

Current Default Penetrance of BRCAPRO

Description

Data frame of penetrance functions for breast and ovarian cancer by gender, BRCA mutation status, and age.

Format

A data frame of penetrance information by gender, mutation status on BRCA1/2, and age. Entries are the net probability of developing cancer in a one-year interval, in the absence of death or censoring. The female penetrances are obtained by combining the best available published estimates with a large set of tested families assembled through the NCI's Cancer Genetics Network. For details, please see the reference.

The female penetrance estimates are based on a nine study meta-analysis using the DerSimonian and Laird random effect modeling approach (Chen et al. 2006). The male penetrance estimates are based on one of the largest US-based cohort collected both prospectively and retrospectively through the Cancer Genetics Network (Tai et al. 2007).

This previous penetrance object has been updated to the new format required in version 2.0+ of the BayesMendel package. The penetrance object is a list of 4 matrices of pre-intervention penetrances. Each matrix is labeled "fFX", "fFY", "fMX", "fMY" and corresponds to:

f generic for density, or probability in one-year intervals, as opposed to cumulative probability
 M/F gender
 X/Y cancer site, X–Breast, Y–Ovarian

Within each matrix are 9 columns and 110 rows corresponding to ages 1 to 110. Make sure the columns of each matrix are in the following order with these names: "B00" "B10" "B20" "B01" "B11" "B21" "B02" "B12" "B22" The column names are coded as follows

B00 noncarriers

B10 deleterious heterozygous mutation(s) of BRCA1

B20 deleterious compound heterozygous or homozygous mutation(s) of BRCA1

B01 deleterious heterozygous mutation(s) of BRCA2

B11 deleterious heterozygous mutation(s) of both BRCA1 and BRCA2

B21 deleterious compound heterozygous or homozygous mutation(s) of BRCA1, deleterious heterozygous mutation(s) and BRCA2

B02 deleterious compound heterozygous or homozygous mutation(s) of BRCA2

B12 deleterious heterozygous mutation(s) of BRCA1 and deleterious compound heterozygous or homozygous mutation(s) of BRCA2

B22 deleterious compound heterozygous or homozygous mutation(s) of both BRCA1 and BRCA2

Male cancer incidence at cancer site Y (ovaries) are set to 0.

Generally, deleterious compound heterozygous or homozygous mutations of BRCA1 and BRCA2 are considered non-viable. However, a small fraction of individuals affected with Fanconi Anemia may have such a mutation in BRCA2. We recommend anyone with a family history including Fanconi Anemia consult a professional to discuss his/her BRCA2 risk.

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