

#### D2 Training in Motor Sports

Ryan Von Rueden CSCS

Director of Strength and Conditioning

Kasey Kahne Racing

# **Motor Sports Athletes**

- Drivers
- Pit Crew Members

#### Drivers as Athletes

- Travel at speeds up to 200 mph
- Up to 3 Gs of force through turns
- Temperatures in cockpit often over 100
- Temperatures by the floor board up to 170
- HR of 120-150 BPM for 3-5 hours
- Lose between 5-10 lbs during the race

#### Pit Crew as Athletes

- Average pit stop 13-15 seconds
- Hit 5 lug nuts
- Take a tire off and put new tire back on
- Run back around the car
- Hit 5 lug nuts
- Take a tire off and put new tire back on

# Skills Set of Motor Sport Athletes

- Vision
- Reaction
- Cognitive Processing
- Focus
- Speed and Agility

#### Vision

- Drivers
  - Hitting their "Marks"
  - Seeing the cars and space around them
- Pit Crew
  - Lug Nut
  - Fuel Tank
  - Jack

#### Reaction

- Drivers
  - Miss a wreck
  - Avoid after being cut off
  - Correcting when a car "steps out" on them
- Pit Crew
  - Any unplanned event during the stop

# Hand Speed

- Drivers
  - Save a spin
  - Miss a Crash
  - Advert line of car
- Pit Crew
  - Lug nut to lug nut
  - Tire on and off
  - Adjustments on car

### **Cognitive Processing**

#### Drivers

- What is going on with the car
- What is going on around them
- Communication with the crew chief on what needs to be done with the car

# Using the D2 for Training

- Trackable
- Progressive
- Vision
- Reaction
- Cognitive Processing

#### Trackable

- Quantitative Data
  - Reaction Time
  - Misses
  - Quadrants
  - Rings
- History

- D2 Familiarization
- Program A
- Full Board

- Peripheral Vision
- Full Board
- Program A
- Program B

- Reaction
- Inner Circles
- Program A
- Program B

- Cognitive Training
- Program A
  - 3 Digit numbers
    - Say them in order from left to right
  - 5 Digit numbers
    - Say them in order from left to right
  - 3 Digit numbers
    - Add them together

- Cognitive Training
- Program B
  - Green Lights
  - **10%**
  - Red light hit
  - Green light don't hit

- Cognitive Training
  - Program B
  - Green Light
    - Hit or don't hit
  - 3 numbers say in order
  - 5 numbers say in order
  - 3 numbers add together

- Cognitive Training
- Inner Circles
  - Left Hand only
  - Right Hand only

- Anyone can react, think and focus fresh, can they do it when they are stressed!!
- Add Physical Stress!!
  - 1 min sprint on treadmill
  - 1 min all out on the rower
  - 1 min all out on the ladder

# **Program Pit Crew**

- Inner Circles
- Both Hands as one

#### Program Progression

- Full Board
  - Program A
    - 3 Numbers
    - 5 Numbers
    - 3 Numbers
  - Program B
    - 3 Numbers
    - 5 Numbers
    - 3 Numbers
    - Green Lights

#### **Program Progression**

- Inner Circles
  - Program A
    - 3 Numbers
    - 5 Numbers
    - 3 Numbers
  - Program B
  - 3 Numbers
  - 5 Numbers
  - 3 Numbers
  - Green Lights

#### **Program Progression**

- Corrective/Improvement drills
  - Quadrants with major differences
  - Rings with major differences

#### THANK YOU

Ryan Von Rueden

Email: coachryan5@hotmail.com

@trainerryan5