Package ‘CBCRisk’

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Type Package
Title Contralateral Breast Cancer Risk Prediction Tool
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Description Predicts the chance of developing contralateral breast cancer for a woman diagnosed with unilateral breast cancer.
License GPL-2
Depends R (>= 3.3.0), stats (>= 3.3.0), car (>= 2.1.2), survival (>= 2.39.2)

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CBCRisk-package Contralateral Breast Cancer Risk Prediction Tool

Description

Predicts the chance of developing contralateral breast cancer for a woman diagnosed with unilateral breast cancer.

Details

This package contains a function called 'cbcrisk' for calculating the absolute risk of contralateral breast cancer (CBC). The function predicts the chance of CBC for women who are affected with unilateral breast cancer.
Description

`cbcrisk` is used to predict the chance of developing contralateral breast cancer for a woman whose current age (i.e., age at counseling) is within 18-89. This function gives the predictions starting at the current age (`start.age`) and then in increments of a specified number of years (`pred.year`) up to age 89.

Usage

`cbcrisk(profile, start.age, pred.year, print.output)`

Arguments

- `profile`: a vector containing the values of 8 variables in the following order: Age at first breast cancer (BC) diagnosis, Anti-estrogen therapy, Family history of BC, High Risk Preneoplasia status, Breast density (BI-RADS), Estrogen Receptor (ER) status, First BC type and Age at first birth. The possible values (categories) of each variable are listed below in the Details section.
- `start.age`: current age (i.e., age at counselling) of the woman. It must be equal to or greater than the age at first breast cancer diagnosis.
- `pred.year`: increments (in years) at which the predictions will be made, starting at `start.age` up to age 89. e.g. 2, 5, 10, ... . The default is 5 years.
- `print.output`: a logical indicating whether the output should be printed on R console. Defaults to TRUE. Setting it to FALSE suppresses the output.

Details

The `cbcrisk` function needs a vector of length 8 as a patient profile. The elements of the patient profile vector must consist of the numerical codes of the categories (noted in parentheses below) of the following risk factors:

- Age at first BC diagnosis: <30 (1); 30-39 (2); 40+ (3).
- Anti-estrogen therapy: Yes (1); No (2); Unknown (3).
- 1st degree family history of BC: Yes (1); No (2); Unknown (3).
- High Risk Preneoplasia: Yes (1); No/Unknown (2).
- Breast density: Extreme dense (1); Heterogeneously dense (2); Scattered (3); Almost Entirely fat (4); Unknown (5).
- ER status: Negative (1); Positive (2); Unknown (3).
- First BC type: Pure DCIS (1); Mixed (2); Pure Invasive (3).
- Age at first birth: <30/Nulliparous (1); 30-39 (2); 40+ (3); Unknown (4).
Value

cbcrisk returns a list of three objects—the patient profile provided by the user, the current age of
the woman provided by the user, and the contralateral breast cancer risks until age 89.

- profile: the patient profile containing information about the 8 variables discussed above.
- current.age: current age of the woman.
- risk: the risks of contralateral breast cancer up to age 89.

Author(s)

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References


Examples

```r
## The profile vector
patient_profile= c(3, 2, 1, 2, 3, 2, 1, 2)

## install packages "car" and "survival" (if not already installed)
## install the "CBCRisk" package
library(CBCRisk)
cbcrisk(patient_profile, 55)  # risks at every 5 years (by default) starting at age 55
cbcrisk(patient_profile, 55, 10)  # risks at every 10 years starting at age 55
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