Package ‘ACWR’

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Type Package

Title Acute Chronic Workload Ratio Calculation

Version 0.1.0

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Description Functions for calculating the acute chronic workload ratio using three different methods: exponentially weighted moving average (EWMA), rolling average coupled (RAC) and rolling averaged uncoupled (RAU). Examples of this methods can be found in Williams et al. (2017) <doi:10.1136/bjsports-2016-096589> for EWMA and Windt & Gabbet (2018) for RAC and RAU <doi:10.1136/bjsports-2017-098925>.

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Encoding UTF-8

LazyData true

Imports r2d3

Depends R (>= 2.10)

RoxygenNote 7.1.1

URL https://github.com/JorgeDelro/ACWR

BugReports https://github.com/JorgeDelro/ACWR/issues

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

NeedsCompilation no

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Repository CRAN

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**Acute Chronic Workload Ratio**

**Description**

Acute Chronic Workload Ratio

**Usage**

```r
ACWR(
  db,
  ID,
  TL,
  weeks,
  days,
  training_dates,
  ACWR_method = c("EWMA", "RAC", "RAU")
)
```

**Arguments**

- `db` a data frame
- `ID` ID of the subjects
- `TL` training load
- `weeks` training weeks
- `days` training days
- `training_dates` training dates
- `ACWR_method` method to calculate ACWR

**Value**

A data frame with the acute & chronic training load and ACWR calculated with the selected method/s and added on the left side of the data frame.
Examples

```r
## Not run:
# Get old working directory
oldwd <- getwd()

# Set temporary directory
setwd(tempdir())

# Read dfs
data("training_load", package = "ACWR")

# Convert to data.frame
training_load <- data.frame(training_load)

# Calculate ACWR
result_ACWR <- ACWR(db = training_load,
    ID = "ID",
    TL = "TL",
    weeks = "Week",
    days = "Day",
    training_dates = "Training_Date",
    ACWR_method = c("EWMA", "RAC", "RAU"))

# set user working directory
setwd(oldwd)

## End(Not run)
```

---

**EWMA**

*Exponentially Weighted Moving Average*

**Description**

Exponentially Weighted Moving Average

**Usage**

`EWMA(TL)`

**Arguments**

- **TL** training load

**Value**

This function returns the following variables:

- **EWMA_chronic**: EWMA - chronic training load.
- EWMA_acute: EWMA - acute training load.
- EWMA_ACWR: EWMA - Acute-Chronic Workload Ratio.

Examples

```r
## Not run:
# Get old working directory
oldwd <- getwd()

# Set temporary directory
setwd(tempdir())

# Read db
data("training_load", package = "ACWR")

# Convert to data.frame
training_load <- data.frame(training_load)

# Select the first subject
training_load_1 <- training_load[training_load[\"ID\"] == 1, ]

# Calculate ACWR
result_EWMA <- EWMA(TL = training_load_1$TL)

# set user working directory
setwd(oldwd)

## End(Not run)
```

---

**plot_ACWR**

*ACWR plots using d3.js*

**Description**

ACWR plots using d3.js

**Usage**

```r
plot_ACWR(
  db,
  TL,
  ACWR,
  day,
  ID = NULL,
  colour = NULL,
  xLabel = NULL,
  y0Label = NULL,
```
plot_ACWR

    y1Label = NULL,
    plotTitle = NULL
)

Arguments

  db       a data frame
  TL       training load
  ACWR     Acute Chronic Workload Ratio
  day      training days
  ID       ID of the subjects
  colour   colour of the bars. By default "#87CEEB" (skyblue)
  xLabel   x-axis label. By default "Days"
  y0Label  left y-axis label. By default "Load [AU]"
  y1Label  right y-axis label. By default "Acute:chronic workload ratio"
  plotTitle Title of the plot. By default "ACWR"

Value

  This function returns a d3.js object for a single subject. For several subjects it returns a list of d3.js objects.

Examples

  ## Not run:
  # Get old working directory
  oldwd <- getwd()

  # Set temporary directory
  setwd(tempdir())

  # Read db
  data("training_load", package = "ACWR")

  # Convert to data.frame
  training_load_db <- data.frame(training_load)

  # Calculate ACWR
  result_ACWR <- ACWR(db = training_load_db,
                      ID = "ID",
                      TL = "TL",
                      weeks = "Week",
                      days = "Day",
                      training_dates = "Training_Date",
                      ACWR_method = c("EWMA", "RAC", "RAU"))

  # Plot for 1 subject
RAC

Rolling Average Coupled

Description

Rolling Average Coupled

Usage

RAC(TL, weeks, training_dates)

Arguments

TL  
training load

weeks  
training weeks

training_dates  
training dates

Value

This function returns the following variables:

- RAC_chronic: RAC - chronic training load.
- RAC_acute: RAC - acute training load.
- RAC_ACWR: RAC - Acute-Chronic Workload Ratio.
Examples

```r
## Not run:
# Get old working directory
oldwd <- getwd()

# Set temporary directory
setwd(tempdir())

# Read db
data("training_load", package = "ACWR")

# Convert to data.frame
training_load <- data.frame(training_load)

# Select the first subject
training_load_1 <- training_load[training_load["ID"] == 1, ]

# Calculate ACWR
result_RAC <- RAC(TL = training_load_1$TL,
                  weeks = training_load_1$Week,
                  training_dates = training_load_1$Training_Date)

# set user working directory
setwd(oldwd)

## End(Not run)
```

---

**RAU**

*Rolling Average Uncoupled*

**Description**

Rolling Average Uncoupled

**Usage**

`RAU(TL, weeks, training_dates)`

**Arguments**

<table>
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<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TL</td>
<td>training load</td>
</tr>
<tr>
<td>weeks</td>
<td>training weeks</td>
</tr>
<tr>
<td>training_dates</td>
<td>training dates</td>
</tr>
</tbody>
</table>
Value

This function returns the following variables:

- RAU_chronic: RAU - chronic training load.
- RAU_acute: RAU - acute training load.
- RAU_ACWR: RAU - Acute-Chronic Workload Ratio.

Examples

```r
## Not run:
# Get old working directory
oldwd <- getwd()

# Set temporary directory
setwd(tempdir())

# Read db
data("training_load", package = "ACWR")

# Convert to data.frame
training_load <- data.frame(training_load)

# Select the first subject
training_load_1 <- training_load[training_load["ID"] == 1, ]

# Calculate ACWR
result_RAU <- RAU(TL = training_load_1$TL,
                  weeks = training_load_1$Week,
                  training_dates = training_load_1$Training_Date)

# set user working directory
setwd(oldwd)

## End(Not run)
```

---

**training_blocks**

Create Training Blocks

Description

Create Training Blocks

Usage

```r
training_blocks(training_dates, actual_TL, diff_dates)
```
training_load

Arguments

- training_dates: training dates
- actual_TL: position of the actual training load
- diff_dates: difference in days

training_load: Training load dataframe

Description

A dataframe with the training load of 3 subjects.

Usage

data("training_load", package = "ACWR")

Format

A dataframe of class tbl_df (inherits from tbl.data.frame) with 84 rows and 5 columns.

Variables

- ID: ID of the subjects
- Week: training weeks
- Day: training days
- TL: training load (arbitrary units)
- Training_Date: training dates
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