

# ADVOCATE

National Consortium for Physical Education and Recreation for Individuals with Disabilities

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NCPERID

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## Advocacy in Adapted Physical Activity and Recreation

### Inside this issue:

<i>President's Message</i>	1
<i>New Board Members</i>	2
<i>Carol Huettig—She will be missed</i>	3
<i>APENS Update</i>	4
<i>National PETE Conference</i>	4
<i>Legislative Update</i>	5
<i>Abstracts—Summer Conference</i>	6
<i>NCPERID Board Members</i>	12

### A Consortium Connecting with Members and Collaborating with Partners

#### President's Message

On behalf of the Board of Directors, I am proud to open the Fall 2006 issue of the ADVOCATE. This is the first issue since our very productive and stimulating Annual Conference at AAHPERD Headquarters in Reston, VA (see more on presentations and sessions in this newsletter). We want you to stay connected with and informed about the Consortium through important news items and highlights in the ADVOCATE.

My first message is a sad one regarding the loss of a friend and colleague. By now most of you know that we lost Dr. Carol Huettig on October 9, 2006 after a courageous battle with cancer. Carol and I were doctoral students together at Texas Woman's University. I still remember her friendly personality and professional passion like it was yesterday. I am sure you are all aware of Carol's many outstanding and truly meaningful contributions to the Adapted Physical Activity profession, and to so many persons with disabilities. I attended the memorial service in Carol's home town last month and was profoundly moved by the unending tributes that were shared by family and

friends from all over the country. Our deepest sympathy is shared with her family and loved ones. Please take time to read the more detailed tribute about Carol in this newsletter.

The second area I want to discuss is our need for continued collaboration. Collaboration is a key element of professional work, especially in the disability and physical activity fields. The Consortium continues to demonstrate successful collaboration to foster its mission. A highlight in the past 12-18 months is expanded collaboration between the Consortium and numerous organizations/agencies that focus on health and physical activity issues of persons with disabilities. For example, we are currently working with the Adapted Physical Activity Council (AAHPERD/AAPAR) current APAC chair Dr. Lauren Lieberman, SUNY Brockport, and chair-elect Dr. Rebecca Lytle, California State University-Chico, on two important initiatives. The first is a subcommittee of APAC that is drafting a position statement on what constitutes a "highly qualified" adapted physical education teacher. This statement is being developed for use by APAC/NCPERID (contact Rebecca Lytle;

rlytle@csuchico.edu). The second cooperative effort is a work group with representation from APAC, NCPERID, and NASPE. These persons are beginning to study the feasibility of accreditation or approval of adapted physical education professional preparation programs (contact Lauren Lieberman; llieberm@brockport.edu). Both of these efforts are benefiting from the involvement of NCPERID members. This is your organization in action.

In addition to the collaboration of these professional work groups, the Consortium has been in communication with highly visible agencies such as the Office on Disability in the U.S. Department of Health and Human Services, the Office of Special Education and Rehabilitation Services in the U.S. Department of Education, Centers for Disease Control and Prevention, Consortium for Citizens with Disabilities, and Special Olympics International. These connections keep the NCPERID in touch with national trends and issues to better inform members and serve persons with disabilities.

*Continued on page 2*

**Mark your Calendars for the 2007 Summer Conference (July 8th–10th)**

## President's message continued

A major event to demonstrate the results and benefits of this collaborative work is our Annual Conference held each July. Please take time to read highlights and abstracts from our Summer 2006 conference (many thanks to former Vice President, Dr. Christine Stopka, University of Florida, for planning and archiving the presentations for this newsletter). Written evaluations and comments indicated that the Summer 2006 conference was a very worthwhile professional development experience. Presenters included professionals from universities, PK-12 schools, federal government departments, national foundations, and advocacy organizations. In addition, lively discussion took place among members on topics ranging from research to professional preparation. An especially fun time was had as we "officially" retired Jan Seaman - again, again, and again. I invite you to be part of our Summer 2007 conference taking place July 8-10 in Reston, VA at AAHPERD Headquarters. Check the web site for infor-

mation about the conference, including submission of presentation proposals. We are also interested in hearing from you about possible presenters and topics. Recommend someone and we will do our best to secure that person for your professional development.

Connecting and collaborating with our members is assisted through the NCPERID website ([www.uwlax.edu/sah/ncperid](http://www.uwlax.edu/sah/ncperid)). I encourage you to use our website. Please let me know if there are relevant features or information that you would like to include. Check out our directory of APE professional preparation programs recently added to the website (<http://www.uwlax.edu/sah/ncperid/directory.htm>). If your program is not part of the directory, complete the brief survey. Send this directory information to others in your state if additional programs could be added.

In order to connect with more APE colleagues we need them to become part of our membership. Please for-

ward this newsletter and our website information to higher education colleagues and others in your state (or other states). Recruit a new member into our group and/or bring back a former member. Take the challenge and initiative to secure a couple of new members for us. Our membership application is easily completed on the web ([www.uwlax.edu/sah/ncperid/memberform.htm](http://www.uwlax.edu/sah/ncperid/memberform.htm)).

Special thanks to Dr. Cindy Piletic, Vice President and ADOVCATE Editor (Western Illinois University), for her excellent work on this newsletter. Her dedication is very much appreciated and valued by all members. Lastly, your Board of Directors wishes you all a very happy, safe, active, and healthy holiday season.

*Sincerely,*

*Garth Tymeson*  
NCPERID President

## New Executive Board Members

At the 2006 Annual Conference four members were welcomed to positions on the board. In an effort to assist the membership to know who is their representation on the board a brief summary is presented below. The positions filled were three Member at Large representatives and Vice President.

### Members at Large

**Scott Pedersen** is a Certified Adapted Physical Educator (CAPE) and an Assistant Professor with the Department of Physical Education, Recreation and Dance at New Mexico State University. He now shares his practical experiences in physi-

cal education and knowledge of kinesiology with aspiring students interested in promoting exercise for individuals of all abilities.

**April Tripp** is currently an Assistant Professor at Towson University in Maryland. Her primary interest area is in the "attitude" domain. She has several projects underway investigating the affect of disability labels on teaching intention.

**Simon Driver** is currently Assistant Professor at North Texas State University in Denton.

### Vice President

**Cindy Piletic** is an Associate Pro-

fessor at Western Illinois University. Her research areas have been eclectic as she has done work in the areas of: paraeducators in the gym, facility accessibility, and how PETE programs addressing APE. She has been on the NCPERID board as Secretary and also Member at Large prior to being elected as Vice President.

Welcome to all the new board members. Thank you for all your efforts to serve the NCPERID membership and individuals with disabilities.

# She Will be Missed: “Dear Friend and Respected Colleague”

## Dr. Carol Huettig (1950–2006)



It doesn't seem possible that life passes so quickly until you look up one day and all you have are sweet memories of someone you love. Dr. Carol Huettig left countless individuals with lasting sweet memories when she passed away on October 9, 2006. Carol had a passion for giving and she chose to give the most to the children, students, and adults involved in adapted physical education. Through numerous national and international presentations, publications, and leadership positions Carol shaped how many people teach and think about adapted physical education.

Carol taught for Cornell College, Carthage College, the Denton Independent School District, the University of Wisconsin-Stevens Point, the Dallas Independent School District, and Texas Woman's University. Carol's excellence in teaching was recognized in many of her past teaching placements. Some of these awards include: "Outstanding Teacher" Award from Carthage College; and "Outstanding Teacher" Award, "Excellence in Service" Award, "Scholar" Award, and "Mentor of the Year" Award from the University of Wisconsin-Stevens Point. Other honors included "International Woman of the Year" and a member of the Carthage College Athletic Hall of Fame for the sports of Volleyball, Basketball, Badminton, and Softball.

In Carol's continuous efforts to promote physical activity for individuals with disabilities, she held various leadership positions in the Special Olympics and in state and regional level AHPERDs. As Coordinator for a Personnel Preparation Grant at the Texas Woman's University Carol developed the outstanding Project INSPIRE website, a comprehensive resource for adapted physical education. She also had numerous publications, including co-author of the textbook *Principles and Methods of Adapted Physical Education and Recreation*.

As impressive as Carol's contributions to the field are, they pale in comparison to her outstanding gift of caring for others. Carol had an infectious laugh and took delight in learning about others. "Although I barely knew her, she always made me feel like her best friend", a comment made by a former coworker, epitomizes how Carol made others feel. She touched many lives and brightened many days. Survivors include one sister Beth Ann Huettig of Milwaukee, one brother Charles (Mary) Huettig of Fontana and their son William, her companion of 20 years Jean Pyfer of Rosholt and her beloved dog Mikey.

*She impacted people all over the world with her smile and her commitment to children with disabilities*

# APENS Update

## What's New with APENS?

The NCPERID and APENS are pleased to announce the second edition of the APENS Standards. The second edition was edited by Dr. Luke Kelly. Special acknowledgment to Dr. Kelly, Dr. Hester Henderson, and Drs. Ron & Lisa French as well as the NCPERID/APENS membership who assisted with collecting and editing this valuable resource of information! The APENS 2<sup>nd</sup> edition is the only complete guide to the adapted physical education national standards (APENS). Every adapted physical educator must know these standards in order to pass the APENS exam and become a certified adapted physical educator (CAPE).

Revised and expanded to help teachers prepare for certification, this edition includes several new and enhanced features:

1. A format that is designed for ease of study so that teachers can prepare with confidence to become certified.
2. An overview of the 15 standards, helping teachers understand how to apply the standards in the real world of teaching students with disabilities.
3. Specific performance indicators for each standard, showing teachers what they should be able to do in the field.

4. Everyday applicability so that preservice and inservice teachers (and administrators and university faculty) can apply the information to ensure effective delivery

*Adapted Physical Education National Standards, 2nd Edition, Human Kinetics* also features a new appendix of frequently asked questions as well as a complete glossary of terms, abbreviations, and acronyms of the sometimes confusing terminology used in the adapted physical education field. The result is a deeper comprehension of the content, which enhances retention and aids in future implementation.  
([www.cortland.edu/APENS](http://www.cortland.edu/APENS))

## National Physical Education Teacher Education Conference

Recently, the National Physical Education Teacher Education Conference was held in Long Beach, California. Over 300 PETE faculty members attended representing colleges and universities from all over the United States. Topics included: Technology, Building Curriculums, Meeting NCATE standards, etc. However, there were only two sessions dealing with diversity.

As an "Adapted" faculty member, I felt a bit out of place, like I was missing my colleagues. Of these 300 professionals there was maybe three faculty that I have seen at Adapted Physical Education sessions at AAHPERD or other APE conferences. As a professional in physical education teacher education and adapted physical education I believed I should be attending these conferences. Because I am a teacher educator. Right? But, where was everyone else?

While at the conference I talked with some other professionals who were

there about why they attended. Additionally, I asked why PETE faculty maybe did not attend the Diversity sessions for there were only two sessions on diversity and they were not well attended. I heard comments that they are so focused on getting technology up and running in their PETE Programs that they were at those sessions instead.

As an APE professional, I have to admit that I have "buted heads" with PETE faculty about the importance of APE and how it should/can be integrated into the PETE curriculum. I wonder why the resistance. NASPE standards address diversity in Standard #3.

My question is also, why don't APE faculty attend the national PETE convention. Don't we teach future physical educators? Don't we have something to gain from being at this conference? Don't we have something to share at this conference?

There is discussion about getting col-

leges and universities accredited for their APE programs. My question is this—how can we accredit programs in adapted physical education teaching when we are not attending conferences such as the PETE conference? Is not the collaboration crucial to our success in preparing future teachers.

Maybe I am missing the boat, I know that I am a big picture person and I sometimes miss the little things. But—it really makes one think about APE and PETE. Could we be collaborating more in content infusion to better prepare future teachers to work with all students .

Dialog on this topic would be great to have. Please, share thoughts with Dr. Garth Tymeson or Dr. Cindy Piletic. See the addresses on NCPERID website.

*Submitted by: Cindy Piletic, Ph.D.  
Western Illinois University  
NCPERID Vice President*

## Legislative Update—What's happening on the Hill?

### Disability Program Funding: Implications as a Result of a Congressional Change of Power

This Legislative Update is a synopsis of an article recently submitted to the *Palaestra* magazine which addresses the impact of a change in leadership and will be published sometime in January, 2007. The *Palaestra* article will delve into three federal organizations that impact funding of discretionary programs. The purpose of this summary is to provide a brief snapshot and insight into proposed funding of federal programs for physical activity and recreation for individuals with disabilities.

Control of the U.S. Congress

changed as a result of the 2006 mid-term elections. The Democratic Party took a majority lead in both the House of Representatives and the Senate for the first time since 1994. Policy experts have a perception of what is likely to happen to the distribution of resources as a result of the change. The question is raised as to what the implications

are for federal funding for physical activity and recreation programs for persons with disabilities.

It is said there are three branches of government: 1) the Legislative Branch (Congress), 2) the Executive Branch (President), and 3) the Office of Management and Budget (OMB) which equates to the amount of dollars in the U.S. Treasury. A change in majority and minority status in the legislature is only one

aspect of the equation for federal program funding. Below is summary prediction about the allocation of physical education and recreation programs funds for persons with disabilities as a result of the recent congressional changes.

In essence, all three structures impact federal funding of programs together. Simply a change from a Republican leadership in the House of Representatives and in the Senate will not necessarily make significant changes in funding priorities. Because the Republican leadership had record expenditures over the last three Congresses (107<sup>th</sup>, 108<sup>th</sup>, and 109<sup>th</sup>), it appears a role reversal has occurred: While the Republicans mantra used to be fiscally con-

servative and the Democrats were thought of as big spenders, their roles have been reversed. Thus, funds for new programs and increases for old ones most likely will not happen as a result of a change in

tion of the change in leadership, a role reversal, and the high federal deficit.

These are early thoughts and predictions of the course to come which may not paint a rosy picture of funding that some might think with a simple change in leadership of Congress. Please refer to the next issue of *Palaestra*, specifically the Legislative Update Department for more specific information on this issue.

Written by: *Bob Arnhold, Slippery Rock University, PA; Immediate Past President*

*Did you know that there may be changes in federal funding for physical activity programs for persons with disabilities*

legislative control.

The programs we would like to see be positively affected by additional funding include the Personnel Preparation (Part D) of the Individuals with Disabilities Education Improvement Act (IDEIA), the Rehabilitation Services Administration - Recreation Programs, and the Physical Education for Progress program (PEP). In addition, local earmarks that provide funding for Congressman's local districts will also be adversely affected due to a combina-

*Join us at AAHPERD for the NCPERID Membership Business Meeting on Friday, March 16 from 9:15-11:15 a.m.*

*Check program booklet for location*

**Mark your Calendars for the 2007 Summer Conference (July 8th—10th)**

## *Posters presented at the 2006 Annual NCPERID Summer Conference*

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### **Using Adapted Aquatics Equipment to Facilitate the Acquisition of Aquatics Skills by Students with Disabilities**

Kathleen Stopka & Christine Stopka, University of Florida

#### **Introduction/Purpose**

Affordable adapted aquatics equipment can be used to facilitate students' learning of specific aquatic skills, as well as those helpful for improving their activities of daily living. All exercises and involvement in the aquatic environment must be completed under appropriate supervision.

#### **Methods**

For example, the forward overhand motion needed to throw a ball for an aquatics target game is similar to the arm motion needed for the freestyle stroke. Also, the buoyancy and resistance of the water can facilitate the skill of walking to help students walk more independently on land. Blowing bubbles and underwater activities help in respiratory and breath control skills. There are six primary categories of aquatics skills in which adapted aquatics equipment can be vital to a student's success and progression. These categories include (1) water entry and exit skills, (2) water exploration and breath control skills, (3) gross motor, balance, and fitness skills in the water, (4) floating and changing positions, (5) propulsion skills, and lastly (6) rescue skills.

#### **Discussion**

Water entry and exit equipment may include a sinkable table can be used in competition pools to create a shallow end where otherwise one does not exist. The welcoming environment and the transition this creates for students encourages entry into the water and helps diminish fears. Folded gym mats are used as safe and slow sliding boards for entry into the pool. Water exploration and breath control skills can be taught using ping-pong balls or Easter eggs blown across the surface of the pool. Gross motor, balance and fitness in the pool is easily encouraged with the use of kick sticks, fun Noodle, sunken PVC pipe parallel bars, and water weights made with PVC pipe and foam noodles. All of the above encourage both endurance and strength training exercises. Floating and changing position skills can be facilitated with the use of Noodles and a pool full of enticing toys to create an environment of maximum stimulus, i.e. controlled "chaos." Propulsion skills can be taught using ball throwing games to mimic stroke technique. Two person kick sticks are also used to facilitate kicking and teamwork skills. Finally, Rescue skills, such as reaching assists are taught using kick sticks.

#### **Summary/Conclusion**

These equipment ideas listed above are as exciting as they are easy, effective, and affordable. Learning potentials are maximized with the use of this equipment and teaching ideas, while fears are simultaneously minimized.

### **Comparison of Isokinetic Peak Force and Power In Individuals with Visual Impairments**

Horvat, M. Nocera, J. Mason, R. & Croce, R.

University of Georgia

#### **Introduction/Purpose**

The purpose of this investigation was to compare isokinetic strength characteristics of visually impaired and sighted counterparts.

#### **Methods**

Thirty age matched participants who met the criteria for blind and partially sighted were matched according to age, height and sex. Participants were evaluated on a Cybex isokinetic dynamometer at speeds of 90 and 180 deg/sec. The main outcomes measures were peak torque normalized by body weight; and power adjusted by body weight. Data was analyzed by using separate 2x2x2 (group x gender x muscle x velocity) repeated measures analyses of variance. Separate ANOVAs were performed because of the relatively low number of subjects in the investigation.

#### **Results**

Results demonstrated significant group, velocity and muscle main effects; sighted individuals had significantly greater values for peak torque and power than individuals with visual impairments.

#### **Conclusion/Recommendations**

In conclusion, it appears that individuals with visual impairments are deficient in strength and power compared to sighted individuals. It is recommended that intervention programs be incorporated early in an individual's development to stress developing muscular strength and power.

**Mark your Calendars for the 2007 Summer Conference—July 8th—10th**  
**([www.uwlax.edu/sah/ncperid](http://www.uwlax.edu/sah/ncperid))**

## *Posters presented at the 2006 Annual NCPERID Summer Conference*

### Labels and Teacher Attributes Affect Inclusion

April Tripp, Towson University; Terry Rizzo, Calif. State Univ., San Bernardino

#### Introduction/Purpose

This study assessed the affect of a label attached to a description of a child's motor ability on attitudes, social norms, perceived behavior control, and/or intentions to teach a student in the general physical education class. Words are more than just methods of expression with individual and isolated meanings; they connect perception, knowledge and beliefs with a larger system of meaning (Gadamer, 2001). This study also evaluated teacher attributes associated with favorable intentions.

#### Methodology

Sixty-eight of 119 (57%) physical educators in an urban east coast school district completed the *Physical Educators' Intention Toward Teaching Individuals with Disabilities (PEITID)* survey.

#### Results/Discussion

Results from a Hotelling's  $T^2$  MANOVA showed a labeling effect. Results from a simultaneous multiple regression procedure also showed that of the teacher attributes assessed, only perceived teaching competence [ $R=.29$ ,  $R^2=.09$ ,  $F(1,66)=6.027$ ,  $p<.017$ ] predicted favorable intentions. This finding is consistent with past research showing the more competent people feel about teaching students with disabilities the more favorable their attitudes. Data supported the suppositions of *TpB* on selected variables for the label group including the social normative component [ $R=.52$ ,  $R^2=.27$ ,  $F(2,65)=12.438$ ,  $p<.000$ ]. Further analyses showed that, for the group that receive that label information, only the school principal [ $R=.28$ ,  $R^2=.08$ ,  $F(1,67)=5.535$ ,  $p=.022$ ] was associated with favorable intentions. This is another important finding demonstrating the influential affect school leadership, particularly the principal, has on teachers. Teachers with support from central administration will have more favorable intentions about teaching students with disabilities in general education classes. Taken collectively, the results from this study also show the adverse affect of labels on beliefs, attitudes and intentions of teachers. In this study, the use of a CP label, despite an actual description of the student's motor ability, had a biasing affect and adversely influenced teachers' intentions.

#### Conclusion

This finding raises important questions to professionals in the field. We must question the need to use disability labels for diagnostic and/or prescriptive purposes and the value of these practices, as well as how they may affect a student's experience in GPE.

### Improvement Differences of Learning Basic Soccer Skills among Individuals with Multi-Levels of Cognitive Functions

Jiabei Zhang, Western Michigan University, and Shihui Chen, The Hong Kong Institute of Education

#### Introduction/Purpose:

Individuals with different types of cognitive functions may show different levels of learning abilities in physical education. The purpose of this study was to compare improvement differences of learning soccer skills by individuals with multi-levels cognitive impairments.

#### Methodology:

Participants were 28 adults with cognitive impairments ( $M$  of age = 30.02; 16 males and 12 females), including mild ( $n = 9$ ), moderate ( $n = 10$ ), and severe ( $n = 9$ ). They were taught three soccer skills with two 60-min training sessions per week for 10 weeks. Each participant was measured based on the task analysis of a soccer skill in the first and last sessions. Their improvement differences between these two sessions were used for analysis. A one-way multivariate analysis of variance design involving multiple dependent variables (trap, kick, and dribble) was used to analyze the overall difference among multi-levels of cognitive impairments (mild, moderate, and severe). Tukey HSD test was used to perform post hoc multiple comparisons to see which pairs of means were different.

#### Results/Discussion:

Results of the Wilks' Lambda multivariate analysis,  $F(6, 46) = 2.98$ ,  $p = .02$ ,  $\text{Eta}^2 = .28$ , indicated a significant difference among three levels of cognitive impairments on learning improvements. Results of the post hoc tests revealed significant differences on trap between mild and severe groups ( $p = .01$ ) and between moderate and severe groups ( $p = .04$ ) and on kick between mild and severe groups ( $p = .01$ ), indicating that participants demonstrated different improvements on learning trap skill among mild, moderate, and severe cognitive impairments and on learning kick skill between mild and severe cognitive impairments.

#### Summary/Conclusion:

The above results indicated that several different levels of learning improvements did exist among individuals with different levels of cognitive impairments.

## *Posters presented at the 2006 Annual NCPERID Summer Conference*

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### Parents' Perception on Inclusive Physical Education Jihoun An; The Ohio State University

#### **Introduction/Purpose**

Parental involvement in the planning of educational programs of students with disabilities has long been considered to be a cornerstone of special education (U. S. Department of Education, 2000). Parents have been identified as fundamental partners in the organization and development of educational programs for children with disabilities (Lytle & Bordin, 2001) and yet the parents' voices have been relatively absent from the discourse on inclusive physical education (Erwin & Soodak, 1995). Therefore, the purpose of this study was to gain an understanding of parents' perceptions of their children's experiences in inclusive physical education.

#### **Methods**

More specifically, this study described (a) the meaning parents gave to physical education for their children, (b) the role they assume in support of their children's physical education experiences, and (d) the importance of the IEP process in home and school communication. The stories of four mothers of elementary (1 boy, 3 girls) and three mothers of secondary (2 boys, 1 girls) aged children with spina bifida were captured and analyzed using phenomenological methods of one-on-one semi-structured interviews, visual artifacts, documents, and field notes.

#### **Results/Discussion/Conclusion**

Thematic line-by-line analysis revealed three themes: *A Good Thing But...*, *Connection to Disability Sports*, and *Beyond the Curriculum*. The mothers valued their children's participation in physical education and provided instrumental support to teachers and teacher associates (i.e., teacher aides). The mothers also recognized the value of disability sport as an avenue for developing sport specific skills, which in turn enriched the school experience. The findings are discussed within the context of Peters' (1996) model of disablement.

### A Community-University Health and Wellness Collaboration for Individuals with Disabilities Robert W. Arnhold, Ph.D., Slippery Rock University, PA

#### **Introduction**

Slippery Rock University of Pennsylvania and Temple University have formed a unique collaborative that addresses professional preparation and community service-learning for individuals with disabilities in urban, inner-city environments and rural, farming environments.

#### **Purpose**

In addition to the heterogeneous nature that people with disabilities bring to the adapted physical activity specialist, the environment, culture, and activity choices must also be addressed in order to provide appropriate life-long, enjoyable activities in which people with disabilities will participate.

#### **Methods/Discussion/Future Plans**

Depending upon access, personal choice, and cultural standards, individuals with disabilities select different forms of recreational pursuits. This project investigates the nature of leisure choice in inner-city urban environments in Philadelphia vs. the rural, farmland communities in western Pennsylvania. Student exchange workshops and distance education courses and workshops are planned to expose future professionals with the nature and extent of these multicultural issues for community residents living with disabilities.



## *Posters presented at the 2006 Annual NCPERID Summer Conference*

### A Look at Two Decades of Training to Determine the Effects of a Low-Intensity Exercise Therapy Program for Intermittent Claudication

Coleen A. Martinez & Christine B. Stopka; University of Florida

#### Introduction/Purpose

Intermittent claudication (IC) is defined as pain in the muscles of the legs accompanying movement; the pain is due to low amounts of blood supply to the peripheral arteries (Ouriel, 2001). IC is the earliest and the most frequent presenting symptom in patients with peripheral arterial disease (PAD) (Ouriel, 2001). The purpose of this study was to see if low-intensity (LI) pain free walking used as exercise therapy for intermittent claudication (IC), over two decades, resulted in significant improvements in walking ability.

#### Methods

Participants (n=94) attended therapy 2.2 times a week for an average of 10 weeks. The participants were involved with the LI program between the years 1980 (when the program was first examined) and 2005. Measurements recorded were total distance walked (DW), and total time walked (TW). Measurements calculated were: average velocity (AV), estimated  $VO_2$  ( $VO_2$ ), metabolic rate (MET), energy expenditure (EE), rate of energy expenditure (REE), work (W), and power (P). An analysis of the data examined changes in the pretest and post-test exercise variables using a repeated measures design (ANOVA).

#### Results/Discussion/Conclusion

Significant improvements ( $p < 0.001$ ) were observed for all exercise variables: DW, 180%; TW, 105%; AV, 54%;  $VO_2$ , 27%; MET, 24%; EE, 182%; REE, 60%; W, 100%; and P, 59%; (n=51 for EE, REE, W, and P). The LI approach used in this study is an alternative approach to the recommended high-intensity (HI) approach. This LI exercise method offered little risk to the participants having further cardiovascular complications unlike others using the HI approach who have reported heart complications during exercise (Carlson, et al 2003). LI exercise training appears to be a viable alternative to HI training for improving the walking ability of patients with IC and should receive further attention, study, and research

### Balance and Mental Retardation

Karen Smail and Michael Horvat, University of Georgia

#### Introduction/Purpose:

The purpose of this study was to investigate the effectiveness of balance training on functional tasks in individuals with mental retardation.

#### Methodology:

Ten high school students from a self contained Special Education classroom participated in a balance program 3 times weekly for 12 weeks. Each session lasted approximately 20-30 minutes and was held in the classroom under the direction of the Adapted Physical Education Specialist. Functional assessments were performed prior to commencing the intervention and after completion of the balance program. Balance measures were collected using the NeuroCom Equitest using the Sensory Organization Test (SOT), weight bearing squat and step up and over.

#### Results/Discussion:

Data analysis indicated a significant difference in the SOT  $F(1,9) = 14.8, p < .01$ . This translated to a 25.8% increase from pre to post test. The weight bearing squat measured weight distribution at knee flexion  $0^\circ, 30^\circ, 60^\circ, \text{ and } 90^\circ$ . Pre test data indicated that participants were right side dominant 58.6% vs. 43.2% left side. Post test data indicated that weight distribution was more symmetrical after training as indicated by 51.9% right side and 48.1% left. Right side dominance was present on the pre test step up and over lift up index with 56.73% of weight distributed on the right and 40.73% on the left; impact index had similar results with 54.4% right side and 40.33% left side. Weight was more symmetrically distributed on the post test, lift up index 52.27% right and 47.33% left and impact index 50.4% right and 50.53% left. This study suggests that symmetrical weight distribution can be corrected with proper training thus resulting in more efficient movement patterns. The equalization of weight symmetry throughout each activity is particularly important to improve balance and reduce falls by avoiding the application of continuous force on one specific area of the body i.e., lower back or knees.

#### Conclusion:

In conclusion our results suggest that participation in a specific intervention training program can improve overall balance and weight symmetry in functional movement. It also supports the premise that individuals with mental retardation require intervention programs and should be encouraged to be active in school based settings to facilitate their overall development and transition to the community.

## *Posters presented at the 2006 Annual NCPERID Summer Conference*

### Title: The Effects of Total Body Vibration and Passive Standing on Bone Mineral Density, Body Composition, and Lean Muscle Mass of an Individual with a Spinal Cord Injury: A Case Study

Ronald Davis, Eric Dugan, David Bassett-Jones, and Leonard Kaminsky, Ball State University

#### Introduction

It is well documented that persons with spinal cord injuries (SCI) are susceptible to osteoporosis and an increase risk of lower limb fractures (Lazo, Shirazi, Sam, Giobbie-Hurder, Balconiere, and Muppidi (2001); de Bruin, Dietz, Dambacher, and Stussi (2000); Giangregorio and Blimkie (2002). Several intervention strategies have been identified to address the issue of bone mineral density (BMD) loss, (i.e functional electrical stimulation (FES) cycle ergometry). No literature could be identified related to the effects of Total Body Vibration (TBV) on BMD for those with SCI.

#### Purpose

The purpose of the study was to determine the effects of TBV and passive standing on BMD and other health-related markers of individuals with SCI.

#### Methods & Procedures

A case study design was used to address the purpose of the study. The subject was pre/post measured with Dual Femur views for BMD and Lean Muscle using dual-energy x-ray absorptiometry (DEXA) machine. The subject was a female SCI (T-10) who participated in two 10 week intervention sessions. Session 1 was from May to July and session 2 lasted from September to December. There was a 10 week intersession with no activity. Session 1 included a standing only protocol of 40 minutes, while session 2 had a separate standing protocol lasting 20 minutes and a TBV bout on a vibration platform. Frequency of intervention was 3 times per week. A vibration platform by Power Plate and an Easy Stander 5000 were used. Vibration bouts included 30, 40, 60s at 30, 40, 50HZ with low and high amplitude across the 10 weeks of each session.

#### Results

Session 1 Standing only	Pre	Post	Change	% change	Session 2 Standing & Vibration Separate	Pre	Post	Change	%change
<b>BMD</b>									
Legs	0.859	0.888	0.029	3.38%		0.853	0.877	0.024	2.81%
Trunk	0.915	0.836	-0.079	-8.63%		0.894	0.845	-0.049	-5.48%
Pelvis	0.988	0.844	-0.144	-14.57%		0.939	0.918	-0.021	-2.24%
Spine	1.21	1.156	-0.054	-4.46%		1.193	1.101	-0.092	-7.71%
Total	1.028	1.041	0.013	1.26%		1.046	1.039	-0.007	-0.67%
<b>Body Comp</b>									
Legs	54.8	51.9	-2.9	-5.29%		57	52.2	-4.8	-8.42%
Gynoid	56.3	47.8	-8.5	-15.10%		57.9	48.1	-9.8	-16.93%
Total	44.8	42.3	-2.5			47.7	44.7	-3	
<b>Lean Mass</b>									
Legs	7,089	10214	3125	44.08%		6860	10895	4035	58.82%
Total	29737	31028	1291	4.34%		28760	30393	1633	5.68%

#### Results/Discussion:

Results indicate a positive impact on BMD of the legs for intervention with and without vibration; trunk, and pelvis BMD less percent change with vibration intervention; body composition and lean muscle mass measures improved more with vibration.

## *Posters presented at the 2006 Annual NCPERID Summer Conference*

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### **Hemorrhagic Stroke: A Case Study**

David G. Lorenzi, MA, MTAA, CAPE, CHES; Assistant Professor  
Indiana University of Pennsylvania

#### **Introduction/Background:**

Mike was a healthy, active, 44 year old male who exercised daily. He suffered a hemorrhagic stroke which resulted in an apoxic brain injury. The stroke occurred as the result of a dissected carotid artery, cause unknown. Based upon the type of stroke that occurred and the acute swelling of the brain, Mike was not expected to survive. He underwent multiple brain surgeries with a craniotomy being performed to relieve swelling and pressure in the brain. Mike spent 3-4 weeks in a neuro intensive care and step-down unit mainly in a comatose state. The next five weeks were spent in an in-patient brain injury unit undergoing traditional rehabilitation consisting of physical therapy, occupational therapy, and speech therapy. He developed a problem and had to have his gallbladder removed and had to use a feeding tube for approximately 4 weeks. His weight dropped from his original 160 lbs. to 129 lbs. during this time.

#### **Methods:**

After five weeks in the brain injury unit, he was sent home to begin in-home and outpatient therapy. His family developed an aggressive home-based rehabilitation program focusing on three main areas: (1) developing a support team of professionals, (2) mobilizing resources, and (3) implementing a rigorous physical activity/exercise program. Various pieces of exercise equipment were purchased for home use including a stair climber, treadmill, recumbent bike, and an elliptical trainer. Mike enrolled in a university-based physical activity program consisting of swimming and physical fitness activities. Additionally, Mike underwent a thorough assessment at the university gauging range of motion and functional capabilities. The stroke resulted in hemiplegia on the right side, with the arm affected to a greater degree. Backward and forward pedaling on the recumbent bike has helped to alleviate drop foot on the right side. Also, Mike lost a great deal of left-sided brain functioning affecting primarily reading, writing, and speaking.

#### **Results/Discussion/Conclusion:**

Now, three years later, Mike's weight is stable at 165 lbs. Additionally, Mike exercises daily, usually swimming and bicycling. Mike uses a recumbent, three wheel bike to ride outside when the weather permits and it is not uncommon for him to independently ride up to 40 miles a day on a bike trail.

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### **Identifying Barriers to Physical Activity Participation in Adults with Brain Injuries**

Dr. Simon Driver, University of North Texas

#### **Purpose**

To identify different barriers that adults with brain injuries are faced with when attempting physical activity.

#### **Method**

A questionnaire was administered to 384 adults with brain injuries. The questionnaire consisted of information on: age, gender, time since injury, level of cognitive functioning, level of physical ability (e.g., walker, cane, wheelchair), level of physical activity post injury, barriers to physical activity participation, and interest in starting a physical activity program. Components of the leisure time exercise questionnaire (Godin & Shepard, 1985) and barriers to physical activity scale for people with physical disabilities (Heller, Rimmer, & Rubin, 2001) were used to create the questionnaire.

#### **Results**

Results indicated six main barriers to participation (out of nine) including cost of program, lack of personal care assistant, transportation, and accessible facility, and inadequate education regarding the benefits of participation. Between 38-48% of participants indicated that these six barriers were an issue.

#### **Conclusion**

Results emphasize the need for increased education about the benefits of physical activity participation for individuals with brain injuries, their specialists, and significant others. Results also emphasize the need for accessible and affordable programs with the appropriate supports.

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*Keep up the good  
work!!*

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