

Appendix E1: Search Strategy for PubMed

1. PubMed searched for “T1 mapping AND heart.” (No date limits set, last searched March 5th, 2018)
2. Citations exported to a database.
3. PubMed searched for “Native T1 AND heart.” (No date limits set, last searched March 5th, 2018)
4. Citations exported to previously generated database.
5. PubMed searched for “ECV AND heart.” (No date limits set, last searched March 5th, 2018)
6. Citations exported to previously generated database.
7. Duplicates were identified using PMID and removed.
8. Titles were screened. If study was obviously not applicable to the meta-analysis and systematic review based on title alone the citation was removed.
9. Abstracts were thoroughly reviewed for inclusion. If study was deemed to not meet inclusion criteria by data provided in the abstract the citation was removed.
10. Full references were thoroughly reviewed for inclusion.
11. Reference lists of eligible articles were reviewed to identify any additional articles.

References of Articles Included in Meta-analysis and Systematic Review

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Table E1A: Native T1 Studies at 1.5 T

| Author | Year | Method | Vendor | FS (T) | Technique | Sequence | FA (°) | N | % Male | Age (years) | Native T1 Mean (ms) | SD (ms) |
|--------------------------|------|--------|---------|--------|-----------|-------------|--------|----|--------|-------------|---------------------|---------|
| Alam et al; subgroup 1 | 2015 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 20 | 45% | 34 | 1014 | 22 |
| Al-Wakeel-Marquard et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 17 | 53% | 24 | 995 | 18 |
| ausdemSiepen et al | 2015 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 56 | 66% | 52 | 1020 | 40 |
| Banyspersad et al | 2015 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1) | 35 | 54 | 46% | 46 | 954 | 34 |
| Bohnen et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)5 | 35 | 13 | 85% | 38 | 1039 | 16 |
| Bohnen et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)5 | 35 | 27 | 70% | 40 | 1040 | 19 |
| Bull et al | 2013 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 33 | 64% | 62 | 944 | 16 |
| Bulluck et al | 2016 | P | Siemens | 1.5 | MOLLI | 5 (3)3 (3)3 | 35 | 20 | 90% | 60 | 1000 | 25 |
| Cao et al | 2018 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 20 | 53% | 54 | 1012 | 26 |
| Chen et al | 2015 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 15 | 73% | 54 | 1000 | 46 |
| Chen et al | 2017 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 10 | 40% | 38 | 1004 | 27 |
| Chow et at | 2016 | P | Siemens | 1.5 | MOLLI | 5 (4)3 | 35 | 10 | 60% | 33 | 943 | 22 |
| Dabir et al; subgroup 1 | 2014 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 58 | 51% | 44 | 952 | 23 |
| Dabir et al; subgroup 3 | 2014 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 34 | 52% | 41 | 950 | 21 |
| Edwards et al | 2015 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | | 43 | 56% | 57 | 955 | 30 |
| Ertel et al | 2015 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 30 | 47% | 52 | 971 | 41 |
| Ferreira et al | 2012 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 21 | 38% | 55 | 944 | 17 |
| Ferreira et al | 2013 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 45 | 78% | 42 | 941 | 18 |
| Ferreira et al | 2014 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 50 | 74% | 41 | 946 | 23 |
| Ferreira et al | 2016 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 31 | 45% | 50 | 954 | 16 |
| Fontana et al | 2014 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 52 | 33% | 46 | 967 | 34 |
| Fontana et al | 2015 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1) | 35 | 47 | 45% | 45 | 968 | 36 |
| Goebel et al | 2015 | R | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 54 | 57% | 48 | 955 | 34 |
| Greulich et al | 2017 | P | Siemens | 1.5 | MOLLI | 3 (3)3 | 35 | 20 | | | 952 | 15 |
| Greulich et al | 2017 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (0)1 | 35 | 20 | | | 959 | 21 |
| Hanneman et al | 2016 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 10 | 50% | 32 | 1006 | 34 |
| Hanneman et al | 2017 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 10 | 50% | 32 | 980 | 51 |
| Heck et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (2)3 (2)5 | 35 | 69 | 0% | 51 | 1005 | 32 |
| Homsí et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 20 | 50% | 63 | 968 | 24 |
| Homsí et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 25 | 52% | 60 | 967 | 17 |
| Huber et al | 2018 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 20 | 45% | 47 | 965 | 25 |
| Karamitsos et al | 2013 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 36 | 61% | 59 | 958 | 20 |

| | | | | | | | | | | | | |
|--------------------------------|------|---|---------|-----|---------|-------------|----|------|------|----|------|----|
| Kato et al | 2016 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 11 | 91% | 57 | 1042 | 20 |
| Kawel-Boehm et al | 2014 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 20 | 55% | 33 | 956 | 25 |
| Kellman et al | 2012 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 62 | 48% | 43 | 965 | 35 |
| Knobelsdorff-Brenkenhoff et al | 2017 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 18 | 78% | 37 | 975 | 17 |
| Kuruville et al | 2015 | P | Siemens | 1.5 | MOLLI | 3 (3)5 | 35 | 22 | 32% | 54 | 976 | 35 |
| Liu et al | 2013 | R | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 1231 | 49% | 67 | 977 | 42 |
| Liu et al | 2017 | R | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 70 | 64% | 48 | 938 | 21 |
| Liu et al; subgroup 1 | 2016 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 10 | 70% | 32 | 954 | 19 |
| Luetkens et al | 2016 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 50 | 60% | 39 | 967 | 28 |
| Luetkens et al | 2016 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 45 | 62% | 40 | 965 | 28 |
| Luetkens et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 35 | 66% | 41 | 967 | 31 |
| Malek et al | 2015 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 20 | 60% | 27 | 939 | 22 |
| Mayr et al | 2016 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | | 20 | | | 962 | 15 |
| Mehta et al | 2015 | P | Siemens | 1.5 | MOLLI | 5 (4)3 | 35 | 10 | 80% | 24 | 971 | 14 |
| Messroghli et al | 2006 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 15 | 60% | 33 | 977 | 63 |
| Messroghli et al | 2007 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 20 | 55% | 24 | 939 | 24 |
| Miller et al | 2013 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 30 | 50% | 45 | 1045 | 47 |
| Mordi et al | 2016 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 21 | 100% | 48 | 952 | 31 |
| Nacif et al | 2011 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 14 | 57% | 38 | 1034 | 56 |
| Nordio et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 10 | | | 881 | 32 |
| Ntusi et al | 2014 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 20 | 5% | 56 | 958 | 20 |
| Ntusi et al | 2015 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 39 | 72% | 49 | 961 | 18 |
| Ntusi et al | 2016 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 92 | 58% | 44 | 956 | 24 |
| Piechnik et al | 2013 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 342 | 49% | 38 | 962 | 25 |
| Piechnik et al; subgroup 1 | 2010 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 10 | 70% | 35 | 966 | 48 |
| Piechnik et al; subgroup 2 | 2010 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 10 | 70% | 35 | 976 | 46 |
| Radunski et al | 2014 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 21 | 81% | 34 | 1051 | 22 |
| Radunski et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)5 | 35 | 20 | 80% | 37 | 1051 | 16 |
| Radunski et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)5 | 35 | 20 | 90% | 31 | 1055 | 24 |
| Rauhalammi et al; subgroup 1 | 2016 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 84 | 49% | 58 | 944 | 25 |
| Reiter et al | 2004 | P | Siemens | 1.5 | MOLLI | 5 (4)2 | 35 | 40 | 50% | 28 | 984 | 28 |
| Rodrigues et al | 2017 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 29 | 60% | 46 | 1024 | 41 |
| Rogers et al; subgroup 1 | 2013 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 38 | 65% | 49 | 952 | 41 |
| Roller et al | 2017 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 24 | 50% | 61 | 957 | 24 |
| Sado et al | 2015 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | 67 | 45% | 46 | 968 | 32 |

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|---------------------------|------|---|---------|-----|---------|-------------|----|----|------|----|------|----|
| Salerno et al; subgroup 1 | 2012 | P | Siemens | 1.5 | MOLLI | 3 (3)5 | 35 | 10 | | 34 | 966 | 31 |
| Salerno et al; subgroup 2 | 2012 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 10 | | 34 | 974 | 22 |
| Schmacht et al | 2016 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 50 | 17 | 29% | 54 | 992 | 28 |
| Soslow et al | 2016 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 11 | 100% | 25 | 988 | 14 |
| Tahir et al | 2017 | P | Philips | 1.5 | MOLLI | 5 (3)3 | | 36 | 61% | 42 | 1032 | 26 |
| Tessa et al | 2015 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 22 | 86% | 42 | 961 | 28 |
| Treibel et al | 2015 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1) | | 50 | 52% | 45 | 955 | 30 |
| Zhang et al | 2015 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | | 12 | 50% | 50 | 964 | 33 |
| Zorach et al | 2018 | P | Siemens | 1.5 | MOLLI | 5 (4)3 | 35 | 20 | 26% | 58 | 987 | 35 |

Note.—Table of all native T1 studies at 1.5T. Method = recruitment method, P = prospectively recruited, R = retrospectively recruited, FS = field strength, Technique = pulse sequence scheme, MOLLI = Modified Look-Locker Inversion Recovery, ShMOLLI = Shortened Modified Look-Locker Inversion Recovery, Sequence = number of phases (number of heartbeats), FA = flip angle, N = number of subjects in study, SD = standard deviation.

Table E1B: Native T1 Studies at 3.0 T

| Author | Year | Method | Vendor | FS (T) | Technique | Sequence | FA (°) | N | % Male | Age (years) | Native T1 Mean (ms) | SD (ms) |
|--------------------------------|------|--------|---------|--------|-----------|-------------|--------|----|--------|-------------|---------------------|---------|
| Alam et al; subgroup 2 | 2015 | P | Siemens | 3 | MOLLI | 3 (3)5 | 35 | 20 | 45% | 34 | 1165 | 28 |
| Blaszczyk et al | 2017 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 29 | 45% | 52 | 1133 | 29 |
| Cameron et al | 2016 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 10 | 60% | 59 | 1192 | 30 |
| Child et al | 2017 | P | Philips | 3 | MOLLI | 3 (3)3 (2)5 | 50 | 26 | 42% | 53 | 1055 | 20 |
| Chin et al | 2014 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 20 | 50% | 55 | 1180 | 28 |
| Chin et al | 2017 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 37 | 65% | 68 | 1166 | 27 |
| Costello et al | 2017 | P | Siemens | 3 | ShMOLLI | 5 (1)1 (1)1 | 35 | 57 | 51% | 48 | 1123 | 47 |
| Dabir et al; subgroup 2 | 2014 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 55 | 51% | 44 | 1053 | 24 |
| Dabir et al; subgroup 4 | 2014 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 32 | 52% | 41 | 1052 | 23 |
| Dass et al | 2012 | P | Siemens | 3 | ShMOLLI | 5 (1)1 (1)1 | 35 | 12 | 58% | 52 | 1178 | 13 |
| Gao et al | 2016 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 23 | 0% | 35 | 1066 | 48 |
| Gormeli et al | 2016 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 41 | 63% | 24 | 1174 | 36 |
| Hamilton et al | 2017 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | | 11 | | | 1247 | 65 |
| Hinojar et al | 2016 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 46 | 20% | 42 | 1057 | 23 |
| Hong et al | 2015 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 10 | 70% | 54 | 1205 | 37 |
| Hromadka et al | 2017 | P | Siemens | 3 | MOLLI | 5 (3)3 | 35 | 20 | 50% | 54 | 1192 | 33 |
| Kawel et al | 2012 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 24 | 33% | 28 | 1273 | 39 |
| Knobelsdorff-Brenkenhoff et al | 2013 | P | Siemens | 3 | MOLLI | 3 (3)5 | 35 | 60 | 50% | 48 | 1159 | 46 |
| Kvernby et al | 2014 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 10 | 90% | 34 | 1089 | 54 |
| Kvernby et al | 2017 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 10 | 60% | 38 | 1145 | 10 |

| | | | | | | | | | | | | |
|------------------------------|------|---|---------|---|---------|-------------|----|-----|------|----|------|----|
| Lee et al | 2015 | P | Siemens | 3 | MOLLI | 3 (3)5 | | 15 | 60% | 33 | 1169 | 21 |
| Lee et al | 2017 | P | Siemens | 3 | MOLLI | 3 (3)5 | | 33 | 48% | 69 | 1185 | 37 |
| Lee et al; subgroup 1 | 2011 | P | Siemens | 3 | MOLLI | 3 (3)5 | 35 | 11 | 45% | 36 | 1314 | 39 |
| Lee et al; subgroup 2 | 2011 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 11 | 45% | 36 | 1324 | 48 |
| Levelt et al | 2016 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 20 | 45% | 54 | 1184 | 28 |
| Levelt et al | 2017 | P | Siemens | 3 | ShMOLLI | 5 (1)1 (1)1 | 35 | 16 | 53% | 51 | 1194 | 26 |
| Lin et al | 2018 | P | Siemens | 3 | MOLLI | 5 (3)3 | 20 | 20 | 50% | 53 | 1283 | 46 |
| Liu et al | 2014 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 92 | 41% | 37 | 1232 | 28 |
| Liu et al; subgroup 2 | 2016 | P | Siemens | 3 | ShMOLLI | 5 (1)1 (1)1 | 35 | 10 | 70% | 36 | 1189 | 34 |
| Luetkens et al | 2014 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 42 | 64% | 39 | 1089 | 45 |
| Luetkens et al | 2016 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 22 | 68% | 45 | 1087 | 55 |
| Mahmod et al | 2014 | P | Siemens | 3 | ShMOLLI | 5 (1)1 (1)1 | 35 | 16 | 53% | 63 | 1168 | 27 |
| McDiarmid et al | 2016 | P | Philips | 3 | MOLLI | 5 (3)3 | 35 | 15 | 100% | 30 | 1202 | 33 |
| McDiarmid et al; subgroup 1 | 2015 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 10 | 70% | 27 | 1159 | 33 |
| McDiarmid et al; subgroup 2 | 2015 | P | Philips | 3 | MOLLI | 4 (3)3 (3)2 | 50 | 10 | 70% | 27 | 1168 | 24 |
| McDiarmid et al; subgroup 3 | 2015 | P | Philips | 3 | MOLLI | 5 (3)3 | 50 | 10 | 70% | 27 | 1171 | 26 |
| McDiarmid et al; subgroup 4 | 2015 | P | Philips | 3 | MOLLI | 4 (3)3 (3)2 | 35 | 10 | 70% | 27 | 1182 | 23 |
| McDiarmid et al; subgroup 5 | 2015 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 10 | 70% | 27 | 1185 | 23 |
| McDiarmid et al; subgroup 6 | 2015 | P | Philips | 3 | MOLLI | 5 (3)3 | 35 | 10 | 70% | 27 | 1189 | 33 |
| Mordi et al | 2017 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 28 | 50% | 68 | 1194 | 29 |
| Piechnik et al; subgroup 3 | 2010 | P | Siemens | 3 | ShMOLLI | 5 (1)1 (1)1 | 35 | 10 | 70% | 35 | 1166 | 62 |
| Piechnik et al; subgroup 4 | 2010 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 10 | 70% | 35 | 1169 | 45 |
| Puntmann et al | 2013 | P | Philips | 3 | MOLLI | 3 (3)5 | 50 | 21 | 23% | 38 | 1056 | 27 |
| Puntmann et al | 2013 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 30 | 63% | 43 | 1070 | 55 |
| Puntmann et al | 2014 | P | Philips | 3 | MOLLI | 3 (3)5 | 50 | 47 | 52% | 51 | 1055 | 22 |
| Puntmann et al | 2017 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 36 | 39% | 43 | 1052 | 25 |
| Rauhalammi et al; subgroup 2 | 2016 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 84 | 49% | 45 | 1154 | 26 |
| Rogers et al; subgroup 2 | 2013 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 38 | 65% | 49 | 1087 | 60 |
| Rutherford et al | 2016 | P | Siemens | 3 | MOLLI | | 35 | 28 | 57% | 60 | 1154 | 32 |
| Scally et al | 2018 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 37 | 3% | 64 | 1184 | 10 |
| Schwarz et al | 2017 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 44 | 10% | 67 | 1189 | 16 |
| Singh et al | 2015 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 22 | 68% | 68 | 1092 | 34 |
| Storz et al | 2017 | P | Siemens | 3 | MOLLI | 5 (3)3 | 35 | 218 | 50% | 54 | 1202 | 46 |
| Teixeira et al; subgroup 1 | 2016 | P | Siemens | 3 | ShMOLLI | 5 (1)1 (1)1 | 35 | 40 | 45% | 59 | 1174 | 37 |
| Teixeira et al; subgroup 2 | 2016 | P | Siemens | 3 | MOLLI | 5 (3)3 | 35 | 40 | 45% | 59 | 1199 | 28 |

| | | | | | | | | | | | | |
|-------------------|------|---|---------|---|-------|-------------|----|----|-----|----|------|----|
| Weingartner et al | 2016 | P | Siemens | 3 | MOLLI | 5 (3)3 | 35 | 20 | 50% | 27 | 1183 | 36 |
| Wu et al | 2016 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 14 | 57% | 51 | 1115 | 37 |
| Wu et al | 2017 | P | Philips | 3 | MOLLI | 5 (3)3 | 35 | 12 | 33% | 56 | 1134 | 27 |
| Wu et al | 2018 | P | Philips | 3 | MOLLI | | 35 | 12 | 42% | | 1115 | 37 |
| Youn et al | 2017 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 19 | 65% | 54 | 1214 | 37 |
| Zhao et al | 2016 | P | Siemens | 3 | MOLLI | 5 (3)3 | 35 | 13 | 77% | 53 | 1248 | 32 |
| Zhou et al | 2017 | P | Philips | 3 | MOLLI | 5 (3)3 | 35 | 14 | 64% | 45 | 1096 | 42 |

Note.—Table of all native T1 studies at 3.0 T. Method = recruitment method, P = prospectively recruited, R = retrospectively recruited, FS = field strength, Technique = pulse sequence scheme, MOLLI = Modified Look-Locker Inversion Recovery, ShMOLLI = Shortened Modified Look-Locker Inversion Recovery, Sequence = number of phases (number of heartbeats), FA = flip angle, N = number of subjects in study, SD = standard deviation.

Table E2: ECV Studies

A. ECV Studies at 1.5 T

| Author | Year | Method | Vendor | FS (T) | Technique | Sequence | FA (°) | PC Time (min) | Contrast | Dose (mmol/kg) | N | % Male | Age (years) | ECV Mean (%) | SD (%) |
|--------------------------|------|--------|---------|--------|-----------|-------------|--------|---------------|------------|----------------|----|--------|-------------|--------------|--------|
| Al-Wakeel-Marquard et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 15 | Dotarem | 0.1 | 17 | 53% | 24 | 26.0 | 2.0 |
| aus dem Siepen et al | 2015 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 10 | Magnevist | 0.2 | 56 | 66% | 52 | 23.0 | 3.0 |
| Banyspersad et al | 2015 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1) | 35 | 15 | Dotarem | 0.1 | 54 | 46% | 46 | 25.0 | 2.0 |
| Bohnen et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)5 | 35 | 15 | Multihance | 0.075 | 13 | 85% | 38 | 25.0 | 1.0 |
| Bohnen et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)5 | 35 | 15 | Multihance | 0.08 | 27 | 70% | 40 | 25.0 | 1.0 |
| Brouwer et al | 2014 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 14 | Magnevist | 0.2 | 14 | 57% | 48 | 26.0 | 2.0 |
| Bulluck et al | 2016 | P | Siemens | 1.5 | MOLLI | 5 (3)3 (3)3 | 35 | 15 | Dotarem | 0.1 | 20 | 90% | 60 | 26.4 | 2.1 |
| Cao et al | 2018 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 15 | Magnevist | 0.2 | 20 | 53% | 54 | 24.6 | 2.2 |
| Chen et al | 2015 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 15 | Magnevist | 0.2 | 15 | 73% | 54 | 23.3 | 2.0 |
| Dabir et al; subgroup 1 | 2014 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 18 | Gadovist | 0.15 | 58 | 51% | 44 | 26.0 | 6.0 |
| Dabir et al; subgroup 2 | 2014 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 18 | Gadovist | 0.15 | 34 | 52% | 41 | 25.0 | 4.0 |
| Edwards et al | 2015 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | | 17.5 | Gadovist | 0.15 | 43 | 56% | 57 | 25.0 | 3.0 |
| Ertel et al | 2015 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 15 | Magnevist | 0.15 | 30 | 47% | 52 | 26.0 | 2.4 |
| Florian et al | 2014 | P | Siemens | 1.5 | MOLLI | 3 (3)5 | 35 | 17.5 | Magnevist | 0.15 | 17 | 100% | 33 | 24.0 | 2.0 |
| Fontana et al | 2012 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1) | 35 | 62.5 | Dotarem | 0.1 | 50 | 53% | 47 | 27.0 | 3.0 |
| Fontana et al | 2015 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1) | 35 | 62.5 | Dotarem | 0.1 | 47 | 45% | 45 | 27.0 | 3.0 |
| Greulich et al | 2017 | P | Siemens | 1.5 | MOLLI | 3 (3)3 | 35 | 20 | Magnevist | 0.15 | 20 | | | 24.5 | 1.0 |
| Greulich et al | 2017 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (0)1 | 35 | 20 | Magnevist | 0.15 | 20 | | | 25.0 | 1.1 |
| Hanneman et al | 2016 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 10 | Gadovist | 0.2 | 10 | 50% | 32 | 27.1 | 3.1 |
| Hanneman et al | 2017 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 15 | Gadovist | 0.2 | 10 | 50% | 32 | 24.9 | 4.0 |

| | | | | | | | | | | | | | | | |
|--------------------------------|------|---|---------|-----|---------|-------------|----|------|------------|-------|------|------|----|------|-----|
| Heck et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (2)3 (2)5 | 35 | 15 | Dotarem | 0.2 | 69 | 0% | 51 | 27.5 | 2.7 |
| Homsí et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 10 | Gadovist | 0.2 | 20 | 50% | 63 | 28.0 | 3.8 |
| Huber et al | 2018 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 15 | Multihance | 0.2 | 20 | 45% | 47 | 22.0 | 3.0 |
| Kellman et al | 2012 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 17.5 | Magnevist | 0.15 | 62 | 48% | 43 | 25.4 | 2.5 |
| Knobelsdorff-Brenkenhoff et al | 2017 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 10 | Gadovist | 0.15 | 18 | 78% | 37 | 27.1 | 6.0 |
| Kuruvilla et al | 2015 | P | Siemens | 1.5 | MOLLI | 3 (3)5 | 35 | 15 | Magnevist | 0.15 | 22 | 32% | 54 | 26.0 | 2.0 |
| Liu et al | 2013 | R | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 25 | Magnevist | 0.15 | 1231 | 49% | 67 | 27.0 | 2.9 |
| Luetkens et al | 2016 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 11 | Gadovist | 0.2 | 50 | 60% | 39 | 27.7 | 6.0 |
| Luetkens et al | 2016 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 10 | Gadovist | 0.2 | 45 | 62% | 40 | 26.1 | 3.2 |
| Luetkens et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 10 | Gadovist | 0.2 | 35 | 66% | 41 | 26.7 | 4.8 |
| Mayr et al | 2016 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | | 20 | Magnevist | 0.15 | 20 | | | 25.0 | 1.1 |
| Mehta et al | 2015 | P | Siemens | 1.5 | MOLLI | 5 (4)3 | 35 | 25 | Magnevist | 0.15 | 10 | 80% | 24 | 27.1 | 1.4 |
| Miller et al; subgroup 1 | 2013 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 15 | Magnevist | 0.2 | 10 | 50% | 46 | 25.8 | 2.8 |
| Miller et al; subgroup 2 | 2013 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 15 | Magnevist | 0.15 | 10 | 50% | 45 | 25.8 | 3.4 |
| Miller et al; subgroup 3 | 2013 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 15 | Magnevist | 0.1 | 10 | 50% | 44 | 27.7 | 3.7 |
| Mordi et al | 2016 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 10 | Gadovist | 0.15 | 21 | 100% | 48 | 26.2 | 2.9 |
| Ntusi et al | 2014 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1) | 35 | 20 | Dotarem | 0.15 | 20 | 5% | 56 | 27.6 | 2.5 |
| Ntusi et al | 2015 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1) | 35 | 20 | Dotarem | 0.15 | 39 | 72% | 49 | 27.9 | 2.0 |
| Radunski et al | 2014 | P | Philips | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 15 | Multihance | 0.075 | 21 | 81% | 34 | 25.0 | 1.1 |
| Radunski et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)5 | 35 | 15 | Multihance | 0.075 | 20 | 80% | 37 | 26.0 | 1.1 |
| Radunski et al | 2017 | P | Philips | 1.5 | MOLLI | 3 (3)5 | 35 | 15 | Multihance | 0.08 | 20 | 90% | 31 | 25.0 | 1.0 |
| Rauhalaami et al | 2016 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 12.5 | Magnevist | 0.15 | 37 | 49% | 58 | 25.0 | 2.3 |
| Roller et al | 2017 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 15 | Multihance | 0.15 | 24 | 50% | 61 | 23.0 | 2.0 |
| Salerno et al; subgroup 1 | 2012 | P | Siemens | 1.5 | MOLLI | 3 (3)5 | 35 | 30 | Magnevist | 0.1 | 10 | | 34 | 28.5 | 1.7 |
| Salerno et al; subgroup 2 | 2012 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 30 | Magnevist | 0.1 | 10 | | 34 | 28.5 | 1.8 |
| Schmacht et al | 2016 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 50 | 15 | ProHance | 0.2 | 17 | 29% | 54 | 26.8 | 3.0 |
| Soslow et al | 2016 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | 35 | 15 | Magnevist | 0.2 | 11 | 100% | 25 | 24.0 | 1.0 |
| Tahir et al | 2017 | P | Philips | 1.5 | MOLLI | 5 (3)3 | | 15 | Dotarem | 0.2 | 36 | 61% | 42 | 26.0 | 3.0 |
| Thuny et al | 2014 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 50 | 10 | Dotarem | 0.2 | 16 | 50% | 50 | 26.8 | 1.4 |
| Treibel et al | 2015 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1) | | 30 | Dotarem | 0.1 | 50 | 52% | 45 | 26.1 | 2.4 |
| Treibel et al | 2017 | P | Siemens | 1.5 | ShMOLLI | 5 (1)1 (1)1 | 35 | | Dotarem | 0.1 | 30 | 44% | 41 | 28.0 | 2.9 |
| Ugander et al | 2012 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 17.5 | Magnevist | 0.15 | 60 | 52% | 49 | 26.0 | 3.0 |
| VanOoji et al | 2016 | P | Siemens | 1.5 | MOLLI | 3 (3)3 (3)5 | 35 | 17.5 | Magnevist | 0.1 | 10 | 60% | 45 | 28.0 | 4.0 |
| Wang et al | 2017 | P | Siemens | 1.5 | MOLLI | 5 (3)3 | | 20 | Magnevist | 0.2 | 97 | 71% | 50 | 26.9 | 2.7 |
| Zorach et al | 2018 | P | Siemens | 1.5 | MOLLI | 5 (4)3 | 35 | 15 | Magnevist | 0.15 | 20 | 26% | 58 | 27.1 | 2.2 |

Note.—Table of all extracellular volume (ECV) studies at 1.5 T. Method = recruitment method, P = prospectively recruited, R = retrospectively recruited, FS = field strength, Technique = pulse sequence scheme, MOLLI = Modified Look-Locker Inversion Recovery, ShMOLLI = Shortened Modified Look-Locker Inversion Recovery, Sequence = number of phases (number of heartbeats), FA = flip angle, PC time = time of measurement postcontrast injection, N = number of subjects in study, SD = standard deviation.

B. ECV Studies at 3.0 T

| Author | Year | Method | Vendor | FS (T) | Technique | Sequence | FA (°) | PC Time (min) | Contrast | Dose (mmol/kg) | N | % Male | Age (years) | ECV Mean (%) | SD (%) |
|-----------------------------|------|--------|---------|--------|-----------|-------------|--------|---------------|------------|----------------|----|--------|-------------|--------------|--------|
| Child et al | 2017 | P | Philips | 3 | MOLLI | 3 (3)3 (2)5 | 50 | 25 | Gadovist | 0.1 | 26 | 42% | 53 | 26.0 | 4.0 |
| Chin et al | 2014 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 20 | Gadovist | 0.1 | 20 | 50% | 55 | 26.0 | 1.6 |
| Chin et al | 2017 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 20 | Gadovist | 0.1 | 37 | 65% | 68 | 26.5 | 1.3 |
| Costello et al | 2017 | P | Siemens | 3 | ShMOLLI | 5 (1)1 (1)1 | 35 | 15 | Magnevist | 0.2 | 57 | 51% | 48 | 24.6 | 2.4 |
| Dabir et al; subgroup 3 | 2014 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 18 | Gadovist | 0.15 | 55 | 51% | 44 | 26.0 | 6.0 |
| Dabir et al; subgroup 4 | 2014 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 18 | Gadovist | 0.15 | 32 | 52% | 41 | 26.0 | 4.0 |
| Hong et al | 2015 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 15 | Gadovist | 0.2 | 10 | 70% | 54 | 25.7 | 2.4 |
| Hromadka et al | 2017 | P | Siemens | 3 | MOLLI | 5 (3)3 | 35 | 15 | Gadovist | 0.05 | 20 | 50% | 54 | 22.8 | 1.9 |
| Kawel et al; subgroup 1 | 2012 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 30 | Magnevist | 0.15 | 24 | 33% | 28 | 29.0 | 3.0 |
| Kawel et al; subgroup 2 | 2012 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 30 | Multihance | 0.1 | 24 | 33% | 28 | 29.0 | 3.0 |
| Lee et al; subgroup 1 | 2011 | P | Siemens | 3 | MOLLI | 3 (3)5 | 35 | 23.5 | Magnevist | 0.15 | 11 | 45% | 36 | 25.8 | 4.1 |
| Lee et al; subgroup 2 | 2011 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 23.5 | Magnevist | 0.15 | 11 | 45% | 36 | 26.3 | 3.8 |
| Levelt et al | 2016 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 15 | | | 20 | 45% | 54 | 29.0 | 3.0 |
| Levelt et al | 2017 | P | Siemens | 3 | ShMOLLI | 5 (1)1 (1)1 | 35 | 15 | Dotarem | 0.03 | 16 | 53% | 51 | 30.0 | 2.0 |
| Lin et al | 2018 | P | Siemens | 3 | MOLLI | 5 (3)3 | 20 | 20 | | | 20 | 50% | 53 | 27.0 | 1.7 |
| Liu et al; subgroup 1 | 2012 | P | Siemens | 3 | MOLLI | 3 (3)5 | 35 | 25 | Multihance | 0.1 | 24 | 33% | 29 | 26.4 | 2.9 |
| Liu et al; subgroup 2 | 2012 | P | Siemens | 3 | MOLLI | 3 (3)5 | 35 | 25 | Magnevist | 0.15 | 24 | 33% | 29 | 27.1 | 2.7 |
| Luetkens et al | 2014 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 10 | Gadovist | 0.2 | 42 | 64% | 39 | 23.6 | 4.1 |
| Luetkens et al | 2016 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 20 | Gadovist | 0.2 | 22 | 68% | 45 | 26.1 | 2.8 |
| McDiarmid et al | 2016 | P | Philips | 3 | MOLLI | 5 (3)3 | 35 | 10 | Gadovist | 0.15 | 15 | 100% | 30 | 24.5 | 2.2 |
| McDiarmid et al; subgroup 1 | 2015 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 15 | Gadovist | 0.15 | 10 | 70% | 27 | 24.5 | 3.2 |
| McDiarmid et al; subgroup 2 | 2015 | P | Philips | 3 | MOLLI | 4 (3)3 (3)2 | 35 | 15 | Gadovist | 0.15 | 10 | 70% | 27 | 24.7 | 3.2 |
| McDiarmid et al; subgroup 3 | 2015 | P | Philips | 3 | MOLLI | 5 (3)3 | 35 | 15 | Gadovist | 0.15 | 10 | 70% | 27 | 24.8 | 3.9 |
| McDiarmid et al; subgroup 4 | 2015 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 15 | Gadovist | 0.15 | 10 | 70% | 27 | 25.0 | 3.3 |
| McDiarmid et al; subgroup 5 | 2015 | P | Philips | 3 | MOLLI | 4 (3)3 (3)2 | 50 | 15 | Gadovist | 0.15 | 10 | 70% | 27 | 25.3 | 4.0 |
| McDiarmid et al; subgroup 6 | 2015 | P | Philips | 3 | MOLLI | 5 (3)3 | 50 | 15 | Gadovist | 0.15 | 10 | 70% | 27 | 25.9 | 3.9 |
| Mordi et al | 2017 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 15 | Gadovist | 0.15 | 28 | 50% | 68 | 27.0 | 4.3 |
| Puntmann et al | 2013 | P | Philips | 3 | MOLLI | 3 (3)5 | 50 | 17.5 | Gadovist | 0.2 | 21 | 23% | 38 | 26.0 | 5.0 |
| Puntmann et al | 2013 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 20 | Gadovist | 0.2 | 30 | 63% | 43 | 26.0 | 7.0 |
| Puntmann et al | 2017 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 15 | Gadovist | 0.1 | 36 | 39% | 43 | 25.0 | 6.0 |

| | | | | | | | | | | | | | | | |
|-------------------|------|---|---------|---|-------|-------------|----|----|-----------|------|-----|-----|----|------|-----|
| Scally et al | 2018 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 10 | Magnevist | 0.15 | 37 | 3% | 64 | 27.0 | 1.0 |
| Schwarz et al | 2017 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 15 | Gadovist | 0.1 | 44 | 10% | 67 | 27.3 | 5.0 |
| Singh et al | 2015 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 50 | 20 | Gadovist | 0.15 | 22 | 68% | 68 | 25.1 | 2.6 |
| Storz et al | 2017 | P | Siemens | 3 | MOLLI | 5 (3)3 | 35 | 10 | Gadovist | 0.2 | 218 | 50% | 54 | 24.6 | 2.8 |
| Weingartner et al | 2016 | P | Siemens | 3 | MOLLI | 5 (3)3 | 35 | 25 | Dotarem | 0.2 | 20 | 50% | 27 | 27.5 | 3.1 |
| Wu et al | 2016 | P | Philips | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 15 | Magnevist | 0.15 | 14 | 57% | 51 | 24.0 | 3.0 |
| Wu et al | 2017 | P | Philips | 3 | MOLLI | 5 (3)3 | 35 | 15 | Magnevist | 0.15 | 12 | 33% | 56 | 24.0 | 3.0 |
| Wu et al | 2018 | P | Philips | 3 | MOLLI | | 35 | 15 | Magnevist | 0.15 | 12 | 42% | | 24.0 | 3.0 |
| Youn et al | 2017 | P | Siemens | 3 | MOLLI | 3 (3)3 (3)5 | 35 | 15 | Gadovist | 0.2 | 19 | 65% | 54 | 25.8 | 2.2 |
| Zhao et al | 2016 | P | Siemens | 3 | MOLLI | 5 (3)3 | 35 | 15 | Magnevist | 0.1 | 13 | 77% | 53 | 25.1 | 1.6 |

Note.—Table of all extracellular volume (ECV) studies at 3.0 T. Method = recruitment method, P = prospectively recruited, R = retrospectively recruited, FS = field strength, Technique = pulse sequence scheme, MOLLI = Modified Look-Locker Inversion Recovery, ShMOLLI = Shortened Modified Look-Locker Inversion Recovery, Sequence = number of phases (number of heartbeats), FA = flip angle, PC time = time of measurement postcontrast injection, N = number of subjects in study, SD = standard deviation.

Table E3: Pooled Covariance

A. Pooled Covariance of Native T1 Subgroups

| | Pooled Covariance of Native T1 Subgroups | | | | | | | |
|----------------|--|------|---------|---------|---------|---------|---------|---------|
| Field Strength | 1.5T | 3.0T | 1.5T | 1.5T | 1.5T | 3.0T | 3.0T | 3.0T |
| Vendor | All | All | Siemens | Siemens | Philips | Siemens | Siemens | Philips |
| Pulse Sequence | All | All | MOLLI | ShMOLLI | MOLLI | MOLLI | ShMOLLI | MOLLI |
| Pooled COV | 0.04 | 0.03 | 0.04 | 0.03 | 0.03 | 0.03 | 0.02 | 0.03 |

B. Pooled Covariance of ECV Subgroups

| | Pooled Covariance of ECV Subgroups | | | | | | | |
|----------------|------------------------------------|------|------|---------|---------|---------|---------|---------|
| Field Strength | All | 1.5T | 3.0T | 1.5T | 1.5T | 1.5T | 3.0T | 3.0T |
| Vendor | All | All | All | Siemens | Siemens | Philips | Siemens | Philips |
| Pulse Sequence | All | All | All | MOLLI | ShMOLLI | MOLLI | MOLLI | MOLLI |
| Pooled COV | 0.12 | 0.12 | 0.16 | 0.12 | 0.10 | 0.15 | 0.10 | 0.18 |

COV = Covariance.

Table E4: T1 and ECV Data from All Sequences and Vendors

| Author | Year | Vendor | FS (T) | Technique | Number of Subjects | % Males | Age (years) | Contrast | Contrast Dose (mmol/kg) | PC Time (min) | Mean Native T1 (ms) | SD Native T1 (ms) | Mean ECV (%) | SD ECV (%) |
|-------------------|------|---------|--------|--------------------|--------------------|---------|-------------|------------|-------------------------|---------------|---------------------|-------------------|--------------|------------|
| Iles et al | 2008 | GE | 1.5 | prototype sequence | 20 | 50 | 38 | Magnevist | 0.20 | 15 | 975 | 62 | | |
| Gai et al | 2011 | Siemens | 1.5 | Look-Locker | 13 | 54 | 38 | Magnevist | 0.15 | 25 | 986 | 168 | 26.0 | 6.0 |
| Nacif et al | 2011 | Siemens | 1.5 | Look-Locker | 14 | 57 | 38 | | | | 998 | 196 | | |
| Sado et al | 2012 | Siemens | 1.5 | FLASH IR | 81 | 52 | 43 | Dotarem | 0.10 | | | | 25.3 | 3.5 |
| Song et al | 2012 | GE | 1.5 | MLLSR | 41 | 78 | 48 | ProHance | 0.20 | 10 | 910 | 93 | | |
| Ho et al | 2013 | Siemens | 3.0 | Look-Locker | 11 | 36 | 27 | Magnevist | 0.15 | 30 | | | 27.0 | 1.0 |
| Neilan et al | 2013 | Siemens | 3.0 | Look-Locker | 15 | 47 | 56 | Magnevist | 0.15 | 30 | | | 28.0 | 2.0 |
| Neilan et al | 2013 | Siemens | 3.0 | Look-Locker | 32 | 56 | 49 | Magnevist | 0.15 | 30 | | | 28.0 | 3.0 |
| Chow et al | 2014 | Siemens | 1.5 | SASHA | 10 | 60 | 54 | Gadovist | 0.15 | 24 | 1170 | 9 | | |
| Neilan et al | 2014 | Siemens | 3.0 | Look-Locker | 20 | 65 | 57 | Magnevist | 0.15 | 30 | | | 28.0 | 3.0 |
| Barison et al | 2015 | GE | 1.5 | MCine-IR | 15 | 73 | 52 | Dotarem | 0.20 | 20 | | | 25.0 | 4.0 |
| Barison et al | 2015 | GE | 1.5 | MCine-IR | 10 | 0 | 48 | Omniscan | 0.20 | 15 | 811 | 89 | 28.0 | 4.0 |
| Kato et al | 2016 | Philips | 1.5 | STONE | 15 | 60 | 46 | | | | 1065 | 35 | | |
| Shah et al | 2016 | Philips | 1.5 | STONE | 27 | 50 | 27 | | | | 1069 | 29 | | |
| Teixeira et al | 2016 | Siemens | 3.0 | SASHA | 40 | 45 | 59 | | | | 1487 | 36 | | |
| Ngu et al | 2016 | GE | 1.5 | VAST | 21 | 52 | 36 | Magnevist | 0.20 | 20 | 1075 | 243 | | |
| Shah et al | 2016 | Philips | 1.5 | STONE | 20 | 67 | 47 | Multihance | 0.10 | | | | 25.0 | 2.0 |
| Weingartner et al | 2016 | Siemens | 3.0 | SAPPHIRE | 20 | 50 | 27 | Dotarem | 0.20 | 25 | 1578 | 36 | 21.0 | 2.8 |
| Weingartner et al | 2016 | Siemens | 3.0 | SASHA | 20 | 50 | 27 | Dotarem | 0.20 | 25 | 1523 | 41 | 21.9 | 3.0 |
| Luetkens et al | 2016 | Philips | 1.5 | ShMOLLI | 50 | 60 | 39 | Gadovist | 0.20 | 12 | 831 | 27 | 25.3 | 4.0 |
| Roux et al | 2017 | GE | 1.5 | MOLLI | 10 | 30 | 35 | Dotarem | 0.20 | 10 | 929 | 80 | | |
| Costello et al | 2017 | Siemens | 3.0 | SASHA | 57 | 51 | 48 | Magnevist | 0.20 | 15 | 1498 | 44 | 19.8 | 1.9 |
| Vansanji et al | 2017 | Siemens | 1.5 | SASHA | 14 | 57 | 51 | Magnevist | 0.15 | 20 | 1172 | 43 | 20.1 | 2.0 |
| Child et al | 2017 | Philips | 3.0 | SASHA | 26 | 42 | 53 | Gadovist | 0.10 | 25 | 1171 | 42 | 26.0 | 8.0 |
| Child et al | 2017 | Philips | 3.0 | ShMOLLI | 26 | 42 | 53 | Gadovist | 0.10 | 25 | 1080 | 32 | 26.0 | 6.0 |

Note.—Table of studies excluded for vendor or pulse sequence scheme, due to inadequate study group numbers for inclusion. ECV = extracellular volume, Native T1 = native t1 time, FS = field strength, Technique = pulse sequence scheme, FLASH IR = Fast Low Angle SHot inversion recovery, MLLSR = Modified Look-Locker acquisition with Saturation Recovery, SASHA = Saturation recovery single-shot acquisition, MCine-IR = Modified Cine Inversion Recovery, STONE = Slice interleaved T1 mapping, VAST = inversion recovery gradient echo sequence with variable sampling of the k-space time, SAPPHIRE = Saturation Pulse Prepared Heart Rate independent Inversion-REcovery, ShMOLLI = Shortened Modified Look-Locker Inversion Recovery, MOLLI = Modified Look-Locker Inversion Recovery, PC time = time of measurement postcontrast injection, N = number of subjects in study, SD = standard deviation.