

## RESEARCH RECRUITMENT LETTER

Researchers at Auburn University are interested in learning more the effect of one-handed carrying in obese and/or elderly individuals. We are inviting you to participate in this research study because you are a healthy individual whose age is 19-35 or 55-64 years old and you meet the following eligibility criteria:

1. No history of physician-diagnosed cardiovascular diseases.
2. No history of physician-diagnosed musculoskeletal disorders (MSDs) in the neck, shoulder, extremities, or low back regions.
3. No chronic pain in the neck, shoulder, extremities, or low back in the previous 6 months.
4. No surgeries in the past 6 months.
5. Are not pregnant or are currently receiving Radiation Therapy.
6. No history of adhesive allergies.

If you decide to participate in this research study, you will be asked to:

1. Meet a research team member in the Occupational Safety and Ergonomics Graduate Village in the department of Industrial and Systems Engineering (3323 Shelby Center for Engineering and Technology) to review the informed consent document and an eligibility questionnaire.
2. Fill in the eligibility questionnaire to make sure it is safe for you to participate.
3. If eligible for the study, you will have to read and sign the informed consent form.
4. You will have a Dual X-ray Absorptiometry (iDXA) body scan at the Tiger Fit Lab in the School of Kinesiology at Auburn University to get information about your fat mass, lean mass, and visceral fat. It is your decision to do the experiments on the same day of the iDXA scan or on a different day. In such case, another time to meet will be established for you to do the experiments.
5. You will need to go to the corridor next to the Automotive Manufacturing Systems Laboratory, located on the ground floor of the Shelby Center to perform one of two experiments.
6. You will be fitted with one small sensor that will collect heart rate information from you. The sensor will be worn on your chest, secured by a strap that goes around your torso.
7. You will be fitted with a breathing mask that will collect oxygen consumption information from you. The mask will be worn on your face and will be secured by a harness that goes around your head.
8. After having all equipment set, you will be asked to perform the first of two experiments.
9. In experiment 1, you will be asked to walk for 90 m four times; once while carrying no load, and three times while carrying three different loads (5 kg, 10 kg, and a self-selected load [not exceeding 20 kg]).
10. After completing experiment 1, you will be asked to move to the Auburn University Automotive Manufacturing Systems Lab (0317 Shelby) in the Department of Industrial and Systems Engineering to be prepped for Experiment 2.
11. You will be fitted with twelve small sensors that will collect muscle activity (i.e., muscle force) information from you. The sensors will be worn on different parts of your back and abdomen and will be secured using a combination of elastic neoprene straps and/or hypoallergenic tapes.
12. A research assistant will ask you to perform three exercising strategies to collect data of the tested muscles.
13. After each of the sensors are secured and you have performed all reference exertions, you will be asked to move to the Auburn University Biomechanics Lab (3401 Wiggins) to be fitted with multiple markers at different segments/joints of your body to capture the speed and location of your body
14. segments. In experiment 2, you will be asked to perform three replicates of three trials (total of 9). These trials include walking while carrying different loads in the dominant hand (0 kg, 5 kg, and 10 kg) for a distance of 5 meters.
15. After each of the walking tasks, in each experiment, you will be asked to rate the exertion due to this specific task on the 15-grade scale for ratings of perceived exertion (RPE). The RPE for the arm, back, and whole body will be documented.

Your total time commitment will be approximately 3 hours.

Participation is completely voluntary. \$50 compensation is provided. A partial compensation of \$25 will be provided to participants who finished one of the two experiments.

If you meet the above criteria and are interested in participating, please provide your name, age, and contact information to Mr. Mohamed Badawy by emailing: [msb0058@auburn.edu](mailto:msb0058@auburn.edu)