Detailed Table 1: Demographic, lifestyle and cognitive health data collected

Demographic characteristics	Survey responses	Neuromechanical performance test metrics
Sex	Concussion Symptoms (SFI_Cx) Symptoms from Concussion or Repeated Head Impacts (6-level survey response)	Average Reaction Time using FitLight (FL_Tav) Unilateral Reactive Hop Test Average Reaction Time for Right and Left Extremities
Age	Sports Fitness Index 0-100 score Ratings of persisting effects from previous injuries (SFI_totalscore)	Average. Reaction Time for Right limb using Fitlight (FL_RT) Unilateral Reactive Hop Test Average Reaction Time for Right Extremity
Body Mass Index (BMI)	Pittsburg Sleep Quality Index (PSQI_Global) High Score = Poor Sleep Quality	Correct No. of Responses for Right limb using FitLight (FL_RTC) (Correct out of 6 Trials)
Mass Moment of Inertia (MMOI)	Stress level on DASS scale (DASS_StressCat) High Score = High Stress	Average. Reaction Time for Left limb using Fitlight (FL_LTav) Unilateral Reactive Hop Test Average Reaction Time for Left Extremity
Self-Reported Dominant Limb	Anxiety level on DASS scale (DASS_AnxietyCat) High Score = High Anxiety	Correct No. of Responses for Left limb using FitLight (FL_Lcorr) (Correct out of 6 Trials)
High school sport participation (hssport_participation) Former High School Athlete	Depression level on DASS scale (DASS_DepCat) High Score = High Depression	Percent Correct Response using Fitlight (FitLpctCorrect) (Correct out of 12 Trials)
	Exercise_Level 8 Response options (Higher number = higher level of activity)	Average. Reaction Time for outer rings During Proactive Mode (DYNA_PA_RTexternalav) Dynavision Proactive Mode Average Reaction Time for Outermost 2 Rings
	Exercise_YN 8 Response options converted to binary categorization (0-3: Inactive; 4-7: Active)	Average. Reaction Time for inner rings during Proactive Mode (DYNA_PA_RTratioav) Dynavision Proactive Mode Average Reaction Time for Innermost 3 Rings
	Prior Injury (AnyInjury) Any sprain or strain within previous 12 months	Ratio of external hits to internal hits in Reactive Mode (DYNA_RAratio) Dynavision Dual-Task in Reactive Mode Ratio of Hits in Outermost 2 Rings to Hits in Innermost 3 Rings
	Core or Lower Extremity Injury (CoreLEinjury) Any core (abdomen or low back) or lower extremity sprain or strain within previous 12 months	Fitlight Efficiency Index (FL_EI) Unilateral Reactive Hop Test Average Reaction Time Divided by Average Response Accuracy (Right and Left Extremity Test Data Combined)
	Upper Extremity Injury (UEInjury) Any upper extremity sprain or strain within previous 12 months	Average Reaction Time (all rings) in proactive mode (pro_avgRT) Dynavision Proactive Mode Average Reaction Time
	Timeloss_anyinjury Any time-loss sprain or strain within previous 12 months	Total Hits in Reactive Mode (re_total_hit) Dynavision Dual-Task in Reactive Mode Ratio Total Number of Hits
	Timeloss_CoreLEInjury Any time-loss core (abdomen or low back) or lower extremity sprain or strain within previous 12 months	
	Timeloss_UEInjury Any time-loss upper extremity sprain or strain within previous 12 months	

Appendix I- Variable Definitions and Acronym

Age – age (years) at time of testing
Dominant – self-reported dominant limb
Sex – gender (0 = males, 1 = females)
Hssport_participation – 0 = they did not participate in high school sports; 1 = they did participate in high school sports
BMI – body mass index
MMOI = mass moment of inertia (how high above the ground body mass is concentrated)
Cx_Hx – concussion history; 0 = no history of concussion; 1 = history of concussion
Cx_number – concussion number; represents self-reported number of prior concussions
Yrs_since_cx – years since last concussion; used self-reported date of last concussion
SFI_Cx – response on SFI question #11 regarding the extent to which participants ever experienced headaches, vision problems, loss of balance, or difficulty concentrating as a result of concussion or repeated head impacts; 0 = severe, 1 = substantial, 2 = moderate, 3 = marginal, 4 = insignificant, 5 = not at all.
SFI_totalscore = 0=100 score, higher indicates better self-reported function (less influence of musculoskeletal injury on function)
PSQI_Global – score of 0-21, higher indicates poorer sleep quality (PSQI = Pittsburgh sleep quality index)
DASS_StressCat – stress category based on previous variable; 0-7= 0 (normal) ; 8-9 = 1 (mild), 10-12 = 2 (moderate); 13-16 = 3 (severe); 17+ = 4 (extremely severe)
DASS_AnxietyCat - anxiety category based on previous variable; 0-3= 0 (normal) ; 4-5 = 1 (mild), 6-7 = 2 (moderate); 8-9 = 3 (severe); 10+ = 4 (extremely severe)
DASS_DepCat - depression category based on previous variable; 0-4= 0 (normal) ; 5-6 = 1 (mild), 7-10 = 2 (moderate); 11-13 = 3 (severe); 14+ = 4 (extremely severe)
FL_Tav – fitlight average reaction time
FL_RT – fitlight average reaction time for right limb only
FL_RTC – correct number of responses out of 6 total response during right limb single leg hopping task
FL_LTav – fitlight average reaction time for left limb
FL_Lcorr – correct number of responses out of 6 total responses during left limb single leg hopping task
FitLpctCorrect – percent of correct responses on the fitlight test (out of 12 possible trials)
DYNA_PA_RTexternalav – average reaction time for rings 4 & 5 during the proactive mode of the dynavision test
DYNA_PA_RTratioav – variable created by dividing external ring average reaction time by internal ring average reaction time during the proactive mode of the dynavision test
DYNA_RAratio = variable created by dividing external hits by internal hits during the reactive mode of the dynavision test
FL_EI – fitlight efficiency index; fitlight average reaction time divided by the percent correct
Exercise_Level – variable based on following question:
Please read the following and choose the ONE answer below that best describes your current level of physical activity or your readiness to do more physical activity. Do not include activities you do as part of your job. "Vigorous" exercise includes activities like jogging, running, fast cycling, aerobics classes, swimming laps, singles tennis, and racquetball. Any activity that makes you work as hard as jogging and lasts 20 minutes at a time should be counted. These types of activities usually increase your heart rate, make you sweat, and make you get out of breath. (Do not count weight lifting). Regular vigorous exercise is done for at least 20 minutes at a time and at least 3 days a week. "Moderate" exercise includes activities like brisk walking, gardening, slow cycling, dancing, doubles tennis, or hard work around the house. Any activity that makes you work as hard as brisk walking and that lasts at least 10 minutes at a time should be counted. Regular moderate exercise is done at least 30 minutes a day and at least 5 days a week. Please check the statement that best describes your current physical activity status:

0 = I don't do regular vigorous or moderate exercise, and I don't intend to start in the next 6 months.
1 = I don't do regular vigorous or moderate exercise now, but I have been thinking of starting in the next 6 months.
2 = I'm trying to start doing vigorous or moderate exercise, but I don't do it regularly.
3 = I'm doing vigorous exercise less than 3 times per week (or) moderate exercise less than 5 times per week.
4 = I've been doing 30 minutes a day of moderate exercise 5 or more days per week for the last 1-5 months.
5 = I've been doing vigorous exercise 3 or more days per week for the last 1-5 months.
6 = I've been doing 30 minutes a day of moderate exercise 5 or more days per week for the last 6 months or more.
7 = I've been doing vigorous exercise 3 or more days per week for the last 6 months or more.
Exercise_YN = dichotomized variable based on exercise level reported; 0 = a 3 or less was reported; 1 = a 4 or more was reported (see above variable)
AnyInjury = using SFI injury history; any injury reported (upper or lower extremity); 0 = no injury reported; 1 = any reported
CoreLEinjury = limits injury types to core and lower extremity injuries
UEInjury= limits injury types to upper extremity injuries
Timeloss_anyinjury = for any participant that reported an injury, denotes whether the injury resulted in loss of game or practice time
Timeloss_CoreLEInjury = for any participant that reported a core/lower extremity injury, denotes whether the injury resulted in loss of game or practice time
Timeloss_UEInjury = for any participant that reported an upper extremity injury, denotes whether the injury resulted in loss of game or practice time
Pro_avgRT – average reaction time (all rings) for the proactive mode of the dynavision test
Re_total_hit = total number of hits achieved during the reactive mode of the dynavision test