



# Academy of Orthopaedic Physical Therapy, APTA, Inc.

## Grant Program

### Annual Progress Report

### Form

Date:  
4/4/23

Name of Investigators: Kimmerly Migel, Erik Wikstrom, Feng-Chang Lin

Name of Grant: The Impact of Real-World Vibration Gait Retraining on Gait Biomechanics in people with Chronic Ankle Instability

(Initial award date – date on contract as start date)

Award Period: 3/22/22 to 5/1/23\_\_\_\_\_

Current Year of Award completed (circle one): 1<sup>st</sup>, 2<sup>nd</sup>, no-cost extension year (3<sup>rd</sup>)

**Progress reports are due no later than 1 year plus 10 days after the initial award date. Failure to submit a timely progress report may result in the termination of your award.**

1. Summary of accomplishments in the past year:

All data has been collected and processed with proposed procedures. We are working on analyzing results and preparing manuscripts.

2. Provide a one-paragraph summary of results or abstract suitable for posting on the Academy website.

Our preliminary results indicate that the cohort enrolled in this study do not walk with a COP location that is any different than healthy controls, which likely impacted our main outcome. We determined that after a single session of vibration feedback gait retraining, people with CAI have a more lateral COP from 70-100% of stance compared to baseline and the COP was more lateral compared to controls for 80-100% of stance. After two-weeks of training, people with CAI had a more lateral COP for the first 40% of stance at posttest compared to baseline. At a 1-week, the COP was more lateral from 20-40% of stance compared to baseline. However, the COP location at posttest and follow up was no different than controls. These results are contradictory to our hypotheses.

3. Attach a list of your publications published or accepted during the past year, or currently being written. Send reprints when available. List presentations made and abstracts accepted for presentation based on this work. Indicate with an asterisk (\*) those publications supported by Academy of Orthopaedic Physical Therapy funding.

**Manuscripts:**

**Migel KG**, Blackburn JT, Gross MT, Pietrosimone BG, Thoma LM, Wikstrom EA. The impact of feedback tool sensor location on center of pressure in people with chronic ankle instability. (being written)

\***Migel KG**, Dewig DR, Blackburn JT, Gross MT, Pietrosimone BG, Thoma L, Wikstrom EA. Feasibility of two-weeks of real-world gait retraining on the center of pressure in people with chronic ankle instability. (being written)

**Migel KG**, Blackburn JT, Gross M, Pietrosimone BG, Thoma L, Wikstrom EA. Functional range of motion and postural control associate with center of pressure changes during gait retraining with haptic feedback in people with chronic ankle instability: An exploratory analysis. (being written)

**Abstracts:**

**Migel KG**, Cain MS, Pietrosimone BG, Blackburn JT, Franz JR, Song K, Jang J, Wikstrom EA. Impact of manual therapy on landing kinematics and kinetics in people with chronic ankle instability. National Athletic Trainers

Association Conference (NATA), Poster, Jun 2022.

**Migel KG**, Mueller CD, Wikstrom EA. Relationships between sensorimotor function and vibration induced changes in gait biomechanics in people with chronic ankle instability. HMSC Day. Chapel Hill, NC. Poster. Apr 2022.

**Migel KG**, Wikstrom EA. Relationships between lower leg alignment and biomechanics following gait retraining in people with chronic ankle instability: A preliminary Report. NC APTA Annual Conference. High Point, NC Poster. Oct 2022.

4. Provide a budget, using the original approved budget. Indicate total funds spent to date per major categories. If there was  $\geq 25\%$  deviation (greater or less spent) of use of funds for any of the budget category, please BRIEFLY indicate the rationale. (See example below)

EXPENSE CATEGORY	Budgeted Amount for Year 1	Actual Amount Spent in Year 1 (As of 04/04/23)	Amount Remaining in Year 1 budget	Budgeted for Year 2	Projected Expenditure in Year 2
Personnel	\$9,000	\$7,894.51	\$1,105.49	0	0
Non-Personnel					
Supplies	\$12,456	\$1,271.36	\$11,184.64	\$6250	\$6250
Research Subject Incentives	\$3,000	\$3,000	0	0	0
Tuition & Fees	\$5,544	\$5,447.06	\$96.94	0	0
<b>TOTAL</b>	<b>\$30,000</b>	<b>\$17,605.63</b>	<b>\$12,387.07</b>	<b>\$6,250</b>	<b>\$6,250</b>

**Non-Personnel Total:** Spending in this category is well under budget at approximately 63% utilization and is anticipated to remain as such.

**Supplies:** Supplies were budgeted at \$12,456 and we have spent \$1,271.36. We opted not to include sneaker purchases as each participant wore their own shoes and we were able to borrow standard lab shoes from another lab for the one instance where the participant did not arrive to the first visit with sneakers. Additionally, the feedback tool components did not need to be replaced as frequently as anticipated, therefore feedback tool costs were lower.

**ADP Computer Services:** These costs are required for all grants per UNC, however, given that one of our Co-Is is a biostatistician, we did not require additional consultation services.

**Publications:** The primary purpose of this no cost extension request is to be able to publish our results in an open access format to improve distribution of our results. The initial results provide valuable information into movement retraining programs which can be implemented into clinical practice. We anticipate at least 2-3 publications from this work.

**Postage:** Required expenditure per UNC, however, we were able to distribute all payments at data collection time points as no participants dropped out of the study.

5. Objectives for the next year: Submit at least 2-3 manuscripts from this project for publications.



04/04/2023

Your Signature

Date

**Return to:**

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