

Associations Between Carotid-Femoral and Brachial-Femoral Pulse Wave Velocity with Sleeping Regularity in College Based Young Adults

Paul M. Ahern, Zachary Y. Kerr, Erik D. Hanson, Jake C. Diana, Aiden J. Chauntry, Kristin S. Ondrak, Jeb Struder, Craig Patterson, Patricia Pagan-Lasalle, Lee Stoner, Michelle L. Meyer, Feng Chang Lin, Justin B. Moore

METHODS

Study Design:

- Cross-sectional observational study (7-day observation period).

Participants:

- 105 college-based young adults
- 86 females, 19 males
- 65% white, 19% Asian, Native American or Pacific Islander, 6.9% black or African American, 5% more than one race, 7.9% Hispanic or Latino.

Outcome	Average (X)	SD
General Descriptives		
Height (cm)	166.71	8.99
Weight (kg)	66.05	14.39
BMI	23.65	4.18
Age (years)	20.57	1.83
Cardiovascular Profile		
cfPWV (m/s)	5.41	0.799
bfPWV (m/s)	6.84	1.21
Systolic BP (mmHG)	120.58	7.27
Diastolic BP (mmHG)	59.61	6.33
Sleep Profiles		
Average Onset Wake Time	8:19am	N/A
Average Onset Sleep Time	12:20am	N/A
Average Time In Bed (min)	435.34	N/A
Average Total Sleep Time (min)	382.7	N/A

TABLE 1. Descriptives table, general anthropometrics, cardiovascular profile, sleep profile.

Exposure Variable:

- Sleep regularity as represented by a standard deviation of wake time, sleep time, and time in bed.

Outcome Variable:

- Carotid-Femoral pulse wave velocity (cfPWV), Brachial Femoral pulse wave velocity (bfPWV).

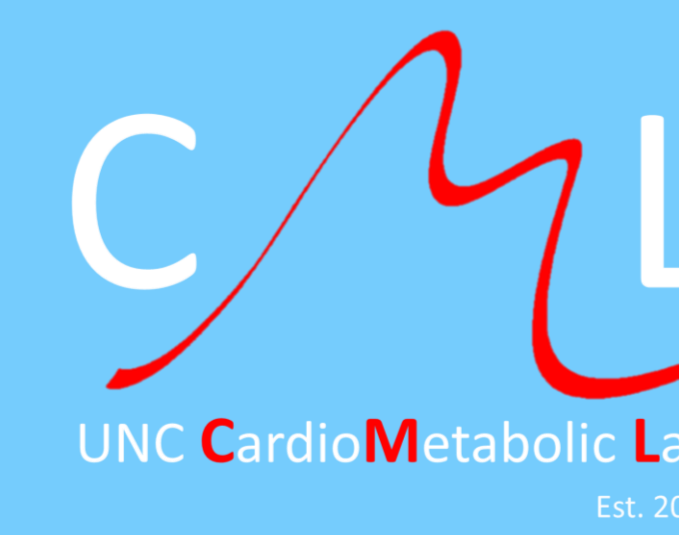
Analysis:

- Multiple linear regression (R-studio)
- Covariates: sex, race, age, ethnicity, and total sleep time

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PROBLEM

CVD is the leading cause of mortality worldwide. Inconsistency in sleep regularity has been associated with higher incidence of CVD related events in older individuals¹, and is also related with microvascular dysfunction², higher inflammation³, and higher adiposity⁴ in younger populations. The relationship between sleep regularity and arterial stiffness has not been investigated in younger populations.

OBJECTIVE

To investigate the relationship between measures of sleep regularity and arterial stiffness.

TAKE HOME

In this analysis no association between sleep regularity and arterial stiffness was found. Further investigation is necessary to derive a conclusion.

Email: paulmic@ad.unc.edu

Lab: <https://unc-cml.weebly.com/>

RG: researchgate.net/lab/UNC-Cardiometabolic-Lab-Lee-Stoner



RESULTS

Figure 1: cfPWV vs SD Onset Wake Time

- No significant relationship emerged in either our unadjusted model (P=0.210) or our adjusted model (P=0.541). Beta coefficients were not prominent in either unadjusted (0.00239) or the adjusted (0.00149) model.

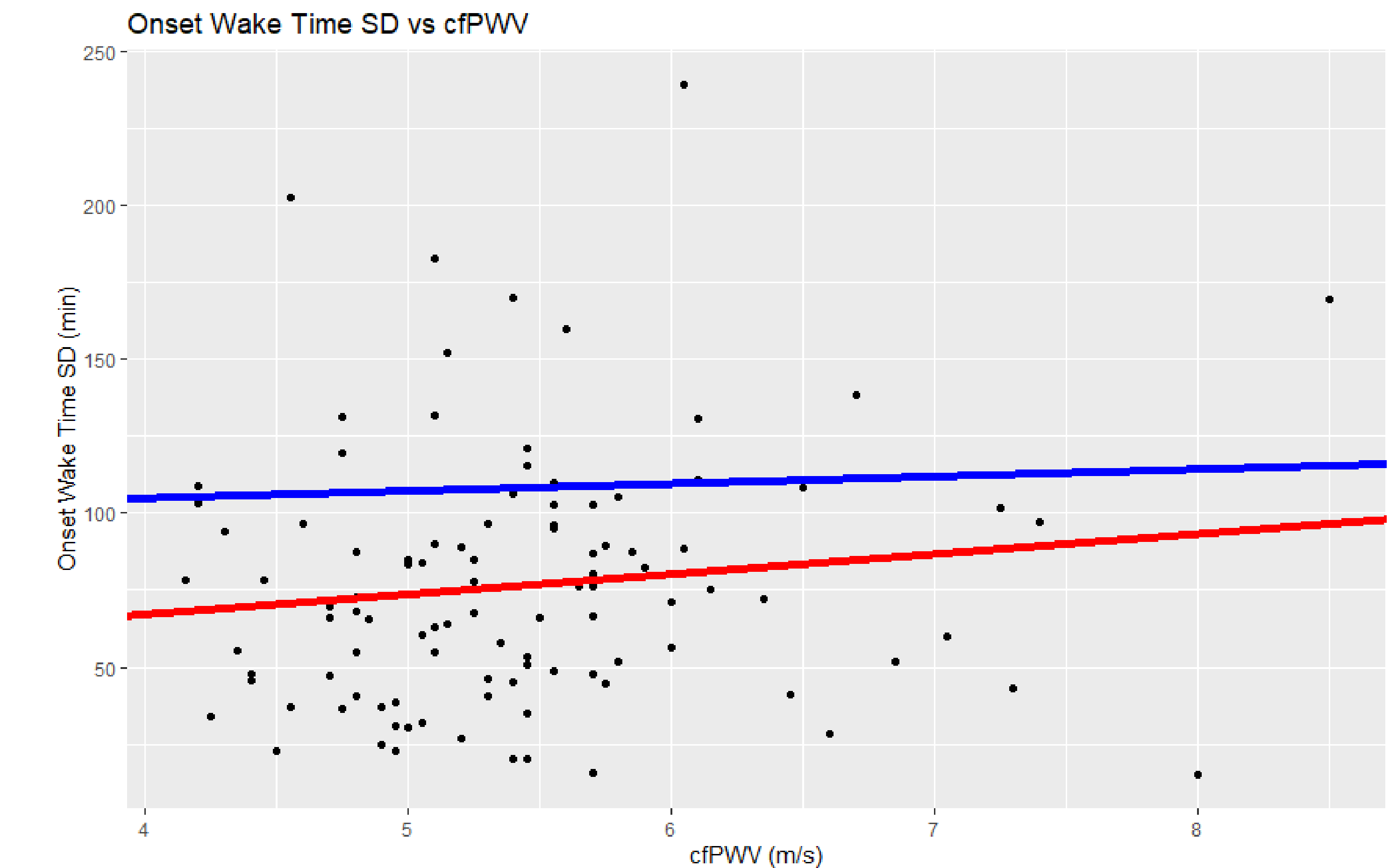


FIGURE 1. Regression plot, BLUE=Adjusted, RED=Unadjusted

Figure 2: bfPWV vs SD Onset Wake Time

- No significant relationship emerged in either our unadjusted model (P=0.625) or our adjusted model (P=0.401). Beta coefficients were not prominent in either unadjusted (0.00142) or the adjusted (0.00340) model.

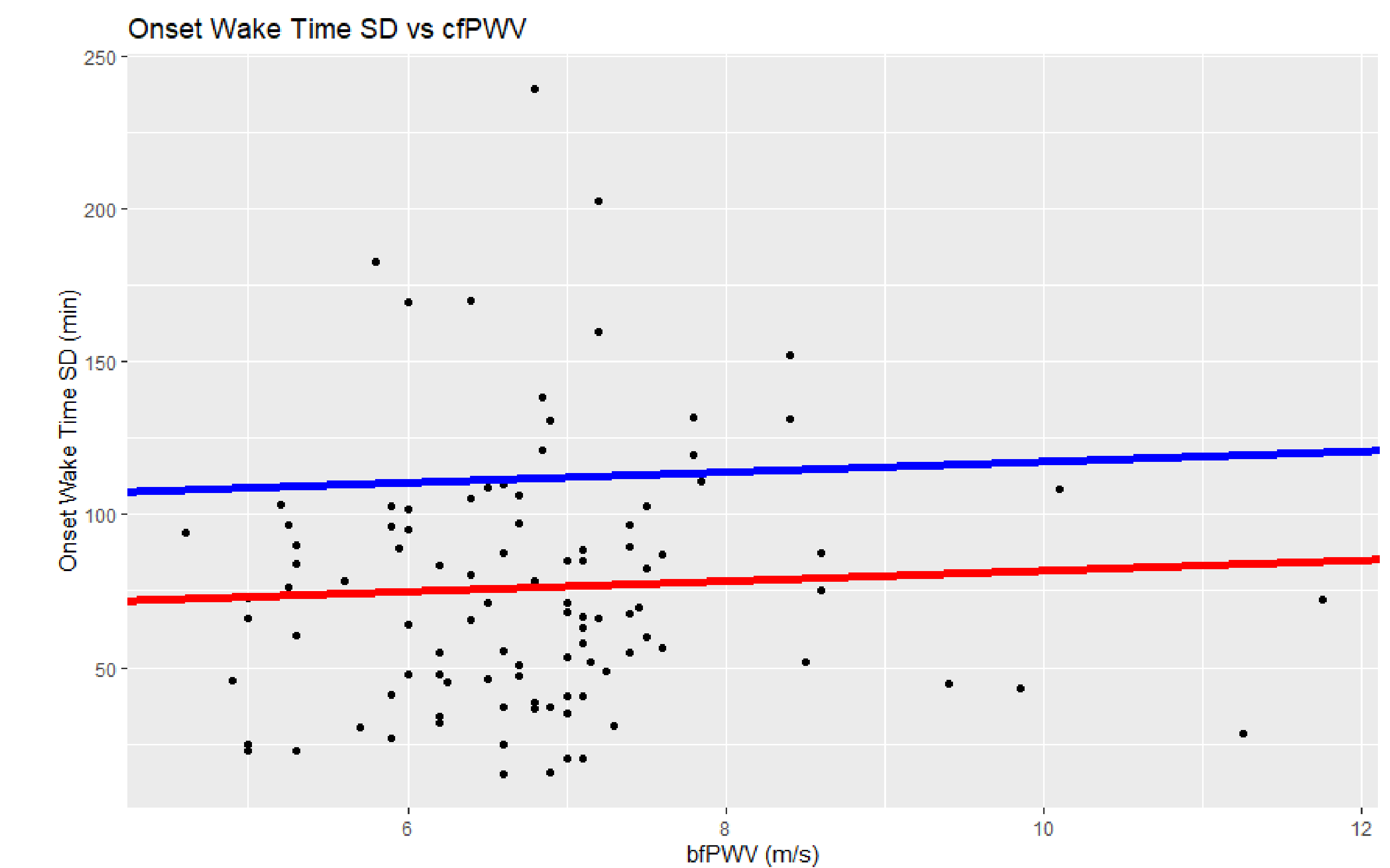


FIGURE 2. Regression plot, BLUE=Adjusted, RED=Unadjusted

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