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No “Yippie!” for the Yips

by Shirl Hoffman, KT Editor



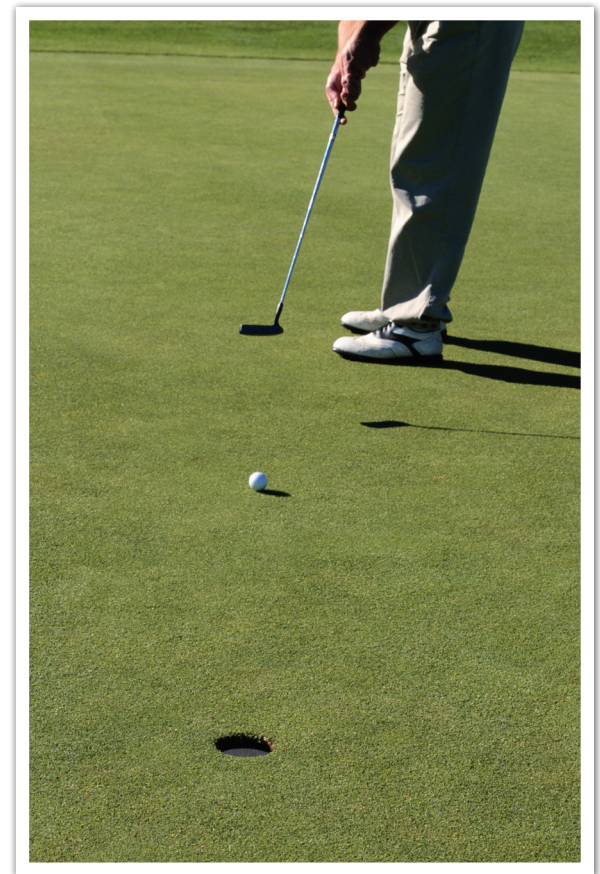
Shirl Hoffman

On a bright and sunny day at the 2014 Valspar Championship, PGA golfer John Daly shot an incredibly bad round. His second-round score of 90—abetted by an octuple bogey 12 on one hole along

with three three-putts and one four-putt—led to an early exit from the tournament, not to mention a crushing embarrassment for the former PGA and British Open champion. Daly hasn’t been at the top of his game for several years, but this was something different: a colossal breakdown. Heading to the parking lot at Innisbrook Resort, he told reporters, “When you’ve got the yips, it’s no fun.”

Daly isn’t alone in suffering the frustration and embarrassment of the yips. The legendary Sam Snead was tormented by the yips, as was British Open winner Mark O’Meara.

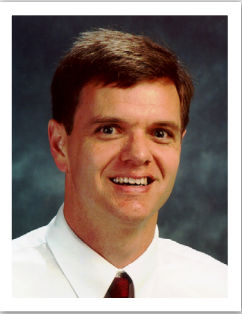
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PRESIDENT'S MESSAGE

Dealing With the Culture of Evaluation and Metrics

By Duane Knudson, AKA president



Duane Knudson

Kinesiology departments must function in an age of expanding emphasis on outcomes evaluation and performance metrics. Chairs must be knowledgeable about the metrics that are the “coins of the realm” in their

universities and states and in the world. Some departments have local and regional missions that are driven by semester credit hours, full-time-equivalent students, or tuition. Other departments have missions to advance in world rankings of research universities where research expenditures, publications, faculty awards, and doctorates granted are important. What if some of these metrics have poor validity and disadvantage our departments? In his 1963 book *Informal Sociology*, William Bruce Cameron (and not Albert Einstein, who often is credited) famously stated, “Not everything that can be counted counts, and not everything that counts can be counted.”

The American Kinesiology Association (AKA) is trying to help in this area on several fronts. We will be launching our national survey of kinesiology departments, which focuses on faculty salaries. This year our salary survey is expanded to include information start-up packages, moving expenses, and other incentives offered to new assistant professors. The survey will also seek data on National Center for Education Statistics Classification of Instructional Programs (CIP) codes as well as information related to our upcoming 2016 AKA Workshop on Innovation and Entrepreneurship in a Time of Shrinking Budgets in San Antonio January 31 to February 2. **Kinesiology chairs and directors, please respond to this survey!**

CIP codes are six-digit numbers from the NCES that provide taxonomy of instructional programs. These codes are used by some universities to allocate resources, define academic program areas, and even document faculty qualifications. Kinesiology departments are housed in a variety of colleges in universities based primarily on local political forces. So it should be no surprise that academic programs in kine-

siology departments and schools appear in the general academic areas (first two digits of the CIP code) of 13: Education; 26: Biological and Biomedical Sciences; 31: Parks, Recreation, Leisure, and Fitness Studies; and 51: Health Professions. While recreation and sports management have sometimes been moved to business schools, there currently are only hospitality and tourism programs in the CIP code 52: Business, Management, Marketing, and Related Support Professions.

The AKA has a CIP code committee working on providing recommendations on how we might lobby the NCES to better represent kinesiology in a future update of the CIP-2010 codes. This is particularly important to departments and schools where CIP codes are key metrics for funding and rankings. The committee is led by AKA president-elect Dr. Mary Rudisill. The committee would welcome your input on this important topic, so please forward any suggestions or data to Mary at rudisme@auburn.edu.

An example of where metrics have been influential and misused is the common abuse

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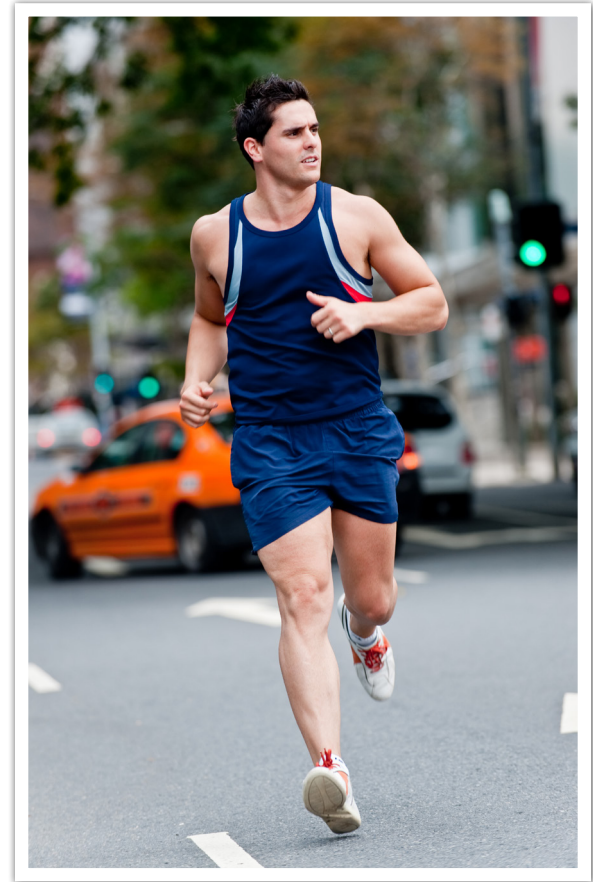
Exercising in Not-So-Fresh Air

Okay, so you live in the city and you want to go for a long run outdoors? It's a good way to improve your health, you say. It extends your life, you say. But what about air pollution? It is well established that long-term exposure to air pollution can shorten lives. In fact, a case might be made (theoretically) that running in a polluted environment actually exacerbates the effects of pollutants on health because increases in physical activity amplify respiratory intake and therefore accumulation of air pollutants in the lungs.

For this reason many of those living in urban areas, particularly areas with heavily polluted air, are discouraged from exercising outdoors. Now, a recent study by Danish researchers, published in advance in *Environmental Health Perspectives*, suggests that such concerns are overblown. More than 50,000 participants aged 50 to 65 years from two large cities who were part of the cohort reported on their physically active leisure activities between 1993 and 1997, including sports, cycling to and from work and in their leisure time, gardening, and walking. Pollution levels were estimated from traffic data at their residential addresses. High exposure to air pollution was defined

as the upper 25th percentile of modeled nitrogen dioxide (NO₂) levels at residential addresses.

A total of 5,534 participants died, 2,864 from cancer, 1,285 from cardiovascular disease, 354 from respiratory disease, and 122 from diabetes. Inverse associations were found between sport participation and total mortality with somewhat weaker negative associations between cycling, gardening and all cause mortality. Walking was negatively correlated with respiratory mortality only. Lead author Professor Zorana Jovanovic Andersen from the Centre for Epidemiology and Screening at the University of Copenhagen told reporters, "Even for those living in the most polluted areas of Copenhagen, it is healthier to run, walk, or cycle to work than it is to stay inactive. However, we would still advise people to exercise and cycle in green areas, parks, and woods with low air pollution and away from busy roads, when possible." She was careful to note that "these results pertain to Denmark and sites with similar air pollution levels and may not necessarily be true in cities with several-fold higher air pollution levels." - SJH



Anderson, Z.J., et al. (2015). A study of the combined effects of physical activity and air pollution on mortality in elderly urban residents: The Danish diet, cancer, and health cohort. *Environmental Health Perspectives*. DOI:10.1289/ehp.1408698.

DO THE RIGHT THING

Endurance Running Is a Turn-On: Who Knew?

By Pat Wade, KT staff writer

Better endurance runners may have an easier time attracting sexual partners and having children, a new study out of the University of Cambridge suggests, but it is not for the reasons you might think.

It may have a big connection to humans' hunter-gatherer past, when long-distance running was an important method of exhausting prey and securing food for early societies. Researchers say that women may have seen running ability as a signal that men were better providers and possessed other traits they would want to pass on to their offspring. Dr. Danny Longman of the Division of Biological Anthropology and the lead author on the paper said the research was driven in part by his own interest in sport competition and how that relates to human development.

"Competition is the driving force of adaptation and ultimately of evolution," Longman said. "By studying the characteristics that make an individual more competitive on the sports field relative to others, it is possible to gain a greater understanding of the factors influencing success and failure in the evolutionary arena."

Distance running may not itself lead to a

runner's reproductive fitness, according to the study. Rather, endurance running ability is associated with higher pre-birth exposure to testosterone, which itself correlates to other markers of reproductive success like higher sperm counts, strength of sex drive, and ease of achieving sexual excitement.

To determine that, researchers visited the 2013 Robin Hood Half Marathon in Nottingham, England. The half-marathon distance was selected because of its resemblance to early persistence hunting, for which a hunter would track and chase prey to the point of exhaustion or overheating, often during the hottest part of the day, according to the study. Humans are well built for this type of activity compared to other animals, thanks to an efficient posture for running and a good cooling mechanism in the form of sweat.

The longest of these hunts could last up to about 35 kilometers, or just under 22 miles, according to the study. Previous research had already established that individuals with higher levels of pre-birth exposure to testosterone have ring fingers longer than their index fingers. The researchers photocopied the hands of 439 male runners and



103 female runners and found that the men with the digit ratios between their index and ring fingers that indicated higher pre-birth testosterone exposure tended to finish the race faster. The 10 percent of men with the higher testosterone exposure finished more than 24 minutes faster on average than the 10 percent with the lower testosterone exposure levels.

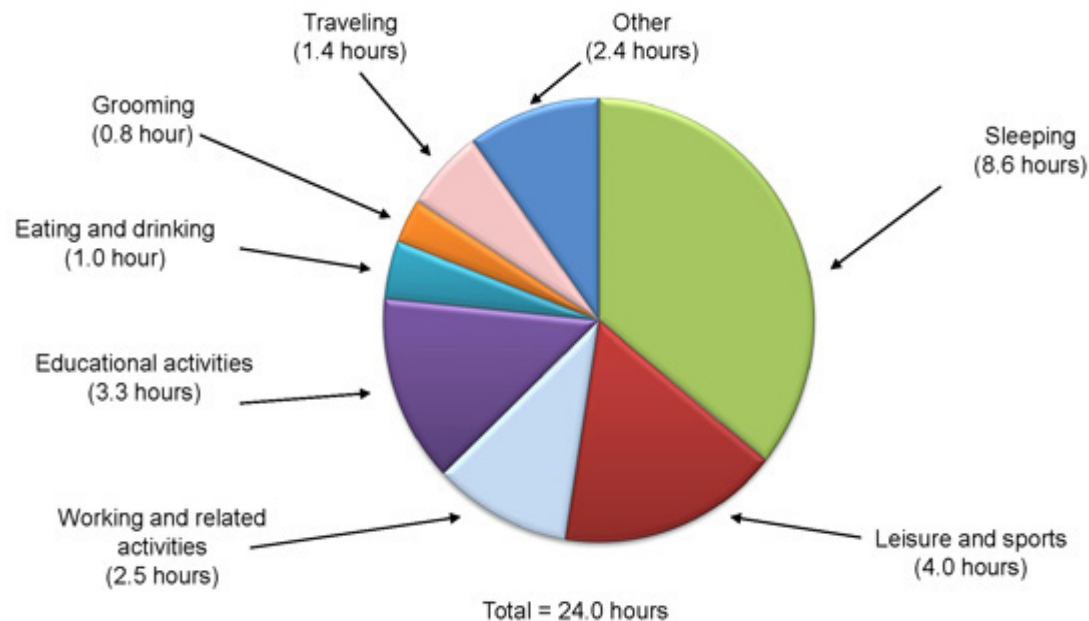
The same was true for women, but the faster finish times were less pronounced than they were in men—the difference averaged about 12 minutes when you compare women with the most and least masculine hands. That suggests there has been some kind of evolutionary pressure on men who are better endurance runners. Despite its connection to early hunting societies, Longman and his team think that this has less to do with ability to procure resources and more to do with the fact that a good run may act as a signal to potential reproductive partners that the runner has good

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Educational Activities Lag Behind Leisure and Sports in Lives of Students

The U.S. Bureau of Labor Statistics, in its American Time Use Survey, shows that an average full-time college student devotes less than 14% of the day to educational activities, a bit more than working and related activities (10%) but less than they spend at leisure and sport activities (16.6%).

Time use on an average weekday for full-time university and college students



NOTE: Data include individuals, ages 15 to 49, who were enrolled full time at a university or college. Data include non-holiday weekdays and are averages for 2009 -13.

SOURCE: Bureau of Labor Statistics, American Time Use Survey

2015 Student Award Winners Announced

by Amelia Lee, AKA Executive Director



Amelia Lee

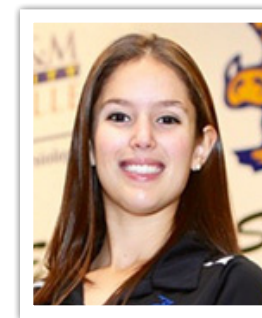
The American Kinesiology Association is committed to recognizing and focusing attention on member departments' most exceptional students. The 2015 student winners represent the next generation of national leaders who will continue to promote and enhance kinesiology as a unified field of study and will work to advance its many applications. Congratulations to all AKA member departments whose students received one of the awards this year and especially the four national competitive award recipients.

Since 2010 AKA member departments have had the privilege of submitting nominations for Undergraduate, Master's, and Doctoral Scholar Awards and a Graduate Student Writing Award. The goal of this program is to focus national attention on students who have been screened and recommended by the faculty in their departments. In 2015 a total of 97 students were

honored for outstanding achievements in kinesiology, and these students received certificates and are publicly recognized on the AKA website: www.americankinesiology.org.

In addition to the recognition awards that focus attention on member departments' most exceptional students, for the second year the AKA is honored to announce the recipients of four National Competitive Awards: a National Undergraduate Scholar Award, a National Master's Scholar Award, a National Doctoral Scholar Award, and a National Graduate Student Writing Award. These awards are competitive, and one winner is chosen by the AKA Awards Committee for each category. This year finalists in each award category were designated as honorable mention. The National Scholar Awards recognize the academic and leadership accomplishments of undergraduate, master's, and doctoral students in AKA member departments. Only one student can be nominated for each award category, and nominees are selected by a vote of the faculty in which the student is enrolled. One winner was chosen by the AKA Awards Committee for each category.

We are proud to announce the recipients of these awards:



Samantha N. Cantu

National Undergraduate Scholar

Samantha N. Cantu,
Texas A & M University
Kingsville

Honorable Mention

Jade Fackler, California State University
at Monterey Bay
Elaine Griffeth, University of Oklahoma
Lori Moore, Temple University



Lauren Weiss

National Master's Scholar

Lauren Weiss, Uni-
versity of Maryland

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Kids Need More Than a Slide and Swings to Get Active

Amy Rose, KT Staff Writer

Researchers, educators, health professionals, and parents are all looking for ways to increase physical activity in children, and one of the most obvious ways would seem to be the good old-fashioned playground. The only problem is our school playgrounds may be too old-fashioned to do the job. There are many new trends in playground design to encourage physical activity and also incorporate cross-curriculum lessons into playground time. Andy Dotterweich, associate professor of recreation management at East Tennessee State University, says playground activity is an “incredible value” that not only increases physical activity but also has psychosocial experience benefits. “It’s good for the body and good for the mind,” he said.

So, the challenge becomes getting kids to use the playgrounds to reap all the benefits awaiting them. A recent study led by Henriette Bondo Anderson, a PhD stu-



Photos provided by PlayCore

dent at the department of sport science and clinical biomechanics at the University of Southern Denmark, wanted to know if differences in playground surfaces might affect children’s physical activity levels. They looked at physical activity levels on three types of playing surfaces—natural grass, multicourt, and open solid surface—along with areas that had playground equipment. The study found that kids were engaged in physical activity for a longer period in the grassy areas as opposed to the courts and solid surfaces. Anderson said one of the reasons for this finding is that kids play the types of games that require stand-



Photos provided by PlayCore

ing and waiting their turns on the solid surfaces, whereas in the grass they are playing soccer and other activities in which all children can be moving continuously.

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Henriette Bondo
Anderson

George Mason Sophomore Wins Para-Bobsled Competition



Jason Sturm

Jason Sturm, a sophomore in the kinesiology department at George Mason University at the School of Recreation, Health, and Tourism at George Mason University, took first place for the U.S. team in the first-ever Para-Bobsled World Cup held in Austria and Switzerland in January. The event is under consideration for inclusion in the Paralympic Games at the 2018 Winter Olympics in South Korea. “Twelve years ago, I was career Army, but life had other plans,” says Sturm, who was injured in an artillery accident at Fort Drum, New York, that resulted in the loss of his left leg below the knee. Sturm received a 2013 Pat Tillman Foundation military scholarship and enrolled in the kinesiology program at

George Mason. “I would never have guessed that I’d land where I am: CrossFit coach, ambassador for adaptive athletics and wounded soldier programs, and looking at the possibility of becoming an Olympic athlete,” he says. “To me, it’s proof that you can’t waste your time looking back. Accept where you are right now, who you are, and then take a step forward.”

Abstracted from a story that appeared in the George Mason University College of Education and Human Development newsletter, February 25, 2015.

EDITOR'S TWO CENTS' WORTH

Would You Have Hired Me if You Knew This About Me?

By Shirl Hoffman, KT Editor



Shirl Hoffman

Duane Knudson's column in this issue underscores the current fascination with testing in higher education. Signs of test mania are everywhere, as are complaints that an obsession with testing

has led to an educational train wreck. Yet test scores remain the paramount measure of accountability for students, faculty in public schools and colleges, law schools, nursing schools, and medical schools.

But it isn't only educational institutions that are caught up in this psychometrophilia: Employers have jumped on the assessment bandwagon, viewing testing as a way to improve efficiency in the hiring process. Major companies have used pre-hire tests for years, but with the introduction of technology that automates the application process and inexpensive online software for analyzing the results, testing has been given a new life.

Eight of the top ten private employers reportedly now use pre-hire tests to weed out as many as 30% of applicants before employers begin to look at resumes. Work-

place personality testing for businesses is estimated to be a half-billion-dollar business and is growing by 10% to 20% a year. Questions may ask applicants whether they agree or disagree with statements such as "People do a lot of things that make me angry" and "I am unsure of what to say when I meet someone." Other tests ask such questions as "I resent being told by a superior that my work isn't up to par" and "I dislike being asked to work on weekends when I am not reimbursed for it" as a way to determine how well the applicant will fit into the culture of the company. Responses are fed into elaborate algorithms that help identify those who would not be good hires.

All of this got me thinking about how pre-hire tests might help kinesiology departments in the hiring process. Although kinesiology departments aren't usually flooded with hundreds of resumes from prospective candidates, such tests might help them avoid surprises when they take on a new faculty member. Any former department head can regale you with stories of having hired someone who, shortly into the job, began to exhibit attitudes and behaviors that would have easily screened them out if identified earlier in the selection process.

So, as a contribution to department

heads everywhere (and a tongue planted firmly in cheek), here is **Hoffman's Would-You-Have-Hired-Me-If-You-Had-Known-This-About-Me? Test.**

1. If my assigned office does not have a window, I will

- a. realize I'm lucky to have the job, work hard, and hope that I can be moved to a nicer office in the next few years
- b. paint a window on the wall as a way of protesting my plight
- c. in the classroom sarcastically refer to my office as "the cave"
- d. arrange to do all my work in the department conference room, or, if the coffee pot is not located there, work from my home

2. If my lab is woefully short of equipment needed for my research, I most likely will

- a. write a research proposal to equip the lab
- b. complain unceasingly to the department head
- c. complain unceasingly to my spouse
- d. switch my area of specialization to sport history

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Read or Ride? It's Not an Either–Or Question

As classroom teachers and physical education teachers argue over the amount of time allowed their subjects in the school schedule, one person has decided it doesn't have to be either one or the other. Why not exercise and read at the same time? asked Scot Ertl, a guidance counselor at Ward Elementary School in Winston-Salem, North Carolina. The idea that one can read and ride a stationary bike at the same time is hardly new, as anyone who visits a fitness center can testify. This is the first time, however, that anyone has managed to try it as a normal part of the school schedule.

Ertl recalls hearing teachers talk about how anxious and frustrated children became when forced to sit at their desks while struggling to read. At the same time the local physical education teacher was complaining about the relatively low fitness levels of the students, many of whom were overweight and embarrassed to exercise in formal settings. Together and with the help of local news organizations, they were able to convince community members and organizations to donate 41 stationary bikes, and the school designated a room for their use. They also secured another 11 bikes for use in regular

classrooms. (Teachers can reserve the cycling room for up to 15 minutes per session.)

Thus was born readandride.org, which has now expanded to more than 30 other schools. Interest has spread not only nationally but internationally. Ertl says he has received inquiries from teachers in Germany, France, and New Zealand. The primary emphasis is on the psychological effect that exercise breaks offer to the children. "Many children get frustrated when they read," he says, "and they come to associate that frustration with reading. This is a way for them to release some of that tension and anxiety and see that reading can be fun." The program has appeared to pay off in terms of improved reading scores. According to Ertl, kids who spent the most time cycling attained an average 83 percent proficiency in reading, while kids who weren't in the cycling room as frequently averaged 41 percent proficiency. While such



MuckGirl

test scores don't allow him to claim that cycling while reading is the answer, results are encouraging enough for the school to continue the program. One benefit he sees is that overweight kids can bike at their own pace and in relative solitude unaffected by the taunts of classmates. Often, parents will come to school and ride with their children. As of yet, there have been no efforts to examine changes in cardiorespiratory fitness. Find more information on the program is at readandride.org. - SJH

Short Shots

NCAA Reverses Position on Heart Exams for Athletes

When he took the job as the first chief medical officer in the NCAA, neurologist Brian Hainline began to turn the spotlight away from the concussion problem to a less-talked-about issue: sudden cardiac deaths among athletes. Recently Hainline told reporters that he was about to recommend that college athletes at higher risk of cardiac death be required to undergo an EKG test before being cleared to participate. His idea met with sharp criticism from several quarters, including the American Heart Association, which warned that such tests result in a fair number of false positives, which could unfairly bar athletes from competition. When word of Hainline's comments got out, some 100 university team physicians signed a petition calling on him to change his mind. The tone of conversation on a listserv operated by the American Medical Society for Sports Medicine became so inflamed that the group shut down the conversation. At a sports medicine conference on April 10, Hainline said he had "become convinced that the infrastructure and knowledge base

will not support this effort at present." He intends to keep pushing for mandatory testing of athletes.

Terlep, S. March 4, 2015. The push to reform NCAA health standards. *Wall Street Journal*. Terlep, S. April 17, 2015. NCAA doctor backs off recommending heart tests for athletes. *Wall Street Journal*.

Hyperparenting May Lead to Less Physically Active Children

Researchers at the School of Kinesiology and Health Studies at Queens University in Canada have found that children of parents who are overly involved in their lives—academically, athletically, and socially—may be less physically active than children of less-involved parents. The study, led by Ian Janssen, surveyed 724 parents of children 2 to 7 years old and assessed four types of parenting: "helicopter" (overprotective) parents; "little-emperor" parents, who favor

their children with gifts; "tiger-mom" parents, who emphasize mastery; and those who encourage their children to participate in excessive extracurricular activities. Of the four styles, all were independently associated with lower reported physical activity of children except helicopter parenting, perhaps, say the researchers, because of low variability in scores (all were quite high) for hyperparenting in this group. Data were self-reported and duration of physical activity was not measured.

Preventive Medicine, April 2015.

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Short Shots

How Much Should You Drink When You Run?

A study to be published in June in the *Scandinavian Journal of Medicine & Science in Sports* suggests that dehydrated runners do not necessarily suffer a drop in performance if they don't know how hydrated they actually are. For years the mantra of many long-distance runners has been more water is better than less. Visions of Alberto Salazar being given intravenous fluids after winning the 1982 Boston Marathon after running the race without water, along with questionable scientific reports, have encouraged many to sip water frequently during races. In the study 11 cyclists were dehydrated 3% and then put through a 20-kilometer time trial in a 95-degree lab and fitted with obscured intravenous lines so they couldn't see how much water they were receiving. They showed no drop in performance. Drinking too much water (hyponatremia), however, can present rare but real dangers, especially for slower runners who spend more time on the course. Studies at both the Boston and London marathons showed that about 13% of runners had some level of hyponatremia. Much of the research on

hydration has been sponsored by sports drink companies.

Bachman, R. February 24, 2015. Ease up on water for that run. *The Wall Street Journal*.

Has This Research Project Run Its Course?

Over the past 20 years the NIH has invested \$6.7 million in the National Runners' and Walkers' Health Study coordinated by Paul Williams, a staff scientist with the Lawrence Berkeley National Laboratory in California. The project has spawned more than 65 peer-reviewed articles that have documented exercise habits and health histories in over 150,000 walkers and runners. Though his work has been criticized for relying largely on self-report measures of physical activity as well as his contention that the health returns of running and walking are proportional to the volume, it has attracted a great deal of public attention and been influential in policy

decisions. Now the NIH has decided not to continue funding the project, leaving Williams stranded just as he was hoping to narrow in on the relationship between running, walking, and longevity. Now he is trying to get funding from the Department of Energy, which oversees the Berkeley lab, and he has mounted a full-scale public relations effort aimed at the running public to pressure the DOE into funding the project, hopefully to the tune of \$5 million.

David Willey, editor of *Runner's World* magazine, asks readers to support Williams' study and write to the secretary of energy. Williams and his colleagues find it inexplicable that the running shoe industry hasn't

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Short Shots

been willing to fund research, especially, says Williams, “when our research has shown that over 90% of 50,000 runners point to health as the most important reason they exercise.” Steve Blair, exercise physiologist of note at the University of South Carolina, told the *Wall Street Journal*, “It continues to amaze me that the running industry, given the size and amount of money, has not invested in research activities to a greater degree.”

Asked to update us on the progress of his quest, Williams told *KT*: “Tom Cove, president and CEO of the Sports & Fitness Industry Association, has been very helpful in bring the study results to the attention of the industry. However, none of the shoe companies have actually sent a check, but I’m hopeful.”

If Some Exercise Is Good, Is More Better?

A recent study conducted at Britain’s University of Oxford and reported in *Circulation* discovered that exercising too much can lead to an increased risk of vascular disease. In this case, “too much” meant

exercising strenuously four to seven days a week as compared to exercising only two or three days per week at the same level. The study is being hailed by some as the best study to date on the subject, purporting to show a horseshoe-shaped response to exercise where, after an optimal exercise experience, the returns fall off and eventually become negative. Beginning in 1998 over one million healthy women from the Million Women Study were tracked for nine years by Britain’s National Health Service. The women reported frequency of physical activity along with other factors. Women reporting strenuous physical activity daily had higher risks of coronary heart disease, cerebrovascular disease, and venous thromboembolic events than those doing the same activity for two or three times each week. While acknowledging the importance of physical activity in lowering the risks of coronary heart disease, the authors conclude, “There is little to suggest progressive reductions in risk of vascular diseases with increasing frequency of activity.”

Armstrong, M.E.G., et al. February 16, 2015. Frequent physical activity may not reduce vascular risk as much as moderate activity. *Circulation*.

Science and Research Are Polluted Medical Ethicist Claims

Arthur Caplan, director of the Division of Medical Ethics at NYU’s Langone Medical Center, warns in the April 3 issue of *Mayo Clinic Proceedings* that “the pollution of science and medicine by plagiarism, fraud, and predatory publishing is corroding the reliability of research, yet neither the leadership or those who rely on the truth of science and medicine are sounding the alarm loudly or moving to fix the problem with appropriate energy.” Caplan cites journals that recruit authors who pay to get their articles published, often with no peer reviews. He estimates that such “predatory publishers” constitute 25% of all open-access journals. “Not only do they provide opportunities for the unscrupulous in academia and industry to pad their curriculum vitae and bibliographies with bogus articles and editorial appointments, they also make it difficult for those involved in the assessment and promotion of scholars to discern value from junk.” Caplan also targets a trend toward falsifying data or concealing violations, pointing to a PloS One study that revealed that 14% of scientists say that their colleagues falsify data and 72% report other questionable practices.

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Short Shots

FBI Turns Its Attention to Agent Fitness

FBI agents now are obligated not only to be on the lookout for terrorists but to watch their waistlines as well. For the first time in 16 years, the agency is requiring agents to pass a fitness test. According to an internal memo sent to agents in October by James Comey and obtained by the *New York Times*, Comey reminded them that they are “symbols to Americans of what is ‘right and good’ about the country. I want you to look like the squared-away object of that reverence.” Fitness testing and presumably agent fitness declined with the recent expansion of FBI interests

into cybersecurity and intelligence. The agency’s 13,500 agents were given until October to take the test and the results will be included on their annual performance reviews. According to the *Times*, “the test is primarily designed to ensure that agents can move quickly during a mass shooting, chase suspects and restrain them if they resist arrest. There are no weight limits, but agents have to achieve certain requirements in four different exercises depending on their age and gender. The threshold to pass is not nearly as high as it is for military commandos or hostage rescue-team members.”

Schmidt, M.S. April 6, 2015. Battling crime and calories at F.B.I. (Fit Bureau of Investigation). *New York Times*, A.1



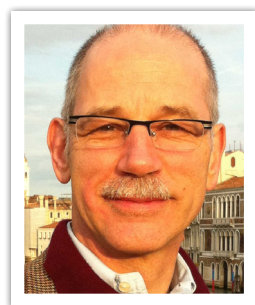
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No “Yippie!” for the Yips

Although he has been a consistent winner in Europe and the United States, golfing great Bernhard Langer has struggled with the yips for his entire career. He told reporters, “At one point I was yipping so badly that I four-putted from three feet and actually hit the ball twice. Those were extremely difficult times. I often thought about quitting.” In recent months golf reporters’ attention has turned to Tiger Woods, whose performance in the 2015 Waste Management Phoenix Open had even diehard Tiger fans cringing and uttering the dreaded “Y-word.”

“Yips,” a term uttered in dismay on golf courses worldwide—usually after a horrible putting performance—is one of the most mysterious afflictions that strike athletes. How a highly skilled performer can suddenly and without warning lose the ability to put together a coordinated series of movements that they have performed flawlessly thousands and even hundreds of thousands of times

can be as baffling to scientists as it is to performers. Happily, however, the scientific community is beginning to wrap its collective minds around this phenomenon and inch their way to practical solutions.



Jürgen Konczak

The word *yips* entered the golfing lexicon thanks to legendary golfer Tommy Armour, who used it to describe his abysmal performance in the Shawnee Open in 1927 where he shot a 23 on the 17th hole. If it were a problem only for golfers, it might not have received quite as much notice by the research community, but in various forms, it afflicts a range of experts in a range of fields.

Those who study the phenomenon are more likely to recognize the yips as a form of occupational cramps or task-specific focal dystonia, which is a motor disorder consisting of involuntary sustained muscle contractions that interfere with voluntary movements. It is known to affect highly trained experts who perform repetitive fine movements that must be temporally and spatially precise. Musician’s dystonia (MD) has ended the careers of scores of violinists, pianists, and guitarists whose fingers “cramp up,” that is, they extend or flex unwontedly during performance. Surgeons and dentists (ouch!) have been victims, as have writers whose hands and fingers lock up. Scott Adams’ work as creator of Dilbert comics has been impeded by yips in his right hand. Warren Deck’s career as a tubist with the New York Philharmonic ended as a result of focal dystonia in his upper lip.

Christian Marquardt, a neuroscientist who has spent much of his career studying MD, told the golf website birdiebank.com

that when he began to study the yips he “immediately had the feeling that there was something very similar (to MD) going on. . . The parallels,” he said, “were stunning.”

In sports, golfers aren’t the only athletes to combat the yips. Archers, billiards players, pistol shooters, dart throwers, tennis players, cricket bowlers, quarterbacks, free-throw shooters, and even pole-vaulters have suffered the embarrassment of having their normally skilled and flowing performances hijacked by the yips. Baseball fans will remember the almost comical struggle of Yankee second baseman Chris Knoblauch to make an accurate 40-foot throw to first base (he eventually moved to center field), and tennis fans still talk about Ana Ivanovic’s famous implosion. The winner of the 2008 French Open eventually became so crippled by the yips that she found it difficult even to toss the ball before a serve.

But among athletes, it is golfers who most dread and suffer from the yips. Poised to make a crucial putt in a big tournament, an experienced and proven golfer will find his or her well-practiced stroke overtaken by an invisible monster. Rather than a smooth, effortless stroke, what emerges from the motor control system is a series of jerks and interruptions. The stroke may even freeze in midphase. As a result the golfer may hit the ball well past the hole or maybe not hit it at all. Although most often seen in putting, the yips can show up on the tee

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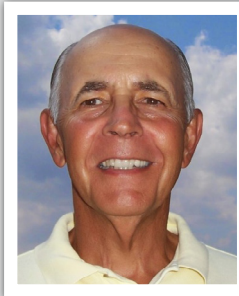
No “Yippiel!” for the Yips

or in chipping as well. Tiger Woods' latest collapse in the 2015 Waste Management Phoenix Open had even diehard Tiger fans cringing and uttering the dreaded “Y-word.” The once-invincible champion shot an 82 after shanking, flubbing, and mis-hitting chip after chip. (See videos at www.businessinsider.com/tiger-woods-yips-2015-2.)

Searching for Causes

Because focal dystonia most often occurs in high-pressure situations, some believe it is essentially a psychological problem, what is familiarly known as choking, brought on by increases in performance anxiety. Debbie Crews, sport psychology consultant for women's golf at Arizona State University and chair of the World Scientific Congress of Golf, who has been probing the brains of golfers for several decades, disabuses people of that notion. “We no longer even use the term *choking*,” says Crews. Her work with a host of colleagues including Charles Adler, professor of neurology at the Mayo Clinic in Scottsdale, Arizona, has shown that the yips can interfere with golf performance whether or not the golfer is under stress; in fact, nonstressed golfers can be exhibiting the yips in subtle ways but not even realize it. The primary consideration, says Crews, isn't so much

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Bob Christina

Bob Christina, former dean of the School of Health and Human Performance at UNCG, has played golf most of his life. Since retiring, he serves as the university's assistant golf coach. He also serves as golf and research consultant to the Pinehurst Golf Academy, PGA of America, LPGA T&C, Golf magazine and its Top 100 Teachers, Precision Golf School of the Triad, and the Steering Committee of the World Scientific Congress of Golf. In 2008 he was named one of Golf magazine's Innovators of the Year. Bob shared this experience about a colleague who was experiencing the yips:

“Dan was a very good player at the college level and mini-tour level. He tends to have an anxious personality with unsound putting fundamentals. Over many years of having less-than-average putting and chipping success (especially with short putts), the putting and chipping yips emerged. The yips were so bad that when he stood a long time over a two- or three-foot putt, he had to take one or two deep breaths, often stepping away and starting all over again. Sometimes he froze over the putt and couldn't begin the backstroke. When he tried to stroke the putt that counted, he would hit the ball twice, often sending the ball a distance beyond the hole that was longer than the distance of the actual putt. His forward stroke looked like the result of a tremor. He appeared to be trying to make use the visual feedback he was getting about his backstroke and the onset of the forward stroke to deliver the putter face perfectly to contact the ball. This all got worse over time and the more he played. It should be mentioned that he could stroke short putts and play chip shots that didn't actually count. In other words, he could effectively perform practice putting strokes and chip shots, but not when it counted.

I taught him a fundamentally sound putting system and separated his hands on the putter grip (split grip). That worked very well for quite a while, but then the yips came back. I had him go to the long putter, which worked great. He decided to go back to his original putter and grip, and they worked fine. So he actually was able to return to the very putting technique in which the yips began. He doesn't play much golf these days, but I suspect that the yips would come back again if he began to play more and he would have to change his grip or go to the long putter.”

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whether or not the golfer is under stress but whether or not he or she is able to maintain attentional focus during the putt.

Still, Crews and other researchers wouldn't rule out heightened anxiety as a contributor to the problem. While increases in stress are not the cause of the yips, it seems clear that they amplify the yips effect by causing performers either to try to overmanipulate the movement or to pay attention to irrelevant cues. “It isn't surprising that stress tends to amplify the yips,” says Jürgen Konczak, director of the Human Sensorimotor Control Laboratory at the School of Kinesiology at the University of Minnesota. Konczak, who has conducted extensive studies on focal dystonia in musicians, points out that “any task requiring heightened attentional demands can be affected by stress, whether performed by those who have dystonia or those who don't. But just because stress amplifies the effects of the yips doesn't mean that stress is the primary cause.”

Yet it might not even be that clear cut. For one thing, there is the chicken-or-egg question: Do increased levels of anxiety really exacerbate the yips, or are anxiety levels elevated by the frustration brought on by the yips? And, if the psychological aspect of the yips isn't a primary factor, why do the yips generally disappear from the

stroke if the ball isn't present or arranged so that it doesn't move?

Some have suggested the problem is biomechanical, the result of a build-up of scar tissue in the arms. But most who have studied the problem do not view the yips as a muscular problem. Data from a legion of studies dealing with MD suggest the main source of the problem is neurological rather than muscular or psychological. Some region or regions of the brain seem to resist the repetition of finely coordinated, well-learned movements and, at present, there is far from unanimous opinion about where in the nervous system these breakdowns occur.

Given the jerkiness of the movement in the yips, it seems clear that something goes awry in the selection and execution of the agonistic and antagonistic muscles that control a movement. Agonistic muscles contract to cause the desired movement; antagonistic muscles contract to oppose this movement. Thus a smooth execution of a skill requires not only contraction of the agonist muscles but relaxation of the antagonist muscles as well. When this synergistic dynamic fails, both sets of muscles can be brought into play simultaneously, freezing the movement or causing the spasms and tremors. For example, dystonia in pianists often causes muscles that contract the wrist flexors and wrist extensors to contract at the same time, locking the wrist joint.

Likewise, the jerking and freezing seen in yips-affected golfers appear to result from the same neural abnormality.



Debbie Crews

Regarding what might be destroying this synergy, there are two separate but related theories. One locates the breakdown in a cluster of deep brain neurons called the basal ganglia that play a role in selecting, initiating, and regulating movement. When the motor cortex generates impulses essential for planning, control, and execution of a movement, the impulses are sent to the basal ganglia for refinement regarding the choice of muscles to be used, including the involvement of agonist and antagonist muscles. One prime suspect is that dystonia occurs as a result of an imbalance of dopamine, an important neurotransmitter in the basal ganglia.

Another popular theory abetted by scores of research studies on MD suggests that the trouble resides in the sensory motor cortex itself. This region of the brain contains topographical “maps” representing distinct body parts. Skilled performance of the putt, for example, requires distinct activation of areas representing the hands, arms, and fingers in the sensorimotor cortex.

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According to this theory, dystonia occurs when the borders of these maps become “smeared.” As a result, says Konczak, efforts to contract a target segment might at the same time cause contraction of muscles controlling neighboring but irrelevant segments including antagonistic muscles.

Interestingly, a depth of experience with a movement appears to be crucial in the development of this abnormality. Studies have shown, for example, that new-world monkeys overtrained in a finger movement show an enlargement and consequent distortion of the somatosensory maps of their fingers. Untrained animals do not show this. Thus, it appears that intensive experience with a movement might enlarge these regions, causing them to overlap, smearing their border regions. This may help to explain why the yips tends to affect only highly trained golfers

Konczak is among many researchers who believe a major part of the problem lies in faulty processing of tactile and proprioceptive feedback from the movement. Konczak and his colleagues’ research have shown, for example, that people with dystonia have difficulty in arm and finger positioning tasks not only in the dystonia-affected limb, but in the unimpaired body parts as well, suggesting general defects in the ability to process sensory feedback

from proprioceptors that serve to control the movement.

As further evidence, he points to the short-term benefits of sensory tricks commonly used by musicians suffering from dystonia. These can be as simple as touching the affected limb with the nonaffected limb. Writers’ cramp (dystonia) is often relieved simply by changing the pen. As Christina described previously, altering the position of the hands on a putter or even using a long putter can often serve as a temporary cure for the yips possibly because it not only requires a different movement but produces different feedback. “When dystonia-plagued musicians try to move their index fingers, the ring finger may move as well,” says Konczak. If they put on a surgical glove (thus altering the sensory feedback) the problem vanishes, at least for a short time. Such tricks strongly suggest that dystonia is less a motor-function disorder than it is a sensory motor integration disorder.

Search for Treatments

So far, those studying the yips in golf have been slow to exploit the theoretical and experimental work being done in MD, even though the yips appear to stem from the same breakdown in neural processing. A treatment for MD pioneered by Victor Candia and his colleagues at the University of Zurich called sensory motor retuning (SMR) has had some success in help-

ing musicians return to the symphony. The technique involves identifying which fingers are being erroneously contracted and placing them in splints, freeing up the dystonic fingers to contract alone. Exercises are then designed for the dystonic finger, which must be performed religiously over a series of months during which the musician cannot play the instrument. It is a laborious process. Candia claims that when the treatment is complete, the effect is often permanent, although Charles Adler is hesitant to give SMR his blessing until further research is conducted.

Recently, researchers in Spain have found a way to speed up this therapeutic process by using transcranial direct current stimulation in which a weak electric current is applied to the scalp above the sensory motor cortex. The idea is to speed up the firing rates of neurons, thus making the brain more responsive to SMR. Initial studies have shown that it can cut in half the time required for SMR to work.

Sensory motor retuning techniques have yet to be applied to treat the yips in golf, although it is not entirely clear that they can be applied. Splints for restricting undesired finger movements are much easier to design for the movements required in playing the piano or violin than for the arm and hand movements in putting. Could harnesses be designed in a way to constrain the pronation and supination of the forearm that is

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No “Yippie!” for the Yips

characteristic of yips-affected putts?

Injecting the forearms with botulinum toxin to relax the cramping muscles without relaxing the primary muscles responsible for executing the skill has brought relief to some yippers, but as Adler points out, it doesn't treat the underlying pathology. He also notes that it is a fairly tricky therapy “since inappropriate dosage could weaken the muscles used in putting and make other shots harder to perform.”

Readers of the golf literature will find a variety of homespun remedies along with assurances that a particular technique will “cure” the yips. Suggestions vary from

holding an egg in your hand while you putt, anchoring the putter in your belly, putting a scorecard over the hole when you putt, create a putting ritual, and “getting some exercise,” and having someone periodically interrupt your putting stroke. Many suggestions assume that the yips is essentially a psychological problem even though the science suggests otherwise. For example, a Golf Academy video on the putting yips featuring professional golfer Tom Lehman suggests that the yips can be cured by reciting a mantra that narrows the golfer's focus (see www.golfchannel.com/media/academy-lehman-putting-yips).

As the science continues to hone in on the causes and treatments, golfers wait for the cure. Perhaps the best thing for them to do is take a tip from Crews who, while painfully aware of the difficulties involved, says, “We always have the golfer change the position of the hands, but almost any change will bring at least a temporary improvement.” And so the search for a successful remedy continues.

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Would You Have Hired Me if You Knew This About Me?

3. You can count on me being accessible on campus

- a. 9 to 5 each day
- b. 3 hours each day
- c. 3 hours each week
- d. Offices make me feel claustrophobic; my doctor says I should work at home (I have a note).

4. If at a faculty meeting an aging but respected senior colleague drones on at length about a topic that few in the meeting seem to care about, I would

- a. nod obligingly as if I'm more interested in what he has to say than my own survival
- b. begin doodling wildly
- c. roll my eyes
- d. fake a heart attack

5. If my department head says I will get no relief from my assigned teaching in order to write a grant proposal, I will

- a. plan to work hard evenings and weekends
- b. forget the proposal
- b. slack off on my teaching
- c. hire a lawyer

6. The department has just voted to require each faculty member to pass a physical fitness test. I will

- a. continue my exercise program so that I can pass the test
- b. point out the low correlation between fitness scores and research productivity
- c. apply for a sabbatical and hope the idea has died a sure death by the time I return
- d. organize a student protest

7. Senior members of the department have just voted to deny me tenure. I will

- a. humbly accept their decision and inquire about my perceived weaknesses so that I may improve in successive job hunts
- b. write a letter to the tenure committee pointing out that my publication record is much stronger than theirs
- c. bad-mouth committee members at conferences
- d. flatten their tires in the parking lot

8. The annual department holiday party is a perfect time to

- a. solidify friendships with my colleagues
- b. butter up senior faculty who will be voting on my tenure
- c. eat a lot
- d. drink a lot

9. Teaching evaluations are

- a. necessary but imperfect ways to measure my performance as an instructor
- b. annoying invasions of a professor's privacy
- c. university-supported ways for spiteful students to seek revenge
- d. sneaky ways for the department head to get rid of me after he finds out that I can't teach

10. My annual merit raise should be based on

- a. my documented accomplishments throughout the year
- b. how hard I worked
- c. how well I have ingratiated myself with the faculty salary recommendation committee
- d. My political persuasion would not allow me to participate in any system that differentiates between faculty in terms of performance and merit. All are equally deserving of a raise.

Revisions, additions, and deletions to the HDTC are welcome. Send to Shirl Hoffman at sjhoffma@uncg.edu.

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Dealing With the Culture of Evaluation and Metrics

of journal bibliometrics like the Thompson Scientific Impact Factor (IF). Decades of data and numerous scholars have pointed out serious problems of the IF that undermine its validity as a measure of journal influence (for reviews see MacRoberts et al. 1989; *JASIS*; Cameron 2005 *Lib & Acad*). The obsession with this metric has been called a mania, which presents a clear disadvantage to smaller and applied disciplines like kinesiology. In kinesiology, there is also good evidence that scholar ratings of influential journals are poorly related to the IF. Fortunately, these numerous studies may have begun to stem the tide of using bibliometrics like the IF as surrogate measures of journals, articles, scholars, and research groups. Currently more than 12,000 scholars and 572 scholarly societies have endorsed the principles of the Declaration on Research Assessment (DORA, <http://am.ascb.org/dora>). Leaders of *Research Quarterly for Exercise and Sport* recently supported DORA. The increasing influence of open-access journals, altmetrics, and

scientific networking may also contribute to a return to the ideal of judging research by its originality and quality rather than an inaccurate metric about the journal in which it is published.

Kinesiology chairs can also be educated on leadership issues like these in the AKA leadership monograph series. The first articles are now being shared with AKA member institutions for free with a new article every other month. Sets of articles of this monograph series will be available for purchase from Human Kinetics for individuals and non-AKA member departments.

Kinesiology faculty should also remember to contribute to and join the kinesiology subject category of the Multimedia Educational Resource for Learning and Online Teaching (MERLOT) organized by the AKA. You can access all the kinesiology instructional resources at www.merlot.org/merlot/materials.htm?category=914017&sort.property=overallRating or all of MERLOT at www.merlot.org.

Finally, I would like to renew the call from my February column of *KT* to promote and wave the flag of kinesiology. Since no

member departments submitted information about important research or service for this issue of *KT*, I will share congratulations to Dr. Tinker Murray (Texas State University) and his collaborators in the Seguin ISD Health Advisory Council. The Seguin ISD team received one of three Champions Awards given at the recent National Physical Activity Plan Congress. The Champions Award recognizes exceptional achievements in implementing the National Physical Activity Plan. In the next issue of *KT* let's have a few more examples of how kinesiology faculty, students, or graduates are making a difference!

The AKA and kinesiology faculty cannot force the public and politicians not to use certain biased metrics, but we can continue to refine more appropriate metrics and educate others about the measures and programs important in promoting physical activity and health. Let's make sure the AKA can help kinesiology departments and faculty with this important mission.

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Endurance Running Is a Turn-On: Who Knew?

traits and reproductive qualities.

“Testosterone has consistently been associated with reproductive success, so the relationship between endurance running ability and digit ratio provides mechanistic evidence in support of the hypothesis that running prowess could act as a reliable signal for male reproductive potential,” Longman said. “Contrary to theories suggesting that the resource acquisition itself promotes reproductive fitness, our results suggest that women may be attracted to men with the capacity to get, rather than those who have.” That is, women may be more attracted to resourceful, intelligent, athletic men, according to the study.

That notion is particularly relevant, because hunting is not nearly as important to survival and raising children today as it was in humans’ hunter-gatherer past—another reason supporting Longman and his team’s suggestion that testosterone is the key player, as opposed to hunting fitness.

“From a behavioral perspective, testosterone mediates confidence and assertiveness in social situations and plays an important role in producing sex drive,” Longman said. “Physiologically, testosterone promotes muscle growth, which is beneficial in male-

to-male combat situations, as well as being an attractive trait—more muscular men report a greater number of sexual partners.” One can imagine those testosterone-associated qualities being relevant in modern societies, Longman said.

The verdict may still be out, though, on whether good runners should expect to have more sexual partners. A topic of Longman’s other research includes hormonal changes after winning or losing in direct physical competition. It has been shown, he said, that winning leads to a temporary surge in testosterone. “This would suggest that successful sportsmen, who regularly win events, may have a predisposition to seek out multiple sexual partners,” Longman said. “Whether or not they are able to achieve this in practice remains to be seen.”

While endurance running prowess may signal to women that a male runner would make a good reproductive partner, the researchers did not examine whether women actually respond to that signal. Longman said this would be an opportunity for further investigation. A takeaway for runners, Longman said, may be a bit more metaphysical.

“Our findings support the theory that endurance running played an important role in shaping our development as a species,” Longman said. “As such, running is a fundamental part of who we are. Today’s

runners can therefore feel as though they are connecting with their evolutionary roots through the activity of running.” Longman acknowledges that people say running feels natural once they reach a certain level of fitness. “This is perhaps because we may have evolved to do just that,” Longman said.

Other hypotheses suggest skeletal changes and development of heat-loss mechanisms may have evolved in humans specifically to facilitate endurance running. Humans are unique in that they can run relatively fast for very long periods of time.

“The connection people say they feel to running may reflect our evolutionary past, or it may represent a simple and uncomplicated means of escaping the stressful modern-day Western lifestyle,” Longman said. “Calling upon a mixture of my research and my own experience training, I’d say the answer is probably a mixture of the two.”

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Kids Need More Than a Slide and Swings to Get Active

Anderson said she would like to look more in depth at each area and see how children used each area. A new study will focus on playgrounds that are designed to accommodate activities for all fitness levels and interests in the playground area. Some of the areas will be dancing areas, climbing structures, and obstacle courses. “(Children) will not need specific skills to participate. You can just join your friends and have fun,” she said. Anderson’s study also found that including loose equipment such as balls, cones, and jump ropes helped increase activity level. Playground manufacturing companies are also working with researchers, communities, and schools to implement playground designs that motivate and engage children at a higher level. Jennie Sumrell, the director of education programs, partnerships, and professional development at PlayCore, the country’s leading provider of educational play and recreation solutions, says the company has several initiatives under way to move play areas in new directions. By working with SHAPE America and other partners, they have identified six elements of play that they believe will increase fitness and physical activity levels: balance, overhead climbing, vertical climbers, spinning, sliding, and swinging. Sumrell says



Photos provided by PlayCore

PlayCore advocates that playground design include all six of the play elements along with progression of skill levels to ensure kids remain active and develop physically. Sumrell says another innovation in playground design is their initiative to design nature back into children’s lives and their play. “Our Pathways to Play program gets children to use trails by incorporating play areas along the way,” said Sumrell. “This approach increases activity time for children and families.” Another program seeks to incorporate nature into the more traditional playground areas of parks and schools as well. “People are seeking ways to make sure kids stay active now and with research that (physical activity) improves cognition performance, people are seeing the importance of physical activity,” said Sumrell. Incorporating playground time into a child’s academic studies is another way educators and playground designers are working together. “We really like the cross-curricular

activities. It gets kids out of the classroom and they are still learning,” said Dotterweich. In his research, he found that more structured activities in the outdoor play areas increased the amount of children’s activity. Still not as much as PE class, but more than free play time. “Anytime you are engaged with the children, they are excited by that. Being engaged is a huge piece of the puzzle,” he said. The abilities of the instructors also made a big difference in the physical activity time of the kids. Some teachers were better than others at keeping the kids moving, but almost all had a positive influence on increasing the activity level. “It may not be the level of physical activity that you want, but they are still moving,” he said. In the war against childhood obesity and sedentary lifestyles, a few of these well-designed improvements may turn an old-school favorite into kids’ new best friend.

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2015 Student Award Winners Announced

Honorable Mention

Shannon Frink, Auburn University
Amy Kuuskoski, University of Tennessee



Garrett Ash

National Doctoral Scholar

Garrett Ash, University of Connecticut

Honorable Mention

Deanna Kennedy, Texas A&M University
Andrea Stark, University of Minnesota

These award winners were selected by the AKA Awards Committee, and we thank them for their personal commitment and energy. We appreciate their generous participation and the time they spend to make the awards program a success.

Honorable Mention

Harsh Harish Buddhadev, Iowa State University
Deanna Kennedy, Texas A&M University



Daniel Machin

National Graduate Student Writing Award

Daniel Machin, University of Texas at Austin

2015 AKA Awards Committee

Melinda Solmon, chair, Louisiana State University
Chris Hearon, Texas A&M University at Kingsville
Karen Meaney, Texas State University
Lanie Dornier, Louisiana Tech University
Mark Loftin, University of Mississippi
Nancy Williams, Penn State
Kristan O'Connor, University of Wisconsin at Milwaukee
Susan Petersen, AKA Liaison, College at Brockport State University of New York

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