2023 NSCA National Conference Research Abstract Submission & Presentation Guidelines

Updated October 18, 2022
THE NATIONAL STRENGTH AND CONDITIONING ASSOCIATION® (NSCA®)

The National Strength and Conditioning Association (NSCA) is a nonprofit professional organization dedicated to advancing the strength and conditioning profession around the world.

Mission statement: As the worldwide authority on strength and conditioning, we support and disseminate research based knowledge and its practical application, to improve athletic performance and fitness

The NSCA advances the profession by supporting strength and conditioning professionals devoted to helping others discover and maximize their strengths. We disseminate research-based knowledge and its practical application by offering industry-leading certifications, research journals, career development services, and continuing education opportunities. The NSCA community is composed of more than 45,000 members and certified professionals who further industry standards as researchers, educators, strength coaches, personal trainers, and other roles in related fields.
GENERAL INFORMATION
The National Strength and Conditioning Association (NSCA) is pleased to make a call for research abstract submissions for presentation at the 2023 National Conference. Research abstract presentations are an opportunity to present current research findings to researchers and strength and conditioning professionals at the NSCA National Conference. The research abstracts are the largest portion of the scientific programs presented every year at the National Conference. The NSCA encourages all researchers and students to submit their abstracts for consideration to the 2023 National Conference.

SUBMISSION DEADLINE
The abstract submission deadline is March 1, 2023 (11:59 PM Eastern Time). Late submissions will not be accepted.

NOTIFICATION
Submitting authors will receive notification of acceptance or rejection of their research abstract by May 1, 2023. If you do not receive notification by May 1, please contact abstracts@nsca.com.

LANGUAGE
All abstracts must be written in English.

COST
There is no cost to submit an abstract, but due to costs incurred by the NSCA, all accepted abstracts are expected to be presented.

FAILURE TO PRESENT
Failure to present an accepted abstract may result in disqualification from presentations at future NSCA conferences.

PRESENTATION FORMAT
Research abstracts can be presented in either a podium or poster. Due to a limited number of available podium presentations, all requests for podium presentations cannot be accommodated. If an abstracted submitted for a podium presentation is not accepted for that format, it will automatically be assigned to a poster presentation.

PRESENTATION DATES
Podium and poster presentations occur on all three days of the conference (July 13 – 15, 2023). Podium presentations typically occur in the morning with poster presentations occurring in two blocks each day.
**PUBLICATION OF ABSTRACTS**

Accepted abstracts, that are presented, will be published in an electronic supplement to the *Journal of Strength and Conditioning Research* (date to be determined). The NSCA encourages all research abstract presenters to submit the completed manuscript of their presented research for consideration in the *Journal of Strength and Conditioning Research*.

**RESEARCH ABSTRACT SUBMISSION GUIDELINES**

- Abstracts must be original research studies that are unpublished.
- Abstracts may not have been previously presented (except at an NSCA regional or state conference).
- All data collection must be completed at the time of submission. Incomplete data collection will not be accepted.
- Do not submit abstracts containing data currently in press. In the event that data contained in an accepted abstract is published (paper, electronic, or other format) prior to the abstract’s submission to the National Conference, the abstract will be withdrawn.
- Case studies (involving clinical cases, rare circumstances, adverse events, etc.) will only be considered on an individual basis.
- Sample size should be sufficient to draw meaningful conclusions based on primary statistical analyses used.
- The first author of the research abstract is considered the primary author and must present the abstract. However, all authors must approve the abstract prior to submission.
- One person may be the primary author on a maximum of two abstracts (only one may be submitted as a podium presentation).
- The number of authors for each abstract is limited to ten (10). An author is defined as an individual identified by the research group to have made substantial contributions to the reported work and agrees to be accountable for these contributions.
- All abstract presenters must pay for their conference registration and all other fees associated with travel.
- Abstracts may only be submitted online.
- For questions, please email the NSCA at abstracts@nsca.com.

**SUBJECT CATEGORIES**

There are twelve (12) available categories for research abstracts:

1. Biochemistry / Endocrinology
2. Biomechanics / Neuromuscular
3. Body Composition
4. Endurance Training / Cardiorespiratory
5. Fitness / Health
6. Flexibility / Stretching
7. Nutrition / Ergogenic Aids
8. Resistance Training / Periodization
9. Social and Behavioral Science
10. Special Populations (health conditions)
11. Speed / Power Development
12. Tactical Strength and Conditioning

**USE OF HUMAN AND ANIMAL SUBJECTS**

All research studies that include data recorded from human participants must comply with the Declaration of Helsinki and the US Department of Health and Human Services Policy for the Protection of Human Research Subjects (US
All animal studies must comply with the Public Health Service Policy on Humane Care and Use of Laboratory Animals.

**ABSTRACT FORMATTING SPECIFICATIONS**

- All abstract submissions must be formatted correctly (see examples below) and include original research-based data to allow for a thorough review. Abstracts that do not meet these criteria will not be accepted.
- The body of the abstract cannot exceed 3,500 characters (including spaces) when there is no figure or table included. When there is a figure or table associated with the abstract, the text cannot exceed 3,000 characters (including spaces).

**FIGURES AND TABLES**

- Abstracts may contain either one figure or one table, but not both. Abstracts submitted with more than one figure or table will have both images removed.
- Any figure or table must pertain to the abstract for the purpose of visualizing data and must be referred to in the text of the abstract. Figures or tables that do not pertain to the abstract will be removed.
- Figures or tables must be concise. It is at the discretion of the NSCA if a figure or table is too big, and if so, it will be removed. Additional text that should be in the abstract may not be substituted in the figure or table.
- The resolution of the figure or table must be adequate for reprinting (i.e., = 150 dpi).
- Including a figure or table does not replace any of the required sections (i.e., purpose, methods, results, etc.).
- No photos or pictures are allowed – only a figure or a table.
- The figure or table must be an image file (.jpg, .gif, and .png are accepted). PDF and PowerPoint are not acceptable.

**REQUIRED INFORMATION**

- Abstracts/submissions must contain the following:
  - Long title (in ALL CAPS) cannot exceed 150 characters (including spaces).
  - Short title cannot exceed 10 words.
  - Language: English.
  - Abstracts must contain the following labeled sections: PURPOSE, METHODS, RESULTS, CONCLUSIONS, and PRACTICAL APPLICATIONS. These section labels must appear in all capital letters on the abstract.
  - Acknowledgements should be included to denote funding sources and/or conflicts of interest when applicable.
- Abstracts/submissions cannot contain the following:
  - Advertising. Research abstracts should be non-biased, free from solicitations, and should not contain demonstrations of products for the purpose of sales.
  - Author(s) degrees (MS, PhD, etc.) or credentials (CSCS, FNSCA, etc.).
- The following information will be asked during the submission process:
  - All authors’ names.
    - If the primary/presenting author is submitting for award consideration, they must be an NSCA Member (professional or student).
    - If an author is NSCA certified, their NSCA ID Number must be entered to automatically record NSCA CEUs. If the authors NSCA ID Number is not entered, the author must self-report the CEUs.
  - All authors’ primary institutions/laboratories (institution/laboratory name, city, state).
  - All authors’ professional mailing address, email address, and phone number.
- Desired presentation format (i.e., podium or poster).
  - Due to limited availability, not all podium requests can be accommodated.
- Abstract subject category.
- If the abstract is being considered for a Student Research Award (see below).

**BRAND NAMES**

- Brand names may only be used in the METHODS section to describe testing procedures when necessary and/or in the ACKNOWLEDGEMENTS section to describe funding or disclose any financial relationships.
- Brand names cannot appear in the title (short or long).
- Brand names may not be used for promotional purposes. It is at the discretion of the NSCA to determine if the use of the brand name is for descriptive or promotional purposes.
- The NSCA reserves the right to replace any brand name with a generic name without notice.
Concurrent Validity and Inter-Device Reliability of a Commercial Running Power Meter in Recreational Runners

J. Hudgins¹, I. Gillis¹, J. Pastina¹, M. Abel¹, H. Bergstrom¹, W. Black², S. Best¹
¹University of Kentucky, ²Owensboro Health

Recent development of running power (P_w) meters has provided endurance runners and coaches with a novel measure of running intensity. Despite support for strong validity and repeatability in well-trained runners, the validity of running power as a measure of metabolic workload in recreational runners has not yet been determined. **PURPOSE:** The purpose of this study was to determine if changes in P_w calculated by a commercial running power meter accurately reflect changes in metabolic workload during running. **METHODS:** Nine male recreational runners completed the study (age: 28.4±7.4 yr, body mass: 74.7±7.4 kg, height: 180.8±8.1 cm, VO₂max: 55.8±7.0 ml/kg/min). All participants completed a 10km run in < 50 minutes in the previous 6 months. On two separate days participants completed a four-stage submaximal treadmill running test (5 min. each at 5, 6, 7, and 8 mi/hr; respiratory exchange ratio < 1.0 at all speeds for all runners) and a maximal graded running test to volitional exhaustion. P_w was recorded by commercial running power meters (Stryd with Wind, Stryd Inc., Boulder, CO). To assess inter-device reliability, one power meter was attached to the right shoe and one to the left during all testing. VO₂ (via expired gas analysis), heart rate (HR), and rating of perceived exertion (RPE) were recorded throughout all tests. P_w from each device (left and right power meters) across submaximal velocities was used to calculate the intraclass correlation coefficient (ICC 2,1) as well as the standard error of measurement (SEM) in absolute terms (Watts, W) and as a coefficient of variation (CV=100 x (SEM/mean)). The minimal difference (MD=SEM x 1.96 x √2) was also determined. A linear regression analysis determined the relationship between P_w and VO₂. Paired t-Tests determined any differences between devices for P_w, and between trials for P_w, VO₂, HR, and RPE. **RESULTS:** There was a strong positive relationship between the average device P_w and VO₂ (Figure 1, r=0.938, p<0.001). The P_w meters showed near-perfect inter-device reliability (ICC=0.999, SEM=1.69 W, CV=0.71%). A significant difference in mean power of 1.00-1.89 W was found between devices at each velocity (5mph, p=0.046; 6mph, p=0.005; 7mph, p=0.008; 8mph, p=0.012). However, this difference is not practically significant, as no participants’ between-device P_w differed more than the MD of 4.7W. No significant differences were found between trials for all other measures (p≥0.311). **CONCLUSIONS:** The strong linear relationship between P_w and VO₂ indicates P_w calculated by the P_w meter accurately reflects differences in metabolic workload during submaximal exercise in recreational runners. P_w was also found to be reliable, and small inter-device differences in P_w were less than the standard error of measurement and/or the minimal difference. **PRACTICAL APPLICATION:** These data suggest runners and coaches can use P_w to validly and reliably indicate metabolic demand at endurance running velocities.

**Figure 1.**

Oxygen consumption (L/min) vs. P_w (W) across all velocities of the submaximal running tests.
PODIUM ABSTRACT PRESENTATION GUIDELINES

- All podium abstract presentations must be prepared in Microsoft PowerPoint.
- All presenters are required to upload their presentation to an NSCA Dropbox account by July 10, 2023 (11:59 PM Eastern Time). Dropbox account URL to be provided.
- Presenters should bring a back-up copy of their presentation on a USB drive.
- All presenters should check in with their session’s moderator prior to presenting.
  - Moderators are assigned in 1-hour blocks (9:00 – 10:00 AM, 10:00 – 11:00 AM, etc.). Podium presenters should check-in with their moderator before the hour block of their presentation.
- Podium abstract presentations must be consistent with the contents of the accepted abstract, and include the following sections: purpose, methods, results, conclusions, and practical applications.
- Podium presentations are 10 – 12 minutes in duration with 3 – 5 minutes of questions from the audience and responses from the presenter.
EXAMPLE PODIUM PRESENTATION
2022 Master’s Student Outstanding Podium Presentation
Conor Cantwell Chandler – Carroll University
POSTER ABSTRACT PRESENTATION GUIDELINES

- All poster presentations should be printed on one uniform poster sheet with dimensions not exceeding 42 × 84 inches (107 × 213 centimeters) (height × width). Unless otherwise noted, the poster boards on which the posters are hung should be 48 × 96 in. (122 × 244 cm).
- Poster abstract presentations must be consistent with the contents of the accepted abstract, and include the following sections: purpose, methods, results, conclusions, and practical applications.
- The Research Committee recommends one of the two following layouts (Traditional Poster or #betterposter) as a general guideline for all poster presentations:

I. TRADITIONAL POSTER DESIGN
EXAMPLE OF TRADITIONAL POSTER PRESENTATION

2022 Undergraduate Student Outstanding Poster Presentation Winner
Elise Choquette – Creighton University

EFFECT OF A FATIGUING PROTOCOL ON MAXIMAL AND RAPID FORCE PRODUCTION IN PERSONS WITH PARKINSON’S DISEASE AND OLDER ADULTS

Elise Choquette, Mitchell A. Magrini, Mac Grahek, Jacob Siedlik, Kelley G. Hammond
Creighton University

Introduction

Persons with Parkinson’s Disease (PD) experience asymmetric gait disorders leading to varying gait and body kinetics (Figure 1). In comparison to non-impaired older adults (OA), they may exhibit a difference in muscle activation while performing maximal contractions.

Individuals with PD exhibit fatigue resistance across repeated contractions, which could be due to suboptimal type Ia motor unit recruitment compared to non-impaired OA. Because of the potential shift in fiber type, peak torque and rate of torque development may be reduced in PD compared to OA. Further, fatigue resistance may be observed in the PD compared to OA.

The purpose of this study was to determine the effect of a fatiguing isometric fatigue protocol on maximal force and rapid force production in persons with PD and non-impaired older adults.

Methods

Twenty individuals (PD n=11, OA n=9) volunteered for this study. Following a warm-up and familiarization, participants performed two maximal isometric

Contractions (MICs) of the bicep brachii. Following a recovery period, participants completed a fatiguing protocol that consisted of 7 sets of maximal isometric voluntary contractions of the quadriceps femoris with 3 min rest for a total of 30 contractions. During this fatiguing protocol, participants were instructed to push their leg against the cuff (avoiding any quadriceps muscle) as hard as they could.

The highest torque (Nm) achieved during the first, middle, and last contraction was calculated and defined as peak torque (Pt). Additionally, peak rate of force development (PRF, Nm/s) was assessed as the highest positive peak using the first derivative of the force signal and determined as the highest rate of change in the force time course.

Figure 5: PRF and Pt were normalized (PtA and PtA+PRF, respectively) to the maximal Pt and PtF collected from the highest MVC contractions. Fatigue is PtA, PtA+PRF, and PtF was calculated as a percent decline using the following equation: $\text{Fatigue} = \text{Percentage Decline in HC-SDP and OA groups} \times 100$ (Contractions) repeated measures ANOVA were used to investigate the differences in body kinematics during the PD and OA groups. Separate 2 (Groups) x 3 (Contractions) repeated measures ANOVA were used to investigate the difference in PD, PtF, PtA, and PtF between the PD and OA group during the fatiguing isometric contraction protocol.

Results

Statistical analysis revealed a significant difference in $\text{Fatigue}$ in PD (P1 3.1 ± 1.14 vs OA 2.7 ± 1.6, p = 0.015) but not in OA (P2 3.1 ± 1.14 vs OA 2.7 ± 1.6, p = 0.015) but not in OA (P3 2.7 ± 1.6 vs OA 2.7 ± 1.6, p = 0.015). PtA (P1 15.8 ± 2.3 vs OA 13.3 ± 4.5, p = 0.015) and PtF (P1 25.5 ± 1.9 vs OA 23.6 ± 1.9, p = 0.015) were significantly different between PD and OA. There were no significant differences in fatiguing between PD and OA.

Conclusions

These data demonstrate a significant difference in PtA between the PD and OA groups. However, the difference in PtA is significantly greater than the difference in PtF. The elimination of the difference in PtF between PD and OA casts doubt on the PD group’s ability to maintain a comparable capacity for rapid torque production compared to OA. These data suggest that the fatiguing protocol may not be fatigue resistant. However, the PD group’s fatigue resistance may be observed in the OA compared to the PD, suggesting that PD may influence fatigue resistance to a greater extent than PtF.

Practical Applications

Coaches, clinicians, and practitioners may note the differences in the rate of torque production in older adults and persons with Parkinson’s Disease following a fatiguing protocol to improve exercise performance.

References

There was no group × time interaction for Pt (p=0.30). PtA (p=0.001), and PtF (p=0.001). However, a significant main effect was not revealed in Pt (P1 20.6 ± 3.3 vs OA 18.2 ± 3.3, p=0.001) but not in OA (P1 21.5 ± 2.9 vs OA 19.7 ± 2.9, p=0.001). PtA (P1 19.5 ± 3.3 vs OA 17.8 ± 3.3, p=0.001) and PtF (P1 28.5 ± 2.9 vs OA 26.7 ± 2.9, p=0.001) were significantly different between PD and OA. However, the difference in PtA between the OA and PD groups was not significant. There were no significant differences in fatiguing between PD and OA.
II. #BETTERPOSTER DESIGN

Main finding goes here, translated into plain English. Emphasize the important words.

More information on #betterposter design can be found at https://www.youtube.com/watch?v=1RwJbhkCA58
EXAMPLE OF #BETTERPOSTER DESIGN

2022 Doctoral Student Outstanding Poster Presentation Winner
Trevor Dufner – University of Central Florida

**Background**

Acute perturbations to IL-8 and neutrophil expression of LFA-1 and Mac-1 are not associated with declines in executive function

**Methods**

- **Participants**
  - 19 male participants were assigned to one of 3 groups: 0 h, 6 h, and 24 h.
- **Randomization**
  - Participants were randomly assigned to each group.
- **Tasks**
  - Participants were asked to complete a series of cognitive tasks designed to assess executive function.
- **Data Analysis**
  - Data was analyzed using a repeated measures ANOVA.

**Results**

- **Executive Function**
  - There were no significant differences in executive function between the groups.

**Conclusion**

Acute perturbations to IL-8 and neutrophil expression of LFA-1 and Mac-1 are not associated with declines in executive function.
**POSTER PRINTING & SHIPPING OPTION**

The NSCA has partnered with posterpresentation.com to offer discounted poster printing with shipping directly to the National Conference (or another location). This is a paid service and completely optional. For more information or to order visit: [https://www.posterpresentations.com/groups/NSCA/nsca-research-poster-printing.html](https://www.posterpresentations.com/groups/NSCA/nsca-research-poster-printing.html)

**ABSTRACT REVIEW PROCESS**

The Scientific Programs Subcommittee is responsible for reviewing the NSCA Research Abstracts to assure that the correct formatting has been applied and to solicit blinded external review(s) for scientific content. Abstracts that do not meet the previously stated formatting criteria will be rejected. The Scientific Programs Subcommittee may solicit a blinded external review. The abstract may be externally reviewed for scientific content, appropriate methodology, correct statistical analysis, proper interpretation of results, and contribution to the field of strength and conditioning. If a reviewer suggests that an abstract be rejected, the Scientific Programs Subcommittee will independently re-review the abstract in question. In this case, the Scientific Program Subcommittee will have final authority to accept or reject the abstract.

**STUDENT AWARD CONSIDERATION**

Any student author who wishes to submit a research abstract for award consideration must be the primary author on the abstract and a Student or Professional Member of the NSCA. Each student can only have one (1) abstract (podium or poster) submitted for award consideration.

**STUDENT RESEARCH AWARD DESCRIPTION**

The NSCA awards outstanding research efforts by students through the NSCA Student Research Awards. Five awards are given each year:

1. Doctoral Student Research Award for Outstanding Podium Abstract Presentation
2. Doctoral Student Research Award for Outstanding Poster Abstract Presentation
3. Master’s Student Research Award for Outstanding Podium Abstract Presentation
4. Master’s Student Research Award for Outstanding Poster Abstract Presentation
5. Undergraduate Student Research Award for Outstanding Poster Abstract Presentation

**PRELIMINARY JUDGING FOR STUDENT AWARDS**

The top ten (10) master’s podium and top ten (10) doctoral podium submissions after the initial review period will be selected to be judged at the National Conference. The top ten (10) doctoral posters, top ten (10) master’s posters, and top five (5) undergraduate posters after the initial review period will be selected to be judged at the National Conference. Students selected to be judged at the National Conference will be notified of their selection.
STUDENT RESEARCH AWARD CRITERIA

- Each student award applicant must be a current Student or Professional NSCA Member at the time the abstract is submitted.
- A student can be the primary author on a maximum of 2 abstracts; however, only 1 abstract can be eligible for the student award.
- The candidate must be enrolled as a full-time student at the time of abstract submission or have completed his/her degree no more than 1-year prior to the NSCA National Conference.
- The abstract must be submitted according to the required specifications (see above) and the “Student Award” option must be selected.
- The presentation guidelines (either podium or poster) must be met as stated in this document.
- Student award candidates must attend the NSCA National Conference to present their research.
- Winners will be announced at the NSCA Awards Banquet on the Friday evening of the conference, as well as through NSCA’s social media channels.
- Case studies are not eligible for award consideration.

STUDENT AWARD JUDGING CRITERIA

Below are five (5) basic questions and additional sub-questions that are used by the judges to evaluate the student award candidates. Each question is answered with a Likert scale response on evaluation sheets, with spaces for judges’ comments. The points are tallied and the comments are considered, narrowing the candidates for consideration. In the event of a tie, an overall subjective score provided by the judges from 1 – 100 will be considered.

1. Was the presentation knowledgeable and professional?
   a. For podium presentations – were the slides readable?
   b. For poster presentations – was the poster readable?
   c. How involved was the student with this project?
      i. Did the student provide well-informed responses to the questions?
      ii. How knowledgeable was the student about this project?
   d. How well did the authors follow the guidelines for abstract presentations (component parts)?

2. Was the introduction/literature review sufficient and relevant?

3. Was the study well designed?
   a. Was the purpose clearly stated?
   b. Did the methodology address the research question?
   c. Were the statistical procedures appropriate?
   d. Were the conclusions valid based on the results of the study?

4. What was the scientific impact of the research?

5. How well did the student bridge the gap with the practical application section?
SUBMISSION CHECKLIST

✓ Abstract is written in English.
✓ Research study is original and has not been previously published or presented.
✓ All required sections are provided and labeled.
✓ PURPOSE, METHODS, RESULTS, CONCLUSIONS, and PRACTICAL APPLICATIONS.
✓ All data are completed and present at the time of submission.
✓ No brand names are included (only permitted in METHODS and/or ACKNOWLEDGEMENTS sections to describe procedures).
✓ No brand names appear in the long or short title.
✓ Any funding is described in the acknowledgements section.
✓ Any potential conflicts of interest are described in the acknowledgements section.