Appendix

**Workflow to Achieve Matched Groups - TEMPLATE**

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The steps below were created to assist with establishing matched groups. We welcome researchers to use these steps as a template or develop their own depending on their own study questions and design.



We encourage researchers to make any version of this process a shared resource for all team members to access and edit. It would be ideal to implement this workflow as a working draft during study planning, especially prior to data analyses of study outcome variables. However, it can still be a useful resource at the stage of exploratory analyses or re-analysis of data.

Importantly, we also encourage researchers to share their processes on free repositories (e.g., the Open Science Framework; www.osf.io), such that others can use it as a guide or reference for their own work. If you would like to share your workflow(s) here, please contact us and we would be happy to use this repository to include a variety of examples.

A similar workflow using propensity scores is available at https://janetybang.github.io/propensity\_scores/.

Study name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Authors: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **ASSESS** data

The final possible sample size to include is X children in group 1 and X children in group 2.

Document the decisions that inform the final statement above such as:

* How many participants do not meet study criteria? What are the reasons for exclusion?
* How many children were tested in pilot testing (e.g., how do we draw the line for which children are considered as a part of pilot testing or not?)
* Are there any children excluded due to other study requirements (e.g., minimum number of observations, passing practice trials)?

1. **SELECT** covariates

We will include the following covariates to match groups:

1. Covariate 1. The rationale to match on covariate 1 is \_\_\_\_\_\_\_ (CITE).
2. Covariate 2. The rationale to match on covariate 2 is \_\_\_\_\_\_\_ (CITE).

Document the decisions that inform the final statement above such as:

* Will we restrict heterogeneity during recruitment to accommodate primary matching covariates (e.g., age) and/or secondary variables we intend to be similar between groups (e.g., females vs. males)?
* What other covariates were also considered? Why were they excluded from matching?
* If applicable, what covariates will be explored in post-hoc covariate analyses?

1. **CONDUCT** matching

We chose to conduct matching using \_\_\_\_\_\_\_\_\_ (e.g., the \_\_\_\_\_\_\_ method in the

MatchIt package in R, hand selection).

Document the decisions that inform the final statement above such as:

* Was the person who hand-selected the matches blinded to information of participants?
* What steps were taken to organize the values to facilitate matching (e.g., first, values on covariate 1 were sorted in descending order for each group).
* What distance unit was decided upon to pairwise matching (e.g., individual in group 2 was included in the matched group if it was within X units of a value for an individual in group 1).
* How were matches selected when there were two of the same value for either group?
* What covariates were considered first if two or more are included in matching?

1. **DIAGNOSE** data

Our final matched sample includes \_\_\_\_ individuals in group 1 and \_\_\_\_\_ individuals in group 2. This was achieved on iteration X.

Our critieria for achieving matched groups are detailed below. Descriptive and inferential statistics were confirmed through visual inspection of \_\_\_\_\_\_\_\_\_\_ (e.g., one or more of the following: histograms, boxplots).

* *p* > .50
* variance ratios close to 1
* Cohen’s d close to 0
* Others?

Iteration 1: Results and Decisions

Iteration 2: Results and Decisions

Iteration 3: Results and Decisions

Document the decisions that inform the final statement above such as:

* What are the results of each iteration?
* If you do decide to iterate, what is the rationale to iterate each time (e.g., *p* values were close to 0 and Cohen’s *d* was more than 1 SD).