Wheelchair Track Clinic

Stroke Mechanics Phases

- Contact
- Release
- Lift and Stretch
- Acceleration

Contact Phase

- Point of Contact - 1:00 – 2 :00
- Initial contact made on top of pushrim with the thump and the outer section of the pushrim with the first two fingers

- Sets the foundation of the stroke
- Elbows slightly out
- Contact outer-inner portion of pushrim
- Thumb I pointed to the sky

Drive Phase

- Point of Contact - 1:00 – 2 :00 through 6:00 – 7:00
- The contact point on the hand move to base of thumb and cuticles of the fingers
- Squeeze and explosive drive
- Pinky finger rotates out and thumb drives down towards the floor as the hand moves from 6:00 – 7:00

- Sets the foundation of the stroke
- Pinky finger rotates in toward the wheel as the hand drives from 1:00 – 3:00.
- 3:00 – 4 :00 o'clock shift
- Drive down and back
- Hand velocity
- Effective transfer of momentum
- Pinky finger drives down to the floor

Release Phase

- Release at 6:00 – 7:30
- Dynamic wrist
- Wrist is in flexion and palm is facing the sky as the hand releases the pushrim
- Pinky finger rotates out and thumb drives down towards the floor as the hand moves from 6:00 – 7:00

- Sets the foundation of the stroke
- Smooth and dynamic
- Critical for velocity

Lift and Stretch

- Hand separation between glove and pushrim

- Create hand-to-pushrim distance
- Arm leads the torso

Acceleration

- Hand velocity
- Reposition hand for initial contact

- Torso initiates the movement
- Arms and torso work synchronously

Mechanics of Climbing

- Point of contact changes (On and Off earlier)
- Recovery shortens
- Back to contact phase as quickly as possible

Mechanics of Starting

- Point of contact changes (On and Off earlier)
- Recovery shortens
- Back to contact phase as quickly as possible

Glove to Pushrim Interface

- Dictated by the style of the glove, however, contact moves from finger to base of the thumb

Seating Position

- Stroke mechanics directly tied to the seating position
- Stroke deficiencies can be corrected by adjusting seating position
- Maximize contact angle, position shoulder to achieve coverage from 2:00 to 7:30
- Ensure seating balance
- To increase biomechanical efficiency sit as high as possible while ensuring seatig balance and stability

Seating Position Adjustments

- Axle Position – Move athlete forward or backward relative to axle
- Seat Height – Raise butt up or down relative to axle and knee height
- Knee Height – Raise kneed up or down relative to axle and knee height

Seating Position General Rules

- Higher Function – Tend to site with higher seat height, lower knee height and minimal to no dump
- Shorter Arm or Torso – Tend to seat with shorter axle position and owe seat height
- Reach bottom of pushrim with a slight bent elbow

Pushrim Diameter Size

- Measure from knuckle of index finger to elbow to help determine pushrim size

Drills

Starts and Rolling Acceleration

- **Station 1 - 100m Glide Zones split as follows**
    - 20m hard // 20m glide // 60m hard
    - 40m hard // 20m glide // 40m hard

- **Station 2 - 200m Glide Zones split as follows**:
    - 50m hard // 50m easy // 100m hard
    - 110m hard // 40m easy // 50m hard

Drafting, Rolling Acceleration, Speed-Endurance, Speed-Reserve

Take maximum velocity and hold it for a long distance. Hold a higher percentage number of maximum MPH for a longer period of time.

- **Station 1 - Work on basic drafting skills** – Allow athletes to get used to be on a drafting pack. First athlete sets the pace and second athlete communicates with the first athlete. If time allows, have the first athlete pull out of the draft line to exchange lead with the second athlete.

- **Station 2 - Jumping out of the draft**
    - Station 3 - 300m paced and 100m kick
    - Station 4 - 200m paced and 100m kick

Entering and Exiting Turns (Compensator skills)

Be smooth and quick. Emphasize on pushing strokes preceding and following the compensator hit. Carry speed and sustain speed while hitting the compensator.

- **Station 1 - Rolling 120m out of turn -** Athletes start rolling about 10 meters before the 800m mark and work on exiting at the break line

- **Station 2 - Rolling 120 into the turn – Athletes s**tart rolling athletes about 10 meters before the 100m mark and drive 10 meters pass the first turn

Drafting

- Preserve energy
- Focus on staying in the draft
- Don't stop pushing when pulling out the draft line
- If athlete slows down to much the next athlete is going to push at a faster pace and a big gap is going to open up and the athlete will have to waste a lot of energy to get back into the draft
- If an athlete pulls and then slows down that will allow other athletes to attack and pull away from the pack