




3D Golf BioDynamics Putting Analysis

First Name: Markus	Last Name: Oestberg	Test type: Initial Test
Date: 07-Dec-2010	Email: markuso1986@yahoo.com	
Mass: 66 kg	Height: 162 cm	Handicap: pro

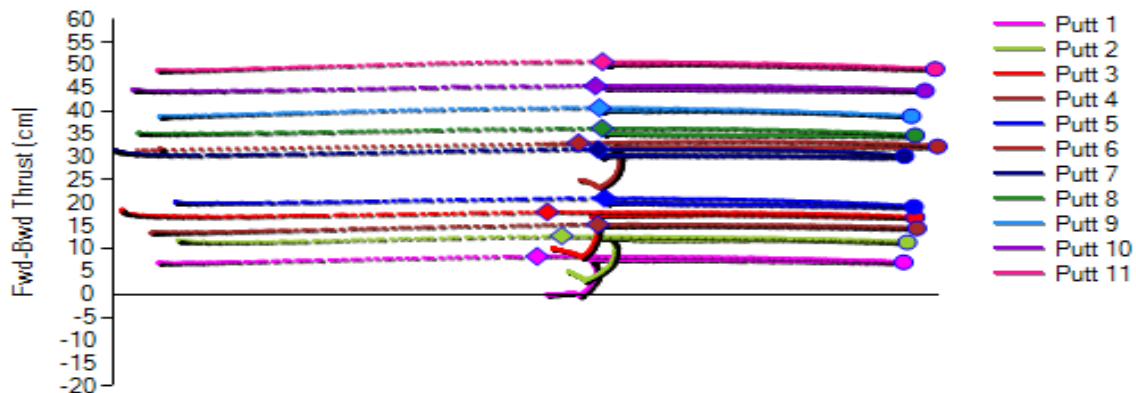
Key Findings:

Putter Motion

Face Rotation

	Address	Top	Impact	Finish	
You	0.2	-8.0	-1.0	9.9	

Putter Path - Top View



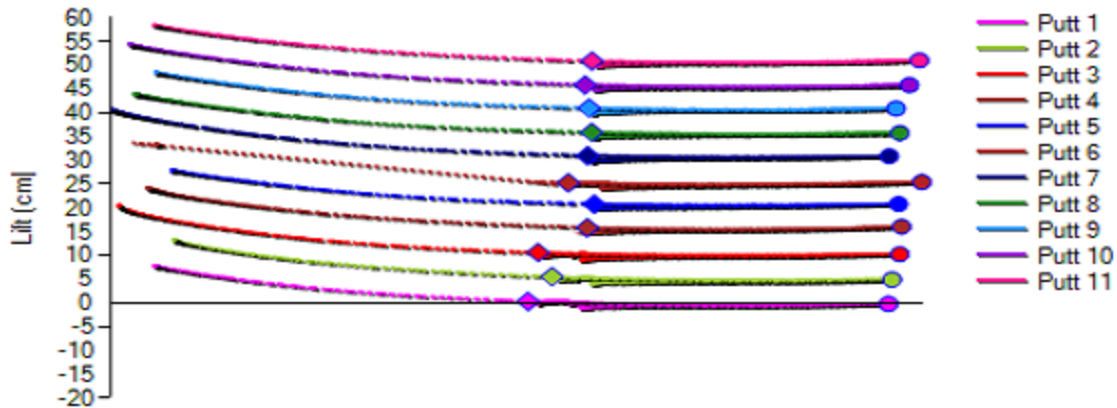


Face Loft & Shaft Lean

	Address	Top	Impact	Finish
Putter Rise			4.4	
Face Loft	-11.6	-23.3	-11.8	3.4
Shaft Lean	1.2	16.1	1.9	-17.9

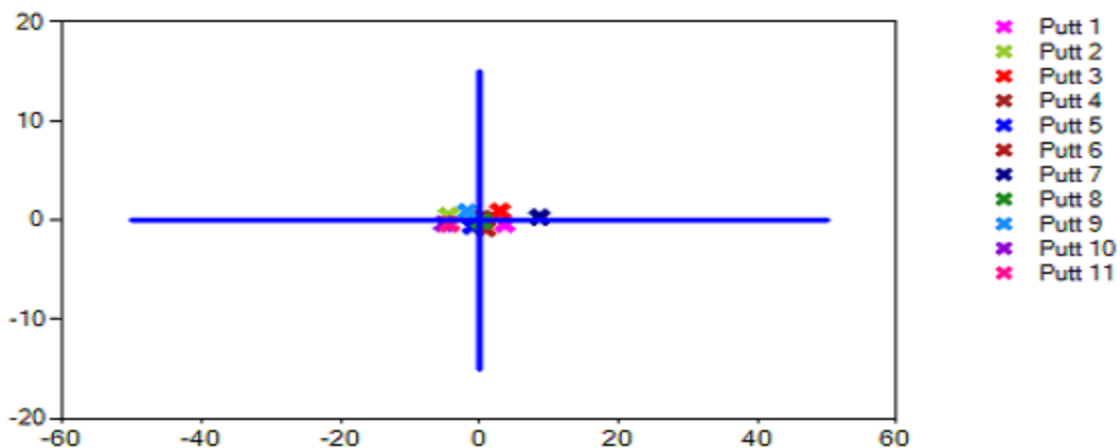


Putter Path - Side View



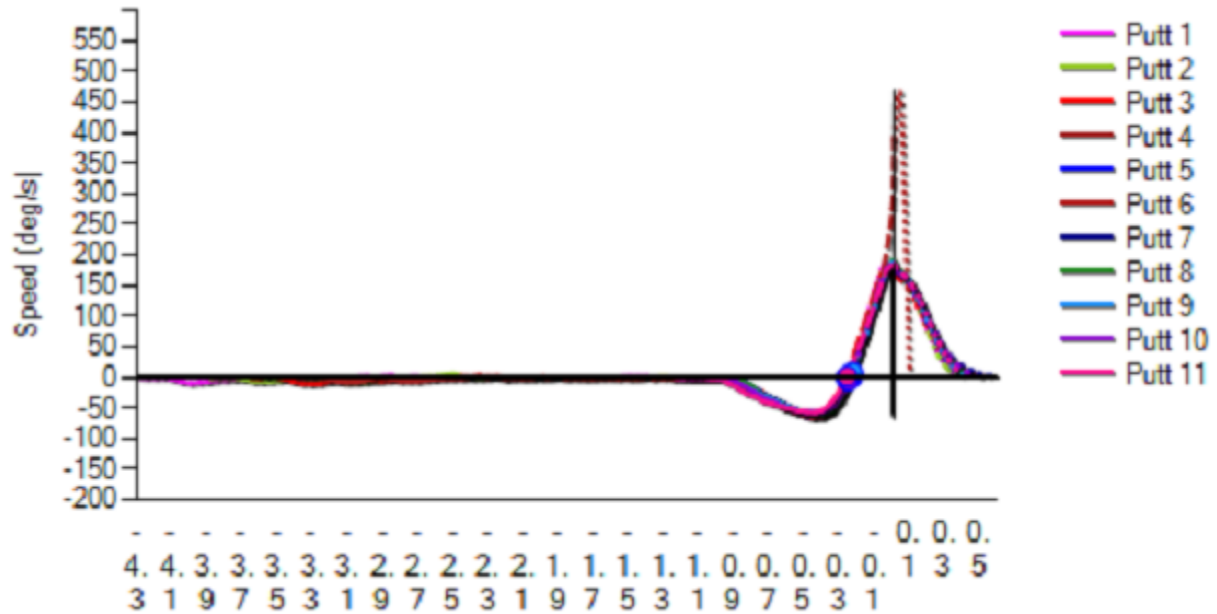
Impact Location

	Minimum (mm)	Maximum (mm)	Range (mm)
Heel/Toe	-5.1	8.6	13.7
Up/Down	-0.9	0.9	1.8

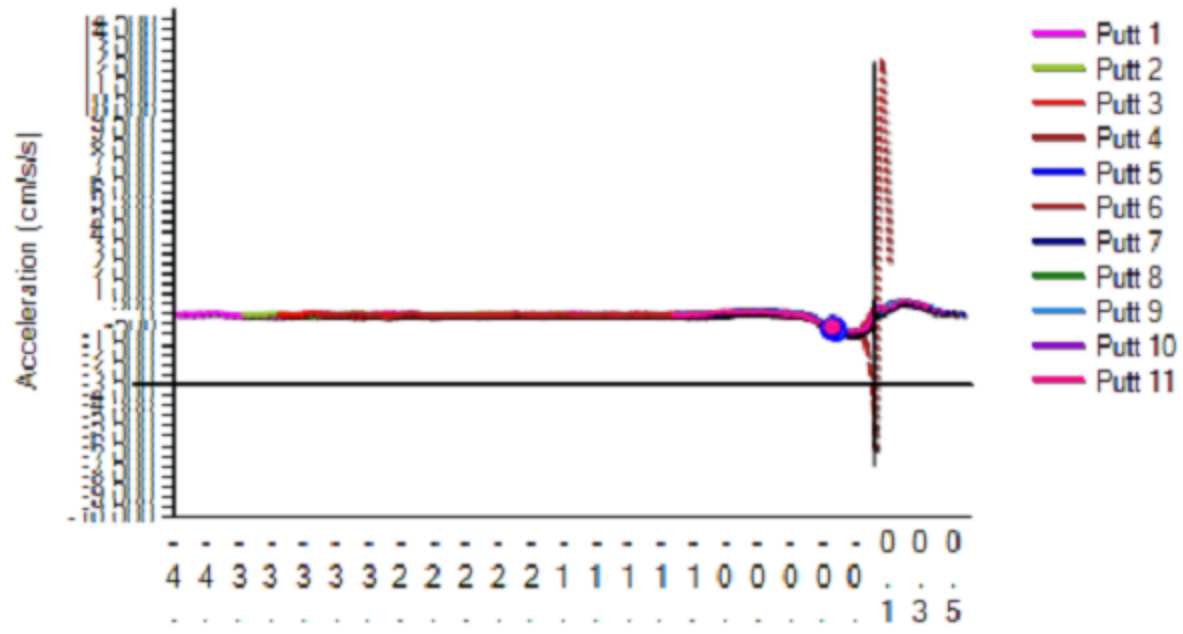




Putter velocity



Putter acceleration



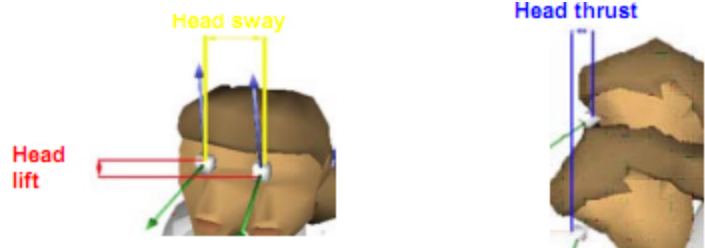


Body Motion & Dynamics

Back Stroke

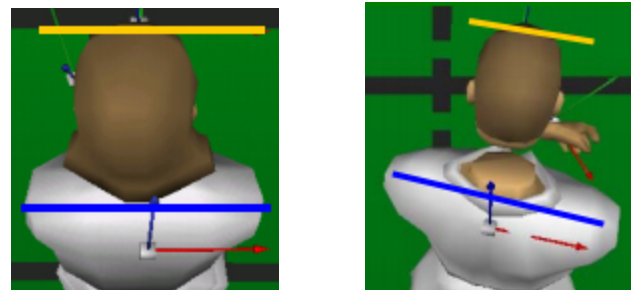
Stability

	You
Head sway (Address to top)	-1.7
Head lift (Address to top)	-1.1
Head thrust (Address to top)	1.4



Rotations

	Address	End of Backstroke
Shoulder Turn	14.3	2.9
Head Turn	34.9	30.9
Wrist flex	-273.1	-272.8

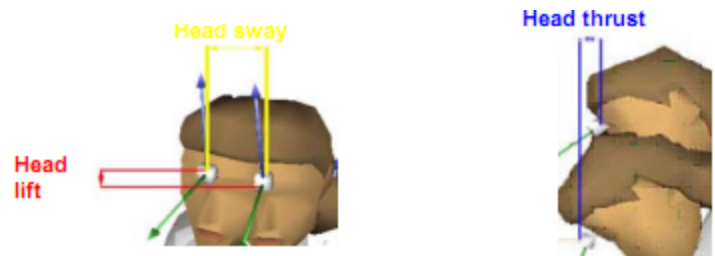




Forward Stroke

Stability

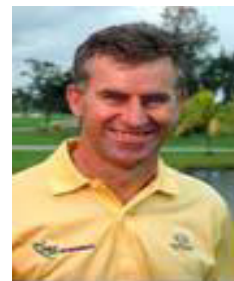
	You
Head sway (Top to impact)	0.7
Head lift (Top to impact)	-1.0
Head thrust (Top to impact)	0.8



Rotations

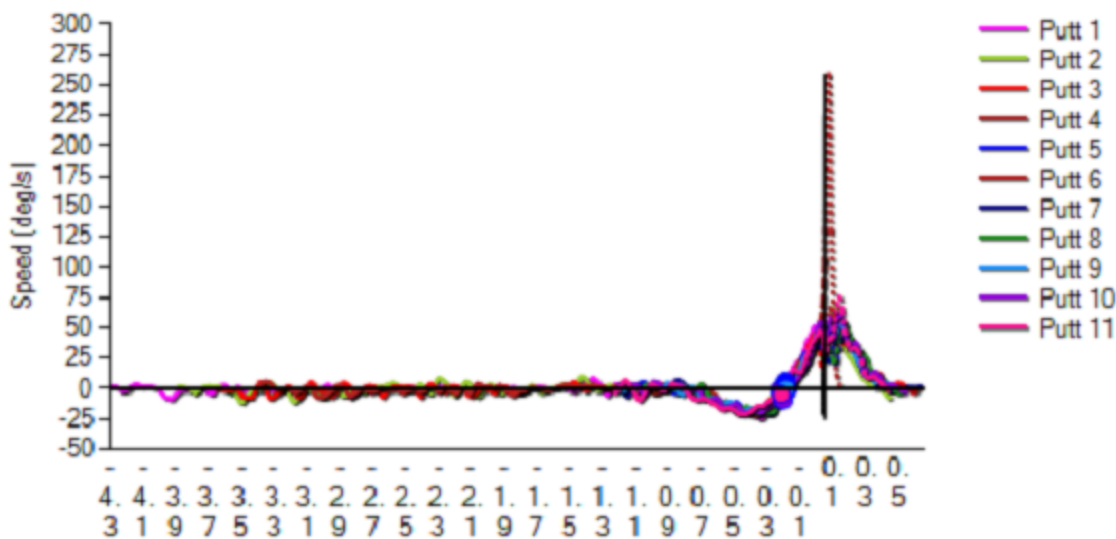
	Address	Impact
Shoulder Turn	14.3	17.5
Head Turn	34.9	40.1
Wrist flex	-273.1	-272.8





Speeds			Tempo		
	Speed (deg/s)	Consistency (SD-deg/s)		Time (ms)	Consistency (SD-ms)
Shoulders	205.9	400.2	Backswing Time	1,732.2	1,271.2
Forearm	216.3	432.0			
Putter face rotation	71.3	59.8	Downswing Time	250.0	13.6

Face Rotation Velocity



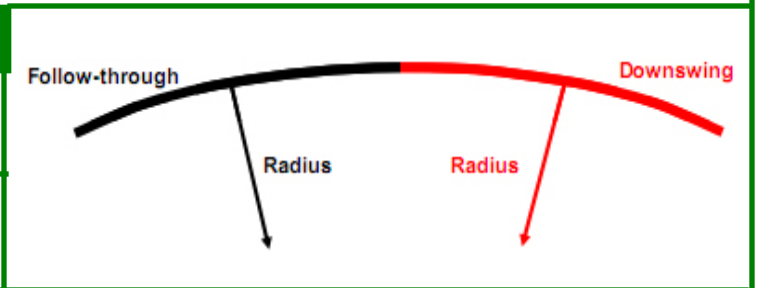


Stroke Lengths

	Back Stroke (cm)	Follow-through (cm)	Ratio
Forearm	3.8	2.2	0.6
Putter	26.9	35.8	1.3

Putter Arc Radius

	Downswing (cm)	Follow-through (cm)
Radius (cm)	80.0	87.7





	Putt #										Mean	Std
	1	2	3	4	5	6	7	8	9	10		
	Address											
Face rotation (deg)	1	2	1	-1	1	2	-1	0	-1	-1	0.2	1.1
Face loft (deg)	-7	-9	-9	-13	-14	-10	-13	-13	-13	-13	-11.6	2.2
Shaft lean (deg)	-3	-2	-2	3	3	-1	3	3	3	3	1.2	2.5
	Backstroke											
Backstroke length (cm)	29	28	30	26	25	29	25	25	25	26	26.9	1.8
Backstroke time (ms)	3,883	3,471	3,233	754	754	2,983	813	763	813	771	1,732.2	1,333.3
	Impact Data											
Face rotation (deg)	1	-1	-1	-1	-1	-1	-2	-1	-1	-2	-1.0	0.8
Face loft (deg)	-10	-10	-10	-13	-13	-12	-12	-12	-13	-12	-11.8	1.1
Shaft lean (deg)	-1	0	1	3	3	2	3	2	2	3	1.9	1.2
Putter rise (deg)	5	5	5	4	3	10	3	3	3	4	4.4	2.0
Putter path (deg)	3	1	2	0	-3	-1	2	2	-1	1	0.2	2.2
Impact location (Heel/Toe)	4	-4	3	0	-1	1	9	0	-2	-5	0.4	0.0
Impact location (Up/Down)	0	0	1	0	-1	-1	0	0	1	0	0.0	0.0
Putter speed (cm/s)	172	163	155	203	178	162	210	226	192	211	186.4	23.5
Face rotation speed (deg/s)	74	49	56	-5	43	34	53	55	29	22	40.0	21.3
	Downstroke / Follow-through											
Downstroke time (ms)	258	263	271	233	238	263	242	233	233	254	250.0	14.3
Follow-through length (cm)	31	32	35	37	35	34	40	38	36	38	35.8	2.6
Ratio (Back-to-follow through)	1.1	1.1	1.2	1.4	1.4	1.2	1.6	1.5	1.4	1.5	1.3	0.2