

# Package ‘Observation’

July 21, 2025

**Type** Package

**Title** Collect and Process Physical Activity Direct Observation Data

**Version** 0.3.0

**Depends** R (>= 2.10)

**Description** Two-part system for first collecting then managing direct observation data, as described by Hibbing PR, Ellingson LD, Dixon PM, & Welk GJ (2018) <[doi:10.1249/MSS.0000000000001486](https://doi.org/10.1249/MSS.0000000000001486)>.

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**Encoding** UTF-8

**LazyData** true

**Imports** svDialogs (>= 1.0.0), stats

**RoxygenNote** 7.1.2

**Suggests** knitr, rmarkdown

**VignetteBuilder** knitr

**URL** <https://github.com/paulhibbing/Observation>

**BugReports** <https://github.com/paulhibbing/Observation/issues>

**NeedsCompilation** no

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**Repository** CRAN

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compendium\_reference *Consult the [Rhrefhttps://sites.google.com/site/compendiumofphysicalactivities/Compendium of Physical Activities to Encode Direct Observation Intensities](https://sites.google.com/site/compendiumofphysicalactivities/Compendium%20of%20Physical%20Activities%20to%20Encode%20Direct%20Observation%20Intensities)*

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## Description

Consult the [Compendium of Physical Activities](#) to Encode Direct Observation Intensities

## Usage

```
compendium_reference(obs_data, interactive = TRUE, ...)
```

## Arguments

obs\_data        A data frame outputted from [data\\_collection\\_program](#)  
interactive     Logical. Should program be run interactively?  
...             Additional arguments passed to method-like functions (under "See Also" below)

## Value

A data frame fully annotated with intensity values

## Note

If ‘interactive = TRUE’, but R is not being used interactively, a message is issued and an override is implemented to set ‘interactive = FALSE’.

## See Also

Other processing functions: [interactive\\_compendium\\_reference\(\)](#), [manual\\_compendium\\_reference\(\)](#)

## Examples

```
data(example_data)

compendium_reference(example_data, FALSE, kids = "yes", mvpa = "yes")
if (interactive()) {
  compendium_reference(example_data)
}
```

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`data_collection_program`*Collect Direct Observation Data*

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**Description**

A generic-like function for collecting direct observation data manually or interactively, depending on user-specified preference and session capabilities.

**Usage**

```
data_collection_program(interactive = TRUE, ...)
```

**Arguments**

<code>interactive</code>	Logical. Should program be run interactively?
<code>...</code>	Additional arguments passed to method-like functions (under "See Also" below)

**Note**

If `'interactive = TRUE'`, but R is not being used interactively, a message is issued and an override is implemented to set `'interactive = FALSE'`.

**See Also**

[example\\_data](#)

Other collection functions: [interactive\\_data\\_collection\\_program\(\)](#), [manual\\_data\\_collection\\_program\(\)](#)

**Examples**

```
if (interactive()) {
  data_collection_program()
}

# Load Sample of interactively-collected data for comparison
#   with manually-entered data

data("example_data")

# Example of manually defining input variables -----

id <- "Test_ID"

timestamps <- c("2018-05-06 02:40:37", "2018-05-06 02:40:46",
  "2018-05-06 02:40:59", "2018-05-06 02:41:14",
  "2018-05-06 02:41:27", "2018-05-06 02:41:37",
  "2018-05-06 02:41:48", "2018-05-06 02:42:03",
  "2018-05-06 02:42:24", "2018-05-06 02:42:39",
  "2018-05-06 02:42:53")
```

```

activities <- c("sitting still", "sitting stretching",
  "sitting shoulder press", "sitting cycling",
  "standing still", "standing stretching",
  "standing shoulder press", "walking slowly",
  "walking quickly", "jumping jacks")

durations <- c(9, 13, 15, 13, 10, 11, 15, 21, 15, 14.460825920105)

Tree_Intensity <- c("Sedentary", "Sedentary/Light",
  "Light/Moderate", "Indeterminate", "Light", "Light",
  "Light/Moderate", "Light", "MVPA", "Light/Moderate")

seated <- c("yes", "yes", "yes", "yes", "no", "no", "no",
  "no", "no", "no")

large_muscles_moving <- c("no", "yes", "yes", "yes",
  "no", "yes", "yes", "yes", "yes", "yes")

slow <- c(NA, "yes", "yes", "no", NA, "yes", "yes",
  "no", "no", "no")

slowed_by_resistance <- c(NA, "no", "yes", NA, NA,
  "no", "yes", NA, NA, NA)

ambulation <- c(NA, NA, NA, NA, NA, NA, NA, NA,
  "yes", "yes", "no")

light_walking <- c(NA, NA, NA, NA, NA, NA, NA,
  NA, "yes", "no", NA)

# Example of using the manual program -----

manual_data <- data_collection_program(
  interactive = FALSE, id = id, timestamps = timestamps,
  activities = activities, durations = durations, seated = seated,
  large_muscles_moving = large_muscles_moving, slow = slow,
  slowed_by_resistance = slowed_by_resistance, ambulation = ambulation,
  light_walking = light_walking
)

# Comparing output of interactive vs manual program -----

test_names <- intersect(names(example_data), names(manual_data))
test_names <- setdiff(names(test_names), "duration_s")

all.equal(
  example_data[, test_names],
  manual_data[, test_names],
  scale = 1,
  tolerance = 5
)

```

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example_data	<i>Sample data collected interactively with direct observation program.</i>
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### Description

A data set assembled by running the interactive direct observation program and entering a variety of activities.

### Usage

example\_data

### Format

A data frame with 10 rows and 15 variables:

**id** The user-inputted identification code for the trial

**User\_Timestamp** The user-inputted start time for the activity

**Auto\_Timestamp** The automatic timestamp generated by button click, retained as a backup if an error occurs in User\_Timestamp

**dayofyear** The numeric day of the year (i.e., julian date)

**minofday** The numeric minute of the day (e.g. 0 for midnight and 1439 for 23:59)

**Activity** The user-inputted activity description

**duration\_s** The duration of the activity (in seconds), based on User\_Timestamp

**auto\_duration\_s** The duration of the activity (in seconds), based on Auto\_Timestamp

**Tree\_Intensity** The pre-classified activity intensity, based on user input to the program's decision tree

**seated** User-inputted response to the seated prompt

**large\_muscles\_moving** User-inputted response to the large-muscles-moving prompt

**slow** User-inputted response to the slow prompt

**slowed\_by\_resistance** User-inputted response to the slowed-by-resistance prompt

**ambulation** User-inputted response to the ambulation prompt

**light\_walking** User-inputted response to the light-walking prompt

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Observation

*Collect and Process Physical Activity Direct Observation Data*

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### Description

This provides a free and easy way to document and annotate physical activity behaviors using direct observation.

### Core functions

[data\\_collection\\_program](#)

[compendium\\_reference](#)

### Associated References

Hibbing PR, Ellingson LD, Dixon PM, & Welk GJ (2018). Adapted Sojourn Models to Estimate Activity Intensity in Youth: A Suite of Tools. *Medicine and Science in Sports and Exercise*. 50(4), 846-854. doi:10.1249/MSS.0000000000001486.

### Note

‘Observation’ functions accept further arguments that are passed to functions from the ‘svDialogs’ package. Doing so may improve your experience using the ‘Observation’ package. See the package vignette for more information.

### Examples

```
# Example of non-interactive use
data(example_data)
compendium_reference(example_data, FALSE, kids = "yes", mvpa = "yes")

# Example of interactive use
if (interactive()) {
  observation_data <- data_collection_program()
  full_data <- compendium_reference(observation_data)
}
```

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