Greeting Badwater Ultramarathon Racers,

While at a recent sports medicine conference, I spoke with Lisa Bliss, MD about the Badwater Ultramarathon event. As you may know, Lisa is a veteran competitor of the 2004 Badwater Ultramarathon, was a pacer there in 2002, headed up the 2003 Badwater Medical Team, and will head up that medical team again this year.

As a result of that conversation, a research study focusing on heart rate responses during ultraendurance events was designed. Dr. Ann Snyder and I will be traveling out to this year's event and we would like gather data on participants. We will be using Timex's Bodylink® system which allows us to collect at least heart rate, speed, and distance. We will also endeavor to collect other information such as temperature along the race course, relative humidity, elevation, etc. The Bodylink® system includes a wrist watch, a heart rate monitoring strap, a GPS unit and a data recorder. These items weigh 1.5, 2.0, ~2.0 and ≤1.5 ounces, respectively (therefore, a total of less than 8 ounces). The watch and strap would be worn on the wrist and chest. The GPS unit and the data recorder would be packaged so they can be put in a hip/ fanny pack or worn in another configuration. ***Due to battery life and data storage capabilities the GPS unit and recorder will need to be changed every 7 or 8 hours***, which would be done at a predetermined check point.

Participation in this data collection is voluntary, even during the race. We are looking for ten (10) volunteers to wear our equipment and any others who will already be wearing this or similar systems. Volunteers will be supplied with a report of their own data, which could help you understand your race and could help you in preparing/ training for another ultraendurance event. If you have questions about the data collection or are interested in volunteering, please contact myself via rwwilson@uwm.edu or the Director of the HPL Dr. Ann Snyder, Ph.D. via acs@uwm.edu.

If you are interested in participating, there are two other documents (the Informed Consent and the Health History Questionnaire) that you will need to read and complete. They can either be completed before the race and sent back to us or you can fill them out on Sunday July 10th.

Regards,
Rob Wilson, M.S.
Laboratory Assistant
Human Performance Laboratory
University of Wisconsin – Milwaukee

Informed Consent Form

Title: **Heart rate responses during ultraendurance exercise events**

Description: I understand that I have been asked to participate in this research study that will examine the response of heart rate during an ultraendurance exercise bout.

Procedures: I understand that I will complete a medical history/physical activity form to insure that I am free of known cardiovascular and pulmonary diseases. I understand that subjects with known disease will be excluded from the study.

I understand that I will be asked to wear a wrist watch, heart rate monitoring strap, a GPS unit and a data recorder. I understand that the total weight of these items is approximately 7 ounces. I understand that in ultraendurance events lasting longer than 8 hours (or multiples of 8 hours) that a second GPS unit and data recorder will be given to me to wear as these units batteries last approximately 8 hours. I understand that following the event the heart rate information will be downloaded and the data will be supplied to me at a later date.

Risks and Benefits: I understand that as a result of exercising that I may become fatigued and short of breath and that I may also be sweating during the exercise. I also understand that during exercise I will increase the rate that my heart beats and that in some individuals that will feel like their heart is pounding. I also understand that the response of the cardiovascular system cannot be predicted with complete accuracy. In rare instances a "heart attack" or "cardiac arrest" may occur. I understand that I should stop the exercise if I feel chest pain, dizziness, unusual or severe shortness of breath, leg pain or cramping, or that I simply want to stop at any point.

I understand that participating in this study does not put me at any greater risk than if I were to just perform the ultraendurance exercise. But that by performing an ultraendurance exercise bout I understand that I could be at some risk.

I understand that once the study is completed, I will be provided the results of this study. I understand that I will receive information regarding how my heart rate responds during ultraendurance exercise. I understand that this study will provide no other direct benefit to me.

I understand that I will not be charged for my participation in this study, nor will I be paid for participating. I understand that the investigators of this study may or may not be present at the individual races and even if present will not be able to monitor me throughout the course of a race. Therefore, any emergency situation that may occur will be handled by the event staff as it would be if I were not in this research study.

Safeguards: I understand that any information about me will be treated in a confidential manner and that the data collected will be used for scientific purposes only. My name and initials will never be used to report any results of the projects. I understand that the records and data files related to this research project will be maintained in Dr. Snyder's laboratory for a period no longer than ten years and that only personnel directly associated with this project will have access to them.

Freedom to Withdraw: I understand that I may refuse to participate in this study or withdraw at any time without penalty. I understand that I may be withdrawn from this study by the investigators if I do not meet the screening criteria. I understand that, should I withdraw or be withdrawn from the study, any information that I have provided will be destroyed.

Voluntary Consent: This study has been explained to me and my questions have been answered. If I have additional questions I may contact the principal investigator:

Ann C. Snyder, Ph.D.
Department of Human Movement Sciences
University of Wisconsin-Milwaukee
Milwaukee, WI 53201
414-229-6065 or 414-229-6080
414-229-2619 Fax
acs@uwm.edu

I understand that if I have any complaints about my treatment in this study I may call or write:

Chris Buth Furness
Institutional Review Board for the Protection of Human Subjects
Graduate School
University of Wisconsin-Milwaukee
P.O. Box 340
Milwaukee, WI 53201
(414) 229-3173

Although they will ask my name, all complaints are kept in confidence.

I have received an explanation of this study**.** I am at least 18 years of age and agree to participate in this study. I understand that my participation in this study is strictly voluntary.

_____ _____

Name Date

This research project has been approved by the University of Wisconsin-Milwaukee Institutional Review Board for the protection of Human Subjects for a one year period.

HEALTH HISTORY/PHYSICAL ACTIVITY QUESTIONNAIRE

_____ _____
Name Date

_____
Address

_____
City State Zip Code

_____
Telephone (Home) Work

_____-_____-_____
Date of Birth

_____
Gender

Although participation in exercise is relatively safe for most apparently healthy individuals, the reaction of the cardiovascular system to increased levels of physical activity cannot always be totally predicted. Consequently, there is a small but real risk of certain changes occurring during exercise participation. Some of these changes may include abnormal blood pressure, irregular heart rhythm, fainting, and in rare instances, a heart attack or cardiac arrest. Therefore, it is imperative that you provide honest answers to this questionnaire. Exercise may be contraindicated under some of the conditions listed below; others may simply require special consideration. If any of the conditions apply, consult your physician before you participate in an exercise program.

A. Have you ever had or do you now have any of the following conditions:

___ 1. Heart failure
___ 2. Coronary artery disease
___ 3. Congestive heart failure
___ 4. Elevated blood lipids (cholesterol and triglycerides)
___ 5. Chest pain at rest or during exertion
___ 6. Shortness of breath
___ 7. An abnormal resting or stress electrocardiogram
___ 8. Uneven, irregular, or skipped heartbeats (including racing or fluttering heart)
___ 9. A blood clot
___ 10. A clot or irritation of the wall of the vein
___ 11. Rheumatic heart fever
___ 12. Elevated blood pressure
___ 13. A stroke
___ 14. Diabetes
___ 15. Cancer
___ 16. A hernia
___ 17. Any known bleeding disorders
___ 18. Any other heart problem that makes exercise unsafe.

B. Do you suffer from any of the following conditions:

___ 1. Arthritis, rheumatism, or gout
___ 2. Chronic low back pain
___ 3. Any other joint, bone, or muscle problems
___ 4. Any respiratory or pulmonary problems
___ 5. Obesity (more than 30% overweight)
___ 6. Anorexia
___ 7. Bulimia
___ 8. Mononucleosis

C. Immediate Family History (mother, father, maternal grandmother or grandfather, paternal grandmother or grandfather, brothers, sisters, children).

Have any of the above had:

___ 1. Stroke
___ 2. Heart Disease
___ 3. Cancer
___ 4. Tuberculosis
___ 5. Kidney Disease
___ 6. High Blood Pressure
___ 7. Diabetes
___ 8. Migraines

D. Do any of the following conditions apply?

1. Do you currently smoke cigarettes? _____
   If yes, how many packs per day? _____

   If no, have you ever smoked cigarettes? _____
   For how many years? _____

2. Do you currently drink coffee and/or tea? _____
   If yes, what is your weekly consumption? _____

3. Do you take any medications (both prescribed and over-the-counter) or nutritional supplements? _____
   Please list all medications and supplements:

Medication/Supplement	Purpose
_____	_____
_____	_____
_____	_____

E. Have you ever had surgery? _____

If yes, please specify:

_____ _____

Date

_____ _____

Date

_____ _____

Date

F. Physical Activity:

Do you engage in regular physical activity? _____

If no, when did you last participate in a regular exercise program?

_____

If yes, please specify below:

Activity	# Sessions per week	Amount of time per session
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____