

Package ‘ebaTools’

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Title Evidence-Based Assessment Tools for Diagnostic Test Evaluation

Version 0.1.0

Description Provides functions for evidence-based assessment of diagnostic tests. Includes calculation of common diagnostic accuracy statistics, Bayesian updating of probabilities, interpretation of likelihood ratios, and visualization using a Fagan nomogram.

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URL <https://github.com/rmcgill777/ebaTools>

BugReports <https://github.com/rmcgill777/ebaTools/issues>

NeedsCompilation no

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bayes_update	<i>Bayesian Updating</i>
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Description

Calculate post-test probabilities from a pre-test probability and positive/negative likelihood ratios.

Usage

```
bayes_update(pretest_probability, lr_positive, lr_negative)
```

Arguments

pretest_probability	Numeric value between 0 and 1 representing the pre-test probability.
lr_positive	Positive likelihood ratio.
lr_negative	Negative likelihood ratio.

Value

An object of class "bayes_update" containing:

pretest_probability Original pre-test probability.

post_positive Post-test probability following a positive test.

post_negative Post-test probability following a negative test.

eba_interpretation	<i>Evidence-Based Assessment Interpretation</i>
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Description

Interpret a post-test probability using evidence-based assessment decision thresholds.

Usage

```
eba_interpretation(
  post_probability,
  wait_threshold = 0.1,
  treat_threshold = 0.7
)
```

Arguments

post_probability Numeric value between 0 and 1.

wait_threshold Threshold below which the condition is considered unlikely. Default = 0.10.

treat_threshold Threshold above which the condition is considered likely. Default = 0.70.

Value

An object of class "eba_interpretation".

eba_stats	<i>Evidence-Based Assessment Statistics</i>
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Description

Calculate evidence-based assessment statistics from a 2×2 contingency table.

Usage

```
eba_stats(tp, fp, fn, tn)
```

Arguments

tp Number of true positives.

fp Number of false positives.

fn Number of false negatives.

tn Number of true negatives.

Value

An object of class "eba_stats".

Examples

```
eba_stats(  
  tp = 50,  
  fp = 10,  
  fn = 5,  
  tn = 100  
)
```

fagan_nomogram	<i>Fagan Nomogram</i>
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Description

Plot pre-test and post-test probabilities using likelihood ratios.

Usage

```
fagan_nomogram(pretest_probability, lr_positive, lr_negative)
```

Arguments

pretest_probability	Numeric value between 0 and 1.
lr_positive	Positive likelihood ratio.
lr_negative	Negative likelihood ratio.

Value

Invisibly returns the calculated probabilities.

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