

**Editorial**

*The State of the Journal* (pp. iii–iv)

Mark G. Fischman

**McCloy Lecture**

*Fifty Years of Advancements in Fitness and Activity Research* (pp. 1–11)

Charles B. Corbin

Over the past 50 years progress in fitness and activity research has been influenced by social events, technical innovations, and changes in the field of physical education and kinesiology. The conventional wisdom of the 1950s yielded to a new wisdom based on research evidence. The author's research, as well as the research of others, from 1960 to the present is discussed. The new wisdom focuses on health-related fitness and physical activity promotion based on health behavior change strategies.

**Epidemiology**

*BMI Group-Related Differences in Physical Fitness and Physical Activity in Preschool-Age Children: A Cross-Sectional Analysis* (pp. 12–19)

Iris Niederer, Susi Kriemler, Lukas Zahner, Flavia Bürgi, Vincent Ebenegger, Pedro Marques-Vidal, and Jardana J. Puder

In the Ballabeina study, we investigated age- and BMI-group-related differences in aerobic fitness (20 m shuttle run), agility (obstacle course), dynamic (balance beam) and static balance (balance platform), and physical activity (PA, accelerometers) in 613 children ( $M$  age = 5.1 years,  $SD$  = 0.6). Normal weight (NW) children performed better than overweight (OW) children in aerobic fitness, agility, and dynamic balance (all  $p < .001$ ), while OW children had a better static balance ( $p < .001$ ). BMI-group-related differences in aerobic fitness and agility were larger in older children ( $p$  for interaction with age = .01) in favor of the NW children. PA did not differ between NW and OW ( $p \geq .1$ ), but did differ between NW and obese children ( $p < .05$ ). BMI-group-related differences in physical fitness can already be present in preschool-age children.

**Motor Behavior**

*Correlates of School-Day Physical Activity in Preschool Students* (pp. 20–26)

Leah E. Robinson, Danielle D. Wadsworth, and Christina M. Peoples

This study examined the relationship among sex, body mass index, motor skill competence (MSC), perceived physical competence (PPC), and school-day physical activity in preschool students ( $N = 34$ ). Physical activity was assessed by steps accumulated during the school day, while MSC and PPC were assessed with the Test of Gross Motor Development–2nd edition (Ulrich, 2000) and the Pictorial Scale of Perceived Competence and Social Acceptance (Harter & Pike, 1984). Regression analyses revealed that preschool students' locomotor ability accounted for 21% ( $p = .007$ ) of the variance associated with school-day physical activity. The findings support an association between participants' ability to locomote and be physically active. The findings warrant future investigations to examine the relationship between locomotor skills and physical activity behaviors.

*Self-Control of Task Difficulty During Training Enhances Motor Learning of a Complex Coincidence-Anticipation Task* (pp. 27–35)

Mathieu Andrieux, Jérémy Danna, and Bernard Thon

The aim of the present work was to analyze the influence of self-controlled task difficulty on motor learning. Participants had to intercept three targets falling at different velocities by displacing a stylus above a digitizer. Task difficulty corresponded to racquet width. Half the participants (self-control condition) could choose the racquet width at the beginning of each trial. Each was paired with a participant from the yoked group. The self-control condition resulted in better performances and accuracy during immediate and delayed retention tests. These results confirm the advantage of a self-control condition on motor learning. They are discussed with reference to the challenge point hypothesis (Guadagnoli & Lee, 2004).

### **Pedagogy**

*Are K–12 Learners Motivated in Physical Education? A Meta-Analysis* (pp. 36–48)

Senlin Chen, Ang Chen, and Xihe Zhu

Previous studies devoted to K–12 learner motivation in physical education share a general assumption that students may lack motivation. This meta-analytic study examined published original studies ( $n = 79$ ) to determine students' motivation level and the association between motivation and outcomes. Original means of motivation measures were converted and aggregated to determine motivation levels. Correlation effect sizes were calculated to determine the association between motivation and outcome measures. The analyses revealed that K–12 students are motivated regardless of the theoretical constructs used in the studies ( $M > 50$ ). The correlation effect sizes ( $r = .20-.30, p < .05$ ) indicate a weak association between motivation and outcome. The findings suggest a need to involve meaningful learning and pedagogy variables in motivation research.

### **Physiology**

*Changes in Bone Alkaline Phosphatase and Procollagen Type-1 C-Peptide After Static and Dynamic Exercises* (pp. 49–54)

Keitaro Kubo, Kazuhito Yuki, and Toshihiro Ikebukuro

We investigated the effects of two types of nonweight-bearing exercise on changes in bone-specific alkaline phosphatase (BAP) and procollagen type 1 C-peptide (PIP). BAP is a specific marker of bone synthesis, whereas PIP reflects synthesis of type 1 collagen in other organs as well as bone. Eight participants performed static and dynamic unilateral knee extensions. BAP and PIP were measured before, and at 1, 2, 24, 48, and 72 hr after exercise. PIP increased at 24 hr after a static knee extension exercise, whereas BAP did not change during the experimental period. We found no changes in these markers after dynamic exercise. These results imply that type 1 collagen synthesis in tendons increases after static exercise.

### **Psychology**

*Path Analysis Examining Self-Efficacy and Decision-Making Performance on a Simulated Baseball Task* (pp. 55–64)

Teri J. Hepler and Deborah J. Feltz

The purpose of this study was to examine the relationship between decision-making self-efficacy and decision-making performance in sport. Undergraduate students ( $N = 78$ ) performed 10 trials of a decision-making task in baseball. Self-efficacy was measured before performing each trial. Decision-making performance was assessed by decision speed and decision accuracy. Path analyses examined the relationships between self-efficacy, residualized past performance, and current performance. The results indicated that self-efficacy was a significant and consistent predictor of decision speed (eight of nine

trials), but not decision accuracy (four of nine trials). It was also found that experience does not have a meaningful effect on the relationship between self-efficacy and decision-making performance in sport.

*Resilient Excellence: Challenges Faced by Trailblazing Women in U.S. Sport Psychology* (pp. 65–76)  
Diane E. Whaley and Vikki Krane

Consistent with other sciences (e.g., Kass-Simon, 1993; Tang, 2006), the field of kinesiology has been called a “masculine domain,” which has an institutionalized culture biased against women (Brackenridge, Mutrie, & Choi, 2005). This paper represents the second part of a larger project that examined the life histories of eight trailblazing women in sport and exercise psychology. In the first paper (Krane & Whaley, 2010) we made the case for re-placing these women into the history of sport psychology, based on their contributions to research, teaching, and service to the field. In this study, we explored the experiences of these women with regard to the challenges they faced and how they overcame or coped with them. The specific themes emerging from the data analysis were the trailblazers’ graduate school and early professional experiences, general campus climates, departmental politics, gender or discipline, coping and the cost of caring, and giving back and moving forward.

*Implementation Planning and Progress on Physical Activity Goals: The Mediating Role of Life-Management Strategies* (pp. 77–86)  
Michelle Dugas, Patrick Gaudreau, and Natasha Carraro

This 4-week prospective study examined whether the use of life-management strategies mediates the relationship between implementation planning and short-term progress on physical activity goals. In particular, the strategies of elective selection, compensation, and loss-based selection were disentangled to assess their specific mediating effects. Results from a sample of 131 undergraduate students showed that, as a composite, life-management strategies fully mediated the relationship between planning and goal progress. More specifically, decomposing the effects demonstrated that only elective selection and compensation mediated the association between planning and greater progress on a personal physical activity goal. Results are discussed in light of their practical implications and contributions to the personal goal literature.

*Differences in Motor Imagery Time When Predicting Task Duration in Alpine Skiers and Equestrian Riders* (pp. 86–93)  
Magali Louis, Christian Collet, and Stéphane Champely, and Aymeric Guillot

Athletes’ ability to use motor imagery (MI) to predict the speed at which they could perform a motor sequence has received little attention. In this study, 21 alpine skiers and 16 equestrian riders performed MI based on a prediction of actual performance time (a) after the course inspection, (b) before the start, and (c) after the actual performance. MI and physical times were similar in expert skiers during each imagery session, while novice skiers and novice and expert riders underestimated the actual course duration. These findings provide evidence that the temporal accuracy of an imagery task prediction depends on the performer’s expertise level and characteristics of the motor skill.

### **Sociocultural Foundations**

*Social Inequalities in Body Weight and Physical Activity: Exploring the Role of Fitness Centers* (pp. 94–102)  
Lindsay McLaren, Melanie J. Rock, and Jamie McElgunn

Fitness centers are a viable option for physical activity, particularly in climates with significant weather variation. Due to variation in economic and social expressions of exclusivity, fitness centers may have

some relation to social inequalities in physical inactivity and related health outcomes; thus, our objective was to explore this relation. Using publicly available data and guided by Bourdieu's theory of habitus, we classified fitness centers in Calgary, Canada, on three dimensions of exclusivity (economic, social, and appearance). We found that, although some highly exclusive centers exist, most demonstrated low exclusivity based on our dimensions. An overall contribution of centers to inequalities appears to be limited; however, caution is warranted in light of cutbacks to municipal budgets that can have an impact on publicly funded facilities.

**Research Notes**

*Children's In-School and Out-of-School Physical Activity During Two Seasons* (pp. 103–107)

Aaron Beighle, Heather Erwin, Charles F. Morgan, and Brandon Alderman

*Evaluation of the Trackstick™ Super GPS Tracker for Use in Walking Research* (pp. 108–113)

David McMinn, David A. Rowe, and Ivan Čuk

*Age-Related Differences in Bilateral Asymmetry in Cycling Performance* (pp. 114–119)

Ting Liu and Jody L. Jensen

*Prevalence of Disordered Eating and Pathogenic Weight Control Behaviors Among NCAA Division I Female Collegiate Gymnasts and Swimmers* (pp. 120–124)

Carlin Anderson and Trent A. Petrie .....