**54th Annual Meeting**
**Society for Psychophysiological Research**
**September 10-14, 2014**
**Atlanta Marriott Marquis**
**Atlanta, Georgia, USA**

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### SPR Call for Abstracts Poster Submission

Is the first author of this submission a pre-doctoral student? * No

Is the first author a member of SPR?* No

## Topic*

Main Topic: Emotion/affect  Secondary Topic: Other

## Lab Affiliation

## Descriptors*

Descriptor 1 Electrodermal activity  Descriptor 2 long-term measurement  Descriptor 3

## Abstract Submission*

**Abstract Title** AMBULATORY EDA: COMPARISONS OF BILATERAL FOREARM AND CALF LOCATIONS

**Abstract Body** The growing need for ambulatory measurement of sympathetic nervous system arousal makes it important to find an unobtrusive alternative to the palmar site for long-term measurement of electrodermal activity (EDA), where sensors may need to be worn for a month or longer. Two prior studies have shown that EDA measured on the palmar and forearm sites is highly correlated; consequently, in this work we examine EDA measured simultaneously from the left and right forearm and left and right calf locations on the bodies of healthy adult volunteers (n=32), sites that support long-term wear. Time-synchronized measurements are made while each participant experiences three types of stressors: physical, cognitive, and emotional, preceded and followed by four rest periods. We also examine the lag of EDA response times in the physical task. All multi-site cross-correlations for all tasks and rest periods had median correlation coefficients above 0.5. The bilateral EDA measurements between both calves have the highest correlation coefficients (mean = 0.91, median = 0.96) calculated over the entire experiment, followed by the correlation coefficients between the forearms (mean=0.78, median=0.91). Participants who reported regularly playing sport showed faster EDA responses to the physical task than those who were less active. All participants reported the four locations to be comfortable, while 40% of participants reported the calf to be slightly more comfortable than the forearm. This study suggests that the back of the lower calf is a viable site for long term measurement of EDA.

**Funding Information**

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**Comments**