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The Traumatic Injuries Distress Scale: Manual and Questionnaire

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The Traumatic Injuries Distress Scale

Revision History: This version updates the prior version dated 2020-Oct-13 based on new knowledge

What is it?

The Traumatic Injuries Distress Scale (TIDS) is a 12-item self-report questionnaire intended to quantify the magnitude of distress experienced as a result of recent musculoskeletal trauma. It is intended to be administered between 2 days and 4 weeks following an injury. It provides a single overall summative score that can be used to predict the likelihood of recovery over the next 6 to 12 months using the decision algorithm at the end of this document. The TIDS can also provide scores on 3 subscales to help clinicians better understand why the patient is at risk. These subscales are 1) uncontrolled pain, 2) negative affect, and 3) intrusion/hyperarousal. Each of those subscales should indicate different treatment priorities (e.g. pain management, cognitive or psychologically-informed intervention, and post-traumatic distress reduction and management techniques, respectively).

How was it developed?

The TIDS was one of the primary tools developed during the doctoral thesis studies of Western University researcher Dr. David Walton. Starting in 2007, it was developed through a rigorous process that included item generation with practicing rehabilitation clinicians including physical therapy, psychologists, physical medicine physicians, and researchers with expertise in measurement and epidemiology. Over 100 items were initially tested for their ability to predict outcomes following trauma in 95 patients with acute traumatic neck pain (i.e. 'whiplash associated disorder'). Most items were excluded as a result of not being able to predict outcome or not being deemed modifiable by the consultants. Some other items were parceled out to form other independent scales (described separately). The results of this preliminary work yielded a prototype version of the TIDS that was 17 items long. The prototype was then tested on a new sample of 76 people with mixed types of MSK trauma. The results led to the tool being reduced to 12 items that were determined to be the most important and psychometrically sound for the purposes of predicting outcomes. That study was reported [here](#). In a follow-up study of 120 people with mixed acute injuries (mostly traumatic neck pain), important cut scores were identified to improve clinical utility of the TIDS for decision making purposes. The TIDS has since been used in a growing number of other samples and to date has maintained strong prognostic value across groups of differing geographies and injury types.

What are the cut scores and how accurate is it?

For interpreting the overall TIDS score (highest possible score is 24), a total score of 3 or under has been identified as best for identifying low risk people, while those scoring 11 or higher are most useful for identifying high risk patients. This results in 3 different subgroups: low risk (≤ 3), moderate or unknown risk (4 to 9), and higher risk (≥ 11). A table of associated sensitivity, specificity, positive and negative predictive values, and positive and negative likelihood ratios for a range of cut scores is provided below. The cut score of 3 is highly specific to those who recover rapidly, with 87% of those scoring at or below that threshold recovering fully by 3 months post-injury when 'disability' is the outcome, and 98% of those recovery rapidly when 'pain' is the outcome. The cut score of 11 or higher is highly specific to those who do not fully recover, with 68% of those scoring over threshold not fully recovering by 12

months. Overall accuracy for predicting rapid recovery/ slow recovery/ no or limited recovery is 76% for disability and 78% for pain (compared to chance, which would be about 33% for three trajectories).

When no or limited recovery is predicted, the subscales can be further used to determine optimal treatment strategies. The decision tree below explains how these additional subscores can be used in clinical decision making.

How to score

Sum the response to each item (0, 1 or 2) for a single overall score. Sum the subscales as follows:

Subscale	Items
<i>Uncontrolled Pain /8</i>	2 + 3 + 6 + 8
<i>Negative Affect /12</i>	1 + 7 + 9 + 10 + 11 + 12
<i>Intrusion / Hyperarousal /4</i>	4 + 5

Where to find it

The TIDS is offered under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International general use license, meaning it can be freely downloaded, used, and modified as long modifications remain available to the public and neither the original nor adapted versions are being sold or used to generate profit without permission of Dr. Walton. The TIDS is now also included as an optional scale in the *Focus on Therapeutic Outcomes* (FOTO) online outcomes management database.

What languages are available?

The TIDS is currently available in English, French-Canadian, Spanish, and Persian versions.

How should it be cited?

Original Development:

Walton DM, Krebs D, Moulden D, Wade P, Levesque L, Elliott J, MacDermid JC. *The Traumatic Injuries Distress Scale: a new tool that quantifies distress and has predictive validity with patient-reported outcomes*. Journal of Orthopedic and Sports Physical Therapy. 2016; 46(10):920-928. Includes both the English and French-Canadian versions.

Cut Scores for Prognostic Validity:

Walton DM, Elliott JM, Lee J, Fakhereddin M, Seo W. *Identification of clinically-useful cut scores of the Traumatic Injuries Distress Scale (TIDS) for predicting rate of recovery following musculoskeletal trauma*. PLoS One. 2021;16(3):e0248745

Spanish Translation:

Lehuede C, Elliott JM, MacDermid JC, Walton DM. *Cross-cultural translation and validation of the Traumatic Injuries Distress Scale – Spanish Version*. Disability and Rehabilitation. 2022:1-6 (online ahead of print).

Persian Translation:

Modarresi S, Modarresi G, Farzad M, Shafiee E, Maleki M, MacDermid JC, Walton DM. *Translation and cross-cultural adaptation of the Traumatic Injuries Distress Scale to Persian*. Journal of Advanced Medical Sciences and Applied Technologies. 2021;6(1):24-32.

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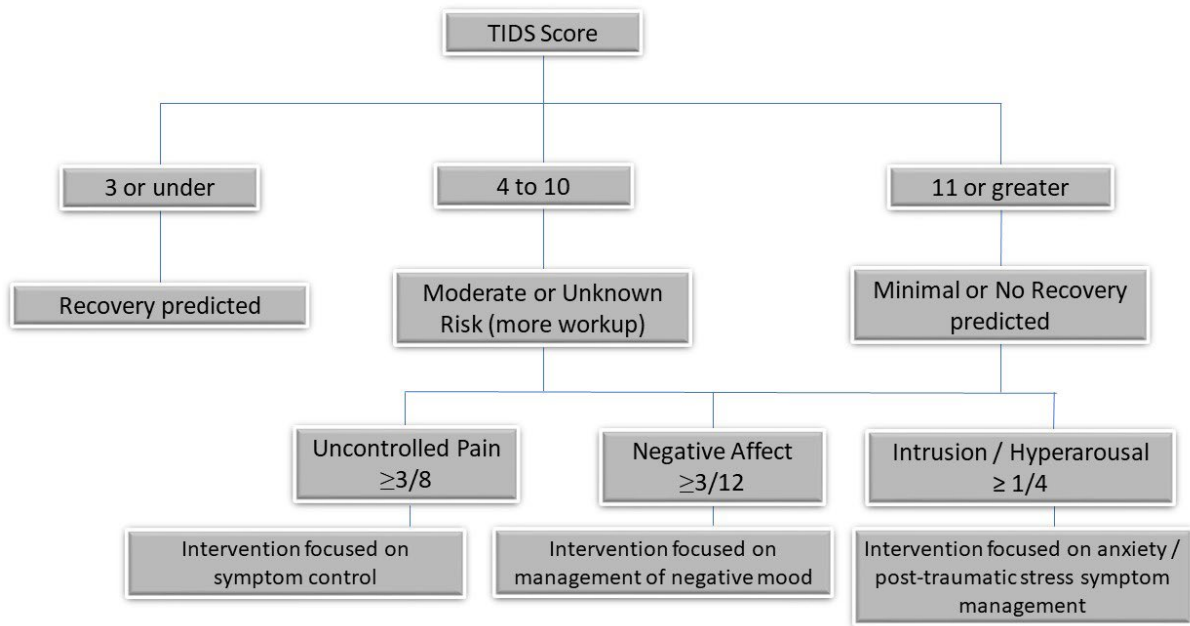


Table 5. A range of useful cut scores on the TIDS total for predicting interference recovery trajectories, Pain Severity recovery trajectories, and distal 12-month Interference scores.

Cut score	Sn	Sp	PPV	NPV	PLR	NLR
<i>%Interference Recovery Predicted (Rapid or Delayed)</i>						
≤3	0.35	0.92	0.87	0.49	4.59	0.70
≤4	0.43	0.87	0.83	0.51	3.25	0.66
≤5	0.52	0.81	0.80	0.54	2.78	0.59
≤6	0.59	0.75	0.77	0.55	2.32	0.55
<i>Minimal or No %Interference Recovery Predicted</i>						
≥9	0.65	0.75	0.64	0.76	2.61	0.47
≥10	0.60	0.80	0.67	0.75	2.98	0.50
≥11	0.51	0.83	0.68	0.71	3.06	0.59
≥12	0.47	0.86	0.70	0.71	3.49	0.61
≥13	0.40	0.90	0.73	0.69	4.05	0.67
<i>Rapid Pain Recovery Predicted</i>						
≤3	0.27	0.97	0.98	0.21	9.29	0.75
≤4	0.33	0.94	0.97	0.22	5.63	0.71
≤5	0.43	0.94	0.97	0.25	7.31	0.61
≤6	0.49	0.85	0.94	0.25	3.36	0.69
<i>Minimal or No Pain Recovery Predicted</i>						
≥9	0.76	0.65	0.30	0.93	2.16	0.36
≥10	0.71	0.69	0.31	0.92	2.29	0.43
≥11	0.71	0.76	0.37	0.93	2.96	0.39
≥12	0.65	0.79	0.38	0.92	3.09	0.45
≥13	0.50	0.83	0.36	0.89	2.87	0.61
<i>52-week %Interference ≤5% Predicted</i>						
≤3	0.33	0.94	0.95	0.30	5.83	0.71
≤4	0.40	0.91	0.94	0.32	4.71	0.65
≤5	0.51	0.91	0.95	0.36	5.94	0.54
≤6	0.57	0.86	0.93	0.38	3.99	0.50
<i>52-week %Interference ≥20% Predicted</i>						
≥9	0.77	0.75	0.48	0.91	3.03	0.31
≥10	0.71	0.80	0.52	0.90	3.54	0.36
≥11	0.63	0.84	0.55	0.88	3.98	0.44
≥12	0.57	0.88	0.59	0.87	4.65	0.49
≥13	0.46	0.90	0.59	0.84	4.74	0.60

Sn = Sensitivity, Sp = Specificity, PPV = Positive Predictive Value, NPV = Negative Predictive Value, PLR = Positive Likelihood Ratio. NLR = Negative Likelihood Ratio.

This table is also available at

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0248745>

English

Traumatic Injuries Distress Scale

RATE THE EXTENT TO WHICH YOU HAVE BEEN BOTHERED BY THE FOLLOWING SYMPTOMS <u>SINCE YOUR INJURY</u> :	Never	Occasionally	Often
1. Difficulty maintaining your concentration	0	1	2
2. Difficulty thinking about anything other than the pain	0	1	2
3. A feeling of being overwhelmed by pain or other symptoms	0	1	2
4. Flashbacks of the time you were injured, that come while you're awake and feel very real	0	1	2
5. Feeling 'wound up', agitated or scared when in a place that reminds you of the time you were injured	0	1	2
6. Frustration at your inability to control your pain	0	1	2
7. Loss of motivation to get up and start a new day	0	1	2
8. Pain that lasts an entire day without easing	0	1	2
9. Loss of interest in your appearance	0	1	2
10. Difficulty doing the things that you would normally enjoy	0	1	2
11. Feeling 'numb' or disconnected, as if you are watching the world through a window	0	1	2
12. Anger directed at others	0	1	2

French-Canadian**ETAD (Échelle de trauma, d'anxiété et de détresse)**

Notez la fréquence à laquelle les symptômes suivants vous ennuiet depuis votre blessure :	Jamais	Rarement	Souvent
1. Difficulté à maintenir sa concentration	0	1	2
2. Difficulté à penser à autre chose qu'à la douleur	0	1	2
3. Une impression d'être envahi par la douleur	0	1	2
4. Des «flashbacks» du moment où vous avez été blessés, qui arrivent quand vous êtes réveillés et qui semblent réels	0	1	2
5. Avoir l'impression d'être «énervé», agité ou effrayé quand vous vous trouvez à un endroit qui vous rappelle le moment où vous avez été blessés	0	1	2
6. De la frustration à <u>votre propre</u> inhabileté à soigner votre douleur	0	1	2
7. Vous avez perdu la motivation pour vous lever et commencer une nouvelle journée	0	1	2
8. De la douleur qui ne s'est pas apaisée au cours d'une journée complète (douleur constante)	0	1	2
9. Perte d'intérêt en votre apparence	0	1	2
10. Il est difficile de faire les choses que normalement vous aimez accomplir	0	1	2
11. Vous vous sentez distant, déconnecté comme si vous regardiez le monde au travers d'une fenêtre	0	1	2
12. Vous ressentez de la colère dirigée vers les autres	0	1	2

Spanish

Cuantifique el nivel de molestia causada por los siguientes síntomas desde su lesión.

	Nunca	Ocasionalmente	Casi siempre
1. Dificultad para mantener su concentración.	0	1	2
2. Dificultad para pensar en otra cosa que no sea su dolor.	0	1	2
3. Una sensación de sentirse agobiado por el dolor u otro síntoma.	0	1	2
4. Recuerdos muy reales de su trauma o lesión mientras está despierto.	0	1	2
5. Sentirse nervioso, agitado o temeroso cuando se encuentra en un lugar que le recuerda su trauma o lesión (Ej. En el auto, el trabajo, la clínica o una superficie resbalosa).	0	1	2
6. Frustración al no sentirse capaz de controlar su dolor.	0	1	2
7. Desmotivación al levantarse y comenzar un nuevo día.	0	1	2
8. Dolor que dura el día completo sin sentir alivio.	0	1	2
9. Pérdida de interés en su apariencia.	0	1	2
10. Dificultad para realizar cosas que normalmente disfruta.	0	1	2
11. Sentirse aturdido o desconectado, como si estuviese viendo el mundo a través de una ventana.	0	1	2
12. Sentir rabia hacia otros.	0	1	2

مقیاس پریشانی و درماندگی بعد از آسیب های تروماتیک (ناشی از ضربه)

هیچوقت	گاه به گاه	بیشتر وقتها یا همیشه	به چه میزان علائم زیر باعث ایجاد مشکل برای شما پس از آسیب شده است؟
۰	۱	۲	۱ مشکل در حفظ تمرکز فکری
۰	۱	۲	۲ مشکل در فکر کردن به هر چیزی به جز درد
۰	۱	۲	۳ احساس کلافگی و یا غیر قابل تحمل بودن درد یا سایر علائم
۰	۱	۲	۴ یادآوری آزار دهنده حادثه در بیداری بطوری که بسیار واقعی به نظر می‌رسد
۰	۱	۲	۵ احساس برانگیختگی، آشفتگی، یا ترس در مکانهایی که یادآور حادثه است (مثلا در ماشین محل کار یا قرار گرفتن روی سطوح لغزنده)
۰	۱	۲	۶ احساس کلافگی از عدم توانایی کنترل درد
۰	۱	۲	۷ از دست دادن روحیه برای شروع روز
۰	۱	۲	۸ دردی که تمام روز پابرجاست و کاهش نمی یابد
۰	۱	۲	۹ اهمیت ندادن به آراستگی ظاهر به دلیل بی حوصلگی
۰	۱	۲	۱۰ عدم تمایل به انجام کارهایی که به طور معمول از آن لذت می بردید
۰	۱	۲	۱۱ احساس بی حوصلگی یا در خود فرورفتگی، به طوری که انگار دنیا را از پشت یک شیشه تماشا می‌کنید
۰	۱	۲	۱۲ احساس خشم بی دلیل