Package 'QRISK3'

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

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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>.

License GPL-3

Encoding UTF-8

LazyData true

RoxygenNote 7.2.3

NeedsCompilation no

Repository CRAN

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Contents

QRISK3_2017 *Cardiovascular Disease 10-year Risk Calculation (QRISK3 2017)*

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,
  ethiniciy,
  heart_attack_relative,
  cholesterol_HDL_ratio,
  systolic_blood_pressure,
  std_systolic_blood_pressure,
  smoke,
  townsend
)
```

Arguments

data	Specifiy your data.
patid	Specifiy 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 disfunction? (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_erythematosis`
: Systemic lupus erythematosis (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)

`ethiniciy`
: Ethic 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_erythematosis="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` *Test data for QRISK3 2017 algorithm - 2019 data*

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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