STEAM ROOM, SAUNA, AND WHIRLPOOL USE

Following is information on the benefits, hazards, and medical guidelines for using steam rooms, saunas, and whirlpools for use when educating patients on use of these facilities.

Please also refer to the American College of Sports Medicine's Health/Fitness Facility Standards and Guidelines[1]

Saunas:

Benefits

- Long-term sauna bathing has been associated with lower blood pressure and enhanced left ventricular function, which may potentially reduce the risk of cardiovascular disease.[2]
- Sauna use may enhance lung function in patients with obstructive pulmonary disease and improve pain in patients with rheumatic disease [3]
- Studies show that increased sauna use is associated with decreased risk of sudden cardiac death, fatal coronary heart disease, fatal cardiovascular disease, and all-cause mortality events.[2]
- Studies have shown that saunas produce a similar physiological response and effect as exercising.[4]

Risks

- Some studies have reported ECG changes, ectopic beats, and perfusion defects indicative of myocardial ischemia in patients with coronary heart disease, but these occur less often during sauna use than during exercise[2]
- Blood pressure may drop after sauna, sometimes causing syncope[2]
- Alcohol consumption while using a sauna can cause severe health risks and should be avoided.[2]
- Saunas can be of high risk to users due to high temperatures and humidity. If temperatures are too high or exposure is too long, hyperthermia, heat exhaustion, heatstroke, and cardiovascular emergencies may result.[3]
- Using saunas while pregnant, having heart or kidney disease, taking certain medications for cardiovascular disease, and having medical issues affected by high heat may be detrimental to one's health.[3]
- Entering a sauna less than ten minutes after exercising may create adverse health effects.[3]

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[1] Tharrett SJ, Peterson JA. *ACSM's Health/Fitness Facility Standards and Guidelines*. 4th Ed. Champaign, IL: Human Kinetics; 2012.

[2] Laukkanen T, Khan H, Zaccardi F, Laukkanen JA. Association Between Sauna Bathing and Fatal Cardiovascular and All-Cause Mortality Events. *JAMA Intern Med.* 2015;175(4):542-548. doi:10.1001/jamainternmed.2014.8187

[3] Hannuksela, M. L., & Ellahham, S. (2001). Benefits and risks of sauna bathing. *The American Journal of Medicine, 110*(2), 118-126. doi:10.1016/s0002-9343(00)00671-9

[4] Crinnion, W. J. (2011). 2CSauna as a Valuable Clinical Tool for cardiovascular, autoimmune, toxicant- induced and other chronic health problems. *Alternative Medicine Review, 16*(3), 215-225. doi:10.15417/1881

Steam Rooms:

Benefits

- The heat generated from steam rooms opens the airways, which reduces congestion and enhances breathing. The wet heat from the steam room thins and opens the mucous membranes in the body, which aids in relieving pressure.[5]

Risks

- Steam rooms can be of high risk to users due to high temperatures and humidity. If temperatures are too high or exposure is too long, hyperthermia, heat exhaustion, heatstroke, and cardiovascular emergencies may result.[3]
- Using steam rooms while pregnant, having heart or kidney disease, taking certain medications for cardiovascular disease, and having medical issues affected by high heat may be detrimental to one's health.[3]
- Entering a steam room less than ten minutes after exercising may create adverse health effects.[3]
- Sauna temperatures should be kept between 100 and 110^{o} F (38 and 42^{o} C).
- People who are pregnant or have medical conditions such as high blood pressure, heart disease, and respiratory problems should avoid exposure to high heat and humidity[6].

Whirlpools:

Benefits

- Studies show using whirlpool baths significantly improves complex regional pain syndrome in the visual analogue score for pain, hand edema, hand grip strength, wrist range of motion (both flexion and extension), fingertip-to-distal palmar crease distance, and the three-point and fingertip pinch strengths.[7]
- Whirlpool therapy can be an effective measure to reduce myofascial pain— localized and pain that results from trigger points in the muscle[8]

Risks

- Whirlpools can be of high risk to users due to high temperatures and humidity. If temperatures are too high or exposure is too long, hyperthermia, heat exhaustion, heatstroke, and cardiovascular emergencies may result.[3]
- Using whirlpools while pregnant, having heart or kidney disease, taking certain medications for cardiovascular disease, and having medical issues affected by high heat may be detrimental to one's health.[3]
- Entering a sauna less than ten minutes after exercising may create adverse health effects.[3]

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[5] Benefits of Using Sauna and Steam Rooms, http://www.aston.ac.uk/sport/news/benefits-of-sauna-and-steam-rooms/

[6] Tharrett, Stephen J., and James A. Peterson. *ACSM's Health/fitness Facility Standards and Guidelines*. Champaign, IL: Human Kinetics, 1997. Print.

[7] Devrimsel, G., Turkyilmaz, A. K., Yildirim, M., & Beyazal, M. S. (2015). The effects of whirlpool bath and neuromuscular electrical stimulation on complex regional pain syndrome. *Journal of Physical Therapy Science*, *27*(1), 27–30. http://doi.org.ezproxy.bu.edu/10.1589/jpts.27.27

[8] Im, S. H., & Han, E. Y. (2013). Improvement in Anxiety and Pain After Whole Body Whirlpool Hydrotherapy Among Patients With Myofascial Pain Syndrome. *Annals of Rehabilitation Medicine*, *37*(4), 534–540. http://doi.org.ezproxy.bu.edu/10.5535/arm.2013.37.4.534

Physician Recommendation:

- Physicians have begun recommending this form of therapy to patients with high blood pressure, muscle spasms, seasonal affective disorder, and high stress levels[9]

For all wet areas:

- Ensure there is a negative exhaust (more exhausted air than supplied air). Negative pressure in wet areas allows air to be pulled from adjacent spaces rather than pushing damp and/or chlorine-scented air into theses adjacent spaces[10].

[9] Sauna-Induced Sweating Offers Many Health Benefits. (2011, January 3). Retrieved May 11, 2016, from http://www.med.wisc.edu/news-events/sauna-induced-sweating-offers-many-health-benefits/30199

[10] Tharrett, Stephen J., and James A. Peterson. *ACSM's Health/fitness Facility Standards and Guidelines*. Champaign, IL: Human Kinetics, 1997. Print.