

Package ‘QRISK3’

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Title 10-Year Cardiovascular Disease Risk Calculator (QRISK3 2017)

Version 0.6.0

Author Yan Li <bluefatterplaydota@gmail.com> [aut, cre, trl],
Matthew Sperrin [aut, ctb],
ClinRisk Ltd. [cph],
Tjeerd Pieter van Staa [aut, ths]

Maintainer Yan Li <bluefatterplaydota@gmail.com>

Description This function aims to calculate risk of developing cardiovascular disease of individual patients in next 10 years. This unofficial package was based on published open-sourced free risk prediction algorithm QRISK3-2017 <<https://qrisk.org/src.php>>.

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Description

This function allows you to calculate 10-year individual CVD risk using QRISK3-2017.

Usage

```
QRISK3_2017(  
  data,  
  patid,  
  gender,  
  age,  
  atrial_fibrillation,  
  atypical_antipsy,  
  regular_steroid_tablets,  
  erectile_disfunction,  
  migraine,  
  rheumatoid_arthritis,  
  chronic_kidney_disease,  
  severe_mental_illness,  
  systemic_lupus_erythematosis,  
  blood_pressure_treatment,  
  diabetes1,  
  diabetes2,  
  weight,  
  height,  
  ethnicity,  
  heart_attack_relative,  
  cholesterol_HDL_ratio,  
  systolic_blood_pressure,  
  std_systolic_blood_pressure,  
  smoke,  
  townsend  
)
```

Arguments

data	Specify your data.
patid	Specify the patient identifier.
gender	1: women 0: men.
age	Specify the age of the patient in year (e.g. 64 years-old)
atrial_fibrillation	Atrial fibrillation? (0: No, 1:Yes)

atypical_antipsy	On atypical antipsychotic medication? (0: No, 1:Yes)
regular_steroid_tablets	On regular steroid tablets? (0: No, 1:Yes)
erectile_disfunction	A diagnosis of or treatment for erectile dysfunction? (0: No, 1:Yes)
migraine	Do patients have migraines? (0: No, 1:Yes)
rheumatoid_arthritis	Rheumatoid arthritis? (0: No, 1:Yes)
chronic_kidney_disease	Chronic kidney disease (stage 3, 4 or 5)? (0: No, 1:Yes)
severe_mental_illness	Severe mental illness? (0: No, 1:Yes)
systemic_lupus_erythematositis	Systemic lupus erythematositis (SLE)? (0: No, 1:Yes)
blood_pressure_treatment	On blood pressure treatment? (0: No, 1:Yes)
diabetes1	Diabetes status: type 1? (0: No, 1:Yes)
diabetes2	Diabetes status: type 2? (0: No, 1:Yes)
weight	Weight of patients (kg)
height	Height of patients (cm)
ethnicity	Ethnic group must be coded as the same as QRISK3
	1 White or not stated
	2 Indian
	3 Pakistani
	4 Bangladeshi
	5 Other Asian
	6 Black Caribbean
	7 Black African
	8 Chinese
	9 Other ethnic group
heart_attack_relative	Angina or heart attack in a 1st degree relative < 60? (0: No, 1:Yes)
cholesterol_HDL_ratio	Cholesterol/HDL ratio? (range from 1 to 11, e.g. 4)
systolic_blood_pressure	Systolic blood pressure (mmHg, e.g. 180 mmHg)
std_systolic_blood_pressure	Standard deviation of at least two most recent systolic blood pressure readings (mmHg)
smoke	Smoke status must be coded as the same as QRISK3

1 non-smoker
 2 ex-smoker
 3 light smoker (less than 10)
 4 moderate smoker (10 to 19)
 5 heavy smoker (20 or over)

townsend Townsend deprivation scores

Value

Return a dataset with three columns: patient identifier, caculated QRISK3 score, caculated QRISK3 score with only 1 digit

Examples

```
data(QRISK3_2019_test)
test_all <- QRISK3_2019_test

test_all_rst <- QRISK3_2017(data=test_all, patid="ID", gender="gender", age="age",
atrial_fibrillation="b_AF", atypical_antipsy="b_atypicalantipsy",
regular_steroid_tablets="b_corticosteroids", erectile_disfunction="b_impotence2",
migraine="b_migraine", rheumatoid_arthritis="b_ra",
chronic_kidney_disease="b_renal", severe_mental_illness="b_semi",
systemic_lupus_erythematosus="b_sle",
blood_pressure_treatment="b_treatedhyp", diabetes1="b_type1",
diabetes2="b_type2", weight="weight", height="height",
ethiniciy="ethrisk", heart_attack_relative="fh_cvd",
cholesterol_HDL_ratio="rati", systolic_blood_pressure="sbp",
std_systolic_blood_pressure="sbps5", smoke="smoke_cat", townsend="town")

test_all_rst$"QRISK_C_algorithm_score" <- test_all$"QRISK_C_algorithm_score"
test_all_rst$"diff" <- test_all_rst$"QRISK3_2017_1digit" - test_all_rst$"QRISK_C_algorithm_score"
print(test_all_rst$"diff")
print(identical(test_all_rst$"QRISK3_2017_1digit", test_all_rst$"QRISK_C_algorithm_score"))
```

QRISK3_2017_test

Test data for QRISK3 2017 algorithm - 2017 data

Description

Data from QRISK3 original algorithm (C code) in 2017. The aim is to compare whether this package calculates the same score as the original algorithm. "QRISK_C_algorithm_score" in dataset is the score calculated using original algorithm in 2017. It should give the same score as this package.

Usage

```
data(QRISK3_2017_test)
```

Format

An object of class `data.frame` with 48 rows and 27 columns.

Examples

```
data(QRISK3_2017_test)
str(QRISK3_2017_test)
```

QRISK3_2019_test	<i>Test data for QRISK3 2017 algorithm - 2019 data</i>
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Description

Data from QRISK3 original algorithm (C code) in 2019. The aim is to compare whether this package calculates the same score as the original algorithm. "QRISK_C_algorithm_score" in dataset is the score calculated using original algorithm in 2019. It should give the same score as this package. This data was similar to QRISK3_2017_test except that several test values have been changed.

Usage

```
data(QRISK3_2019_test)
```

Format

An object of class `data.frame` with 49 rows and 27 columns.

Examples

```
data(QRISK3_2019_test)
str(QRISK3_2019_test)
```

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