

Configure Intervention and Data Elements

In order to Extract, you first need to Configure Interventions and Data Elements, which you do from the Configure Study Tags page in order to reuse the structure you built during the Tagging stage.

Interventions correspond to the types of therapies/treatments/medications etc. that were compared across the articles and appear as purple in the Tagging Hierarchy. **Data Elements** refer to all other relevant data from the article that will be extracted and appear as gold in the Tagging Hierarchy.

Note: Only one hierarchy can be designated as your Intervention hierarchy, but any node in your hierarchy can be configured as a Data Element. There is no requirement, however, that every tag be configured as a data element!

Where does Extraction Configuration take place?

The screenshot displays the 'Common Data Elements - Embolization for cSDH' configuration interface. On the left, a sidebar lists various tools: 'Literature Search' (1/1), 'Screening' (96/137), 'Tagging' (96/138), 'Extraction' (0/18), and 'Study Inspector'. The 'Extraction' option is highlighted with a red box. The main content area, titled 'Protocol', contains the following sections:

- Common Data Elements: Prospective studies of embolizing cSDH**
- Background:** Embolization of the middle meningeal artery (MMA) has emerged as a therapeutic option (either alone or with surgery) to treat cSDH. Multiple trials of embolization are active, but they are not collecting "harmonized" (i.e. comparable) data elements, limiting the ability to compare results across trials.
- Objective:** To collect, classify, and count the Data Elements from all published prospective studies of MMA embolization along with all active trials of MMA embolization.
- Inclusion/Exclusion:**

Inclusion Criteria	Exclusion Criteria
Prospective trials of MMA embolization (published or active)	Case reports, case series, retrospective studies
Must report embolization of the MMA either alone or in combination with surgery	Animal studies
Must report clinical outcomes	Editorials, correspondence, opinion articles
	Methods articles
	Guidelines articles or news/updates
	Studies not reporting interventions or outcomes of interest
- Interventions:**
 - MMA embolization alone - broken down into Liquid Embolic, Particles, Glue/BCA, or Other
 - MMA embolization with surgery - broken down into Liquid Embolic, Particles, Glue/BCA, or Other
 - Comparator therapies
- Outcomes of Interest:**

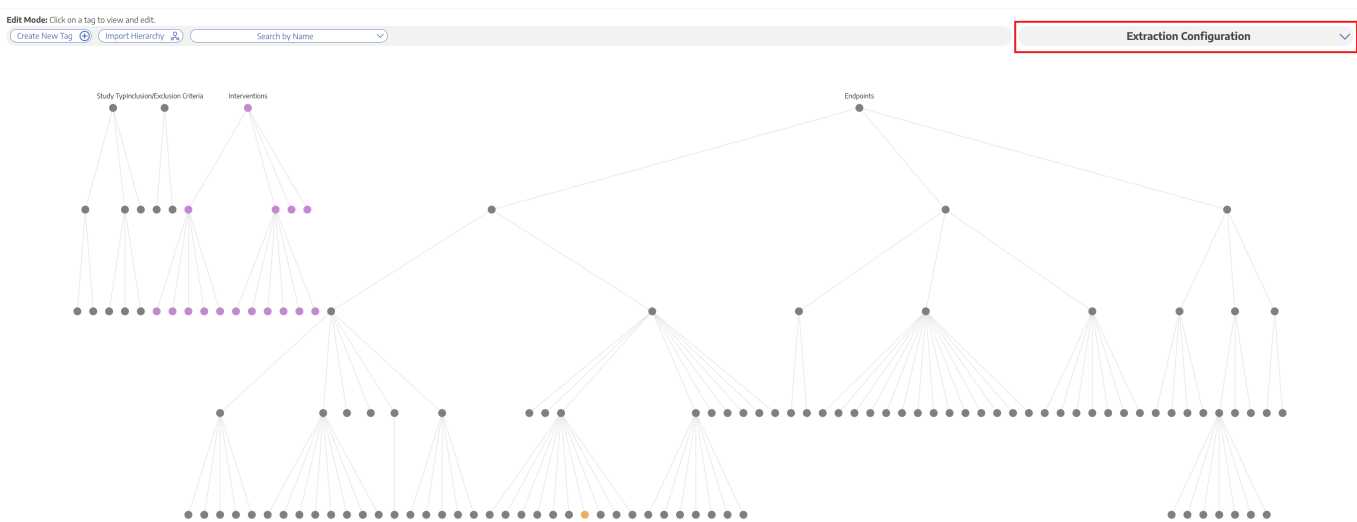
Safety Endpoints	Efficacy Endpoints
Tag all endpoints once per study, whether primary or secondary	Tag all endpoints once per study, whether primary or secondary

Extraction can be configured in two places: in the same location that Tags are configured or under "Configure Extraction" in the Extraction module. Extraction configuration is integrated into tagging configuration in order to use your existing hierarchy to structure your Interventions and Data Elements.

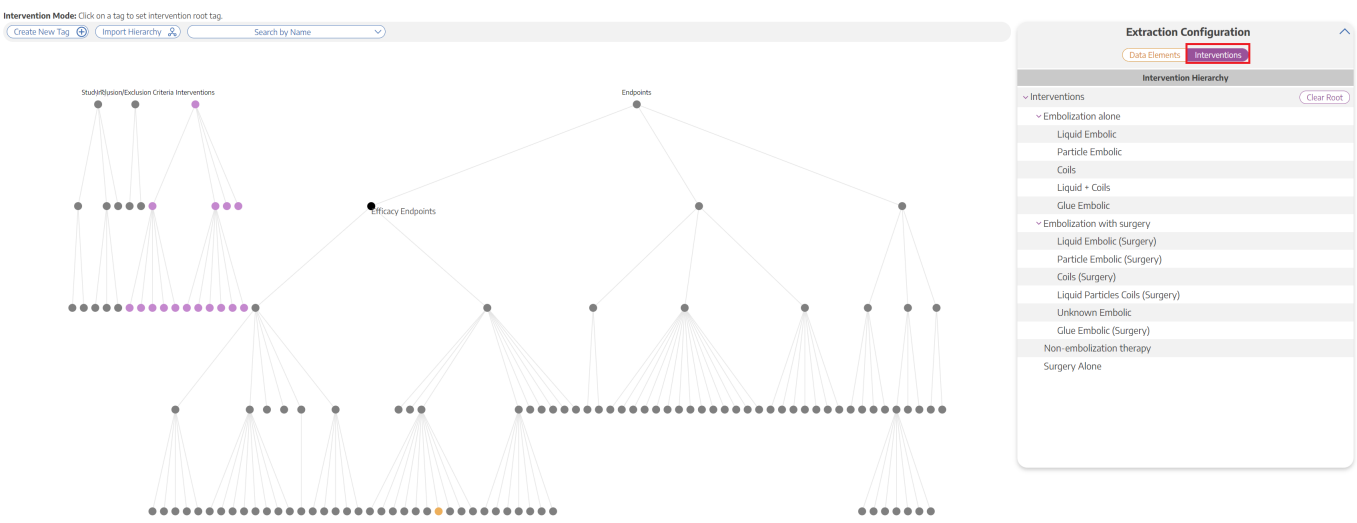
Configuring Interventions

1. Open the Extraction Configuration panel

Expand the "Extraction Configuration" dropdown button on the right.

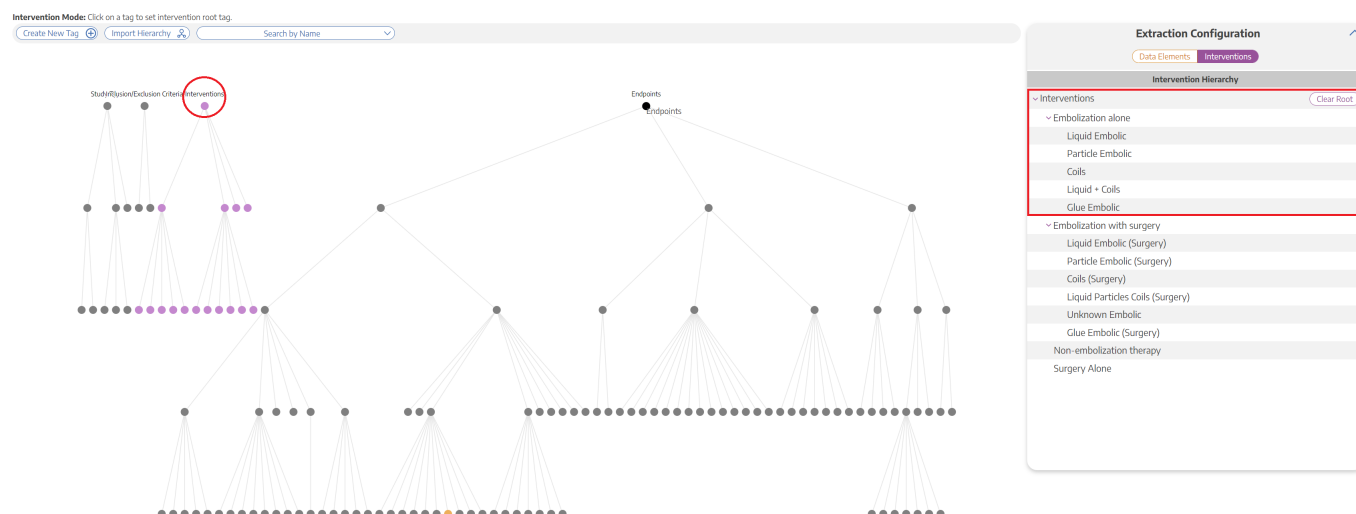


2. Toggle to Interventions

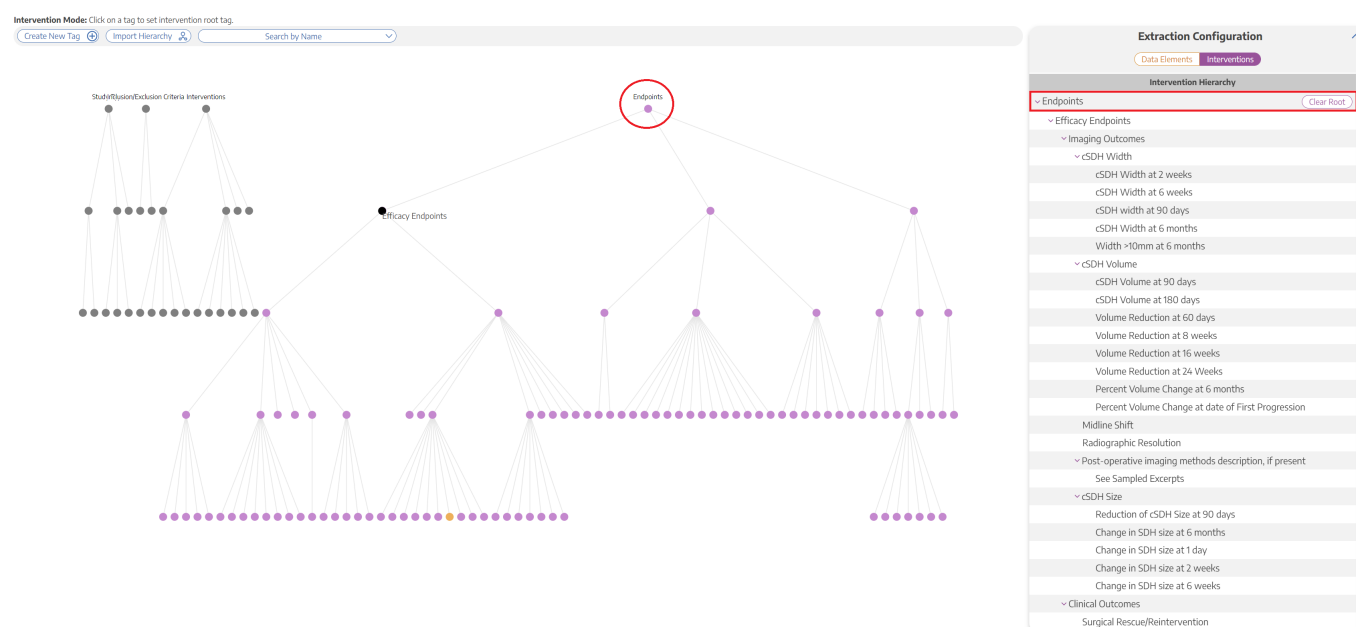


3. Click on the "Interventions" Root Tag

The Intervention list on the right corresponds to all of the tags underneath the “Intervention” root tag



Intervention tags can easily be changed. For example, by simply opening the Interventions tab and clicking “Endpoints”, all tags under “Endpoints” are now Interventions for your Extraction.



This is important to note because if you accidentally leave the incorrect hierarchy as the Interventions and then you go to extract, these incorrect Interventions options (for instance, “Endpoints” tags in the example above) will appear under the Intervention drop-down menu instead of the “Interventions” tags

Last
update:
2023/01/23
23:58

Next Home

Dashboard

Settings

Literature Search

Other Sources

Duplicate Review

Search Explanation

Query Builder

Screening

Configure Screening

Tagging

Configure Tagging

Extraction

Configure Extraction

Study Inspector

Synthesis

Manuscript Editor

Abstract Editor

Export

Abstract Full-text Supplements Related Reports

Q

RESEARCH—HUMAN—CLINICAL STUDIES

Middle Meningeal Artery Embolization for Chronic Subdural Hematoma: A Multi-Center Experience of 154 Consecutive Embolizations

BACKGROUND: Middle meningeal artery (MMA) embolization has emerged as a promising treatment for chronic subdural hematomas (SDH).
OBJECTIVE: To determine the safety and efficacy of MMA embolization.
METHODS: Consecutive patients who underwent MMA embolization for SDH (primary treatment or recurrence after conventional surgery) at 15 centers were included. Clinical details and follow-up were collected prospectively. Primary clinical and radiographic outcomes were the proportion of patients requiring additional surgical treatment within 90 d after index treatment and proportion with >50% cSDH thickness reduction on follow-up computed tomography imaging versus 90 d. National Institutes of Health Stroke Scale and modified Rankin Scale were also collected (mean age 59.8 years, 59.2% female). A total of 15 patients underwent bilateral interventions for 154 total embolizations (66.7% primary treatment). At presentation, 30.4% and 21.9% of patients were on antipile and anticoagulation therapy, respectively. Median admission cSDH thickness was 14 mm. A total of 46.1% of embolizations were performed under general anesthesia, and 97.4% of procedures were successfully completed. A total of 70.2% of embolizations used particles, and 25.3% used liquid embolics with no significant outcome difference between embolization materials ($P = .28$). On last follow-up (mean 94.0 d), median cSDH thickness was 4 mm (77% median thickness reduction). A total of 7.8% of patients had >50% improvement on imaging (31.9% improved clinically), and 9 patients (6%) required further cSDH treatment. There were 18 complications with 9 (6.5%) degree of confirmed hematoma expansion. Mortality rate was 4.4%, mostly unrelated to the index procedure but because of underlying comorbidities.

CONCLUSION: MMA embolization may provide a safe and efficacious minimally invasive alternative to conventional surgical techniques.

KEY WORDS: Chronic subdural hematoma, Chronic subdural hemorrhage, Middle meningeal artery embolization, Infratentorial subdural hematoma, Refractory subdural hemorrhage

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Chronic subdural hematoma (cSDH) is one of the most common neurological lesions. Its incidence is rising from population aging and increasing antipile and anticoagulant use.^{1–3} Symptomatic cSDH is rare, reported mainly for patients with thrombotic thromboembrotic purpura,⁴ barbiturate ingestion or encephalomyelitis and drainage are considered the gold standard for management of cSDH. However, more than 5% to 30% of operative cases are associated with hematoma recurrence.^{5–13} Symptomatic recurrence is

*Peter Kim and Georgios A. Menegades contributed equally to this work.

This work has been previously presented as an oral presentation at the 2019 Congress of Neurological Surgeons, Service Session, on October 23, 2019, in San Diego, California.

Correspondence: Peter Kim, MD, MPH, FRCPC, Department of Neurosurgery, Boston Children's Hospital, 700 Cambridge St., Suite 1A, Boston, MA 02130, USA. Email: ptkim@bwh.harvard.edu

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Navigation

Study Design

Arms

Intervention No Selection

Arm Size

Units

Total

Change in SDH size at 1 day

Change in SDH size at 2 weeks

Change in SDH size at 6 months

Change in SDH size at 6 weeks

Clinical Outcomes

Clinical Effects

Complications reporting

Control event delay or encephalopathy

cSDH size

Luckily, this is easily fixed: just navigate back to the Data Elements Menu within the Tagging Hierarchy, click on the “Interventions” root tag, and viola, your Interventions are Interventions once again!

Configuring Data Elements

1. View the Data Elements Menu

Navigate to the Data Elements Menu and click “Data Elements”

The data elements tab will show you a list of all tags, which you can select either in the list or by clicking on the tag node.

Click the plus sign next to a tag to turn the tag into a Data Element

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3. Select the Data Type

Continuous, Dichotomous, or Categorical (Mandatory)

Data Element Mode: Click on a tag to set a data element.

Create New Tag

Import Hierarchy

Search by Name

Study/Study/Exclusion Interventions

Endpoints

Extraction Configuration

Data Elements

Interventions

Name	Data Type	
16 week Mortality	Dichotomous	⊖
180 Day Mortality		⊕
246 Week Mortality		⊕
30 day Mortality		⊕
60 day Mortality		⊕
7 day Mortality		⊕
8 Week Mortality		⊕
90 day mortality		⊕
Active Cohort Study (prospective)		⊕
Active Non-Randomized Trial		⊕
Active Randomized Controlled Trial		⊕
Active Trials		⊕
(ADL) Activities of Daily Living		⊕
Artery Dissection		⊕
Assessments/Surveys		⊕
180 Day Mortality		

Data Type:

Continuous

Dichotomous

Categorical

Depending on the data type, different inputs will populate. For example, if a data element is categorical, you will be able to specify the different categories.

4. Select the Expected Timepoint

Baseline or Outcome - Choose the Expected Timepoint based on whether the data was collected at Baseline or as an Outcome (Mandatory)

Data Element Mode: Click on a tag to set a data element.

Create New Tag

Import Hierarchy

Search by Name

Study/Intervention/Exclusion

Endpoints

Extraction Configuration

Data Elements

Interventions

Name	Data Type	
16 week Mortality	Dichotomous	⊖
180 Day Mortality		⊕
246 Week Mortality		⊕
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8 Week Mortality		⊕
90 day mortality		⊕
Active Cohort Study (prospective)		⊕
Active Non-Randomized Trial		⊕
Active Randomized Controlled Trial		⊕
Active Trials		⊕

180 Day Mortality

Data Type *

Continuous

Expected Timepoint *

Baseline

Outcome

Unit

Central Tendency Measure *

Close

Save

If the data element can be both a Baseline and an Outcome, choose Baseline.

5. Select the Direction

Higher Better or Lower Better (if applicable) - For example, the Data Element is “Mortality”, Lower Better would most likely be appropriate

Data Element Mode: Click on a tag to set a data element.

Create New Tag

Import Hierarchy

Search by Name

Study/Intervention/Exclusion

Endpoints

Extraction Configuration

Data Elements

Interventions

Name	Data Type	
16 week Mortality	Dichotomous	⊖
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Active Cohort Study (prospective)		⊕
Active Non-Randomized Trial		⊕
Active Randomized Controlled Trial		⊕
Active Trials		⊕

180 Day Mortality

Data Type *

Continuous

Expected Timepoint *

Outcome

Direction

Higher Better

Lower Better

Close

Save

6. Add the Measurement Units

Example: Mintues, mL, kg (if applicable)

Data Element Mode: Click on a tag to set a data element.

Create New Tag

Import Hierarchy

Search by Name

Study/Study/Exclusion Clite/Interventions

Endpoints

Extraction Configuration

Data Elements

Interventions

Name	Data Type	
16 week Mortality	Dichotomous	⊖
180 Day Mortality		⊕
246 Week Mortality		⊕
30 day Mortality		⊕
60 day Mortality		⊕
7 day Mortality		⊕
8 Week Mortality		⊕
90 day mortality		⊕
Active Cohort Study (prospective)		⊕
Active Non-Randomized Trial		⊕
Active Randomized Controlled Trial		⊕
Active Trials		⊕

180 Day Mortality

Data Type:

Continuous

Expected Timepoint:

Outcome

Direction:

Lower Better

Units:

Unit

Central Tendency Measure:

Close

Save

7. Add the Central Tendency Measurement

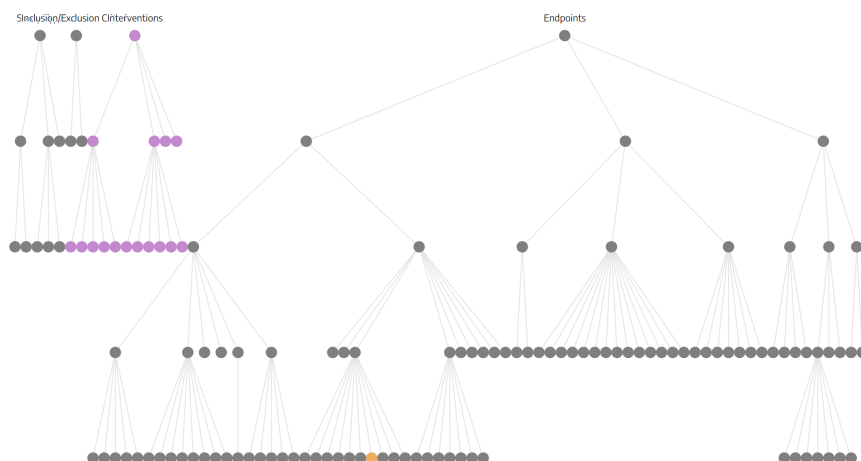
Mean or Median (Mandatory for continuous variables) - After choosing Mean or Median, it will also ask you about “Dispersion Measure” (SD for Mean; IQR or Range for Median)

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Data Element Mode: Click on a tag to set a data element.

Create New Tag (+) Import Hierarchy (🔗) Search by Name (🔍)



Extraction Configuration

Data Elements Interventions

Name	Data Type	
16 week Mortality	Dichotomous	⊖
180 Day Mortality		⊕
246 Week Mortality		⊕
30 day Mortality		⊕
60 day Mortality		⊕
7 day Mortality		⊕
8 Week Mortality		⊕
90 day mortality		⊕
Active Cohort Study (prospective)		⊕
Active Non-Randomized Trial		⊕
Active Randomized Controlled Trial		⊕

180 Day Mortality

Data Type: Continuous

Expected Timepoint: Outcome

Direction: Lower Better

Units: Unit

Central Tendency Measure: Mean

Mean

Median

Close

Save

8. Click Save

Confirm that the configuration worked based on whether the node turned gold, and move on to configure any other Data Elements of interest

How many Data Elements should you create?

When configuring your Data Elements, it is vital to recognize that **every Data Element you configure must be:**

1. collected across all studies, adding time to your project, and
2. presented on Synthesis, potentially confusing readers as to which Data Elements are vital to your review/meta-analysis.

It is also important to understand that, unlike with primary studies, multivariate comparisons are limited in meta-analytical research by the aggregated nature of the data. Thus, all Data Elements should be of direct interest to compare among Interventions of interest.

There is no exactly 'correct' number of Data Elements. However, remembering that the # of Data Elements collected = # of studies * # of Data Elements configured, the following **suggested guidelines** may help estimate the appropriate number of Data Elements and project timelines:

- **1-3 Data Elements:** <5 min per study, highly focused Synthesis. May provide too little context for key outcomes.
- **4-7 Data Elements:** 5-10 min per study, focused Synthesis. Likely represents the primary & secondary outcomes of interest, as well as high-value background data.
- **8-10 Data Elements:** 10-20 min per study, detailed Synthesis. Likely represents all primary &

secondary outcomes of interest, subsidiary endpoints, and any background data of interest.

Data sparsity may be a problem. **Recommended that you keep your review to this size or smaller!**

- **10-20 Data Elements:** Up to an hour per study, intensively detailed Synthesis. Likely represents most data elements reported in underlying studies; may represent an unfocused research question. Should be reserved only for extensive reviews where the endpoints of interest are undefined, or review types that require going beyond conventional methods.
- **20+ Data Elements:** Several hours per study, potentially overwhelming Synthesis. Can introduce not only data sparsity but collection quality concerns. May reflect an unfocused research question or unconventional review type. Recommended that such reviews be split into smaller pieces if they must be undertaken.

These are suggestions only, but can have major impact on the quality, focus, and timeliness of projects. If you have any questions on this guidance, feel free to [Contact Support!](#)

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