

Online Supplementary Material

Re-evaluation: Beyond acute assessment to office management. The development of a Sports Concussion Office Assessment Tool (SCOAT6) for adults and children

SEARCH STRATEGY

Review title: Re-evaluation: Beyond acute assessment to office management. The development of a Sports Concussion Office Assessment Tool (SCOAT) for adults and children

Conducted for: 6th International Consensus Statement on Sport Concussion

The search was informed by three main resources: search terms suggested by authors, keywords and subject headings informed by analysis of a set of known seed papers, as well as the systematic review on a similar topic conducted as part of the 5th Consensus Statement on Concussion in Sport. The search attempts to be comprehensive (i.e. a sensitive search) and is aimed at retrieving all potentially relevant articles. These supplemental materials include an annotated Ovid Medline search strategy in order to provide a search narrative (Cooper et al., 2018) and the complete search strategies for the six other databases searched which includes: Embase (Ovid), Cochrane Central Register of Controlled Trials (Ovid), APA PsycInfo (Ovid), CINAHL (EBSCO), SportDiscus (EBSCO), and Web of Science core collection (which includes: Science Citation Index-Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index, Conference Proceedings Citation Index - Science, Conference Proceedings Citation Index - Social Sciences & Humanities, and Emerging Sources Citation Index). The search was created by Zahra Premji, PhD MLIS (Librarian).

Annotated Medline (via Ovid) Search Strategy as searched on 26 March 2022

The sports and concussion concepts were collaboratively created by Zahra Premji and K. Alix Hayden (librarians), and peer reviewed using PRESS by Heather Ganshorn (librarian). The Diagnosis/Diagnostic tests, and clinical domains concepts were created by Zahra Premji, and peer reviewed using PRESS by K. Alix Hayden

Supplemental Table 1. Overview of Ovid Medline syntax

.tw,kf.	Keyword searching. Searches the following fields: title, abstract, and author-supplied keywords.
Exp	Exploded subject heading. Includes more specific (i.e., narrower) subject headings which are nested below the main subject heading
/ (at the end of a term)	Subject heading
*	Truncation operator Retrieves multiple endings for a word. E.g., sport* retrieves: <i>sport</i> , <i>sports</i> , <i>sporting</i>
adj	Adjacency operator Adj2 means that the two words/phrases will occur within 2 words of each other, in either direction.

	E.g., return* adj2 play* retrieves return/returned/returning within 2 words in either direction of play*
OR	Boolean operator Used to combine synonyms for the same concept
AND	Boolean operator Used to combine all the relevant concepts: <i>Concussion AND Sports AND Diagnosis AND Clinical domains</i>

Supplemental Table 2. Database(s): Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily

Concept	#	Searches	Results	Annotations
Concussion	1	exp Brain Concussion/	10991	Exploded subject heading for concussion
	2	exp Post-Concussion Syndrome/	1423	Exploded subject heading for post-concussive syndrome
	3	Craniocerebral Trauma/	23060	Additional subject headings of relevance
	4	Brain Injuries/ or Brain injuries, traumatic/	63982	
	5	Brain Injury, Chronic/	778	
	6	(concussion* or concussed or concussive or subconcuss* or sub-concuss*).tw,kf.	11766	Keyword terms including acronyms, specific concussion-related terms as well as broader terms relating to head injuries and neurotrauma.
	7	(post-concuss* or postconcuss*).tw,kf.	3590	
	8	(mild adj3 (traumatic brain injur* or tbi*)).tw,kf.	7672	
	9	mtbi*.tw,kf.	3607	
	10	(head adj2 (injur* or impact* or trauma*)).tw,kf.	36851	
	11	(traumatic brain injur* or tbi*).tw,kf.	52550	
	12	(neurotrauma* or "neuro-trauma*").tw,kf.	2453	
	13	(craniocerebral adj2 (trauma* or injur*)).tw,kf.	3249	
	14	or/1-13	131939	
Sport	15	exp Athletic Injuries/ or exp Athletes/	44681	Subject heading for athletes

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16	Sports/ or Return to Sport/ or Sports medicine/	44094	Subject heading for category terms related to sport
17	exp baseball/ or exp basketball/ or exp Bicycling/ or exp boxing/ or exp football/ or exp gymnastics/ or exp hockey/ or exp martial arts/ or exp racquet sports/ or exp skating/ or exp Skiing/ or exp snow sports/ or exp soccer/ or exp Swimming/ or exp Tennis/ or exp "track and field"/ or exp volleyball/ or exp water sports/ or exp wrestling/ or exp youth sports/	75034	Subject headings for the individual sports, as well as youth sports.
18	(athlete* or athletic* or crew or player* or teammate* or team-mate* or varsity).tw,kf.	136583	Keywords related to athletes
19	sport*.tw,kf,jw.	172838	Keyword for sport as a category term
20	((return* or resum* or "re-ent*" or reent*) adj2 (play* or competition* or sport*)).tw,kf.	7771	Keyword combination for return to sport
21	(baseball or basketball or biking or bicycling* or bmx or boxing or "bull rid*" or bullrid* or cheerleading or "cheer leading" or climbing or cricket or diving or equestrian or football or golf or gymnastics or handball or "horse* riding" or hockey or lacrosse or mountaineering or netball or net ball or racquet sport* or racquetball or ringette or rodeo* or "roller derb*" or rugby or skateboard* or skating or skiing or snowboard* or snow sport* or soccer or softball or squash or swimming or tennis or "track and field" or wrestling or volleyball).tw,kf.	105908	Keyword terms for individual sports where concussion is known to occur. This list was created by consulting the list of Olympic sports in addition to all other exploratory methods previously mentioned.
22	(archery or badminton or bobsled* or bobsleigh* or canoe* or "cross country" or fencing or kayak* or luge or rifle or "roller derb*" or rollerskat* or rowing or sailing or skeleton or "ski jump*" or sledding or surfing	55538	

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		or trampoline* or "water polo" or "weight lifting" or windsurfing or yachting).tw,kf.		
	23	(aikido or judo or jiu-jitsu or "jiu-jitsu" or jujitsu or "ju jitsu" or karate or kickbox* or "Martial art*" or taekwondo or "tae kwon do" or "tai ji").tw,kf.	2801	
	24	(capoeira or "Dim mak" or kenpo or "kung fu" or "pencak silat" or pitfight* or savate or "submission fight*" or UFC or "ultimate fighting champion*").tw,kf.	957	
	25	(biker* or boxer* or "cheer leader*" or cheerleader* or climber* or cyclist* or diver or divers or fencer* or fighter* or footballer* or goalie* or golfer* or gymnast or gymnasts or "horse* rider*" or jockey* or judoka* or mountaineer* or rower* or sailor* or skater* or skier* or sledder* or snowboarder* or surfer* or swimmer* or "weight lifter*" or wrestler*).tw,kf.	33005	Keyword terms relating to the player of the specific sport
	26	or/15-25	412487	Combination line for Sport concept combined with OR
	27	14 and 26	11483	
Diagnosis/Diagnostic tests	28	"diagnostic techniques and procedures"/ or symptom assessment/	10606	Subject headings for diagnosis and diagnostic test terms including specific tests and general terms related to diagnosis studies.
	29	Early Diagnosis/	29530	
	30	"Sensitivity and Specificity"/	363583	
	31	roc curve/	68191	
	32	Diagnosis, Computer-Assisted/	23813	
	33	Checklist/	7801	
	34	Physical Examination/	42526	
	35	"Predictive Value of Tests"/	220432	
	36	Self-Assessment/	13098	
	37	Neuropsychological Tests/ or Psychological Tests/	137106	
	38	Severity of Illness Index/	266552	

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	39	diagnostic techniques, neurological/ or neurologic examination/	29440	
	40	Accelerometry/	6906	
	41	Vision Tests/	10617	
	42	Glasgow Coma Scale/	10291	
	43	Neuroimaging/	17429	
	44	di.fs.	2799130	diagnosis floating subheading
	45	((Diagnos* or Assess* or Exam* or Questionnaire* or Detect* or Recogniz* or Screen* or Tool* or Test* or Checklist* or Instrument* or Scale* or Inventor* or Battery or Batteries or Measur* or Score* or Evaluat* or identify*) adj10 (concuss* or postconcuss* or subconcuss* or postinjur* or injur* or mtbi* or "mild tbi*" or "traumatic brain injur*" or tbi* or "follow-up*" or followup* or serial or clinic* or office or hospital* or emergency or outpatient* or subacute* or "sub-acute*" or acute or series or symptom*)).tw,kf.	2825590	Keyword terms related to diagnosis with proximity to concussion, post-acute time period or clinical setting.
	46	"concussion clinic*".tw,kf.	249	
	47	Diagnostic Imaging/	43962	Additional imaging subject headings
	48	Tomography, X-Ray Computed/	406821	
	49	exp Magnetic Resonance Imaging/	506201	
	50	(neuroimag* or "CT scan*" or "CAT Scan*" or "imaging" or "MRI*").tw,kf.	1174686	Additional imaging keywords
	51	28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50	6385232	Diagnosis/diagonostic tests concept combined using OR
	52	27 and 51	7544	Sport AND Concussion AND Diagnosis concepts
Clinical Domains	53	exp *Postural Balance/	16510	Subject headings and textwords for balance and gait
	54	(Postural adj2 (sway* or control or stability)).tw,kf.	11456	

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55	(balance or imbalance or unstead*).tw,kf.	309243	
56	((musculoskeletal or postural) adj2 equilibrium).tw,kf.	203	
57	exp *Gait/ or exp *Gait Disorders, Neurologic/	24548	
58	gait*.tw,kf.	60087	
59	exp *Psychomotor Performance/	58696	
60	((task or motor) adj2 (6ormone6ita* or control or skill*)).tw,kf.	54457	
61	((sensorimotor or psychomotor) adj2 (performance* or control or skill*)).tw,kf.	5045	Subject headings and textwords for motor and executive function
62	"motor skills".tw,kf.	8240	
63	exp *Executive Function/	10786	
64	(executive adj2 (function* or dysfunction* or control* or performance)).tw,kf.	37948	
65	exp *Cognition/	101867	
66	exp *Cognition Disorders/	82349	
67	(cogniti* adj3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or 6ormone6it* or consequence* or symptom* or processing)).tw,kf.	226557	Subject headings and textwords for cognition and cognition disorders
68	exp *Memory/	93015	
69	*Memory Disorders/	15486	
70	(memory adj3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or 6ormone6it* or symptom*)).tw,kf.	72295	Subject headings and textwords for memory and memory-related disorders
71	exp *Confusion/	11623	Subject headings and
72	(confused or confusion).tw,kf.	50643	textwords for
73	*Attention/	49045	confusion,

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74	(attention adj3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or 7ormone7it*)).tw,kf.	56046	comprehension, and attention
75	*Comprehension/	8334	
76	comprehension.tw,kf.	28579	
77	*Reaction Time/	17712	Subject headings and textwords for reaction time
78	("reaction time*" or "processing speed*" or "single-task" or "dual-task").tw,kf.	59347	
79	*orientation/ or *orientation, spatial/	15087	Subject headings and textwords for orientation
80	orientation.tw,kf.	148947	
81	exp *Amnesia/	6175	Subject headings and textwords for amnesia
82	amnesia.tw,kf.	11013	
83	exp *Vision, Ocular/	19862	Subject headings and textwords for eye, vision, ocular and related disorders
84	exp *Visual Perception/ or exp *Visual Acuity/	130481	
85	exp *Vision Disorders/	50655	
86	*Vision, Low/	2969	
87	exp *Eye Movements/ or *Saccades/ or *"Pursuit, Smooth"/	29715	
88	(vision* or visual* or oculomotor* or "oculomotor" or "ocular motor" or visuomotor or "visuo-motor" or visuovestibular or optometric* or optokinetic or "VOMS performance").tw,kf.	796620	
89	exp *Ocular Motility Disorders/ or *Oculomotor Muscles/ or *"Convergence, Ocular"/ or Reflex, Vestibulo-ocular/	43874	
90	((eye or ocular) adj2 (movement* or motilit*)).tw,kf.	40727	
91	("eye track*" or saccad* or "smooth pursuit" or "vergence" or "visual fixation").tw,kf.	24713	
92	exp *Vestibular Diseases/	10862	

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93	*Vestibular Function Tests/	3052	Subject headings for vestibular disease
94	exp *Dizziness/ or exp *Vertigo/	9197	Subject headings and textwords for dizziness
95	(dizziness or vertigo or auricular).tw,kf.	45796	
96	Tinnitus/ or (tinnitus or “auditory processing”).tw,kf.	19387	Subject headings and textwords for Tinnitus
97	*Fatigue/	16183	Subject headings and textwords for fatigue
98	(fatigue* or drowsiness or tiredness or “daytime nap*”).tw,kf.	122072	
99	*Headache/ or *Migraine disorders/ or *Migraine with aura/	39033	Subject headings and textwords for headache
100	Post-Traumatic Headache/	493	
101	(headache* or migraine*).tw,kf.	114978	
102	*Consciousness/ or *Unconsciousness/	8602	Subject headings and textwords for consciousness
103	*Awareness/	9976	
104	(consciousness or unconscious* or awareness or alertness or fogginess).tw,kf.	234542	
105	(vestibulo* or vestibular*).tw,kf.	46068	Textwords for vestibular disease
106	*Learning/	43294	Subject headings and textwords for learning
107	((learning or language or verbal) adj3 (fluency or dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or 8ormone8it*)).tw,kf.	81769	
108	exp *Neurocognitive Disorders/	235775	
109	(neurocogniti* or 8ormone8itary88* or neurobehav* or neurosensory or 8ormone8itary88* or neuromuscular or 8ormone8i*).tw,kf.	554299	Subject headings and textwords for neurocognitive and neuro-related domains
110	exp *Neurobehavioral Manifestations/ or *”Behavioral Symptoms”/	221281	
111	exp *Sleep/ or *Sleep Apnea, Obstructive/ or *Sleep Wake Disorders/ or *Sleep Hygiene/	101203	

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	or *Sleep Arousal Disorders/ or *Sleep Disorders, Circadian Rhythm/ or *Sleep Disorders, Intrinsic/ or *"Sleep Initiation and Maintenance Disorders"/		
112	(sleep* adj2 (problem* or difficult* or trouble* or disturb* or wake or deficit* or hygiene or quality)).tw,kf.	57599	Subject headings and textwords for sleep-related disorders
113	(insomnia or hypersomnia or hyposomnia or dyssomnia or parasomnia or nightmare* or sleepwalk* or somnambulism).tw,kf.	31292	
114	((emotion* or psychological) adj2 (function* or dysfunction*)).tw,kf.	17488	
115	((symptom* adj2 (data or pattern* or analysis or severity or burden)) or asymptomatic).tw,kf.	217492	Subject headings and textwords for emotional, behavioral, and psychological domains
116	*anger/ or *rage/	3779	
117	(anger* or angry or rage* or "impulse control*").tw,kf.	33156	
118	exp *Irritable Mood/	867	
119	(irritat* or irritab*).tw,kf.	58610	
120	*Mood Disorders/ or *Anxiety Disorders/ or *Anxiety/ or *Depressive Disorder/	126081	
121	(mood* or anxiety or anxious or sad or emotional or depression or depressed).tw,kf.	759065	
122	((behavior* or behaviour*) adj3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)).tw,kf.	188449	
123	exp *Cervical Vertebrae/	29107	Subject headings and textwords for cervical
124	(cervical or cervicogenic or cervicovestibular or neck).tw,kf.	454926	
125	(endocrin* or neuroendocrin* or pituitary or hypopituitar* or (hormon* adj2 (dysfunction* or deficien*)) or hypogonad*	488996	Subject headings and textwords for hormone disorders.

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		or hypocortisol* or hypothyroid* or nausea or vomit*).tw,kf.		
	126	Hypogonadism/ or Hypopituitarism/ or *Nausea/	22282	
	127	exp *Biomarkers/	285193	Subject headings and textwords for blood and biomarkers
	128	((blood* or serum* or fluid*) adj3 (marker* or biomarker* or "biological marker*")).tw,kf.	46824	
	129	((blood or saliva or serum or urine) adj2 (test* or sampl*)).tw,kf.	354951	
	130	or/53-129	5397691	Clinical domains concept combined with OR
	131	52 and 130	4488	Final combination line: Concussion AND Sports AND Diagnosis AND Clinical Domains
	132	limit 131 to yr="2001 - 2022"	4195	Limited to 2001 to current
	133	limit 132 to english language	4143	Limited to English Language

Supplemental Table 3. Embase (via OVID) Search Strategy as searched on 26 March 2022

#	Query	Results
1	brain concussion/	6,600
2	concussion/	7,423
3	postconcussion syndrome/	2,777
4	traumatic brain injury/	57,312
5	brain injury/	92,211
6	(concussion* or concussed or concussive or subconcuss* or sub-concuss*).tw,kf.	15,694
7	(post-concuss* or postconcuss*).tw,kf.	5,073
8	(mild adj3 (traumatic brain injur* or tbi*)).tw,kf.	11,480
9	mtbi*.tw,kf.	5,820
10	(head adj2 (injur* or impact* or trauma*)).tw,kf.	48,014
11	(traumatic brain injur* or tbi*).tw,kf.	81,230
12	(neurotrauma* or "neuro-trauma*").tw,kf.	3,746
13	(craniocerebral adj2 (trauma* or injur*)).tw,kf.	3,739

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14	or/1-13	214,760
15	athlete/ or basketball player/ or body builder/ or boxer/ or cyclist/ or football player/ or hockey player/ or judoka/ or skier/ or soccer player/ or triathlete/ or wrestler/	61,395
16	sport/ or aquatic sport/ or exp athletics/ or baseball/ or basketball/ or body building/ or boxing/ or exp combat sport/ or contact sport/ or "cricket (sport)"/ or cycling/ or diving/ or endurance sport/ or extreme sport/ or football/ or hockey/ or horseback riding/ or ice hockey/ or martial art/ or mountaineering/ or exp racquet sport/ or rock climbing/ or roller skating/ or rowing/ or rugby/ or skateboarding/ or skating/ or skiing/ or soccer/ or swimming/ or team sport/ or exp tennis/ or "track and field"/ or volleyball/ or water skiing/ or winter sport/ or wrestling/ or youth sport/	145,494
17	sport injury/	32,571
18	sports medicine/	18,189
19	return to sport/	4,382
20	(athlete* or athletic* or crew or player* or teammate* or teammate* or varsity).tw,kf.	164,420
21	sport*.tw,kf,jx.	204,639
22	((return* or resum* or "re-ent*" or reent*) adj2 (play* or competition* or sport*)).tw,kf.	9,532
23	(baseball or basketball or biking or bicycling* or bmx or boxing or "bull rid*" or bullrid* or cheerleading or "cheer leading" or climbing or cricket or diving or equestrian or football or golf or gymnastics or handball or "horse* riding" or hockey or lacrosse or mountaineering or netball or "net ball" or "racquet sport*" or racquetball or ringette or "roller derb*" or rollerskat* or rodeo* or rugby or skateboard* or skating or skiing or snowboard* or "snow sport*" or soccer or softball or squash or swimming or tennis or "track and field" or wrestling or volleyball).tw,kf.	123,192
24	(archery or badminton or bobsled* or bobsleigh* or canoe* or "cross country" or fencing or kayak* or luge or rifle or rowing or sailing or skeleton or "ski jump*" or sledding or surfing or trampolin* or "water polo" or "weight lifting" or windsurfing or yachting).tw,kf.	70,489
25	(aikido or judo or jiujitsu or "jiu-jitsu" or jujitsu or "ju jitsu" or karate or kickbox* or "Martial art*" or taekwondo or "tae kwon do" or "tai ji").tw,kf.	3,383
26	(capoeira or "Dim mak" or kenpo or "kung fu" or "pencak silat" or pitfight* or savate or "submission fight*" or UFC or "ultimate fighting champion*").tw,kf.	1,490
27	(biker* or boxer* or "cheer leader*" or cheerleader* or climber* or cyclist* or diver or divers or fencer* or fighter* or footballer* or goalie* or golfer* or gymnast or gymnasts or "horse* rider*" or jockey* or judoka* or mountaineer* or rower* or sailor* or skater* or skier* or sledder* or snowboarder* or surfer* or swimmer* or "weight lifter*" or wrestler*).tw,kf.	37,083

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28	or/15-27	499,150
29	14 and 28	14,947
30	clinical assessment/ or clinical examination/ or clinical assessment tool/ or "evaluation and follow up"/	335,016
31	exp diagnosis/ or diagnostic procedure/ or symptom assessment/ or computer assisted diagnosis/	7,282,359
32	physical examination/ or self evaluation/ or early diagnosis/	394,888
33	neuropsychological test/ or psychologic test/ or neurologic examination/ or neuroimaging/ or diagnostic imaging/ or multimodal imaging/ or nuclear magnetic resonance imaging/ or x-ray computed tomography/	1,320,478
34	accelerometry/ or vision test/ or Glasgow coma scale/ or "severity of illness index"/	71,525
35	((Diagnos* or Assess* or Exam* or Questionnaire* or Detect* or Recogniz* or Screen* or Tool* or Test* or Checklist* or Instrument* or Scale* or Inventor* or Battery or Batteries or Measur* or Score* or Evaluat* or identify*) adj10 (concuss* or postconcuss* or subconcuss* or postinjur* or injur* or mtbi* or "mild tbi*" or "traumatic brain injur*" or tbi* or "follow-up*" or followup* or serial or clinic* or office or hospital* or emergency or outpatient* or subacute* or "sub-acute*" or acute or series or symptom*)).tw,kf.	4,206,075
36	"concussion clinic*".tw,kf.	427
37	(neuroimag* or "CT scan*" or "CAT Scan*" or "imaging" or "MRI*").tw,kf.	1,735,534
38	"sensitivity and specificity"/ or receiver operating characteristic/ or predictive value/ or checklist/ or named inventories, questionnaires/	684,845
39	di.fs.	3,394,802
40	or/30-39	11,489,420
41	29 and 40	10,811
42	exp *body equilibrium/ or *balance disorder/ or exp *gait/ or exp *neurologic gait disorder/ or exp *psychomotor performance/ or exp *executive function/ or exp *cognition/ or exp *cognitive defect/ or exp *memory/ or exp *memory disorder/ or exp *confusion/ or exp *attention/ or exp *comprehension/ or exp *reaction time/ or *orientation/ or *spatial orientation/ or exp *amnesia/	1,230,271
43	exp *vision/ or exp *visual disorder/ or exp *visual acuity/ or *low vision/ or exp *visual impairment/ or exp *eye movement/ or exp *eye movement disorder/ or exp *extraocular muscle/ or *vestibuloocular reflex/	210,446
44	*vestibular function/ or exp *vestibular disorder/ or *vertigo/ or *tinnitus/ or *fatigue/ or *exhaustion/ or exp *chronic daily headache/ or *headache/ or exp *migraine/ or *posttraumatic headache/ or *consciousness/ or *unconsciousness/ or *consciousness disorder/ or *awareness/ or exp *learning/	316,502
45	*behavior disorder/ or exp *"disorders of higher cerebral function"/	488,230

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46	*sleep disorder/ or *circadian rhythm sleep disorder/ or *daytime somnolence/ or *drowsiness/ or *fragmented sleep/ or *hypersomnia/ or exp *insomnia/ or *parasomnia/ or *periodic limb movement disorder/ or *sleep arousal disorder/ or exp *sleep disordered breathing/ or *somnolence/	86,635
47	*anger/ or *rage/ or *irritability/ or *mood disorder/ or exp *depression/ or exp *anxiety/ or exp *anxiety disorder/	388,185
48	exp *cervical vertebra/ or *hypogonadism/ or *hypopituitarism/ or *nausea/ or *biological marker/	130,524
49	(gait* or balance or imbalance or unstead* or (Postural adj2 (sway* or control or stability)) or ((musculoskeletal or postural) adj2 equilibrium)).tw,kf.	473,223
50	((task or motor or sensorimotor or psychomotor) adj2 (performanc* or control or skill*)).tw,kf.	76,339
51	("motor skill*" or (executive adj2 (function* or dysfunction* or control* or performance))).tw,kf.	69,450
52	(cogniti* adj3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit* or consequence* or processing)).tw,kf.	331,300
53	((memory or attention) adj3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)).tw,kf.	166,840
54	(confused or confusion or comprehension or "reaction time*" or "processing speed*" or "single-task" or "dual-task" or orientation or amnesia).tw,kf.	353,712
55	(vision* or visual* or oculomotor* or "oculo-motor" or "ocular motor" or visuomotor or "visuo-motor" or visuovestibular or optometric* or optokinetic or "VOMS performance" or "eye track*" or saccad* or "smooth pursuit" or "vergence" or "visual fixation" or ((eye or ocular) adj2 (movement* or motilit*))).tw,kf.	1,061,711
56	(dizziness or vertigo or auricular or tinnitus or "auditory processing" or fatigue* or drowsiness or tiredness or "daytime nap*" or vestibulo* or vestibular* or headache* or migraine* or consciousness or unconscious* or awareness or alertness or fogginess).tw,kf.	786,141
57	((learning or language or verbal) adj3 (fluency or dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*))).tw,kf.	108,088
58	(neurocogniti* or neuropsycholog* or neurobehav* or neurosensory or neuropsychiatr* or neuromuscular or neurolog* or ((emotion* or psychological) adj2 (function* or dysfunction*))).tw,kf.	825,546
59	(insomnia or hypersomnia or hyposomnia or dyssomnia or parasomnia or nightmare* or sleepwalk* or somnambulism or	127,797

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	(sleep* adj2 (problem* or difficult* or trouble* or disturb* or wake or deficit* or hygiene or quality)).tw,kf.	
60	((symptom* adj2 (data or pattern* or analysis or severity or burden)) or asymptomatic).tw,kf.	318,805
61	(irritat* or irritab* or mood* or anxiety or anxious or sad or emotional or depression or depressed or anger* or angry or rage* or "impulse control*").tw,kf.	1,122,433
62	((behavior* or behaviour*) adj3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)).tw,kf.	241,206
63	(cervical or cervicogenic or cervicovestibular or neck or endocrin* or neuroendocrin* or pituitary or hypopituitar* or (hormon* adj2 (dysfunction* or deficien*)) or hypogonad* or hypocortisol* or hypothyroid* or nausea or vomit*).tw,kf.	1,270,997
64	((blood* or serum* or fluid*) adj3 (marker* or biomarker* or "biological marker*")).tw,kf.	73,256
65	((blood or saliva or serum or urine) adj2 (test* or sampl*)).tw,kf.	522,312
66	or/42-65	7,185,774
67	41 and 66	6,802
68	limit 67 to yr="2001 - 2022"	6,498
69	limit 68 to english language	6,411
70	(exp animal/ or nonhuman/) not exp human/	6,774,638
71	69 not 70	6,168

Supplemental Table 4. Cochrane Central Register of Controlled Trials (via OVID) Search Strategy as searched on 26 March 2022

#	Searches	Results
1	exp Brain Concussion/	442
2	exp Post-Concussion Syndrome/	164
3	Craniocerebral Trauma/	338
4	Brain Injuries/ or Brain injuries, traumatic/	2310
5	Brain Injury, Chronic/	36
6	(concussion* or concussed or concussive or subconcuss* or sub-concuss*).tw,kw.	891
7	(post-concuss* or postconcuss*).tw,kw.	530
8	(mild adj3 (traumatic brain injur* or tbi*)).tw,kw.	888
9	mtbi*.tw,kw.	429
10	(head adj2 (injur* or impact* or trauma*)).tw,kw.	2500
11	(traumatic brain injur* or tbi*).tw,kw.	5843
12	(neurotrauma* or "neuro-trauma*").tw,kw.	131
13	(craniocerebral adj2 (trauma* or injur*)).tw,kw.	143
14	or/1-13	9068
15	exp Athletic Injuries/ or exp Athletes/	1804
16	Sports/ or Return to Sport/ or Sports medicine/	1099

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17	exp baseball/ or exp basketball/ or exp Bicycling/ or exp boxing/ or exp football/ or exp gymnastics/ or exp hockey/ or exp martial arts/ or exp racquet sports/ or exp skating/ or exp Skiing/ or exp snow sports/ or exp soccer/ or exp Swimming/ or exp Tennis/ or exp "track and field"/ or exp volleyball/ or exp water sports/ or exp wrestling/ or exp youth sports/	4565
18	(athlete* or athletic* or crew or player* or teammate* or team-mate* or varsity).tw,kw.	12054
19	sport*.tw,kw,jw.	20165
20	((return* or resum* or "re-ent*" or reent*) adj2 (play* or competition* or sport*)).tw,kw.	631
21	(baseball or basketball or biking or bicycling* or bmx or boxing or "bull rid*" or bullrid* or cheerleading or "cheer leading" or climbing or cricket or diving or equestrian or football or golf or gymnastics or handball or "horse* riding" or hockey or lacrosse or mountaineering or netball or net ball or racquet sport* or racquetball or ringette or rodeo* or "roller derb*" or rugby or skateboard* or skating or skiing or snowboard* or snow sport* or soccer or softball or squash or swimming or tennis or "track and field" or wrestling or volleyball).tw,kw.	8820
22	(archery or badminton or bobsled* or bobsleigh* or canoe* or "cross country" or fencing or kayak* or luge or rifle or "roller derb*" or rollerskat* or rowing or sailing or skeleton or "ski jump*" or sledding or surfing or trampolin* or "water polo" or "weight lifting" or windsurfing or yachting).tw,kw.	2405
23	(aikido or judo or jujitsu or "jiu-jitsu" or jujitsu or "ju jitsu" or karate or kickbox* or "Martial art*" or taekwondo or "tae kwon do" or "tai ji").tw,kw.	434
24	(capoeira or "Dim mak" or kenpo or "kung fu" or "pencak silat" or pitfight* or savate or "submission fight*" or UFC or "ultimate fighting champion*").tw,kw.	164
25	(biker* or boxer* or "cheer leader*" or cheerleader* or climber* or cyclist* or diver or divers or fencer* or fighter* or footballer* or goalie* or golfer* or gymnast or gymnasts or "horse* rider*" or jockey* or judoka* or mountaineer* or rower* or sailor* or skater* or skier* or sledder* or snowboarder* or surfer* or swimmer* or "weight lifter*" or wrestler*).tw,kw.	3349
26	or/15-25	35955
27	14 and 26	516
28	"diagnostic techniques and procedures"/ or symptom assessment/	322
29	Early Diagnosis/	590
30	"Sensitivity and Specificity"/	9418
31	roc curve/	1343
32	Diagnosis, Computer-Assisted/	735
33	Checklist/	302
34	Physical Examination/	862
35	"Predictive Value of Tests"/	7615
36	Self-Assessment/	757
37	Neuropsychological Tests/ or Psychological Tests/	8186
38	Severity of Illness Index/	20524
39	diagnostic techniques, neurological/ or neurologic examination/	1006
40	Accelerometry/	561
41	Vision Tests/	282

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42	Glasgow Coma Scale/	471
43	Neuroimaging/	177
44	di.fs.	57607
45	((Diagnos* or Assess* or Exam* or Questionnaire* or Detect* or Recogniz* or Screen* or Tool* or Test* or Checklist* or Instrument* or Scale* or Inventor* or Battery or Batteries or Measur* or Score* or Evaluat* or identify*) adj10 (concuss* or postconcuss* or subconcuss* or postinjur* or injur* or mtbi* or "mild tbi*" or "traumatic brain injur*" or tbi* or "follow-up*" or followup* or serial or clinic* or office or hospital* or emergency or outpatient* or subacute* or "sub-acute*" or acute or series or symptom*)).tw,kw.	530830
46	"concussion clinic*".tw,kw.	32
47	Diagnostic Imaging/	134
48	Tomography, X-Ray Computed/	4465
49	exp Magnetic Resonance Imaging/	9151
50	(neuroimag* or "CT scan*" or "CAT Scan*" or "imaging" or "MRI*").tw,kw.	70369
51	28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50	620705
52	27 and 51	427
53	exp *Postural Balance/	0
54	(Postural adj2 (sway* or control or stability)).tw,kw.	2911
55	(balance or imbalance or unstead*).tw,kw.	31183
56	((musculoskeletal or postural) adj2 equilibrium).tw,kw.	20
57	exp *Gait/ or exp *Gait Disorders, Neurologic/	31
58	gait*.tw,kw.	10995
59	exp *Psychomotor Performance/	0
60	((task or motor) adj2 (performanc* or control or skill*)).tw,kw.	14770
61	((sensorimotor or psychomotor) adj2 (performance* or control or skill*)).tw,kw.	2372
62	"motor skills".tw,kw.	1533
63	exp *Executive Function/	0
64	(executive adj2 (function* or dysfunction* or control* or performance)).tw,kw.	7475
65	exp *Cognition/	3655
66	exp *Cognition Disorders/	178
67	(cogniti* adj3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit* or consequence* or symptom* or processing)).tw,kw.	42185
68	exp *Memory/	2655
69	*Memory Disorders/	8
70	(memory adj3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit* or symptom*)).tw,kw.	10455
71	exp *Confusion/	1
72	(confused or confusion).tw,kw.	3178
73	*Attention/	0

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74	(attention adj3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*).tw,kw.	10887
75	*Comprehension/	0
76	comprehension.tw,kw.	2622
77	*Reaction Time/	0
78	("reaction time*" or "processing speed*" or "single-task" or "dual-task").tw,kw.	9554
79	*orientation/ or *orientation, spatial/	0
80	orientation.tw,kw.	4974
81	exp *Amnesia/	197
82	amnesia.tw,kw.	1737
83	exp *Vision, Ocular/	181
84	exp *Visual Perception/ or exp *Visual Acuity/	2761
85	exp *Vision Disorders/	883
86	*Vision, Low/	0
87	exp *Eye Movements/ or *Saccades/ or *"Pursuit, Smooth"/	544
88	(vision* or visual* or oculomotor* or "oculo-motor" or "ocular motor" or visuomotor or "visuo-motor" or visuovestibular or optometric* or optokinetic or "VOMS performance").tw,kw.	121705
89	exp *Ocular Motility Disorders/ or *Oculomotor Muscles/ or *"Convergence, Ocular"/ or Reflex, Vestibulo-ocular/	622
90	((eye or ocular) adj2 (movement* or motilit*).tw,kw.	3371
91	("eye track*" or saccad* or "smooth pursuit" or "vergence" or "visual fixation").tw,kw.	1898
92	exp *Vestibular Diseases/	2
93	*Vestibular Function Tests/	1
94	exp *Dizziness/ or exp *Vertigo/	2
95	(dizziness or vertigo or auricular).tw,kw.	15529
96	Tinnitus/ or (tinnitus or "auditory processing").tw,kw.	2701
97	*Fatigue/	0
98	(fatigue* or drowsiness or tiredness or "daytime nap").tw,kw.	38085
99	*Headache/ or *Migraine disorders/ or *Migraine with aura/	60
100	Post-Traumatic Headache/	107
101	(headache* or migraine*).tw,kw.	31063
102	*Consciousness/ or *Unconsciousness/	1
103	*Awareness/	0
104	(consciousness or unconscious* or awareness or alertness or fogginess).tw,kw.	20377
105	(vestibulo* or vestibular*).tw,kw.	2679
106	*Learning/	0
107	((learning or language or verbal) adj3 (fluency or dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*).tw,kw.	9600
108	exp *Neurocognitive Disorders/	0
109	(neurocogniti* or neuropsycholog* or neurobehav* or neurosensory or neuropsychiatr* or neuromuscular or neurolog*).tw,kw.	54506

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110	exp *Neurobehavioral Manifestations/ or *"Behavioral Symptoms"/	4578
111	exp *Sleep/ or *Sleep Apnea, Obstructive/ or *Sleep Wake Disorders/ or *Sleep Hygiene/ or *Sleep Arousal Disorders/ or *Sleep Disorders, Circadian Rhythm/ or *Sleep Disorders, Intrinsic/ or *"Sleep Initiation and Maintenance Disorders"/	16
112	(sleep* adj2 (problem* or difficult* or trouble* or disturb* or wake or deficit* or hygiene or quality)).tw,kw.	17946
113	(insomnia or hypersomnia or hyposomnia or dyssomnia or parasomnia or nightmare* or sleepwalk* or somnambulism).tw,kw.	11332
114	((emotion* or psychological) adj2 (function* or dysfunction*)).tw,kw.	5053
115	((symptom* adj2 (data or pattern* or analysis or severity or burden)) or asymptomatic).tw,kw.	28493
116	*anger/ or *rage/	0
117	(anger* or angry or rage* or "impulse control*").tw,kw.	3780
118	exp *Irritable Mood/	1
119	(irritat* or irritab*).tw,kw.	13290
120	*Mood Disorders/ or *Anxiety Disorders/ or *Anxiety/ or *Depressive Disorder/	1
121	(mood* or anxiety or anxious or sad or emotional or depression or depressed).tw,kw.	140008
122	((behavior* or behaviour*) adj3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)).tw,kw.	32455
123	exp *Cervical Vertebrae/	1
124	(cervical or cervicogenic or cervicovestibular or neck).tw,kw.	44041
125	(endocrin* or neuroendocrin* or pituitary or hypopituitar* or (hormon* adj2 (dysfunction* or deficien*)) or hypogonad* or hypocortisol* or hypothyroid* or nausea or vomit*).tw,kw.	72959
126	Hypogonadism/ or Hypopituitarism/ or *Nausea/	652
127	exp *Biomarkers/	291
128	((blood* or serum* or fluid*) adj3 (marker* or biomarker* or "biological marker*")).tw,kw.	10960
129	((blood or saliva or serum or urine) adj2 (test* or sampl*)).tw,kw.	68270
130	or/53-129	610043
131	52 and 130	320
132	limit 131 to yr="2001 - 2022"	315
133	limit 132 to english language	223

Supplemental Table 5. APA PsycInfo (via OVID) Search Strategy as searched on 26 March 2022

#	Query	Results
1	Traumatic Brain Injury/	19,931
2	Brain Concussion/	2,809
3	head injuries/ or brain injuries/	5,591
4	(concussion* or concussed or concussive or subconcuss* or sub-concuss*).tw,id.	4,254
5	(post-concuss* or postconcuss*).tw,id.	2,036
6	(mild adj3 (traumatic brain injur* or tbi*)).tw,id.	4,508

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7	mtbi*.tw,id.	2,254
8	(head adj2 (injur* or impact* or trauma*)).tw,id.	8,690
9	(traumatic brain injur* or tbi*).tw,id.	20,603
10	(neurotrauma* or "neuro-trauma*").tw,id.	532
11	(Craniocerebral adj2 (trauma* or injur*)).tw,id.	204
12	or/1-11	33,066
13	sports/	21,221
14	baseball/ or basketball/ or extreme sports/ or football/ or judo/ or martial arts/ or soccer/ or swimming/ or tennis/ or weightlifting/	10,581
15	athletes/ or athletic participation/ or athletic performance/ or athletic training/ or college athletes/ or competition/	35,755
16	sports medicine/	185
17	(athlete* or athletic* or crew or player* or teammate* or team-mate* or varsity).tw,id.	44,912
18	sport*.tw,id,jx.	47,192
19	((return* or resum* or "re-ent*" or reent*) adj2 (play* or competition* or sport*)).tw,id.	605
20	(baseball or basketball or biking or bicycling* or bmx or boxing or "bull rid*" or bullrid* or cheerleading or "cheer leading" or climbing or cricket or diving or equestrian or football or golf or gymnastics or handball or "horse* riding" or hockey or lacrosse or mountaineering or netball or net ball or racquet sport* or racquetball or ringette or rodeo* or "roller derb*" or rugby or skateboard* or skating or skiing or snowboard* or snow sport* or soccer or softball or squash or swimming or tennis or "track and field" or wrestling or volleyball).tw,id.	30,440
21	(archery or badminton or bobsled* or bobsleigh* or canoe* or "cross country" or fencing or kayak* or luge or rifle or "roller derb*" or rollerskat* or rowing or sailing or skeleton or "ski jump*" or sledding or surfing or trampoline* or "water polo" or "weight lifting" or windsurfing or yachting).tw,id.	5,078
22	(aikido or judo or jujitsu or "ju-jitsu" or jujitsu or "ju jitsu" or karate or kickbox* or "Martial art*" or taekwondo or "tae kwon do" or "tai ji").tw,id.	1,224
23	(capoeira or "Dim mak" or kenpo or "kung fu" or "pencak silat" or pitfight* or savate or "submission fight*" or UFC or "ultimate fighting champion*").tw,id.	197
24	(biker* or boxer* or "cheer leader*" or cheerleader* or climber* or cyclist* or diver or divers or fencer* or fighter* or footballer* or goalie* or golfer* or gymnast or gymnasts or "horse* rider*" or jockey* or judoka* or mountaineer* or rower* or sailor* or skater* or skier* or sledder* or snowboarder* or surfer* or swimmer* or "weight lifter*" or wrestler*).tw,id.	8,306
25	or/13-24	109,618
26	12 and 25	2,771
27	exp Computer Assisted Diagnosis/ or exp Medical Diagnosis/ or exp Diagnosis/ or diagnostic criteria/ or Measurement/ or Test Reliability/ or Test Validity/ or Test Battery/ or test sensitivity/	368,488
28	psychometrics/ or magnetic resonance imaging/ or exp tomography/ or "checklist (testing)"/ or physical examination/	129,961
29	neuroimaging/ or neuropsychological assessment/ or "severity (disorders)"/ or symptom checklists/ or Self-Report/ or exp "Severity (Disorders)"/	75,013

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30	((Diagnos* or Assess* or Exam* or Questionnaire* or Detect* or Recogniz* or Screen* or Tool* or Test* or Checklist* or Instrument* or Scale* or Inventor* or Battery or Batteries or Measur* or Score* or Evaluat* or identify*) adj10 (concuss* or postconcuss* or subconcuss* or postinjur* or injur* or mtbi* or "mild tbi*" or "traumatic brain injur*" or tbi* or "follow-up*" or followup* or serial or clinic* or office or hospital* or emergency or outpatient* or subacute* or "sub-acute*" or acute or series or symptom*)).tw.	511,996
31	"concussion clinic*".tw.	96
32	(neuroimag* or "CT scan*" or "CAT Scan*" or "imaging" or "MRI*").tw.	126,052
33	or/27-32	876,393
34	26 and 33	2,080
35	exp Equilibrium/ or exp Gait/ or exp Movement Disorders/ or exp Motor Processes/ or exp executive function/ or task switching/ or exp Motor Performance/ or Perceptual Motor Processes/	196,002
36	Cognitive Impairment/ or Neurocognition/ or Cognition/ or Cognitive Ability/ or Mental Confusion/ or Neuropsychology/ or Reaction Time/ or exp Memory/ or exp memory disorders/ or exp attention/ or concentration/ or exp comprehension/ or exp perceptual orientation/ or neurophysiology/	403,488
37	exp Perceptual Measures/ or exp Vision/ or exp Color Perception/ or exp Visual Perception/ or exp Visual Discrimination/ or exp Vision Disorders/ or visual cortex/ or visual tracking/ or exp vision disorders/ or oculomotor muscles/ or exp eye movements/ or eye convergence/ or exp depth perception/ or exp distance perception/ or neurocognitive disorders/	156,687
38	sleep/ or sleep apnea/ or sleep deprivation/ or sleep wake cycle/ or sleepiness/ or exp sleep wake disorders/	49,321
39	vertigo/ or tinnitus/ or fatigue/ or exp headache/ or migraine headache/ or exp awareness/ or exp consciousness disturbances/ or unconsciousness/ or wakefulness/ or exp consciousness disorders/ or learning/	221,227
40	exp anger/ or irritability/ or exp affective disorders/ or exp major depression/ or exp Anxiety Disorders/ or exp Anxiety/ or "depression (emotion)"/	297,344
41	exp hypogonadism/ or exp hypopituitarism/ or nausea/ or biological markers/	17,746
42	(gait* or balance or imbalance or unstead* or (Postural adj2 (sway* or control or stability)) or ((musculoskeletal or postural) adj2 equilibrium)).tw.	66,395
43	((task or motor or sensorimotor or psychomotor) adj2 (performanc* or control or skill*)).tw.	51,802
44	("motor skill*" or (executive adj2 (function* or dysfunction* or control* or performance))).tw.	45,586
45	(cogniti* adj3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit* or consequence* or processing)).tw.	163,864
46	((memory or attention) adj3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)).tw.	106,649
47	(confused or confusion or comprehension or "reaction time*" or "processing speed*" or "single-task" or "dual-task" or orientation or amnesia).tw.	217,745

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48	(vision* or visual* or oculomotor* or "oculo-motor" or "ocular motor" or visuomotor or "visuo-motor" or visuovestibular or optometric* or optokinetic or "VOMS performance" or "eye track*" or saccad* or "smooth pursuit" or "vergence" or "visual fixation" or ((eye or ocular) adj2 (movement* or motilit*))).tw.	295,151
49	(dizziness or vertigo or auricular or tinnitus or "auditory processing" or fatigue* or drowsiness or tiredness or "daytime nap*" or vestibulo* or vestibular* or headache* or migraine* or consciousness or unconscious* or awareness or alertness or fogginess).tw.	250,803
50	((learning or language or verbal) adj3 (fluency or dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)).tw.	103,911
51	(neurocogniti* or neuropsycholog* or neurobehav* or neurosensory or neuropsychiatr* or neuromuscular or neurolog* or ((emotion* or psychological) adj2 (function* or dysfunction*))).tw.	195,803
52	(insomnia or hypersomnia or hyposomnia or dyssomnia or parasomnia or nightmare* or sleepwalk* or somnambulism or (sleep* adj2 (problem* or difficult* or trouble* or disturb* or wake or deficit* or hygiene or quality))).tw.	41,953
53	((symptom* adj2 (data or pattern* or analysis or severity or burden)) or asymptomatic).tw.	27,267
54	(irritat* or irritab* or mood* or anxiety or anxious or sad or emotional or depression or depressed or anger* or angry or rage* or "impulse control*").tw.	711,559
55	((behavior* or behaviour*) adj3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)).tw.	183,246
56	(cervical or cervicogenic or cervicovestibular or neck or endocrin* or neuroendocrin* or pituitary or hypopituitar* or (hormon* adj2 (dysfunction* or deficien*)) or hypogonad* or hypocortisol* or hypothyroid* or nausea or vomit*).tw.	57,348
57	((blood* or serum* or fluid*) adj3 (marker* or biomarker* or "biological marker*")).tw.	3,008
58	((blood or saliva or serum or urine) adj2 (test* or sampl*)).tw.	15,988
59	or/35-58	2,172,301
60	34 and 59	1,666
61	limit 60 to yr="2001 - 2022"	1,622
62	limit 61 to english language	1,584

Supplemental Table 6. CINAHL (via EBSCO) Search Strategy as searched on 26 March 2022

#	Query	Results
S1	(MH "Diagnostic Tests, Routine") OR (MH "Predictive Validity")	10,959
S2	(MH "Diagnosis") OR (MH "Diagnosis, Computer Assisted+") OR (MH "Clinical Assessment Tools+") OR (MH "Diagnosis, Differential") OR (MH "Diagnosis, Neurologic+") OR (MH "Diagnostic Imaging+") OR (MH "Early Diagnosis+") OR (MH "Exercise Test+") OR (MH "Functional Assessment+") OR (MH "Monitoring,	1,058,411

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	Physiologic+") OR (MH "Patient Assessment+") OR (MH "Severity of Injury") OR (MH "Severity of Illness")	
S3	(MH "Physical Examination+")	149,251
S4	(MH "Questionnaires") OR (MH "Checklists") OR (MH "Behavior Rating Scales") OR (MH "Language Tests") OR (MH "Psychological Tests") OR (MH "Neuropsychological Tests+") OR (MH "Scales") OR (MH "Instrument Validation")	854,804
S5	(MH "Neurologic Examination+") OR (MH "Physical Examination, Preparticipation") OR (MH "Diagnosis, Brain+") OR (MH "Reflex") OR (MH "Neuroradiography+")	94,504
S6	(MH "Glasgow Coma Scale") OR (MH "Trauma Severity Indices")	17,661
S7	TI (((Diagnos* or Assess* or Exam* or Questionnaire* or Detect* or Recogniz* or Screen* or Tool* or Test* or Checklist* or Instrument* or Scale* or Inventor* or Battery or Batteries or Measur* or Score* or Evaluat* or identify*) N10 (concuss* or postconcuss* or subconcuss* or postinjur* or injur* or mtbi* or "mild tbi*" or "traumatic brain injur*" or tbi* or "follow-up*" or followup* or serial or clinic* or office or hospital* or emergency or outpatient* or subacute* or "sub-acute*" or acute or series or symptom*))) OR AB (((Diagnos* or Assess* or Exam* or Questionnaire* or Detect* or Recogniz* or Screen* or Tool* or Test* or Checklist* or Instrument* or Scale* or Inventor* or Battery or Batteries or Measur* or Score* or Evaluat* or identify*) N10 (concuss* or postconcuss* or subconcuss* or postinjur* or injur* or mtbi* or "mild tbi*" or "traumatic brain injur*" or tbi* or "follow-up*" or followup* or serial or clinic* or office or hospital* or emergency or outpatient* or subacute* or "sub-acute*" or acute or series or symptom*)))	848,470
S8	TI "concussion clinic*" OR AB "concussion clinic"	188
S9	TI ((neuroimag* or "CT scan*" or "CAT Scan*" or "imaging" or "MRI*")) OR AB ((neuroimag* or "CT scan*" or "CAT Scan*" or "imaging" or "MRI*"))	239,685
S10	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9	2,254,838
S11	(MH "Sports") OR (MH "Horseback Riding") OR (MH "Animal Sports") OR (MH "Amateur Sports") OR (MH "Aquatic Sports") OR (MH "Diving") OR (MH "Rowing") OR (MH "Swimming") OR (MH "Athletic Performance") OR (MH "Athletic Training") OR (MH "Athletic Training Programs") OR (MH "Sport Specific Training") OR (MH "Body Building") OR (MH "College Sports") OR (MH "Contact Sports") OR (MH "Boxing") OR (MH "Football") OR (MH "Martial Arts") OR (MH "Rugby") OR (MH "Wrestling") OR (MH "Cycling") OR (MH "Endurance Sports") OR (MH "Extreme Sports") OR (MH "Fencing") OR (MH "Golf") OR (MH "Gymnastics") OR (MH "Handball") OR (MH "Mountaineering") OR (MH "Professional Sports") OR (MH "Racquet Sports") OR (MH "Tennis") OR (MH "Rock Climbing") OR (MH "Skating") OR (MH "Ice Skating") OR (MH "Skateboarding") OR (MH "Skiing") OR (MH "Snow Skiing") OR (MH "Sporting Events") OR (MH "Sports, Disabled") OR (MH "Sports Participation") OR (MH "Target Sports") OR (MH "Archery") OR (MH "Baseball") OR (MH "Team Sports") OR (MH "Basketball") OR (MH "Cricket (Sports)") OR (MH "Hockey") OR (MH "Soccer") OR (MH "Softball") OR (MH "Volleyball") OR (MH "Track and Field") OR (MH "Weight Lifting") OR (MH "Winter Sports") OR (MH "Snowboarding") OR (MH "Cross Country Skiing")	74,629
S12	(MH "Athletic Injuries") OR (MH "Aquatic Sports Injuries") OR (MH "Skiing Injuries") OR (MH "Swimming Injuries") OR (MH "Baseball Injuries") OR (MH "Basketball Injuries") OR (MH "Boxing Injuries") OR (MH "Cricket Injuries") OR (MH "Cycling Injuries") OR (MH "Fencing Injuries") OR (MH "Football Injuries") OR (MH "Golf	23,095

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	Injuries") OR (MH "Gymnastics Injuries") OR (MH "Hockey Injuries") OR (MH "Martial Arts Injuries") OR (MH "Mountaineering Injuries") OR (MH "Racquet Sports Injuries") OR (MH "Tennis Injuries") OR (MH "Rock Climbing Injuries") OR (MH "Rugby Injuries") OR (MH "Skateboarding Injuries") OR (MH "Soccer Injuries") OR (MH "Volleyball Injuries") OR (MH "Winter Sports Injuries") OR (MH "Snowboarding Injuries")	
S13	(MH "Sports Re-Entry") OR (MH "Sports Medicine")	9,111
S14	(MH "Athletes+")	31,972
S15	TI sport* OR AB sport* OR SO sport* OR SU sport*	142,601
S16	TI (((return* or resum* or "re-ent*" or reent*) N2 (play* or competition* or sport*))) OR AB (((return* or resum* or "re-ent*" or reent*) N2 (play* or competition* or sport*)))	5,444
S17	TI ((baseball or basketball or biking or bicycling* or bmx or boxing or bullrid* or "bull rid*" or cheerleading or "cheer leading" or climbing or cricket or diving or equestrian or football or golf or gymnastics or handball or "horse* riding" or hockey or lacrosse or mountaineering or netball or "net ball" or "racquet sport*" or racquetball or ringette or rodeo* or "roller derb*" or rollerskat* or rugby or skateboard* or skating or skiing or snowboard* or "snow sport*" or soccer or softball or squash or swimming or tennis or "track and field" or wrestling or volleyball)) OR AB ((baseball or basketball or biking or bicycling* or bmx or boxing or bullrid* or "bull rid*" or cheerleading or "cheer leading" or climbing or cricket or diving or equestrian or football or golf or gymnastics or handball or "horse* riding" or hockey or lacrosse or mountaineering or netball or "net ball" or "racquet sport*" or racquetball or ringette or rodeo* or "roller derb*" or rollerskat* or rugby or skateboard* or skating or skiing or snowboard* or "snow sport*" or soccer or softball or squash or swimming or tennis or "track and field" or wrestling or volleyball))	40,202
S18	TI ((archery or badminton or bobsled* or bobsleigh* or canoe* or "cross country" or fencing or kayak* or luge or rifle or rowing or sailing or skeleton or "ski jump*" or sledding or surfing or trampoline* or "water polo" or "weight lifting" or windsurfing or yachting)) OR AB ((archery or badminton or bobsled* or bobsleigh* or canoe* or "cross country" or fencing or kayak* or luge or rifle or rowing or sailing or skeleton or "ski jump*" or sledding or surfing or trampoline* or "water polo" or "weight lifting" or windsurfing or yachting))	9,371
S19	TI ((aikido or judo or jiu-jitsu or "jiu-jitsu" or jujitsu or "ju jitsu" or karate or kickbox* or "Martial art*" or taekwondo or "tae kwon do" or "tai ji")) OR AB ((aikido or judo or jiu-jitsu or "jiu-jitsu" or jujitsu or "ju jitsu" or karate or kickbox* or "Martial art*" or taekwondo or "tae kwon do" or "tai ji"))	1,638
S20	TI ((capoeira or "Dim mak" or kenpo or "kung fu" or "pencak silat" or pitfight* or savate or "submission fight*" or UFC or "ultimate fighting champion*")) OR AB ((capoeira or "Dim mak" or kenpo or "kung fu" or "pencak silat" or pitfight* or savate or "submission fight*" or UFC or "ultimate fighting champion*"))	192
S21	TI ((athlete* or athletic* or crew or player* or teammate* or "team-mate*" or varsity or biker* or boxer* or "cheer leader*" or cheerleader* or climber* or cyclist* or diver or divers or fencer* or fighter* or footballer* or goalie* or golfer* or gymnast or gymnasts or "horse* rider*" or jockey* or judoka* or mountaineer* or rower* or sailor* or skater* or skier* or sledder* or snowboarder* or surfer* or	71,461

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	swimmer* or "weight lifter*" or wrestler*) OR AB ((athlete* or athletic* or crew or player* or teammate* or "team-mate*" or varsity or biker* or boxer* or "cheer leader*" or cheerleader* or climber* or cyclist* or diver or divers or fencer* or fighter* or footballer* or goalie* or golfer* or gymnast or gymnasts or "horse* rider*" or jockey* or judoka* or mountaineer* or rower* or sailor* or skater* or skier* or sledder* or snowboarder* or surfer* or swimmer* or "weight lifter*" or wrestler*))	
S22	S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21	206,152
S23	(MH "BRAIN concussion") OR (MH "POSTCONCUSSION syndrome") OR (MH "BRAIN injuries")	31,273
S24	TI ((concussion* or concussed or concussive or subconcuss* or "sub-concuss*")) OR AB ((concussion* or concussed or concussive or subconcuss* or "sub-concuss*"))	6,195
S25	TI (("post-concuss*" or postconcuss*)) OR AB (("post-concuss*" or postconcuss*))	1,665
S26	TI ((mild N3 ("traumatic brain injur*" or tbi*))) OR AB ((mild N3 ("traumatic brain injur*" or tbi*)))	3,334
S27	TI mtbi* OR AB mtbi*	1,294
S28	TI ((head N2 (injur* or impact* or trauma*))) OR AB ((head N2 (injur* or impact* or trauma*)))	11,499
S29	TI (("traumatic brain injur*" or tbi*)) OR AB (("traumatic brain injur*" or tbi*))	19,516
S30	TI ((neurotrauma* or "neuro-trauma*") OR (craniocerebral N2 (trauma* OR injur*)) OR AB ((neurotrauma* or "neuro-trauma*") OR (craniocerebral N2 (trauma* OR injur*)))	679
S31	S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30	46,357
S32	S22 AND S31	6,724
S33	S10 AND S32	4,431
S34	(MH "Balance, Postural")	18,317
S35	(MH "Gait+")	13,976
S36	(MH "Sleep-Wake Transition Disorders+") OR (MH "Disorders of Excessive Somnolence+") OR (MH "Movement Disorders+")	39,461
S37	(MH "Executive Function") OR (MH "Functional Assessment+")	29,947
S38	(MH "Psychomotor Performance")	13,287
S39	(MH "Cognition+") OR (MH "Cognition Disorders+")	104,010
S40	(MH "Confusion")	2,648
S41	(MH "Neuropsychology")	1,978
S42	(MH "Reaction Time")	12,675
S43	(MH "Memory+") OR (MH "Learning+") OR (MH "Mental Processes")	128,538
S44	(MH "Neurobehavioral Manifestations") OR (MH "Memory Disorders+") OR (MH "Consciousness Disorders") OR (MH "Unconsciousness")	11,762
S45	(MH "Attention")	17,785
S46	(MH "Orientation+")	3,137
S47	(MH "Sleep+") OR (MH "Sleep Apnea Syndromes+") OR (MH "Parasomnias") OR (MH "Sleep Arousal Disorders+") OR (MH "Sleep Disorders+") OR (MH "Dyssomnias+")	63,024
S48	(MH "Perception") OR (MH "Visual Perception+") OR (MH "Depth Perception") OR (MH "Spatial Perception") OR (MH "Color Perception")	48,647

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S49	(MH "Vision") OR (MH "Visual Acuity") OR (MH "Eye Movements+") OR (MH "Saccades") OR (MH "Musculoskeletal, Neural, and Ocular Physiology")	24,091
S50	(MH "Dizziness") OR (MH "Tinnitus") OR (MH "Vision Disorders")	19,307
S51	(MH "Oculomotor Muscles")	1,002
S52	(MH "Vestibular Diseases") OR (MH "Vertigo+")	5,149
S53	(MH "Fatigue")	20,242
S54	(MH "Headache") OR (MH "Migraine")	28,213
S55	(MH "Anger") OR (MH "Anxiety") OR (MH "Depression") OR (MH "Behavioral Symptoms")	156,504
S56	(MH "Anxiety Disorders")	11,743
S57	(MH "Affective Disorders") OR (MH "Depression")	127,608
S58	(MH "Hypogonadism")	1,511
S59	(MH "Hypopituitarism")	619
S60	(MH "Nausea")	5,033
S61	(MH "Biological Markers")	55,540
S62	(MH "Vomiting") OR (MH "Nausea and Vomiting")	10,950
S63	TI ((gait* or balance or imbalance or unstead* or (Postural N2 (sway* or control or stability)) or ((musculoskeletal or postural) N2 equilibrium))) OR AB ((gait* or balance or imbalance or unstead* or (Postural N2 (sway* or control or stability)) or ((musculoskeletal or postural) N2 equilibrium)))	91,011
S64	TI (((task or motor or sensorimotor or psychomotor) N2 (performanc* or control or skill*))) OR AB (((task or motor or sensorimotor or psychomotor) N2 (performanc* or control or skill*)))	20,916
S65	TI (("motor skill*" or (executive N2 (function* or dysfunction* or control* or performance)))) OR AB (("motor skill*" or (executive N2 (function* or dysfunction* or control* or performance))))	17,036
S66	TI ((cogniti* N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit* or consequence* or processing))) OR AB ((cogniti* N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit* or consequence* or processing)))	80,418
S67	TI (((memory or attention) N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*))) OR AB (((memory or attention) N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)))	34,572
S68	TI ((confused or confusion or comprehension or "reaction time*" or "processing speed*" or "single-task" or "dual-task" or orientation or amnesia)) OR AB ((confused or confusion or comprehension or "reaction time*" or "processing speed*" or "single-task" or "dual-task" or orientation or amnesia))	66,776
S69	TI ((vision* or visual* or oculomotor* or "oculo-motor" or "ocular motor" or visuomotor or "visuo-motor" or visuovestibular or optometric* or optokinetic or "VOMS performance" or "eye track*" or saccad* or "smooth pursuit" or "vergence"	152,044

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	or "visual fixation" or ((eye or ocular) N2 (movement* or motilit*))) OR AB ((vision* or visual* or oculomotor* or "oculo-motor" or "ocular motor" or visuomotor or "visuo-motor" or visuovestibular or optometric* or optokinetic or "VOMS performance" or "eye track*" or saccad* or "smooth pursuit" or "vergence" or "visual fixation" or ((eye or ocular) N2 (movement* or motilit*))))	
S70	TI ((dizziness or vertigo or auricular or tinnitus or "auditory processing" or fatigue* or drowsiness or tiredness or "daytime nap*" or vestibulo* or vestibular* or headache* or migraine* or consciousness or unconscious* or awareness or alertness or fogginess)) OR AB ((dizziness or vertigo or auricular or tinnitus or "auditory processing" or fatigue* or drowsiness or tiredness or "daytime nap*" or vestibulo* or vestibular* or headache* or migraine* or consciousness or unconscious* or awareness or alertness or fogginess))	199,708
S71	TI (((learning or language or verbal) N3 (fluency or dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*))) OR AB (((learning or language or verbal) N3 (fluency or dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)))	38,546
S72	TI ((neurocogniti* or neuropsycholog* or neurobehav* or neurosensory or neuropsychiatr* or neuromuscular or neurolog* or ((emotion* or psychological) N2 (function* or dysfunction*))) OR AB ((neurocogniti* or neuropsycholog* or neurobehav* or neurosensory or neuropsychiatr* or neuromuscular or neurolog* or ((emotion* or psychological) N2 (function* or dysfunction*)))	135,928
S73	TI ((insomnia or hypersomnia or hyposomnia or dyssomnia or parasomnia or nightmare* or sleepwalk* or somnambulism or (sleep* N2 (problem* or difficult* or trouble* or disturb* or wake or deficit* or hygiene or quality)))) OR AB ((insomnia or hypersomnia or hyposomnia or dyssomnia or parasomnia or nightmare* or sleepwalk* or somnambulism or (sleep* N2 (problem* or difficult* or trouble* or disturb* or wake or deficit* or hygiene or quality))))	33,172
S74	TI (((symptom* N2 (data or pattern* or analysis or severity or burden)) or asymptomatic)) OR AB (((symptom* N2 (data or pattern* or analysis or severity or burden)) or asymptomatic))	58,825
S75	TI ((irritat* or irritab* or mood* or anxiety or anxious or sad or emotional or depression or depressed or anger* or angry or rage* or "impulse control*")) OR AB ((irritat* or irritab* or mood* or anxiety or anxious or sad or emotional or depression or depressed or anger* or angry or rage* or "impulse control*"))	304,752
S76	TI (((behavior* or behaviour*) N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*))) OR AB (((behavior* or behaviour*) N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)))	71,194
S77	TI ((cervical or cervicogenic or cervicovestibular or neck or endocrin* or neuroendocrin* or pituitary or hypopituitar* or (hormon* N2 (dysfunction* or deficien*)) or hypogonad* or hypocortisol* or hypothyroid* or nausea or vomit*)) OR AB ((cervical or cervicogenic or cervicovestibular or neck or endocrin* or	172,256

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	neuroendocrin* or pituitary or hypopituitar* or (hormon* N2 (dysfunction* or deficien*)) or hypogonad* or hypocortisol* or hypothyroid* or nausea or vomit*)	
S78	TI (((blood* or serum* or fluid*) N3 (marker* or biomarker* or "biological marker*"))) OR AB (((blood* or serum* or fluid*) N3 (marker* or biomarker* or "biological marker*")))	12,034
S79	TI (((blood or saliva or serum or urine) N2 (test* or sampl*))) OR AB (((blood or saliva or serum or urine) N2 (test* or sampl*)))	57,994
S80	S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75 OR S76 OR S77 OR S78 OR S79	1,525,631
S81	S33 AND S80	2,677
S82	S33 AND S80 Limiters - Published Date: 20010101-20221231	2,596
S83	S33 AND S80 Limiters - Published Date: 20010101-20221231; Scholarly (Peer Reviewed) Journals	2,433

Supplemental Table 7. SportDiscus (via EBSCO) Search Strategy as searched on 26 March 2022

#	Query	Results
S1	DE "SPORTS" OR DE "AMATEUR sports" OR DE "AQUATIC sports" OR DE "BALL games" OR DE "COLLEGE sports" OR DE "CONTACT sports" OR DE "ENDURANCE sports" OR DE "EXTREME sports" OR DE "INDIVIDUAL sports" OR DE "MILITARY sports" OR DE "OLYMPIC Games" OR DE "PROFESSIONAL sports" OR DE "RECREATIONAL sports" OR DE "SCHOOL sports" OR DE "SPORTS competitions" OR DE "TEAM sports" OR DE "VIOLENCE in sports" OR DE "WINTER sports" OR DE "SPORTS camps" OR DE "SPORTS events" OR DE "SPORTS medicine" OR DE "SPORTS participation"	218,575
S2	DE "ATHLETICS" OR DE "BASEBALL" OR DE "BASKETBALL" OR DE "BICYCLE motocross" OR DE "BICYCLE racing" OR DE "BICYCLE racing training" OR DE "BOXING" OR DE "CYCLING" OR DE "CHEERLEADING" OR DE "ROCK climbing" OR DE "CRACK climbing" OR DE "FACE climbing" OR DE "FREE climbing" OR DE "INDOOR rock climbing" OR DE "CRICKET (Sport)" OR DE "CRICKET competitions" OR DE "INDOOR cricket" OR DE "TWENTY20 cricket" OR DE "ACROBATIC diving" OR DE "SPRINGBOARD diving" OR DE "HORSE sports" OR DE "EQUESTRIAN accidents" OR DE "DRESSAGE tests" OR DE "EVENTING (Horsemanship)" OR DE "GAMES on horseback" OR DE "HORSE racing" OR DE "SHOW jumping" OR DE "SHOW riding" OR DE "VAULTING (Horsemanship)" OR DE "FOOTBALL" OR DE "CANADIAN football" OR DE "COLLEGE football" OR DE "HIGH school football" OR DE "MINOR league football" OR DE "PROFESSIONAL football" OR DE "ARENA football" OR DE "RUGBY football" OR DE "COLLEGE rugby football" OR DE "FLORENTINE football" OR DE	414,469

	"PROFESSIONAL rugby football" OR DE "RUGBY League football" OR DE "RUGBY Union football" OR DE "RUGBY competitions" OR DE "SEVEN-a-side rugby football" OR DE "AUSTRALIAN football" OR DE "TACKLING (Rugby)" OR DE "GOLF" OR DE "COLLEGE golf" OR DE "PROFESSIONAL golf" OR DE "SNOW golf" OR DE "GYMNASTICS" OR DE "ARTISTIC gymnastics" OR DE "SWEDISH gymnastics" OR DE "TEAM aerobics" OR DE "TUMBLING" OR DE "HANDBALL" OR DE "TEAM handball" OR DE "HOCKEY" OR DE "COLLEGE hockey" OR DE "FIELD hockey" OR DE "INDOOR hockey" OR DE "LAWN hockey" OR DE "MINOR league hockey" OR DE "ROLLER hockey" OR DE "BALL hockey" OR DE "PROFESSIONAL hockey" OR DE "LACROSSE" OR DE "MOUNTAINEERING" OR DE "NETBALL" OR DE "RACKET games" OR DE "RACQUETBALL" OR DE "RINGETTE (Game)" OR DE "RODEOS" OR DE "BRONC riding" OR DE "BULL riding" OR DE "CALF roping" OR DE "CHUCKWAGON racing" OR DE "STEER roping" OR DE "STEER wrestling" OR DE "TEAM penning" OR DE "TEAM roping" OR DE "TRICK roping" OR DE "SKATEBOARDING" OR DE "SNOW skating" OR DE "SKATING" OR DE "FIGURE skating" OR DE "FREE skating" OR DE "ICE dancing" OR DE "PROFESSIONAL skating" OR DE "SPEED skating" OR DE "ROLLER skating" OR DE "SKI acrobatics" OR DE "SKI cross" OR DE "SKI mountaineering" OR DE "SKI racing" OR DE "SKIS & skiing" OR DE "SLALOM canoeing" OR DE "SLALOM racing" OR DE "SLALOM skiing" OR DE "SNOWBOARDING" OR DE "BACKCOUNTRY snowboarding" OR DE "SLOPESTYLE snowboarding" OR DE "SKIBOARDING" OR DE "SOCCER" OR DE "COLLEGE soccer" OR DE "HIGH school soccer" OR DE "INDOOR soccer" OR DE "PROFESSIONAL soccer" OR DE "SOFTBALL" OR DE "SLOW pitch softball" OR DE "YOUTH league softball" OR DE "SQUASH (Game)" OR DE "SWIMMING" OR DE "SWIMMING competitions" OR DE "SYNCHRONIZED swimming" OR DE "TENNIS" OR DE "COLLEGE tennis" OR DE "COURT tennis" OR DE "PROFESSIONAL tennis" OR DE "TABLE tennis" OR DE "TENNIS leagues" OR DE "TENNIS tournaments" OR DE "TENNIS training" OR DE "TRACK & field" OR DE "ALL-around (Track & field)" OR DE "COLLEGE track & field" OR DE "HURDLING (Track & field)" OR DE "INDOOR track & field" OR DE "JUMPING" OR DE "STEEPLECHASING (Track & field)" OR DE "VAULTING" OR DE "VOLLEYBALL" OR DE "BEACH volleyball" OR DE "COLLEGE volleyball" OR DE "PROFESSIONAL volleyball" OR DE "VOLLEYBALL competitions" OR DE "WRESTLING" OR DE "COLLEGE wrestling" OR DE "FREESTYLE wrestling" OR DE "HIGH school wrestling" OR DE "PROFESSIONAL wrestling" OR DE "SAMBO wrestling" OR DE "SUMO"	
S3	DE "AIKIDO" OR DE "JUDO" OR DE "SAN-jitsu" OR DE "JIU-jitsu" OR DE "KARATE" OR DE "TAE kwon do" OR DE "KICKBOXING" OR DE "MARTIAL arts" OR DE "CAPOEIRA (Dance)" OR DE "MIXED martial arts" OR DE "ARCHERY" OR DE "BADMINTON (Game)" OR DE "BADMINTON tournaments" OR DE "BADMINTON training" OR DE "CANOE racing" OR DE "CROSS-country ski racing" OR DE "NORDIC combined" OR DE "SPORT fencing" OR DE "FENCING" OR DE "KAYAKING" OR DE	59,827

	"KAYAKING training" OR DE "ICE luge racing" OR DE "SHOOTING contests" OR DE "ROWING" OR DE "SAILING" OR DE "SKELETON" OR DE "SKI jumping" OR DE "SLEDDING" OR DE "SURFING" OR DE "BODYBOARDING" OR DE "KITE surfing" OR DE "STAND-up paddle surfing" OR DE "WINDSURFING" OR DE "TRAMPOLINING" OR DE "WATER polo" OR DE "WEIGHT lifting" OR DE "YACHTING"	
S4	DE "ATHLETES" OR DE "ATHLETES' health" OR DE "ARCHERS" OR DE "BADMINTON players" OR DE "BASEBALL players" OR DE "BASKETBALL players" OR DE "BOBSLEDDERS" OR DE "BODYBUILDERS" OR DE "BOXERS (Sports)" OR DE "BULLFIGHTERS" OR DE "CANOEISTS" OR DE "COLLEGE athletes" OR DE "CRICKET players" OR DE "CYCLISTS" OR DE "DIVERS" OR DE "ELITE athletes" OR DE "ENDURANCE athletes" OR DE "FENCERS" OR DE "FOOTBALL players" OR DE "GOLFERS" OR DE "GYMNASTS" OR DE "HANDBALL players" OR DE "HIGH school athletes" OR DE "HOCKEY players" OR DE "JUNIOR high school athletes" OR DE "LACROSSE players" OR DE "MALE athletes" OR DE "MARTIAL artists" OR DE "MIDDLE school athletes" OR DE "MOUNTAINEERS" OR DE "NETBALL players" OR DE "OFFENSIVE players" OR DE "OLDER athletes" OR DE "OLYMPIC athletes" OR DE "PROFESSIONAL athletes" OR DE "ROWERS" OR DE "RUGBY football players" OR DE "RUGBY football teams" OR DE "SKATEBOARDERS" OR DE "SKATERS" OR DE "SKIERS" OR DE "SNOWBOARDERS" OR DE "SOCCER players" OR DE "SOFTBALL players" OR DE "SQUASH players" OR DE "SURFERS" OR DE "SWIMMERS" OR DE "TABLE tennis players" OR DE "TEAM handball players" OR DE "TENNIS players" OR DE "TRACK & field athletes" OR DE "TRIATHLETES" OR DE "VOLLEYBALL players" OR DE "WATER polo players" OR DE "WEIGHT lifters" OR DE "WINDSURFERS (Persons)" OR DE "WOMEN athletes" OR DE "WRESTLERS"	290,240
S5	DE "MARTIAL artists" OR DE "ARCHERS" OR DE "BADMINTON players" OR DE "CANOEISTS" OR DE "KAYAKERS" OR DE "SAILORS" OR DE "SURFERS" OR DE "TRAMPOLINISTS" OR DE "WATER polo players" OR DE "WEIGHT lifters"	7,029
S6	DE "SPORTS medicine" OR DE "PEDIATRIC sports medicine" OR DE "SPORTS emergencies" OR DE "SPORTS nutrition" OR DE "SPORTS ophthalmology" OR DE "SPORTS physical therapy" OR DE "SPORTS injuries" OR DE "AQUATIC sports injuries" OR DE "BASEBALL injuries" OR DE "BASKETBALL injuries" OR DE "BOXING injuries" OR DE "CRICKET injuries" OR DE "DIVING injuries" OR DE "DIVING accidents" OR DE "EQUESTRIAN accidents" OR DE "FOOTBALL injuries" OR DE "GOLF injuries" OR DE "GYMNASTICS injuries" OR DE "HOCKEY injuries" OR DE "HORSE sports injuries" OR DE "IN-line skating injuries" OR DE "JUDO injuries" OR DE "KARATE injuries" OR DE "MARTIAL arts injuries" OR DE "MOTORSPORTS injuries" OR DE "NETBALL injuries" OR DE "RACKET game injuries" OR DE "RUGBY football injuries" OR DE "SKATEBOARDING injuries" OR DE "SKIING injuries" OR DE "SKIING accidents" OR DE "SOCCER injuries" OR DE "TENNIS injuries" OR DE "VAULTING injuries" OR DE "VOLLEYBALL injuries" OR DE "WINTER	34,397

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	sports injuries" OR DE "JUDO injuries" OR DE "KARATE injuries" OR DE "MARTIAL arts injuries" OR DE "CANOEING accidents" OR DE "YACHTING accidents"	
S7	TI ((athlete* or athletic* or crew or player* or teammate* or "team-mate*" or varsity)) OR AB ((athlete* or athletic* or crew or player* or teammate* or "team-mate*" or varsity)) OR KW ((athlete* or athletic* or crew or player* or teammate* or "team-mate*" or varsity))	373,528
S8	TI sport* OR AB sport* OR KW sport* OR SO sport*	790,312
S9	TI (((return* or resum* or "re-ent*" or reent*) N2 (play* or competition* or sport*))) OR AB (((return* or resum* or "re-ent*" or reent*) N2 (play* or competition* or sport*))) OR KW (((return* or resum* or "re-ent*" or reent*) N2 (play* or competition* or sport*)))	6,482
S10	TI ((baseball or basketball or biking or bicycling* or bmx or boxing or "bull rid*" or bullrid* or cheerleading or "cheer leading" or climbing or cricket or diving or equestrian or football or golf or gymnastics or handball or "horse* riding" or hockey or lacrosse or mountaineering or netball or "net ball" or "racquet sport*" or racquetball or ringette or rodeo* or "roller derb*" or rollerskat* rugby or skateboard* or skating or skiing or snowboard* or "snow sport*" or soccer or softball or squash or swimming or tennis or "track and field" or wrestling or volleyball)) OR AB ((baseball or basketball or biking or bicycling* or bmx or boxing or "bull rid*" or bullrid* or cheerleading or "cheer leading" or climbing or cricket or diving or equestrian or football or golf or gymnastics or handball or "horse* riding" or hockey or lacrosse or mountaineering or netball or "net ball" or "racquet sport*" or racquetball or ringette or rodeo* or "roller derb*" or rollerskat* rugby or skateboard* or skating or skiing or snowboard* or "snow sport*" or soccer or softball or squash or swimming or tennis or "track and field" or wrestling or volleyball)) OR KW ((baseball or basketball or biking or bicycling* or bmx or boxing or "bull rid*" or bullrid* or cheerleading or "cheer leading" or climbing or cricket or diving or equestrian or football or golf or gymnastics or handball or "horse* riding" or hockey or lacrosse or mountaineering or netball or "net ball" or "racquet sport*" or racquetball or ringette or rodeo* or "roller derb*" or rollerskat* rugby or skateboard* or skating or skiing or snowboard* or "snow sport*" or soccer or softball or squash or swimming or tennis or "track and field" or wrestling or volleyball))	573,592
S11	TI ((archery or badminton or bobsled* or bobsleigh* or canoe* or "cross country" or fencing or kayak* or luge or rifle or rowing or sailing or skeleton or "ski jump*" or sledding or surfing or trampolin* or "water polo" or "weight lifting" or windsurfing or yachting)) OR AB ((archery or badminton or bobsled* or bobsleigh* or canoe* or "cross country" or fencing or kayak* or luge or rifle or rowing or sailing or skeleton or "ski jump*" or sledding or surfing or trampolin* or "water polo" or "weight lifting" or windsurfing or yachting)) OR KW ((archery or badminton or bobsled* or bobsleigh* or canoe* or "cross country" or fencing or kayak* or luge or rifle or rowing or sailing or skeleton or	54,014

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	"ski jump*" or sledding or surfing or trampolin* or "water polo" or "weight lifting" or windsurfing or yachting))	
S12	TI ((aikido or judo or jiujitsu or "jiu-jitsu" or jujitsu or "ju jitsu" or karate or kickbox* or "Martial art*" or taekwondo or "tae kwon do" or "tai ji")) OR AB ((aikido or judo or jiujitsu or "jiu-jitsu" or jujitsu or "ju jitsu" or karate or kickbox* or "Martial art*" or taekwondo or "tae kwon do" or "tai ji")) OR KW ((aikido or judo or jiujitsu or "jiu-jitsu" or jujitsu or "ju jitsu" or karate or kickbox* or "Martial art*" or taekwondo or "tae kwon do" or "tai ji"))	14,911
S13	TI ((capoeira or "Dim mak" or kenpo or "kung fu" or "pencak silat" or pitfight* or savate or "submission fight*" or UFC or "ultimate fighting champion*")) OR AB ((capoeira or "Dim mak" or kenpo or "kung fu" or "pencak silat" or pitfight* or savate or "submission fight*" or UFC or "ultimate fighting champion*")) OR KW ((capoeira or "Dim mak" or kenpo or "kung fu" or "pencak silat" or pitfight* or savate or "submission fight*" or UFC or "ultimate fighting champion*"))	1,743
S14	TI ((biker* or boxer* or "cheer leader*" or cheerleader* or climber* or cyclist* or diver or divers or fencer* or fighter* or footballer* or goalie* or golfer* or gymnast or gymnasts or "horse* rider*" or jockey* or judoka* or mountaineer* or rower* or sailor* or skater* or skier* or sledder* or snowboarder* or surfer* or swimmer* or "weight lifter*" or wrestler*)) OR AB ((biker* or boxer* or "cheer leader*" or cheerleader* or climber* or cyclist* or diver or divers or fencer* or fighter* or footballer* or goalie* or golfer* or gymnast or gymnasts or "horse* rider*" or jockey* or judoka* or mountaineer* or rower* or sailor* or skater* or skier* or sledder* or snowboarder* or surfer* or swimmer* or "weight lifter*" or wrestler*)) OR KW ((biker* or boxer* or "cheer leader*" or cheerleader* or climber* or cyclist* or diver or divers or fencer* or fighter* or footballer* or goalie* or golfer* or gymnast or gymnasts or "horse* rider*" or jockey* or judoka* or mountaineer* or rower* or sailor* or skater* or skier* or sledder* or snowboarder* or surfer* or swimmer* or "weight lifter*" or wrestler*))	149,851
S15	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14	1,478,360
S16	(DE "BRAIN concussion" OR DE "POSTCONCUSSION syndrome") OR (DE "BRAIN injuries")	6,068
S17	DE "BRAIN concussion prevention"	185
S18	DE "BRAIN concussion diagnosis"	385
S19	TI ((concussion* or concussed or concussive or subconcuss* or "sub-concuss*")) OR AB ((concussion* or concussed or concussive or subconcuss* or "sub-concuss*")) OR KW ((concussion* or concussed or concussive or subconcuss* or "sub-concuss*"))	5,596
S20	TI (("post-concuss*" or postconcuss*)) OR AB (("post-concuss*" or postconcuss*)) OR KW (("post-concuss*" or postconcuss*))	907

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S21	TI ((mild N3 ("traumatic brain injur*" or tbi*))) OR AB ((mild N3 ("traumatic brain injur*" or tbi*))) OR KW ((mild N3 ("traumatic brain injur*" or tbi*)))	1,285
S22	TI mtbi* OR AB mtbi* OR KW mtbi*	394
S23	TI ((head N2 (injur* or impact* or trauma*))) OR AB ((head N2 (injur* or impact* or trauma*))) OR KW ((head N2 (injur* or impact* or trauma*)))	3,730
S24	TI (("traumatic brain injur*" or tbi*)) OR AB (("traumatic brain injur*" or tbi*)) OR KW (("traumatic brain injur*" or tbi*))	5,269
S25	TI ((neurotrauma* or "neuro-trauma*") OR (craniocerebral N2 (trauma* OR injur*))) OR AB ((neurotrauma* or "neuro-trauma*") OR (craniocerebral N2 (trauma* OR injur*))) OR KW ((neurotrauma* or "neuro-trauma*") OR (craniocerebral N2 (trauma* OR injur*)))	178
S26	S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25	13,381
S27	S15 AND S26	6,992
S28	((DE "DIAGNOSIS" OR DE "PHYSICAL diagnosis" OR DE "VISUAL analog scale" OR DE "DIAGNOSTIC examinations" OR DE "MEDICAL screening") OR (DE "DIAGNOSIS of brain diseases" OR DE "ELECTROENCEPHALOGRAPHY")) OR (DE "DIAGNOSTIC examinations" OR DE "EYE examination" OR DE "SKIN examination" OR DE "DIAGNOSTIC imaging" OR DE "DIAGNOSTIC ultrasonic imaging" OR DE "MAGNETIC resonance imaging" OR DE "MEDICAL radiography" OR DE "RADIOISOTOPE scanning" OR DE "DIAGNOSTIC ultrasonic imaging" OR DE "ECHOCARDIOGRAPHY")) OR (DE "BLOOD testing")	38,550
S29	(DE "EXERCISE tests" OR DE "PHYSICAL fitness testing" OR DE "PSYCHOLOGICAL tests") OR (DE "SPORT Concussion Assessment Tool" OR DE "SPORTS clinics")	16,051
S30	DE "MEDICAL needs assessment" OR DE "PHYSICAL therapy assessment"	1,742
S31	DE "SELF-evaluation"	7,197
S32	TI (((Diagnos* or Assess* or Exam* or Questionnaire* or Detect* or Recogniz* or Screen* or Tool* or Test* or Checklist* or Instrument* or Scale* or Inventor* or Battery or Batteries or Measur* or Score* or Evaluat* or identify*) N10 (concuss* or postconcuss* or subconcuss* or postinjur* or injur* or mtbi* or "mild tbi*" or "traumatic brain injur*" or tbi* or "follow-up*" or followup* or serial or clinic* or office or hospital* or emergency or outpatient* or subacute* or "sub-acute*" or acute or series or symptom*))) OR AB (((Diagnos* or Assess* or Exam* or Questionnaire* or Detect* or Recogniz* or Screen* or Tool* or Test* or Checklist* or Instrument* or Scale* or Inventor* or Battery or Batteries or Measur* or Score* or Evaluat* or identify*) N10 (concuss* or postconcuss* or subconcuss* or postinjur* or injur* or mtbi* or "mild tbi*" or "traumatic brain injur*" or tbi* or "follow-up*" or followup* or serial or clinic* or office or hospital* or emergency or outpatient* or subacute* or "sub-acute*" or acute or series or symptom*))) OR KW (((Diagnos* or Assess* or Exam* or	98,816

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	Questionnaire* or Detect* or Recogniz* or Screen* or Tool* or Test* or Checklist* or Instrument* or Scale* or Inventor* or Battery or Batteries or Measur* or Score* or Evaluat* or identify*) N10 (concuss* or postconcuss* or subconcuss* or postinjur* or injur* or mtbi* or "mild tbi*" or "traumatic brain injur*" or tbi* or "follow-up*" or followup* or serial or clinic* or office or hospital* or emergency or outpatient* or subacute* or "sub-acute*" or acute or series or symptom*))	
S33	TI "concussion clinic*" OR AB "concussion clinic*" OR KW "concussion clinic*"	110
S34	TI ((neuroimag* or "CT scan*" or "CAT Scan*" or "imaging" or "MRI*")) OR AB ((neuroimag* or "CT scan*" or "CAT Scan*" or "imaging" or "MRI*")) OR KW ((neuroimag* or "CT scan*" or "CAT Scan*" or "imaging" or "MRI*"))	19,859
S35	S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34	152,143
S36	S27 AND S35	3,162
S37	(((((DE "BALANCE disorders") OR (DE "EQUILIBRIUM testing"))) OR (DE "GAIT disorders" OR DE "GAIT in humans"))) OR (DE "MOVEMENT disorders" OR DE "PSYCHOMOTOR disorders"))) OR (DE "PERCEPTUAL-motor processes" OR DE "VISUOMOTOR coordination" OR DE "MOTOR ability" OR DE "MOTOR ability testing"))) OR (DE "MOTOR imagery (Cognition)" OR DE "EYE-hand coordination"))) OR (DE "PERCEPTUAL-motor processes")	33,525
S38	((((DE "COGNITION" OR DE "COGNITIVE load" OR DE "PERCEPTION" OR DE "THOUGHT suppression" OR DE "COGNITION disorders" OR DE "DEMENTIA" OR DE "MOTOR imagery (Cognition)" OR DE "COGNITIVE ability") OR (DE "REACTION time"))) OR (DE "ATTENTION"))) OR (DE "MEMORY" OR DE "ATTENTION" OR DE "PSYCHOLOGY of learning" OR DE "SHORT-term memory" OR DE "SPATIAL memory" OR DE "SHORT-term memory")	22,638
S39	DE "NEUROPHYSIOLOGY"	1,987
S40	(DE "VISION" OR DE "VISION disorders" OR DE "VISION testing" OR DE "MOTION perception (Vision)" OR DE "VISUAL perception" OR DE "EYE examination" OR DE "VISUAL acuity" OR DE "EYE movements") OR (DE "DEPTH perception")	6,562
S41	DE "SLEEP" OR DE "SLEEP disorders" OR DE "SLEEP interruptions" OR DE "SLEEP deprivation & health" OR DE "SLEEP deprivation" OR DE "SLEEP hygiene" OR DE "SLEEP apnea syndromes in children"	5,541
S42	(((((DE "VERTIGO" OR DE "DIZZINESS") OR (DE "HEARING disorders"))) OR (DE "FATIGUE"))) OR (DE "HEADACHE" OR DE "CLUSTER headache" OR DE "MIGRAINE" OR DE "TENSION headache" OR DE "MIGRAINE"))) OR (DE "SITUATIONAL awareness") OR (DE "LOSS of consciousness")	17,690
S43	((((DE "MOOD (Psychology)") OR (DE "AFFECTIVE disorders"))) OR (DE "ANXIETY"))) OR (DE "MENTAL depression")	14,152
S44	DE "NAUSEA" OR DE "VOMITING"	419
S45	TI ((gait* or balance or imbalance or unstead* or (Postural N2 (sway* or control or stability)) or ((musculoskeletal or postural) N2 equilibrium))) OR AB ((gait* or balance or imbalance or unstead* or	50,297

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	(Postural N2 (sway* or control or stability)) or ((musculoskeletal or postural) N2 equilibrium))) OR KW ((gait* or balance or imbalance or unstead* or (Postural N2 (sway* or control or stability)) or ((musculoskeletal or postural) N2 equilibrium)))	
S46	TI (((task or motor or sensorimotor or psychomotor) N2 (performanc* or control or skill*))) OR AB (((task or motor or sensorimotor or psychomotor) N2 (performanc* or control or skill*))) OR KW (((task or motor or sensorimotor or psychomotor) N2 (performanc* or control or skill*)))	16,589
S47	TI (("motor skill*" or (executive N2 (function* or dysfunction* or control* or performance)))) OR AB (("motor skill*" or (executive N2 (function* or dysfunction* or control* or performance)))) OR KW (("motor skill*" or (executive N2 (function* or dysfunction* or control* or performance))))	8,170
S48	TI ((cogniti* N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit* or consequence* or processing))) OR AB ((cogniti* N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit* or consequence* or processing))) OR KW ((cogniti* N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit* or consequence* or processing)))	10,761
S49	TI (((memory or attention) N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*))) OR AB (((memory or attention) N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*))) OR KW (((memory or attention) N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)))	5,032
S50	TI ((confused or confusion or comprehension or "reaction time*" or "processing speed*" or "single-task" or "dual-task" or orientation or amnesia)) OR AB ((confused or confusion or comprehension or "reaction time*" or "processing speed*" or "single-task" or "dual-task" or orientation or amnesia)) OR KW ((confused or confusion or comprehension or "reaction time*" or "processing speed*" or "single-task" or "dual-task" or orientation or amnesia))	22,157
S51	TI ((vision* or visual* or oculomotor* or "oculo-motor" or "ocular motor" or visuomotor or "visuo-motor" or visuovestibular or optometric* or optokinetic or "VOMS performance" or "eye track*" or saccad* or "smooth pursuit" or "vergence" or "visual fixation" or ((eye	34,628

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	or ocular) N2 (movement* or motilit*))) OR AB ((vision* or visual* or oculomotor* or "oculo-motor" or "ocular motor" or visuomotor or "visuo-motor" or visuovestibular or optometric* or optokinetic or "VOMS performance" or "eye track*" or saccad* or "smooth pursuit" or "vergence" or "visual fixation" or ((eye or ocular) N2 (movement* or motilit*))) OR KW ((vision* or visual* or oculomotor* or "oculo-motor" or "ocular motor" or visuomotor or "visuo-motor" or visuovestibular or optometric* or optokinetic or "VOMS performance" or "eye track*" or saccad* or "smooth pursuit" or "vergence" or "visual fixation" or ((eye or ocular) N2 (movement* or motilit*)))	
S52	TI ((dizziness or vertigo or auricular or tinnitus or "auditory processing" or fatigue* or drowsiness or tiredness or "daytime nap*" or vestibulo* or vestibular* or headache* or migraine* or consciousness or unconscious* or awareness or alertness or fogginess)) OR AB ((dizziness or vertigo or auricular or tinnitus or "auditory processing" or fatigue* or drowsiness or tiredness or "daytime nap*" or vestibulo* or vestibular* or headache* or migraine* or consciousness or unconscious* or awareness or alertness or fogginess)) OR KW ((dizziness or vertigo or auricular or tinnitus or "auditory processing" or fatigue* or drowsiness or tiredness or "daytime nap*" or vestibulo* or vestibular* or headache* or migraine* or consciousness or unconscious* or awareness or alertness or fogginess))	48,683
S53	TI (((learning or language or verbal) N3 (fluency or dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*))) OR AB (((learning or language or verbal) N3 (fluency or dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*))) OR KW (((learning or language or verbal) N3 (fluency or dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)))	4,475
S54	TI ((neurocogniti* or neuropsycholog* or neurobehav* or neurosensory or neuropsychiatr* or neuromuscular or neurolog* or ((emotion* or psychological) N2 (function* or dysfunction*))) OR AB ((neurocogniti* or neuropsycholog* or neurobehav* or neurosensory or neuropsychiatr* or neuromuscular or neurolog* or ((emotion* or psychological) N2 (function* or dysfunction*))) OR KW ((neurocogniti* or neuropsycholog* or neurobehav* or neurosensory or neuropsychiatr* or neuromuscular or neurolog* or ((emotion* or psychological) N2 (function* or dysfunction*)))	23,158
S55	TI ((insomnia or hypersomnia or hyposomnia or dyssomnia or parasomnia or nightmare* or sleepwalk* or somnambulism or (sleep* N2 (problem* or difficult* or trouble* or disturb* or wake or deficit* or hygiene or quality)))) OR AB ((insomnia or hypersomnia or hyposomnia or dyssomnia or parasomnia or nightmare* or sleepwalk*	5,058

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	or somnambulism or (sleep* N2 (problem* or difficult* or trouble* or disturb* or wake or deficit* or hygiene or quality)))) OR KW ((insomnia or hypersomnia or hypsomnia or dyssomnia or parasomnia or nightmare* or sleepwalk* or somnambulism or (sleep* N2 (problem* or difficult* or trouble* or disturb* or wake or deficit* or hygiene or quality))))	
S56	TI (((symptom* N2 (data or pattern* or analysis or severity or burden)) or asymptomatic)) OR AB (((symptom* N2 (data or pattern* or analysis or severity or burden)) or asymptomatic)) OR KW (((symptom* N2 (data or pattern* or analysis or severity or burden)) or asymptomatic))	5,783
S57	TI ((irritat* or irritab* or mood* or anxiety or anxious or sad or emotional or depression or depressed or anger* or angry or rage* or "impulse control*")) OR AB ((irritat* or irritab* or mood* or anxiety or anxious or sad or emotional or depression or depressed or anger* or angry or rage* or "impulse control*")) OR KW ((irritat* or irritab* or mood* or anxiety or anxious or sad or emotional or depression or depressed or anger* or angry or rage* or "impulse control*"))	50,879
S58	TI (((behavior* or behaviour*) N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*))) OR AB (((behavior* or behaviour*) N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*))) OR KW (((behavior* or behaviour*) N3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)))	11,769
S59	TI ((cervical or cervicogenic or cervicovestibular or neck or endocrin* or neuroendocrin* or pituitary or hypopituitar* or (hormon* N2 (dysfunction* or deficien*)) or hypogonad* or hypocortisol* or hypothyroid* or nausea or vomit*)) OR AB ((cervical or cervicogenic or cervicovestibular or neck or endocrin* or neuroendocrin* or pituitary or hypopituitar* or (hormon* N2 (dysfunction* or deficien*)) or hypogonad* or hypocortisol* or hypothyroid* or nausea or vomit*)) OR KW ((cervical or cervicogenic or cervicovestibular or neck or endocrin* or neuroendocrin* or pituitary or hypopituitar* or (hormon* N2 (dysfunction* or deficien*)) or hypogonad* or hypocortisol* or hypothyroid* or nausea or vomit*))	23,169
S60	DE "CERVICAL vertebrae"	1,805
S61	TI (((blood* or serum* or fluid*) N3 (marker* or biomarker* or "biological marker*"))) OR AB (((blood* or serum* or fluid*) N3 (marker* or biomarker* or "biological marker*"))) OR KW (((blood* or serum* or fluid*) N3 (marker* or biomarker* or "biological marker*")))	1,391
S62	DE "BIOCHEMICAL markers"	1,862

S63	TI (((blood or saliva or serum or urine) N2 (test* or sampl*))) OR AB (((blood or saliva or serum or urine) N2 (test* or sampl*))) OR KW (((blood or saliva or serum or urine) N2 (test* or sampl*)))	10,648
S64	S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63	291,941
S65	S36 AND S64	1,837
S66	S36 AND S64 Limiters - Published Date: 20010101-20221231	1,732
S67	S36 AND S64 Limiters - Published Date: 20010101-20221231 Source type: Academic Journals	1,625

Supplemental Table 8. Web of Science Core Collection Search Strategy as searched on 26 March 2022

(Editions = A&HCI, ESCI, CPCI-SSH, CPCI-S, SCI-EXPANDED, SSCI)

#1	TS=((((concussion* OR concussed OR concussive OR subconcuss* OR sub-concuss*) OR (post-concuss* OR postconcuss*) OR (mild NEAR/3 ("traumatic brain injur*" OR tbi*)) OR (head NEAR/2 (injur* OR impact* OR trauma*)) OR ("traumatic brain injur*" OR tbi* OR mtbi* OR neurotrauma* OR "neuro-trauma*") OR (craniocerebral NEAR/2 (trauma* OR Injur*)))	122,397
#2	TS=(((sport*) OR (athlete* OR athletic* OR crew OR player* OR teammate* OR team-mate* OR varsity OR sport*) OR ((return* OR resum* OR "re-ent*" OR reent*) NEAR/2 (play* OR competition* OR sport*)) OR (baseball OR basketball OR biking OR bicycling* OR bmx OR boxing OR "bull rid*" OR bullrid* OR cheerleading OR "cheer leading" OR climbing OR cricket OR diving OR equestrian OR football OR golf OR gymnastics OR handball OR "horse* riding" OR hockey OR lacrosse OR mountaineering OR netball OR "net ball" OR "racquet sport*" OR racquetball OR ringuette OR "roller derb*" OR rollerskat* OR rodeo* OR rugby OR skateboard* OR skating OR skiing OR snowboard* OR "snow sport*" OR soccer OR softball OR squash OR swimming OR tennis OR "track and field" OR wrestling OR volleyball OR archery OR badminton OR bobsled* OR bobsleigh* OR canoe* OR "cross country" OR fencing OR kayak* OR luke OR rifle OR rowing OR sailing OR skeleton OR "ski jump*" OR sledding OR surfing OR trampoline* OR "water polo" OR "weight lifting" OR windsurfing OR yachting) OR (aikido OR judo OR jujutsu OR "jiu-jitsu" OR jujutsu OR "ju jitsu" OR karate OR kickbox* OR "Martial art*" OR taekwondo OR "tae kwon do" OR "tai ji") OR (capoeira OR "Dim mak" OR kenzo OR "kung fu" OR "pencak silat" OR pitfight* OR savage OR "submission fight*" OR ufc OR "ultimate fighting champion*") OR (biker* OR boxer* OR "cheer leader*" OR cheerleader* OR climber* OR cyclist* OR diver OR divers OR fencer* OR	677,312

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	fighter* OR footballer* OR goalie* OR golfer* OR gymnast OR gymnasts OR "horse* rider*" OR jockey* OR judoka* OR mountaineer* OR rower* OR sailor* OR skater* OR skier* OR sledder* OR snowboarder* OR surfer* OR swimmer* OR "weight lifter*" OR wrestler*)))	
#3	TS=((((Diagnos* or Assess* or Exam* or Questionnaire* or Detect* or Recogniz* or Screen* or Tool* or Test* or Checklist* or Instrument* or Scale* or Inventor* or Battery or Batteries or Measur* or Score* or Evaluat* or identify*) NEAR/10 (concuss* or postconcuss* or subconcuss* or postinjur* or injur* or mtbi* or "mild tbi*" or "traumatic brain injur*" or tbi* or "follow-up*" or followup* or serial or clinic* or office or hospital* or emergency or outpatient* or subacute* or "sub-acute*" or acute or series or symptom*)) or ("concussion clinic*" or neuroimag* or "CT scan*" or "CAT Scan*" or "imaging" or "MRI*"))))	4,140,166
#4	(((gait* or balance or imbalance or unstead* or (Postural NEAR/2 (sway* or control or stability)) or ((musculoskeletal or postural) NEAR/2 equilibrium)) or ((task or motor or sensorimotor or psychomotor) NEAR/2 (performanc* or control or skill*)) or ("motor skill*" or (executive NEAR/2 (function* or dysfunction* or control* or performance))) or (cogniti* NEAR/3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit* or consequence* or processing)) or ((memory or attention) NEAR/3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)) or (confused or confusion or comprehension or "reaction time*" or "processing speed*" or "single-task" or "dual-task" or orientation or amnesia) or (vision* or visual* or oculomotor* or "oculo-motor" or "ocular motor" or visuomotor or "visuo-motor" or visuovestibular or optometric* or optokinetic or "VOMS performance" or "eye track*" or saccad* or "smooth pursuit" or "vergence" or "visual fixation" or ((eye or ocular) NEAR/2 (movement* or motilit*))) or (dizziness or vertigo or auricular or tinnitus or "auditory processing" or fatigue* or drowsiness or tiredness or "daytime nap*" or vestibulo* or vestibular* or headache* or migraine* or consciousness or unconscious* or awareness or alertness or fogginess) or ((learning or language or verbal) NEAR/3 (fluency or dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)) or (neurocogniti* or neuropsycholog* or neurobehav* or neurosensory or neuropsychiatr* or neuromuscular or neurolog* or ((emotion* or psychological) NEAR/2 (function* or dysfunction*)) or (insomnia or hypersomnia or hyposomnia or dyssomnia or parasomnia or nightmare* or sleepwalk* or somnambulism or (sleep* NEAR/2 (problem* or difficult* or trouble* or disturb* or wake or deficit* or hygiene or quality))) or ((symptom*	7,641,179

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	NEAR/2 (data or pattern* or analysis or severity or burden)) or asymptomatic) or (irritat* or irritab* or mood* or anxiety or anxious or sad or emotional or depression or depressed or anger* or angry or rage* or "impulse control*") or ((behavior* or behaviour*) NEAR/3 (dysfunction* or problem* or performance* or change* or deficit* or difficult* or impairment or disturbance* or function* or abnormalit* or symptom* or complaint* or disorder* or disabilit*)) or (cervical or cervicogenic or cervicovestibular or neck or endocrin* or neuroendocrin* or pituitary or hypopituitar* or (hormon* NEAR/2 (dysfunction* or deficien*)) or hypogonad* or hypocortisol* or hypothyroid* or nausea or vomit*) or ((blood* or serum* or fluid*) NEAR/3 (marker* or biomarker* or "biological marker*")) or ((blood or saliva or serum or urine) NEAR/2 (test* or sampl*)))) (Topic)	
#5	#4 AND #3 AND #2 AND #1	4,693
#6	#4 AND #3 AND #2 AND #1 and 2022 or 2021 or 2020 or 2019 or 2018 or 2017 or 2016 or 2015 or 2014 or 2013 or 2012 or 2011 or 2010 or 2009 or 2008 or 2007 or 2006 or 2005 or 2004 or 2003 or 2002 or 2001 (Publication Years)	4,553

Supplemental Table 9. Summary of paediatric-specific papers' risk of bias

Symptoms (14)		Study Quality		
		(++)	(+)	(-)
SCAT symptom scale		0	8	4
PCSI		0	1	0
CSI		0	0	1
Clinical Profiles Screening Tool (CP Screen)		0	0	1
Cognition (19)		Study Quality		
		(++)	(+)	(-)
Standardized Assessment of Concussion (SAC)		0	0	1
ImPACT		1	10	2
ANAM		1	0	1
Axon		1	0	0
Reaction time		0	0	1
Single-task (standing) cognitive test		0	1	0
Dual-task (walking) cognitive test		0	1	0
Perceptual motor control perception action coupling task (PACT)		0	1	0
Balance-Motor (9)		Study Quality		
		(++)	(+)	(-)
mBESS		0	3	1
BESS		0	3	1
Tandem Gait		0	3	1
Oculo-motor/Vestibular (6)		Study Quality		
		(++)	(+)	(-)
VOMS		0	6	0
Physical Exam (3)		Study Quality		
		(++)	(+)	(-)
Physical examination		0	1	0

++ Low risk of bias; + Acceptable; - Inadmissible

Supplemental Table 10. Excluded papers based on high risk of bias

Please see attached PDF table