Materials Design Analysis Reporting (MDAR)
Checklist for Authors

The MDAR framework establishes a minimum set of requirements in transparent reporting applicable to studies in the life sciences (see Statement of Task: doi:10.31222/osf.io/9sm4x.). The MDAR checklist is a tool for authors, editors, and others seeking to adopt the MDAR framework for transparent reporting in manuscripts and other outputs. Please refer to the MDAR Elaboration Document for additional context for the MDAR framework.

For all that apply, please note where in the manuscript the required information is provided.

Materials:

Newly created materials	indicate where provided: page no/section/legend)	n/a
The manuscript includes a dedicated "materials availability statement" providing transparent disclosure about availability of newly created materials including details on how materials can be accessed and describing any restrictions on access.	Page 43, under Data and materials availability section.	

Antibodies	indicate where provided: page no/section/legend)	n/a
For commercial reagents, provide supplier name, catalogue number and RRID, if available.		N/A

DNA and RNA sequences	indicate where provided: page no/section/legend)	n/a
Short novel DNA or RNA including primers, probes: Sequences should be included or deposited in a public repository.	Primers for expression analysis in mouse models of AKI are described in Page 25, under Materials and methods/Quantitative PCR analysis section. Availability of sequence data of kidney biopsy tissues from participants with AKI and healthy references are described in page 43, Data and materials availability section.	

Cell materials	indicate where provided: page no/section/legend	n/a
Cell lines: Provide species information, strain. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID.		N/A
Primary cultures: Provide species, strain, sex of origin, genetic modification status.		N/A

Experimental animals	indicate where provided: page no/section/legend)	n/a
Laboratory animals or Model organisms: Provide species, strain, sex, age, genetic modification status. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID.	The generation of mouse models of AKI are described in Page 24, under Materials and methods/Animal surgery and experimental protocol section.	
Animal observed in or captured from the field: Provide species, sex, and age where possible.		N/A

Plants and microbes	indicate where provided: page no/section/legend)	n/a
Plants: provide species and strain, ecotype and cultivar where relevant, unique accession number if available, and source (including location for collected wild specimens).		N/A
Microbes: provide species and strain, unique accession number if available, and source.		N/A

Human research participants	indicate where provided: page no/section/legend) or state if these demographics were not collected	n/a
If collected and within the bounds of privacy constraints report on age, sex and gender or ethnicity for all study participants.	Age, sex, self reported race and ethnicity of study KPMP participants are reported in Supplemental Data S1; Demographic characteristics of TRIBE-AKI cohort of adult cardiac surgery patients, pediatric surgery patients, and marathon runner cohort are described in Table 1 and page 9-12, under Results/A multiomic investigation identifies biomarkers of PT maladaption section.	

Design:

Study protocol	indicate where provided: page no/section/legend)	n/a
If study protocol has been pre-registered, provide DOI. For clinical trials, provide the trial registration number **OR** cite DOI.	Study protocol of the KPMP cohort, TRIBE-AKI adult cohort, pediatric cardiac surgery cohort, and marathon runner cohort are cited in reference 10, 48, 50, and 30, respectively.	

Laboratory protocol	indicate where provided: page no/section/legend)	n/a
Provide DOI **OR** other citation details if detailed step-by-step protocols are available.	The protocol generating human kidney tissue single-nucleus RNA sequencing data are provided with citation in reference 10 and in page 21, under Materials and methods/study design. The laboratory protocol generating mouse models of AKI are provided with citation in reference 31, in page 24-25, under Materials and methods/animal surgery and experimental protocol.	

Experimental study design (statistics details)		
For in vivo studies: State whether and how the following have been done	**indicate where provided: page no/section/legend. If it could have been done, but was not, write not done**	**n/a**
Sample size determination		N /A
Randomisation		N /A
Blinding		N /A
Inclusion/exclusion criteria	Page 20-21, under Materials and methods/study design.	

Sample definition and in-laboratory replication	indicate where provided: page no/section/legend	n/a
State number of times the experiment was replicated in laboratory.		N /A
Define whether data describe technical or biological replicates.		N /A

Ethics	indicate where provided: page no/section/legend	n/a
Studies involving human participants: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Page 21, under Materials and methods/study design.	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Page 21, under Materials and methods/study design.	
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.	Page 21, under Materials and methods/study design.	N /A

Dual Use Research of Concern (DURC)	indicate where provided: page no/section/legend	n/a
If study is subject to dual use research of concern regulations, state the authority granting approval and reference number for the regulatory approval.		N /A

Analysis:

Attrition	indicate where provided: page no/section/legend	n/a
Describe whether exclusion criteria were preestablished. Report if sample or data points were omitted from analysis. If yes report if this was due to attrition or intentional exclusion and provide justification.	Exclusion criteria were established prior to study enrollement and reported in page 20-21, under Materials and methods/study design.	

Statistics	indicate where provided: page no/section/legend	n/a
Describe statistical tests used and justify choice of tests.	Statistical tests are described in details in page 26-28, under Materials and methods/statistical analysis	

Data availability	indicate where provided: page no/section/legend	n/a
For newly created and reused datasets, the manuscript includes a data availability statement that provides details for access or notes restrictions on access.	The computer codes used to generate snRNA-seq data are deposited in Zenodo and provided with DOI. The de-identified snRNA-seq data processed by the KPMP consortium is publicly available and deposited at http://atlas.kpmp.org/respository. The restriction of and approach to access to raw sequencing data and proteomics data are described in page 43, under Acknowledgement/data and materials availability.	
If newly created datasets are publicly available, provide accession number in repository **OR** DOI **OR** URL and licensing details where available.	The computer codes are deposited in Zenodo and provided with DOI in page 43, and snRNA-seq data processed by the KPMP consortium is deposited at http://atlas.kpmp.org/respository. These are detailed under Acknowledgement/data and materials availability.	
If reused data is publicly available provide accession number in repository **OR** DOI **OR** URL, **OR** citation.	The reuse of single nucleus RNA sequencing data from 6 participants with AKI and 7 healthy references are described in page 5, under results/single-nucleus RNA sequencing reveals diverse PT cell phenotypes in human AKI, and provided with citation in reference 10.	

Code availability	indicate where provided: page no/section/legend	n/a
For all newly generated custom computer code/software/mathematical algorithm or re-used code essential for replicating the main findings of the study, the manuscript includes a data availability statement that provides details for access or notes restrictions.	The computer code used to generate the results is deposited in Zenodo and provided with DOI and described in page 43, under Acknowledgement/data and materials availability.	
If newly generated code is publicly available, provide accession number in repository, **OR** DOI **OR** URL and licensing details where available. State any restrictions on code availability or accessibility.	The computer code used to generate the results is deposited in Zenodo and provided with DOI and described in page 43, under Acknowledgement/data and materials availability.	
If reused code is publicly available provide accession number in repository **OR** DOI **OR** URL, **OR** citation.		N /A

Reporting

MDAR framework recommends adoption of discipline-specific guidelines, established and endorsed through community initiatives. Journals have their own policy about requiring specific guidelines and recommendations to complement MDAR.

Adherence to community standards	**indicate where provided: page no/section/legend**	**n/a**
State if relevant guidelines (e.g., ICMJE, MIBBI, ARRIVE) have been followed, and whether a checklist (e.g., CONSORT, PRISMA, ARRIVE) is provided with the manuscript.		N/A