







TRANSITION





TRANSITION PHASE

The period of time beginning from the change of direction of the pelvis (TOB - they start to move towards the target) to the point where all segments move in the same direction



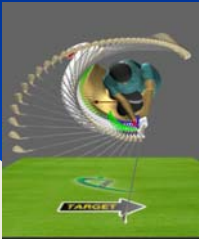
TRANSITION SEQUENCE

The order in which the body parts change direction (pelvis, UT, arms, hands, club)



TRANSITION - what is happening


- Weight is transferred to left leg
- Pelvis begins to sway toward the target and rotate in the opposite direction
- X-Factor ↑ to set up a SSC (stretch-shorten cycle) in the muscles
- Spine tilts to right as pelvis moves laterally while the UT and head lag behind



GOLF BIODYNAMICS

TRANSITION - Sequences - 3D

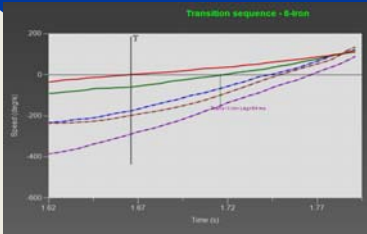
Let's examine some graphs



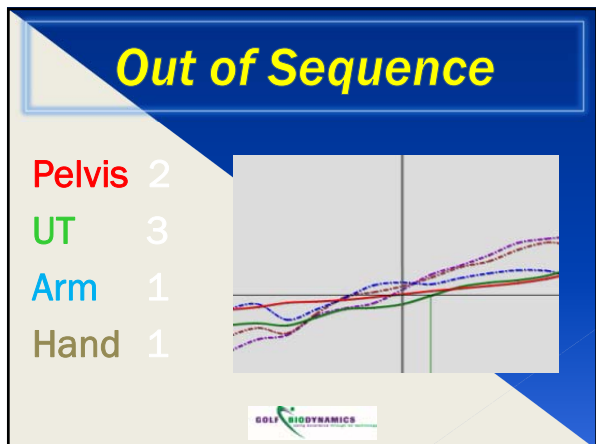
GOLF BIODYNAMICS

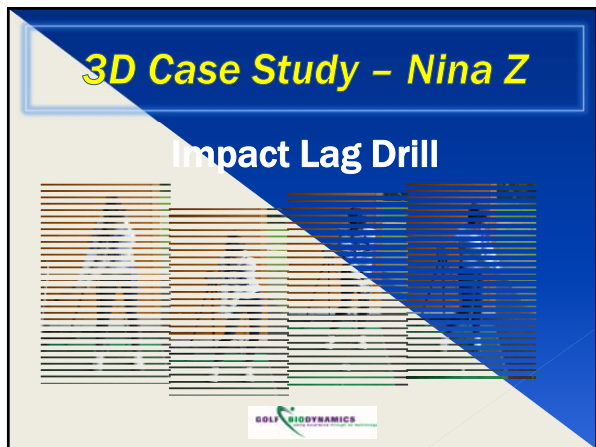
Ideal

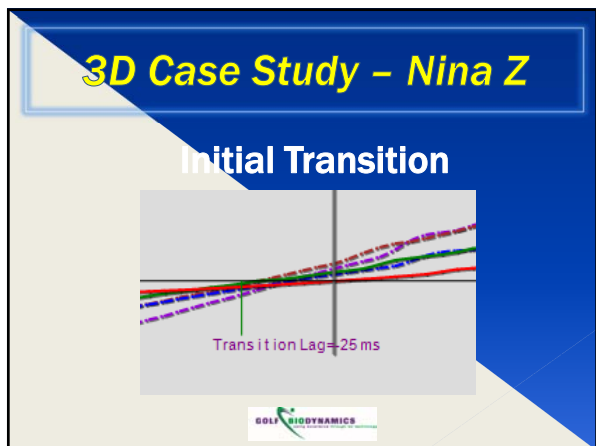
Pelvis	1
UT	2
Arm	3
Hand	4

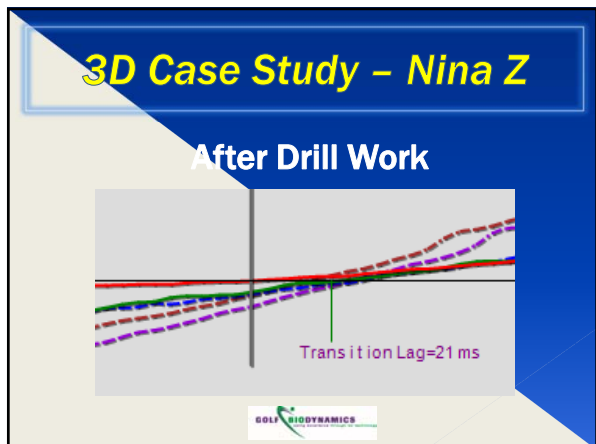


GOLF BIODYNAMICS









How important is a good transition?

It is more difficult to achieve good impact dynamics with a poor transition sequence

GOLF BIODYNAMICS

DRILLS and PROGRESSIONS

GOLF BIODYNAMICS

DRILLS and PROGRESSIONS

1. Pelvis Rotation Drill Progressions (Steps 1-7 handout)
2. Sequence Drill from TOB using Theraband - (video)
3. Theraband Pull: Against (band around pelvis/leg)
4. Bump Hip to Hip
5. Hand against Hand from the top – golfer leads with the hips
6. Medicine Balls throws
7. Step drill and modifications



IMPACT and LAG



IMPACT

What constitutes a good impact position?



IMPACT POSITION

A Coaches Description

Weight on the left foot/leg
Handle leading the club head
Club head travelling slightly down
Head over the ball but BW forward

Andrew Rice



IMPACT POSITION

“Flat left wrist”
“Bent right wrist”
“Stability and compression”
“Divot after the ball”
etc



IMPACT in 3D





IMPACT in 3D

- Body Rotations (pelvis, shoulders, head)
- Pelvic & UT Tilt
- Pelvic Thrust/Bend
- Head position
 - (lateral, rotational, lift)
- Shaft lean
- Club velocity (linear and twist)






The 3D "Numbers"

Pelvis Rotation	35 - 55°
Upper Torso Rotation	35 - 55°
Head Rotation	10 - 40°
Pelvic Tilt	10 - 15°
Pelvic Sway	11 - 14cm
Head Sway	-3 - +2cm

The 3D "Numbers"

Pelvis Thrust	0 - 2 cm
Upper Torso Tilt	25 - 35°
Pelvic Bend	<10°
Head drop	~ 6-7 cm
Shaft lean	10 - 14°
Spine Angle (2D)	6° > setup

DEFINITION

But, impact is not just a position.


Consider the dynamics !



GOLF BIODYNAMICS

The 3D "Numbers"

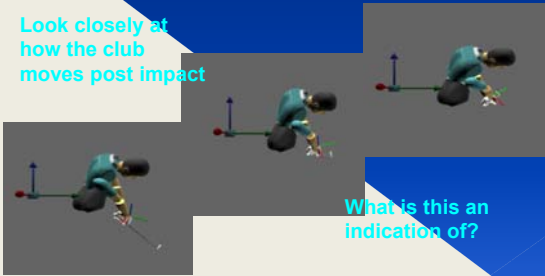
Club velocity (Z)	Club dependent
Club Velocity (X)	Club dependent
Club Velocity (Y)	Club dependent
Twist velocity	800 - 1,500 °/s
Body Speeds	Varies with segment
Timing Lags	Varies with segment



GOLF BIODYNAMICS

The 3D IMAGE - DTL

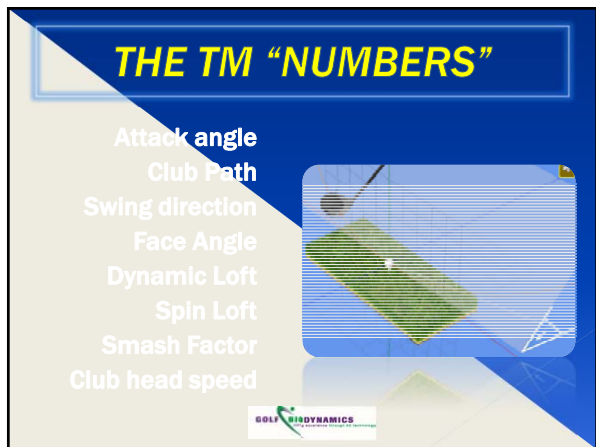
Look closely at how the club moves post impact



What is this an indication of?

GOLF BIODYNAMICS







IMPACT – Drills

1. Simulation of Address/Impact Positions
2. Towel/Broom Drag
3. Lag/Impact Drill (restricted F/T)
4. Impact Ramp
5. Chip, Pinch Punch



LAG – Drills

1. Swing Fan
2. Whippy Club
3. Wide B/S to narrow D/S using plane board/shaft behind player



QUESTION TIME



