

# I-Scores

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## ABSTRACT

The Editorial Committee wants to provide its readers with an update on the commonly used scales. The use of tables and scales is a widespread practice in Orthopedics and Traumatology. The measurement and quantification of clinical, functional, and radiographic aspects have become an essential tool for decision-making in different aspects of healthcare activity. We carry out a review of the most used scales, defining their use and including original and updated literature.

**Keywords:** Scales; scores; tables; update.

**Level of Evidence:** V

## I-Scores

## RESUMEN

El Comité Editorial quiere brindar a sus lectores una actualización de las escalas de uso corriente. El empleo de tablas y escalas es una práctica muy extendida en la Ortopedia y Traumatología. La medición y la cuantificación de los aspectos clínicos, funcionales y radiográficos se convirtieron en una herramienta imprescindible para la toma de decisiones en diferentes aspectos de la actividad asistencial. Llevamos a cabo una revisión de las escalas más utilizadas, definiendo su uso e incluyendo bibliografía original y actualizada.

**Palabras clave:** Escalas; puntajes; tablas; actualización.

**Nivel de Evidencia:** V

## INTRODUCTION

The Editorial Committee wants to provide its readers with an update on the commonly used scales. The use of tables and scales is a widespread practice in Orthopedics and Traumatology. The measurement and quantification of clinical, functional, and radiographic aspects have become an essential tool for decision-making in different aspects of healthcare activity

We carry out a review of the most used scales, defining their use and including original and updated literature.

## GLASGOW SCALE

The Glasgow Coma Scale was created by Graham Teasdale and Bryan Janett, members of the Institute of Neurological Sciences at the University of Glasgow, in 1974. It uses three parameters: the verbal response, the ocular response, and the motor response. The lowest score is 3, while the highest value is 15. The systematic application of this scale at regular intervals makes it possible to obtain a clinical profile of the patient's evolution (Table 1).

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**Table 1.** Glasgow Coma Scale

Variable	Answer	Score
<b>Eye opening</b>	Spontaneous	4
	To speech	3
	To pain	2
	No response	1
<b>Verbal response</b>	Correctly oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible sounds	2
	No response	1
<b>Motor response</b>	Obeys commands	6
	Moves to localized pain	5
	Withdraws from pain	4
	Abnormal limb flexion	3
	Abnormal limb extension	2
	Lack of motor response	1

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## MESS

Kaj Johansen, a vascular surgeon, described the Mangled Extremity Severity Score (MESS) in 1990, which assesses soft tissue injury, limb ischemia, the presence and duration of shock, and the patient's age. A score greater than 7 defines the need to amputate the lower limb (Table 2).

**Table 2.** MESS Scale

<b>A. Soft tissue/bone injury</b>	
Low energy (stab, simple fracture, gunshot wound)	1
Medium energy (open fracture or multiple fractures, dislocation)	2
High energy (rifle shot wound, crush injury)	3
Very high energy (the above plus gross contamination, soft tissue avulsion)	4
<b>B. Limb ischemia</b>	
Reduced or absent pulse, but normal perfusion	*1
Pulseless, paresthesias, slow capillary refill	*2
Cold, paralyzed, numb fingers	*3
(*The score is doubled in case of ischemia of more than six hours)	
<b>C. Blood pressure</b>	
Systolic blood pressure >90 mmHg consistently.	0
Transient hypotension	1
Persistent hypotension	2
<b>D. Age (in years)</b>	
Over 30 years old	0
Between 30 and 50 years	1
Over 50 years old	2

Note: If possible, it should be performed 2 hours after the traumatic event for a single time, since it is not a scale that predicts the evolution of pathology. If performed after 6 hours of the traumatic event, the score obtained in segment B must be doubled.

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## AIS SCALE

The Abbreviated Injury Scale (AIS) is a severity scoring system that divides the body into 9 regions (head, face, neck, chest, abdomen, spine, upper extremity, lower extremity, and unspecified), and assigns a value from 1 to 6 based on the state. (1. Minor, 2 Moderate, 3. Serious but not life-threatening, 4. Severe and life-threatening, 5. Critical, 6. Unsurvivable (Figure 1).

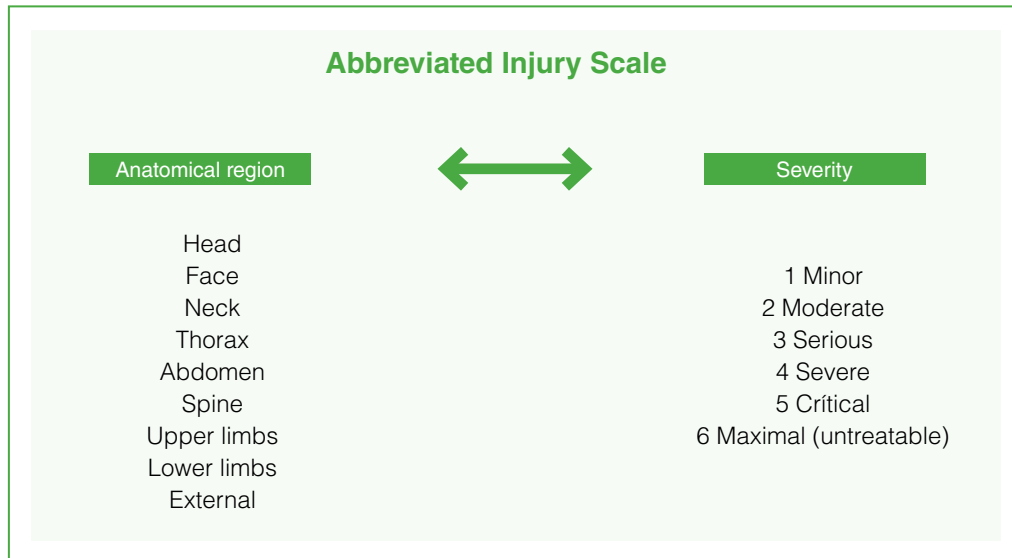


Figure 1. AIS scale.

## INJURY SEVERITY SCORE (ISS)

The ISS is calculated by adding the score of the three lesions with the highest AIS scores from three different body regions (Figure 2). The score ranges from 1 to 75. An example is shown in Figure 3.

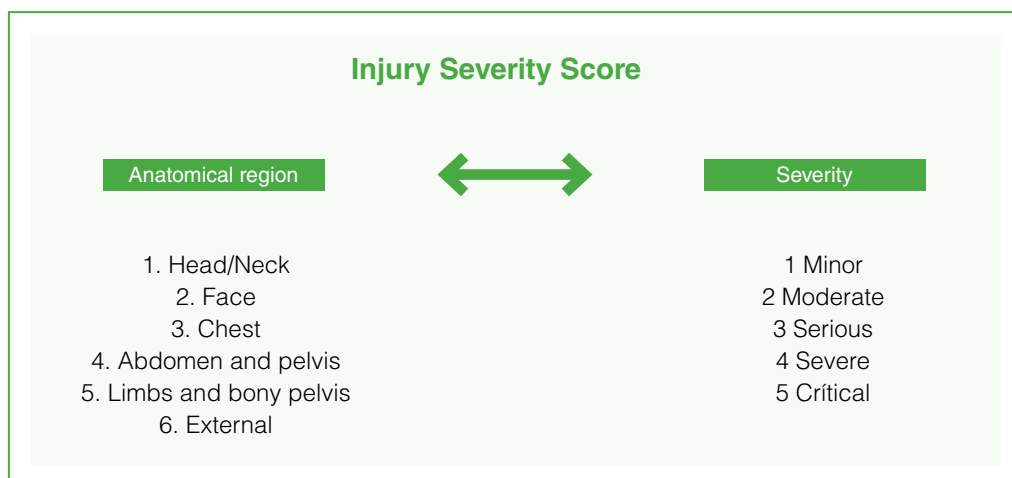


Figure 2. Injury Severity Score (ISS).

Injury Severity Score; ISS			
Region	Injury description	AIS	Square Top Three
Head & neck	Cerebral contusion	3	9
Face	No injury	0	
Chest	Flail chest	4	16
Abdomen	Minor contusion of liver	2	
	Complex rupture spleen	5	25
Extremity	Fractured femur	3	
External	No injury	0	
Injury Severity Score:			50

AIS Score	Injury	ISS
1	Minor	1-8 Minor
2	Moderate	9-15 Moderate
3	Serious	16-24 Serious
4	Severe	25-49 Severe
5	Critical	50-74 Critical
6	Survivable	75 Maximum

**Figure 3.** Example of the Injury Severity Score (ISS).

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