Package 'healthmotionR'

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Type Package

Title A Comprehensive Collection of Health and Human Motion Datasets

Version 0.1.0

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Description

Provides a broad collection of datasets focused on health, biomechanics, and human motion. It includes clinical, physiological, and kinematic information from diverse sources, covering aspects such as surgery outcomes, vital signs, rheumatoid arthritis, osteoarthritis, accelerometry, gait analysis, motion sensing, and biomechanics experiments. Designed for researchers, analysts, and students, the package facilitates exploration and analysis of data related to health monitoring, physical activity, and rehabilitation.

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URL https://github.com/alejandrosialer/healthmotionR, https://alejandrosialer.github.io/healthmotionR/

BugReports https://github.com/alejandrosialer/healthmotionR/issues

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Contents

`acceldata2_list` *Accelerometer Data Example 2*

Description

Data example from the 2003-2004 National Health and Nutrition Examination Survey (NHANES) dataset. This example includes 184 individuals, giving 1,288 daily profiles. It only includes valid subjects with at least three complete days, obtained as a subset of `acceldata_list` using the function `valid.subjects()`.

Usage

```
data(acceldata2_list)
```

Format

A list with 4 components:

PA An integer matrix with 1,288 rows (daily profiles) and 1,440 columns (minute-by-minute accelerometer counts).

label A data frame with 1,288 observations and 3 variables:

- **id** Integer identifier of the profile
- **day** Integer indicating the day label
- **personid2** Integer providing an alternative identifier of the individual

flag A numeric matrix with the same dimensions as `PA`, containing quality indicators (e.g., 0 = valid, 1 = flagged).

demo A data frame with 184 observations and 5 variables:

- **personid** Integer identifying the participant
- **age** Integer indicating age
- **sex** Factor with 2 levels indicating sex
- **bmi** Numeric variable with body mass index
- **race** Factor with 2 levels indicating race

Details

The dataset name has been kept as 'acceldata2_list' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'list' indicates that the dataset is stored as a list containing multiple components. The original content has not been modified in any way.

Source

Data taken from the accelmissing package version 2.2.

`acceldata_list` *Accelerometer Data Example*

Description

Data example from the 2003-2004 National Health and Nutrition Examination Survey (NHANES) dataset. This example only includes 218 individuals, which gives 1,526 daily profiles, from a total of 7,176 participants in the physical activity survey.

Usage

```
data(acceldata_list)
```

Format

A list with 4 components:

PA A data frame with 1,526 observations and 1,440 variables. Each row corresponds to a daily profile, with columns V1 to V1440 representing accelerometer counts recorded minute by minute throughout the day.

label A data frame with 1,526 observations and 3 variables:

- **personid** Integer identifying the individual
- **daylabel** Integer indicating the label of the day
- **personid2** Integer providing an alternative identifier of the individual

flag A data frame with 1,526 observations and 1,440 variables. The structure mirrors that of PA, with values indicating data quality (e.g., 0 = valid, 1 = flagged).

demo A data frame containing demographic information for the 218 participants with 5 variables:

- **personid** Integer identifying the participant
- **age** Integer indicating age
- **sex** Factor with 2 levels indicating sex
- **bmi** Numeric variable with body mass index
- **race** Factor with 2 levels indicating race

Details

The dataset name has been kept as 'acceldata_list' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'list' indicates that the dataset is stored as a list containing multiple data frames. The original content has not been modified in any way.

Source

Data taken from the accelmissing package version 2.2.

`accelimp_list` *Accelerometer Data Example with Imputations*

Description

This dataset, accelimp_list, is a list containing imputed accelerometer data from the 2003-2004 National Health and Nutrition Examination Survey (NHANES). It includes 184 individuals, resulting in 1,288 daily profiles obtained after applying `accel.impute()` to the raw accelerometer data.

Usage

```
data(accelimp_list)
```

Format

A list with 1 component:

imp1 A numeric matrix with 1,288 rows (daily profiles) and 1,440 columns (minute-by-minute accelerometer counts), containing the imputed accelerometer data.

Details

The dataset name has been kept as 'accelimp_list' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'list' indicates that the dataset is stored as a list. The original content has not been modified in any way.

Source

Data taken from the accelmissing package version 2.2.

---

admiral_vs_tbl_df *Vital Signs Dataset*

Description

This dataset, admiral_vs_tbl_df, is a tibble data frame containing a CDISC SDTM VS dataset from the CDISC pilot project. It includes study identifiers, subject identifiers, vital signs test codes, test names, measurement results, visit information, and related metadata. The dataset follows the structure of clinical trial data and provides standardized vital signs information.

Usage

```
data(admiral_vs_tbl_df)
```

Format

A data frame with 29,643 observations and 24 variables:

STUDYID Character string indicating the study identifier

DOMAIN Character string indicating the domain abbreviation

USUBJID Character string indicating the unique subject identifier

VSSEQ Numeric value indicating the sequence number

VSTESTCD Character string indicating the vital signs test short name

VSTEST Character string indicating the vital signs test name

VSPOS Character string indicating the subject's position during measurement

VSORRES Character string indicating the result or finding in original units

VSORRESU Character string indicating the original measurement units

VSSTRESC Character string indicating the character result/finding in standard format

VSSTRESN Numeric value indicating the result/finding in standard units

VSSTRESU Character string indicating the standard units

VSSTAT Character string indicating the completion status

VSLOC Character string indicating the location of the measurement

VSBLFL Character string indicating whether the value is a baseline flag

VISITNUM Numeric value indicating the visit number

VISIT Character string indicating the visit name

VISITDY Numeric value indicating the planned study day of the visit

VSDTC Character string indicating the date/time of measurements

VSDY Numeric value indicating the study day of vital signs

VSTPT Character string indicating the planned time point name

VSTPTNUM Numeric value indicating the planned time point number

VSELTM Character string indicating the planned elapsed time from the time point reference

VSTPTREF Character string indicating the time point reference

Details

The dataset name has been kept as 'admiral_vs_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the admiral.test package version 0.7.0.

---

angle_walk_array *Hip and Knee Angle while Walking*

Description

This dataset, angle_walk_array, is a 3-dimensional array containing hip and knee angle data (in degrees) for 39 boys measured during walking. Each observation records the hip and knee joint angles across 20 equally spaced points of a movement cycle.

Usage

```
data(angle_walk_array)
```

Format

A 3-dimensional numeric array with 1,560 values and dimensions:

[1:20] Movement cycle points

[1:39] Individual subjects (boys)

[1:2] Joint angle type: `"Hip Angle"`, `"Knee Angle"`

Details

The dataset name has been kept as angle_walk_array to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix _array indicates that the dataset is an array. The original content has not been modified in any way.

Source

Data taken from the **fda** package version 6.3.0.

AtrialFibrillation_list

Atrial Fibrillation Multivariate Time Series

Description

This dataset, AtrialFibrillation_list, is a multivariate time series (MTS) consisting of two-channel ECG recordings of atrial fibrillation. The database was created from data used in the Computers in Cardiology Challenge 2004.

Usage

```
data(AtrialFibrillation_list)
```

Format

A list with 2 components:

data A list of 30 numeric matrices, each of dimension 640 × 2, representing two-channel ECG recordings.

classes A numeric vector of length 30, indicating the class labels associated with each multivariate time series.

Details

The dataset name has been kept as 'AtrialFibrillation_list' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'list' indicates that the dataset is stored as a list object. The original content has not been modified in any way.

Source

Data taken from the **mlmts** package, version 1.1.2.

BasicMotions_list *Basic Motions Multivariate Time Series*

Description

This dataset, BasicMotions_list, is a multivariate time series (MTS) of four students performing four different activities while wearing a smart watch.

Usage

```
data(BasicMotions_list)
```

Format

A list with 2 components:

data A list of 80 numeric matrices, each of dimension 100×6, representing six-channel sensor recordings from the smart watch.

classes A numeric vector of length 80, indicating the class labels associated with each multivariate time series.

Details

The dataset name has been kept as 'BasicMotions_list' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'list' indicates that the dataset is stored as a list object. The original content has not been modified in any way.

Source

Data taken from the **mlmts** package, version 1.1.2.

body_metrics_df *Body Temperature and Heart Rate*

Description

This dataset, body_metrics_df, is a data frame containing measurements of body temperature and heart rate for 130 healthy individuals. It was used to investigate the claim that "normal" human body temperature is 98.6 degrees Fahrenheit.

Usage

```
data(body_metrics_df)
```

Format

A data frame with 130 observations and 3 variables:

temperature Numeric vector indicating the body temperature of each individual (degrees Fahrenheit)

gender Integer code indicating the gender of the individual

hr Integer vector indicating the heart rate (beats per minute)

Details

The dataset name has been kept as 'body_metrics_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the **UsingR** package version 2.0-7.

FingerMovements_char *Finger Movements Multivariate Time Series*

Description

This dataset, FingerMovements_char, refers to multivariate time series (MTS) indicating the finger movements of a subject while typing at a computer keyboard. In this version, the dataset is represented as a character string with instructions on how to obtain the full dataset from an external package.

Usage

```
data(FingerMovements_char)
```

Format

A character vector of length 1, containing instructions for accessing the full dataset from the **ueadata1** package.

Details

The dataset name has been kept as 'FingerMovements_char' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'char' indicates that the dataset is stored as a character object. The original content has not been modified in any way.

Source

Data taken from the **mlmts** package, version 1.1.2.

HandMovementDir_char *Hand Movement Direction Multivariate Time Series*

Description

This dataset, HandMovementDir_char, refers to multivariate time series (MTS) indicating the movement of a joystick by two subjects with their hand and wrist. In this version, the dataset is represented as a character string with instructions on how to obtain the full dataset from an external package.

Usage

```
data(HandMovementDir_char)
```

Format

A character vector of length 1, containing instructions for accessing the full dataset from the **ueadata1** package.

Details

The dataset name has been kept as 'HandMovementDir_char' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'char' indicates that the dataset is stored as a character object. The original content has not been modified in any way.

Source

Data taken from the **mlmts** package, version 1.1.2.

healthmotionR *healthmotionR: A Comprehensive Collection of Health and Human Motion Datasets*

Description

This package provides a broad collection of datasets focused on health, biomechanics, and human motion. It includes clinical, physiological, and kinematic information from diverse sources, covering aspects such as surgery outcomes, vital signs, rheumatoid arthritis, osteoarthritis, accelerometry, gait analysis, motion sensing, and biomechanics experiments.

Details

healthmotionR: A Comprehensive Collection of Health and Human Motion Datasets

A Comprehensive Collection of Health and Human Motion Datasets.

Author(s)

Maintainer: Oscar Alejandro Sialer Gallo <alejandro.sialer.gallo@gmail.com>

See Also

Useful links:

- https://github.com/alejandrosialer/healthmotionR

Heartbeat_char *Heartbeat Multivariate Time Series*

Description

This dataset, Heartbeat_char, refers to multivariate time series (MTS) indicating heart sound from healthy patients and pathological patients (with a confirmed cardiac diagnosis). In this version, the dataset is represented as a character string with instructions on how to obtain the full dataset from an external package.

Usage

```
data(Heartbeat_char)
```

Format

A character vector of length 1, containing instructions for accessing the full dataset from the **uea-data1** package.

Details

The dataset name has been kept as 'Heartbeat_char' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'char' indicates that the dataset is stored as a character object. The original content has not been modified in any way.

Source

Data taken from the **mlmts** package, version 1.1.2.

infant_walking_df *Infant Walking*

Description

This dataset, infant_walking_df, is a data frame containing the ages (in months) at which 12 infants were reported by their mothers to have started walking. The infants were randomly assigned to either an "exercise" or "no-exercise" group as part of the study conducted by Zelazo et al. (1972). The data are also presented in Table 9.8 of Wolfe and Schneider, *Intuitive Introductory Statistics*.

Usage

```
data(infant_walking_df)
```

Format

A data frame with 6 observations and 2 variables:

exercise Numeric vector indicating the age at which infants in the exercise group began walking (months)

no_exercise Numeric vector indicating the age at which infants in the no-exercise group began walking (months)

Details

The dataset name has been kept as 'infant_walking_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the **IIS** package version 1.1.

KinData_df *KinData – Kinematics Dataset*

Description

This dataset, `KinData_df`, is a data frame containing part of the motion capture dataset freely available in the publication by Ansuini et al. (2015). It provides detailed kinematic measurements of grasping movements across multiple conditions.

Usage

```
data(KinData_df)
```

Format

A data frame with the following variables:

Grip_Aperture_01 numeric
Grip_Aperture_02 numeric
Grip_Aperture_03 numeric
Grip_Aperture_04 numeric
Grip_Aperture_05 numeric
Grip_Aperture_06 numeric
Grip_Aperture_07 numeric
Grip_Aperture_08 numeric
Grip_Aperture_09 numeric
Grip_Aperture_10 numeric
Object.Size numeric
Wrist_Height_01 numeric
Wrist_Height_02 numeric
Wrist_Height_03 numeric
Wrist_Height_04 numeric
Wrist_Height_05 numeric
Wrist_Height_06 numeric
Wrist_Height_07 numeric
Wrist_Height_08 numeric
Wrist_Height_09 numeric
Wrist_Height_10 numeric
Wrist_Velocity_01 numeric
Wrist_Velocity_02 numeric
Wrist_Velocity_03 numeric
Wrist_Velocity_04 numeric
Wrist_Velocity_05 numeric
Wrist_Velocity_06 numeric
Wrist_Velocity_07 numeric
Wrist_Velocity_08 numeric
Wrist_Velocity_09 numeric
Wrist_Velocity_10 numeric
x_finger_plane_01 numeric
x_finger_plane_02 numeric
x_finger_plane_03 numeric
x_finger_plane_04 numeric

x_finger_plane_05 numeric
x_finger_plane_06 numeric
x_finger_plane_07 numeric
x_finger_plane_08 numeric
x_finger_plane_09 numeric
x_finger_plane_10 numeric
x_index_01 numeric
x_index_02 numeric
x_index_03 numeric
x_index_04 numeric
x_index_05 numeric
x_index_06 numeric
x_index_07 numeric
x_index_08 numeric
x_index_09 numeric
x_index_10 numeric
x_thumb_01 numeric
x_thumb_02 numeric
x_thumb_03 numeric
x_thumb_04 numeric
x_thumb_05 numeric
x_thumb_06 numeric
x_thumb_07 numeric
x_thumb_08 numeric
x_thumb_09 numeric
x_thumb_10 numeric
y_finger_plane_01 numeric
y_finger_plane_02 numeric
y_finger_plane_03 numeric
y_finger_plane_04 numeric
y_finger_plane_05 numeric
y_finger_plane_06 numeric
y_finger_plane_07 numeric
y_finger_plane_08 numeric
y_finger_plane_09 numeric
y_finger_plane_10 numeric
y_index_01 numeric

y_index_02 numeric
y_index_03 numeric
y_index_04 numeric
y_index_05 numeric
y_index_06 numeric
y_index_07 numeric
y_index_08 numeric
y_index_09 numeric
y_index_10 numeric
y_thumb_01 numeric
y_thumb_02 numeric
y_thumb_03 numeric
y_thumb_04 numeric
y_thumb_05 numeric
y_thumb_06 numeric
y_thumb_07 numeric
y_thumb_08 numeric
y_thumb_09 numeric
y_thumb_10 numeric
z_finger_plane_01 numeric
z_finger_plane_02 numeric
z_finger_plane_03 numeric
z_finger_plane_04 numeric
z_finger_plane_05 numeric
z_finger_plane_06 numeric
z_finger_plane_07 numeric
z_finger_plane_08 numeric
z_finger_plane_09 numeric
z_finger_plane_10 numeric
z_index_01 numeric
z_index_02 numeric
z_index_03 numeric
z_index_04 numeric
z_index_05 numeric
z_index_06 numeric
z_index_07 numeric
z_index_08 numeric

z_index_09 numeric

z_index_10 numeric

z_thumb_01 numeric

z_thumb_02 numeric

z_thumb_03 numeric

z_thumb_04 numeric

z_thumb_05 numeric

z_thumb_06 numeric

z_thumb_07 numeric

z_thumb_08 numeric

z_thumb_09 numeric

z_thumb_10 numeric

Details

The dataset includes information on wrist velocity, grip aperture, wrist height, and three-dimensional coordinates of the index finger, thumb, and finger plane. Each measurement is recorded across 10 equally spaced points of the movement trajectory. The variable `Object.Size` indicates the size of the object being grasped.

The dataset name has been kept as `KinData_df` to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the **healthmotionR** package and assists users in identifying its specific characteristics. The suffix `_df` indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the **PredPsych** package version 0.4.

---

knee_speed_tbl_df *Peak Knee Velocity in Walking*

Description

This dataset, knee_speed_tbl_df, is a tibble containing measurements of peak knee velocity during walking at both flexion and extension. The data originate from studies investigating functional performance in individuals with cerebral palsy.

Usage

```
data(knee_speed_tbl_df)
```

Format

A tibble with 2 variables:

flexion Numeric values indicating peak knee velocity at flexion

extension Numeric values indicating peak knee velocity at extension

Details

The dataset name has been kept as 'knee_speed_tbl_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'tbl_df' indicates that the dataset is stored as a tibble (a modern data frame). The original content has not been modified in any way.

Source

Data taken from the **pubh** package version 2.0.0.

---

meniscal_list *Meniscal Repairs Load at Failure*

Description

This dataset, meniscal_list, contains the load at failure for 18 cadaveric menisci repaired by one of three techniques: the FasT-Fix Meniscal Repair Suture System (FasT-Fix), the use of biodegradable Meniscus Arrows (MA), and the Vertical Mattress Sutures (VMS) approach. The data are also presented in Table 12.1 of Wolfe and Schneider - Intuitive Introductory Statistics.

Usage

```
data(meniscal_list)
```

Format

A list with 3 numeric components, each containing 6 observations:

FasT-Fix Numeric vector. Load at failure values for menisci repaired with the FasT-Fix system.

Meniscus Arrows Numeric vector. Load at failure values for menisci repaired with biodegradable Meniscus Arrows.

Vertical Mattress Numeric vector. Load at failure values for menisci repaired with Vertical Mattress Sutures.

Details

The dataset name has been kept as 'meniscal_list' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'list' indicates that the dataset is stored as a list structure. The original content has not been modified in any way.

Source

Data taken from the **IIS** package, version 1.1.

`motionpaths_list` *Simulated Motion Paths*

Description

This dataset, motionpaths_list, is a list containing simulated motion paths. It includes trajectories represented as numeric matrices and corresponding group classifications.

Usage

```
data(motionpaths_list)
```

Format

A list with 2 components:

trajectories A numeric matrix with dimensions [40, 10], representing simulated motion trajectories

groups A factor vector with 4 levels indicating group classifications

Details

The dataset name has been kept as 'motionpaths_list' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'list' indicates that the dataset is a list object. The original content has not been modified in any way.

Source

Data taken from the RRPP package version 2.1.2.

`motion_sense_list` *Motion Sense Dataset*

Description

This dataset, motion_sense_list, is a list containing smartphone sensor measurements of user acceleration and pitch attitude collected from 24 individuals performing various physical activities. The dataset includes time-series data recorded by accelerometer and gyroscope sensors under consistent environmental conditions.

Usage

```
data(motion_sense_list)
```

Format

A list of length 2:

user_acceleration Numeric matrix of dimensions 200 × 96 containing acceleration measurements for each participant across activities

pitch_attitude Numeric matrix of dimensions 200 × 96 containing pitch angle measurements for each participant across activities

Details

Participants (n = 24) of varying gender, age, weight, and height performed four distinct activities: jogging, walking, sitting, and standing. Additional recordings also included stair movements (upstairs and downstairs).

The dataset name has been kept as 'motion_sense_list' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'list' indicates that the dataset is stored as a list object. The original content has not been modified in any way.

Source

Data taken from the **ReMFPCA** package version 2.0.0.

---

osteoarthritis_df *Data of 2,585 Participants in the Osteoarthritis Initiative (OAI) Project*

Description

This dataset, osteoarthritis_df, is a data frame containing demographic and clinical information of 2,585 individuals with or at risk of knee osteoarthritis. The dataset includes variables such as age, sex, body mass index (BMI), race, smoking status, and osteoarthritis-related outcomes. Some variables contain missing values, including BMI (quantitative), race (categorical), smoking status (binary), and knee osteoarthritis status at follow-up (binary).

Usage

```
data(osteoarthritis_df)
```

Format

A data frame with 2,585 observations and 7 variables:

AGE Integer vector indicating the participant's age

SEX Factor indicating the participant's sex (2 levels)

BMI Numeric vector indicating the body mass index of the participant

RAC Factor indicating the participant's race (4 levels)

SMK Factor indicating the smoking status (2 levels)

OSP Factor indicating osteoarthritis status at baseline (2 levels)

KOA Factor indicating knee osteoarthritis status at follow-up (2 levels)

Details

The dataset name has been kept as 'osteoarthritis_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the MatchThem package version 1.2.1.

---

rheuma_df *Data from Patients with Acute Rheumatoid Arthritis*

Description

This dataset, rheuma_df, is a data frame containing data from patients with acute rheumatoid arthritis. A new agent was compared with an active control, and each patient was evaluated on a five-point assessment scale of improvement.

Usage

```
data(rheuma_df)
```

Format

A data frame with 10 observations and 3 variables:

Drug Factor indicating the treatment group (2 levels: new agent or active control)

Improvement Ordered factor indicating improvement on a five-point assessment scale

n Integer indicating the number of patients in each category

Details

The dataset name has been kept as 'rheuma_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the Fahrmeir package version 2016.5.31.

---

run_biomech_tbl_df *Running Injury Clinic Kinematic Dataset*

Description

This dataset, run_biomech_tbl_df, is a tibble containing biomechanics data of human subjects ($N = 1,832$) running on a treadmill. Data include 3D marker positions over trials ranging from 25 to 60 seconds. In addition, demographic information and calculated variables of interest (such as step width, stride rate, peak knee flexion angle) are provided. The dataset also comes with sample processing code and data analysis tutorials.

Usage

```
data(run_biomech_tbl_df)
```

Format

A tibble with 1,832 observations and 26 variables:

sub_id Numeric identifier for the subject.

datestring Character string indicating the recording date.

filename Character string specifying the source filename.

speed_r Numeric value for treadmill running speed.

age Numeric value for subject's age.

Height Numeric value for subject's height (in cm).

Weight Numeric value for subject's weight (in kg).

Gender Character string indicating subject's gender.

DominantLeg Character string indicating the dominant leg.

InjDefn Character string indicating the injury definition.

InjJoint Character string indicating the injured joint.

InjSide Character string indicating the injured side.

SpecInjury Character string specifying the injury type.

InjDuration Numeric value for injury duration (in weeks).

InjJoint2 Character string for additional injured joint information.

InjSide2 Character string for additional injured side information.

SpecInjury2 Character string for additional specific injury information.

Activities Character string indicating physical activities.

Level Character string indicating running level.

YrsRunning Numeric value for years of running experience.

RaceDistance Character string indicating typical race distance.

RaceTimeHrs Character string for race completion time (hours).

RaceTimeMins Character string for race completion time (minutes).

RaceTimeSecs Character string for race completion time (seconds).

YrPR Numeric value for year of personal record.

NumRaces Numeric value indicating number of races completed.

Details

The dataset name has been kept as 'run_biomech_tbl_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'tbl_df' indicates that the dataset is stored as a tibble (data frame). The original content has not been modified in any way.

Source

Data taken from figshare: https://plus.figshare.com/articles/dataset/Running_Injury_Clinic_Kinematic_Dataset/24255795/1?file=42637039

StandWalkJump_list *StandWalkJump Multivariate Time Series*

Description

This dataset, StandWalkJump_list, is a multivariate time series (MTS) involving short-duration ECG signals recorded from a healthy 25-year-old male performing different physical activities. The dataset is structured to allow analysis of physiological responses across 27 separate trials.

Usage

```
data(StandWalkJump_list)
```

Format

A list with 2 components:

data A list of 27 numeric matrices, each of dimension 2500×4, representing ECG signals recorded during different physical activities.

classes Numeric vector of length 27 indicating the activity label corresponding to each trial.

Details

The dataset name has been kept as 'StandWalkJump_list' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'list' indicates that the dataset is a list structure. The original content has not been modified in any way.

Source

Data taken from the **mlmts** package, version 1.1.2.

Stepping_df *Stepping and Heart Rate*

Description

This dataset, Stepping_df, is a data frame containing heart rate measurements of subjects performing stepping exercises at different heights and frequencies. Each subject's resting heart rate was measured before a trial (HRInit) and after stepping (HRFinal). Step heights include 5.75 inches (Low) and 11.5 inches (High), and stepping frequencies include 14 steps/min (Slow), 21 steps/min (Medium), and 28 steps/min (Fast), resulting in six possible height/frequency combinations. Each trial lasted three minutes, with subjects kept on pace by an electric metronome and heart rate counted by an experimenter.

Usage

```
data(Stepping_df)
```

Format

A data frame with 30 observations and 6 variables:

Order Numeric vector indicating the order of the measurement.

Block Numeric vector indicating the block or session number.

Height Factor with 2 levels indicating step height (1 = Low, 2 = High).

Freq Factor with 3 levels indicating stepping frequency (1 = Slow, 2 = Medium, 3 = Fast).

HRInit Numeric vector indicating the subject's heart rate before the trial (beats per minute).

HRFinal Numeric vector indicating the subject's heart rate after the trial (beats per minute).

Details

The dataset name has been kept as 'Stepping_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the sur package version 1.0.4.

surgerydat_df *Simulated Surgery Procedures Data*

Description

This dataset, surgerydat_df, is a data frame containing simulated data of surgery procedures performed at multiple hospitals. It includes information on patients, their survival times, and hospital-specific risk characteristics.

Usage

```
data(surgerydat_df)
```

Format

A data frame with 32,529 observations and 9 variables:

entrytime Numeric vector indicating the patient's entry time into the study (in days)

survtime Numeric vector indicating survival time (in days)

censorid Numeric indicator of censoring status

unit Numeric vector identifying the hospital unit (1–45)

exptheta Numeric vector indicating the true failure rate of the hospital

psival Numeric vector indicating the hospital's patient arrival rate (ψ)

age Numeric vector indicating the patient's age (in years)

sex Factor with 2 levels indicating patient sex

BMI Numeric vector indicating the patient's body mass index

Details

The dataset comprises data from 45 simulated hospitals with patient arrivals occurring within the first 400 days after the start of the study. Patient survival times were determined using a risk-adjusted Cox proportional hazards model with coefficients: age = 0.003, BMI = 0.02, and sexmale = 0.2, along with an exponential baseline hazard rate $h_0(t, \lambda = 0.01)e^{\mu}$. Hospital-specific hazard rate increases were sampled from a normal distribution:

$$\theta \sim N(\log(1), sd = 0.4)$$

This means that the average failure rate of hospitals in the dataset is the baseline ($\theta = 0$), with some hospitals experiencing higher or lower rates. The true failure rate is given in the variable `exptheta`. Patient arrival rates (ψ) differ across hospitals:

- Hospitals 1–5 & 16–20: 0.5 patients per day (small hospitals)
- Hospitals 6–10 & 21–25: 1 patient per day (medium hospitals)
- Hospitals 11–15 & 26–30: 1.5 patients per day (large hospitals)

The dataset name has been kept as 'surgerydat_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the success package version 1.1.1.

`vs_peds_tbl_df` *Vital Signs Dataset - Pediatrics*

Description

This dataset, vs_peds_tbl_df, is a tibble data frame containing an updated SDTM VS dataset with anthropometric measurements for pediatric patients. It includes study identifiers, subject identifiers, vital signs test codes, test names, measurement results, visit information, evaluator details, and epoch classification. The dataset follows the CDISC SDTM structure and is tailored for pediatric populations.

Usage

```
data(vs_peds_tbl_df)
```

Format

A data frame with 164 observations and 26 variables:

STUDYID Character string indicating the study identifier

DOMAIN Character string indicating the domain abbreviation

USUBJID Character string indicating the unique subject identifier

VSSEQ Integer value indicating the sequence number

VSTESTCD Character string indicating the vital signs test short name

VSTEST Character string indicating the vital signs test name

VSPOS Character string indicating the subject's position during measurement

VSORRES Character string indicating the result or finding in original units

VSORRESU Character string indicating the original measurement units

VSSTRESC Character string indicating the character result/finding in standard format

VSSTRESN Numeric value indicating the result/finding in standard units

VSSTRESU Character string indicating the standard units

VSSTAT Character string indicating the completion status

VSLOC Character string indicating the location of the measurement

VSBLFL Character string indicating whether the value is a baseline flag

VISITNUM Numeric value indicating the visit number

VISIT Character string indicating the visit name

VISITDY Integer value indicating the planned study day of the visit

VSDTC Character string indicating the date/time of measurements

VSDY Integer value indicating the study day of vital signs

VSTPT Character string indicating the planned time point name

VSTPTNUM Numeric value indicating the planned time point number

VSELTM Character string indicating the planned elapsed time from the time point reference

VSTPTREF Character string indicating the time point reference

VSEVAL Character string indicating the evaluator

EPOCH Character string indicating the epoch classification

Details

The dataset name has been kept as 'vs_peds_tbl_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the pharmaversesdtm package version 1.3.1.

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walking_df *Walking Data*

Description

This dataset, walking_df, is a data frame containing demographic and categorical information from walking activity observations. It includes sex, age, ordered factors related to the walking activity, and the source of the data.

This dataset, walking_df, is a data frame containing measurements of walking disability collected in studies A, B, and E. It follows a clinical trial data structure and includes identifiers, visit information, test codes, test names, measurement results, and related metadata.

Usage

```
data(walking_df)
```


```
data(walking_df)
```

Format

A data frame with 890 observations and 5 variables:

sex Factor indicating the sex of the participant (2 levels)

age Numeric value indicating the age of the participant

YA Ordered factor with 4 levels related to walking activity A

YB Ordered factor with 4 levels related to walking activity B

src Factor indicating the source of the data (3 levels)

A data frame with 29,643 observations and 24 variables:

STUDYID Character string indicating the study identifier

DOMAIN Character string indicating the domain abbreviation

USUBJID Character string indicating the unique subject identifier

VSSEQ Numeric value indicating the sequence number

VSTESTCD Character string indicating the vital signs test short name

VSTEST Character string indicating the vital signs test name

VSPOS Character string indicating the subject's position during measurement

VSORRES Character string indicating the result or finding in original units

VSORRESU Character string indicating the original measurement units

VSSTRESC Character string indicating the character result/finding in standard format

VSSTRESN Numeric value indicating the result/finding in standard units

VSSTRESU Character string indicating the standard units

VSSTAT Character string indicating the completion status

VSLOC Character string indicating the location of the measurement

VSBLFL Character string indicating whether the value is a baseline flag

VISITNUM Numeric value indicating the visit number

VISIT Character string indicating the visit name

VISITDY Numeric value indicating the planned study day of the visit

VSDTC Character string indicating the date/time of measurements

VSDY Numeric value indicating the study day of vital signs

VSTPT Character string indicating the planned time point name

VSTPTNUM Numeric value indicating the planned time point number

VSELTM Character string indicating the planned elapsed time from the time point reference

VSTPTREF Character string indicating the time point reference

Details

The dataset name has been kept as 'walking_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

The dataset name has been kept as 'walking_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the TrendLSW package version 1.0.2.

Data taken from the mice package version 3.18.0.

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walk_biomech_tbl_df *Running Injury Clinic Kinematic Dataset (Walking)*

Description

This dataset, walk_biomech_tbl_df, is a tibble containing biomechanics data of human subjects ($N = 2,088$) walking on a treadmill. Data include 3D marker positions over trials ranging from 25 to 60 seconds. In addition, demographic information and calculated variables of interest (such as step width, stride rate, peak knee flexion angle) are provided. The dataset also comes with sample processing code and data analysis tutorials.

Usage

```
data(walk_biomech_tbl_df)
```

Format

A tibble with 2,088 observations and 26 variables:

sub_id Numeric identifier for the subject.

datestring Datetime object indicating the recording date.

filename Character string specifying the source filename.

speed_w Numeric value for treadmill walking speed.

age Numeric value for subject's age.

Height Numeric value for subject's height (in cm).

Weight Numeric value for subject's weight (in kg).

Gender Character string indicating subject's gender.

DominantLeg Character string indicating the dominant leg.

InjDefn Character string indicating the injury definition.

InjJoint Character string indicating the injured joint.

InjSide Character string indicating the injured side.

SpecInjury Character string specifying the injury type.

InjDuration Numeric value for injury duration (in weeks).

InjJoint2 Character string for additional injured joint information.

InjSide2 Character string for additional injured side information.

SpecInjury2 Character string for additional specific injury information.

Activities Character string indicating physical activities.

Level Character string indicating running level.

YrsRunning Numeric value for years of running experience.

RaceDistance Character string indicating typical race distance.

RaceTimeHrs Character string for race completion time (hours).

RaceTimeMins Character string for race completion time (minutes).

RaceTimeSecs Character string for race completion time (seconds).

YrPR Numeric value for year of personal record.

NumRaces Numeric value indicating number of races completed.

Details

The dataset name has been kept as 'walk_biomech_tbl_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'tbl_df' indicates that the dataset is stored as a tibble (data frame). The original content has not been modified in any way.

Source

Data taken from figshare: https://plus.figshare.com/articles/dataset/Running_Injury_Clinic_Kinematic_Dataset/24255795/1?file=42637045

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z_labels_monitoring_df

Activity Labels for Human Activity Monitoring

Description

This dataset, z_labels_monitoring_df, is a data frame containing the labelled activities recorded during the observation period corresponding to the data object z.acc.

Usage

```
data(z_labels_monitoring_df)
```

Format

A data frame with 6 observations and 3 variables:

activity Character string indicating the recorded activity

start Integer value indicating the start time of the activity

end Integer value indicating the end time of the activity

Details

The dataset name has been kept as 'z_labels_monitoring_df' to avoid confusion with other datasets in the R ecosystem. This naming convention helps distinguish this dataset as part of the healthmotionR package and assists users in identifying its specific characteristics. The suffix 'df' indicates that the dataset is a data frame. The original content has not been modified in any way.

Source

Data taken from the TrendLSW package version 1.0.2.

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