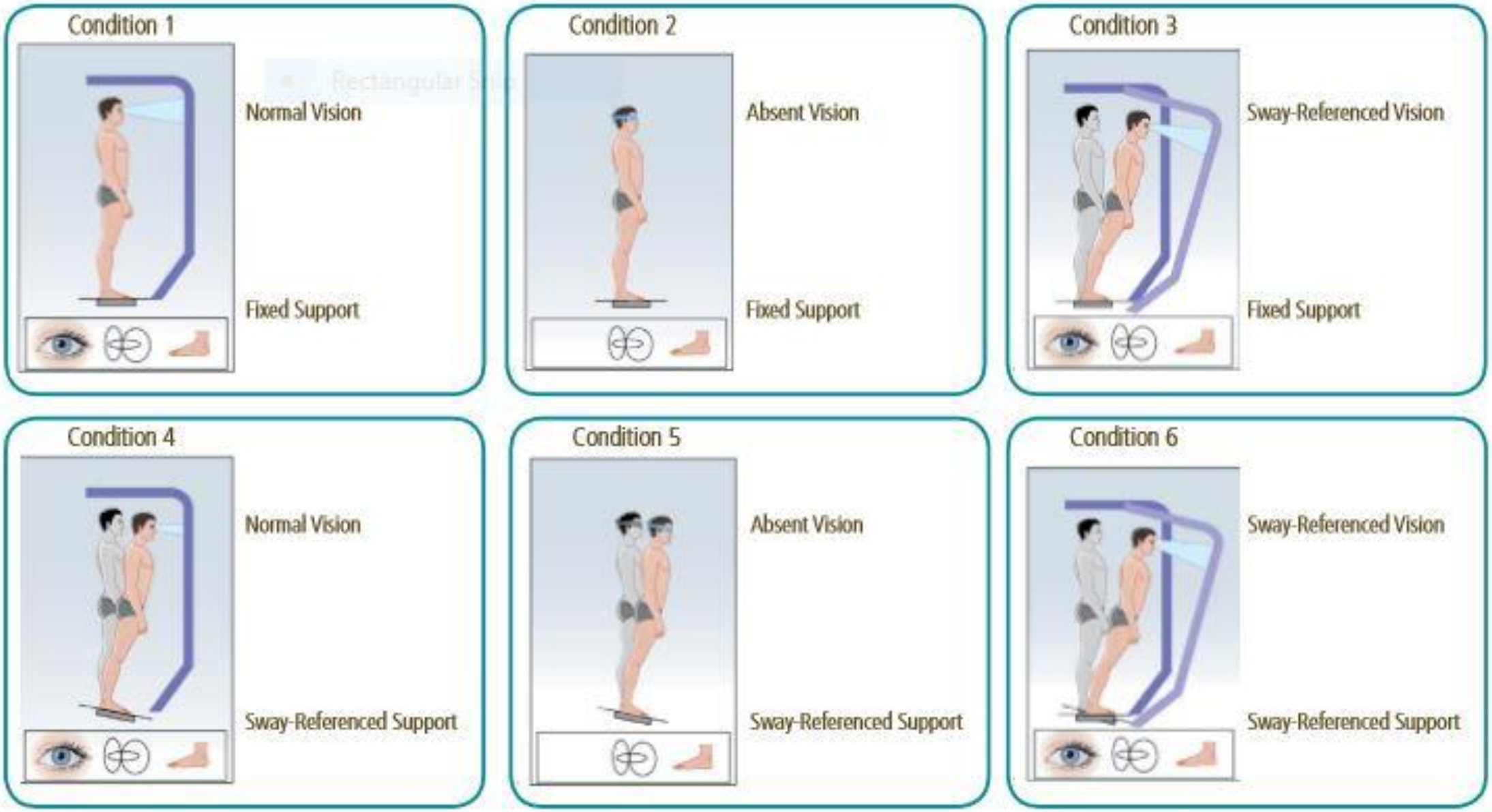
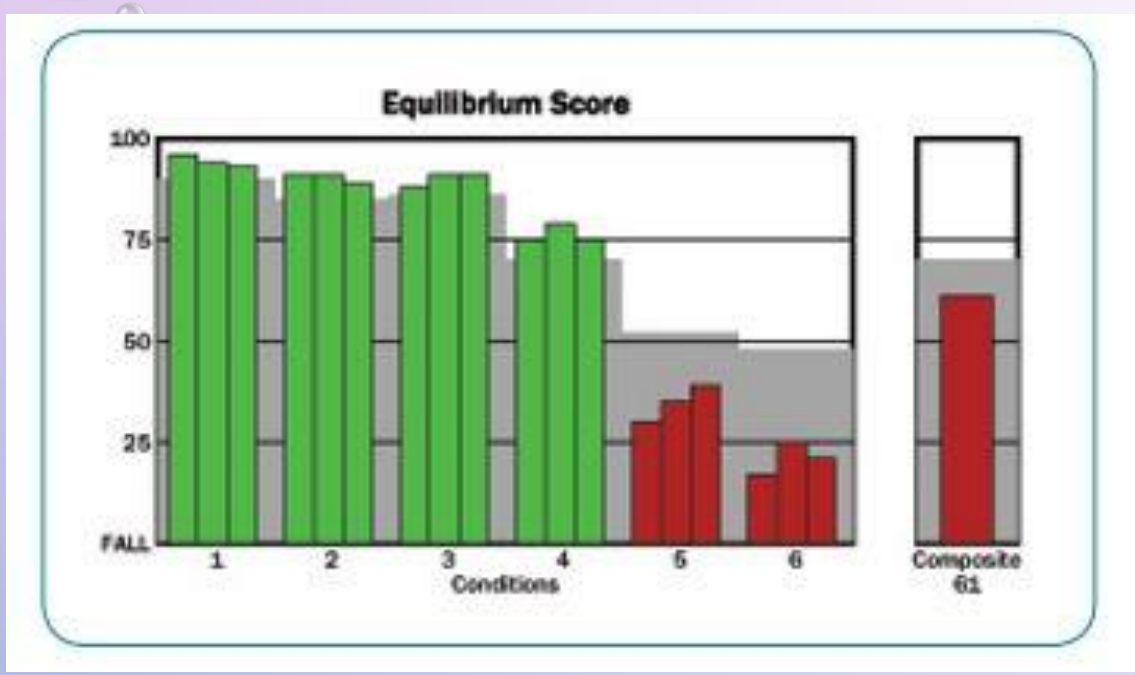
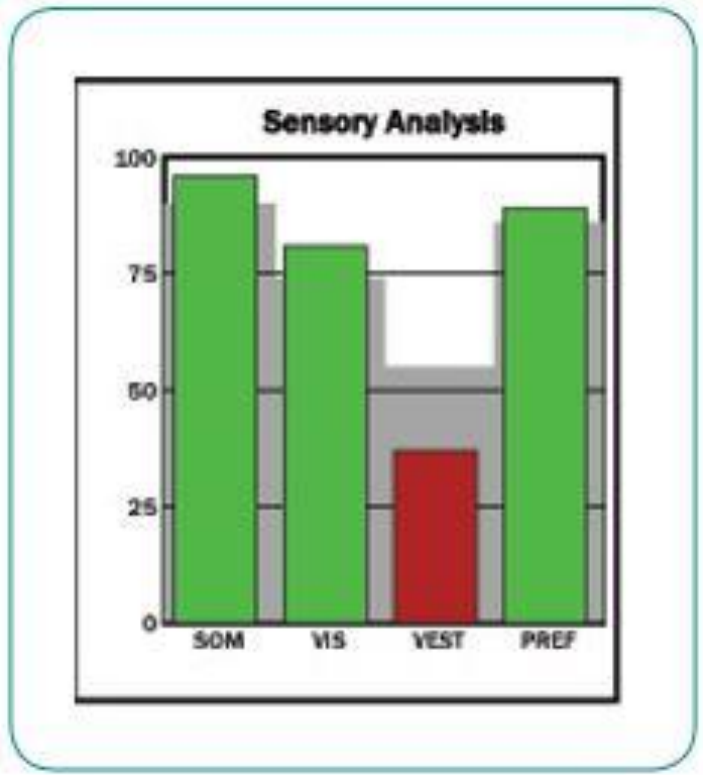

Condition 1
Normal Vision
Fixed Support
Condition 2
Absent Vision
Fixed Support
Condition 3
Sway-Referenced Vision
Fixed Support
Condition 4
Normal Vision
Sway-Referenced Support
Condition 5
Absent Vision
Sway-Referenced Support
Condition 6
Sway-Referenced Vision
Sway-Referenced Support

DATA ANALYSIS





- The 3 scores for each trial were averaged.
- The NeuroCom program performed calculations to provide the composite balance score.

SOM	Condition 2 / Condition 1	Patient's ability to use input from **somatosensory** system to maintain balance
VIS	Condition 4 / Condition 1	Patient's ability to use input from **visual** system to maintain balance
VEST	Condition 5 / Condition 1	Patient's ability to use input from **vestibular** system to maintain balance

SAMPLE (N=28)

Mean age	75
Range	66-91
Gender	
Female	23 (82)
Male	5 (18)
Marital Status	**n (%)**
Never Married	3 (11)
Married/partner	16 (57)
Divorced/separated	3 (11)
Widowed	6 (21)
Education	**n (%)**
High School/ GED	3 (11)
Some college	7 (25)
College Graduate	8 (29)
Some graduate work	4 (14)
Graduate degree or higher	6 (21)
Income	**n (%)**
<$20k	1 (4)
$20k - <$35k	3 (11)
$35k - <$55k	2 (7)
$55k - < $75k	5 (18)
$75k +	11 (39)

Self-reported Health	**n (%)**
Physical Health	
Excellent	7 (25)
Very Good	12 (43)
Good	8 (29)
Fair	1 (4)
Mental Health	
Excellent	13 (46)
Very Good	10 (36)
Good	5 (18)
Exercise	
None	2 (7)
Mild	7 (25)
Moderate/Strenuous	19 (68)

FALL RESULTS (N=28)

First Assessment	n (%)
Fall in past year	
No falls	11 (39)
One fall	11 (39)
>1 fall	6 (21)
Fall in past 5 years	
No falls	7 (25)
One fall	6 (21)
>1 fall	15 (54)
Where fall occurred	
Indoors	2 (7)
Outdoors	12 (43)
Both	6 (21)
Cause of fall	
Dizziness	1 (4)
Tripping	13 (46)
Slipping	11 (39)
Injury Occurred	
Yes	11 (39)
Serious Injury	
Yes	5 (18)

Second Assessment	n (%)
Fall since program	
No falls	17 (61)
One fall	4 (14)
>1 fall	1 (4)
Where fall occurred	
Indoors	2 (7)
Outdoors	2 (7)
Both	1 (4)
Cause of fall	
Dizziness	0 (0)
Tripping	2 (7)
Slipping	3 (11)
Injury Occurred	
Yes	1 (4)
Serious Injury	
Yes	1 (4)

T-TESTS RESULTS

	Composite Score	Somatosensory	Visual	Vestibular	Balance Confidence
Overall Sample (N=28)					
1st assessment	64.38	97.26	79.35	45.17	3.35
2nd assessment	66.62	96.65	82.80	46.70	**4.0***
Yoga (n=8)					
1st assessment	65.38	97.42	78.42	46.96	3.67
2nd assessment	70	98.88	**85.33***	54.25	4.17
Tai Chi (n=7)					
1st assessment	61.14	95.78	77.14	36.90	3.33
2nd assessment	61.86	94.40	85.16	31.70	**4.0***
MOB (n=6)					
1st assessment	66.83	98.78	83.15	52.43	3.0
2nd assessment	67.67	96.31	76.66	54.14	3.8

Note: *$p < .05$

DISCUSSION

Limitations

- Small sample size, with no diversity
- Large drop-out due to time commitment and scheduling issues
- Not random assignment
- NeuroCom had no comparative norms for 80+
- No way to tell specific cause of improvements made
    - Too many variables (in the study and outside of study)

Strengths

- Community engagement and feedback was positive
- MOB discussions helped participants learn about themselves and reduce FOF
- Connections and friendship were formed
    - Combats social isolation
- Established protocol to complete on an annual basis, open to the community.

Future recommendations

- Limited research on balance yoga. More studies should be conducted targeting the older population
- This pilot study shows promise, so should be replicated on a larger scale and with a more diverse population
- NeuroCom needs to extend database for comparative norms for 80+

TAKE HOME MESSAGE

- We established a protocol for the Fall risk assessment clinic.
- The next annual clinic will be the weekend of September 29th, 2018.
- Based on our limited sample, it appears that MOB does help improve Balance Confidence, which reduces the risk of falling. However, the impact could be strengthened when combined with a balance-specific exercise program, such as balance yoga.

REFERENCES

Alexander, J. L., Sartor-Glittenberg, C., Bordenave, E., & Bordenave, L. (2015). Effect of the matter of balance program on balance confidence in older adults. *GeroPsych: The Journal of Gerontopsychology and Geriatric Psychiatry*, *28*(4), 183.

Balance. (n.d.). Retrieved December 06, 2016, from http://www.physio-pedia.com/Balance

Bergen, G., Stevens, M. R., & Burns, E. R. (2016). Falls and fall injuries among adults aged≥ 65 years—United States, 2014. *MMWR. Morbidity and Mortality Weekly Report*, *65*.

CDC, STEADI. (n.d.). *Risk Factors for Falls* [Brochure]. Author. Retrieved from https://www.cdc.gov/steadi/pdf/risk_factors_for_falls-a.pdf

Hakim, R. M., Kotroba, E., Cours, J., Teel, S., & Leininger, P. M. (2010). A cross-sectional study of balance-related measures with older adults who participated in tai chi, yoga, or no exercise. *Physical & Occupational Therapy in Geriatrics, 28*(1), 63-74. doi:10.3109/02703181003605861

Haynes, M., League, P., & Neault, G. (2015). A Matter of Balance: Older adults taking control of falls by building confidence. *Frontiers in Public Health, 2*. doi:10.3389/fpubh.2014.00274

Hu, Y., Chung, Y., Yu, H., Chen, Y., Tsai, C., & Hu, G. (2016). Effect of tai chi exercise on fall prevention in older adults: systematic review and meta-analysis of randomized controlled trials. *International Journal of Gerontology, 10*(3), 131-136. doi:10.1016/j.ijge.2016.06.002

A Matter of Balance - Falls Prevention Program. (n.d.). Retrieved June 09, 2017, from https://www.ncoa.org/resources/program-summary-a-matter-of-balance/

Nick, N., Petramfar, P., Ghodsbin, F., Keshavarzi, S., & Jahanbin, I. (2016). The effect of yoga on balance and fear of falling in older adults. *PM&R: The Journal of the American Academy of Physical Medicine and Rehabilitation, 8*(2), 145-151. doi:10.1016/j.pmrj.2015.06.442

Patel, N. K., Akkihebbalu, S., Espinoza, S. E., & Chiodo, L. K. (2011). Perceptions of a community-based yoga intervention for older adults. *Activities, Adaptation & Aging, 35*(2), 151-163. doi:10.1080/01924788.2011.574256

Watson, Mary Ann, F. Owen Black, and Matthew Crowson. "The Human Balance System." *Vestibular Disorders Association*. N.p., 2016. Web. 06 Dec. 2016.

Wu, Y., Macdonald, H. V., & Pescatello, L. S. (2016). Evaluating exercise prescription and instructional methods used in tai chi studies aimed at improving balance in older adults: a systematic review. *Journal of the American Geriatrics Society, 64*(10), 2074-2080. doi:10.1111/jgs.14242

Youkhana, S., Dean, C. M., Wolff, M., Sherrington, C., & Tiedemann, A. (2015). Yoga-based exercise improves balance and mobility in people aged 60 and over: A systematic review and meta-analysis. *Age and Ageing, 45*(1), 21-29. doi:10.1093/ageing/afv175