QFLOW-MRI® References

Validation Studies

- **Geest RJ van der, Niezen RA, Wall EE van der, Roos A de, Reiber JHC.**

- **Onen F, Feugeas MCH, Marco G de, Baron G, Ravaud P, Legrain S, Moretti JL, Schouman Claeyes E, Peretti II.**
  Cerebrospinal fluid MR dynamics and risk of falls in the elderly.
  *J Neuroradiol* 2005; 32: 3-9

- **Salm LP, Schuijf JD, Lamb HJ, Bax JJ, Vliegen HW, Jukema JW, Wall EE van der, Roos A de, Doornbos J.**
  Validation of a high-resolution, phase contrast cardiovascular magnetic resonance sequence for evaluation of flow in coronary artery bypass grafts.

Other Publications:

1. **Hoogendoorn LI, Pattynama PMT, Buis B, Geest RJ van der, Wall EE van der, Roos A de.**
   Noninvasive evaluation of aortocoronary bypass grafts with magnetic resonance flow mapping.

2. **Helbing WA, Bosch JG, Maliepaard C, et al.**
   Comparison of echocardiographic methods with magnetic resonance imaging for assessment of right ventricular function in children.

   Magnetic resonance imaging assessment of the severity of mitral regurgitation: Comparison with invasive techniques.

4. **Geest RJ van der, Buller VGM, Reiber JHC.**
   Automated quantification of flow velocity and volume in the ascending and descending aorta using MR flow velocity mapping.
5. **Helbing WA, Niezen RA, le Cessie S, Geest RJ van der, Ottenkamp J, Roos A de.**
   Right ventricular diastolic function in children with pulmonary regurgitation after repair of Tetralogy of Fallot: Volumetric evaluation by magnetic resonance velocity mapping.

6. **Niezen RA, Helbing WA, Geest RJ van der, Rebergen SA, Roos A de.**
   Biventricular systolic function and mass studied with MR imaging in children with pulmonary regurgitation after repair for Tetralogy of Fallot.

7. **Kayser HWM, Stoel BC, Wall EE van der, Geest RJ van der, Roos A de.**
   MR velocity mapping of tricuspid flow: Correction for through-plane motion.

8. **Kayser HWM, Schalij MJ, Wall EE van der, Stoel BC, Roos A de.**
   Biventricular function in patients with nonischemic right ventricular tachyarrhythmias assessed with MR imaging.

9. **Roos A de, Helbing WA, Niezen RA, Rebergen SA, Wall EE van der, Ottenkamp J.**
   Magnetic resonance imaging in adult congenital heart disease.

10. **Westenberg JJM, Wasser MNJM, Geest RJ van der, et al.**
    Variations in blood flow waveforms in stenotic renal arteries by 2D phase-contrast Cine MRI.

11. **Geest RJ van der, Niezen RA, Wall EE van der, Roos A de, Reiber JHC.**

12. **Niezen RA, Doornbos J, Wall EE van der, Roos A de.**
    Measurement of aortic and pulmonary flow with MRI at rest and during physical exercise.

13. **Kozerke S, Botnar R, Oyre S, Scheidegger MB, Pedersen EM, Boesiger P.**
    Automatic vessel segmentation using active contours in cine phase contrast flow measurements.
Flow profiles in the left anterior descending and the right coronary artery assessed by
MR velocity quantification: effects of through-plane and in-plane motion of the heart.

15. Geest RJ van der, Reiber JHC.
Quantification in cardiac MRI.

Improved MR Flow mapping in coronary artery bypass grafts during adenosine-induced
stress.

AH, Spaan JAE, Wall EE van der.
Biophysical properties of the normal-sized aorta in patients with Marfan syndrome:
evaluation with MR Flow mapping.

18. Beyerbach HP, Lamb HJ, Laarse A van der, Vliegen HW, Leujes F, Hazekamp
MG, Roos A de, Wall EE van der.
Aortic valve replacement in patients with aortic valve stenosis improves myocardial
metabolism and diastolic function.

Simultaneous noninvasive measurement of blood flow in the great cardiac vein and left
anterior descending artery.

Lamb HJ, Wall EE van der, Roos A de.
MR Flow mapping in coronary artery bypass grafts: a validation study with Doppler
flow measurements.

21. Bedaux WLF, Hofman MBM, Vyt SLA, Bronzwaer JGF, Visser CA, Rossum
AC van.
Assessment of coronary artery bypass graft disease using cardiovascular magnetic
resonance determination of flow reserve.
22. Roest AAW, Roos A de, Lamb HJ, Helbing WA, Aardweg JG van den, Doornbos J, Wall EE van der, Kunz P.
Tetralogy of Fallot: postoperative delayed recovery of left ventricular stroke volume after physical exercise - Assessment with fast MR imaging.

23. Wong P, Graves MJ, Lomas DJ
Integrated physiological flow simulator and pulse sequence monitoring system for MRI

Analysis of an automated background correction method for cardiovascular MR phase contrast imaging in children and young adults.

Assessment of ductal blood flow in newborns with obstructive left heart lesions by cardiovascular magnetic resonance
*J Cardiovasc Magn Reson* 2013; 15: 45

26. Joseph AA
Real-time MRI of moving spins using undersampled radial FLASH
PhD thesis, University of Würzburg, 2013
27. Flacke S, Allen JS, Chia JM, Wible JH, Periasamy MP, Adams MD, Adzamli IK, Lorenz CH.
Characterization of viable and nonviable myocardium at MR imaging: comparison of gadolinium-based extracellular and blood pool contrast materials versus manganese-based contrast materials in a rat myocardial infarction model.

Value of magnetic resonance imaging for the noninvasive detection of stenosis in coronary artery bypass grafts and recipient coronary arteries.

Vein graft function improvement after percutaneous intervention: evaluation with MR Flow mapping.
Radiology 2003; 228 (3): 834-41.

30. Hout RJ van den, Lamb HJ, Aardweg JG van den, Schot R, Steendijk P, Wall EE van der, Bax JJ, Roos A de.
Real-time MR imaging of aortic flow: influence of breathing on left ventricular stroke volume in chronic obstructive pulomonary disease.

31. Paelinck BP, Lamb HJ, Bax JJ, Wall EE van der, Roos A de.
MR flow mapping of dobutamine-induced changes in diastolic heart function.

32. Nollen GJ, Groenink M, Tijssen JGP, Wall EE van der, Mulder BJM.
Aortic stiffness and diameter predict progressive aortic dilatation in patients with Marfan syndrome.

33. Salm LP, Langerak SE, Vliegen HW, Jukema JW, Bax JJ, Zwinderman AH, Wall EE van der, Roos A de, Lamb HJ.

34. Salm LP, Bax JJ, Vliegen HW, Langerak SE, Dibbets P, Jukema JW, Lamb HJ, Pauwels EKJ, Roos A de, Wall EE van der.
JACC 2004; 44 (9): 1877-82.
35. Straten A van, Vliegen HW, Hazekamp MG, Bax JJ, Schoof PH, Ottenkamp J, Wall EE van der, Roos A de.
Right ventricular function after pulmonary valve replacement in patients with tetralogy of fallot.

Accurate and reproducible mitral valvular blood flow measurement with three-directional velocity-encoded magnetic resonance imaging.

37. Paelinck BP, Roos A de, Bax JJ, Bosmans JM, Geest RJ van der, Dhondt D, Parizel PM, Vrints CJ, Lamb HJ.
Feasibility of tissue magnetic resonance imaging. A pilot study in comparison with tissue Doppler imaging and invasive measurement.
JACC 2005; 45(7): 1109-16.

38. Dam VH ten, Box FMA, Craen AJM de, Heuvel DMJ van den, Bollen ELEM, Murray HM, Buchem MA van, Westendorp RGJ, Blauw GJ on behalf of the PROSPER Study Group.
Lack of effect of pravastatin on cerebral blood flow or parenchymal volume loss in elderly at risk for vascular disease.

39. Pul C van, Jong NMCM de, Beek LM van, Pasmans HLM, Wijn PFF, Visser RF.
MRI for diagnosing aortic valve stenosis: a comparison study of MRI and ultrasound.

40. Straten A van, Vliegen HW, Lamb HJ, Roes SD, Wall EE van der, Hazekamp MG, Roos A de.
Time course of diastolic and systolic function improvement after pulmonary valve replacement in adult patients with tetralogy of fallot.
JACC 2005; 46(8):1559-64.

41. Oshinski JN, Curtin JL, Loth F.
Mean-average wall shear stress measurements in the common carotid artery.

42. Grotenhuis HB, Ottenkamp J, Westenberg JJM, Bax JJ, Kroft LJM, Roos A de.
Reduced aortic elasticity and dilatation are associated with aortic regurgitation and left ventricular hypertrophy in nonstenotic bicuspid aortic valve patients.
43. Dam VH ten, Heuvel DMJ van den, Craen AJM de, Bollen ELEM, Murray HM, Westendorp RGJ, Blauw GJ, Buchem MA van.
Decline in total cerebral blood flow is linked with increase in periventricular but not deep white matter hyperintensities.

44. Salm LP, Schuijf JD, Lamb HJ, Bax JJ, Vliegen HW, Jukema JW, Wall EE van der, Roos A de, Doornbos J.
Validation of a high-resolution, phase contrast cardiovascular magnetic resonance sequence for evaluation of flow in coronary artery bypass grafts.

45. Meer RW van der, Diamant M, Westenberg JJM, Doornbos J, Bax JJ, Roos A de, Lamb HJ.
Magnetic resonance assessment of aortic pulse wave velocity, aortic distensibility, and cardiac function in uncomplicated type 2 diabetes mellitus.

46. Westenberg JJM, Lamb HJ, Geest RJ van der, Bleeker GB, Holman ER, Schalij MJ, Roos A de, Wall EE van der, Reiber JHC, Bax JJ.
Assessment of left ventricular dyssynchrony in patients with conduction delay and idiopathic dilated cardiomyopathy. Head-to-head comparison between tissue doppler imaging and velocity-encoded magnetic resonance imaging.

47. Grotenhuis HB, Kroft LJM, Elderen SGC van, Westenberg JJM, Doornbos J, Hazekamp MG, Vliegen HW, Ottenkamp J, Roos A de.
Right ventricular hypertrophy and diastolic dysfunction in arterial switch patients without pulmonary artery stenosis.
*Heart* 2007;93:1604-1608.

Right coronary artery flow impairment in patients with pulmonary hypertension.

49. Grotenhuis HB, Roos A de, Ottenkamp J, Schoof PH, Vliegen HW, Kroft LJM.
MR imaging of right ventricular function after the Ross procedure for aortic valve replacement: initial experience.

50. Johnson K, Sharma P, Oshinski J.
Coronary artery flow measurement using navigator echo gated phase contrast magnetic resonance velocity mapping at 3.0 T.
46. Meer RW van der, Hammer S, Smit JWA, Frölich M, Bax JJ, Diamant M, Rijzewijk LJ, Roos A de, Romijn JA, Lamb HJ.

47. Hammer S, Meer RW van der, Lamb HJ, Schär M, Roos A de, Smit JWA, Romijn JA.

48. Westenberg JJM, Braun J, Veire NR van de, Klautz RJM, Versteegh MIM, Roes SD, Geest RJ van der, Roos A de, Wall EE van der, Reiber JHC, Bax JJ, Dion RAE.


51. Rijzewijk LJ, Meer RW van der, Smit JWA, Diamant M, Bax JJ, Hammer S, Romijn JA, Roos de A, Lamb HJ.

52. Westenberg JJM, Roes SD, Marsan NA, Binnendijk NMJ, Doornbos J, Bax JJ, Reiber JHC, Roos A de, Geest RJ van der.


60. Hulst AE van der, Westenberg JJM, Kroft LJM, Bax JJ, Blom NA, Roos A de, Roest AAW
Tetralogy of Fallot: 3D velocity-encoded MR imaging for evaluation of right ventricular valve flow and distolic function in patients after correction
*Radiology* 2010; 256: 724-734

61. Elderen SGC van, Brandts A, Grond J van der, Westenberg JJM, Kroft LJM, Buchem MA van, Smit JWA, Roos A de.
Cerebral perfusion and aortic stiffness are independent predictors of white matter brain atrophy in type 1 diabetic patients assessed with magnetic resonance imaging.
*Diabetes Care* 2011; 34:459-463

62. Rüssel IK, Brouwer WP, Germans Tj, Knaapen P, Marcus JT, Velden J van der, Götte MJW, Rossum AC van
Increased left ventricular torsion in hypertrophic cardiomyopathy mutation carriers with normal wall thickness.

63. Marsan NA, Westenberg JJM, Roes SD, Bommel RJ van, Delgado V, Geest RJ van der, Roos A de, Klautz RJ, Reiber JC, Bax JJ
Three-dimensional echocardiography for the preoperative assessment of patients with left ventricular aneurysm

64. Bonekamp D, Degaonkar M, Barker PB.
Quantitative cerebral blood flow in dynamic susceptibility contrast MRI using total cerebral flow from phase contrast magnetic resonance angiography.
*Magnetic Res. in Medicine* (2011); 66:57-66

Multiple myocardial crypts on modified long-axis view are a specific finding in pre-hypertrophic HCM mutation carriers.
*Eur Heart J-Cardiovasc Imaging* 2012; 13: 292-297

Fetal circulation in left-sided congenital heart disease measured by cardiovascular magnetic resonance: a case-control study

Real-Time Flow MRI of the aorta at a resolution of 40 msec
*JMRI* 2013

Determinants and normal values of ascending aortic diameter by age, gender, and race/ethnicity in the Multi-Ethnic Study of Atherosclerosis (MESA).


Coupling of vessel wall morphology and function in the aorta and the carotid artery: an evaluation with MRI.
*Int J Cardiovasc Imaging* 2014; 30: 91-98

Fully automated tool to identify the aorta and compute flow using phase-contrast MRI: validation and application in a large population based study.
*J Magn Reson Imaging* 2014; 40: 221-228.

Direct measurement of aortic regurgitation with phase-contrast magnetic resonance is inaccurate: proposal of an alternative method of quantitation.
*Pediatr Radiol* 2014; 44; 1358-1369

Role of stress echocardiography in operated Fallot: feasibility and detection of right ventricular response.
*J Am Soc Echocardiogr* 2014; 27: 1319-1328

73. Dragulescu A, Friedberg MK, Grosse-Wortmann L, Redington A, Mertens L
Effect of chronic right ventricular volume overload on ventricular interaction in patients after Tetralogy of Fallot repair
*J Am Soc Echocardiography* 2014; 27(8): 896-902

Real-time phase-contrast flow MRI of the ascending aorta and superior vena cava as a function of intrathoracic pressure (Valsalva manoeuvre).
*Br J Radiol* 2014 (in press)

75. Das A, Wansapura JP, Gottliebson WM, Banerjee RK
Methodology for implementing patient-specific spatial boundary condition during a cardiac cycle from phase-contrast MRI for hemodynamic assessment.
*Medical Image Analysis* 2014; on-line 20 sept 2014

11β-Hydroxysteroid dehydrogenase activity in brain does not contribute to systemic interconversion of cortisol and cortisone in healthy men
77. Park E-A, Lee W, Kim H-K, Chung JW
Effect of papillary muscles and trabeculæ on left ventricular measurement using cardiovascular magnetic resonance imaging in patients with hypertrophic cardiomyopathy.
*Korean J Radiol* 2015; 16(1): doi.org/10.3348/kjr.2015.16.1.4

BNP and haematological parameters are markers of severity of Ebstein’s anomaly: correlation with CMR and cardiopulmonary exercise testing
*Eur Heart J Cardiovasc Imaging* 2015; doi/10.1093/ehjci/jeu312

Elevated plasma B-type natriuretic peptide concentration and resistive index, but not decreased aortic distensibility, associate with impaired blood flow at popliteal artery in type 2 diabetic patients

80. Tsai-Goodman B, Zhu MY, Al-Rujaib M, Seed M, Macgowan CK
Foetal blood flow measured using phase-contrast cardiovascular magnetic resonance – preliminary data comparing 1.5T with 3.0 T

Pulmonary regurgitant volume is superior to fraction using background-corrected phase contrast MRI in determining the severity of regurgitation in repaired tetralogy of Fallot

82. Kröner ESJ, Grond J van der, Westenberg JJM, Wall EE van der, Siebelink H-MJ, Lamb HJ
Morphological and functional carotid vessel wall properties in relation to cerebral white matter lesions in myocardial infarction patients.

Cardiovascular outcome associations among cardiovascular magnetic resonance measures of arterial stiffness: the Dallas heart study