PERFORMING ARTS
SPECIAL INTEREST GROUP

ORTHOPAEDIC SECTION
AMERICAN PHYSICAL THERAPY ASSOCIATION

APTA
American Physical Therapy Association
The Science of Healing. The Art of Caring.

PASIG MONTHLY CITATION BLAST: No.73 **July 2012**

Dear Performing Arts SIG members:

In anticipation of the PASIG committee meeting next month, I look forward to receiving your APTA-CSM poster and platform abstract submissions, case reports, and emails in regards to how we can improve. This month's citation blast is on substance abuse, the elephant in the room in some situations. With our growth toward autonomous practice, we would do well to consider pharmacological, psychological, social, and cultural effects on the spectrum of artists we serve.

The format is an annotated bibliography of articles generally from the last decade. The PASIG Research Committee initiated this monthly Citation BLAST on performing arts-related topics in June 2005 in the hopes of encouraging our members to stay current in the literature and, perhaps, consider conducting research themselves. Each month we send a new list of performing arts (PA) citations to members of the PASIG to further the pursuit of PA-related scholarship. (Information about EndNote referencing software can be found at http://www.endnote.com, including a 30-day free trial).

Please consider compiling and contributing a brief summary of Performing Arts-related abstracts for citation blast this year. It's easy to do, and a great way to become involved with PASIG!

Warm regards,

Annette

Annette Karim, PT, DPT, OCS

Chair, PASIG Research Committee
Home: neoluvsonlyme@aol.com Work: akarim@evergreenpt.net

PASIG Research Committee members:
Shaw Bronner PT, PhD, OCS, sbronner@liu.edu
Jeff Stenback PT, OCS, jsptocs2@hotmail.com
Sheyi Ojofeitimi PT, DPT, sojofeit@gmail.com
Jennifer Gamboa PT, DPT, OCS, jgamboa@bodydynamicsinc.com
Susan D. Fain PT, DMA, sfain@ptcentral.org

Monthly Citation Blast EndNote Assistant:
Laura Reising, MS, SPT lbr2120@columbia.edu

PERFORMING ARTS CONTINUING EDUCATION AND CONFERENCES

Orthopaedic Section Independent Study Course. *20.3 Physical Therapy for the Performing Artist*.
Monographs are available for:
- Figure Skating (J. Flug, J. Schneider, E. Greenberg),
- Artistic Gymnastics (A. Hunter-Giordano, Pongetti-Angeletti, S. Voelker, TJ Manal), and
- Instrumentalist Musicians (J. Dommerholt, B. Collier).

Contact: Orthopaedic Section at: www.orthopt.org

Orthopaedic Section Independent Study Course. *Dance Medicine: Strategies for the Prevention and Care of Injuries to Dancers*.
This is a 6-monograph course and includes many PASIG members as authors.
- Epidemiology of Dance Injuries: Biopsychosocial Considerations in the Management of Dancer Health (MJ Liederbach),
- Nutrition, Hydration, Metabolism, and Thinness (B Glace),
- The Dancer's Hip: Anatomic, Biomechanical, and Rehabilitation Considerations (G. Grossman),
- Common Knee Injuries in Dance (MJ Liederbach),
- Foot and Ankle Injuries in the Dancer: Examination and Treatment Strategies (M. Molnar, R. Bernstein, M. Hartog, L. Henry, M. Rodriguez, J. Smith, A. Zujko),
- Developing Expert Physical Therapy Practice in Dance Medicine (J. Gamboa, S. Bronner, TJ Manal).

Contact: Orthopaedic Section at: www.orthopt.org

Harkness Center for Dance Injuries, Hospital for Joint Diseases. Principles of Dance Medicine: Clinical management of the dancer patient. New York, NY, July 12 – 15, 2012. http://hjd.med.nyu.edu/harkness/education/healthcare-professionals/upcoming-educational-courses

Performing Arts Medical Association (PAMA). 30th Annual Symposium: Medical Problems of Performing Artists, Snowmass, CO, July 26 – 29, 2012. Contact: http://www.artsmed.org *(Congratulations former PASIG Research Chair Shaw Bronner, PT, PhD, OCS, invited to speak on The science behind dancing: Where have we been, where could we go?")*

International Association for Dance Medicine and Science: 22nd Annual Meeting, Singapore. October 25 – 28, 2012. Contact: http://www.iadms.org

Do you have a new course or performing arts residency or fellowship? Email me! neoluvsonlyme@aol.com Annette Karim, PT, DPT, OCS

What happens after the show? How do performing artists get through the long tour? When does social drinking become a problem? How do we, often the first to notice change, address alcohol or other substance abuse?

The following abstracts cover a variety of views into substance abuse in different types of performing artists, an introductory glimpse at best. May this lead you toward looking further into the research and pressing the edge forward in how we provide care for this unique population.

Annette Karim, PT, DPT, OCS
Director of Dance Medicine
Evergreen Physical Therapy Specialists

Bellis, M. A., T. Hennell, et al. (2007). "Elvis to Eminem: quantifying the price of fame through early mortality of European and North American rock and pop stars." J Epidemiol Community Health **61**(10): 896-901.

BACKGROUND: Rock and pop stars are frequently characterised as indulging in high-risk behaviours, with high-profile deaths amongst such musicians creating an impression of premature mortality. However, studies to date have not quantified differences between mortality experienced by such stars and general populations. OBJECTIVE: This study measures survival rates of famous musicians (n = 1064) from their point of fame and compares them to matched general populations in North America and Europe. DESIGN: We describe and utilise a novel actuarial survival methodology which allows quantification of excess post-fame mortality in

pop stars. PARTICIPANTS: Individuals from North America and Europe performing on any album in the All-Time Top 1000 albums from the music genres rock, punk, rap, R&B, electronica and new age. RESULTS: From 3 to 25 years post fame, both North American and European pop stars experience significantly higher mortality (more than 1.7 times) than demographically matched populations in the USA and UK, respectively. After 25 years of fame, relative mortality in European (but not North American) pop stars begins to return to population levels. Five-year post-fame survival rates suggest differential mortality between stars and general populations was greater in those reaching fame before 1980. CONCLUSION: Pop stars can suffer high levels of stress in environments where alcohol and drugs are widely available, leading to health-damaging risk behaviour. However, their behaviour can also influence would-be stars and devoted fans. Collaborations between health and music industries should focus on improving both pop star health and their image as role models to wider populations.

Botre, F. and A. Pavan (2008). "Enhancement drugs and the athlete." Neurol Clin **26**(1): 149-167; ix.

This article considers the health risks associated with the abuse of performance-enhancing drugs (PEDs) in sport. After an overview on the evolution of doping substances and methods and on the current international organization of the antidoping tests, the potential risks correlated with abuse of PEDs are presented. Specific problems of drug associations, designer steroids, and nutritional supplements also are discussed. Data from randomized clinical trials may not be sufficient to identify the complete range of adverse effects possible with abuse of PEDs; more specific studies are necessary to assess their actual toxic potential.

Buckman, J. F., D. A. Yusko, et al. (2009). "Risk profile of male college athletes who use performance-enhancing substances." J Stud Alcohol Drugs **70**(6): 919-923.

OBJECTIVE: There is a general perception that use of performance-enhancing substances (PESs) does not fit the standard profile of substance use. This study sought to determine whether users of PESs report high-risk patterns of alcohol and other drug use and demonstrate risk behaviors associated with problematic substance use. METHOD: Anonymous self-report questionnaires were administered to a sample of 234 male student athletes. PES users were defined as college athletes who reported past-year use of a broad array of PESs (including stimulants, hormone precursors, and nutritional supplements). RESULTS: Male athlete PES users (n = 73) compared with nonusers (n = 160) reported more problematic alcohol-use behaviors and more alcohol- and drug-use-

related problems. The former compared with the latter was also more likely to report past-year use of tobacco products, marijuana, cocaine, psychedelics, and prescription drugs without a prescription. In addition, PES users demonstrated higher sensation seeking, and greater coping and enhancement motivations for drinking and marijuana use than non-PES users. CONCLUSIONS: Although banned PESs are not typically viewed as having a high addiction potential, male athletes who use these drugs may be more likely to participate in other problematic substance-use behaviors. Importantly, the male athletes in this study who reported PES use also participated in substance-use behaviors that can have profound negative effects on athletic performance. More research on the use of PESs in college athletes is needed.

Dodge, T. L. and J. J. Jaccard (2006). "The effect of high school sports participation on the use of performance-enhancing substances in young adulthood." J Adolesc Health **39**(3): 367-373.

PURPOSE: The present study examined the relationship between high school sports participation and the use of anabolic steroids (AS) and legal performance-enhancing dietary supplements in young adulthood. Additionally, the relationship between the use of AS and legal dietary supplements was explored. METHODS: Data on approximately 15,000 adolescents from the National Longitudinal Study of Adolescent Health were used. School sports participation was assessed when adolescents were in grades 7-12. AS use and legal performance-enhancing dietary supplement use were assessed six years later. RESULTS: Males were more likely than females to use AS and legal supplements. A sport by gender interaction emerged for the use of AS, indicating that the gender differences in AS use were greater for those who participated in sports during high school. High school sports participation was associated with increased likelihood that adolescents would use legal supplements in young adulthood. Finally, there was a positive relationship between the use of legal dietary supplements and AS use. CONCLUSIONS: This study highlights the important role that the social environment during adolescence has on future health behaviors. Results suggest that the sporting context experienced during early adolescence may have lasting effects on the use of performance-enhancing substances. The use of legal performance-enhancing dietary supplements appears to be more prevalent than the use of AS, and there seems to be a positive relationship between the use of AS and legal performance-enhancing dietary supplements.

Freyer-Adam, J., B. Coder, et al. (2009). "The performance of two motivation measures and outcome after alcohol detoxification." Alcohol Alcohol **44**(1): 77-83.

AIMS: The aims of this study were to investigate the performance of the

treatment version of the Readiness to Change Questionnaire (RCQ[TV]) among individuals currently receiving alcohol detoxification and to develop a treatment version of the Treatment Readiness Tool (TReaT[TV]). METHODS: A total of 549 patients (86% men) recruited from two detoxification units were interviewed close to treatment intake and followed up 12 months later. Confirmatory factor analyses and logistic regression analyses were conducted. RESULTS: A modified nine-item version of the RCQ[TV] showed a good fit of the model (CFI = 0.95) and internal consistencies ranging between 0.49 and 0.91. Twelve months later, RCQ-Actors had an odds ratio of 1.95 (95% CI: 1.12-3.37) for being abstinent compared to Precontemplators/Contemplators. The development of the TReaT[TV] resulted in 15 items and 5 scales with a CFI of 0.97 and Cronbach's alphas ranging between 0.59 and 0.94. TReaT[TV] Precontemplators/Contemplators were less likely to utilize help than Maintainers (OR = 0.17, 95% CI: 0.06-0.45). CONCLUSIONS: The psychometric properties were modest for the modified RCQ[TV] and good for the TReaT[TV]. Readiness to change and readiness to seek help should be assessed separately among treatment seekers.

Grossbard, J. R., C. M. Lee, et al. (2007). "Alcohol and risky sex in athletes and nonathletes: what roles do sex motives play?" J Stud Alcohol Drugs **68**(4): 566-574.

OBJECTIVE: Studies indicate greater sexual risk-taking behaviors and alcohol use in student-athletes compared with nonathletes, particularly in college samples. Although research has documented an association between drinking and risky sex, studies have not examined the role of sex motives in predicting risky sex in athletes. The purpose of the current study was to extend previous research on athletes' risk-taking behaviors by examining incoming college student-athletes and nonathletes' alcohol consumption, risky sexual behavior, and sex motives. METHOD: Participants included 2,123 (58.9% female) incoming college students attending a northwest university, 221 of whom reported intercollegiate athletic participation during their upcoming year. Hierarchical multiple regression analyses were conducted to examine associations between sex motives and risky sexual behaviors using a cross-sectional design. RESULTS: Results indicated greater weekly alcohol consumption, frequency of drinking before or during sex, and number of sexual partners in athletes compared with nonathletes. Athletes also reported greater levels of enhancement motives for sex and lower levels of intimacy motives than nonathletes, although no differences were found for coping motives. Significant interactions indicated that, for athletes, greater levels of enhancement sex motives predicted a greater number of sexual partners and more frequent drinking before or during sex, and greater levels of intimacy motives predicted less frequent drinking before or during

sex. CONCLUSIONS: Student-athletes are at risk for problematic outcomes associated with risky sex, including drinking before or during sex and having sex with multiple partners. Prevention efforts targeted at incoming college student-athletes should consider the role of sex motives.

Levy, S., M. M. Abaza, et al. (2001). "Psychiatric manifestations of medications commonly prescribed in otolaryngology." Ear Nose Throat J **80**(4): 266-268, 270-261.

Otolaryngologists, nurses, and psychological professionals should be familiar with the potential psychiatric side effects of medications that are commonly prescribed by otolaryngologists. Because some of these side effects are atypical, their relationship to medications might not be obvious. An awareness of the potential for psychiatric side effects caused by adrenocorticoids, antihistamines and decongestants, and antisecretory medications will help the clinician avoid or detect and treat drug-induced disorders, as will an awareness of the potential for side effects caused by combinations of medications. Identification of individual risk factors such as age, pre-existing organic brain disease, a history of drug abuse or dependence, or coexisting or pre-existing psychiatric disorders is important in preventing and detecting drug-induced psychiatric disorders. The drugs discussed in this article can have serious, even fatal, interactions with certain psychiatric medications.

McDuff, D. R. and D. Baron (2005). "Substance use in athletics: a sports psychiatry perspective." Clin Sports Med **24**(4): 885-897, ix-x.

Athletes use substances to produce pleasure, relieve pain and stress, improve socialization, recover from injury, and enhance performance. Therefore, they use some substances in substantially higher rates that nonathletes. Despite these higher rates of use, rates of addiction may in fact be lower in athletes. This article reviews the prevalence and patterns of use, health and performance effects, and preventive and treatment interventions for alcohol, tobacco, stimulants, and steroids. Each substance is considered from the differing perspectives of abuse/addiction and performance enhancement models. Similarities and differences between college and professional athletes are discussed. Finally, suggestions for future research are made.

Rodek, J., D. Sekulic, et al. (2009). "Can we consider religiousness as a protective factor against doping behavior in sport?" J Relig Health **48**(4): 445-453.

Religiousness is rarely studied in relation to doping behaviors in sport. In this study, we sampled 27 weightlifting/powerlifting athletes from Bosnia and Herzegovina. Using the originally developed questionnaire and by means of Spearman's correlation, we interpreted data and discussed relationships between (a) social, religious, sport, and educational factors,

and (b) substance use criteria, including cigarettes, alcohol, analgesics, nutritional supplementation, and doping behaviors. In conclusion, we found (1) that religiousness can be considered as a potential protective factor against doping, but also (2) that religious subjects tend to deny and underestimate the doping behaviors in their sport. Both of these findings should be extensively studied in future investigations.

Sekulic, D., R. Kostic, et al. (2009). "Religiousness as a protective factor for substance use in dance sport." J Relig Health **48**(3): 269-277.

Although religiousness is found to be a significant protective factor in substance use, there is an evidential lack of studies of such in athletes. The aim of the study was to identify the predictive value of the religiousness and some social, educational, and sport factors on substance use in 43 sport dancers. An originally developed questionnaire for studying substance use and precipitation factors was applied. The Chi-square showed male dancers as more religious than females. Using the Spearman's correlation, religiousness was found to be a significant protective factor in cigarette smoking, sport nutritional supplementation, and the likelihood of doping. Data were interpreted emphasizing the previous findings from the literature.

Sekulic, D., M. Peric, et al. (2010). "Substance use and misuse among professional ballet dancers." Subst Use Misuse **45**(9): 1420-1430.

This study investigated substance use and misuse among 16 female and 9 male Croatian ballet professionals in 2008 using an original questionnaire. We analyzed social, personal, activity- and training-related, and educational factors, and criteria such as: binge alcohol drinking, cigarette smoking, appetite suppressant consumption, analgesic use, and actual and potential "doping" habits. Frequency tables and rank-order correlation were calculated. More than one third of the male dancers reported binge drinking, while 20% of the females smoked more than a box of cigarettes per day. Almost 25% of these dancers will use "doping" if it will ensure successful ballet performance, regardless of negative health consequences. In males, the risk of potential "doping" behavior increased with age. In females, education level was negatively related to cigarette smoking, but positively correlated to potential "doping" habits and behavior. In both genders, religiousness was the factor negatively related to the following: (1) potential "doping" behavior and (2) belief that "doping" exists in professional ballet. Results suggest that there is evident need for more specific medical and/or psychological services in professional ballet. The study's limitations are noted.

Singer, M. and G. Mirhej (2006). "High notes: the role of drugs in the making of Jazz." J Ethn Subst Abuse **5**(4): 1-38.

This paper examines the role played by illicit drugs, especially marijuana and heroin, in the historic development and evolution of Jazz in the United States during the twentieth century. In addition to an assessment of the extent of drug use and kinds of drugs used by Jazz musicians and singers, the impact and costs of drug use on the lives of people in Jazz, and the changing patterns of drug use during several eras of Jazz production, the paper contextualizes drug use among Jazz performers and societal response to it in light of prevailing ethnic inequalities and critical medical anthropological theory.

Tolson, G. H. and M. J. Cuyjet (2007). "Jazz and substance abuse: road to creative genius or pathway to premature death." Int J Law Psychiatry **30**(6): 530-538.

Jazz music and jazz musicians have often been linked for better or worse to the world of addictive substances. Many talented jazz musicians either had their careers sidetracked or prematurely ended due to their addiction to drugs and/or alcohol. The rigors of nightly performances, travel, and for many musicians a disapproving society exacted a toll that impacted the creativity of many artists of the genre. The fact that drug and alcohol use had a significant impact on the performance levels of numerous jazz musicians in the 1940's and 1950's has been much discussed, but more study of that impact is warranted. While recent research has provided new information regarding this challenging topic, there is still much to learn. Indeed, a number of questions for inquiry may be posed. Among those questions are the following: Was the work of these jazz artists truly inspired? Would their creative output have been enhanced had they not been addicted to substances? What was the impact of the addictive substances on their ability to function as creative artists and is there evidence to refute or verify that impact? Are there identifiable traits in certain artists that allowed them to be creative in spite of their addictions? This examination presents an evaluation of the evidence of the link between creativity and substance abuse especially as it relates to selected jazz artists during this time period and how they remained creative and actually prospered in their careers in spite of addictions to controlled substances.

Wills, G. I. (2003). "Forty lives in the bebop business: mental health in a group of eminent jazz musicians." Br J Psychiatry **183**: 255-259.

BACKGROUND: Above-average levels of psychopathology have been demonstrated convincingly in groups of outstanding individuals working in the arts. Currently, jazz musicians have not been studied in this regard. AIMS: To investigate any evidence of psychopathology in a group of eminent jazz musicians. METHOD: Biographical material relating to 40 eminent American modern jazz musicians was reviewed and an attempt

was made to formulate diagnoses using DSM-IV. RESULTS: Evidence was provided of levels of psychopathology in the sample of jazz musicians similar to those found in other previously investigated creative groups, with the exception of substance related problems. An interesting connection between creativity and sensation-seeking was highlighted. CONCLUSIONS: The link between psychopathology and creativity in the arts was given further weight. Future studies of jazz musicians using larger samples and making comparison with groups from different eras of music would give greater clarification to this area.

Wolkewitz, M., A. Allignol, et al. (2011). "Is 27 really a dangerous age for famous musicians? Retrospective cohort study." BMJ **343**: d7799.

OBJECTIVE: To test the "27 club" hypothesis that famous musicians are at an increased risk of death at age 27. Design Cohort study using survival analysis with age as a time dependent exposure. Comparison was primarily made within musicians, and secondarily relative to the general UK population. SETTING: The popular music scene from a UK perspective. PARTICIPANTS: Musicians (solo artists and band members) who had a number one album in the UK between 1956 and 2007 (n = 1046 musicians, with 71 deaths, 7%). MAIN OUTCOME MEASURES: Risk of death by age of musician, accounting for time dependent study entry and the number of musicians at risk. Risk was estimated using a flexible spline which would allow a bump at age 27 to appear. RESULTS: We identified three deaths at age 27 amongst 522 musicians at risk, giving a rate of 0.57 deaths per 100 musician years. Similar death rates were observed at ages 25 (rate = 0.56) and 32 (0.54). There was no peak in risk around age 27, but the risk of death for famous musicians throughout their 20s and 30s was two to three times higher than the general UK population. CONCLUSIONS: The 27 club is unlikely to be a real phenomenon. Fame may increase the risk of death among musicians, but this risk is not limited to age 27.

Yusko, D. A., J. F. Buckman, et al. (2008). "Risk for excessive alcohol use and drinking-related problems in college student athletes." Addict Behav **33**(12): 1546-1556.

There is compelling evidence that college student athletes engage in frequent episodes of heavy drinking and are prone to negative consequences resulting from such use. This study sought to identify risk and protective factors associated with student-athlete drinking and determine if student-athlete risk factors differed from those of non-athletes. Athletes compared to non-athletes reported more exaggerated perceptions of peer heavy drinking and lower sensation seeking and coping and enhancement motives for drinking, suggesting a risk profile distinct from non-athletes. In the overall sample, higher sensation seeking, overestimation of peer heavy drinking, non-use of protective behaviors while

drinking, and higher enhancement and coping drinking motives were associated with greater frequency of heavy episodic drinking and more negative drinking consequences. In athletes compared to non-athletes, sensation seeking was more strongly associated with heavy episodic drinking and drinking to cope was more strongly associated with negative alcohol-related consequences. Overall, the results suggest that already proven brief intervention strategies, with minor adaptations related to the roles of sensation seeking and drinking to cope, may be helpful for student athletes.

Zenic, N., M. Peric, et al. (2010). "Comparative analysis of substance use in ballet, dance sport, and synchronized swimming: results of a longitudinal study." Med Probl Perform Art **25**(2): 75-81.

There have been few studies comparing substance use and misuse (SU&M) in different performing arts forms. Herein, we identified and compared SU&M in women studying an art (ballet, n = 21), a non-Olympic sport (dance sport, n = 25), and an Olympic sport (synchronized swimming, n = 23). The sample of variables comprised general, educational, and sport factors, as well as SU&M data, including consumption of opiates, cigarettes, alcohol, nutritional supplements, doping behaviors, and beliefs. Using the Kruskal-Wallis test, we found no significant differences between study groups in potential doping behaviors. Most of the examinees reported that they did not rely on physicians' and/or coaches' opinions regarding doping. Only sport dancers recognized their consumption of cannabis as a violation of anti-doping rules. Those more convinced that doping habits are present in their sport (or art) have a certain tendency toward doping usage. In conclusion, a strong anti-doping campaign within the studied arts is suggested, focusing on the health-related problems of SU&M.

Please remember to update your orthopaedic section profile, thank you!
https://www.orthopt.org/surveys/membership_directory.php