**Note: The highly recommended CDEs have been listed below with asterisks (\*) and bolded.**

**Subject Information**

* 1. Subject age: years, months
	2. Subject gender: [ ]  Female [ ]  Male [ ]  Unknown [ ]  Unspecified [ ]  Not reported
	3. Subject height: [ ]  Feet [ ]  Meters [ ]  Inches [ ]  Centimeters
	4. Subject weight: [ ]  Ibs [ ]  kgs
	5. Subject head size (circumference): [ ]  Inches [ ]  Centimeters
	6. Sport (see instructions):
	7. Position (see instructions):
	8. Subject's competition level: [ ]  Rec [ ]  Club [ ]  HS [ ]  College [ ]  Professional [ ]  Military [ ] Other

**Activity**

* 1. Activity at time of event: [ ]  Warm-up (if discernible) [ ]  Practice [ ]  Game [ ]  Scrimmage

**Data Collection**

* 1. Start of data collection (date / time)
		1. Date of first event:
		2. Time of first event: [ ]  am [ ]  pm [ ]  24-hour clock
	2. End of data collection (date / time)
		1. Date of last event:
		2. Time of last event: [ ]  am [ ]  pm [ ]  24-hour clock
	3. Number of Exposures (Also see [Video Device Confirmation CRF](https://www.commondataelements.ninds.nih.gov/sites/nindscde/files/Doc/TBI/F2688_Video_Device_Confirmation.docx))
		1. Total number of exposures registered:
		2. True Positive exposures are confirmed in video: [ ]  Yes [ ]  No
		3. If answer to ‘b’ is yes, include description of video confirmation method or citation and complete [Video Device Confirmation CRF](https://www.commondataelements.ninds.nih.gov/sites/nindscde/files/Doc/TBI/F2688_Video_Device_Confirmation.docx):
		4. Exposures are confirmed with published detection algorithm: [ ]  Yes [ ]  No (See [Video Device Confirmation CRF](https://www.commondataelements.ninds.nih.gov/sites/nindscde/files/Doc/TBI/F2688_Video_Device_Confirmation.docx))
		5. If answer to ‘d’ is yes, include description of detection method and validation performance or citation:

**Sensor and Helmet Information**

* 1. Sensor and Helmet
		1. †Device: [ ]  Single [ ]  Multiple
		2. \***Sensor Types (check all that apply):**

[ ]  **Linear accelerometer**

[ ]  **Gyroscope**

[ ]  **Angular accelerometer**

[ ]  **Force**

[ ]  **Pressure**

[ ]  **Other, specify:**

* + 1. \***Sensor Manufacturer/Vendor:**
		2. **\*Sensor Model (if any):**
		3. Helmet Manufacturer (if any):
		4. Helmet Model (if any):
		5. Helmet size (if any):

[ ]  2XS

[ ]  XS

[ ]  S

[ ]  M

[ ]  L

[ ]  XL

[ ]  2XL

[ ]  3XL

[ ]  4XL

[ ]  5XL

[ ]  Youth S

[ ]  Youth M

[ ]  Youth L

[ ]  Youth S/M

[ ]  Youth L/XL

[ ]  Other, specify:

* + 1. Device mounting location [or interface and location]:

[ ]  Helmet

[ ]  Mouth guard

[ ]  Left ear

[ ]  Right ear

[ ]  Skin

[ ]  Teeth

[ ]  Ear canal

[ ]  Other, specify:

* + - 1. For mouth guard: [ ]  Custom [ ]  Boil-and-bite model
		1. \***Hardware Version:**
		2. \***Sensor Firmware Version:**
		3. **\*Software Version:**
		4. **\*Device Type:**

**[ ]  Ear piece**

**[ ]  Helmet liner**

**[ ]  Custom mouth guard (thermoformed, 3D printed)**

**[ ]  Boil-and-bite mouth guard (injection molded, 3D printed)**

**[ ]  Retainer**

**[ ]  Skin patch**

**[ ]  Headband**

**[ ]  Other, specify:**

* + 1. **\*Anatomical Location of sensing device on User’s head:**

**[ ]  Ear canal**

**[ ]  Maxilla**

**[ ]  Mandible**

**[ ]  Upper jaw/teeth**

**[ ]  Parietal**

**[ ]  Frontal**

**[ ]  Temporal**

**[ ]  Occiput**

**[ ]  Palate**

* + 1. **\*Impact duration/sampling window:**
			1. **Pre-trigger: (ms)**
			2. **Post-trigger: (ms)**
			3. **Total record length: (ms)**
		2. †Laboratory ranges of kinematic calibration for instrument (e.g., bare head between 20g to 100g; American football between 25g to 100g to forehead, front boss, side, rear):

OR Indicate: **[ ]** Custom calibration **[ ]** Standard sensor star rating

* + 1. **\*Data Storage (trigger) threshold:**
	1. Linear Accelerometer Sensor Information (information may be available from manufacturer part number)
		+ 1. **\*Linear acceleration unit:** [ ]  g [ ]  m/s2
			2. \***Accelerometer full scale range, +/- (m/sec^2):**
			3. **\*Accelerometer sampling rate (Hz):**

 Exploratory Data Elements:

1. †Accelerometer nominal non-linearity, (% of output):
2. †Accelerometer calibration type and calibration constants: [ ]  None [ ]  Linear Y=mX+B [ ]  Non-linear Y=kX^n
3. †Accelerometer 0dB pass-band, (f1-f2, Hz):
4. Accelerometer analog pre-filter type: [ ]  None [ ]  4th Order Butterworth [ ]  Other, specify:
5. Accelerometer analog pre-filter -3dB corner frequency, (Hz):
6. Are angular accelerations derived from linear accelerometer outputs? [ ]  Yes [ ]  No
	* 1. Derivation method:
7. Angular accelerations are confirmed with published method: [ ]  Yes [ ]  No
8. If answer to ‘j’ is yes, include citation, if not include description:
	1. Angular Sensor Information (information may be available from manufacturer part number)
		* 1. **\*Does sensor directly measure** [ ]  **angular velocity in rad/sec or** [ ]  **angular acceleration in rad/s2?**
			2. **\*Gyroscope full scale range, +/- (rad/s):**
			3. **\*Gyroscope sampling rate, (Hz):**

Exploratory Data Elements:

* + - 1. †Gyroscope calibration type and constants [ ]  None [ ]  Linear form Y=mX+B [ ]  Non-linear form Y=kX^n
			2. †Gyroscope nominal non-linearity, (% of output):
			3. †Gyroscope 0dB pass-band, (f1-f2, Hz):
			4. Analog pre-filter type: [ ]  None [ ]  4th Order Butterworth [ ]  Brick Wall [ ]  Other, specify:
			5. Gyroscope filter -3dB corner frequency, (Hz):
			6. If angular velocity sensor, are angular accelerations derivatives? [ ]  Yes [ ]  No

Derivation method:

* + - 1. If gyroscope, what equation was used to compute derivative?
			2. **\*If no, indicate coordinate definition for transformation purposes:**
	1. **\*Are the data filtered based on standards according to SAE J211?: [ ]  Yes [ ]  No**
		+ 1. **\*if no, additional filter specifications should be given:**
			2. **\*Specify filter type:**

**Sensor Data Collection**

* 1. Head Linear Acceleration Information
		+ 1. †Estimated frequency content of linear acceleration pulse, to compare against sensor optimal ranges of performance (Hz):
			2. **\*Peak linear acceleration x: [ ]  g [ ]  m/s2**
			3. **\*Peak linear acceleration y: [ ]  g [ ]  m/s2**
			4. **\*Peak linear acceleration z: [ ]  g [ ]  m/s2**
			5. Scalar of linear acceleration (RSS value)
	2. †Linear velocity
	3. Head Angular Velocity Information
		+ 1. †Frequency content of angular velocity pulse (Hz – if different than linear acceleration):
			2. Peak change in rotational velocity x: [ ]  rad/s [ ]  deg/s
			3. Peak change in rotational velocity y: [ ]  rad/s [ ]  deg/s
			4. Peak change in rotational velocity z: [ ]  rad/s [ ]  deg/s
			5. Peak change in rotational velocity: [ ]  scalar [ ]  rad/s [ ]  deg/s
	4. Head Angular Acceleration Information
		+ 1. †Frequency content of angular (rotational) acceleration pulse (Hz – if different than linear acceleration):
			2. Peak rotational acceleration x: [ ]  rad/s2 [ ]  deg/s2
			3. Peak rotational acceleration y: [ ]  rad/s2 [ ]  deg/s2
			4. Peak rotational acceleration z: [ ]  rad/s2 [ ]  deg/s2
			5. Peak rotational acceleration magnitude: [ ]  scalar [ ]  rad/s2 [ ]  deg/s2

The following are Exploratory Data Elements that may be considered:

* 1. Head Kinematic Injury Criteria
		+ 1. †Head Injury Criterion (HIC):
		1. Specify: [ ]  HIC15 [ ]  HIC36
			1. †Severity Index (SI):
			2. †Brain Injury Criterion (BrIC):
			3. †Rotational Injury Criterion (RIC):
			4. †Power Rotational Head Injury Criterion (PRHIC):
			5. †Head Impact Power (HIP):
			6. †HIT Severity Profile (HITsp):
	2. †Peak Principal strain:
	3. †Peak fiber oriented strain:
	4. †FE Model Name: [ ]  ABM [ ]  GHBMC [ ]  THUMS [ ]  WHIM [ ]  Other, specify:
	5. †FE Model Version:
	6. Impact location/direction:

## GENERAL INSTRUCTIONS

Important note: Most data elements on this form are classified as Supplemental (i.e., non-Core) and should only be collected if the research team considers them appropriate for their study. However, the data elements noted with an asterisk (\*) and bolded on this CRF Module are classified as Supplemental – Highly Recommended (i.e., strongly recommended for Biomechanical Devices in TBI clinical studies to collect). In addition, the data elements noted with a dagger (†) on this CRF Module are classified as Exploratory (i.e., reasonable to use for Biomechanical Devices in TBI clinical studies since they fill in a needed gap but need further validation).

**\* Data elements are Supplemental – Highly Recommended.**

†Data elements are Exploratory (Lowest Classification).

All other data elements are supplemental.

## SPECIFIC INSTRUCTIONS

Please see the Data Dictionary for definitions for each of the data elements included in this CRF Module*.*

* Subject age - No further instructions
* Subject gender - No further instructions
* Subject height - No further instructions
* Subject weight - No further instructions
* Subject head size (circumference) - Head circumference should be measured with a non-stretch tape held firmly, but without squeezing the skin, in the horizontal plane through the glabella [forehead above eyebrows] and opisthocranion [posterior most point of the occiput]. <https://www.ejmanager.com/mnstemps/134/1997_4_3_1.pdf>
* Start of data collection - The date/time when data acquisition started
* Date of first recorded event (mm/dd/yyyy) and Time of first recorded event (hh:mm) - Report the time and date when the first event was recorded.
* End of data collection - The date/time when data acquisition ended
* Date of last recorded event (mm/dd/yyyy) and Time of last recorded event (hh:mm) - Report the time and date when the last event was recorded.
* Sport (See Table 2 for list) - Select from list of permissible values below. Note: This information may make the data personal identifiable along with position.
* Position (See Table 2 for list) - The primary position of the participant at the time of the event(s). Select from list of permissible values for each sport. Note: Depending on the sample size, this data may be personally identifiable. It is up to the researcher to determine if this information should be collected.
* Subject's competition level - Competition level of practice or game participated in by subject at time of recording of exposure event. Determine competition level based on official practice or competition category. If other, or laboratory/ exploratory, etc., record if so. Note: Recreation (‘Rec’) is non-competitive recreational sport while competitive recreational is referred to as ‘Club’.
* Activity at time of event - Select from the options provided.
* Sensor and Helmet Information - Information regarding sensor device type and performance specifications, and helmet type (if applicable) and specifications. Fill out required items a-p.
	+ Device - Single or multiple devices (not sensors) used for data collection. If multiple devices are used, will require entry for each device. Check appropriate box. If multiple devices are employed, information will be required for each device.
	+ Sensor Type(s) - Check all that apply: linear accelerometer, gyroscope, angular accelerometer, force, pressure, other, specify (any other type of sensor, specify). Fill in the appropriate sensor type per the definition
	+ Sensor Manufacturer / Vendor - Vendor of the sensor or if vendor and manufacturer are identical then the manufacturer of the final assembled sensor package. Fill in the appropriate vendor per the instructions.
	+ Sensor Model (if any) - Model name and number for final assembled sensor package if available. Fill in the appropriate vendor per the instructions.
	+ Helmet Manufacturer (if any) - Helmet manufacturer (company) owning the design and marketing the helmet. Fill in the appropriate helmet manufacturer per the instructions.
	+ Helmet Model (if any) - Helmet model number for helmet per vendor or manufacturer
	+ Helmet Size (if any) - Per most common available sizes, 2 extra small to 5 extra-large, and youth small to youth large/extra-large. 2 extra small, extra small, small, medium, large, extra-large, 2 extra-large, 3 extra-large, 4 extra-large, 5 extra-large, youth small, youth medium, youth large, youth small/medium, youth large/extra-large. If another numeric size convention is used, then provide the number and units or convention in other (specify). Fill in the appropriate helmet size per the instructions, or fill in the other numeric convention and units or convention name in other (specify).
	+ Device mounting location (or interface and location) - Location of placement of final assembled device, including helmet (inside helmet), mouthguard, ear (left or right), skin, teeth, ear canal, or other (specify). Fill in the appropriate device mounting location or interface and location per the instructions.
	+ Hardware version - Per vendor - hardware number for final assembled device for vendor sensor hardware and date of manufacture if available. Fill in the appropriate hardware version per the definition.
	+ Sensor Firmware version - Per vendor - firmware hardware version number and date of firmware if available. Fill in the appropriate firmware version per the definition.
	+ Software version - Per vendor - sometimes postprocessing of data is performed in software and if so, recording pc or app software version and platform, so version of software, and. Windows 10, OSX High Sierra, etc. Fill in the appropriate software version per the definition.
	+ Device Type - Ear piece, helmet liner, custom mouth guard (thermoformed, 3D printed), boil-and-bite mouth guard (injection molded, 3D printed), retainer, skin patch, headband, other(specify). Record the general device type as advertised and under intended use.
	+ Anatomical Location of Device - Location the device is mounted for data collection; general locations are anatomic locations on the head.
	+ Exposure duration / sampling window - Length of time data is collected for a given exposure. Record time in milliseconds, both pre-trigger, post-trigger, or pre- and post-trigger total (milliseconds).
	+ Data Storage Threshold - This is the trigger threshold used to trigger an impact. Specified as linear acceleration, angular acceleration, angular velocity or a combination (check all that apply). Also, if the algorithm requires the signal to exceed a given threshold for a minimum amount of time that should be included as ‘MTOM, minimum time over threshold, samples or ms for units’. Specify if triggering is possible independently by axis and enter each if so. Check proprietary option and provide practical threshold in practice as well. Fill trigger threshold. Also, if the algorithm requires the signal to exceed a given threshold for a minimum amount of time that should be included as ‘MTOM, minimum time over threshold, samples or ms for units’ Specify if triggering is possible independently by axis and enter each if so. Check proprietary option and provide practical threshold in practice as well.
* Number of exposures
	+ Total number of exposures registered - A single exposure refers to one occurrence of head impact/inertial exposure. The number of exposures registered refers to the total number of such occurrences over the duration of data collection (start and end times defined by CDEs 2 and 3). For example, if data collection occurred over a single American Football game for one player, and the player’s head accelerometry device registered 30 impacts, the number of exposures registered would be 30. It is important to consider that for some sensor systems that they don’t differentiate between actual play and things like halftime or water breaks. It can be challenging to measure true head impacts, not jumping up or down for example, unless that is the question being asked.
	+ If any of the answers to ‘b’ or ‘d’ is yes, please enter the number of exposures after confirming with video or detection algorithm.
	+ Exposures are confirmed in video - State whether the exposures indicated in a have been confirmed in video recordings of the activity. For example, if registered head impacts from an American Football game were observed in game video to occur at the times indicated by the data recordings, the answer would be yes. Select yes or no.
	+ If answer to ‘b’ is yes, include description of video confirmation method or citation. Include a text description of the method used, or a citation of the method.
	+ Impacts are confirmed with validated impact detection algorithm - State whether the exposures indicated in a have been confirmed or detected by a validated method to detect exposure. For example, if registered head impacts from an American Football game were confirmed by a validated head impact detection algorithm to be head impacts (instead of spurious recordings), then the answer would be yes. Select yes or no.
	+ If answer to ‘d’ is yes, include description of impact detection method or citation - Include a text description of the method used and validation performance, or a citation of the method.
* Linear Accelerometer Sensor Information - No further instructions
* Angular Sensor Information - No further instructions
* Are the data filtered based on standards according to SAE J211? - No further instructions (Under future consideration: Use of SAE J1734.)
* Head Linear Acceleration Information - No further instructions
* Head Angular Velocity Information - No further instructions
* Head Angular Acceleration Information - No further instructions
* Head Kinematic Injury Criterion (Table 1)

Table 1

| **Criterion** | **Value** | **Definition** | **Reference/Notes** |
| --- | --- | --- | --- |
| Head Injury Criterion (HIC)  | Numeric value, >0 | Linear acceleration using “g” as unit, time “ms” as unit.See REF for equation. | Versace, J., "A Review of the Severity Index," SAE Technical Paper 710881, 1971, <https://doi.org/10.4271/710881>. |
| Specify HIC15 or HIC36 |
| Severity Index (SI) | Numeric value, >0 | It was formulated by fitting the Wayne State Tolerance Curve, which is based on skull fracture data. It incorporates impact duration into the assessment of head and brain injury risk. Linear acceleration using “g” as unit, time “ms” as unit.See Ref for equation. | Gadd, C., "Use of a Weighted-Impulse Criterion for Estimating Injury Hazard," SAE Technical Paper 660793, 1966, <https://doi.org/10.4271/660793>.  |
| The integral is evaluated over the period of time from when the linear acceleration first exceeds 4g to when it returns to 4g after the largest peak |
| Brain Injury Criterion (BrIC)  | Numeric value, >0 | Formulated using the maximum magnitudes of the three orthogonal head angular velocity components. | Takhounts, E., Craig, M., Moorhouse, K., McFadden, J. et al., "Development of Brain Injury Criteria (BrIC)," SAE Technical Paper 2013-22-0010, 2013, <https://doi.org/10.4271/2013-22-0010>.Takhounts EG, Craig MJ, Moorhouse K, McFadden J, Hasija V. Development of brain injury criteria (BrIC). Stapp Car Crash J. 2013 Nov;57:243-66. |
| Critical velocity values are model-dependent, and also rely on an injury dataset to produce the 50% injury probability |
| Rotational Injury Criterion (RIC)  | Numeric value, >0 | This is a HIC analogue by replacing linear acceleration with rotational acceleration.  | Kimpara H, Iwamoto M. Mild traumatic brain injury predictors based on angular accelerations during impacts. Ann Biomed Eng. 2012 Jan;40(1):114-26. |
| Time interval bound to 36 ms. |
| Power Rotational Head Injury Criterion (PRHIC)  | Numeric value, >0 | See Ref for equation. | Kimpara H, Nakahira Y, Iwamoto M, Rowson S, Duma SM. Head Injury Prediction Methods Based on 6 Degree of Freedom Head Acceleration Measurements during Impact Int. J. Automot. Engineering 2011;2:13-9. <https://www.jstage.jst.go.jp/article/jsaeijae/2/2/2_20114490/_pdf/-char/en> |
| Head Impact Power (HIP) | Numeric value, >0 | See Ref for equation. | Newman JA, Shewchenko N, Welbourne E. A proposed new biomechanical head injury assessment function - the maximum power index. Stapp Car Crash J. 2000 Nov;44:215-47. |
| The maximum is taken over the entire 100 ms window when sensor measurements are recorded. |
| HIT Severity Profile (HITsp)  | Numeric value, >0 | A weighted sum of peak linear and rotational accelerations, HIC, and Gadd SI with empirically determined weights.See Ref for equation. | Greenwald RM, Gwin JT, Chu JJ, Crisco JJ. Head impact severity measures for evaluating mild traumatic brain injury risk exposure. Neurosurgery. 2008 Apr;62(4):789-98; discussion 798. |
| HITsp is effectively a commercial name of Principal Component Score (PCS). They are identical. |

* Peak Principal strain - Recommend 95th percentile peak maximum principal strain value among all elements in the brain mesh. If possible, also recommend reporting where this peak value occurred in the brain.
* Peak fiber oriented strain - Recommend 95th percentile peak strain value along the white matter fiber direction within the brain. Also recommend specify the technique used to report the fiber-oriented strain, e.g., sampled from FE elements or from neuroimaging. If possible, also recommend reporting where this peak value occurred in the brain white matter region, based on an atlas.
* FE Model Name - Abbreviation of the head injury model name used; e.g., ABM, GHBMC, THUMS, WHIM, etc.
* FE Model Version - Currently, it is not typical to report a model version number except for a few (GHBMC/THUMS). Recommend to report a major and a minor version number in the future, e.g., Version 1.0, Version 2.1. Also recommend providing citation of the model description and validation for the specific model. Need to further discuss what constitutes a major version vs. a minor version – for example, change of head/brain meshing, change of material property (isotropic vs. anisotropic), etc. may constitute a major version, while geometrical scaling and revision on brain-skull boundary conditions, etc. may be a minor version.

References

Cortes N, Lincoln AE, Myer GD, Hepburn L, Higgins M, Putukian M, Caswell SV. Video Analysis Verification of Head Impact Events Measured by Wearable Sensors. Am J Sports Med. 2017 Aug;45(10):2379-2387.

Wu LC, Zarnescu L, Nangia V, Cam B, Camarillo DB. A head impact detection system using SVM classification and proximity sensing in an instrumented mouthguard. IEEE Trans Biomed Eng. 2014 Nov;61(11):2659-68.

Table 2 – Sports and Positions

|  |  |  |
| --- | --- | --- |
| **Baseball** |   | Base Coach |
|   | Base Runner |
|   | Batter |
|   | Catcher |
|   | Center Field |
|   | First Base |
|   | Left Field |
|   | Participant |
|   | Pitcher |
|   | Right Field |
|   | Second Base |
|   | Short Stop |
|   | Third Base |
| **Basketball** |   | Center |
|   | Forward |
|   | Guard |
|   | Participant |
| **Beach Volleyball** |   | Participant |
| **Biking** |   | Rider |
| **Bowling** |   | Participant |
| **Boxing** |   | 102lbs |
|   | 105lbs |
|   | 108lbs |
|   | 112lbs |
|   | 115lbs |
|   | 118lbs |
|   | 122lbs |
|   | 126lbs |
|   | 130lbs |
|   | 135lbs |
|   | 140lbs |
|   | 147lbs |
|   | 154lbs |
|   | 160lbs |
|   | 168lbs |
|   | 175lbs |
|   | 200lbs |
|   | Heavyweight |
|   | Participant |
| **Cheerleading** |   | Base |
|   | Flyer |
|   | Back spotter |
|   | Front Spotter |
|   | Participant |
|   | Unknown |
| **Cross Country/ Track** |   | Runner |
|   | Unknown |
| **Diving** |   | Diver |
| **Fencing** |   | Participant |
| **Field** |   | Decathlete |
|   | Heptathlete |
|   | Jumper |
|   | Pentathlete |
|   | Runner |
|   | Thrower |
|   | Participant |
|   | Pole Vaulter |
| **Field Hockey** |   | Defensive Back |
|   | Forward/Attack |
|   | Goalkeeper |
|   | Midfielder |
|   | Participant |
| **Football** |   | Center |
|   | Cornerback |
|   | Defensive End |
|   | Defensive Tackle/Nose Guard |
|   | Defensive Back |
|   | Flanker/Wide Receiver |
|   | Holder |
|   | Punter/Kicker |
|   | Linebacker |
|   | Long Snapper |
|   | Off (tight) End |
|   | Off Guard |
|   | Off Tackle |
|   | Quarterback |
|   | Running Back/Slotback |
|   | Safety |
|   | Special Teams (FG Offense) |
|   | Special Teams (FG Defense) |
|   | Special Teams (Punt Return) |
|   | Special Teams (Punt Coverage) |
|   | Special Teams (Kickoff Coverage) |
|   | Special Teams (Kickoff Return) |
|   | Participant |
| **Golf** |   | Participant |
| **Gymnastics** |   | Participant |
| **Ice Hockey** |   | Center |
|   | Defense Right |
|   | Defense Left |
|   | Forward Attack |
|   | Goal Keeper |
|   | Participant |
|   | Wing (left) |
|   | Wing (right) |
| **In Line Hockey** |   | Center |
|   | Defense Right |
|   | Defense Left |
|   | Forward Attack |
|   | Goal Keeper |
|   | Participant |
|   | Wing (left) |
|   | Wing (right) |
|   | Other |
| **Lacrosse** |   | Defensive Back |
|   | Forward Attack |
|   | Goal Keeper |
|   | Middlefield |
| **Rifle** |   | Participant |
| **Rowing/Crew** |   | Coxwain |
|   | Port |
|   | Starboard |
|   | Participant |
|   | Unknown |
| **Rugby** |   | Loosehead Prop |
|   | Hooker |
|   | Tighthead Prop |
|   | Second Row |
|   | Blindside Flanker |
|   | Openside Flanker |
|   | Number 8 |
|   | Scrum-half |
|   | Fly-half |
|   | Inside Center |
|   | Outside Center |
|   | Left Wing |
|   | Fullback |
|   | Participant |
|   | Unknown |
| **Sailing** |   | Participant |
| **Skiing** |   | Alpine |
|   | Cross Country |
|   | Participant |
| **Soccer** |   | Defensive Back |
|   | Forward |
|   | Goalkeeper |
|   | Midfielder |
| **Softball** |   | Base Coach |
|   | Base Runner |
|   | Batter |
|   | Catcher |
|   | Center Field |
|   | First Base |
|   | Left Field |
|   | Participant |
|   | Pitcher |
|   | Right Field |
|   | Second Base |
|   | Short Stop |
|   | Third Base |
| **Sprint Football** |   | Center |
|   | Cornerback |
|   | Defensive End |
|   | Defensive Tackle/Nose Guard |
|   | Defensive Back |
|   | Flanker/Wide Receiver |
|   | Holder |
|   | Punter/Kicker |
|   | Linebacker |
|   | Long Snapper |
|   | Off (tight) End |
|   | Off Guard |
|   | Off Tackle |
|   | Quarterback |
|   | Running Back/Slotback |
|   | Safety |
|   | Special Teams (FG Offense) |
|   | Special Teams (FG Defense) |
|   | Special Teams (Punt Return) |
|   | Special Teams (Punt Coverage) |
|   | Special Teams (Kickoff Coverage) |
|   | Special Teams (Kickoff Return) |
|   | Participant |
|   | Other |
| **Squash** |   | Singles |
|   | Doubles |
|   | Participant |
| **Swimming** |   | Swimmer |
| **Tennis** |   | Doubles |
|   | Singles |
|   | Participant |
| **Volleyball** |   | Libero |
|   | Middle Blocker |
|   | Outside Hitter |
|   | Setter |
|   | Participant |
|   | Opposite/Right side Hitter |
| **Water Polo** |   | Goalkeeper |
|   | Swimmer |
|   | Participant |
| **Wrestling** |   | 125 lbs |
|   | 133 lbs |
|   | 141 lbs |
|   | 149 lbs |
|   | 157 lbs |
|   | 165 lbs |
|   | 174 lbs |
|   | 184 lbs |
|   | 197 lbs |
|   | Heavyweight |
|   | Participant |
| **Other, specify** |  |  |