**Table 1:** Study characteristics and categories.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **First author** | **Year** | **Modality** | **Study category** | **Subcategory** | **Number females studied** | **Number males studied** |
| Ariumi [[11](http://www.ncbi.nlm.nih.gov/pubmed/20151253)] | 2010 | CT | Axes | Flexion, rotation | 24 | 21 |
| Shabshin [[9](http://www.ncbi.nlm.nih.gov/pubmed/15221214)] | 2004 | MRI | Axes | Insall-salvati | 134 | 128 |
| Cinotti [[36](http://www.ncbi.nlm.nih.gov/pubmed/22730027)] | 2013 | MRI | Axes | mPTS, lPTS | 35 | 45 |
| Haddad [[6](http://www.ncbi.nlm.nih.gov/pubmed/23409572)] | 2012 | MRI | Axes | mPTS, lPTS | 71 | 72 |
| Hudek [[7](http://www.ncbi.nlm.nih.gov/pubmed/21318628)] | 2011 | MRI | Axes | mPTS, lPTS | 31 | 24 |
| Lustig [[3](http://www.ncbi.nlm.nih.gov/pubmed/22476528)] | 2013 | MRI | Axes | mPTS, lPTS | 51 | 50 |
| Ristic [[44](https://www.ncbi.nlm.nih.gov/pubmed/25151761)] | 2014 | MRI | Axes | mPTS, lPTS | 11 | 49 |
| Zhang [[45](https://www.ncbi.nlm.nih.gov/pubmed/24565940)] | 2014 | CT | Axes | mPTS, lPTS | 40 | 40 |
| Moghtadaei [[46](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4431422/)] | 2015 | CT | Axes | Rotation | 54 | 96 |
| Tao [[12](http://www.ncbi.nlm.nih.gov/pubmed/21053891)] | 2010 | CT | Axes | Rotation | 19 | 20 |
| Raju [[47](http://www.ncbi.nlm.nih.gov/pubmed/26685799)] | 2015 | MRI | Axes | Rotation | 38 | 86 |
| Dickschas [[48](https://www.ncbi.nlm.nih.gov/pubmed/25416671)] | 2016 | CT | Axes | TT-TG | 36 | 19 |
| Pandit [[49](https://www.ncbi.nlm.nih.gov/pubmed/21394593)] | 2011 | MRI | Axes | TT-TG | 43 | 57 |
| Skelley [[50](https://www.ncbi.nlm.nih.gov/pubmed/25632054)] | 2015 | MRI | Axes | TT-TG | 57 | 59 |
| Akagi [[10](http://www.ncbi.nlm.nih.gov/pubmed/15057100)] | 2004 | CT | Axes | Valgus | 19 | 20 |
| Han [[51](http://www.ncbi.nlm.nih.gov/pubmed/26253858)] | 2016 | MRI | Axes, femur | mPTS, lPTS, AP length, ML width, condyle height, PO | 262 | 273 |
| Van Diek [[52](https://www.ncbi.nlm.nih.gov/pubmed/23832174)] | 2014 | MRI | Axes, femur | mPTS, lPTS, ML width, notch | 41 | 47 |
| Cinotti [[21](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3482353/)] | 2012 | MRI | Axes, femur | mPTS, lPTS, PO | 35 | 45 |
| Alemparte [[53](https://www.ncbi.nlm.nih.gov/pubmed/17276225)] | 2007 | CT | Axes, femur | TT-TG, trochlea | 30 | 30 |
| Balcarek [[37](https://www.ncbi.nlm.nih.gov/pubmed/20713643)] | 2010 | MRI | Axes, femur, patella | TT-TG, trochlea, patella height | 127 | 130 |
| Hashemi [[8](http://www.ncbi.nlm.nih.gov/pubmed/19047719)] | 2008 | MRI | Axes, tibia | mPTS, lPTS, plateau depth | 33 | 22 |
| Ding [[35](https://www.ncbi.nlm.nih.gov/pubmed/12810930)] | 2003 | MRI | Cartilage | G-vol | 214 | 158 |
| Nishimura [[54](https://www.ncbi.nlm.nih.gov/pubmed/15928885)] | 2005 | MRI | Cartilage | G-vol | 31 | 37 |
| Antony [[55](https://www.semanticscholar.org/paper/Body-composition%2C-hormonal-and-inflammatory-factors-Antony-Venn/315cdbc746d21e77cf54b6ee7f38c9cce384fb23)] | 2015 | MRI | Cartilage | T-vol | 155 | 173 |
| Berry [[56](https://www.ncbi.nlm.nih.gov/pubmed/21084325)] | 2011 | MRI | Cartilage | T-vol, p-vol | 47 | 46 |
| Caglar [[57](https://www.ncbi.nlm.nih.gov/pubmed/25491612)] | 2014 | MRI | Cartilage | T2 | 60 | 47 |
| Joseph [[58](https://www.ncbi.nlm.nih.gov/pubmed/25680652)] | 2015 | MRI | Cartilage | T2 | 255 | 226 |
| Mosher [[59](https://www.ncbi.nlm.nih.gov/pubmed/14994301)] | 2004 | MRI | Cartilage | T2 | 10 | 7 |
| Eckstein [[60](http://www.ncbi.nlm.nih.gov/pubmed/11795982)] | 2002 | MRI | Cartilage | T2, thickness, SA | 18 | 18 |
| Draper [[61](https://www.ncbi.nlm.nih.gov/pubmed/16647278)] | 2006 | MRI | Cartilage | Thickness | 30 | 20 |
| Eckstein [[62](https://www.ncbi.nlm.nih.gov/pubmed/20691798)] | 2010 | MRI | Cartilage | Thickness | 597 | 465 |
| Cicuttini [[63](http://www.ncbi.nlm.nih.gov/pubmed/11908572)] | 2002 | MRI | Cartilage | Thickness, g-vol | 96 | 70 |
| Otterness [[33](http://www.ncbi.nlm.nih.gov/pubmed/17321168)] | 2007 | MRI | Cartilage | Thickness, SA, g-vol | 40 | 57 |
| Faber [[34](https://www.ncbi.nlm.nih.gov/pubmed/11357452)] | 2001 | MRI | Cartilage | Thickness, SA, g-vol | 9 | 9 |
| Beattie [[64](https://www.ncbi.nlm.nih.gov/pubmed/18778479)] | 2008 | MRI | Cartilage | Thickness, SA, t-vol | 73 | 46 |
| Eckstein [[65](https://www.ncbi.nlm.nih.gov/pubmed/15479900)] | 2004 | MRI | Cartilage | Thickness, SA, t-vol, p-vol, f-vol | 14 | 15 |
| Berry [[66](https://www.ncbi.nlm.nih.gov/pubmed/19077298)] | 2008 | MRI | Cartilage, patella | P-vol, patella bone volume | 186 | 111 |
| Li [[67](https://www.ncbi.nlm.nih.gov/pubmed/22025249)] | 2012 | CT | Femur | AP length, condyle height | 39 | 51 |
| Van den Heever [[14](http://www.ncbi.nlm.nih.gov/pubmed/21775148)] | 2012 | MRI | Femur | AP length, ML width | 22 | 20 |
| Cavaignac [[15](https://www.ncbi.nlm.nih.gov/pubmed/26743712)] | 2016 | CT | Femur | AP length, ML width | 134 | 122 |
| Cho [16] | 2015 | CT | Femur | AP length, ML width, condyle height, notch | 114 | 88 |
| Pinskerova [[17](http://www.ncbi.nlm.nih.gov/pubmed/25095761)] | 2014 | MRI | Femur | AP length, ML width, condyle height, trochlea | 100 | 100 |
| Barnes [[68](https://www.ncbi.nlm.nih.gov/pubmed/21244806)] | 2010 | CT | Femur | AP length, ML width, condyle ratios | 39 | 27 |
| Fehring [[70](http://www.ncbi.nlm.nih.gov/pubmed/19797567)] | 2009 | MRI | Femur | Condyle height | 100 | 112 |
| Yue [[71](https://www.semanticscholar.org/paper/The-intercondylar-notch-ceiling%3A-an-accurate-for-in-Yue-Wang/26d50c41ab01e3cdf73fd0c827fd11d24aec5546)] | 2015 | CT | Femur | Condyle height, condyle ratios | 50 | 50 |
| Rosenstein [[72](https://www.ncbi.nlm.nih.gov/pubmed/19292386)] | 2008 | MRI | Femur | Condyle ratios | 50 | 50 |
| Yan [[43](https://www.ncbi.nlm.nih.gov/pubmed/23245733)] | 2014 | CT | Femur | Condyle ratios, trochlea | 50 | 50 |
| Park [[69](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3438280/)] | 2012 | MRI | Femur | ML width, condyle ratios | 79 | 147 |
| Li [[73](http://www.ncbi.nlm.nih.gov/pubmed/24462107)] | 2014 | CT/  MRI | Femur | ML width, condyle height | 65 | 96 |
| Murshed [[74](https://www.ncbi.nlm.nih.gov/pubmed/15580343)] | 2005 | MRI | Femur | ML width, condyle height | 100 | 100 |
| Vrooijink [[75](https://www.ncbi.nlm.nih.gov/pubmed/21472470)] | 2011 | MRI | Femur | ML width, condyle ratios, notch | 40 | 49 |
| Anderson [[76](https://www.ncbi.nlm.nih.gov/pubmed/11206258)] | 2001 | MRI | Femur | ML width, notch | 50 | 50 |
| Van Eck [[77](https://www.ncbi.nlm.nih.gov/pubmed/21764541)] | 2011 | MRI | Femur | Notch | 45 | 55 |
| Van Eck [[78](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2923716/)] | 2010 | CT | Femur | Notch | 10 | 10 |
| Charlton [[79](https://www.ncbi.nlm.nih.gov/pubmed/12016071)] | 2002 | MRI | Femur | Notch | 20 | 28 |
| Dienst [[80](http://www.ncbi.nlm.nih.gov/pubmed/16807752)] | 2007 | MRI | Femur | Notch | 10 | 10 |
| Estes [[81](http://www.ncbi.nlm.nih.gov/pubmed/26198056)] | 2015 | MRI | Femur | Notch | 23 | 49 |
| Wang [[20](http://www.ncbi.nlm.nih.gov/pubmed/23587633)] | 2014 | CT | Femur | PO | 50 | 50 |
| Arslan [[22](http://www.ncbi.nlm.nih.gov/pubmed/26124901)] | 2015 | MRI | Femur | Red marrow | 92 | 48 |
| Biedert [[82](https://www.ncbi.nlm.nih.gov/pubmed/19495725)] | 2009 | MRI | Femur | Trochlea | 68 | 84 |
| Hasler [[83](https://www.ncbi.nlm.nih.gov/pubmed/24985525)] | 2014 | MRI | Femur | Trochlea | 16 | 37 |
| Kamath [[84](https://www.ncbi.nlm.nih.gov/pubmed/22704031)] | 2013 | MRI | Femur | Trochlea | 183 | 146 |
| Wang [[42](https://www.ncbi.nlm.nih.gov/pubmed/24384431)] | 2012 | CT | Femur | Trochlea | 50 | 50 |
| Voleti [[4](http://www.ncbi.nlm.nih.gov/pubmed/25448325)] | 2015 | MRI | Femur, cartilage | Condyle height, condyle ratios, PO, thickness | 50 | 50 |
| Lee [[85](https://www.ncbi.nlm.nih.gov/pubmed/26117502)] | 2015 | CT | Femur, patella | F-SA/vol, patella bone volume, patella SA | 55 | 55 |
| Cheng [[40](https://www.ncbi.nlm.nih.gov/pubmed/19629438)] | 2010 | CT | Femur, tibia | AP length, ML width, AP-t, ML-t | 78 | 94 |
| Lim [[18](http://www.ncbi.nlm.nih.gov/pubmed/22721912)] | 2013 | MRI | Femur, tibia | AP length, ML width, AP-t, ML-t, t-ratio | 59 | 56 |
| Bisson [[19](https://www.ncbi.nlm.nih.gov/pubmed/20620789)] | 2010 | MRI | Femur, tibia | AP length, ML width, plateau depth | 40 | 40 |
| Yue [[13](http://www.ncbi.nlm.nih.gov/pubmed/20407755)] | 2011 | CT | Femur, tibia | AP length, ML width, trochlea, AP-t, ML-t | 20 | 20 |
| Bellemans [[86](http://www.ncbi.nlm.nih.gov/pubmed/19669385)] | 2010 | CT | Femur, tibia | Condyle ratio, AP-t, ML-t, t-ratio | 686 | 314 |
| Huang [30] | 2015 | CT | Patella | Patella height, patella width, patella thickness | 60 | 60 |
| Shang [[41](https://www.ncbi.nlm.nih.gov/pubmed/24384431)] | 2014 | CT | Patella | Patella height, patella width, patella thickness | 20 | 20 |
| Yoo [[87](http://www.ncbi.nlm.nih.gov/pubmed/17898923)] | 2007 | MRI | Patella | Patella height, patella width, patella thickness | 30 | 142 |
| Mahfouz [[32](http://www.ncbi.nlm.nih.gov/pubmed/17947029)] | 2006 | CT | Patella | Patella morphology | 95 | 133 |
| Mahfouz [[31](https://www.ncbi.nlm.nih.gov/pubmed/17482786)] | 2007 | CT | Patella | Patella morphology | 95 | 133 |
| Scheffel [[29](http://www.ncbi.nlm.nih.gov/pubmed/23221829)] | 2013 | MRI | Tibia | ACL insertion site | 68 | 70 |
| Kucukdurmaz [[88](https://www.ncbi.nlm.nih.gov/pubmed/24747621)] | 2014 | MRI | Tibia | AP-t, ML-t | 150 | 110 |
| Erkocak [[23](http://www.ncbi.nlm.nih.gov/pubmed/25906912)] | 2016 | MRI | Tibia | AP-t, ML-t, t-ratio | 138 | 88 |
| Hartel [[25](http://www.ncbi.nlm.nih.gov/pubmed/24503228)] | 2014 | CT | Tibia | Master shape | 38 | 79 |
| Hartel [[26](https://www.ncbi.nlm.nih.gov/pubmed/19467875)] | 2009 | MRI | Tibia | Master shape | 110 | 127 |
| Hovinga [[24](https://www.ncbi.nlm.nih.gov/pubmed/19242980)] | 2009 | MRI | Tibia | ML-t | 36 | 34 |
| Stone [[89](https://www.ncbi.nlm.nih.gov/pubmed/17478281)] | 2007 | MRI | Tibia | ML-t | 38 | 63 |
| Tang [[27](http://www.ncbi.nlm.nih.gov/pubmed/20720141)] | 2010 | MRI | Tibia | Offset | 25 | 25 |
| Sun [[28](https://www.ncbi.nlm.nih.gov/pubmed/23290176)] | 2014 | CT | Tibia | Posterior proximal tibia | 138 | 162 |

**Legend:** CT: Computed Tomography; MRI: Magnetic Resonance Imaging; TT-TG: Tibial Translation-Trochlear Groove Distance; mPTS: medial Posterior Tibial Slope; lPTS: Lateral Posterior Tibial Slope; AP: Anteroposterior; ML: Mediolateral; PO: Posterior Offset; Vol: Volume; G-vol: General volume; T-vol: Tibial volume; F-vol: Femoral volume; P-vol: Patellar volume; SA: Surface Area; F-SA: Femur Surface Area; AP-t: AP length of tibia; ML-t: ML width of tibia; T-ratio: Tibial ratio.