

DIALOGOS – BAKER UNIVERSITY

DIRECTIONS FOR ABSTRACT SUBMISSION

Directions: Please carefully read over the directions and then complete the submission form, providing the information requested.

1. The submission deadline is Friday, March 20th, 2019 by 4PM CST
2. You will need to open an **EasyChair** account to submitting your abstract.
 1. Go to <https://easychair.org/conferences/?conf=dia19> to begin.
 2. Accounts with **EasyChair** are of no charge to the authors
 3. Please have your abstract and adviser form (if an Honors Project) prior to submission. This form can be found at www.bakeru.edu/dialogos under formats and guidelines.
 4. Only electronic submissions through **EasyChair** will be accepted.
3. The abstract needs to be submitted as a Microsoft Word document. If submitting the adviser form, it must be in pdf format.
4. Save both documents as “FirstAuthorLastname_First Initial_DIA19”
5. Be certain to correctly select the authors to be corresponded with regard to the status of the abstract. **You must include yourself.**

Abstract Format: Abstract narratives are limited to 300 words (not including spaces, title, and author names).

1. The entire abstract must be typed using Microsoft Word using 1-inch margins, a Times New Roman font, and 12-point font size.
 - a. Please make sure to adjust line and paragraph spacing so there is no extra spacing between lines. Select line and paragraph spacing →. Make sure spacing before and after is set to zero.
 - b. All aspects of the abstract must be left justified.
2. **The title of the abstract must be typed in UPPERCASE and in bold (15 word limit. Not counted in character count for abstract).**
 - a. The title must be succinct and informative.
3. On the next line include first and last names of the authors (e.g., John Doe, Jean Author).
4. On the next line include the faculty sponsor(s)
5. On the next line include the Academic Department
6. Skip a line
7. The text of the abstract must be single-spaced, left justified, Times New Roman 12pt font, and one paragraph.
8. The abstract must be informative and should be presented in the format associated with the project discipline.
9. **Submissions that do NOT meet the above format instructions will not be accepted.** Please refer to the sample abstract provided.

Expectations of Faculty Sponsor(s):

1. Read over and comply the directions for abstract submission.
2. Work with the student author in the development of the abstract.
3. Complete a final proofread of the abstract prior to submission

THE ROLE OF AGE-ASSOCIATED CHANGES IN SKELETAL MUSCLE ON BLOOD PRESSURE IN STANDING

Michelle M. Masterson, Amy L. Morgan, Carrie S. Multer, & Charles A. Armstrong

Faculty Sponsor(s)

Department of Dialogos

Thirty percent of people aged 65 years and older living independently have experienced a fall. Muscle weakness, postural instability, and orthostatic hypotension (OH) have been identified as contributing factors to falls. However, the age-associated differences in these factors and the relationship between them is not clear. **PURPOSE:** Therefore, the purpose of this study was to investigate the differences in lower extremity (LE) muscle activity, LE volumetric measurements, blood pressure (BP), heart rate (HR), and postural sway between young and old individuals upon assuming an upright position. **METHODS:** Two groups of 10 healthy males (20-24 yrs. and 65-82 yrs.) volunteered for this study. BP and HR were measured during supine resting and LE volumetric measurements were obtained immediately after supine rest. Electromyographic (EMG) activity of bilateral gastrocnemius and tibialis anterior muscles was recorded during a one-repetition maximal isometric contraction, followed by a second resting period. Subjects then stood quietly for 15 minutes while BP, HR, EMG, and postural sway on a force platform were measured for 20 seconds each minute. **RESULTS:** Systolic, diastolic, and mean arterial BP of both groups significantly increased from supine values within one minute of standing (mean arterial BP: young = 86.5 to 96.9 mmHg, old = 100.3 to 114.0 mmHg). The BP variables remained elevated during the 15 minutes of standing with no instances of OH, despite a significantly attenuated HR response in the older group relative to the younger group (greatest mean HR recorded during 15 minutes of standing: young = 85 bpm, old = 73 bpm). There were no differences in EMG activity or postural sway between the two groups. **CONCLUSION:** Older subjects did not exhibit an increased incidence of OH, despite an attenuated HR response, nor did they demonstrate changes in postural sway or EMG activity. Therefore, it appears that BP is maintained by mechanisms other than changes in HR or LE muscle activity. Further research is needed to develop a better understanding of how LE muscle activity, BP maintenance, and postural instability interact as individuals age in order to develop effective interventions to reduce the incidence of falls in the older population.