OS10

{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?**

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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).

Challenges? Lessons learned 🤝

- Technical alignment
- Organizational differences
- Resources

Artwork by @allison_horst

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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.

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Key Features ✨

{admiralmetabolic} provides three key things:

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

Example function: Derive waist-height ratio

{admiral}

```
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)
)
```

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```
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)
)
```

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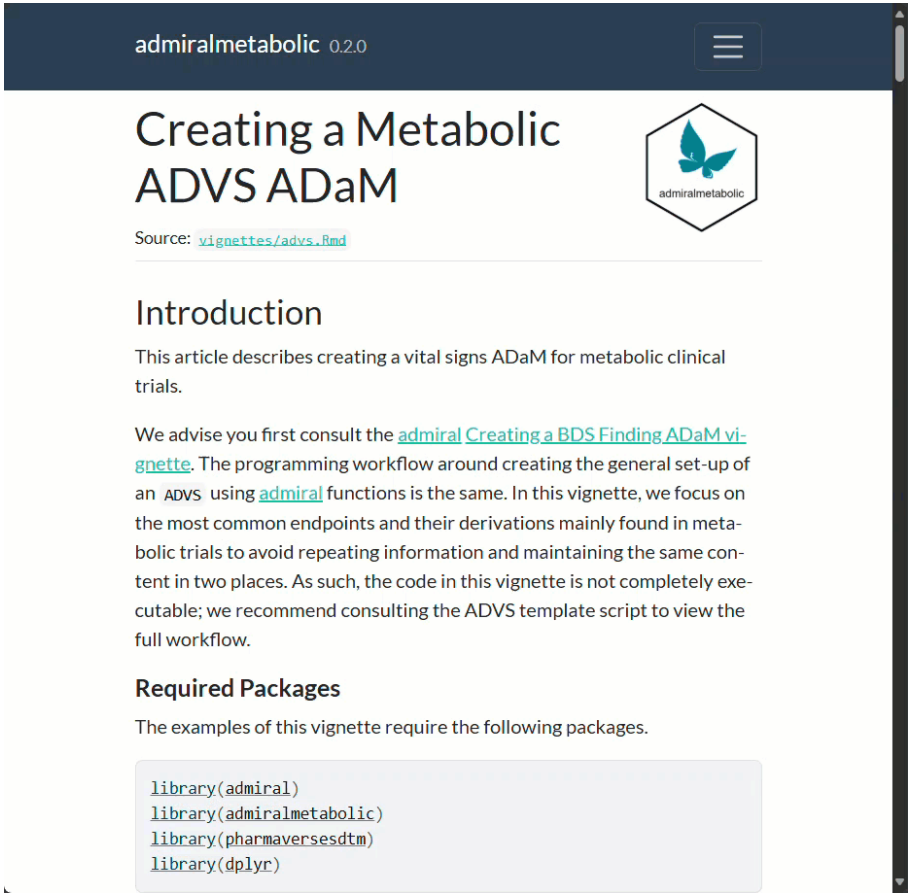
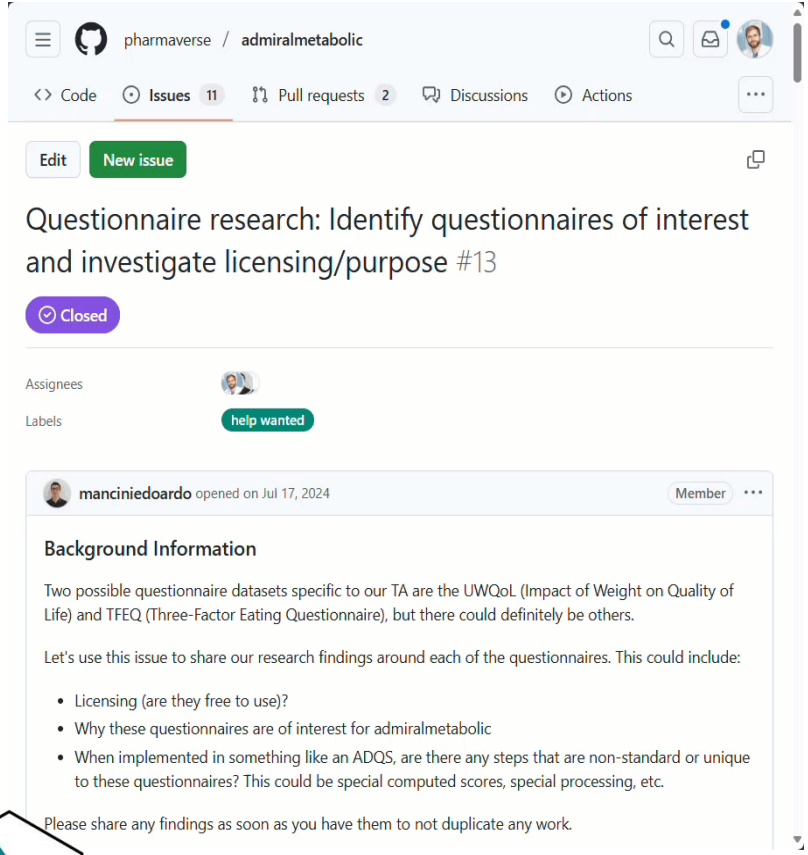
Documentation

Extensive documentation/ vignettes

- ADVS
- ADLB
- ADCoEQ





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Example feature: COEQ

Control of Eating Questionnaire (CoEQ)

- Licensing
- Vignette
- Test data

The Future

Planned features:

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

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Takeaways

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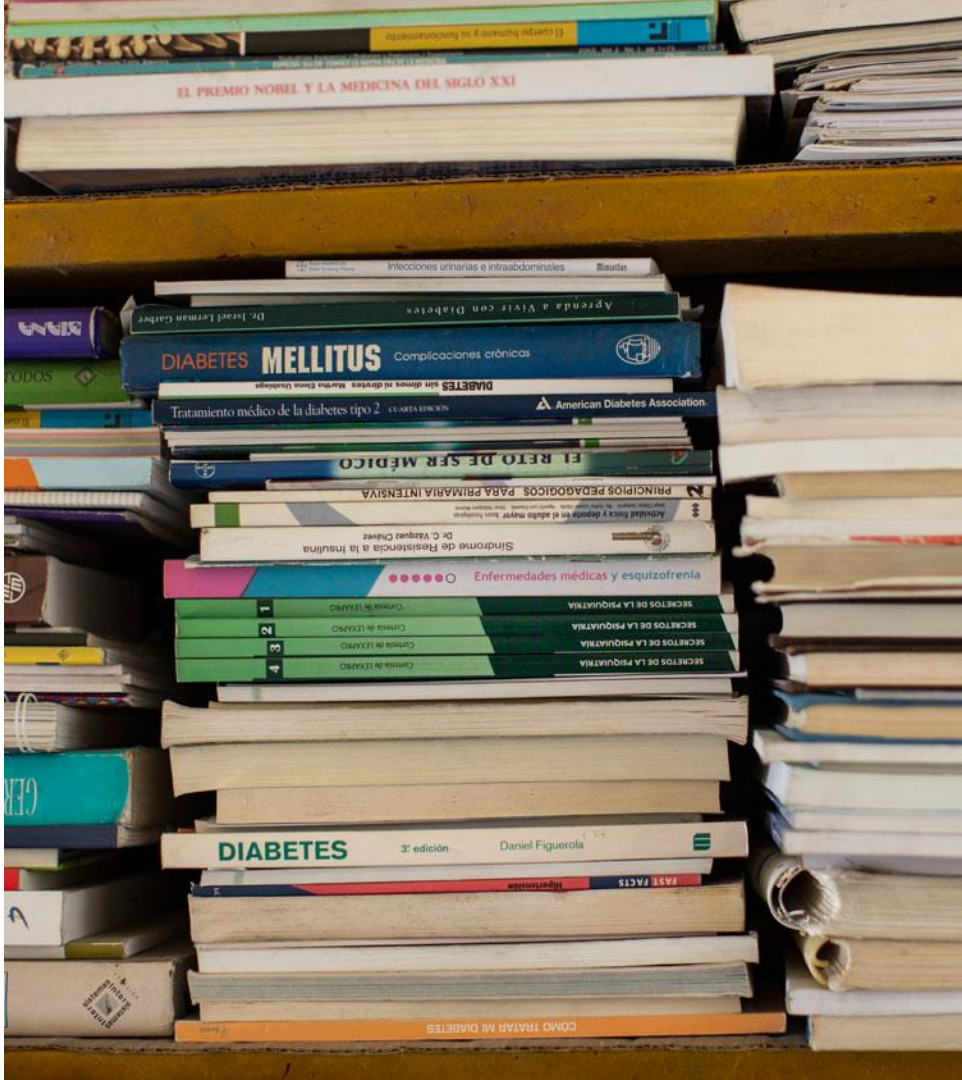

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Thank You!

Questions?

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Learn more at: **pharmaverse.github.io/admiralmetabolic/**