



Field Testing of Fitness WNT Program



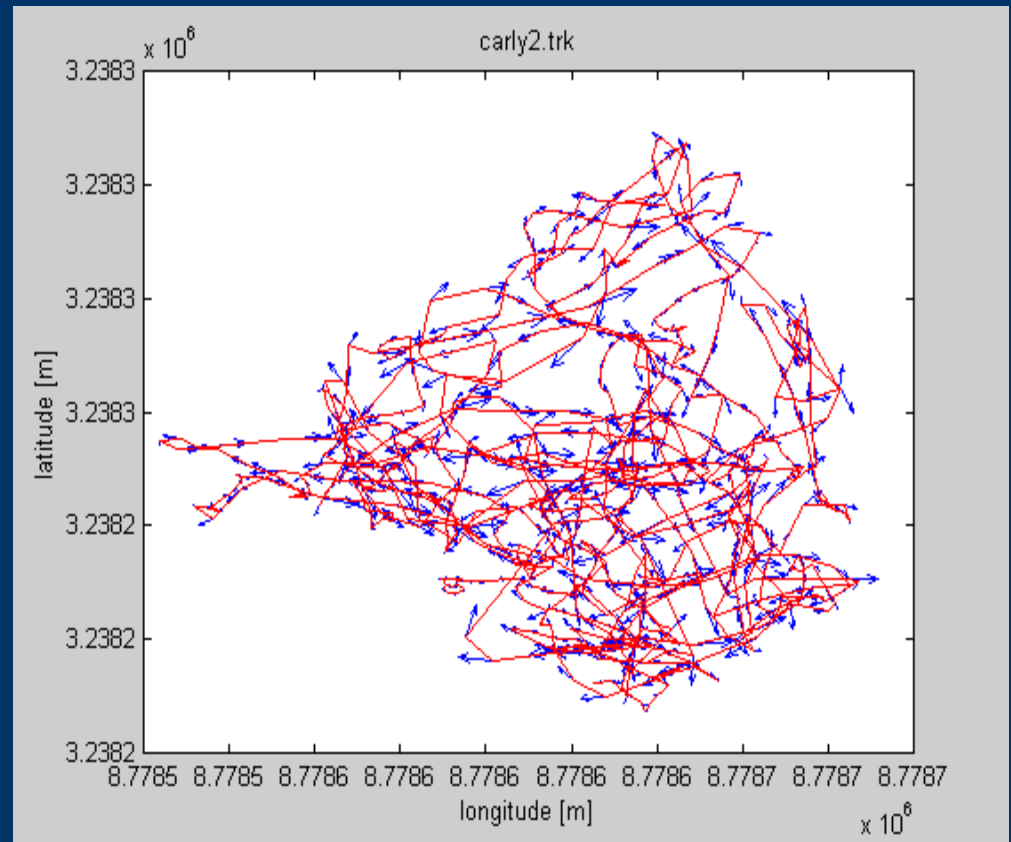
Purposes of Fitness Testing

- Determine level of fitness of players
 - tells you what your players have been doing on their own
 - with limited training settings, players must train independently and you need to know the fitness level of your players
- Confirm adaptations to training
- Give objective numbers to gut feelings
 - confirm who your runners are



Running Patterns in Soccer

- Walking, jogging, cruising, sprinting, backing
- 2/3 (men), 3/4 (women) of game is at a walk/jog
- Important feature of fitness is how fast one recovers from activity
- 1 change of speed/direction every 4-5 seconds





Classes of Tests

- Tests of athleticism
 - test the overall athletic ability of the player
 - advantages: fun, pretty good indicators of the level of athlete
 - disadvantages: not very sensitive to training
- Tests of fitness
 - tests the various aspect of physical fitness
 - advantages: very sensitive to training
 - disadvantages: an exhaustive effort for valid results



When To Test?

- No absolutes here
- Pre-season
 - determines who has done their training homework
 - gives you information on what deficiencies you have to address
- 1/3 of the way through season
 - fitness pretty well set by now-not much change from here on
- Post season
 - this serves as the standard to beat for next preseason



Other options

- Preseason or after “cuts”
- Early off season (their low point)
- End of off season training
 - must match or beat this next preseason
- e.g. UNC women:
 - August, February, May
- Little reason to test more often than every 6 weeks-ish



USSF Testing History

- Pre 1996
 - occasional VO2 max tests, body comp, at local Univ/hosp
- WNT 1996
 - USOC study on fitness of women's soccer
- MNT 1998
 - January, March, May prior to France
- U17
 - every 4-6 months prior to New Zealand
- All youth national teams at one time or another



Selection of Tests

- There are literally dozens of tests to choose from
- Pick tests you are comfortable with and stay with them
- April H choose a series of athleticism and fitness tests
 - low tech, easy to administer, minimum of equipment, and good information
- Her goal
 - all WNT's (✓)
 - all WUSA teams (✓)
 - all state ODP programs (?)



Tests of Athleticism

- 1' sit-ups, 1' pushups
- 20 yard 'pro' agility run
- 20 and 40 yard sprint
- 40 yard T test



Tests of Fitness

- 2 x 300 yard shuttle
- 1-step vertical jump
- 3-hop test
- yo-yo intermittent recovery shuttle run



Test Methods: 1' sit-ups

- Need a stopwatch
- Lying, flat on back, hips flexed to 45° , knees to 90° , feet flat
- partner holds down the feet
- hands clasped behind the head
- do as many situps in 1'
 - elbows must touch knees, shoulders must touch ground



Test Methods: 1' push-ups

- Need a stopwatch
- Start in the 'up' position, arms shoulder width apart, weight on the toes
- keep head to the feet in a straight line
- do as many push-ups as possible in 1'
 - chest must touch the grounded fist of their partner
 - return to fully extended elbows
 - straight body



Test Methods: 20 yard 'Pro' Agility Run

Need a stopwatch, measuring tape



- Player straddles center line
- on command, moves as fast as possible to touch one line (w/ foot)
- then to the far line
- back to center
- record best of 2 trials



Test Methods: Vertical Jump

- Need Vertek or wall, chalk, tape
- measure standing reach
- Player steps back 1 step
- Approach with 1 step to a 2 foot jump
- Knock highest wand as possible
(mark chalk on wall)
- record the best of 3 jumps





Test Methods: 20 and 40 yd Sprint

Need measuring tape, 2 stopwatches



- From a standing start
- Time starts on first movement of player
- 20yd split and 40yd time recorded
- Take best times of 3 trials



Test Methods: 3 Hop Test

start



(30 ft measuring tape)

- Standing long jump with 3 reciprocal jumps (no stops)
- Use arms for lift and balance
- Measure from start to closest heel
- Record best of 3 trials
- (note: players think this is fun and will want to do many times. Don't let them, they will be pretty sore the next day)



Test Methods: 40 yard T Test

Need measuring tape, stopwatch, 4 cones

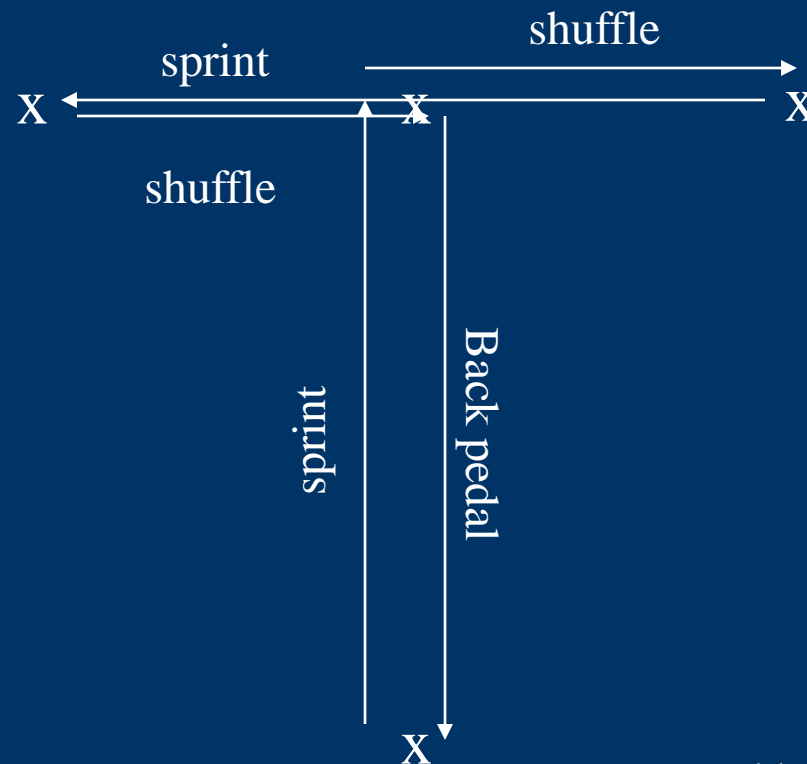
X 5yds X 5yds X

10 yds

X



Test Methods: 40 yard T Test

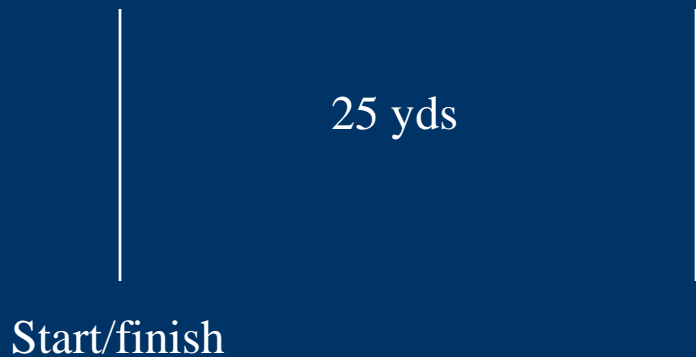


Record best of 2 trials
set up 2nd course for practice



Test Methods: 300 yd Shuttle

Need measuring tape, stopwatches



- Group of players start on command
 - run 6 laps (=300yd) for time
 - rest 5', then repeat
 - record average of two times
 - I suggest you record both times.
- Player A=59s and 61s
Player B=56s and 64s
each average 60s, but who is more fit?



Test Methods: Yo-Yo Intermittent Recovery Shuttle Run

Need boom box, yo-yo tape, measuring tape, lots of cones



- Cue tape to test start
- Players start on first beep, turn at far line on 2nd beep, finish on 3rd beep
- use the 10s recovery period to walk around cone 5m behind the start/finish line
- Speeds gradually increase
- 1st time they do not finish on time, they are warned, 2nd time they are done
- Record total meters run (on score sheet)
- one monitor can watch up to 5-6 people



April's Suggested Schedule

- **Day 1:**
 - 20/40yd sprint, vertical jump, 3 hop, yo-yo
- **Day 2:**
 - 20yd agility, T test, push-ups, sit-ups, 300yd shuttle



Average WNT Data

| | | | | |
|--------|----------------|----------|-----------|-------|
| VJ | 3 hop | 20y | 40y | 300y |
| 23.5" | 22' | 2.99s | 5.36s | 59.2s |
| T test | 20y agility | 1' situp | 1' pushup | Beep |
| 9.08s | 4.27s | 59 | 49 | 1350m |



One More To Consider

- Yo-yo tests ability to recover from moderate intensity exercise
- Test recovery from high intensity exercise using the 7 x 30m sprints
- needs electronic timing (\$\$\$), stopwatch, measuring tape
- Player starts 1st run on their own
- start recovery stopwatch when they finish
- count down to next start, repeat for 7 total runs



7 x 30m Sprint Calculations

- Compute fastest, average of all 7, %decline
 - $(\text{fastest} - \text{slowest} / \text{slowest} \times 100)$
- add a timer at 10m
 - get 0-10m time for explosive sprint
 - 10-30m time for flying 20m
 - 0-30 for overall speed
- % decline of flying 20m sprint is correlated with game running distance



Average WNT Results on 7 x 30m

| | Fastest | Average | % decline |
|-----------|---------|---------|-----------|
| 10m | 1.98s | 2.08s | -9.89% |
| Flying 20 | 2.74s | 2.89s | -9.34 |
| 30m | 4.75 | 4.98 | -8.25 |



U17 Men's National

| | Fastest | Average | % decline |
|-----------|---------|---------|----------------|
| 10m | 1.80s | 1.84s | -3.9% |
| Flying 20 | 2.58s | 2.71s | -8.23% |
| 30m | 4.41s | 4.55s | -6.45% |
| Vert | 25" | Beep | 1600- 1860m |



Get this on the Web

- Go to www.med.unc.edu/~donkirk
- scroll down and click on Field Tests of Fitness
- email me and I will send you the powerpoint file
don.kirkendall@soccer.com

