adequacy, personal diet adequacy, perceived and actual dietary supplement safety knowledge, dietary supplement recommendation, personal dietary supplement use, and profes-

sional opinions. Additional qualitative data was collected during the session discussion.

## Results

The following results indicate health and fitness professionals' (n = 13; 8 male and 5 female) dietary supplements knowledge, attitudes, and behaviors. Both quantitative and qualitative data are reported.

### Knowledge

When asked to rate their perceived knowledge of dietary supplements one-third felt "not knowledgeable" and two-thirds felt "knowledgeable." None of the participants felt "very knowledgeable," which was the highest rating for the 4-point scale.

Four of the 13 participants answered correctly that the "manufacturer" of the dietary supplement is "responsible for ensuring that a dietary supplement is safe for consumers before it hits the supermarket shelf." The nine participants who answered the question incorrectly indicated that they thought that the Food and Drug Administration (FDA) or the Federal Trade Commission (FTC) were responsible for ensuring the supplements' safety. One participant stated that "clients and patients are interested and inquisitive and will look to us for answers!" regarding the safety of dietary supplements. Another participant felt that physical educators, coaches, health education professionals, or personal trainers "should not" prescribe dietary supplements."

### Attitudes

The majority of participants indicated that they do NOT "think the average American's diet received adequate vitamins and nutrients necessary for optimal function" (n = 12;

92.3%); whereas two-thirds of the participants felt that their own diets were adequate for optimal function (n = 8; 66.7%). One participant stated that people should understand that "eating right can do the same thing" as using dietary supplements.

### Behaviors

Health and fitness professionals' behaviors regarding dietary supplement recommendation and usage are depicted in Figures 1 and 2. Three of the 13 participants "have never recommended" dietary supplements to a client/student/friend. Sports/nutrition supplements (n = 11), energy boosters (n = 8), meal replacement supplements (n = 7), and performance enhancers (n = 6) were the four most frequently taken supplements by participants. Vitamins/minerals (n = 7), sports/nutrition supplements (n = 7), and amino acids/protein supplements (n = 5) were the next 3 most frequently recommended supplements. All (n = 13) of the participants had taken a vitamin and/or mineral at some point.

Qualitative data from one participant stated that people "don't have to take anything [dietary supplements] with an adequate diet." However this same individual also stated that he/she consumed "protein powder to supplement my diet/provide for my active lifestyle and a multivitamin, just in case."

## Discussion

Health and physical educators, personal trainers, and coaches are often viewed as experts in the health and fitness fields. With this perception comes a professional responsibility to provide accurate information to clients, students, or friends regarding

# Health and Fitness Professionals' Knowledge, Attitudes, and Behaviors toward Dietary Supplements



supplementation. The wide range of products, questions regarding supplement safety, and unknown interaction effects with other medications make it difficult for the health and fitness professional to have the in-depth knowledge required to prescribe dietary supplements. In the current study, the majority of health and fitness professionals believed that they were not qualified to prescribe dietary supplements to their clients, students, or friends although two-thirds of the subjects felt “knowledgeable” about dietary supplements. When asked who was qualified to prescribe supplements, answers ranged from medical professionals to a variety of “qualified” wellness specialists. It is unclear if the type of supplement or purpose for taking the supplement would dictate who the professional deems qualified to recommend/prescribe it. As a health and fitness professional, it is important to have resources on hand for clients and a list of appropriate referrals for those who are seeking dietary supplement use.

When assessing knowledge of the professionals, a majority did not know how supplements were regulated and who was responsible for the dietary supplement testing and safety. This view may be similar to that of the general population. This view perpetuates the misguided assumption that supplements are tightly regulated and “proven” to be safe prior to being marketed and distributed. Clients can benefit not only from knowledge of individual dietary supplements but also from understanding the framework by which dietary supplements are researched and brought to the supermarket shelves. A better understanding of

this process may encourage clients to take further precautions, such as consulting with their healthcare providers, prior to deciding to take a particular dietary supplement.

The majority of professionals in this study believed that the average American did not receive adequate nutrients for proper functioning however, two-thirds felt that their own diets were adequate. Even though the majority of professionals felt they were receiving proper nutrients, all responded that they have taken a dietary supplement at some point. This shows a possible disconnect between professionals’ attitude and behavior. Another possible explanation could involve when the supplements were taken. The current study did not discern between past and current usage, therefore dietary supplement usage may have occurred in the past.

Based on the current study and a review of the literature, the authors have outlined several guidelines for the health and fitness professional to consider when working with clients and dietary supplements.

1. Know and respect your profession’s scope of practice. Scope of practice refers to providing services within a profession based on education, experience, and competency. In the case of professions such as health educators and personal trainers, it is sometimes difficult to discern where your role stops and where the role of a licensed healthcare provider begins. The American College of Sports Medicine (ACSM) and American Dietetic Association (ADA) recently adopted a joint position statement after a careful review of the safety, efficacy, and prescription of dietary supplements

regarding nutrition and athletic performance (ACSM et al., 2009). The experts recommend that “a qualified sports dietitian and, in particular, the Board Certified Specialist in Sports Dietetics in the United States, should provide individualized nutrition direction and advice after a comprehensive nutrition assessment.” In cases where dietary supplements are sought for disease prevention or treatment, a qualified physician can counsel the client on benefits and risks of supplements versus conventional medicines, interactions of supplements with other drugs, and recommendations based on the patient’s overall condition and health status.

2. Avoid prescribing, selling, or recommending supplements to clients. Although health and fitness professionals work with clients regarding general nutrition and weight management issues, there is potential liability for unauthorized medical practice that would normally be provided by a physician or registered dietitian. Consequences of unauthorized medical practice vary by state and potential lawsuits may be brought against fitness and health professionals with respect to prescribing or selling dietary supplements. If you suspect a client would benefit from dietary supplements, develop a list of referrals to physicians and registered dietitians properly trained to assess need and prescribe appropriate supplementation.

3. Educate yourself to become a resource for clients who do decide to take supplements. You can consult with a dietitian, physician or take continuing education classes on nutritional supplements. Avoid obtaining all of

# Health and Fitness Professionals' Knowledge, Attitudes, and Behaviors toward Dietary Supplements



your information from non-scientific sources such as popular magazines or non-credible internet sources. Instead, consult peer-reviewed journals and avoid reviewing research only provided by the manufacturer of the supplement.

4. Encourage your clients to become well informed consumers. Educate your clients on the hazards of misuse, drug interactions, contamination, fraud, and other important supplement issues. Provide them with appropriate resources such as websites from the FDA and Federal Trade Commission (FTC) that are designed to educate consumers. The FDA site <http://www.fda.gov/food/DietarySupplements/default.html> provides information on making informed decisions and evaluating the need for supplementation, how to report an adverse event, and information on how supplements are regulated. The FTC provides information on health fraud and current lawsuits on common dietary supplements at <http://www.ftc.gov/bcp/menus/consumer/health/drugs.html>.

This study had several unique strengths and limitations. One methodological strength that this study encompassed was the variety of health and fitness professionals that were represented in the sample. These include health and physical educators, personal trainers, coaches, and college professors who serve students, athletes, professionals in training, and the general population. Limitations of the study included the sample size and questionnaire reliability and validity. The small convenience sample was comprised of individuals from a limited geographic region recruited from a state health and fitness conference. Furthermore, there was

the potential that subjects self-selected into the study based on their attendance in a dietary supplement workshop. Participants who took an interest in the workshop topic may have had specific biases related to dietary supplements that were different from professionals who did not attend. The questionnaire was self-report which inherently presents problems with subjects' recall and misrepresentation. The survey questions were not validated by the researchers and general categories of supplements were collected instead of specific products taken or recommended to clients limiting the analysis of the data. Future research should include assessing knowledge, attitudes, and behaviors toward specific products in each of the broad categories (i.e. type of vitamin/mineral, protein powder, herbal/botanical), determining use of referral systems, and should include a larger sample from a more diverse geographic area.

## References

Coates, P. M. (2008, June 9 - June 13). *Welcome and overview. Presentation at the Dietary Supplements Practicum by National Institutes of Health (NIH): Office of Dietary Supplements. Washington, DC.*

Dwyer, J. (2008, June 9 - June 13). *Why do Americans take dietary supplements? Motivations for dietary supplement use. Presentation at the Dietary Supplements Practicum by National Institutes of Health (NIH): Office of Dietary Supplements. Washington, DC.*

Malinauskas, B. M., Overton, R. F., Carraway, V. G., & Cash, B. C. (2007). *Supplements of interest for sport-related injury and sources of supplement information among college athletes. Advances in Medical Sciences, 52, 50-54.*

*American College of Sports Medicine, American Dietetic Association, Dieticians of Canada, Rodriguez, N. R., Di Marco, N. M., & Langley, S. (2009). American College of Sports Medicine position stand: Nutrition and athletic performance. Medicine and Science in Sports and Exercise, 41(3), 709-731.*

Murphy, S. P., White, K. K., Park, S.-Y., & Sharma, S. (2007). *Multivitamin-multimineral supplements' effect on total nutrient intake. American Journal of Clinical Nutrition, 85, 280S-284S.*

O'Dea, J., & Rawstorne, P. R. (2003). *Male adolescents identify their weight gain practices, reasons for desired weight gain, and sources of weight gain information. Journal of the American Dietetic Association, 101(1), 105-107.*

Radimer, K., Bindewald, B., Hughes, J., Ervin, B., Swanson, C., & Picciano, M. F. I. (2004). *Dietary supplement use in adults in the US, 1999-2000. American Journal of Epidemiology, 160, 339-349.*

Thompson, C. A., & Newton, T. (2005). *Dietary supplements: Evaluation and application in clinical practice. Topical Clinical Nutrition, 20(1), 28-39.*

*United States Food and Drug Administration (USFDA). (2010). Overview of dietary supplements. Retrieved February 28, 2010, from <http://www.fda.gov/Food/DietarySupplements/ConsumerInformation/ucm110417.htm#what>.*

Figure 1. Number of health and fitness professionals who “recommended that a client/student/friend take any of these items.”

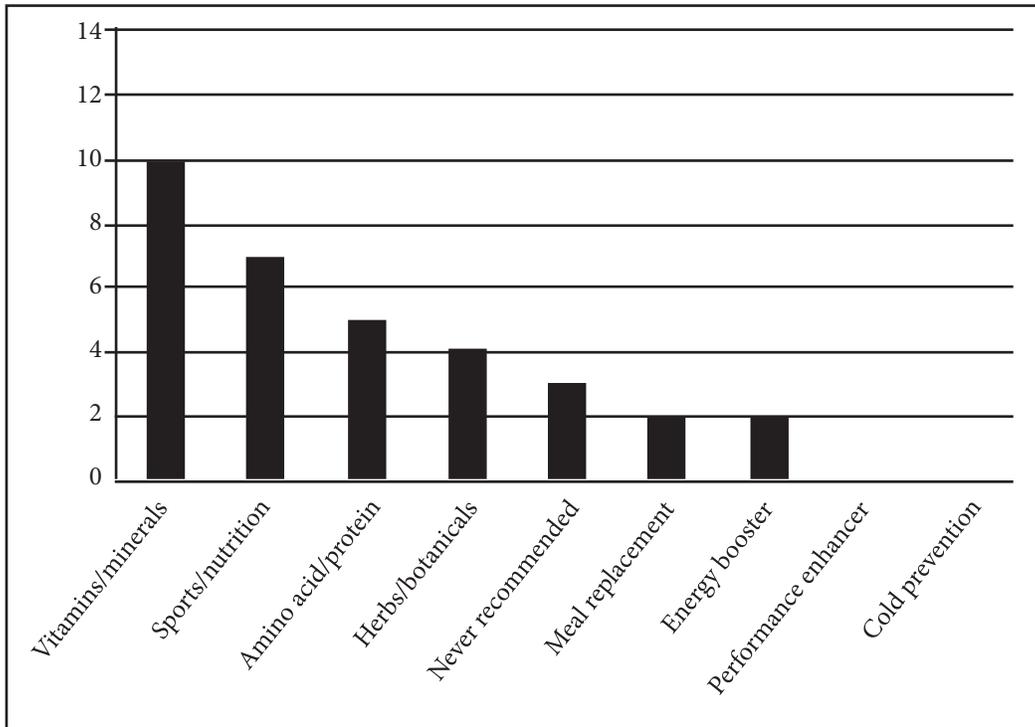
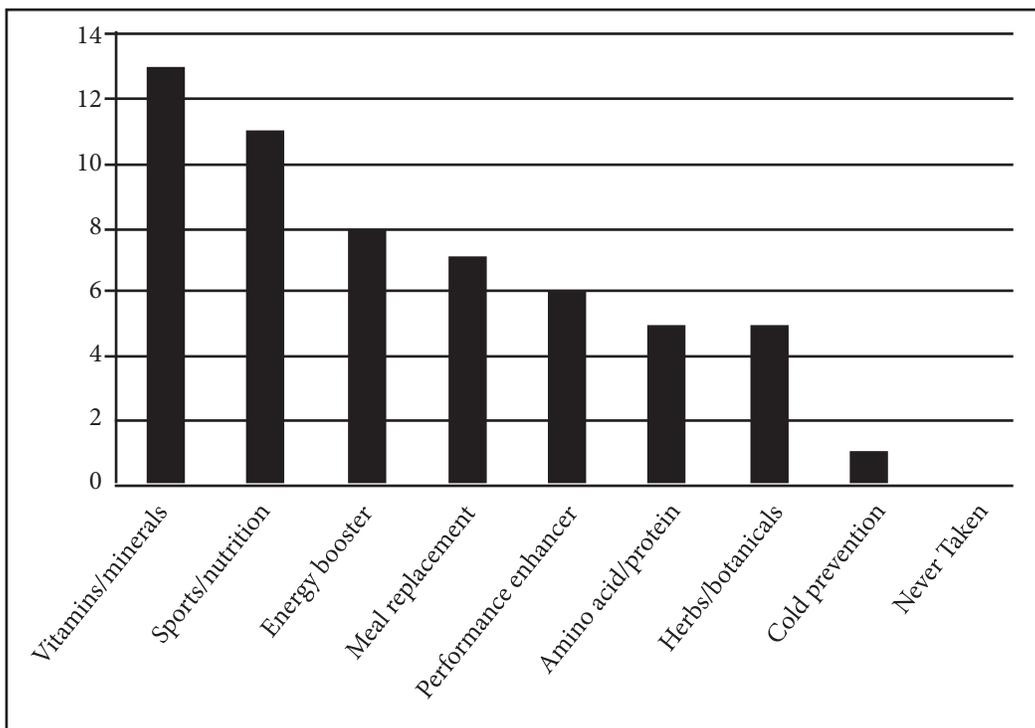


Figure 2. Number of health and fitness professionals who “have ever taken any of these items.”



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# Binge Eating Disorder: What Physical Activity Professionals Need To Know

Jason Crandall, Ph.D, Kentucky Wesleyan College

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## Introduction

Physical activity professionals are faced with a difficult task- to increase the levels of physically active people in the United States and around the world. Recent data have shown that we are not accomplishing this task with any great success (Ogden, Carroll, Curtin, McDowell, Tabak, & Flegal, 2006). Many factors, including physical activity have been linked to the increasing rates of obesity, yet there is one contributing factor that many professionals may be unaware of- binge eating disorder or BED. Binge eating disorder is an eating disorder characterized by consistent binge eating (episodes of uncontrolled eating involving large amounts of food) without using laxatives, excessive physical activity, and/or dieting as ways of eliminating the increased caloric intake (Moore & Franko, 2008). Unlike bulimia nervosa, BED clients do not purge or try to eliminate the excess calories in any way, while bulimics will use laxatives, excessive physical activity or vomiting to eliminate unwanted calories. In addition, psychological problems such as body dissatisfaction are in some cases more severe than in bulimics. There are also differences between obese BED clients and obese non-BED clients. Obese binge eaters have significantly more psychological problems, tend to become obese sooner, spend more time on weight-loss diets, and are more concerned with their shape and weight when compared to obese

non-binge eaters (Munsch, Michael, Biedert, Meyer, & Margraf, 2008). Obese binge eaters have also been shown to regain lost weight faster and have greater dropout rates from weight loss programs (Munsch, et al., 2008).

## What types of treatment are currently being used to treat BED?

Since researchers have shown BED clients to be different from other eating disorder clients and non-BED obese clients, it may be concluded that BED clients need special attention when entering eating disorders or weight management treatment programs. At this time, several treatments are being used to treat BED. These include cognitive-behavioral therapy, interpersonal therapy, pharmacological therapy, and weight loss therapy (Dingemas, Bruna, & Furth, 2002)(Marcus, 1999). However, these treatments have shown only moderate success in reducing or eliminating binge eating episodes and moderate success in long-term weight loss. Combinations of these treatments have also been used and produced unimpressive results. Due to the low success rate for these types of treatments, it is important to look for other methods that may help in the treatment of BED. Few studies have examined the effects of regular physical activity on BED, so definitive statements regarding the benefits of physical activity for the BED client cannot be made. However, since regular physical activity

produces mental and physical benefits in other populations, it may be an important addition capable of enhancing and ultimately improving current BED treatment methods (Crandall & Eisenman, 2001) (See Table 1).

## What are possible causes of BED?

Since the majority of BED clients are obese it is necessary to examine the connection between the disorder and the onset of obesity. It is still undetermined if BED causes obesity or obesity results in BED. Although the causality of BED is unknown researchers have suggested several factors that may contribute to the etiology of BED. It is likely that these factors are also inter-related. Factors suggested to contribute to BED include dysmorphic or negative moods, obsessive-compulsive disorder, addiction, and dieting (Streigel-Moore & Franko, 2008). Dysmorphic moods, such as depression and anxiety, are more prevalent in obese subjects with BED (Araujo, Santos, & Nardi, 2010). Another factor that may contribute to BED is obsessive-compulsive disorder (Wilfley, Friedman, Douchis, Stein, Welch, & Ball, 2000). Research has not supported this hypothesis since neither obese with BED or non-BED obese clients have exhibited obsessive-compulsive behavior. Alcohol and drug abuse have been reported to be more prevalent in clients with BED and their families, while other researchers report no gen-

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# Binge Eating Disorder: What Physical Activity Professionals Need To Know

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eral addictive behaviors in obese binge eaters (Ramacciotti, Coli, Paoli, Gabriellini, Schulte, Castrogiovanni, 2005).

Despite the difficulty in determining the cause of BED, it is possible to determine the effects that regular physical activity may have on the conditions that are associated with the disorder. Research indicates that physical activity produces a wide-range of both psychological and physiological benefits, many of which could directly or indirectly aid in the treatment of BED symptoms. Therefore, physical activity may enhance or improve treatment strategies for BED.

## **How can physical activity affect treatment strategies?**

Because physical activity has been shown to produce these positive psychological benefits, it is possible that these same effects may be seen in individuals with BED since they have been found to present these and other psychological problems such as a reduced health-related quality of life. Physical activity may not only improve the psychological factors discussed earlier, but may improve the conditions that accompany obesity as well. Recent data have shown that increases in physical fitness, regardless of reductions in body weight, can decrease the risk of non-insulin dependent diabetes, heart disease and hypertension (Sacheck, Kuder, & Economos, 2010). Although physical activity may result in body weight loss, weight reduction should not be the primary goal of treatment for either obese non-binge eaters or obese binge eaters since significant weight reduction is rarely

achieved or maintained after cessation of weight loss programs. Lyons and Miller (1999) have suggested a practice shift from the goal of weight reduction to improving health and well-being for people of all sizes. By utilizing indicators such as blood pressure, blood lipids, blood glucose, depression, health-related quality of life, etc. as measures of success, the treatment of BED may be significantly improved.

## **Why is an understanding important for physical activity professionals?**

The first important reason is the fact that up to 40% of individuals who enter weight management programs have BED (Dingemans et al., 2002). This is important since these same individuals may have attempted to control their weight by joining, or attempting to join, your physical activity facility. As a physical activity professional working in the field, you may have already met with someone who has BED. Obviously if you were unaware of this disorder, your efforts may have been in vain. Why? Although following your expert advice, the urge to binge eat may have negated any positive gains possible from an physical activity program. BED may also prevent an individual from ever beginning a physical activity program. This may be due to the many psychological and physiological problems associated with the disorder. These psychological and physiological problems lead us to the second important reason for physical activity professionals to understand BED. Research indicates that physical activity produces a wide-range of both psychological and physiological benefits, many of

which could directly or indirectly aid in the treatment of BED.

If physical activity professionals are to utilize physical activity as an aid in the treatment of BED, they must be able to identify those with the disorder. You may come in contact with someone with BED in two ways. First, a mental health professional may refer an individual to you. If this is the case you will already be aware of the disorder. However, you may come into contact with, either in an physical activity facility or elsewhere, an individual who may not be aware that they have the disorder or may not tell you even if they are aware. It is more difficult to recognize BED if you are not looking for it.

## **How do you identify someone with BED?**

When individuals enter most physical activity facilities they are usually administered a battery of tests including flexibility, muscular strength and endurance, and some form of aerobic capacity measurement. Health questionnaires to determine any prior history of cardiovascular and/or metabolic disorders are also administered. None of these tests or questionnaires can alert the physical activity professional to the existence of BED. A more thorough examination is needed to determine the presence of BED or any other type of eating disorder. Signs to look for include increased depression, anxiety, low self-esteem, and a negative body image (Stice, 1999). A nutritional analysis may reveal unusual eating patterns such as large amounts of food consumed in a short amount

# Binge Eating Disorder: What Physical Activity Professionals Need To Know



of time. Since physical activity professionals are not psychologists it is important not to attempt to diagnose any type of psychological disorder, but it is important that we recognize the signs of a problem.

## What course of action should a physical activity professional take with a BED client?

If you suspect that someone has BED you should first approach your client and find out more about their situation. Do they meet some or all of the diagnostic criteria for BED? After questioning your client, you may suggest that they see a mental health professional about the problem. This may be a difficult topic to discuss, but as a physical activity professional you have a responsibility to address any health problem that may face your client. Hopefully, your client will recognize the problem and begin treatment. It is at this time that a physical activity program may be implemented. Currently a typical physical activity prescription following ACSM guidelines should be utilized for individuals with BED since there is no research on the type, duration, and intensity of physical activity that may aid in the treatment of BED symptoms or even exacerbate binge eating. There is concern that the utilization of physical activity in the treatment of BED may lead to an increase in binge eating episodes or to a form of bulimia nervosa (purging or non-purging). The National Task Force on the Prevention and Treatment of Obesity reviewed the literature on dieting and the development of eating disorders (National Task Force on the

Prevention and Treatment of Obesity, 2000). It was concluded that moderate caloric restriction, in combination with behavioral weight loss treatment (including physical activity), does not seem to cause significant binge eating in overweight adults without preexisting binge eating problems and might reduce binge eating episodes in individuals with recurrent binge eating before treatment. In addition, researchers have identified specific categories of perceived barriers to physical activity that may be addressed using known intervention strategies (Crandall, et al., 2003) (See Table 2). These results suggest that physical activity may positively affect the treatment of BED.

There is a lack of information for physical activity professionals who are interested in working with this special population. Increasing the awareness of BED is not enough. Research must be conducted to explore the psychological and physiological mechanisms that might support or refute the utilization of physical activity as an adjunct treatment strategy for BED. For example, it is unknown if physical activity may have a protective effect against BED. Women who were not active in physical activity/sport as students in school may be more susceptible to the co-morbidities of BED (Crandall, Eisenman, Ransdell, Reel, Shultz, & Weitzman, 2003). The optimal physical activity prescription for BED patients is also unknown. Longitudinal studies examining various physical activity intervention strategies are needed to answer this question. It is my hope that this article raises your awareness as a physical activity professional as to the seriousness of BED and

the need to explore physical activity as a viable treatment option.

## References

- Araujo, D., Santos, G., & Nardi, A. (2010). *Binge eating disorder and depression: a systematic review. The World Journal of Biological Psychiatry: The Official Journal of The World Federation of Societies of Biological Psychiatry*, 11(2 Pt 2), 199-207.
- Crandall, K. J., & Eisenman, P. A. (2001). *Physical activity: A treatment option for binge eating disorder? Women in Sport and Physical Activity Journal*, 10, 95-116.
- Crandall, K. J., Eisenman, P. A., Ransdell, L. B., Reel, J. R., Shultz, B. B., & Weitzman, L. (2003). *Relationship between physical activity and binge eating disorder in community men and women. Unpublished manuscript, University of Utah, Salt Lake City.*
- Dingemans, A. E., Bruna, M. J., & Furth, E. F. (2002). *Binge eating disorder: A review. International Journal of Obesity*, 26, 299-307.
- Lyons, P. & Miller, W.C. (1999). *Effective health promotion and clinical care for large people. Medicine and Science in Sports and Physical Activity*, 31(8), 1141-1146.
- Marcus, M. D. (1999). *Obese patients with binge-eating disorder. In D. J. Goldstein (Ed.), The Management of Eating Disorders and Obesity. Totowa: Humana Press Inc.*
- Munsch, S., Michael, T., Biedert, E., Meyer, A., & Margraf, J. (2008). *Negative mood induction and unbalanced nutrition style as possible triggers of binges in binge eating disorder (BED). Eating and Weight Disorders*, 13(1), 22-29.
- National Task Force on the Prevention and Treatment of Obesity. (2000). *Dieting and the Development of Eating Disorders in Overweight and Obese Adults. Archives of Internal Medicine*, 160, 2581-2589.
- Ogden, C.L., Carroll, M.D., Curtin, L.R., McDowell, M.A., Tabak, C.J., & Flegal, K.M.

# Binge Eating Disorder: What Physical Activity Professionals Need To Know



(2006). Prevalence of overweight and obesity in the United States, 1999-2004. *Journal of the American Medical Association*, 295, 1549-1555.

Ramacciotti, C., Coli, E., Paoli, R., Gabriellini, G., Schulte, F., Castrogiovanni, S., et al. (2005). The relationship between binge eating disorder and non-purging bulimia nervosa. *Eating and Weight Disorders*, 10(1), 8-12

Sacheck, J.M., Kuder, J.F., & Economos, C.D. (2010). Physical fitness, adiposity, and metabol-

ic risk factors in young college students. *Medicine and Science in Sports and Exercise*, 42(6), 1039-1044.

Stice, E. (1999). Clinical implications of psychological research on bulimia nervosa and binge eating disorder. *Journal of Clinical Psychology*, 55, 675-683.

Striegel-Moore, R., & Franko, D. (2008). Should binge eating disorder be included in the DSM-V? A critical review of the state of the evidence.

*Annual Review of Clinical Psychology*, 4305-324.

Wilfley, D., Friedman, M., Dounchis, J., Stein, R., Welch, R., & Ball, S. (2000). Comorbid psychopathology in binge eating disorder: Relation to eating disorder severity at baseline and following treatment. *Journal of Consulting and Clinical Psychology*, 68(4), 641-649.

Table 1

Possible Benefits of Physical Activity for BED Clients

Psychological Benefits	Physiological Benefits
• Decreased depression	• Reductions in fat mass
• Increased health-related quality of life	• Maintenance of fat-free body weight
• More positive body image	• Improvements in dietary intake
• Increased self-esteem	• Reduction in chronic disease risk

Table 2

Intervention Strategies Used to Decrease Perceived Barriers to Physical Activity

Perceived barrier	Strategy
Personal barriers	
Social physique anxiety	Exercise room especially for overweight and obese participants
	Limit revealing clothing in exercise facility
	Unstructured, home-based, and family-oriented lifestyle activities
	Female-only groups
Health Problems	Implement educational programs (e.g., workshops and classes)
Compulsive issues	Cleaning products around exercise facility
Lack of Fitness	Exercise room especially for overweight and obese participants
Environmental barriers	
Lack of time	Unstructured, home-based, and family-oriented lifestyle activities
Social barriers	Incorporate activities involving family
	Social Support from friends, family, and significant others
Access	Unstructured, home-based, and family-oriented lifestyle activities



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