Video dataset for Assessing ACL Injury Risk in Female Athletes

Dataset [1] collected for the task of capturing performance-related information from videos of athletes. Collected with a focus on female athletes, as they tend to show higher risk of injury.

- Video data summary:

  No. of Participants: 89
  Total No. of Evaluative Jumps: 582

  No. of Countermovement Jumps: 346
  No. of Drop Jumps: 236

  No. of Camera Views for Each Video: 3

  Camera Settings:
  - Side View (Left and Right) Cameras Not Maintained At Fixed Angles Across All Videos.
  - Height of Cameras Not Fixed.

  Total No. of Videos: 1746

- Organization of video files:

  Participant ID (PID)

  anon_<PID>-<Jump Type>-<Camera View>

  anon_<PID>-<Jump Type>-<Camera View>-<Jump Count>.mp4

- Keyframes of jumps: “clipped_athletic_data_key_points_in_video.xlsx”
  - Provides key points – frame numbers – in jump videos:
    - **Lowest Point of Jump**: First squat that the participant performs when landing on the force plate.
    - **Highest Point of Jump**: Highest point that the participant reaches when performing the jump part of the evaluative motion.
    - **Final Landing**: Second point of impact on force plate, when participant lands after the jump.

Countermovement Jump – key events:
Drop Jump – key events:

- Force Plate data collected during jumps:
  - Countermovement Jumps: “Athletic Research Project CMJ.xlsx”

  ▪ Variables: Braking Phase Duration: Concentric Duration, Braking Phase Duration: Contraction Time, Braking Phase Duration (s), Concentric Duration (ms), Concentric Impulse -50ms (Ns), Concentric Impulse-100ms (Ns), Concentric Maximum RFD (N/s), Concentric Mean Force (N), Concentric Mean Power / BW (W/kg), Concentric Mean Power (W), Concentric Peak Force / BW (N/kg), Concentric Peak Force (N), Concentric Peak Velocity (m/s), Concentric RFD - 50ms (Ns), Concentric RFD - 100ms (Ns), Concentric RFD - 200ms (Ns), Concentric RFD / BW (W/kg), Concentric RFD (N), Concentric RPD50ms (W/s), Concentric RPD-100ms / BW (W/kg), Concentric RPD - 100ms (W/kg), Concentric RPD / BW (W/kg), Concentric RPD (W/s), Concentric Time to Peak Force (ms), Contraction Time: Eccentric Duration (%), Contraction Time (ms), Countermovement Depth (cm), Eccentric: Concentric Duration (%), Eccentric: Concentric Mean Force Ratio (%), Eccentric Acceleration Phase Duration (s), Eccentric Braking Impulse (Ns), Eccentric Braking RFD-100ms / BW (W/kg), Eccentric Braking RFD-100ms (Ns), Eccentric Braking RFD / BW (W/kg), Eccentric Braking RFD (N), Eccentric Deceleration Impulse (Ns), Eccentric Deceleration Phase Duration (s), Eccentric Deceleration RFD / BW (W/kg), Eccentric Deceleration RFD (N/s), Eccentric Duration (ms), Eccentric Mean Braking Force (N), Eccentric Mean Deceleration Force (N), Eccentric Mean Force (N), Eccentric Mean Power / BW (W/kg), Eccentric Mean Power (W), Eccentric Peak Force / BW (N/kg), Eccentric Peak Force (N), Eccentric Peak Power (W), Eccentric Peak Velocity (m/s), Eccentric Unloading Impulse (Ns), Flight Time: Contraction Time, Flight Time: Eccentric Duration, Flight Time (ms), Force at Peak Power (N), Force at Zero Velocity (N), Jump Height (Flight Time) (cm), Jump Height (Flight Time) in Inches (in), Jump Height (Imp-Dis) (cm), Jump Height (Imp-Mom) (cm), Jump Height (Imp-Mom) in Inches (in), Lower-Limb Stiffness (N/m), Mean Eccentric+Concentric Power:Time (W/s), Minimum Eccentric Force (N), Movement Start to Peak Force (s), Movement Start to Peak Power (s), P1 Concentric Impulse (Ns), P2 Concentric Impulse (Ns), Peak Net Takeoff Force / BW (N/kg), Peak Power / BW (W/kg), Peak Power (W), Positive Impulse (Ns), Positive Takeoff Impulse (Ns), RSI-modified (m/s), Start of Braking Phase (s), Start of Concentric Phase (s), Start of Eccentric Deceleration Phase (s), Start of Integration (s), Start of Movement (s), Start of Movement Detection Threshold (N), Takeoff Peak Force / BW (N/kg), Takeoff Peak Force (N), Time to Braking Phase (s), Total Work (J), Velocity at Peak Power (m/s), Jump Height (FT) Relative Landing RFD (N/s/cm), Jump Height (FT) Relative Peak Landing Force (N/cm), Landing Net Peak Force / BW (N/kg), Landing RFD (Ns), Mean Landing Power (W), Peak Landing Acceleration (m/s²), Peak Landing Force / BW (N), Peak Landing Force (N), Peak Landing Power (W), Peak Landing Velocity (m/s), Peak Takeoff Acceleration (m/s²), "Athlete Standing Weight Asymmetry (% L,R)", "Concentric Impulse-50ms Asymmetry (% L,R)", "Concentric Impulse-100ms Asymmetry (% L,R)", "Concentric Impulse Asymmetry (% L,R)", "Concentric Maximum RFD Asymmetry (% L,R)", "Concentric Mean Force
Drop Jumps: “Athletic Research Project Drop Jump.xlsx”

- Variables: Concentric Impulse [Ns], Concentric Mean Force [N], Concentric Mean Power / BW [W/kg], Concentric Mean Power [W], Concentric Peak Velocity [m/s], Countermovement Depth [cm], Eccentric: Concentric Mean Force Ratio [%], Eccentric Mean Force [N], Flight Time [ms], Force at Zero Velocity [N], Jump Height (Flight Time) [cm], Jump Height (Flight Time) in Inches [in], Jump Height (Imp-Dis) [cm], Jump Height (Imp-Mom) [cm], Jump Height (Imp-Mom) in Inches [in], Movement Start to Peak Power [s], Peak Power / BW [W/kg], Peak Power [W], Positive Impulse [Ns], Positive Takeoff Impulse [Ns], Start of Concentric Phase [s], Jump Height (FT Relative Landing RFD [N/s/cm], Jump Height (FT Relative Peak Landing Force [N/cm], Landing Net Peak Force / BW [N/kg], Landing RFD [N/s], Mean Landing Power [W], Peak Landing Acceleration [m/s²], Peak Landing Force [N], Peak Landing Power [W], Peak Landing Velocity [m/s], Peak Takeoff Acceleration [m/s²], "Concentric Impulse Asymmetry [% L,R]", "Concentric Mean Force Asymmetry [% L,R]", "Eccentric:Concentric Mean Force Ratio Asymmetry [% L,R]", "Eccentric Mean Force Asymmetry [% L,R]", "Force at Zero Velocity Asymmetry [% L,R]", "Positive Impulse Asymmetry [% L,R]", "Positive Takeoff Impulse Asymmetry [% L,R]", "Landing RFD Asymmetry [% L,R]", "Landing Peak Force Asymmetry [% L,R]", Concentric Impulse (Left) [Ns], Concentric Impulse

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