

Efforts of European Consortium in MRI (PARENCHIMA)

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WG3 lead – COST action PARENCHIMA

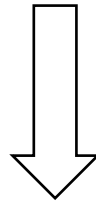


PARENCHIMA: aims

Renal MRI biomarkers:

- high potential as enrichment/outcome biomarkers (non-invasive, sensitive)
- underused (need for dedicated expertise and development)

Lack of standardization and difficulties in comparing results limits commercial exploitation, and hinders the set-up of multi-center trials/translation into clinics.



PARENCHIMA: Magnetic Resonance Imaging Biomarkers for CKD

Overall aim: to eliminate the main barriers to the broader study, commercial exploitation and clinical use of renal MRI biomarkers

- improving the reproducibility and standardization of renal MRI biomarkers
- increase their availability by developing an open-access toolbox (software/data)
- demonstrate biological validity and clinical utility

PARENCHIMA - www.renalMRI.org

PI: Steven Sourbron (Leeds, UK)

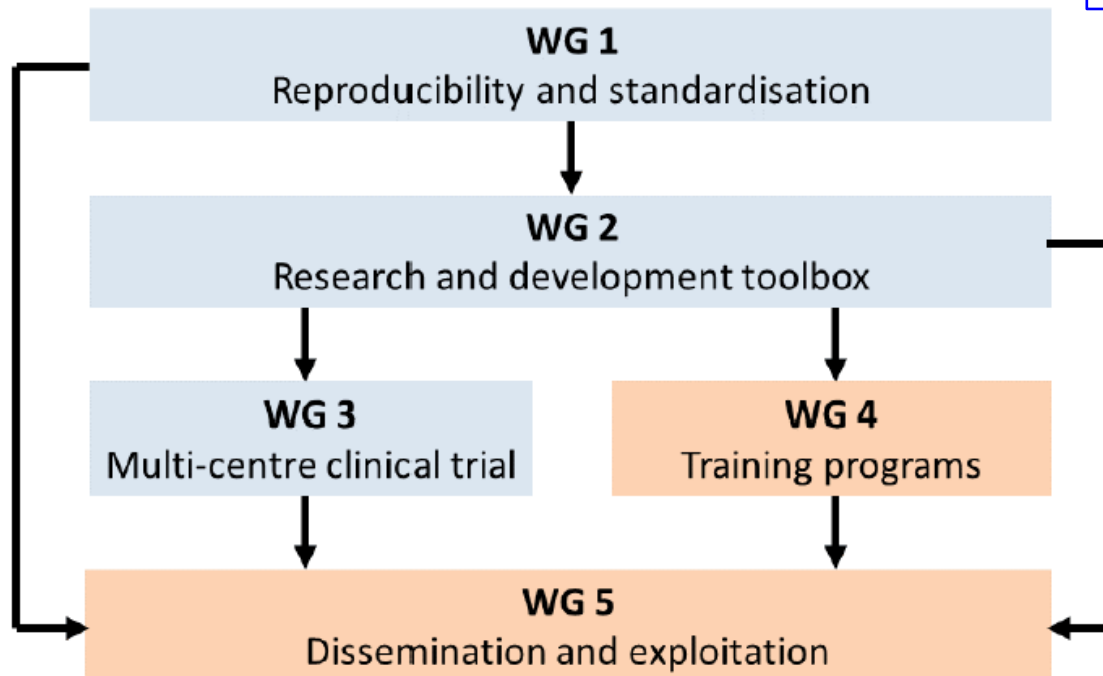
Started April 4th 2017

Duration: 4 years



Open and growing network of researchers
25 participant countries (to date)

**Everyone is
invited to join
PARENCHIMA**



WG1: reproducibility and standardisation

Aim: to improve the standardisation in the acquisition and analysis of renal MRI data - establish clear reference baseline for further development and technical and clinical validation

Engaging experts beyond Europe and/or coordinating similar initiatives to avoid different standards emerging in different parts of the world

1.1: Preclinical book on renal MRI

Aim: write a comprehensive book on preclinical renal MRI

Section editors already decided – chapter authors TBD

If interested contact Andreas Pohlmann (andreas.pohlmann@mdc-berlin.de)

**Open call for
preclinical book
contributors**



1.2: Recommendations on clinical renal MRI acquisition protocols

Aim: develop detailed recommendations on how to acquire renal MRI biomarkers on clinical scanners of all vendors and all field strengths (evidence-driven consensus formation, dynamic approach)

1.2 Recommendation on clinical renal MRI acquisition

Short-term aim: **international panel of experts around each MRI biomarker**

- Representative of the field (all MRI vendors and application areas)
- Open to any MRI scientist with a publication track record

Same guiding principles (all panels):

- Application-specific optimisation
- A solution for every machine in every hospital
- Evidence-driven consensus formation
- Dynamic and version-controlled
- Qualification of implementations

**Looking for renal MRI
biomarker experts
to join the panels –
US experts needed**

Stage 1: Review of recent literature

Stage 2: Collection of protocols

Stage 3: Comparison of protocols

Stage 4: Consensus formation

Stage 5: Publication of recommendations

To join a panel: contact the lead (Steven Sourbron - s.sourbron@leeds.ac.uk)

To know more: <http://www.renalmri.org/taskforce/15>

WG2: research and development toolbox

Aim: answer the need for software tools to analyse renal MRI data and lack of access to data from previous studies by **delivering an open-source R&D Toolbox consisting of a coherent set of databases and software**

**Looking for renal MRI
study data**

2.1: Database

Aim: to implement a database (anonimised patient registry + image bank) and make it available for secondary research

Quibim Precision® imaging biomarker platform

so far: pilot data, DCE

**Live Webinar – QUIBIM platform
Open to anybody**

Live Webinar: using the QUIBIM database platform (24 Jul 2018 -9am-1pm CEST)

<http://www.renalmri.org/action/14>

2.2: Software

Aim: to implement a library of core algorithms alongside a graphical user interface

Next project period

Interested in WG2?

contact Frank (frank.zoellner@medma.uni-heidelberg.de)

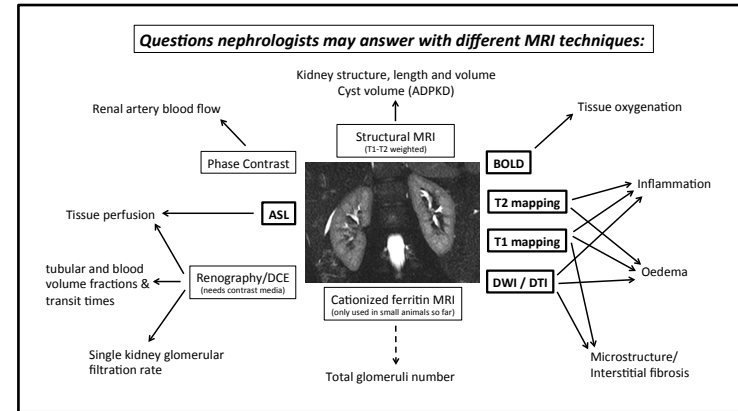
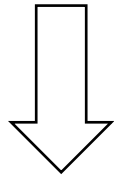


WG3: multi-center clinical trial

WG3 joins up clinical sites working on renal MRI

Aim: to pave the way for clinical use of renal MRI by addressing the need for stronger evidence in patients.

Before planning anything new:
clear picture of what has been done so far



Series of papers on MRI biomarkers in renal disease:

a picture of the state of the art, including practical recommendations

- [Editorial](https://doi.org/10.1093/ndt/gfy181) (doi: 10.1093/ndt/gfy181)

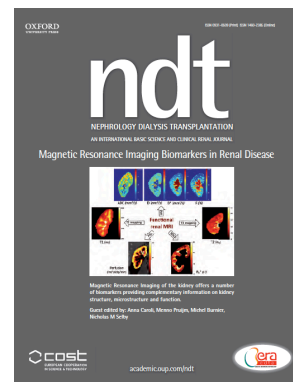
- [Position paper](https://doi.org/10.1093/ndt/gfy152) (doi: 10.1093/ndt/gfy152)

* key clinical questions that MRI must address to become more widely used in patients with kidney disease

* series of practical recommendations to accelerate MRI study and translation

- [Review papers on ASL](https://doi.org/10.1093/ndt/gfy180) (doi: 10.1093/ndt/gfy180), [BOLD MRI](https://doi.org/10.1093/ndt/gfy243) (doi: 10.1093/ndt/gfy243), [DWI](https://doi.org/10.1093/ndt/gfy163) (doi: 10.1093/ndt/gfy163), and [T1/T2 mapping](https://doi.org/10.1093/ndt/gfy198) (doi: 10.1093/ndt/gfy198)

**NDT open access special issue
coming soon**



WG3: multi-center clinical trial

- 3.8 MRI in ADPKD

ADPKD task force

Aim: to secure funding to further validate MRI biomarkers in ADPKD

- 3.9 MRI in renal transplantation

renal transplantation
task force

Aim: to secure funding to further validate MRI biomarkers in renal transplantation

Short-term aims:

- Prepare the ground for a large scale longitudinal multicentre study aimed at providing additional evidence of biological and clinical validity of MRI biomarkers in CKD
- Secure grant funding to validate MRI biomarkers in ADPKD/renal transplantation
- Coordinate smaller scale studies on specific relevant disease areas
- Add MRI to ongoing renal initiative
- Create a study documentation repository, helpful for designing new study protocols

Interested in joining WG3? Contact me (acaroli@marionegri.it)

WG4: training programs

Aim: to develop training programs and workshops on renal imaging for basic scientists and clinical users.

4.2 Clinical training workshop

Aim: set up and run a clinical training school, introducing renal MRI to a clinical audience

focus: potential clinical utility and application areas; insite into the technology; hands-on training in the acquisition, processing and interpretation of renal MRI data

first training school: summer 2019 (2/3 days workshop)

Lead: Roslyn Simms (r.simms@sheffield.ac.uk)

No registration fee

US people can be invited to come and give lessons

Open to anyone (US trainees can not be funded)



Clinical training workshop
Open to anyone

WG5: dissemination and exploitation

Aim: to provide the platform for international stakeholders to merge synergies in the promotion of renal MRI biomarkers for CKD

Project website: www.renalmri.org

Bi-annual international scientific meetings on renal MRI:

1 – Bordeaux, France, 2015 ~80 participants

Provided the momentum for the funding application to COST

2 – Berlin, Germany, 2017 ~150 participants

Co-organised by PARENCHIMA

3 – Nottingham, UK, 2019 ~300 expected participants

Co-organised by PARENCHIMA with the UK renal imaging network

**Next international meeting
on renal MRI: 2019, UK**

4 – outside Europe, 2021

Beyond the funding period of PARENCHIMA

PARENCHIMA will be involved in planning up until May 2021

**Call for 2021 international
meeting organisers**

In summary: how to get involved from the US

To know more: visit the project website – www.renalmri.org

Twitter handle: @PARENCHIMA

To stay up to date: join our mailing list (email Steven - s.sourbron@leeds.ac.uk)

To join a specific WG / task force: contact the leads

WG1: Preclinical book on renal MRI - andreas.pohlmann@mdc-berlin.de

WG1: Recommendations on clinical MRI acquisition - s.sourbron@leeds.ac.uk

WG2: Upload MRI data to QUIBIM - frank.zoellner@medma.uni-heidelberg.de

WG3: biological and clinical validation of MRI biomarkers – acaroli@marionegri.it

WG4: Clinical training workshop - r.simms@sheffield.ac.uk

WG5: International meetings on renal MRI: s.sourbron@leeds.ac.uk

Short-term scientific missions (STSMs): US people can host STSMs

Acknowledgments

Steven Sourbron
COST action PARENCHIMA



Andrea Remuzzi, Norberto Perico, Giuseppe Remuzzi
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Questions?

