

Package: PhysioGaitNorm (via r-universe)

October 3, 2026

Title Normative Gait Reference Database for the Physio Ecosystem

Version 0.2.1

Description Normative gait reference data for the Physio ecosystem: mean and standard-deviation kinematic waveform bands over the gait cycle (51- and 101-point) for the nine Gait Deviation Index / Gait Profile Score kinematic variables, together with a normative feature reference set for constructing the Gait Deviation Index. Provides dataset loaders, a catalogue, and a documented provenance and version manifest. The bundled ``adult_reference" set is derived from real motion-capture data - the 24 young healthy adults (age 21-37) of the public WBDS dataset (Fukuchi, Fukuchi & Duarte 2018, CC-BY), overground comfortable-speed walking, time-normalised to the gait cycle; the per-subject waveforms also form the normative feature population for the Gait Deviation Index. Sagittal angles use the Z-axis convention; frontal/transverse axes were resolved by matching published normative shape (Perry & Burnfield; Winter). See the provenance manifest and citations. Consumed by gait-index calculations (Schwartz & Rozumalski 2008 GDI; Baker et al. 2009 GPS/GVS/MAP).

Depends R (>= 4.2)

Imports utils

Suggests testthat (>= 3.2.0), knitr, rmarkdown

License MIT + file LICENSE

Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.3.3

VignetteBuilder knitr

Config/testthat/edition 3

URL <https://github.com/x-biosignal/PhysioGaitNorm>,
<https://x-biosignal.r-universe.dev/PhysioGaitNorm>,
<https://x-biosignal.github.io/PhysioGaitNorm/>

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listGaitNorms	<i>List the available normative gait datasets</i>
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Description

Returns the provenance / version manifest of the normative gait datasets bundled with the package: dataset name, version, population, age range, walking-speed condition, subject count, kinematic variables, units, data source, license, and citation.

Usage

listGaitNorms()

Value

A data frame, one row per dataset (class gait_norm_catalog).

Examples

listGaitNorms()

loadGaitNorm	<i>Load a normative gait reference dataset</i>
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Description

Loads mean and standard-deviation kinematic waveform bands over the gait cycle for the nine Gait Deviation Index / Gait Profile Score kinematic variables, and (optionally) the normative feature reference set used to construct the Gait Deviation Index.

Usage

```
loadGaitNorm(
  dataset = "adult_reference",
  cycle = c(101, 51),
  age = NULL,
  speed = NULL,
  features = TRUE,
  reload = FALSE
)
```

Arguments

dataset	Dataset name; one of <code>listGaitNorms()\$dataset</code> (default "adult_reference").
cycle	Gait-cycle length in points: 101 (default) or 51.
age	Optional age in years; if given it must fall within the dataset's age_min/age_max, otherwise an error is raised (this reference set is not stratified by age).
speed	Optional walking-speed condition (e.g. "self_selected"); if given it must match the dataset's speed.
features	Logical; if TRUE (default) also load the normative feature reference matrix (subjects x concatenated 51-point kinematics) used to build the GDI basis.
reload	Logical; force a re-read even if the dataset is cached.

Value

A `gait_norm` list with elements: `dataset`, `version`, `cycle_length`, `percent` (cycle sampling points), `variables`, `mean` and `sd` (each a `length(variables) x cycle_length` matrix, rows named by variable, columns named by cycle percentage), `units`, `features` (the feature matrix or NULL), and `provenance` (a one-row manifest data frame).

References

Schwartz MH, Rozumalski A (2008). "The Gait Deviation Index: a new comprehensive index of gait pathology." *Gait & Posture* 28(3):351-357. Baker R, et al. (2009). "The Gait Profile Score and Movement Analysis Profile." *Gait & Posture* 30(3):265-269.

See Also[listGaitNorms\(\)](#)**Examples**

```
norm <- loadGaitNorm("adult_reference", cycle = 101)
dim(norm$mean)
norm$variables
```

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