

## eLife's transparent reporting form

We encourage authors to provide detailed information *within their submission* to facilitate the interpretation and replication of experiments. Authors can upload supporting documentation to indicate the use of appropriate reporting guidelines for health-related research (see [EQUATOR Network](#)), life science research (see the [BioSharing Information Resource](#)), or the [ARRIVE guidelines](#) for reporting work involving animal research. Where applicable, authors should refer to any relevant reporting standards documents in this form.

If you have any questions, please consult our Journal Policies and/or contact us: [editorial@elifesciences.org](mailto:editorial@elifesciences.org).

### Sample-size estimation

- You should state whether an appropriate sample size was computed when the study was being designed
- You should state the statistical method of sample size computation and any required assumptions
- If no explicit power analysis was used, you should describe how you decided what sample (replicate) size (number) to use

Please outline where this information can be found within the submission (e.g., sections or figure legends), or explain why this information doesn't apply to your submission:

We did not use a statistical method to estimate appropriate sample sizes. We recorded and analyzed in total 13 meiotic spindles of 13 *C. elegans* wildtype hermaphrodites and 11 meiotic spindles of 11 *C. elegans* mei-1(or642) hermaphrodites for the FRAP analysis. The total number of spindles used in the different analyses is stated both in the main text and in the corresponding figures/figure legends. For the EM analyses, we analyzed 6 complete spindles of meiosis I and 4 complete spindles of meiosis II, each originating from individual *C. elegans* hermaphrodites.

### Replicates

- You should report how often each experiment was performed
- You should include a definition of biological versus technical replication
- The data obtained should be provided and sufficient information should be provided to indicate the number of independent biological and/or technical replicates
- If you encountered any outliers, you should describe how these were handled
- Criteria for exclusion/inclusion of data should be clearly stated
- High-throughput sequence data should be uploaded before submission, with a private link for reviewers provided (these are available from both GEO and ArrayExpress)

Please outline where this information can be found within the submission (e.g., sections or figure legends), or explain why this information doesn't apply to your submission:



The number of spindles analyzed for each experiment is stated in the Figure and corresponding Text and Figure Legend. The number of microtubules of each spindle can be found in Table 1 for meiosis I and suppl. Figure 1 for meiosis II. More than 3 replicates were performed in different days. The meiotic spindles that have fluorescence recovered from the photobleaching will count for the analysis, whereas those spindles that disassembled after the photobleaching treatment will be excluded from the analysis.

### Statistical reporting

- Statistical analysis methods should be described and justified
- Raw data should be presented in figures whenever informative to do so (typically when N per group is less than 10)
- For each experiment, you should identify the statistical tests used, exact values of N, definitions of center, methods of multiple test correction, and dispersion and precision measures (e.g., mean, median, SD, SEM, confidence intervals; and, for the major substantive results, a measure of effect size (e.g., Pearson's r, Cohen's d)
- Report exact p-values wherever possible alongside the summary statistics and 95% confidence intervals. These should be reported for all key questions and not only when the p-value is less than 0.05.

Please outline where this information can be found within the submission (e.g., sections or figure legends), or explain why this information doesn't apply to your submission:

Raw data, standard error and mean can be found in the text and table 1.

(For large datasets, or papers with a very large number of statistical tests, you may upload a single table file with tests, Ns, etc., with reference to sections in the manuscript.)

### Group allocation

- Indicate how samples were allocated into experimental groups (in the case of clinical studies, please specify allocation to treatment method); if randomization was used, please also state if restricted randomization was applied
- Indicate if masking was used during group allocation, data collection and/or data analysis

Please outline where this information can be found within the submission (e.g., sections or figure legends), or explain why this information doesn't apply to your submission:

The analysed spindles were grouped according to their respective stage in meiosis, i.e. metaphase/ anaphase etc the stages are based on the distance between segregating chromosomes. For the modeling of local microtubule changes, microtubules were grouped according to their location within the spindle.

### Additional data files (“source data”)

- We encourage you to upload relevant additional data files, such as numerical data that are represented as a graph in a figure, or as a summary table
- Where provided, these should be in the most useful format, and they can be uploaded as “Source data” files linked to a main figure or table
- Include model definition files including the full list of parameters used



- Include code used for data analysis (e.g., R, MatLab)
- Avoid stating that data files are “available upon request”

Please indicate the figures or tables for which source data files have been provided:

Figures 1,3,4 and 7, Table 1

Redemann S., 2021, *C. elegans* meiotic spindles,  
<https://doi.org/10.5061/dryad.x3ffbg7k5>, Dryad Digital Repository,  
[doi.org/10.5061/dryad.x3ffbg7k5](https://doi.org/10.5061/dryad.x3ffbg7k5)

Figures 6, 6-suppl 1, Fig. 8, 8-Suppl 1&2, Fig. 10, Fig.11  
Fuerthauer S., 2021, Example data and analysis code for meiotic spindles,  
<https://github.com/SebastianFuerthauer/SpindleRerrangement>", github repository