

Proposed Measures & Variables:

Outcome Variables Definition and Measurement The primary outcome will be average number of miles walked or run, and total moderate and vigorous activity (kcal/day) as reported on a two-page questionnaire. These will be estimated from survey questionnaires, which will ask about

Running activity: current average weekly miles run and miles run during each of the last five years, number of marathons, best marathon time, best 10 km time; and minutes required to run one mile during usual run, longest usual weekly run, and injuries,

Walking activity: current average weekly miles walked and miles walked during the last five years, number of marathons, best marathon time, best 5 km and 10 km time; number of minutes required to walk one mile during usual walk, longest usual weekly walk, injuries.

Other activities: hours per week spent at running, cycling, swimming, aerobics, stretching, and other physical activities.

At baseline and the three-year follow-up survey, 200 subjects (100 walkers and 100 runners consisting of equal numbers of men and women) will be selected at random from the cohort to receive a pedometer/heart rate monitors. We will consider using pedometers linked to the website (www.sportbrain.com) at baseline and three-year follow-up to verify survey entries. The instrument they provide is ideal for our research but we will need to be assured that their services are likely to remain available throughout the study duration,

Independent Variable Definition and Measurement The primary independent variable is assignment to intervention or control group.

Control participants will receive postcards every four months referring them to websites that contain information on walking (they would not be referred to the interactive tools we have developed). These will probably be the American Volkssport Association (Universal City, TX) and the Road Runner Clubs of America (Alexandria, VA) who will provide informational webpages for promoting walking and running. These sites contain information on how to maintain a walking and running program, appropriate choice of clothing and shoes, safety, injuries, frequently asked questions, community resources, finding attractive routes, walking and running partners, and walking and running events. Alternatively, we may wish to develop our own material to match the basic information provided to the treatment group.

Treatment participants will receive postcards every four months referring them to our interactive web site with tools for maintaining walking and running and preventing cessation. They would also have access to the informational material provided to the controls. We propose to employ three methods to encourage continued exercise participation and prevent exercise cessation: 1) visual– a plot of a person's total cumulative mileage across a trans-continental path with an image of the actual view from that point on the path; 2) mutual support– walkers and runners can choose partners to

exercise with (or compete against) as they travel along the transcontinental path; 3) recognition—runners and walkers who complete a state will be recognized on an award page. In addition, we will actively promote other community resources such as clubs and mentoring services.

The survey questionnaires will also collect the following information that may be used to characterize successful adherence:

Weight: current height and weight; weight for the past five years; current body circumferences of the chest, waist, hips and bra cup.

Health and risk factors for disease: prior history of heart disease, cancer, and other diseases.

Menstrual history and children: whether women are still having periods, average cycle length, age of last period if no longer having periods, age of first full term pregnancy, number of live births and total months of lactation, presence and absence of uterus and of one or both ovaries.

Diet: weekly intakes of alcohol, red meat, fish and fruit, vitamins C, calcium, aspirin; and if a person has a lactovegetarian or strict vegetarian diet.

Cigarette use: current and past use, number of cigarettes per day, years of cigarette use, and age when last smoked.

Potential mediators of physical activity Within the treatment group we will be able to collect information on the resources used by the individual participants when they log onto the site. The participants have the option of enabling cookies on their Internet browsers that will not require them to log on. The virtual running groups and partnerships, and at the preference of the actual contact with exercise partners, clubs and mentors will be determined before and after the intervention. Access to the journal reports will be compared between runners and walkers who place high importance on the health benefits and those who do not. We may also be able to model temporal shifts in the use of resources, i.e., from social support to informational needs. We may also find that the tools we provide may also promote health improvements in other areas such as nutrition as reflected in the use of our on line diet assessment program.

In addition, we have identified a set of possible behavioral questions that focus on questions of spousal and social support, response to conditions that might interrupt training, perceptions of health risk and benefits, discretionary time, and reasons for exercising:

- **Do you currently live with your spouse or significant other?** 1) yes; 2) some of the time; 3) no.
- **Do you currently exercise with your spouse or significant other?** 1) always; 2) usually; 3) some of the time; 4) never; 5) not applicable.
- **How often does the schedule of your spouse or significant other prevent you from exercising?** 1) always; 2) usually; 3) some of the time; 4) never; 5) not applicable.

- **How supportive is your spouse or significant other of your exercise?** 1) 100%; 2) supportive; 3) supportive unless it conflicts with their interest; 4) not very supportive; 5) 0% support; 6) not applicable.
- **When you have a head cold, you:** 1) exercise as usual; 2) cut back on your exercise a little; 3) cut back on your exercise a lot; 4) stop exercising until you feel better; 5) never get colds.
- **When you have a head cold, you:** 1) go to work as usual; 2) take as little time off as possible; 3) take time off until you are better; 4) take time off until you are completely over your cold; 5) never get colds.
- **When you have an injury that makes exercise unpleasant, you:** 1) exercise as usual; 2) exercise a little less; 3) exercise a lot less; 4) stop exercising; 5) never get injured.
- **If you stop exercising due to injury or illness, you:** 1) start exercising as soon as possible even if it hurts; 2) start exercising as soon as it stops hurting; 3) take several days off before starting to exercise again; 4) take several weeks off before starting to exercise again; 5) take a month or more off; 6) never stop exercising.

- **How many times per week you currently walk or run with a club or organized group?**
- **How many times per week you currently walk or run with friends?**
- **How many times per week you currently walk or run by yourself?**

- **How much do you believe you need to walk or run to get the greatest health benefits:** 1) ten minutes per day; 2) 30 minutes on most days of the week; 3) 15 miles per week; 4) 25 miles per week; 5) 35 miles per week; 6) 40 or more miles per week; 7) there are no health benefits; 8) don't know; 9) don't know and don't care
- **Do you think your current exercise is:** 1) much less than you should be doing; 2) somewhat less than you should be doing; 3) about right; 4) more than necessary; 5) much more than necessary.
- **If you were to stop exercising, you believe that your weight would:** 1) decrease or remain about the same; 2) increase a little; 3) increase a fair amount; 4) increase a lot; 5) don't know; 6) don't know and don't care.
- **If you were to stop exercising, you believe that your chance of getting a heart attack would:** 1) decrease or remain about the same; 2) increase a little; 3) increase a fair amount; 4) increase a lot; 5) definitely happen.; 6) don't know; 7) don't know and don't care
- **If you were to stop exercising you believe that your chance of getting hemorrhoids would:** 1) decrease or remain about the same; 2) increase a little; 3) increase a fair amount; 4) increase a lot; 5) definitely happen; 6) don't know; 7) don't know and don't care
- **If you were to stop exercising, you believe that your chance of getting cancer would:** 1) remain about the same; 2) increase a little; 3) increase a fair amount; 4) increase a lot; 5) definitely happen; 6) don't know; 7) don't know and don't care

- **If you were to stop exercising you think your chance of getting depressed would:** 1) remain about the same; 2) increase a little; 3) increase a fair amount; 4) increase a lot; 5) definitely happen; 6) don't know; 7) don't know and don't care
- **How concerned are you about gaining weight?** 1) obsessed; 2) very concerned; 3) somewhat concerned; 4) slightly concerned; 5) not concerned; 6) don't know; 7) don't know and don't care
- **How concerned are you about getting a heart attack?** 1) obsessed; 2) very concerned; 3) somewhat concerned; 4) slightly concerned; 5) not concerned; 6) don't know; 7) don't know and don't care
- **How concerned are you about getting hemorrhoids?** 1) obsessed; 2) very concerned; 3) somewhat concerned; 4) slightly concerned; 6) not concerned; 6) don't know; 7) don't know and don't care.
- **How concerned are you about getting cancer?** 1) obsessed; 2) very concerned; 3) somewhat concerned; 4) slightly concerned; 5) not concerned; 6) don't know; 7) don't know and don't care.
- **How concerned are you about getting depressed?** 1) obsessed; 2) very concerned; 3) somewhat concerned; 4) slightly concerned; 5) not concerned; 6) don't know; 7) don't know and don't care.

- **How much leisure time do you have that you could do anything you want?** 1) all the time; 2) most of the day; 3) some of the day; 4) one or two hours per day; 5) one or two hours per week; 6) none; 7) don't know; 8) don't know and don't care.
- **How many hours do you spend each week on the Internet?**
- **How many hours do you spend each week watching TV?**
- **How many hours do you spend each week talking to friends?**
- **How many hours do you spend each week reading, listening to music, or pursuing your hobbies?**

- **How important is *fitness* as your reason for exercising?** 1) most important; 2) very important; 3) important; 4) not very important; 5) exercising isn't enjoyable; 6) don't know; 7) don't know and don't care.
- **How important is *enjoyment* as your reason for exercising?** 1) most important; 2) very important; 3) important; 4) not very important; 5) exercising isn't enjoyable; 6) don't know; 7) don't know and don't care.
- **How important is *health* as your reason for exercising?** 1) most important; 2) very important; 3) important; 4) not very important; 5) exercising isn't healthy; 6) don't know; 7) don't know and don't care.
- **How important is *weight control* as your reason for exercising?** 1) most important; 2) very important; 3) important; 4) not very important; 5) exercising doesn't affect weight; 6) don't know; 7) don't know and don't care.
- **How important is *running with others* as your reason for exercising?** 1) most important; 2) very important; 3) important; 4) not very important; 5) I don't run with others; 6) don't know; 7) don't know and don't care.

- **How important is *listening to music, radio or tape recorded books* as your reason for exercising?** 1) most important; 2) very important; 3) important; 4) not very important; 5) never listen to these things; 6) don't know; 7) don't know and don't care.
- **How important is *participating in races or other events* as your reason for exercising?** 1) most important; 2) very important; 3) important; 4) not very important; 5) never participate; 6) don't know; 7) don't know and don't care.
- **How important are your *immediate responses to exercise (more energy, feeling better)* for your reason for exercising?** 1) most important; 2) very important; 3) important; 4) not very important; 5) never participate; 6) don't know; 7) don't know and don't care.
- **How certain are you that you will still be exercising the same amount in five years?** 1) 100%; 2) almost certain; 3) probably will be; 4) maybe; 5) unlikely; 6) don't know; 7) don't know and don't care.
- **How difficult would it be to increase your running or walking mileage by 20%?** 1) easy; 2) not too hard; 3) could be done; 4) difficult; 5) impossible; 6) don't know; 7) don't know and don't care.
- **How difficult would it be to start running or walking again if you had to quit for three months?** 1) easy; 2) not too hard; 3) could be done; 4) difficult; 5) impossible; 6) don't know; 7) don't know and don't care.