

THE ESSENTIALS OF LONG SNAPPING:

A FUNDAMENTAL
APPROACH



A Research Project and Instructional DVD by:

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- Conducted at the United States Military Academy (USMA)

Why this Project?

- Began with a Thesis Proposal
- Too broad a topic to have impact on the football community with that depth of research
- Too few long snappers to provide statistical significance
- Most high school and college football coaches merely give athletes a video and say “go forth and snap”
- I have been on the receiving end of that, and the available videos always left me wanting more!

How then, did this DVD come to be?

- Researched and wrote a proposal
- IRB approval from MSU and USMA
- Gathered participants (USMA Cadets)
- Tested the Release Point, Foot Position, Guide Hand Height, and Sighting Method
- Studied the video with Dartfish software
- Came to some interesting conclusions
- Filmed the video and drills
- Went to the Center for Enhanced Performance (CEP) video lab for editing

Participants

- All USMA cadets (n=3)
- All over the age of 18
- All current football players
- All long snap specialists

Participants

- This was a good situation because they all have a very similar environment and therefore a good base from which to test
- Using skilled snappers made it possible to test for the various technical changes

Objectives

- Create an instructional DVD for players and coaches
 - Research based
 - Professional quality

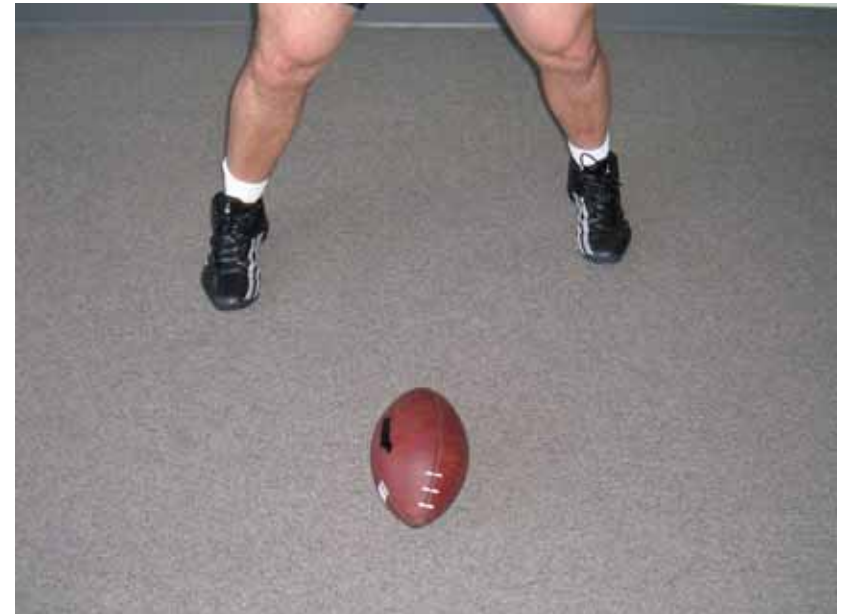
Testing: What I looked for

- Point of Release (early, normal, late)
- Hypothesis: Effect on vertical placement of the ball
 - Late release=high snap/early release=low snap



Testing: What I looked for

- Foot position (left foot back, right foot back, parallel)
- Hypothesis: Effect on horizontal placement of the ball
 - Left foot back=snap to target's right
 - Right foot back=snap to target's left



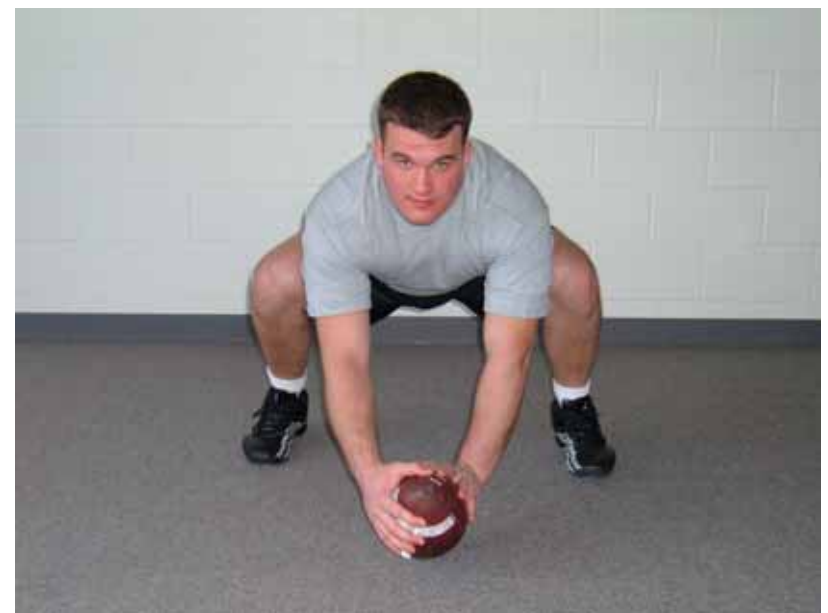
Testing: What I looked for

- Guide hand height (high, medium, low)
- Hypothesis: Effect on vertical placement of the ball
 - The higher the guide hand=higher snap
 - Lower=low snap



Testing: What I looked for

- Sighting Method (visual, non-visual)
- Hypothesis: Effect on snap consistency
 - Non-visual more erratic



Testing: Instrumentation

- Sony DCR-VX2000 digital video camera and tripod to record the experimental trials
- Microsoft Excel and Dartfish software
- 4' x 8' piece of plywood, tape, marker, and spray paint to create the target
- 2 Wilson 1005 model footballs marked at 1 inch intervals
- 3 Black spandex bottoms, long sleeve tops, black shorts, and shoes for participant clothing



Testing: Instrumentation

- Dry erase board, markers, and eraser for message board
- 3 small cones
- Athletic tape/duct tape for marking the floor and walls
- Reflective tape for marking the participants
- White curtains and stands to provide backdrop
- Extension cord



Testing: Procedures

- Target 15 yards behind ball-center 42 inches high (all trials)
- Target was divided into quadrants for Cartesian coordinates
- Background color was off-white
- Fiducials-cones, tape markings, etc to provide vertical and horizontal reference



Testing: Procedures

- Ball was dipped in chalk prior to each snap
- Began with 10 snaps at the target under Normal conditions
- 9 at Release Point
- 9 at Foot Position
- 9 at Guide Hand Height
- 10 at Sighting Method
- Total of 47 snaps



Testing: Procedures

- Each condition was randomized
- Camera angle changed every 3 (or 4) snaps
- The chalk dot on the target was measured in inches from the horizontal and inches from the vertical lines (x, y)

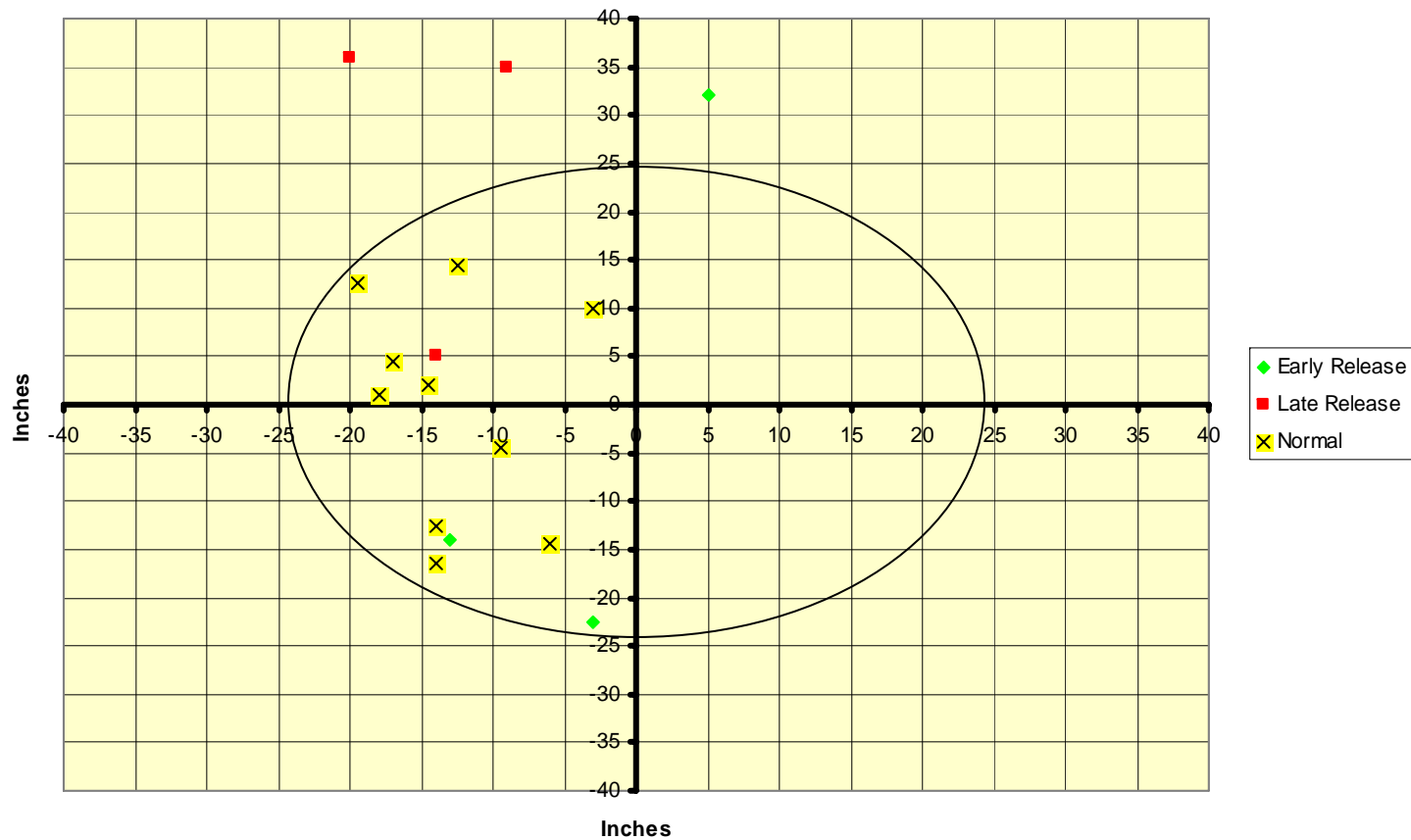


Testing: Procedures

- If the snap hit the target, it was recorded
- If the snap hit in the black, or off the target completely it was re-done
- If it missed again, it was recorded and noted
- If the participant said he “slipped” the snap was not recorded and it was done again

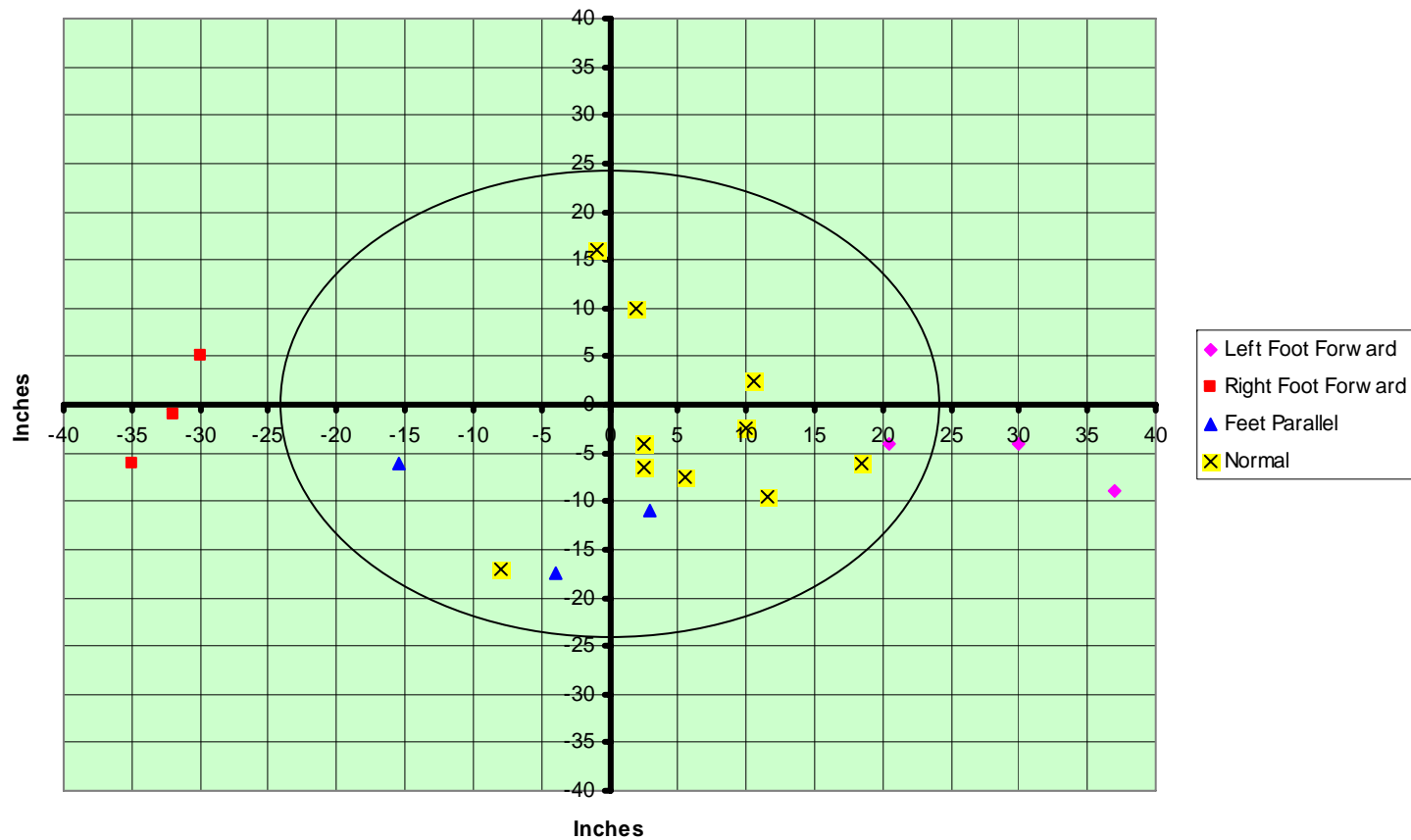
Results: Ball Placement

P3 NORMAL CONDITION vs RELEASE POINT



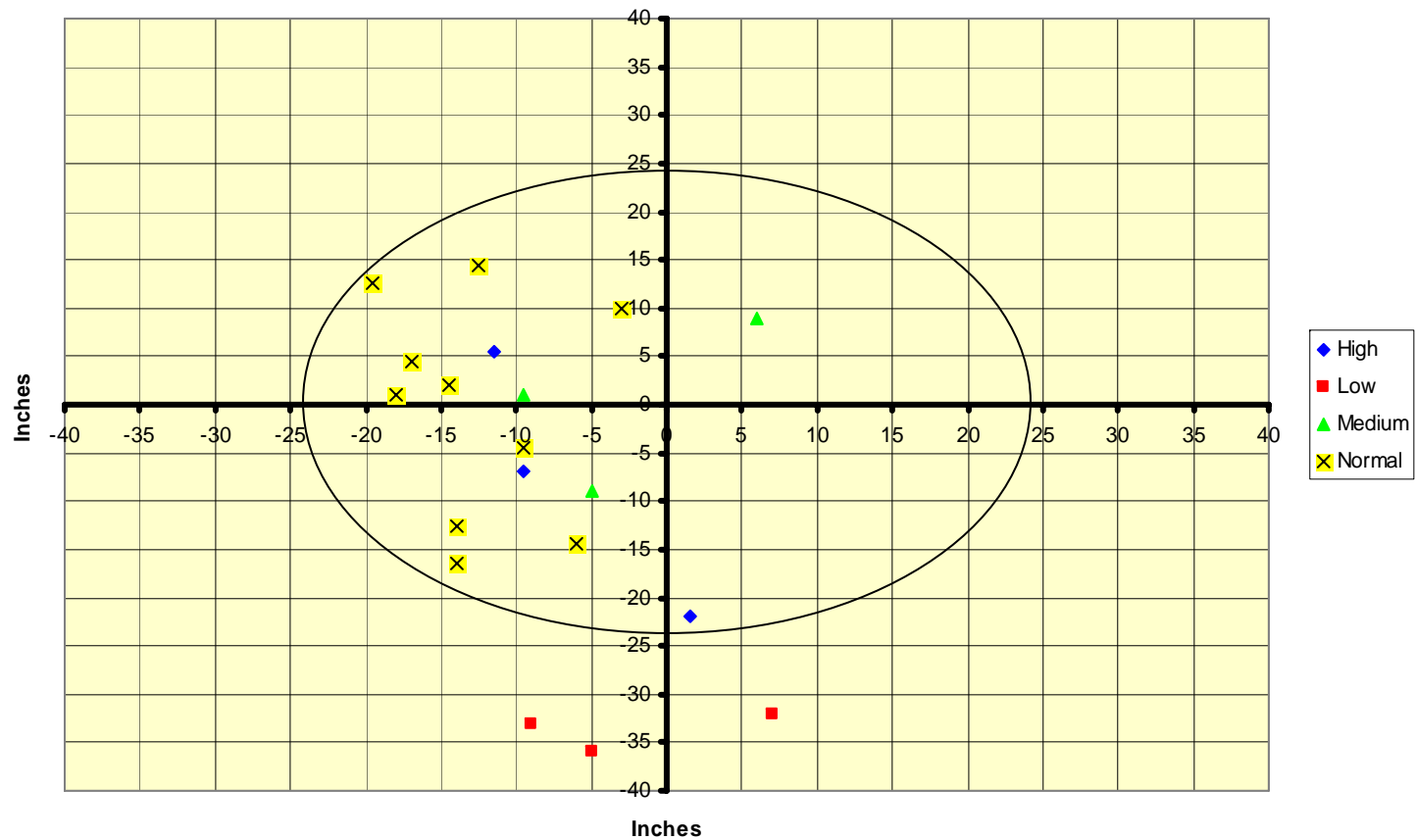
Results: Ball Placement

P2 NORMAL CONDITION vs FOOT POSITION



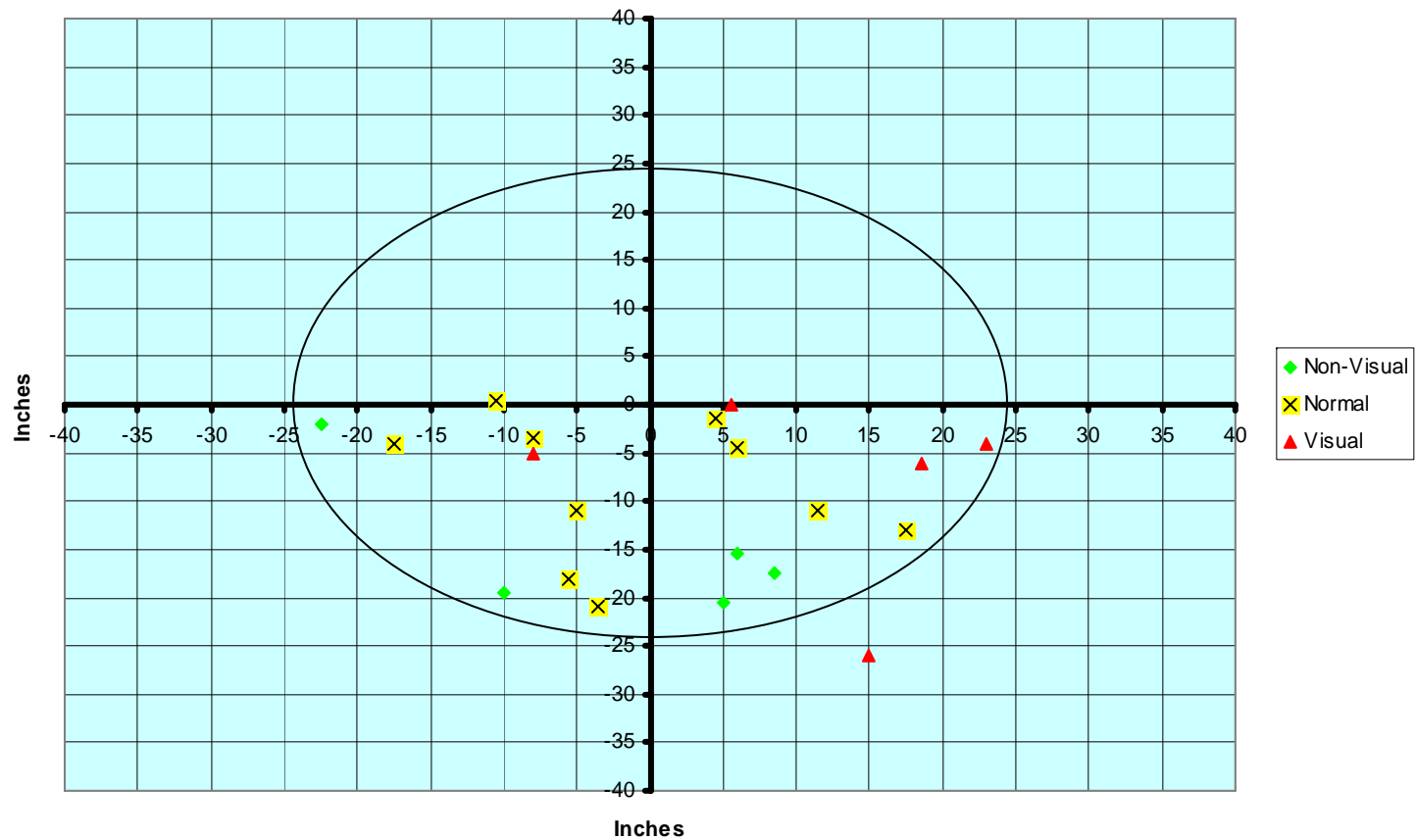
Results: Ball Placement

P3 NORMAL CONDITION vs GUIDE HAND HEIGHT



Results: Ball Placement

P1 NORMAL CONDITION vs SIGHTING METHOD



Results: Initial Video Analysis

- The mini-digital video was transferred to VHS for initial analysis/elimination of non-usable footage
- Exclusion Criteria:
 - Poor film angle
 - Participant compensated on his technique
 - Participant was unable to perform technique properly

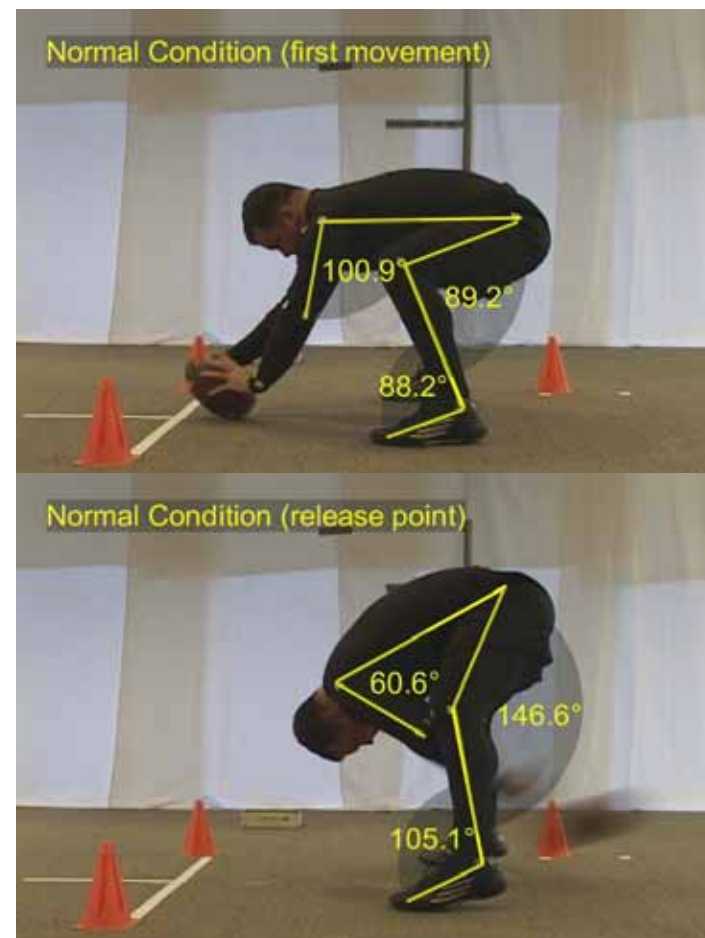
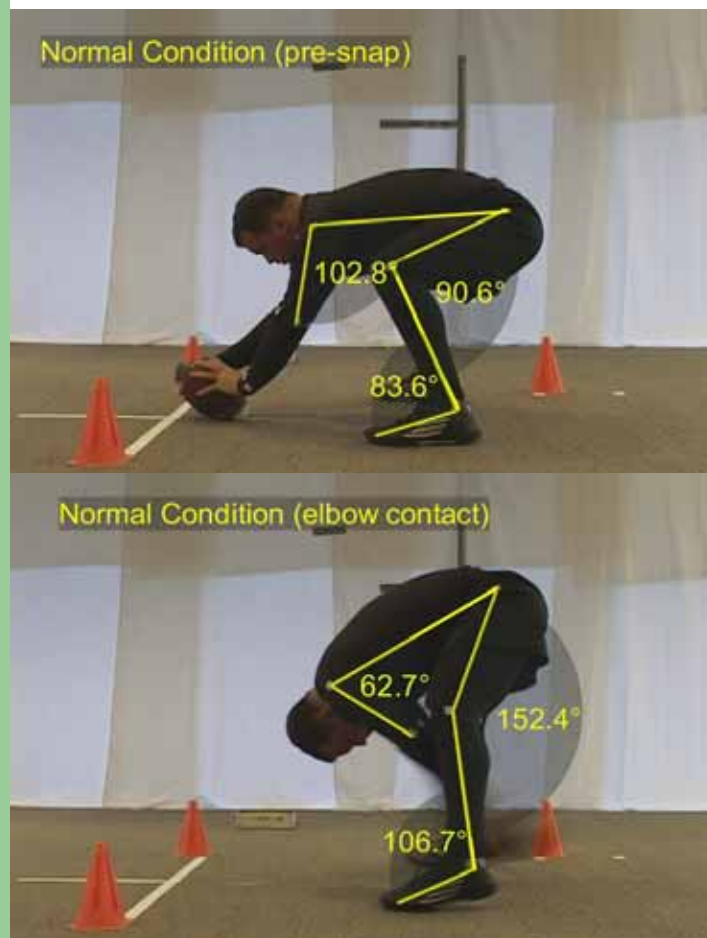
Results: Initial Video Analysis

- Release Point: only participant #3 properly demonstrated this technique
- Foot Position: only participant #2 properly demonstrated this technique
- Guide Hand Height: affected all participants but participant #2 had best demonstration
- Sighting Method: all participants similar-used participant #1

Results/Conclusions: Dartfish Analysis

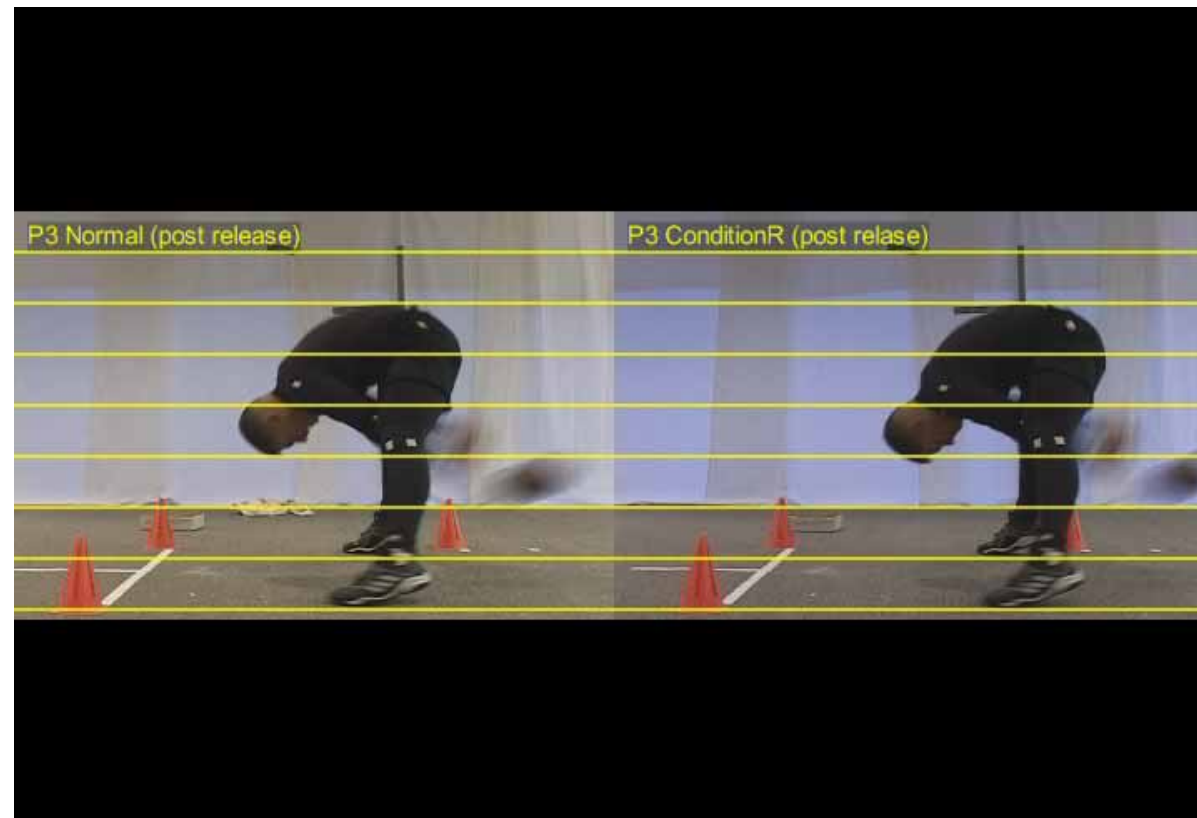
- After initial viewing and exclusions were made, the appropriate footage was loaded into Dartfish
- Special thanks here to **George Corbari** for letting me invade his home to do this!!
- First we had to establish a baseline-for this we analyzed the normal trials and came up with the four events of the long snap
 - Prior to movement (pre-snap)
 - First movement
 - Elbow contact with thighs
 - Release

Results/Conclusions: Dartfish Analysis



Results/Conclusions: Dartfish Analysis

- Release Point

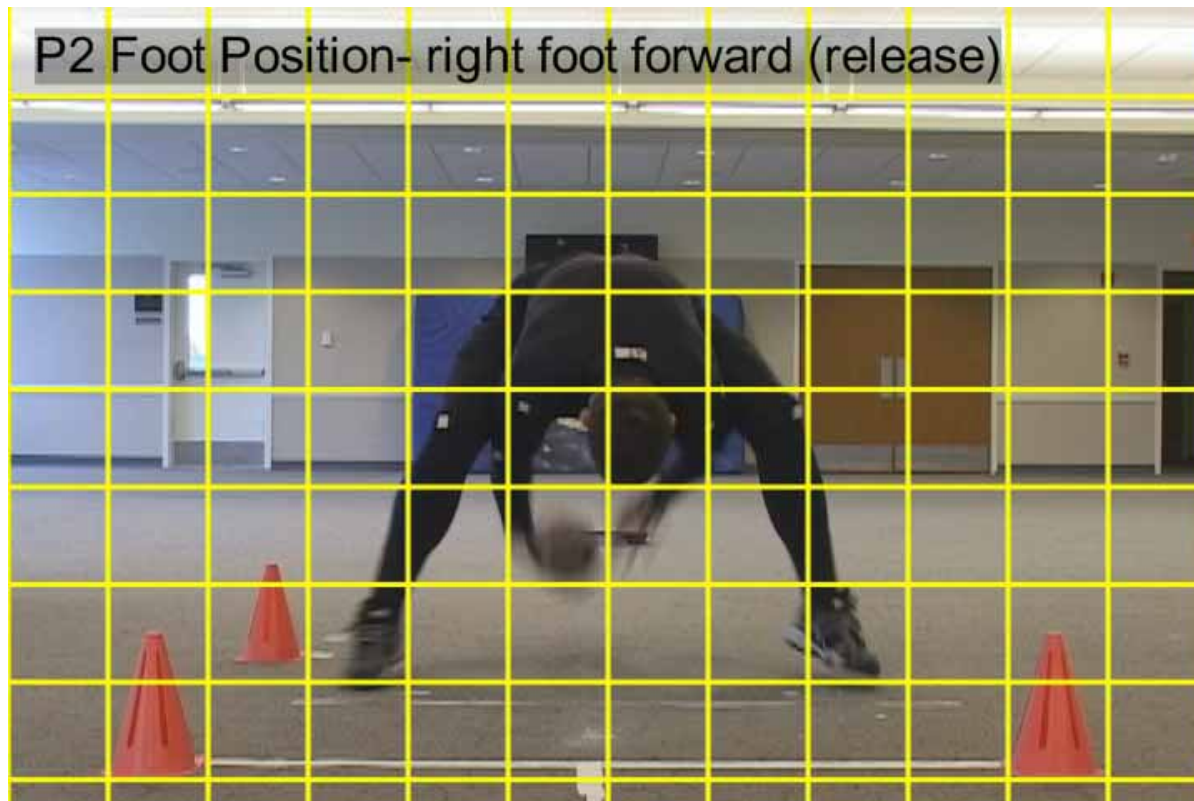


Results/Conclusions: Dartfish Analysis

- If the ball is released late it will go high
- If the ball is released early it will go low
- NO SURPRISE!!
- However, this is very challenging to do on command! Only participant #3 did it and only twice!

Results/Conclusions: Dartfish Analysis

- Foot Position

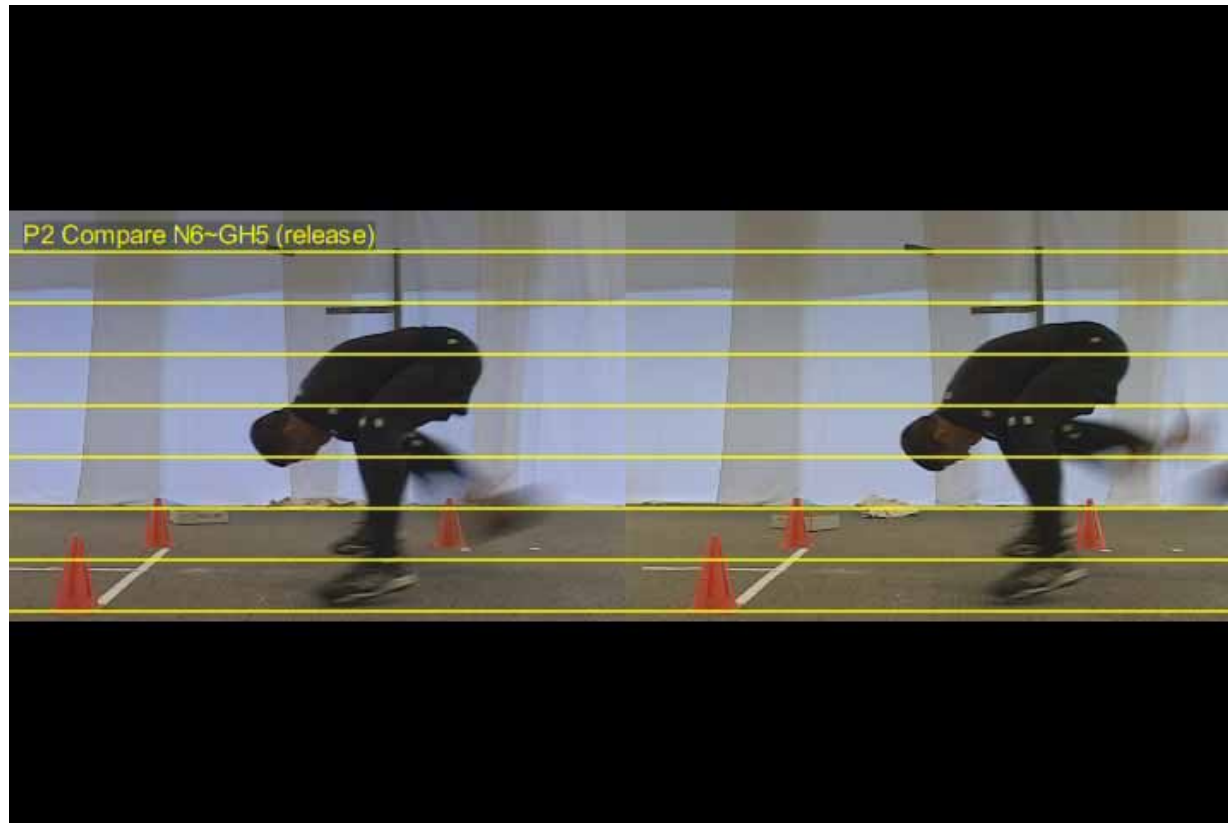


Results/Conclusions: Dartfish Analysis

- Aiming point changes when one foot is in front of the other
 - Left foot back=snap to target's right
 - Right foot back=snap to target's left
- The snapper can compensate for this
- Foot position can be used as a tool for directional snaps
- If one leg is caught on PAT, coach may want to watch the guard position

Results/Conclusions: Dartfish Analysis

- Guide Hand Height

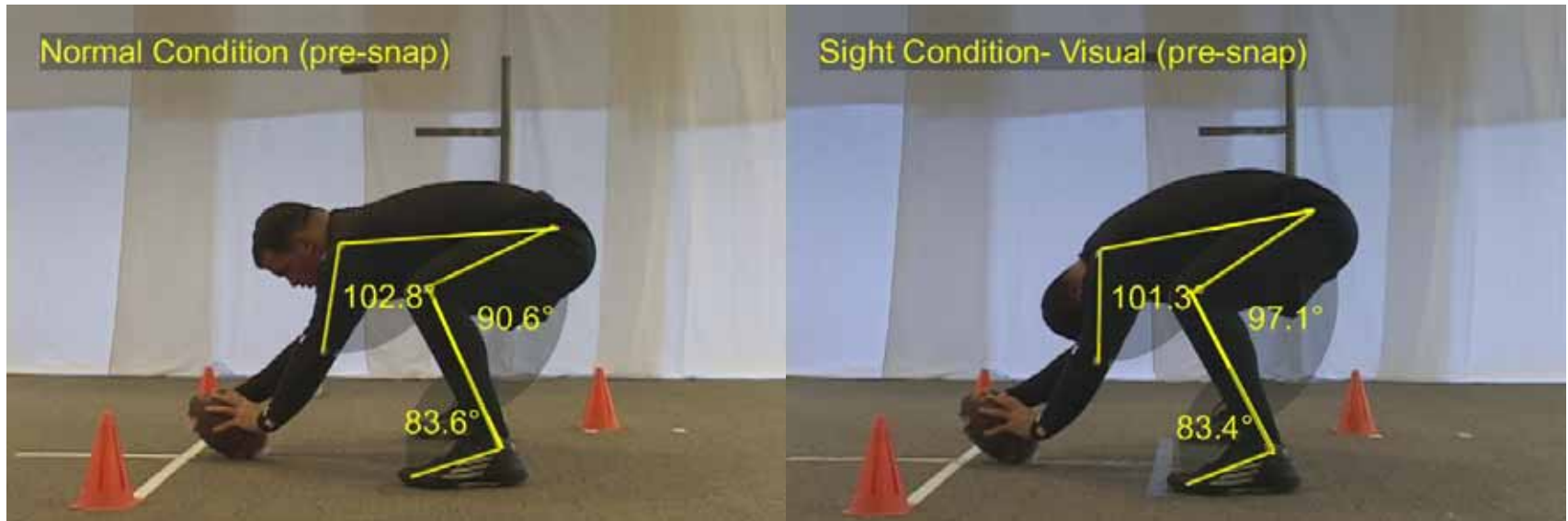


Results/Conclusions: Dartfish Analysis

- Initially thought a direct correlation existed between height and vertical placement
- NOT SO!
- Guide Hand Height may affect release point
- Affects each individual differently
 - For some low = low snap
 - For some low = high snap

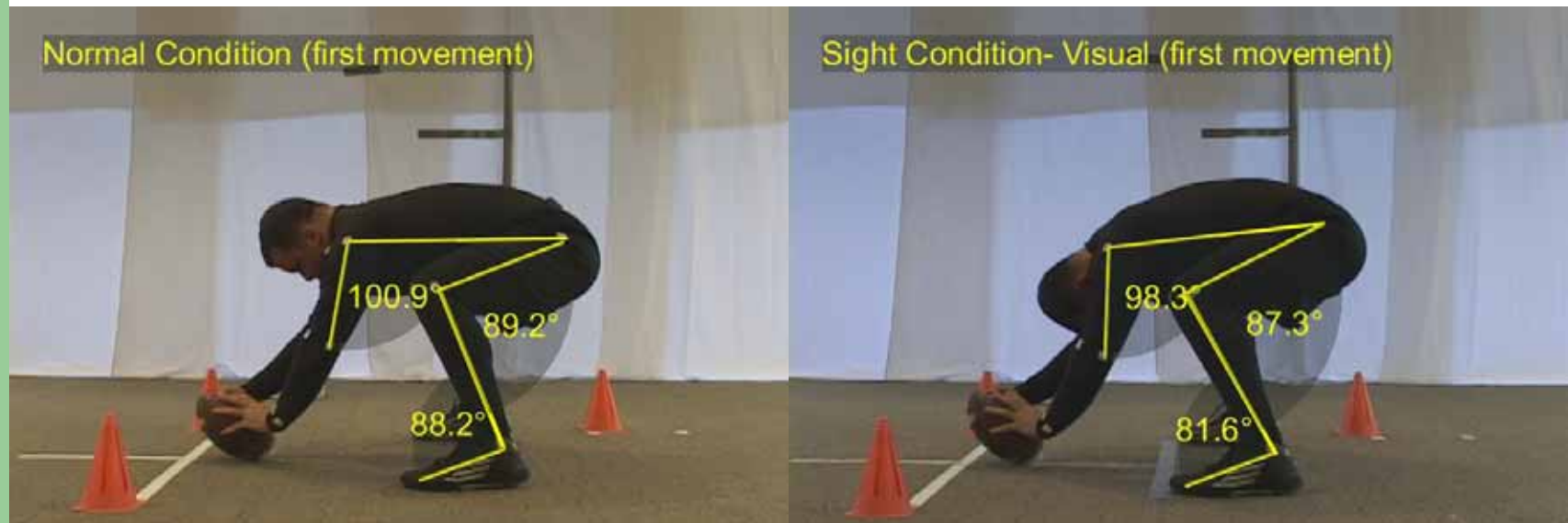
Results/Conclusions: Dartfish Analysis

- Sighting Method



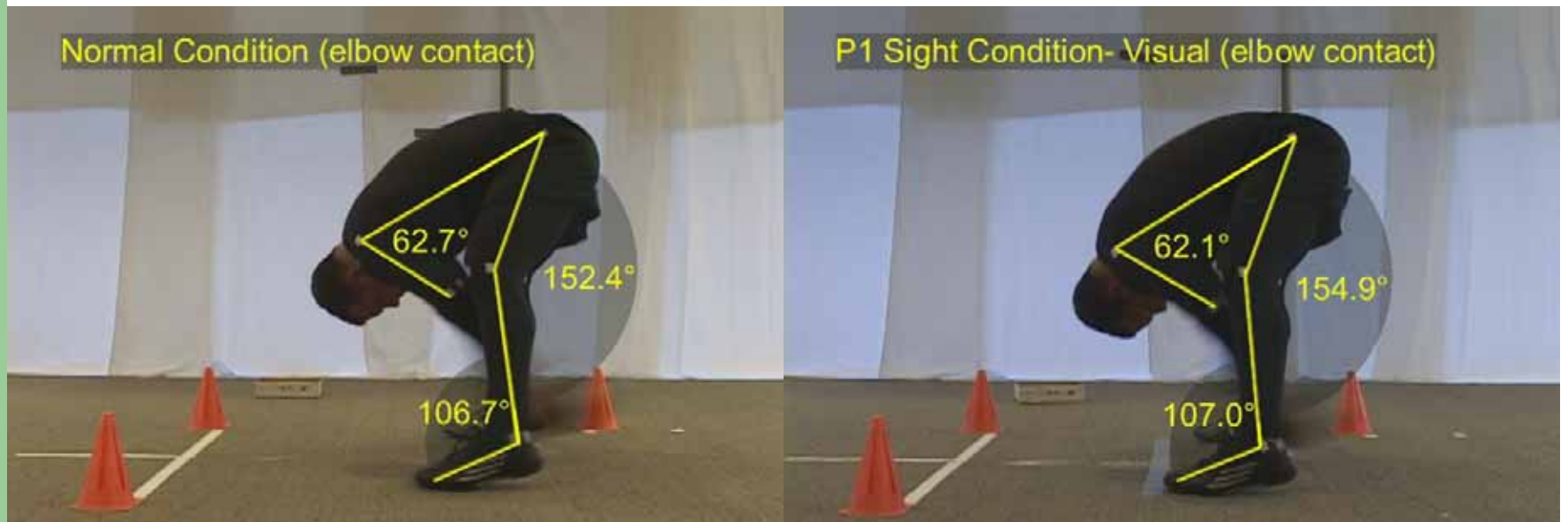
Results/Conclusions: Dartfish Analysis

- Sighting Method



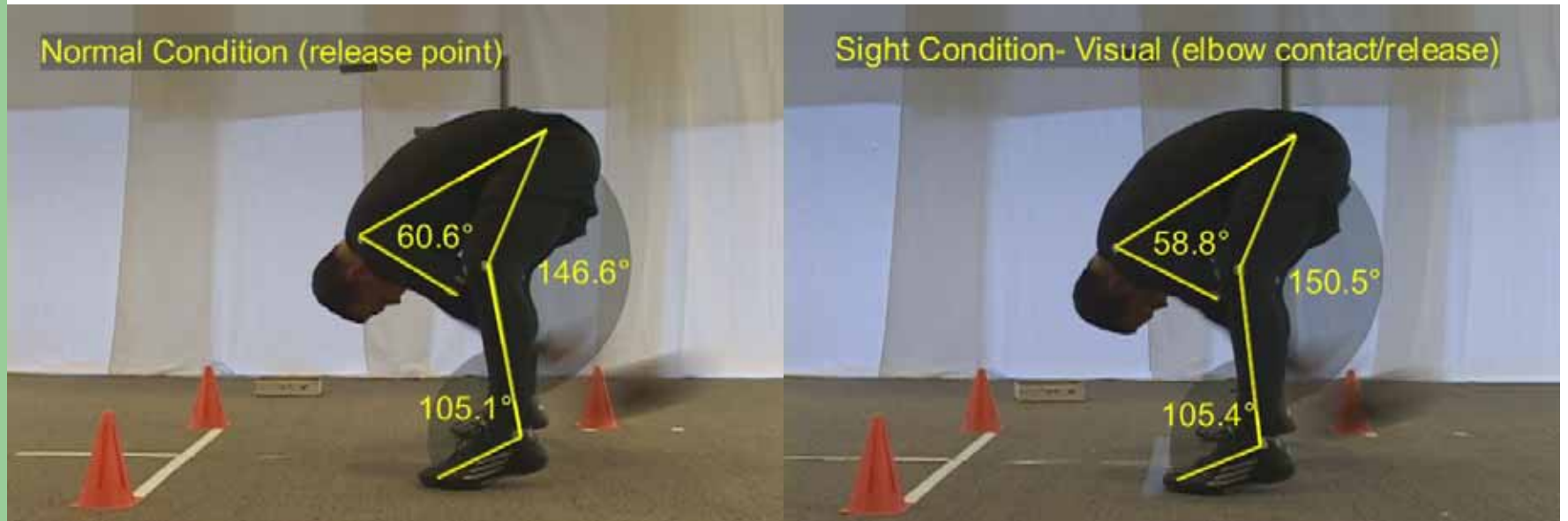
Results/Conclusions: Dartfish Analysis

- Sighting Method



Results/Conclusions: Dartfish Analysis

- Sighting Method



Results/Conclusions: Dartfish Analysis

- All participants were naturally non-visual snappers
- All had the same results – greater angle at the knee in the pre snap event
- Not much difference in ball placement
- However, all commented on having less power in their snap for the visual method (hips started higher)

Applications Towards DVD

- Guide Hand Height
 - May aid in differences between punt and P.A.T. snaps
 - Or simply to get the ball up/down
- Foot Placement
 - May aid in directional punt snaps
 - Or on a very windy day!

Limitations

- Lighting could have been better for experimental trials
- Dartfish could only capture stills at a frame rate of 0.033 seconds... this is good, but the total time is only 0.7 seconds from initial ball movement to impact on target
- Statistical significance is null because of small number of participants and that only a small percent of snaps were performed “properly”

Further Study

- Ball Angle
- Stance width
- Hip/leg drive affect on speed of snap
- More in-depth with Release, Foot Position, Guide Hand, and Sighting Method each with its own study
 - More participants
 - Establish statistical significance

Making the DVD: Instrumentation

- Sony DCR-VX2000 digital video camera (drills)
- Sony DSR-300 digital video camera (instructional)
- Tripod
- Samson MR-1 wireless microphone (instructional)
- Beyerdynamic DT-280 headset microphone (voiceovers)
- Sony DSR-60 digital video cassette player (import video into system)
- DPS Velocity software (editing of video)
- Pioneer PRV-LX1 DVD writer (burn DVD)
- 4 Panasonic mini DV cassetts

Making the DVD: Instrumentation

- Athletic tape
- 3 Wilson 1005 footballs
- Water bottle
- Empty trash can (clean)
- Medium pylon style cone

Making the DVD: Location

- Instructional segment filmed at Shea Stadium, West Point, NY
- Drill segment filmed at Michie Stadium, West Point, NY
- Video editing performed at the Center for Enhanced Performance lab, West Point, NY

Making the DVD: Procedures

- Original video footage was transferred to VHS for easy home viewing (I was on assignment in OK.)
- Created a table with desired scenes/order
- Imported original digital video into computer with DPS velocity software
- Many, many hours editing video, voicing over segments, adding graphics, music, and several drafts
- Final DVD was burned!!

Limitations

- The wireless microphone had some difficulties in the original filming process which led to necessary voiceovers
- Very challenging to replicate outdoor (live) sound
- Some drill footage had to be spliced because the participant had trouble with the drill
- But we made it work!

CEP Staff

- Shown left to right:
Thad Weismann, Joe
Ross, and Bill
McCormick
- THANKS GUYS!!



Questions?

- Let's watch the DVD!