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| American Society of Exercise Physiologists |

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| **In This Issue**  |
| [**Editor's Corner**](https://mail.google.com/mail/?ui=2&view=bsp&ver=ohhl4rw8mbn4#12d56b14541bc763_LETTER.BLOCK7) |
| [**Ask the EP**](https://mail.google.com/mail/?ui=2&view=bsp&ver=ohhl4rw8mbn4#12d56b14541bc763_LETTER.BLOCK8) |
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| [**Journal of Exercise Physiology-online**](http://r20.rs6.net/tn.jsp?llr=rfwe9acab&et=1104185324703&s=2&e=001vjf9gNmiK4_AMZx46xJePG2Ivbdotgd4EXFLr6WOovGyYCP0iozLuMTNQNSuT2LmNRVm3off3R1bHrTohMHsy-sKDoBefj5KdZLsi_YkyCHXVK-Rx5yIjJrK8LOPw9Vn) [**Professionalization of Exercise Physiology-online**](http://r20.rs6.net/tn.jsp?llr=rfwe9acab&et=1104185324703&s=2&e=001vjf9gNmiK48UyvgvkSgwYe0hCYREURg5gcGSvGKJHOhafyQyCixBgm9Tk3CL1kKImINYh88SDf2fdPJtcZhHnHChPX-LZ-uvaWOsxm3zLUjKv3UKR-KvGEHOY8d-rNep)  [**More On Us**](http://r20.rs6.net/tn.jsp?llr=rfwe9acab&et=1104185324703&s=2&e=001vjf9gNmiK492QVahZ-7msbXGQDa-9kBRmAKlRXt_dY71uP8gHO9GESToqzR6yGN5lF6MHtddZ2MPj9zlAhupiDaJdhyixWZRC2jVZX01QNc=)[**PhDs can now petition for Board Certification**](http://r20.rs6.net/tn.jsp?llr=rfwe9acab&et=1104185324703&s=2&e=001vjf9gNmiK48aDFiOFp9arqjH5L43eh9kYtNmdnHOsUE3XFOsqy8m6wU2jy30DtL24i2VI7rJE1q1dBx-2xd4fbY4CWkw_PCaXQ9gLV-7tueu-OcShjEoJVnpYSfVK90_ZidcEwhDPyrzxPl94t-v7Q==) |

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| **Issue: #1** | **January 2011** |  |

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| **Dear Tommy,** Thank you for being part of our community. **ASEP is the specific voice for (historically under-represented) Exercise Physiologists.** Please use this Newsletter as a link to ASEP resources from scientific journals to professional papers, to employment and related opportunities. And be sure to click on "More On Us" at the left for the ASEP-Newsletter's parent web site.Yours in health, -Lonnie Lowery and Jonathan Mike, ASEP-Newsletter Editors  |

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| **Editor's Corner** |  |
| editorial **New Year's Day 2020**   A new year brings a look to the future. What will Exercise Physiology look like in 2020? Will we make progress in acceptance, salary and notoriety as EPs? Let's imagine a vastly improved future world...  In 2020 exercise will be recognized as medicine that is ultimately equally - or more - effective than modalities of the past that have enjoyed greater funding and support. The federal government will recognize this with Medicaid / Medicare reimbursement for EPs and federal grants for translational research. A whopping 25 state governments will recognize the impact with licensure for EPs, with other lagging states moving to enact licensure. Conditions like heart disease of various kinds, muscle wasting, diabetes, obesity and even some forms of cancer will all involve a formalized, reimbursed exercise intervention. This will be administered by an Exercise Physiologist - not a nurse or a dietitian or even a physical therapist - but a licensed and Board Certified Exercise Physiologist who has spent far more time being educated specifically in exercise topics.   Student enrollment in accredited, rigorous university EP programs will grow, even at a time when many other academic majors are seeing reductions. Public health need will be that high. EP skills and education will be in great demand in an overfat,mostly sedentary population rife with chronic disease. Graduates of these programs in 2020 will find a livable salary, even if they choose to stay in Exercise Physiology proper. Of course many will choose careers in research, strength coaching, physical therapy, medicine, athletic training, etc. as well.     Our "perfect" 2020 will be a year of justice, in which deserving students and graduates are not confused with less educated personal trainers or a multitude of different, questionably certified exercise gurus. Proactive, preventive health settings will take on an equal or greater importance compared to the reactive clinical treatment centers of the past. It will be a year in which inroads are finally being made into turning around the expensive, devastating state of poor public fitness that has grown to undeniable proportions. It will be a year of hope.    Will all of these things take place by 2020? Probaly not. But every step exercise physiologists take toward forging and protecting their own profession and skill set does get us a little closer.  Lonnie Lowery, PhD Co-editor, ASEP-Newsletter   |
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| **Ask the EP** |  |
| **Q: What are some of the physiological effects of dehydration and performance?** **A:**    Dehydration can significantly reduce exercise capacity with impairments generally becoming detectable with the fluid deficit exceeds 2% of bass mass (3). Historically, the topic was researched as early as 1944 using military personnel and is considered a classic reference in the importance of dehydration during exercise, concluding that ingesting fluid retards the development of dehydration (5). Because sweating is the primary means of heat dissipation, sweat loss must be matched by fluid ingestion in preventing dehydration. However, this assessment is rather difficult because the stimulus to drink is not initiated until the person has incurred a water loss of 2% body mass.  Dehydration is quantified by the amount of body weight loss, for example:Pre-exercise weight= 70.kgPost -exercise weight= 68.5kgWeight loss= 1.5(**1.5/70) x100= 2.1%**Dehydration and heat responses can result in decreased sweat rate and a faster rise in body temperature. Other systematic effects include increased heart rate and decrease stroke volume, decreased splanchnic blood flow, and decreased muscle blood flow (2,4). In addition, certain percent decrements in body weight are associated with various negative performance factors such as cardiovascular effects (1%), decrease V02 (3%), loss of strength (5%), and fatalities (12%) (4).Currently, there is still a debate concerning different sport drinks and hydration status and performance variables. Early work by Adolf suggested the importance of fluid ingestion to reduce cardiovascular and thermoregulatory effects.  However, It was not until the early 1990's that Gisolfi studied the effect of weak carbohydrate and electrolyte (6%) solutions and exercise performance. The condition of dehydration is associated by increased concentrations of ADH and Aldosterone. These hormones assist to conserve NA+ H20 balance by ↓ urine volumes and ADH, together with Angiotensin II, to help maintain or raise peripheral vascular resistance to maintain blood pressure.Current recommendations (1) suggests drinking 500ml of fluid 2 hours before exercise and 600-1200ml/hr during exercise with cool fluids (15-22 °C) is best. However, unless the exercise bout lasts greater than 60-90 minutes, there is very little advantage to supplementing carbohydrate/electrolyte solutions.Wendt and colleagues (6) suggest rehydration tactics such as consuming fluids that should match closely with the rate of water loss, and ingesting a sports drink with 7% carbohydrate content will assist and improve intestinal water absorption.Can pre-exercise hydration be increased? Yes**.** Glycerol has the capacity to enhance fluid retention. In so doing, glycerol hyperhydration may be a logistically preferred method due to decrease urine output and free-water clearance, which may give a performance advantage by offsetting dehydration. For a thorough review of this topic, the reader is referred to the following reference:  Nelson JL, Robergs RA. Exploring the potential ergogenic effects of glycerol hyperhydration. Sports Med. 2007;37(11):981-1000. Review**References**1).American College of Sports Medicine, Sawka MN, Burke LM, Eichner ER, Maughan RJ, Montain SJ, Stachenfeld NS. American College of Sports Medicine position stand. Exercise and fluid replacement.Med Sci Sports Exerc. 2007 Feb;39(2):377-90. Review. 2). Armstrong, Lawrence. Performing in Extreme Environments. Human Kinetics. 2000 3). Coyle EF. Fluid and fuel intake during exercise.J Sports Sci. 2004 Jan;22(1):39-55. Review. 4). Piantadosi, Claude. The Biology of Human Survival. Oxford University Press. 2003 5). Pitts, G. Work in the heat as affected by intake of water, salt, and glucose. American Journal of Physiology. 142:253-259, 1944. 6). Wendt D, van Loon LJ, Lichtenbelt WD.Thermoregulation during exercise in the heat: strategies for maintaining health and performance. Sports Med. 2007;37(8):669-82. Review.   Jonathan Mike, MS, CSCS, USAW, NSCA-CPTDoctorate StudentCo-editor, ASEP Newsletter  |

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| **Advertisements & Announcements** |  |
| **Opportunities Related to Exercise Physiology** **Community Announcement: Iron Radio.org** has issued a call for brief submissions from EP students or professionals interested in getting their first involvement in legitimate Internet / pod casting settings. Opinions on professional issues or micro reviews and recent research are welcomed. Students' audio submissions (see National Public Radio (NPR]) and / or the [Iron Radio.org](http://r20.rs6.net/tn.jsp?llr=rfwe9acab&et=1104185324703&s=2&e=001vjf9gNmiK4___GFTG7C1IU-OWrHzjmsQEckGPXx1WFUXZDgyPvPMpx-YO0bfCnR8R1GtRyOaqpvJLvxq-HI_YnWQ9mdJ97fGoMl4KRJAiRHEgIIPFk7Fww==) web site for examples) will be editor-reviewed by ASEP-Newsletter Editors Dr. Lonnie Lowery and Jonathan Mike. The submissions should be 300-500 word essays read aloud and recorded with Windows Sound Recorder or similar software and sent via email to Lonman7@hotmail.com. Iron Radio.org is not ASEP-affiliated. **----------------------------------------------------** **NOTE:** [**ASEP Board of Directors with approval of The Center for Exercise Physiology-online**](http://r20.rs6.net/tn.jsp?llr=rfwe9acab&et=1104185324703&s=2&e=001vjf9gNmiK48aDFiOFp9arqjH5L43eh9kYtNmdnHOsUE3XFOsqy8m6wU2jy30DtL24i2VI7rJE1q1dBx-2xd4fbY4CWkw_PCaXQ9gLV-7tueu-OcShjEoJVnpYSfVK90_ZidcEwhDPyrzxPl94t-v7Q==) **developed the "EPC Petition Guidelines" for doctorate exercise physiologists to become Board Certified.**  |

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| Thank you for perusing our opinions, facts and opportunities in this edition of the ASEP-Newsletter.  **Sincerely,** Lonnie LoweryAmerican Society of Exercise Physiologists  |

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