

## INTRODUCTION

### Parameters:

Walking Trials: Heel Strike (HS), Toe Off (TO)  
 Sit-To-Walk : Seat-Off (SO), Toe-Off (TO)

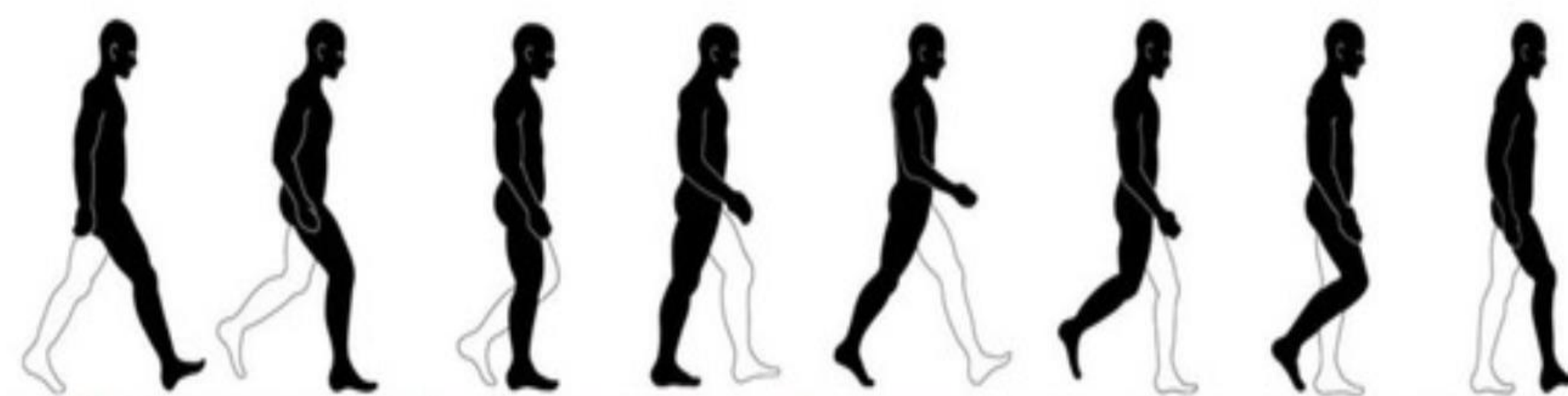


Figure A: Representation of normal walking trials.

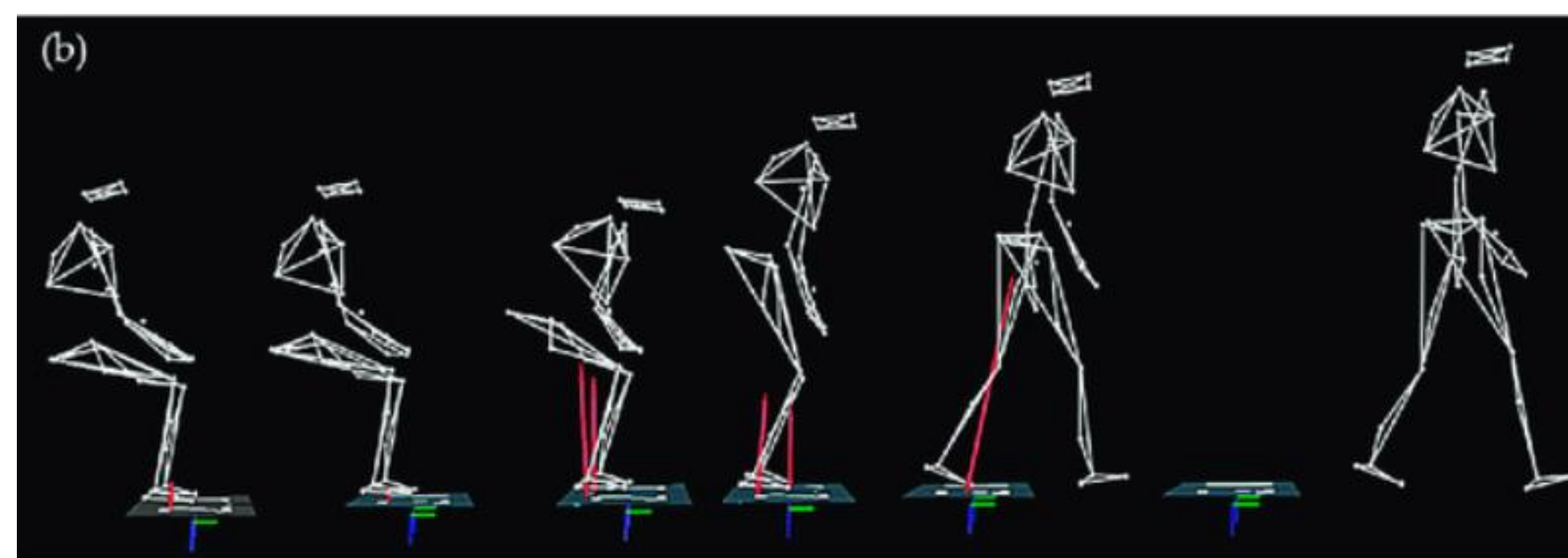


Figure B: Representation of sit-to-walk (STW) trials.

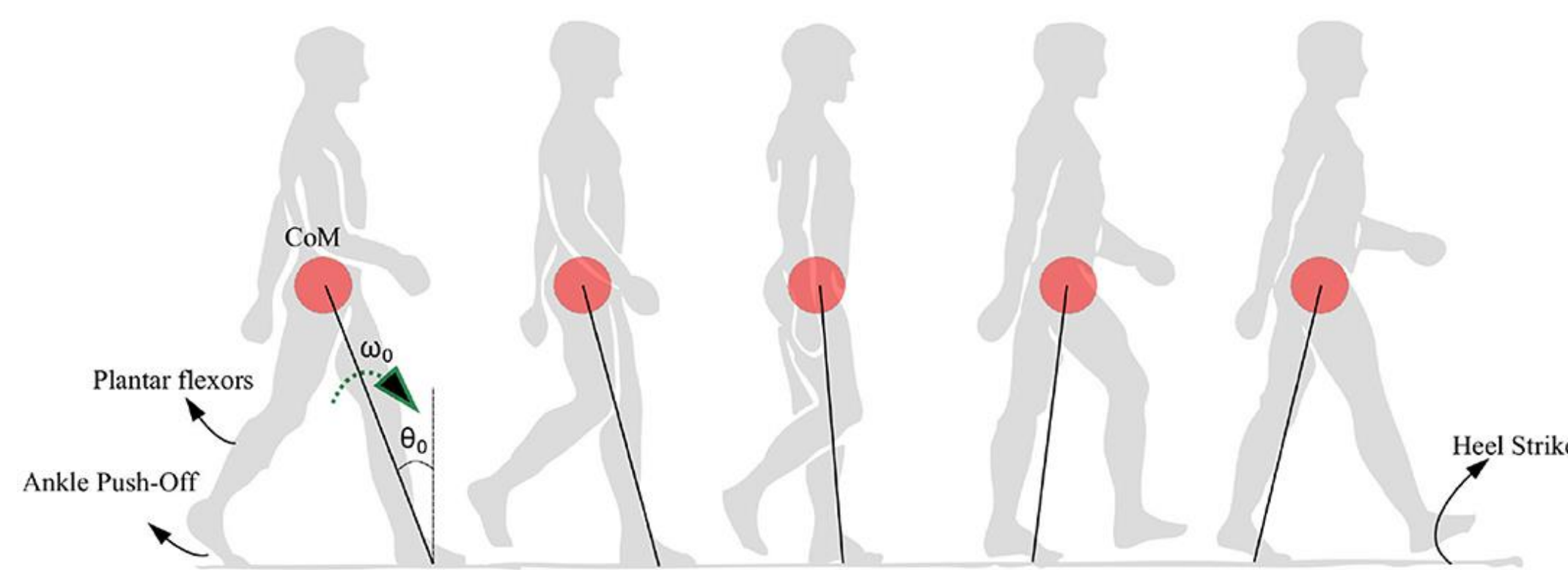


Figure C: Representation of center of mass (COM) to ankle angle at different moments during gait cycle.

## OBJECTIVE & HYPOTHESIS

- Objective:** Explore how emotions affect the COM-to-ankle angle and dynamic balance during gait initiation and sit-to-walk transitions in young adults.
- Hypothesis:** High arousal emotions such as anger, fear, and joy will change the angle, whereas neutral and sadness should have no effect and remain like the baseline.

## METHODS

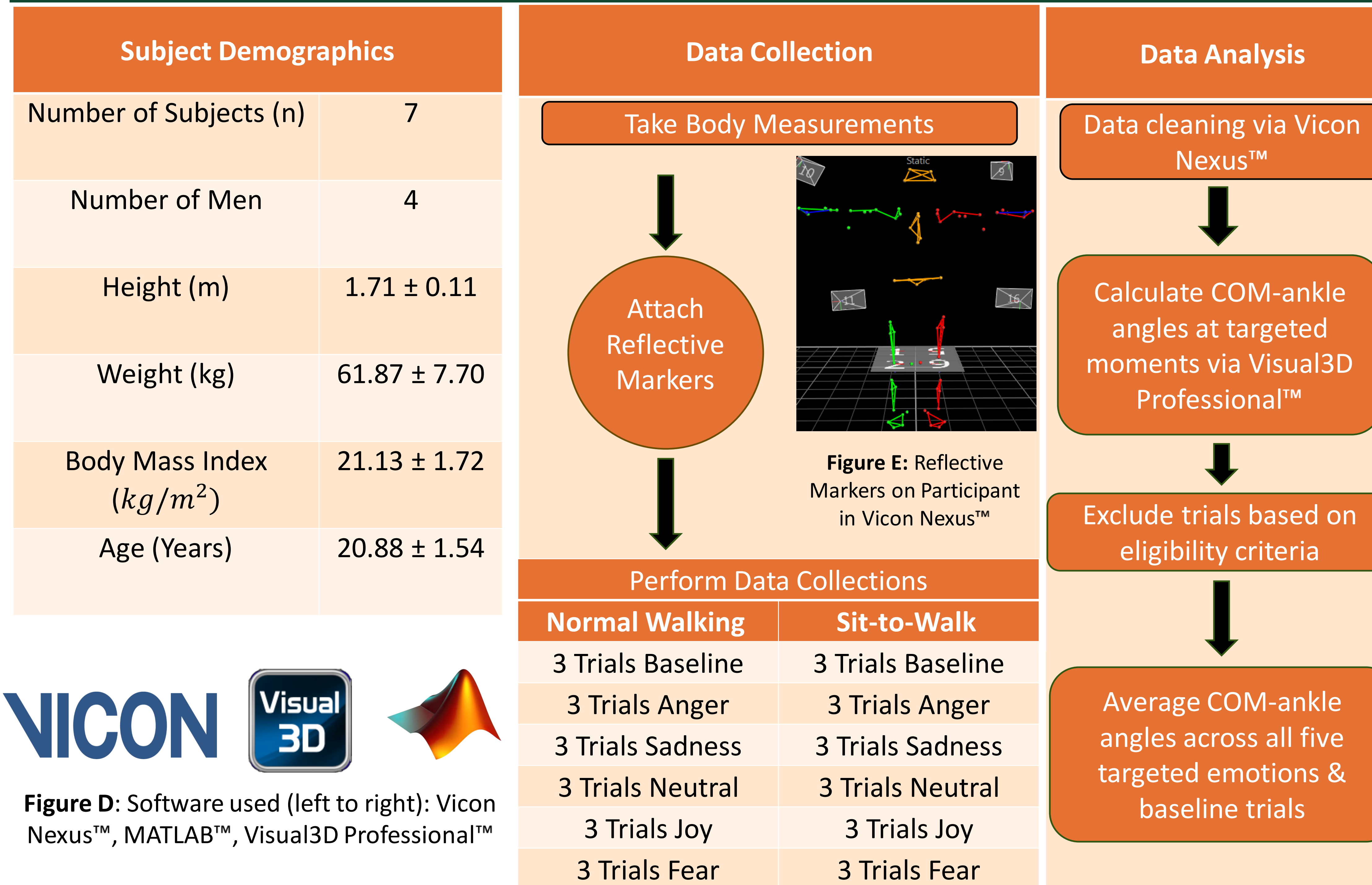


Figure D: Software used (left to right): Vicon Nexus™, MATLAB™, Visual3D Professional™

## RESULTS

### Mean COM Ankle Angles at Gait Initiation and Sit-To-Walk Transition Moments for Baseline and Targeted Emotions

Trial Types	Walking				Sit-To-Walk			
	Heel Strike	Toe Off	P-value	Cohen's D	Seat Off	Toe Off	P-value	Cohen's D
Baseline	18.65°	26.78°			20.15°	21.32°		
Anger	18.56°	27.97°	HS = 0.64 TO = 0.03	HS = - 0.17 TO = 1.51	19.99°	21.11°	SO = 0.83 TO = <0.001	SO = 0.11 TO = 1.47
Sadness	18.19°	27.34°	HS = 0.33 TO = 0.25	HS = 0.52 TO = 0.66	19.65°	20.25°	SO = 0.63 TO = <0.001	SO = 0.25 TO = 4.94
Neutral	18.22°	27.29°	HS = 0.08 TO = 0.01	HS = 0.80 TO = 1.60	19.57°	20.78°	SO = 0.39 TO = <0.001	SO = 0.42 TO = 3.40
Joy	18.75°	27.31°	HS = 0.68 TO = 0.07	HS = 0.17 TO = 1.06	19.06°	21.04°	SO = 0.03 TO = 0.01	SO = 1.07 TO = 1.47
Fear	18.16°	27.35°	HS = 0.03 TO = 0.02	HS = 0.99 TO = 1.44	19.28°	20.29°	SO = 0.11 TO = <0.001	SO = 0.78 TO = 6.02

Cohen's D values: small (0.2), medium (0.5), and large (0.8)  
 P-value<0.05: Correlating Observation

## CONCLUSION

### Significant findings:

- Anger, fear, and joy alter angles/moments compared to a neutral state.
- Fear shows the most considerable deviation during gait initiation.
- Joy significantly alters balance during the sit-to-walk transition.

### Implications and potential applications:

- Emotional states influence biomechanics of balance and movement.
- May enhance physical therapy and motor control understanding.

### Future Research:

- Larger sample size and varied demographics could enhance findings.
- Aim at developing interventions for emotion-affected balance.

## REFERENCES

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- Point/Counterpoint Is Emotional Intelligence a Good Measure of Leadership Ability? (n.d.). [www.shrm.org](https://www.shrm.org/topics-tools/news/hr-magazine/point-counterpoint-emotional-intelligence-good-measure-leadership-ability#:~:text=The%20average%20person%20has%20more). <https://www.shrm.org/topics-tools/news/hr-magazine/point-counterpoint-emotional-intelligence-good-measure-leadership-ability#:~:text=The%20average%20person%20has%20more>

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Contact