Package 'InsuSensCalc'

July 21, 2025

Title Insulin Sensitivity Indices Calculator

Version 0.0.1

Maintainer Sufyan Suleman <sufyansuleman@hotmail.com>

Description It facilitates the calculation of 40 different insulin sensitivity indices based on fasting, oral glucose tolerance test (OGTT), lipid (adipose), and tracer (palmitate and glycerol rate) and dxa (fat mass) measurement values. It enables easy and accurate assessment of insulin sensitivity, critical for understanding and managing metabolic disorders like diabetes and obesity. Indices calculated are described in Gastaldelli (2022). <doi:10.1002/oby.23503> and Lorenzo (2010). <doi:10.1210/jc.2010-1144>.

License MIT + file LICENSE

Encoding UTF-8

RoxygenNote 7.2.3

LazyData true

Imports dplyr, tibble, magrittr, tidyr

Suggests knitr, rmarkdown, testthat

VignetteBuilder knitr

Depends R (>= 3.5.0)

URL https://github.com/sufyansuleman/InsuSensCalc

BugReports https://github.com/sufyansuleman/InsuSensCalc/issues

NeedsCompilation no

Author Sufyan Suleman [aut, cre] (ORCID:
<https://orcid.org/0000-0001-6612-6915>)

Repository CRAN

Date/Publication 2024-04-04 12:03:01 UTC

Contents

`example_data` *Example Dataset*

Description

Names, description and units (where needed) of the variables. Name of the variables in the input data should be the same as the ones listed below for accurately calculating the indices. Otherwise it will result in Error. If a variable is missing for the category it will not calculate the any of the index for that category. This can be handeld by creating the variable column with NA vlaues If the values are missing for a variable it will set the value to NA and calculate the remaining indices and return the NA value for the missing variable.

Usage

```
example_data
```

Format

A data frame with rows (number of observations) and 17 columns (variables, can vary for every data):

age numeric Age of the individual (years)

sex factor Sex of the individual (1 for male, 2/0 for female)

I0 numeric Fasting insulin level (pmol/L)

G0 numeric Fasting glucose level (mmol/L)

I30 numeric Insulin level at 30 minutes (pmol/L)

G30 numeric Glucose level at 30 minutes (mmol/L)

I120 numeric Insulin level at 120 minutes (pmol/L)

G120 numeric Glucose level at 120 minutes (mmol/L)

HDL_c numeric HDL cholesterol level (mmol/L)

FFA numeric Free fatty acid level (mmol/L)

waist numeric Waist circumference of the individual (cm)

weight numeric Weight of the individual (kg)

bmi numeric Body mass index of the individual (kg/m^2)

TG numeric Triacylglycerides level (mmol/L)

rate_palmitate numeric Rate of palmitate (arbitrary units)

rate_glycerol numeric Rate of glycerol (arbitrary units)

fat_mass numeric Fat mass of the individual (kg)

Source

Data is a simulated dataset for illustrative purposes.

Index