## S1 File. PRISMA 2020 Checklist

| Section and Topic | Item # | Checklist item                                                                 | Location where item is reported |
|-------------------|--------|-------------------------------------------------------------------------------|-------------------------------|
| **TITLE**         |        |                                                                               |                               |
| Title             | 1      | Identify the report as a systematic review.                                 | Page 1                        |
| **ABSTRACT**      |        |                                                                               |                               |
| Abstract          | 2      | See the PRISMA 2020 for Abstracts checklist.                                 | Page 2                        |
| **INTRODUCTION**  |        |                                                                               |                               |
| Rationale         | 3      | Describe the rationale for the review in the context of existing knowledge.   | Page 4                        |
| Objectives        | 4      | Provide an explicit statement of the objective(s) or question(s) the review addresses. | Page 5                        |
| **METHODS**       |        |                                                                               |                               |
| Eligibility criteria | 5  | Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses. | Pages 6 and 7                 |
| Information sources | 6  | Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted. | Page 6                        |
| Search strategy   | 7      | Present the full search strategies for all databases, registers and websites, including any filters and limits used. | Page 6                        |
| Selection process | 8      | Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process. | Page 6                        |
| Data collection process | 9 | Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process. | Page 6                        |
| Data items        | 10a    | List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect. | Pages 7 and 8                 |
|                   | 10b    | List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information. | Page 7 and 8                 |
| Study risk of bias assessment | 11 | Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process. | Page 8                        |
| Effect measures   | 12     | Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results. | Page 8                        |
| Synthesis methods | 13a    | Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)). | Page 8                        |
|                   | 13b    | Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions. | Page 8                        |
|                   | 13c    | Describe any methods used to tabulate or visually display results of individual studies and syntheses. | Page 8                        |
|                   | 13d    | Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used. | Pages 8 and 9                 |
|                   | 13e    | Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression). | Page 9                        |
|                   | 13f    | Describe any sensitivity analyses conducted to assess robustness of the synthesized results. | Page 9                        |
| Reporting bias assessment | 14 | Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases). | Page 9                        |
| Certainty         | 15     | Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome. | NA                           |
| Section and Topic | Item # | Checklist item | Location where item is reported |
|-------------------|--------|----------------|---------------------------------|
| **RESULTS**       |        |                |                                  |
| Study selection   | 16a    | Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram. | Page 9 |
|                   | 16b    | Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded. | Page 9 |
| Study characteristics | 17    | Cite each included study and present its characteristics. | Page 9 and Table 1 |
| Risk of bias in studies | 18    | Present assessments of risk of bias for each included study. | Figure 2 and S4 file |
| Results of individual studies | 19    | For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots. | Figures 3 to 5 and S5 file |
| Results of syntheses | 20a   | For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies. | Figure 2 and supplemental S4 File |
|                   | 20b    | Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect. | Figures 3 to 5 and supplemental S4 file |
|                   | 20c    | Present results of all investigations of possible causes of heterogeneity among study results. | Page 11 |
|                   | 20d    | Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results. | Page 11-12 |
| Reporting biases  | 21     | Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed. | Page 10-11 |
| Certainty of evidence | 22    | Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed. | NA |
| **DISCUSSION**    |        |                |                                  |
| Discussion        | 23a    | Provide a general interpretation of the results in the context of other evidence. | Pages 14 to 18 |
|                   | 23b    | Discuss any limitations of the evidence included in the review. | Pages 17-18 |
|                   | 23c    | Discuss any limitations of the review processes used. | Pages 17-18 |
|                   | 23d    | Discuss implications of the results for practice, policy, and future research. | Page 18 |
| **OTHER INFORMATION** |        |                |                                  |
| Registration and protocol | 24a   | Provide registration information for the review, including register name and registration number, or state that the review was not registered. | Prospero, page 6 |
|                   | 24b    | Indicate where the review protocol can be accessed, or state that a protocol was not prepared. | Prospero |
|                   | 24c    | Describe and explain any amendments to information provided at registration or in the protocol. | NA |
| Support           | 25     | Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review. | Page 18 |
| Competing interests | 26    | Declare any competing interests of review authors. | Page 18 |
### S1 File. PRISMA 2020 Checklist

| Section and Topic                              | Item # | Checklist item                                                                                                                                                                                                 | Location where item is reported |
|------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Availability of data, code and other materials | 27     | Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review. | NA                              |

*From:* Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: [http://www.prisma-statement.org/](http://www.prisma-statement.org/)
S2 File. Exhaustive list of extracted parameters.

| Parameter                        | Number of Studies Reporting This Parameter |
|----------------------------------|--------------------------------------------|
| **HEMODYNAMIC PARAMETERS**       |                                            |
| Mean Arterial pressure           | 17                                         |
| Heart rate                       | 20                                         |
| **CARDIAC FUNCTION**             |                                            |
| Echographic parameters           |                                            |
| IVSd                              | 15                                         |
| IVSs                              | 12                                         |
| LVDd                              | 34                                         |
| LVDs                              | 33                                         |
| LVPWd                             | 17                                         |
| LVPWs                             | 13                                         |
| Ejection fraction                 | 35                                         |
| Fractional shortening             | 33                                         |
| Millar intraventricular catheter  |                                            |
| Stroke volume                     | 4                                          |
| ESV                               | 5                                          |
| EDV                               | 5                                          |
| ESP                               | 8                                          |
| EDP                               | 8                                          |
| dPdmax                            | 9                                          |
| dPdtmin                           | 7                                          |
| **CARDIAC REMODELING**            |                                            |
| Hypertrophy                       |                                            |
| HW/TL                             | 8                                          |
| CSA                               | 11                                         |
| ANP                               | 3                                          |
| BNP                               | 3                                          |
| Fibrosis                          |                                            |
| PVF (histology)                   | 11                                         |
| IF (histology)                    | 19                                         |
| Col1a1                            | 4                                          |
| Col3a1                            | 0                                          |
| Tgfb                              | 6                                          |
| Ctgf                              | 7                                          |
| Apoptosis                         |                                            |
| Caspase 3                         | 13                                         |
| TUNEL                             | 23                                         |
| **RESPONSE TO ISCHEMIA**          |                                            |
| Infarct size                      | 17                                         |

IVSd: interventricular septum in diastole; IVSs: interventricular septum in systole; LVDd: left ventricular diameter in diastole; LVDs: left ventricular diameter in systole; LVPWd: left ventricular posterior wall in diastole; LVPWs: left ventricular posterior wall in systole; ESV: end-systolic volume; EDV: end-diastolic volume; ESP: end-systolic pressure; EDP: end-diastolic pressure, dPdmax/dPdtmin: maximum and minimum rate of pressure change in the ventricle (index of left ventricular global contractility/relaxation); HW/TL: heart weight/tibia length; CSA: cross-sectional area; ANP: atrial natriuretic peptide; BNP: brain natriuretic peptide; PVF: perivascular fibrosis; IF: interstitial fibrosis; Col1a1: collagen type 1, Col3a1: collagen type 3; Tgfb: transforming growth factor; Ctgf: connective tissue growth factor.
S3 File. References included in the meta-analysis

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### S4 File. Individual study quality

| Study             | Sequence generation | Baseline characteristics | Allocation concealment | Random housing | Blinding | Random outcome assessment | Blinding | Incomplete outcome data | Selective outcome reporting | Other sources of bias |
|-------------------|---------------------|--------------------------|------------------------|----------------|----------|---------------------------|----------|------------------------|--------------------------|---------------------|
| Bao 2020          | unclear             | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | unclear            |
| Béguin 2005       | unclear             | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | unclear            |
| Béguin 2007       | unclear             | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | unclear            |
| Belaidi 2008      | unclear             | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | unclear            |
| Belaidi 2009      | low                 | low                      | low                    | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | unclear            |
| Belaidi 2016      | low                 | low                      | low                    | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | unclear            |
| Bober 2018        | unclear             | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | unclear            |
| Bourdier 2016     | low                 | low                      | low                    | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | unclear            |
| Cai 2003          | unclear             | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | unclear            |
| Castro-Grattoni 2016 | unclear             | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | unclear            |
| Castro-Grattoni 2019 | unclear             | low                      | low                    | low            | low      | low                       | low      | low                    | low                     | low                |
| Chen 2005         | low                 | low                      | low                    | low            | low      | low                       | low      | low                    | low                     | low                |
| Chen 2008         | unclear             | low                      | unclear                | low            | low      | low                       | unclear  | unclear                | unclear                  | low                |
| Chen 2010         | unclear             | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | unclear            |
| Chen 2011         | low                 | low                      | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | low                |
| Chen 2015         | low                 | low                      | low                    | low            | low      | low                       | low      | low                    | low                     | low                |
| Chen 2016         | low                 | low                      | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | low                |
| Chen 2016         | unclear             | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | low                |
| Del Rio 2016      | unclear             | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | unclear            |
| Détraite 2021     | low                 | unclear                  | low                    | low            | low      | low                       | low      | low                    | low                     | low                |
| Ding 2014         | unclear             | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | unclear            |
| Ding 2014         | low                 | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | unclear            |
| Du 2019           | unclear             | unclear                  | low                    | low            | low      | low                       | unclear  | unclear                | unclear                  | low                |
| Farre 2018        | unclear             | low                      | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | low                |
| Fu 2016           | unclear             | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | low                |
| Guan 2019         | low                 | low                      | low                    | low            | low      | low                       | low      | low                    | low                     | low                |
| Guo 2015          | unclear             | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | low                |
| Han 2014          | low                 | unclear                  | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | low                |
| Han 2018          | unclear             | low                      | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | low                |
| Hayashi 2008      | low                 | low                      | low                    | low            | low      | low                       | low      | low                    | low                     | low                |
| Hayashi 2011      | unclear             | low                      | unclear                | unclear        | unclear  | unclear                   | unclear  | unclear                | unclear                  | low                |
| Author/Year              | Confidence Level | Confidence Level | Confidence Level | Confidence Level | Confidence Level | Confidence Level | Confidence Level | Confidence Level | Confidence Level |
|-------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Imahigh 2018            | unclear          | low              | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          |
| Inamoto 2010            | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          |
| Jiang 2020              | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          |
| Joyeux-Faure 2005       | low              | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          |
| Lai 2015                | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          |
| Lai 2015                | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          |
| Li 2016                 | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          |
| Li 2017                 | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          |
| Lu 2020                 | unclear          | unclear          | low              | unclear          | low              | unclear          | low              | unclear          | unclear          |
| Lucking 2014            | low              | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          |
| Ma 2020                 | unclear          | unclear          | unclear          | unclear          | low              | unclear          | low              | unclear          | unclear          |
| Maeda 2013              | unclear          | unclear          | unclear          | unclear          | low              | unclear          | low              | unclear          | unclear          |
| Matsumoto 2009          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          |
| Milahigh 2013           | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          |
| Moraunclear 2018        | uncertain         | low              | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          |
| Moreau 2015             | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          |
| Mouin 2020              | unclear          | unclear          | low              | low              | low              | low              | low              | Yes              | low              |
| Moulin 2020             | low              | unclear          | low              | low              | low              | low              | low              | Yes              | low              |
| Naghshin 2009           | unclear          | low              | unclear          | unclear          | unclear          | low              | unclear          | low              | unclear          |
| Naghshin 2012           | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | low              | unclear          | unclear          |
| Nakagawa 2019           | unclear          | unclear          | unclear          | unclear          | unclear          | low              | unclear          | low              | unclear          |
| Nishioka 2013           | unclear          | unclear          | unclear          | unclear          | unclear          | low              | unclear          | low              | unclear          |
| Pai 2016                | low              | low              | low              | low              | low              | low              | low              | low              | low              |
| Park 2007               | unclear          | unclear          | unclear          | unclear          | unclear          | unclear          | uncertain         | low              | unclear          |
| Ramirez 2012            | unclear          | unclear          | uncertain         | low              | low              | low              | low              | low              | low              |
| Ramounclear 2007        | unclear          | unclear          | low              | unclear          | unclear          | low              | unclear          | low              | unclear          |
| Ramounclear 2013        | unclear          | unclear          | low              | unclear          | low              | low              | low              | low              | low              |
| Ray 2015                | unclear          | unclear          | low              | unclear          | low              | unclear          | low              | unclear          | low              |
| Rodriguez 2014          | unclear          | unclear          | low              | unclear          | low              | unclear          | low              | unclear          | low              |
| Sun 2020                | unclear          | unclear          | low              | low              | low              | low              | low              | low              | low              |
| Tao 2019                | unclear          | unclear          | low              | low              | low              | low              | low              | low              | low              |
| Tong 2019               | unclear          | unclear          | low              | low              | low              | low              | low              | low              | low              |
| Totoson 2013            | unclear          | unclear          | low              | low              | low              | low              | low              | low              | low              |
| Wang 2013               | unclear          | unclear          | low              | low              | low              | low              | low              | low              | low              |
| Wang 2017               | unclear          | unclear          | low              | low              | low              | low              | low              | low              | low              |
| Wang 2020               | unclear          | unclear          | low              | low              | low              | low              | low              | low              | low              |
| Year    | Name  | Score | Score | Score | Score | Score | Score | Score | Score | Score | Score | Score | Score | Score | Score | Score | Score |Score | Score | Score | Score | Score | Score | Score | Score | Score | Score | Score |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 2017    | Wei   | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear |
| 2010    | Williams | low | low | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear |
| 2015    | Xie   | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear |
| 2015    | Xu    | low | low | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear |
| 2011    | Yang  | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear |
| 2018    | Yang  | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear |
| 2019    | Yang  | unclear | low | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear |
| 2015    | Yeung | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear |
| 2014    | Yin   | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear |
| 2014    | Yuan  | low | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear |
| 2015    | Yuan  | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear |
| 2018    | Zang  | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear |
| 2018    | Zhang | unclear | low | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear |
| 2018    | Zhang | unclear | low | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear | unclear |
| 2018    | Zhang | unclear | unclear | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain |
| 2019    | Zhao  | unclear | unclear | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain |
| 2014    | Zhou  | unclear | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain |
| 2018    | Zhou  | unclear | low | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain |
| 2018    | Zhou  | unclear | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain |
| 2020    | Zhu   | unclear | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain | uncertain |
S5 File. Meta-regression results

Results of meta-regressions and subgroup analyses. Meta-regressions on IH parameters were adjusted on significant predictors in univariate meta-regressions (p<0.2). *not included in multivariate models because of an important proportion of missing data.

HEMODYNAMIC PARAMETERS

| MEAN ARTERIAL PRESSURE |  |  |  |
|------------------------|---|---|---|
| Moderator              | n | slope | p-val |
| **Univariate meta-regression** |  |  |  |
| Strain                 | 22 | 0.04 ¥ |
| Species                | 22 | 0.56 |
| Sex                    | 22 | NA |
| Body weight            | 14 | 0.00 | 0.93 |
| Year of publication    | 22 | 0.00 | 0.95 |
| Age                    | 12 | -0.02 | 0.70 |
| **Adjusted meta-regression on IH parameters** |  |  |  |
| FiO₂                   | 22 | -0.08 | 0.64 |
| Hypoxia duration       | 8  | -0.07 | 0.60 |
| Reoxygenation duration | 8  | 0.07  | 0.60 |
| IH duration per day    | 22 | 0.14  | 0.67 |
| Protocol duration      | 22>21 | 0.03>0.02 | 0.02>0.29 |

¥covariate included in the multivariate model on IH parameters

| HEART RATE |  |  |  |
|------------|---|---|---|
| Moderator  | n | slope | p-val |
| **Univariate meta-regression** |  |  |  |
| Strain     | 22 | 0.60 |
| Species    | 22 | 0.47 |
| Sex        | 21 | NA |
| Body weight| 10 | 0.00 | 0.91 |
| Year of publication | 22 | 0.03 | 0.33 |
| Age        | 13 | -0.01 | 0.62 |
| **Adjusted meta-regression on IH parameters** |  |  |  |
| FiO₂       | 22 | 0.02 | 0.91 |
| Hypoxia duration | 11 | 0.00 | 0.77 |
| Reoxygenation duration | 11 | 0.00 | 0.73 |
| IH duration per day | 22 | -0.06 | 0.53 |
| Protocol duration | 22 | 0.00 | 0.95 |
### CARDIAC FUNCTION

| LVDd   | Moderator | n     | slope | p-val |
|--------|-----------|-------|-------|-------|
| Univariate meta-regression | Strain | 43    | 0.25  |       |
|        | Species   | 43    | 0.16† |       |
|        | Sex       | 40    | NA    |       |
|        | Body weight | 17    | -0.01 | 0.03* |
|        | Year of publication | 43    | 0.05  | 0.52  |
|        | Age       | 27    | -0.04 | 0.19* |

**Adjusted meta-regression on IH parameters**

| FiO₂   | 43    | 0.59  |       |
| Hypoxia duration | 40    | -0.01 | 0.25  |
| Reoxygenation duration | 38    | -0.00 | 0.59  |
| IH duration per day | 42    | 0.37  | 0.07  |
| Protocol duration | 43    | 0.03  | 0.12  |

† covariate included in the multivariate model on IH parameters

### EJECTION FRACTION

| Ejection Fraction | Moderator | n     | slope | p-val |
|-------------------|-----------|-------|-------|-------|
| Univariate meta-regression | Strain | 45    | 0.02† |       |
|        | Species   | 45    | 0.45  |       |
|        | Sex       | 43    | NA    |       |
|        | Body weight | 17    | 0.01  | 0.05* |
|        | Year of publication | 45    | -0.14 | 0.19  |
|        | Age       | 29    | 0.09  | 0.25  |

**Adjusted meta-regression on IH parameters**

| FiO₂   | 45    | -0.31 | 0.37  |
| Hypoxia duration | 42    | 0.03  | 0.31  |
| Reoxygenation duration | 40    | 0.01  | 0.57  |
| IH duration per day | 44    | -0.52 | 0.20  |
| Protocol duration | 45    | -0.05 | 0.07  |

† covariate included in the multivariate model on IH parameters
### HW/TL

| Moderator            | n  | slope | p-val |
|----------------------|----|-------|-------|
| **Univariate meta-regression** |    |       |       |
| Strain               | 15 | 0.52  |       |
| Species              | 15 | 0.49  |       |
| Sex                  | 14 |       |       |
| Body weight          | 0  |       |       |
| Year of publication  | 15 | 0.17  | 0.22  |
| Age                  | 15 | -0.02 | 0.75  |
| **Adjusted meta-regression on IH parameters** |    |       |       |
| FiO₂                 | 15 | 0.05  | 0.88  |
| Hypoxia duration     | 15 | 0.00  | 0.97  |
| Reoxygenation duration | 15 | -0.01 | 0.48  |
| IH duration per day  | 15 | 0.07  | 0.77  |
| Protocol duration    | 15 | 0.03  | 0.15  |

* covariate included in the multivariate model on IH parameters

### Cardiomyocyte size (CSA)

| Moderator            | n  | slope | p-val |
|----------------------|----|-------|-------|
| **Univariate meta-regression** |    |       |       |
| Strain               | 10 | 0.15  | ¥     |
| Species              | 10 | 0.07  | ¥     |
| Sex                  | 9  | NA    |       |
| Body weight          | 3  | 0.11  | 0.63  |
| Year of publication  | 10 | -0.09 | 0.75  |
| Age                  | 6  | -0.10 | 0.58  |
| **Adjusted meta-regression on IH parameters** |    |       |       |
| FiO₂                 | 10 | -1.32 | 0.74  |
| Hypoxia duration     | 3  | 0.18  | **0.00** |
| Reoxygenation duration | 3  | 0.04  | **0.00** |
| IH duration per day  | 10 | -0.23 | 0.77  |
| Protocol duration    | 10 | -1.32 | 0.74  |

* covariate included in the multivariate model on IH parameters
## CARDIAC REMODELING - FIBROSIS

### PVF

| Moderator               | n | slope | p-val |
|-------------------------|---|-------|-------|
| Univariate meta-regression |   |       |       |
| Strain                  | 10|       |       |
| Species                 | 10|       |       |
| Sex                     | 10| 0.34  | 0.73  |
| Body weight             | 2 |       |       |
| Year of publication     | 10| -0.027| 0.84  |
| Age                     | 10| -0.029| 0.18† |

**Adjusted meta-regression on IH parameters**

| Moderator               | n | slope | p-val |
|-------------------------|---|-------|-------|
| FiO2                    | 10| -0.03 | 0.07  |
| Hypoxia duration        | 5 |       |       |
| Reoxygenation duration  | 5 |       |       |
| IH duration per day     | 10| 0.5   | 0.45  |
| Protocol duration       | 10| 0.01  | 0.80  |

†covariate included in the multivariate model on IH parameters

### INTERSTITIAL FIBROSIS

| Moderator               | n | slope | p-val |
|-------------------------|---|-------|-------|
| Univariate meta-regression |   |       |       |
| Strain                  | 22->21| 0.00->0.01† |
| Species                 | 22|       | 0.81  |
| Sex                     | 20|       | NA    |
| Body weight             | 11| 0.00  | 0.89  |
| Year of publication     | 22| -0.11 | 0.69  |
| Age                     | 12| -0.17 | 0.42  |

**Adjusted meta-regression on IH parameters**

| Moderator               | n | slope | p-val |
|-------------------------|---|-------|-------|
| FiO2                    | 22| 0.53  | 0.32  |
| Hypoxia duration        | 9 | 0.02  | 0.24  |
| Reoxygenation duration  | 9 | -0.01 | 0.72  |
| IH duration per day     | 21| 0.64  | 0.32  |
| Protocol duration       | 22| 0.03  | 0.70  |

†covariate included in the multivariate model on IH parameters
| Moderator                  | n  | slope | p-val |
|----------------------------|----|-------|-------|
| **Univariate meta-regression** |    |       |       |
| Strain                     | 16 | 0.25  |       |
| Species                    | 16 | 0.63  |       |
| Sex                        | 14 | NA    |       |
| Body weight                | 11 | 0.00  | 0.89  |
| Year of publication        | 16 | 0.49  | 0.05* |
| Age                        | 10 | -1.92 | 0.19  |
| **Adjusted meta-regression on IH parameters** |    |       |       |
| FiO$_2$                     | 16 | -0.16 | 0.87  |
| Hypoxia duration           | 6  | 0.02  | 0.90  |
| Reoxygenation duration     | 6  | 0.00  | 0.90  |
| IH duration per day        | 16 | 0.38  | 0.26  |
| Protocol duration          | 16 | -0.01 | 0.87  |
## CARDIAC REMODELING - APOPTOSIS

### TUNEL

| Moderator               | n   | slope | p-val |
|-------------------------|-----|-------|-------|
| **Univariate meta-regression** |     |       |       |
| Strain                  | 19  |       | 0.00¥ |
| Species                 | 19  |       | 0.15¥ |
| Sex                     | 18  |       |       |
| Body weight             | 10  | 0.00  |       |
| Year of publication     | 19  | -0.20 | 0.50  |
| Age                     | 10  | 0.15  | 0.72  |

**Adjusted meta-regression on IH parameters**

| Moderator                | n   | slope | p-val |
|--------------------------|-----|-------|-------|
| FiO₂                     | 19  | 0.11  | 0.93  |
| Hypoxia duration         | 7   | 0.09  | 0.13  |
| Reoxygenation duration   | 7   | 0.05  | 0.49  |
| IH duration per day      | 16  | -0.68 | 0.65  |
| Protocol duration        | 17  | 0.11  | 0.34  |

### CASPASE 3

| Moderator               | n   | slope | p-val |
|-------------------------|-----|-------|-------|
| **Univariate meta-regression** |     |       |       |
| Strain                  | 13  |       | 0.67  |
| Species                 | 13  |       | 0.73  |
| Sex                     | 13  |       |       |
| Body weight             | 8   | -0.02 | 0.80  |
| Year of publication     | 13  | 0.91  | 0.30  |
| Age                     | 9   | 0.76  | 0.43  |

**Adjusted meta-regression on IH parameters**

| Moderator                | n   | slope | p-val |
|--------------------------|-----|-------|-------|
| FiO₂                     | 13  | 0.41  | 0.85  |
| Hypoxia duration         | 7   | -0.01 | 0.64  |
| Reoxygenation duration   | 7   | -0.01 | 0.85  |
| IH duration per day      | 11  | 2.74  | 0.62  |
| Protocol duration        | 11  | 0.43  | **0.03** |
# RESPONSE TO MYOCARDIAL ISCHEMIA

| Moderator                | n  | slope | p-val | slope | p-val |
|--------------------------|----|-------|-------|-------|-------|
| **Univariate meta-regression** |    |       |       |       |       |
| Strain                   | 23 | 0.01  | ¥     |       |       |
| Species                  | 24 | 0.93  |       |       |       |
| Sex                      | 24 | NA    |       |       |       |
| Body weight              | 16 | 0.00  | 0.76  |       |       |
| Year of publication      | 24 | 0.14  | 0.02  | ¥     |       |
| Age                      | 9  | -0.22 | 0.40  |       |       |
| **Adjusted meta-regression on IH parameters** |    |       |       |       |       |
| FiO₂                     | 23 | -0.61 | 0.00  | -0.50 | 0.00  |
| Hypoxia duration         | 21 | -0.02 | 0.07  |       |       |
| Reoxygenation duration   | 21 | -0.03 | 0.11  |       |       |
| IH duration per day      | 23 | 0.46  | 0.00  | 0.18  | 0.11  |
| Protocol duration        | 22 | 0.03  | 0.51  |       |       |
Funnel plots showing publication bias for the main outcomes (white circles indicate observed studies, black circles indicate imputed studies): MAP: mean arterial pressure; LVDd: left ventricular diameter in diastole; EF: ejection fraction; CSA: cross-sectional area.