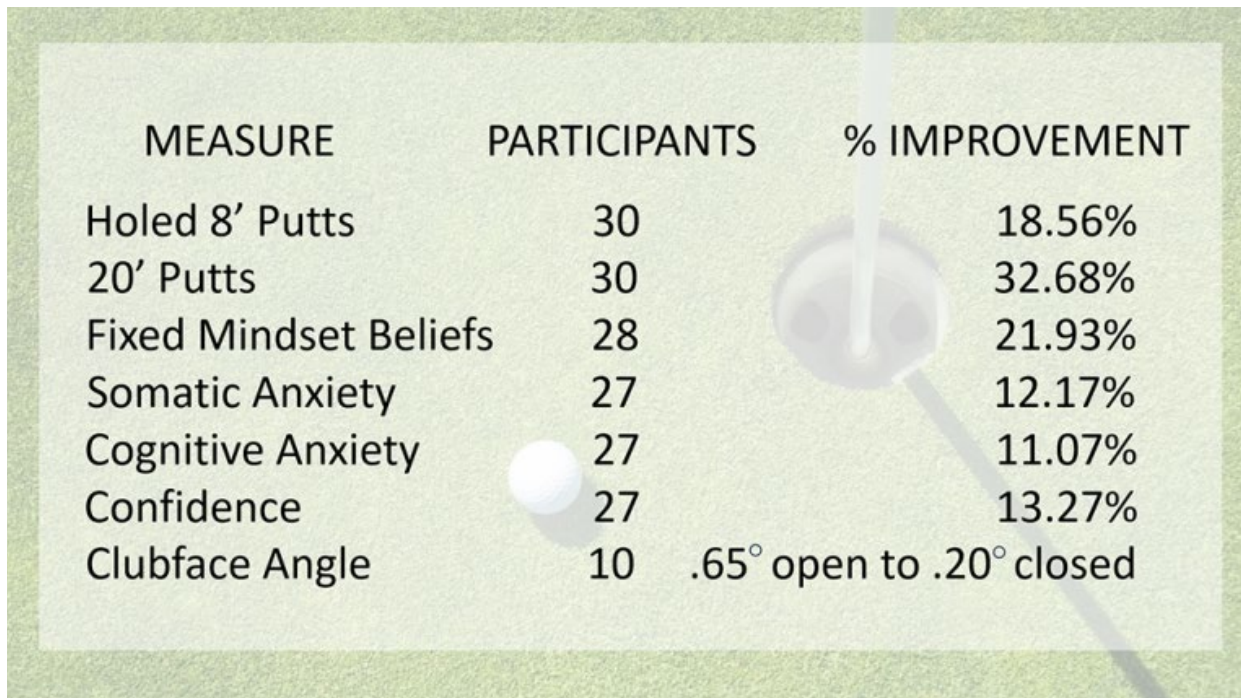


Abstract: 2023 USA National Golf Pilot Results
Mental Skills and Putting Performance Improvement for Amateur and Professional Athletes.
Susan Shapcott, PhD. MetaBrain Labs, LLC. Bellevue, WA. September 2023

Backgrounds: Tools and Interventions demonstrating improvement in cognitive skills for amateur and professional athletes are needed. MetaBrain Labs, Inc. has demonstrated through feasibility studies improvement in mental skills for the sport of Golf (Shapcott, June 2023) with a Chatbot adaptive therapy bioinformatics tool skills program intervention for golfers.

Methods: Thirty golfers based in the USA were recruited from the MetaBrain Labs, Inc. leadership team, personal contact network and a LI post in December 2022. Golfers completed a pre-intervention survey that measured performance anxiety about putting and ability beliefs using the Fixed Mindset app (Dweck, 1999) and Competitive State Anxiety-2(CSAI-2R; Cox et al 2003). The athlete's performance was directly observed and measured with a Blast Motion golf sensor for the completion of two putting tasks: 8 foot putting and 20 foot putting. Data from seven measures were collected: 1) holed 8ft putts, 2) Distance of 20-foot putts, 3) fixed mindset belief, 4) somatic anxiety, 5) cognitive anxiety, 6) confidence, and 7) club side angle. The MetaBrain Labs, LLC bioinformatics software system Chatbot intervention (MetaBrain Labs (US patent applications 17/941,496, 63/261,037, 17/941,559, and 17,941,533, with September 9, 2021, priority date) delivered the Golf program using an app, chatbot, and EEG neurotech wearable headset (Brainlink). Twenty eight total sessions were completed over two weeks twice a day to deliver the cognitive adaptive theory golf program.

Results: Thirty golfers were recruited for the pilot study with a range of 30 to 10 participants who completed the data collection process on the seven measures. The demographics of the participants were predominantly male (96%), average age of 42.19 years, with 26 average years of golfing experience and a baseline average 18-hole performance score of 87.6. Putting performance demonstrated an 18.6% improvement on the 8 holed putts, 32.7% improvement on the 20 foot putts and, 65 degree open and .20 degree closed for the clubface angle. In addition, there was an improvement in 21.9% fixed mindset beliefs, 12.7% in cognitive anxiety and 13.7% of confidence in performance.



MEASURE	PARTICIPANTS	% IMPROVEMENT
Holed 8' Putts	30	18.56%
20' Putts	30	32.68%
Fixed Mindset Beliefs	28	21.93%
Somatic Anxiety	27	12.17%
Cognitive Anxiety	27	11.07%
Confidence	27	13.27%
Clubface Angle	10	.65° open to .20° closed

Conclusions: The MetaBrain Labs LLC pilot study demonstrates cognitive athlete skill improvement in performance in putting and critical technical measures and mental belief measures for experienced golfers. Additional research is ongoing to test the implementation of cognitive adaptive theory programs in other domains using the MetaBrain Labs, bioinformatics software tool for 93 programs in 6 healthcare domains.