Package 'geboes.score'

February 2, 2024

Title Evaluate the Geboes Score for Histology in Ulcerative Colitis

Version 1.0.0

Description Evaluate and validate the Geboes score for histological assessment
of inflammation in ulcerative colitis. The original Geboes score from Geboes,
et al. (2000) <doi:10.1136/gut.47.3.404>, binary version from Li, et al.
(2019) <doi:10.1093/ecco-jcc/jjz022>, and continuous version from Magro, et
al. (2020) <doi:10.1093/ecco-jcc/jjz123> are all described and implemented.

License GPL (>= 3)

Encoding UTF-8

RoxygenNote 7.2.3

Depends R (>= 2.10)

LazyData true

Imports checkmate

Suggests spelling, testthat (>= 3.0.0)

Config/testthat/edition 3

Language en-US

URL https://billdenney.github.io/geboes.score/

NeedsCompilation no

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R topics documented:

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assert_geboes_score	*Check if a value is a valid Geboes score*

Description

Check if a value is a valid Geboes score

Usage

```
assert_geboes_score(x, all_categories = FALSE)
```

Arguments

x	A character vector of Geboes score grades
all_categories	Must x include all categories exactly once?

Value

x, if the values are valid; an error otherwise

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factor_geboes_score	*Convert a Geboes score into a factor*

Description

Convert a Geboes score into a factor

Usage

```
factor_geboes_score(x, drop_0 = FALSE)

levels_geboes_score(drop_0 = FALSE)
```

Arguments

x	A character vector of Geboes score grades
drop_0	Drop the ".0" levels other than "0.0"

Value

x as a factor, verified to be a Geboes score

Functions

- levels_geboes_score(): Get all available levels of the Geboes score

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| geboes_continuous | *Convert maximum Geboes scores to a continuous measurement* |

Description

This function returns 0 for any grade ending in ".0" fitting with the intent of the score as anything other than "0.0" cannot be a maximum.

Usage

```
geboes_continuous(x)
```

Arguments

x   A character vector of Geboes score grades

Value

The numeric value of the continuous Geboes score (the integer value of the maximum grade)

References

See Supplementary Table 1 in the reference below

Magro F, Lopes J, Borralho P, et al. Comparing the Continuous Geboes Score With the Robarts Histopathology Index: Definitions of Histological Remission and Response and their Relation to Faecal Calprotectin Levels. Journal of Crohn's and Colitis. 2020;14(2):169-175. doi:10.1093/ecco-jcc/jjz123

Examples

```
# Generate all continuous scores
geboes_continuous(geboes.score::geboes_grades$grade)
```

| geboes_grades | *Geboes grading source data and descriptions for assessing inflammation in ulcerative colitis* |

Description

grade_category_num Main category

grade_category_desc Description of the main category

grade_subcategory_num Subcategory (NA if not applicable)

grade_subcategory_desc Description of the subcategory

grade Text value of the grade

grade_num Numeric value of the grade within the category/subcategory

description Text description of the grade

normal Is the grade normal or abnormal? (see Li 2019)

Usage

```
geboes_grades
```

Format

An object of class data.frame with 29 rows and 8 columns.

Source

References

Geboes K, Riddell R, Öst A, Jensfelt B, Persson T, Löfberg R. A reproducible grading scale for histological assessment of inflammation in ulcerative colitis. Gut. 2000;47(3):404-409. doi:10.1136/gut.47.3.404

Li K, Strauss R, Marano C, et al. A Simplified Definition of Histologic Improvement in Ulcerative Colitis and its Association With Disease Outcomes up to 30 Weeks from Initiation of Therapy: Post Hoc Analysis of Three Clinical Trials. Journal of Crohn's and Colitis. 2019;13(8):1025-1035. doi:10.1093/ecco-jcc/jjz022

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geboes_score_binary   *Convert a Geboes score from the original value to a normal/abnormal value*

Description

Values <= "3.1" or ending with ".0" are considered "normal"; values > "3.1" are considered abnormal based on Li 2019.

Usage

```
geboes_score_binary(x)
```

Arguments

x   A character vector of Geboes score grades

Value

A character vector the same length as x with "normal" or "abnormal"

References

Li K, Strauss R, Marano C, et al. A Simplified Definition of Histologic Improvement in Ulcerative Colitis and its Association With Disease Outcomes up to 30 Weeks from Initiation of Therapy: Post Hoc Analysis of Three Clinical Trials. Journal of Crohn's and Colitis. 2019;13(8):1025-1035. doi:10.1093/ecco-jcc/jjz022

Examples

```
geboes_score_binary(c("3.1", "4.0", "3.2")) # c("Normal", "Normal", "Abnormal")
```

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max_geboes_score	*Determine the maximum value of the Geboes score*

Description

Since the values ending in ".0" indicate no effect, they are not considered in which values is the maximum. In other words, "2.0" < "1.1".

Usage

```
max_geboes_score(x, all_categories = TRUE, na.rm = TRUE)
```

Arguments

x	A character vector of Geboes score grades
all_categories	Must x include all categories exactly once?
na.rm	a logical indicating whether missing values should be removed.

Details

Typical use of `max_geboes_score()` is to find the maximum for a single person at a single time. For that, the `all_categories` argument ensures that each category is present exactly once.

Value

The maximum value of x where values ending in ".0" are considered as "0.0"

Examples

```
max_geboes_score(c("0.0", "1.2", "2A.2", "2B.1", "3.3", "4.1", "5.0")) # 4.1
```

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