

{admiralmetabolic}

A Collaborative Journey to Develop an Admiral
Extension Package for Metabolic Data

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The presentation & discussions represents the views of the presenters and not necessarily Novo Nordisk and Boehringer Ingelheim

The Challenge: R is the Future, But...

- The pharmaceutical industry is adopting R.
- Tools like `{admiral}` help create standard ADaM datasets.
- **What about metabolic diseases?**



The Solution: {admiralmetabolic}

- An **extension package** for {admiral}.
- Developed through a **cross-company collaboration**



A Cross-Industry Collaboration 🤝

Result of a collaboration between
developers from:

- **Novo Nordisk**
- **Roche**
- **Boehringer Ingelheim**
- **Novartis**



Why Collaborate? A Win-Win Model 🍷

For Developers:

- An amazing learning opportunity!
- Gained deep expertise in `{admiral}`.
- Built a strong professional network.

For Companies:

- Shared development cost and effort.
- Influenced an "industry-standard" tool.



Illustrations from Hadley Wickham's ACM talk "The Joy of Functional Programming (for Data Science)." Hadley Wickham

Challenges? Lessons learned

- Technical alignment
- Organizational differences
- Resources



@allison_horst

Artwork by @allison_horst

How We Work: Open & Transparent

Our entire workflow is public on GitHub 

- **GitHub Issues:** Planning and feature requests.
- **Pull Requests:** Code contributions and peer review.
- **Slack:** Communication and support.



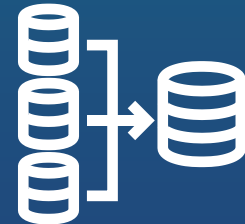
Artwork by @allison_horst



Key Features ✨

{admiralmetabolic} provides three key things:

1. Specialized Functions
2. Detailed Vignettes (tutorials)
3. Test Data



Example function: Derive waist-height ratio

{admiral}

{admiralmetabolic}

```
derive_param_computed(  
  dataset = advs,  
  by_vars = exprs(USUBJID, VISIT),  
  parameters = c("WSTCIR"),  
  set_values_to = exprs(  
    AVAL = AVAL.HEIGHT / AVAL.WSTCIR,  
    PARAMCD = "WAISTHGT",  
    PARAM = "Waist to Height Ratio"  
  ),  
  constant_parameters = c("HEIGHT"),  
  constant_by_vars = exprs(USUBJID)  
)
```

```
derive_param_waisthgt(  
  dataset = advs,  
  by_vars = exprs(USUBJID, VISIT),  
  wstcir_code = "WSTCIR",  
  height_code = "HEIGHT",  
  set_values_to = exprs(  
    PARAMCD = "WAISTHGT",  
    PARAM = "Waist to Height Ratio"  
  ),  
  constant_by_vars = exprs(USUBJID),  
  get_unit_expr = admiral::extract_unit(PARAM)  
)
```



Documentation


Extensive documentation/
vignettes

- ADVS
- ADLB
- ADCoEQ



admiralmetabolic 0.2.0

Creating a Metabolic ADVS ADaM



Source: [vignettes/advs.Rmd](#)

Introduction

This article describes creating a vital signs ADaM for metabolic clinical trials.

We advise you first consult the [admiral Creating a BDS Finding ADaM vignette](#). The programming workflow around creating the general set-up of an ADVS using [admiral](#) functions is the same. In this vignette, we focus on the most common endpoints and their derivations mainly found in metabolic trials to avoid repeating information and maintaining the same content in two places. As such, the code in this vignette is not completely executable; we recommend consulting the ADVS template script to view the full workflow.

Required Packages

The examples of this vignette require the following packages.

```
library(admiral)
library(admiralmetabolic)
library(pharmaversesdtm)
library(dplyr)
```

Example feature: COEQ

Control of Eating Questionnaire (CoEQ)

- Licensing
- Vignette
- Test data

pharmaverse / admiralmetabolic

<> Code Issues 11 Pull requests 2 Discussions Actions

Edit New issue

Questionnaire research: Identify questionnaires of interest and investigate licensing/purpose #13

Closed

Assignees

Labels help wanted

manciniedoardo opened on Jul 17, 2024 Member

Background Information

Two possible questionnaire datasets specific to our TA are the UWQoL (Impact of Weight on Quality of Life) and TFEQ (Three-Factor Eating Questionnaire), but there could definitely be others.

Let's use this issue to share our research findings around each of the questionnaires. This could include:

- Licensing (are they free to use)?
- Why these questionnaires are of interest for admiralmetabolic
- When implemented in something like an ADQS, are there any steps that are non-standard or unique to these questionnaires? This could be special computed scores, special processing, etc.

Please share any findings as soon as you have them to not duplicate any work.



The Future

Planned features:

- **Oral Glucose Tolerance Test (OGTT)**
- **Glycemic Status**
- **Cardiovascular Risk Scores**
- **Weight loss plateau**



Takeaways





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Thank You!

Questions?

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Learn more at: [**pharmaverse.github.io/admiralmetabolic/**](https://pharmaverse.github.io/admiralmetabolic/)