Package ‘QRISK3’

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

Version 0.3.0

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Description This function aims to calculate risk of developing cardiovascular disease of individual pa-
tients in next 10 years. The package was based on published risk prediction algo-

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LazyData true

RoxygenNote 7.0.0

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

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**Description**

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

**Usage**

```r
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_erythematosi,
  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`  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_erythematosis
  Systemic lupus erythematosi (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
QRISK3_2017_test

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, calculated QRISK3 score, calculated QRISK3 score with only 1 digit

Examples

data(QRISK3_2017_test)
test_all <- QRISK3_2017_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",
ethnicity="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$"QRISK_C_algorithm_score" <- test_all$"QRISK3_2017_1digit"
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 <https://qrisk.org/three/src.php>. 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)
Description

Data from QRISK3 original algorithm (C code) in 2019 <https://qrisk.org/three/src.php>. 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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