

THIS IS

BELLABEE

BELLABEE WEARABLE



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences

Fakulteit Gesondheidswetenskappe
Lefapha la Disaense tša Maphelo



The effect of pulse electromagnetic field stimulation training on the neuro-agility of netball players

Rebekah Janse van Rensburg

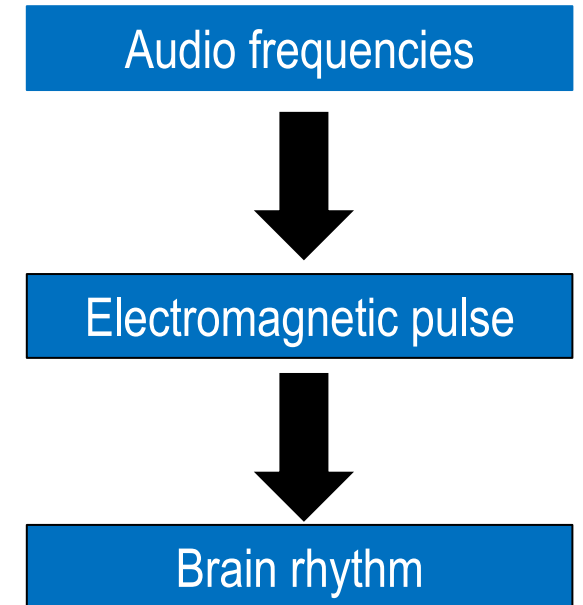
23 October 2019

Make today matter



Introduction

- Neuro-agility
- Skill related fitness (SRF)
 - Coordination
- Pulse electromagnetic field (PEMF) stimulation
 - Bellabee device



NAP™

- Neurolink™
- “You cant improve what you cant measure “

NEURODESIGN

7 Neurophysiological components

NEUROAGILITY

6 Brain Drivers

Flexibility in learning and thinking

Speed and ease of learning and thinking

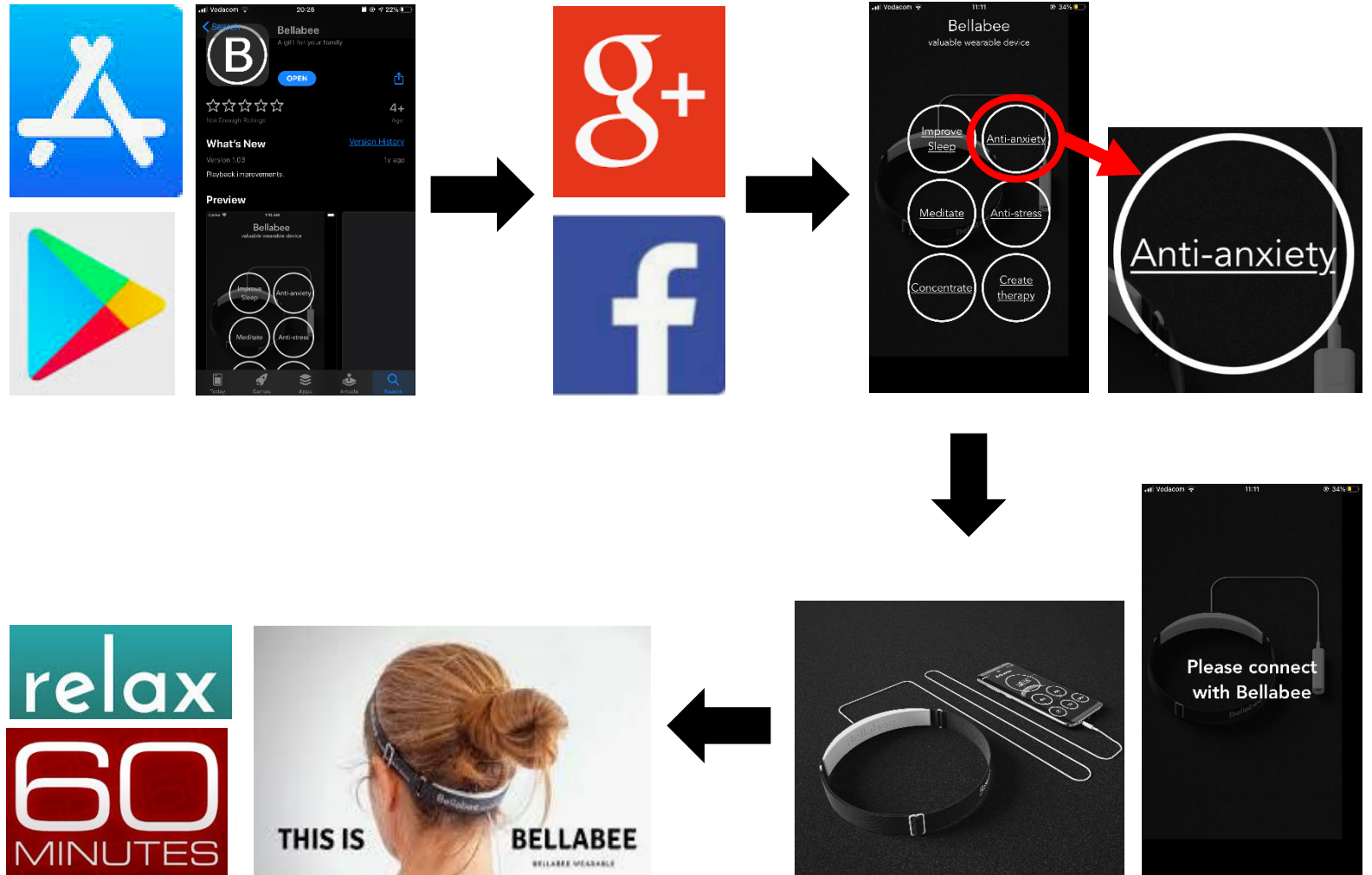
Learning Skills

- Memory
- Reading
- Note-taking
- Listening
- Concentration



Bellabee

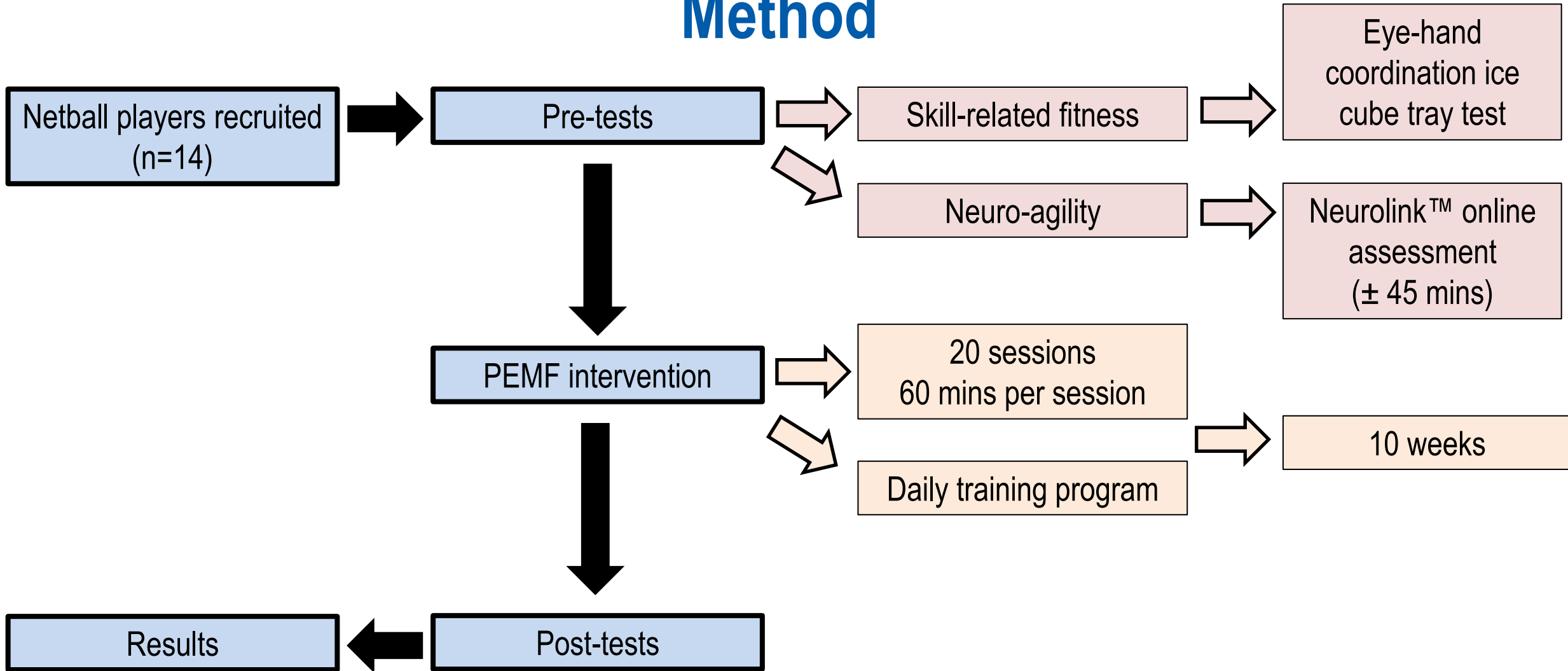
- FDA approved
- Safe to use
 - 200 micro-teslas
- Balance brainwaves
 - Energise / relax



Aim

To determine whether pulse electromagnetic field (PEMF) stimulation is an effective intervention, as part of a training program, in improving netball players' neuro-agility and their performance.

Method



Results - Brain Drivers

	Pre-intervention (mean ± SD)	Post-intervention (mean ± SD)	Difference (mean ± SD)	Asymp. Sig. (2- tailed)
Brain Fitness	4.93 ± 1.816	6.71 ± 1.73	1.79 ± 1.968	↑ 0.007*
Stress	7.64 ± 1.75	7.93 ± 1.83	0.29 ± 1.708	↑ 0.436
Sleep	6.21 ± 2.17	7 ± 1.55	0.79 ± 1.567	↑ 0.094
Movement	7.5 ± 1.45	8.14 ± 1.4	0.64 ± 1.630	↑ 0.151
Attitude	7.79 ± 1.14	7.86 ± 1.18	0.07 ± 0.961	↑ 0.776
Food	6.36 ± 1.23	7.14 ± 1.4	0.79 ± 1.423	↑ 0.061

* $p < 0.05$

Results - Learning Skills

	Pre-intervention (mean ± SD)	Post- intervention (mean ± SD)	Difference (mean ± SD)	Asymp. Sig. (2- tailed)
General	7.23 ± 2.547	8.46 ± 1.599	1.23 ± 2.292	↑ 0.080
Memory	7.23 ± 1.671	8 ± 1.754	0.77 ± 1.671	↑ 0.119
Reading	4.77 ± 2.006	5.54 ± 2.274	0.77 ± 1.250	↑ 0.041*
Note-taking	6.46 ± 2.240	7.69 ± 1.727	1.23 ± 2.423	↑ 0.099
Listening	4.15 ± 2.143	5.54 ± 1.946	1.38 ± 1.643	↑ 0.008*
Concentration	5.23 ± 2.547	6.77 ± 1.846	1.54 ± 2.373	↑ 0.043*


* $p < 0.05$

Results – Neuro-agility

	Pre-intervention (mean ± SD)	Post- intervention (mean ± SD)	Difference (mean ± SD)	Asymp. Sig. (2- tailed)
Neuro-agility (%)	62.43 ± 9.905	73.93 ± 9.327	11.5 ± 13.031	↑ 0.010*

* $p < 0.05$

Results - Skill Related Fitness

	Pre-test (mean \pm SD)	Post-test (mean \pm SD)	Difference (mean \pm SD)	Asymp. Sig. (2- tailed)
Eye-hand coordination (sec)	24.80 \pm 4.185	9.3 \pm 3.268	-15.5 \pm 5.462	 0.005*

* $p < 0.05$

Conclusion

- PEMF training as part of a training program
 - Improves neuro-agility and SRF significantly
 - Moderate positive correlation (Spearman's $\rho = 0.367$)
- Impact
 - Team won South African championship
- Potential in this method of training in becoming more commonly used

Limitations

- Limitations
 - Small sample size
 - Population variance (female, 15-19 years old, sport-related skills, same training program)

Future Studies

- Future Studies

- Effect of PEMF, as part of a training program, on health-related fitness
- Effect of PEMF, as part of a training program, on SRF in more depth
- Effect of training program on performance
- Effect of PEMF on performance



Acknowledgements

- Dr Andre Vermeulen (Neurolink)
- Tuks Athletics Club
- Afrikaans Hoer Meisieskool

THANK YOU



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