

Calculation of FEV/height percentiles for Cystic Fibrosis patients

Version 2.11
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This is a collection of R functions which convert
(1) between FEV1 values in liters and FEV1 quantiles
(2) between height values in cm and height quantiles

What is new:

Version 2.11 includes minor bug fixes

Version 2.10 allows to choose the reference period on which the equations are based.

Four different reference periods are available:

- 1994-2001 (used in all earlier versions)
- 1999-2006 (new default)
- 1994-2000 (early period)
- 2001-2006 (late period)

Installation and usage:

1. Unpack fevcalc_2.11.zip into the directory you will be working in.
2. Start R
3. Run
 > source("fevcalc-func.r")
4. Use fevperc() to convert FEV1, htperc() to convert height

Contents of fevcalc.zip

- readme.txt (this file)
- fevcalc-func.r (R functions)
- examples.r (examples of usage)
- fevhtcoef_99_06.RData (data files with coefficients for different periods)
- fevhtcoef_94_01.RData
- fevhtcoef_94_00.RData
- fevhtcoef_01_06.RData

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DOCUMENTATION FOR fevperc():
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fevperc(fevL=fevar,quan=quanvar,age=agevar,ht=htvar,sex=sexvar,period)

Converts between FEV quantiles and FEV in liters

INPUT:

fevL: FEV1 in liters (vector)
quan: quantiles (scalar or vector; values 0.01-0.99)
age: age values (vector; 6-40 years)
ht: height values (vector; 105-190 cm [180 in women])
sex: sex values (vector, same length as ht)
 permissible codes: 1,'m','M','Male','male'
 0,'f','F','Female','female'
period: period of reference equation
 permissible values: "94_01","99_06" (moving 8-year window)
 "94_00","01_06" (early vs. late period)
 Default is "99_06".

Provide either fevL or quan, not both

Provide age or ht or both

Each age has specific permissible ranges of height; if height falls
outside the range, empty value is returned

Age, ht, sex must have equal length. Scalars are replicated as needed.

OUTPUT:

fevL was not specified -> returns a matrix of fev [L]
 (rows=observations, columns=quantiles)
quan was not specified -> returns a vector of FEV quantiles
 If FEV falls below 0.01 quantile, 0 is returned.
 If FEV falls above 0.99 quantile, 1 is returned

REMARK:

This function loads coefficient datasets fevhtcoef_xx_yy.Rdata
from current directory

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DOCUMENTATION FOR htperc():
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htperc(ht=htvar,quan=quanvar,age=agevar,sex=sexvar,period)

Converts between height quantiles and height in cm

INPUT:

ht: height values (vector)
quan: quantiles (scalar or vector; values 0.01-0.99)
age: age values (vector; 0-40 years)
sex: sex values (vector)
permissible codes: 1,'m','M','Male','male'
0,'f','F','Female','female'
period: period of reference equation
permissible values: "94_01","99_06" (moving 8-year window)
"94_00","01_06" (early vs. late period)
Default is "99_06".

Provide either ht or quan, not both

Provide age or ht or both

Age, ht, sex must have equal length. Scalars are replicated as needed.

OUTPUT:

ht was not specified -> returns a matrix of heights [cm]
(rows=observations, columns=quantiles)
quan was not specified -> returns a vector of height quantiles
If height falls below 0.01 quantile, 0 is returned.
If height falls above 0.99 quantile, 1 is returned

REMARK:

This function loads coefficient datasets fevhtcoef_xx_yy.Rdata
from current directory