

# ACI Sport

Corso di Formazione per Medici di Gara  
Collaboratori ACI Sport  
25 Settembre 2025



SPORT

# La Gestione della Concussione Cerebrale nel Motor Sport ed il Politrauma



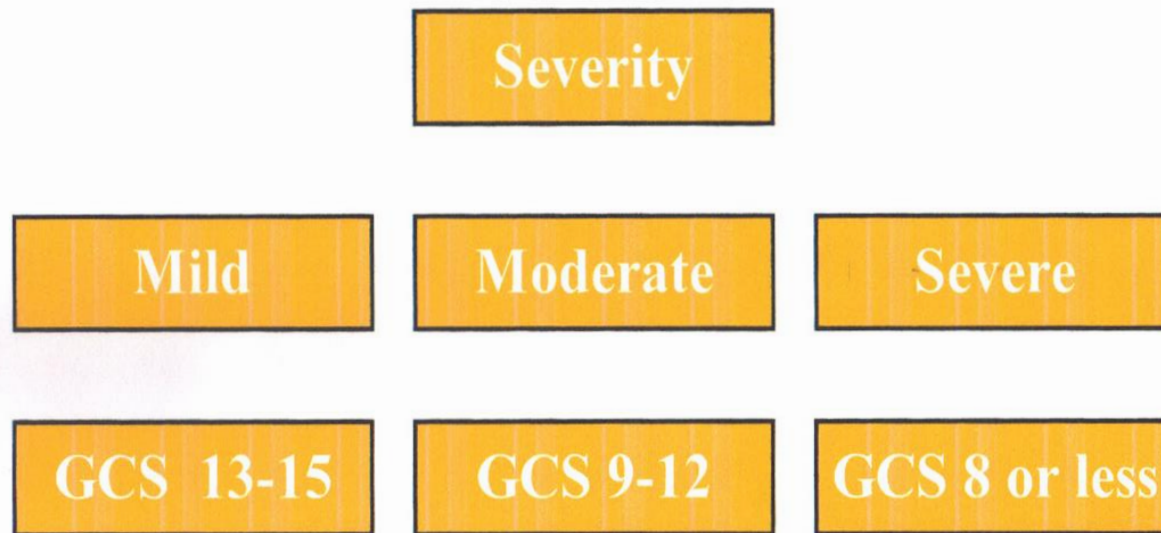
Daniel Di Mattia  
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Medici Federali ACI Sport



Un numero superiore ai 70 milioni di soggetti in tutto il mondo subiscono una lesione cerebrale traumatica ogni anno. Frequentemente questi pazienti presentano delle patologie che necessitano di trattamenti chirurgici di emergenza per lesioni vascolari, dell'apparato muscolo scheletrico degli organi cavi e parenchimatosi.

Nel Motorsport, in seguito ad un incidente durante una competizione, il rischio di lesioni traumatiche associate a traumi cerebrali è elevatissimo sia per i Piloti che per il Personale addetto ai servizi di Gara.

# CLASSIFICAZIONE TRAUMI CRANICI



# GLASGOW COMA SCORE

## GCS



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GLASGOW COMA SCORE		
Apertura degli occhi	spontaneamente	4
	alla parola	3
	al dolore	2
	non apre gli occhi	1
Risposte verbali	orientata, cioè il paziente relaziona con l'ambiente, capisce e risponde	5
	confusa	4
	parole non appropriate, parole a casaccio, urla, bestemmia, cose insensate, anche se pronunciate bene	3
	suoni incomprensibili, per esempio farfuglia	2
	nessuna	1
Risposte motorie	obbedisce ai comandi	6
	localizza il dolore, se non vi è risposta ai comandi si applica uno stimolo doloroso che viene mantenuto finché non si abbia il massimo della risposta: inizialmente si applica la pressione al letto ungueale con il risultato di estensione o flessione del gomito; se vi è una di queste risposte allora lo stimolo viene effettuato al collo o al tronco per ricercare la "localizzazione" che si intende effettuata quando gli arti si muovono per tentare di rimuovere lo stimolo doloroso.	5
	si retrae, flette normalmente ma non localizza il dolore.	4
	Anormale flessione allo stimolo doloroso (decorticazione)	3
	Estensione allo stimolo doloroso, si ha quando la risposta è in adduzione delle braccia, rotazione interna e pronazione dell'avambraccio nel modello stereotipato della decerebrazione. (decerebrazione)	2
	nessuna	1
RISULTATO		
Grave, con GCS ≤ 8	Moderata, GCS 9-13	Minore, GCS ≥ 14.

# CLASSIFICAZIONE TRAUMI CRANICI SCAT 6



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## SCAT6™

Sport Concussion Assessment Tool  
For Adolescents (13 years +) & Adults



### What is the SCAT6?

The SCAT6 is a standardised tool for evaluating concussions designed for use by Health Care Professionals (HCPs). The SCAT6 cannot be performed correctly in less than 10-15 minutes. Except for the symptoms scale, the SCAT6 is intended to be used in the acute phase, ideally within 72 hours (3 days), and up to 7 days, following injury. If greater than 7 days post-injury, consider using the SCAT6/Child SCAT6.

The SCAT6 is used for evaluating athletes aged 13 years and older. For children aged 12 years or younger, please use the Child SCAT6.

If you are not an HCP, please use the Concussion Recognition Tool 6 (CRT6).

Preseason baseline testing with the SCAT6 can be helpful for interpreting post-injury test scores but is not required for that purpose. Detailed instructions for use of the SCAT6 are provided as a supplement. Please read through these instructions carefully before testing the athlete. Brief verbal instructions for each test are given in *Blue Italics*. The only equipment required for the examiner is athletic tape and a watch or timer.

This tool may be freely copied in its current form for distribution to individuals, teams, groups, and organizations. Any alteration (including translations and digital re-formatting), re-branding, or sale for commercial gain is not permissible without the expressed written consent of ASST.

### Recognise and Remove

A head impact by either a direct blow or indirect transmission of force to the head can be associated with serious and potentially fatal consequences. If there are significant concerns, which may include any of the Red Flags listed in Box 1, the athlete requires urgent medical attention, and if a qualified medical practitioner is not available for immediate assessment, then activation of emergency procedures and urgent transport to the nearest hospital or medical facility should be arranged.

### Completion Guide

Orange: Optional part of assessment

### Key Points

- Any athlete with suspected concussion should be REMOVED FROM PLAY; medically assessed, and monitored for injury-related signs and symptoms, including deterioration of their clinical condition.
- No athlete diagnosed with concussion should return to play on the day of injury.
- If an athlete is suspected of having a concussion and medical personnel are not immediately available, the athlete should be referred (or transported if needed) to a medical facility for assessment.
- Athletes with suspected or diagnosed concussion should not take medications such as aspirin or other anti-inflammatories, sedatives or opiates, drink alcohol or use recreational drugs and should not drive a motor vehicle until cleared to do so by a medical professional.
- Concussion signs and symptoms may evolve over time; it is important to monitor the athlete for ongoing, worsening, or the development of additional concussion-related symptoms.
- The diagnosis of concussion is a clinical determination made by an HCP.
- The SCAT6 should NOT be used by itself to make, or exclude, the diagnosis of concussion. It is important to note that an athlete may have a concussion even if their SCAT6 assessment is within normal limits.

### Remember

- The basic principles of first aid should be followed: assess danger at the scene; athlete responsiveness, airway, breathing, and circulation.
- Do not attempt to move an unconscious/unresponsive athlete (other than what is required for airway management) unless trained to do so.
- Assessment for a spinal and/or spinal cord injury is a critical part of the initial on-field evaluation. Do not attempt to assess the spine unless trained to do so.
- Do not remove a helmet or any other equipment unless trained to do so safely.

For use by Health Care Professionals Only

SCAT6™

Developed by: The Concussion in Sport Group (CISG)

Supported by:



# CLASSIFICAZIONE TRAUMI CRANICI



## Sport Concussion Assessment Tool SCAT6

### What it measures:

**The SCAT6 tool** is used to assess concussions in athletes who are aged 13 years or older. The test has 8 subcomponents that are measured in the following order:

## Valutazione delle commozioni cerebrali nello sport SCAT6

### Cosa misura:

**Il Test SCAT6** viene utilizzato per valutare le commozioni cerebrali negli atleti di età pari o superiore a 13 anni. Il test prevede 8 sottocomponenti che vengono misurate nel seguente ordine:

# CLASSIFICAZIONE TRAUMI CRANICI



Lo SCAt6 è uno strumento standardizzato per la valutazione degli Atleti infortunati per la concussione e può essere utilizzato negli Atleti a partire dai 13 anni di età.  
Sostituisce le SCAt precedenti.

# TRAUMI CRANICI TRE PUNTI CARDINE



**1) DIFFICOLTA' AL RICONOSCIMENTO**

**2) DIFFICOLTA' ALLA DIAGNOSI**

**3) DIFFICOLTA' NEL STABILIRE I TEMPI DI  
GUARIGIONE**

# CLASSIFICAZIONE TRAUMI CRANICI SINTOMI E SEGNI



**SPORT**

- ❖ **NAUSEA**
- ❖ **VOMITO**
- ❖ **DISTURBI DELL'EQUILIBRIO**
- ❖ **VERTIGINI**
- ❖ **DISTURBI VISIVI**
- ❖ **SENSAZIONE DI SPOSSATEZZA**
- ❖ **IPERSENSIBILITA' ALLA LUCE E AI RUMORI**
- ❖ **STORDIMENTO**

# CLASSIFICAZIONE TRAUMI CRANICI SINTOMI E SEGNI



- ❖ **SENSAZIONE DI ANNEBBIAMENTO**
- ❖ **SENSAZIONE DI RALLENTAMENTO**
- ❖ **DIFFICOLTA' A RICORDARE**

# CLASSIFICAZIONE TRAUMI CRANICI SINTOMI E SEGNI



- ❖ **FACILITA' A DIMENTICARE INFORMAZIONI O CONVERSAZIONI RECENTI**
- ❖ **CONFUSIONE NELLA RICOSTRUZIONE DI EVENTI RECENTI**
- ❖ **LENTEZZA NELLA RISPOSTA ALLE DOMANDE**
- ❖ **TENDENZA A RIPETERSI E PORRE SPESSO LE STESSE DOMANDE**

# NEU TRAUMI CRANICI QUANDO E' INDICATA UNA TAC D'URGENZA?



- ❖ GCS inferiore a 13 sulla valutazione iniziale nel reparto di emergenza
- ❖ GCS inferiore a 15 a 2 ore dopo l'infortunio sulla valutazione in pronto soccorso
- ❖ Sospetta frattura del cranio
- ❖ Nessun segno di frattura della base del cranio ma perdita di fluido cerebrospinale dall'orecchio o il naso
- ❖ Disturbi visivi
- ❖ Deficit neurologico focale
- ❖ Più di 1 episodio di vomito

# CLASSIFICAZIONE TRAUMI CRANICI SINTOMI E SEGNI TARDIVI



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- ❖ **IRRITABILITA'**
- ❖ **TRISTEZZA**
- ❖ **TENDENZA A COMMUOVERSI**
- ❖ **NERVOSISMO**
- ❖ **SONNOLENZA E/O**
- ❖ **DIFFICOLTA' AD ADDORMENTARSI**
- ❖ **TENDENZA A DORMIRE PIU' O MENO DEL SOLITO**

# TRAUMI NEL MOTORSPORT TEST DIAGNOSTICI



I Test Diagnostici per la rilevazione della concussione cerebrale nel trauma cranico devono costituire una determinante fondamentale nella gestione e nell'iter terapeutico dei soggetti che partecipano ad un evento di Motorsport e che giungono presso i nostri Nosocomi con patologie passibili di trattamento chirurgico d'urgenza.

**Il rilevamento delle lesioni intracraniche si basa sulla TC del cranio è abusata e richiede ulteriori risorse e tempo.**

L'utilizzo di biomarcatori selezionati quali **UCH-L1**, **GFAP**, **NF-L** e **TAU** possono predire la lesione intracranica presente alla tomografia computerizzata del cranio in fase acuta consentendo un iter diagnostico ed eventualmente terapeutico chirurgico più veloce, efficace e con minor rischio di complicanze per procedurali.

L'introduzione dei test sui biomarcatori del trauma cranico e conseguente concussione cerebrale è già una realtà in USA ed in Francia dove viene utilizzata rutinariamente sia nei Pronto Soccorso che nella Traumatologia Sportiva.

# Traumatologia e Motorsport



Durante il Gran Premio d'Italia di Formula Uno, oltre all'organizzazione secondo le norme FIA (Federation Internationale de l'Automobile) del Servizio Sanitario presso il Centro Medico del Circuito è stato disposto per la prima volta in assoluto un servizio aggiuntivo disponibile durante le giornate della manifestazione. GFAP e UCH-L1 sono proteine che si trovano nelle cellule gliali e nei neuroni e vengono rilasciate nel sangue dopo che l'encefalo ha subito un trauma od insulto meccanico.

# Traumatologia e Motorsport



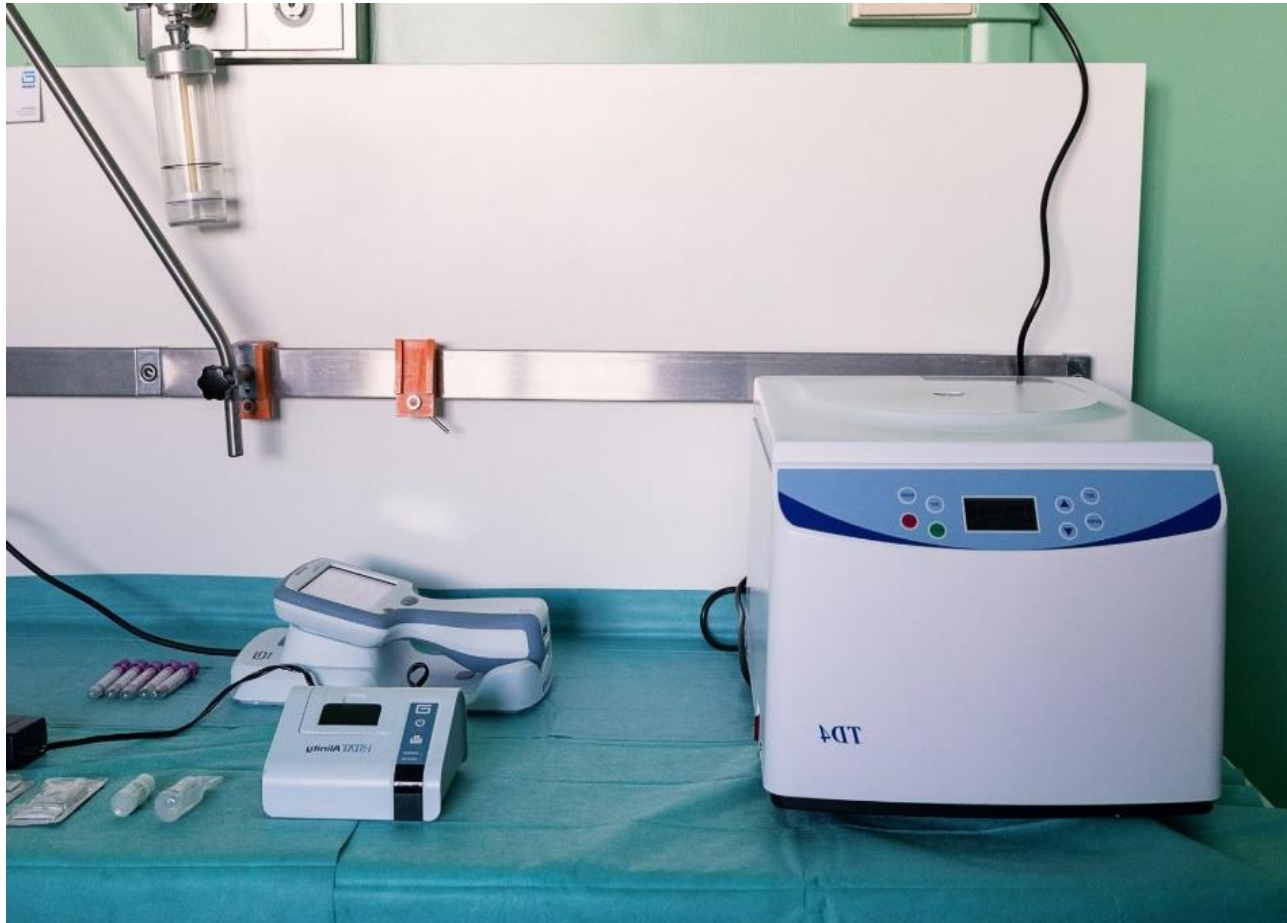
Il test al plasma i-STAT TBI di Abbott è il primo test rapido su un analizzatore portatile a ricevere l'autorizzazione FDA 510(k) e può determinare la necessità di una TAC per i traumi cranici anche lievi.

I risultati del test sono disponibili in circa 15 minuti. Tale servizio contemplava la possibilità di effettuare mediante Kit diagnostici ed un'apparecchiatura la i-STAT ALINITY fornita a titolo gratuito dalla Abbott la diagnosi precoce di concussione cerebrale dopo trauma cranico.

# Kit diagnostici e l'apparecchiatura i-STAT ALINITY Abbott



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Le Federazioni Internazionali hanno ben presente il problema e stanno sviluppando i protocolli e le linee guida per il riconoscimento ed il trattamento del POLITRAUMA e della CONCUSSIONE CEREBRALE.

Ne sono esempi:

FIFA, UEFA, FIA, WORLD RUGBY, FIS, NFL, NHL.

# CLASSIFICAZIONE TRAUMI CRANICI STUDIO INDY CAR 2012 2014



DAI DATI A DISPOSIZIONE SI SUPPONE CHE UNA SOFFERENZA CEREBRALE SI POSSA VERIFICARE DA ACCELERAZIONI DEL CAPO SUPERIORI AI 50g CI SONO STATI 43 INCIDENTI CON QUESTA CARATTERISTICA

2012 TOTALE 16

2013 TOTALE 13

2014 TOTALE 14

TOTALE CONCUSSIONI DOCUMENTATE 5

# Politrauma e Motorsport



La gestione globale del paziente politraumatizzato deve essere adattata al tipo di lesioni presenti nel soggetto e alle condizioni generali durante l'assistenza terapeutica intensiva. Sul luogo in cui è avvenuto il trauma, le immediate manovre rianimatorie ed il trasporto rapido e sicuro in un centro traumatologico sono gli interventi indispensabili per una corretta condotta terapeutica.

# Trattamento del Paziente Traumatizzato 3 FASI TOPICHE



Il trattamento chirurgico operatorio del paziente politraumatizzato è suddiviso in tre fasi topiche.

# Trattamento del Paziente Traumatizzato I FASE



Interventi urgenti e vitali ossia controllo immediato delle emorragie massive intraddominali o toraciche e la decompressione cerebrale e spinale.

Coadiuvate dai Test Rapidi di Concussione Cerebrale.

# Trattamento del Paziente Traumatizzato II FASE



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La chirurgia della prima giornata (Day One Surgery), comprende le procedure operatorie che consentono al paziente di essere ammesso in terapia intensiva e sono deputate a prevenire le gravi invalidità secondarie.

# Trattamento del Paziente Traumatizzato II FASE



Attenuare la risposta infiammatoria sistemica nelle fasi precoci della terapia intensiva e ridurre così il rischio di Multiple Organ Failure (MOF) poiché è necessario procedere alla stabilizzazione delle fratture e al debridement delle lesioni dei tessuti molli.

# Trattamento del Paziente Traumatizzato III FASE



Entro una settimana dal trauma si dovrebbero attuare le procedure di secondo livello (Second Look) per stabilizzare la riparazione dei tessuti molli e ottimizzare il controllo delle infezioni. Dopo che le condizioni generali del paziente si sono stabilizzate, le rimanenti procedure ricostruttive vengono effettuate nella terza fase del trattamento operatorio.

# TBI (Traumatic Brain Injury)



## DIAGNOSTICA TBI

In ambito civile la maggior parte dei casi di TBI è di grado lieve-moderato (circa 80-85%, GCS 13-15 per i lievi, GCS 9-12 per i moderati). La maggior parte di questi giunge nei Nostri Pronto Soccorso per il trattamento e l'assistenza. Attualmente, la TC cranica è lo strumento diagnostico principale per valutare la gravità delle lesioni.

La TC è in grado di rilevare le emorragie, ma non è particolarmente sensibile nel rilevare le **DAI (Diffuse Axonal Injury)** o altre forme più sottili di lesioni cerebrali.

Inoltre, la scansione TC ripetuta può comportare un'elevata esposizione alle radiazioni per la popolazione a rischio, come i bambini.

Pertanto, prevediamo lo sviluppo di un dispositivo **POC(Point of Care)** rapido come screening prima dell'uso della TC. È possibile che la misurazione ripetuta dei biomarcatori nel tempo possa essere utilizzata per individuare l'evoluzione della lesione, il peggioramento della lesione o il decorso del recupero cerebrale.

# GLASGOW COMA SCORE

## GCS



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Glasgow Coma Scale		
Response	Scale	Score
Eye Opening Response	Eyes open spontaneously	4 Points
	Eyes open to verbal command, speech, or shout	3 Points
	Eyes open to pain (not applied to face)	2 Points
	No eye opening	1 Point
Verbal Response	Oriented	5 Points
	Confused conversation, but able to answer questions	4 Points
	Inappropriate responses, words discernible	3 Points
	Incomprehensible sounds or speech	2 Points
	No verbal response	1 Point
Motor Response	Obeys commands for movement	6 Points
	Purposeful movement to painful stimulus	5 Points
	Withdraws from pain	4 Points
	Abnormal (spastic) flexion, decorticate posture	3 Points
	Extensor (rigid) response, decerebrate posture	2 Points
	No motor response	1 Point
<b>Minor Brain Injury = 13-15 points; Moderate Brain Injury = 9-12 points; Severe Brain Injury = 3-8 points</b>		

# CONCUSSION IN FIA



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# GLASGOW COMA SCORE GCS





Open access

Protocol

BMJ Open  
Sport &  
Exercise  
Medicine

## Research Evaluating Sports Concussion Events—Rapid Assessment of Concussion and Evidence for Return (RESCUE-RACER): a two-year longitudinal observational study of concussion in motorsport

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### ABSTRACT

**Introduction** Concussion is a clinical diagnosis, based on self-reported patient symptoms supported by clinical assessments across many domains including postural control, ocular/vestibular dysfunction, and neurocognition. Concussion incidence may be rising in motorsport which, combined with unresolved challenges to accurate diagnosis and lack of guidance on the optimal return-to-race timeframe, creates a difficult environment for healthcare practitioners.

**Methods and analysis** Research Evaluating Sports Concussion Events—Rapid Assessment of Concussion and Evidence for Return (RESCUE-RACER) evaluates motorsports competitors at baseline (Competitor Assessment at Baseline, Ocular, Neuroscientific (CARBON) study) and post-injury (Concussion Assessment and Return to motorSport (CARS) study), including longitudinal data. CARBON collects pre-injury neuroscientific data; CARS repeats the CARBON battery sequentially during recovery for competitors involved in a potentially concussive event. As its primary outcome, RESCUE-RACER will develop the evidence base for an accurate trackside diagnostic tool. Baseline objective clinical scoring (Sport Concussion Assessment Tool—5th edition (SCATS5)) and neurocognitive data (Immediate Post-Concussion Assessment and Cognitive Testing (ImPACT)) will be assessed for specificity to motorsport and relationship to existing examinations. Changes to SCATS5 and ocular, vestibular, and reaction time function (Dix 100) will be estimated by the reliability change index as a practical tool for trackside diagnosis. Neuropsychological (Cambridge Neuropsychological Test Automated Battery (CNTAB)) assessments, brain MRI (7 Tests) and salivary biomarkers will be compared with the new tool to establish utility in diagnosing and monitoring concussive injuries.

**Ethics and dissemination** Ethical approval was received from East of England-Cambridge Central Research Ethics Committee (18/EE/0141). Participants will be notified of study outcomes via publications (to administrators) and summary reports (to communications). Ideally, all publications will be open access.

**Trial registration number** February 2019 nationally (Central Portfolio Management System 38259) and internationally (ClinicalTrials.gov NCT03844282).

### INTRODUCTION

Concussion is defined by the Concussion In Sport Group as: 'a traumatic brain injury induced by biomechanical forces'<sup>1</sup> and is diagnosed clinically according to a constellation of symptoms including alterations of mental state and consciousness.<sup>2</sup> The natural history is believed to be benign, but there is significant individual heterogeneity in its severity and rate of recovery, with longer recovery periods in certain demographics, such as adolescents.<sup>3</sup>

Amidst rising concern about concussion in contact sports,<sup>4–7</sup> there is scarce evidence in the scientific literature on the incidence, severity, and recovery of head injuries specifically in motorsport.<sup>8</sup> What little there is suggests that even though there has been significant investment in safety, drivers continue to experience a greater risk of concussion compared with other high-risk sports.<sup>9</sup> Furthermore, a recent survey in the international journal of motorsport medicine, *AUTO-Medical*, found that 70% of competitors: 'did not feel completely normal' when they attempted to return-to-race following concussion.<sup>10</sup> This landscape in the motorsport environment specifically—a relatively high concussion incidence combined with competitors returning before they have fully recovered—may leave competitors in control of a high-speed vehicle that poses an ongoing threat to the individual, other participants, and the public. Accurate identification of concussion and a



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# GLASGOW COMA SCORE GCS



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Early instrumental diagnostics on playground of head trauma in sporting events: the role of biomarkers to improve sports medical protocols in recognition and treatment of brain concussion.



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10.23736/S0025-7826.23.04377-6)

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DOI: 10.23736/S0025-7826.23.04377-6

## ORTHOPEDIC AREA

### *Early instrumental diagnostics on playground of head trauma in sporting events: the role of biomarkers to improve sports medical protocols in recognition and treatment of brain concussion*

Diagnostica strumentale precoce in campo gara del trauma cranico negli eventi sportivi: il ruolo dei biomarcatori a completamento dei protocolli medico sportivi nel riconoscimento e trattamento della concussione cerebrale

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#### SUMMARY

**BACKGROUND:** Introduction of diagnostic tools for cerebral concussion detection in head trauma must constitute a milestone in sporting events in order to immediately address the management and therapeutic process of the injured athlete, as well as the return-to-play in safety.

**METHODS:** During activity in Contact Sports (i.e. Rugby, Boxing, American Football, Football, Ice Hockey) or in Individual Sports (Winter Sports, Cycling, Alpine Skiing, Bobsleigh, Skeleton) where there is a high risk of head trauma and consequent cerebral concussion, currently in Italy there is no other diagnostic method on playground than direct observation of the traumatic event by the Team Doctor and the subsequent objective examination of the athlete combined with anamnestic data.

**RESULTS:** The most obvious symptom of concussion is loss of consciousness, although most head and athletes experience other symptoms and signs such as headache, nausea and vomiting, dizziness, postural imbalance (ataxia), confusion with light-headedness or numbness, retrograde amnesia or anterograde, diplopia and photophobia. Sometimes the symptoms are absent or trivial and the injury is underestimated with possible subsequent immediate and delayed serious consequences as Second Impact Syndrome.

**CONCLUSIONS:** Introduction of biomarkers test of head trauma and consequent concussion in an American reality for the National Football League in the 2023-2024 championship. Estimates of the incidence of sport related concussion in the United States vary from underestimated by 200,000 cases up to a conceivable number of 3,800,000. When occurs a fatal outcome the fatal concussion was mainly subsequent to a previous undiagnosed event (CRS): data from the Centers for Disease Control and Prevention. In Italy there are no certain data on this matter. An appropriate estimate, calculated on data from Emilia Romagna, assumes around 120,000 cases per year in line with the American data, compared to the Italian population. To complete validated concussion protocols, it is necessary to introduce reliable biomarkers in order to manage the athlete's injury and to obtain a diagnostic and therapeutic gold standard, as well for return-to-play of the athlete.

**Key words:** SRC; sports related concussion; biomarkers; mild traumatic brain injury; athletes.

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MEDICINA DELLO SPORT

December 2023

# HEAD INJURY ANALYSIS



## Head Injury Analysis of Vehicle Occupant in Frontal Crash Simulation: Case Study of ITB's Formula SAE Race Car

Sandro Mihradi, Hari Golfianto, Andi Isra Mahyuddin & Tatacipta Dirgantara

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534 J. Eng. Technol. Sci., Vol. 49, No. 4, 2017, 534-545



### Head Injury Analysis of Vehicle Occupant in Frontal Crash Simulation: Case Study of ITB's Formula SAE Race Car

Sandro Mihradi<sup>1</sup>, Hari Golfianto<sup>2</sup>, Andi Isra Mahyuddin<sup>3</sup> & Tatacipta Dirgantara<sup>4</sup>

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**Abstract.** In the present study, frontal crash simulations were conducted to determine the effect of various car speeds against the Head Injury Criterion (HIC), a measure of the likelihood of head injury arising from impact. The frontal impact safety of ITB's formula SAE race car designed by students was evaluated as a case study. LS-DYNA<sup>®</sup>, an explicit finite element code for non-linear dynamic analysis was utilized in the analysis. To analyze head injury, a two-step simulation was conducted. In the first step, a full-frontal barrier test was simulated without incorporating a dummy inside the car. The output was the deceleration data of the car, which was used as input in the second step, a sled test simulation. In the sled test, only the cockpit and dummy were modeled. The effect of deceleration to the head of the dummy was then evaluated. The results show that HIC values at an impact speed of 7 m/s (25 km/h) to 11 m/s (40 km/h) were below the safe limit and still in the safe zone. However, the HIC values will exceed the safe limit when the speed of impact is the same as or greater than 12 m/s (43 km/h).

**Keywords:** finite element analysis; frontal collision; FSAE; head injury; impact simulator; sled test.

#### 1 Introduction

The Society of Automotive Engineers (SAE) hosts a number of student design competitions, one of which is Formula SAE<sup>®</sup>, which challenges students to design a formula-style race car. One of the essential aspects is safety, especially in the impact attenuator (IA) and seatbelt design. The IA absorbs kinetic energy during frontal impact, while the seatbelt restrains the driver's body from moving forward due to deceleration. According to the 2013 Formula SAE Rules [1], the AI has to be able to absorb sufficient impact energy, i.e. when annotated

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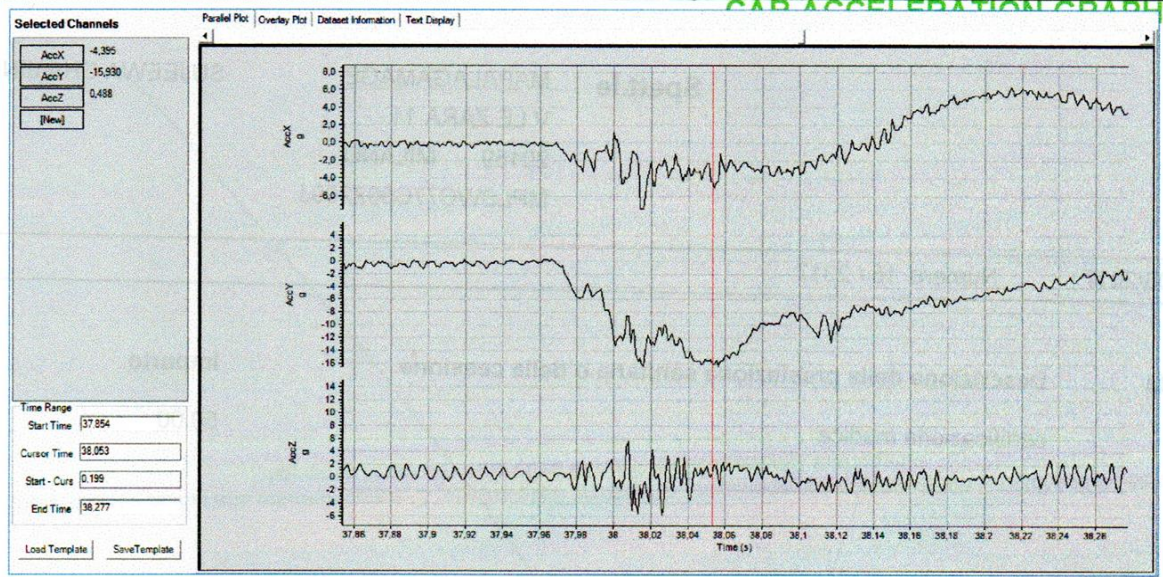
# DTM RACE ACCIDENT Headrest Case Study



SPORT



## DTM Race accident - Headrest Case Study



MAIN IMPACT ACC of the CAR : Longitudinal 4.4g - Lateral 16g

HOFBURG, VIENNA  
28-29 NOVEMBER 2016

# POLITRAUMA IN MOTOR SPORT CONCLUSIONI



E' auspicabile che oltre all'introduzione da parte di tutte le Federazioni Nazionali di protocolli per il riconoscimento, la diagnosi ed il trattamento della Concussione Cerebrale, venga presa in assoluta considerazione la possibilità di effettuare in campo gara la diagnostica precoce di Concussione Cerebrale tramite i Biomarcatori Cerebrali in conseguenza di un trauma cranico sportivo.

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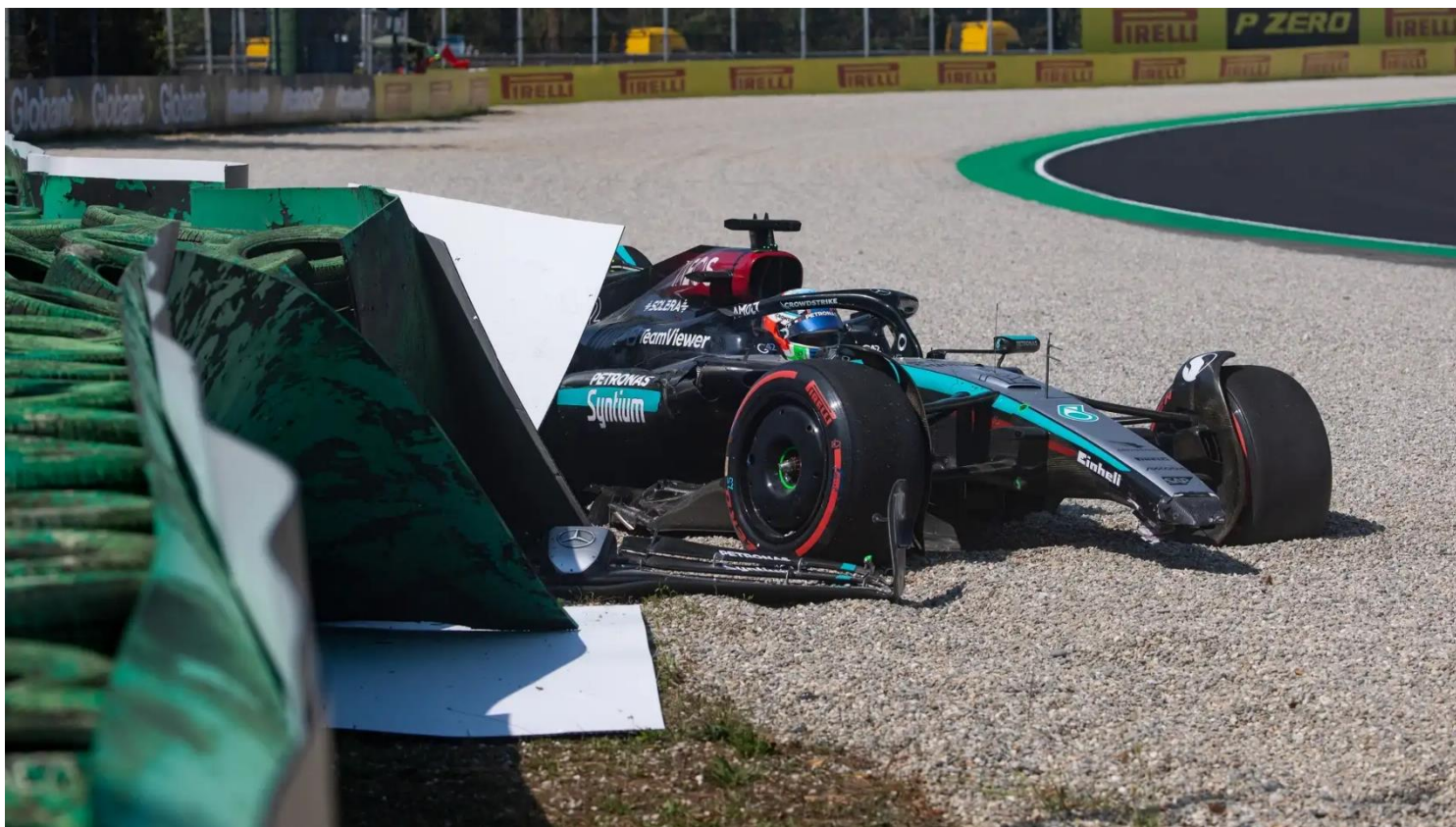


L'ACI è titolare in Italia del potere sportivo automobilistico conferito dalla FIA, riconosciuto dal CONI e dalla legge.

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