

DAFTAR PUSTAKA

1. Chudyk AM, Ashe MC, Gorman E, Al Tunaiji HO, Crossley KM. Risk of hip fracture with hip or knee osteoarthritis: A systematic review. *Clin. Rheumatol.* 16. Mai 2012;31(5):749–57.
2. Gullberg B, Johnell O, Kanis JA. World-wide projections for hip fracture. *Osteoporos. Int.* 1997;7(5):407–13.
3. Zhang Y, Jordan JM. Epidemiology of osteoarthritis. *Clin. Geriatr. Med.* August 2010;26(3):355–69.
4. Kanis JA, Odén A, McCloskey E V., Johansson H, Wahl DA, Cooper C. A systematic review of hip fracture incidence and probability of fracture worldwide. *Osteoporos. Int.* 15. September 2012;23(9):2239–56.
5. Rawal BR, Ribeiro R, Malhotra R, Bhatnagar N. Anthropometric measurements to design best-fit femoral stem for the Indian population. *Indian J. Orthop.* 2012;46(1):46–53.
6. Dhanwal DK, Dennison EM, Harvey NC, Cooper C. Epidemiology of hip fracture: Worldwide geographic variation. *Indian J. Orthop.* 2011;45(1):15–22.
7. Lespasio MJ, Sultan AA, Piuzzi NS, Khlopas A, Husni ME, Muschler GF, u. a. Hip Osteoarthritis: A Primer. *Perm. J.* 2018;22:89–94.
8. Leung F, Lau TW, Kwan K, Chow SP, Kung AWC. Does timing of surgery matter in fragility hip fractures? *Osteoporos. Int.* 6. Dezember 2010;21(SUPPL. 4):529–34.
9. Gomez PF, Morcuende JA. Early attempts at hip arthroplasty--1700s to 1950s. *Iowa Orthop. J.* 2005;25:25–9.
10. Pivec R, Johnson AJ, Mears SC, Mont MA. Hip arthroplasty. *Lancet.* November 2012;380(9855):1768–77.
11. Lai YS, Wei HW, Cheng CK. Incidence of hip replacement among national health insurance enrollees in Taiwan. *J. Orthop. Surg. Res.* 2008;3(1):1–10.
12. Moerman S, Mathijssen NMC, Tuinebreijer WE, Vochteloo AJH, Nelissen RGHH. Hemiarthroplasty and total hip arthroplasty in 30,830 patients with hip fractures: data from the Dutch Arthroplasty Register on revision and risk factors for revision. *Acta Orthop.* 3. September 2018;89(5):509–14.
13. Brooks PJ. Dislocation following total hip replacement: causes and cures. *Bone Joint J.* November 2013;95-B(11):67–9.

14. Baharuddin MY, Zulkifly AH, Kadir MRA, Saat A, Aziz AA, Lee MH. Morphometric study of the acetabular in Malay population normal hips and its clinical applications. *J. Med. Sci. Journal of Medical Sciences*; 1. Mai 2011;11(5):213–9.
15. Mahaisavariya B, Sitthiseripratip K, Tongdee T, Bohez ELJ, Vander Sloten J, Oris P. Morphological study of the proximal femur: A new method of geometrical assessment using 3-dimensional reverse engineering. *Med. Eng. Phys.* November 2002;24(9):617–22.
16. Mahmoud B. Bone Alone Is Somewhat More Valuable, Espe-. :395–6.
17. Erickson MF. Aging changes in the medullary cavity of the proximal femur in American Blacks and Whites. *Am. J. Phys. Anthropol.* 1979;51(4):563–9.
18. Dewo P, Suyitno, Dharmastiti R, Salim UA, Hidayat L, Wibowo PA, u. a. Morfometría tridimensional del fémur proximal para diseñar prótesis a medida en la población de Indonesia. *Int. J. Morphol.* 2016;34(2):436–42.
19. Hutabarat A, Saleh R, Sakti M, Toban Layuk Allo Y, Rizan Hendrawan A. Morphology study of the acetabulum values of indonesian deutero malay sub-race population in South Sulawesi. *J. Med. Sci.* 2018;18(2):69–75.
20. Sengodan V, Sinmayanantham E, Kumar J. Anthropometric analysis of the hip joint in South Indian population using computed tomography. *Indian J. Orthop.* 2017;51(2):155–61.
21. Adler JT. Gray's Anatomy: The Anatomical Basis of Clinical Practice, 40th Edition. *J. Surg. Res.* Januar 2010;158(1):28–9.
22. Thomas J, Li Z, Agur A, Robinson P. Imaging of the Acetabular Labrum. *Semin. Musculoskelet. Radiol.* 20. Juni 2013;17(03):248–57.
23. Field RE, Rajakulendran K. The Labro-Aacetabular Complex. *J. Bone Jt. Surgery-American Vol.* Mai 2011;93(Suppl 2):22–7.
24. Clemente CD. "Gray's Anatomy ed 30". 39. Aufl. Standring S, Herausgeber. London UK: Elsevier; 1985.
25. Kumar A, Kumar NV, S. U, Noel C. Assessment of proximal femur anthropometry in South Indian population through cadaveric bones and radiologically correlating difference if any between other ethnic groups. *Int. J. Res. Orthop.* 2017;3(3):466.
26. Choi S. Total hip arthroplasty. *Decis. Orthop. Reg. Anesthesiol. A Case-Based Approach.* 2015;95–100.
27. Gkagkalis G, Goetti P, Mai S, Meinecke I, Helmy N, Bosson D, u. a. Cementless short-stem total hip arthroplasty in the elderly patient - Is it a safe option?: A prospective multicentre observational study. *BMC Geriatr.*

- BMC Geriatrics; 2019;19(1):1–11.
28. Cowin SC. Mechanosensation and fluid transport in living bone. 2002;2(3):256–60.
 29. Azar FM, James H. Beaty, S. Terry Canale. Campbell's Operative Orthopaedics, Thirteenth Edition. Elsevier. 2017.
 30. Pennington M, Grieve R, Sekhon JS, Gregg P, Black N, Van Der Meulen JH. Cemented, cementless, and hybrid prostheses for total hip replacement: Cost effectiveness analysis. BMJ. 2013;
 31. Morshed S, Bozic KJ, Ries MD, Malchau H, Colford JM. Comparison of cemented and uncemented fixation in total hip replacement: A meta-analysis. Acta Orthop. 2007;
 32. Stihsen C, Radl R, Keshmiri A, Rehak P, Windhager R. Subsidence of a cementless femoral component influenced by body weight and body mass index. Int. Orthop. 2012;36(5):941–7.
 33. Van Tuong N. Measuring geometric parameters of proximal femur by using reverse engineering. MM Sci. J. 2019;2019(March):2761–6.
 34. Jamali AA, Mak W, Wang P, Tai L, Meehan JP, Lamba R. What is normal femoral head/neck anatomy? An analysis of radial CT reconstructions in adolescents. Clin. Orthop. Relat. Res. 2013;471(11):3581–7.
 35. Trung DT, Trung HP, Cong MT, Maffulli N, Trung TN. The anatomical characteristics of Vietnamese adult hip joint: A multiplanar reconstruction computer tomographic study. Muscles. Ligaments Tendons J. 2019;9(2):165–72.
 36. Guo J, Dong W, Qin S, Zhang Y. Definition of ideal configuration for femoral neck screw fixation in older people. Sci. Rep. 2019;9(1):1–9.
 37. Pasquier G, Ducharne G, Sari Ali E, Giraud F, Mouttet A, Durante E. Total hip arthroplasty offset measurement: Is C T scan the most accurate option? Orthop. Traumatol. Surg. Res. Elsevier Masson SAS; 2010;96(4):367–75.
 38. Tallroth K, Lepistö J. Computed tomography measurement of acetabular dimensions: Normal values for correction of dysplasia. Acta Orthop. 2006;77(4):598–602.
 39. Hingsammer AM, Bixby S, Zurkowski D, Yen YM, Kim YJ. How Do Acetabular Version and Femoral Head Coverage Change With Skeletal Maturity? Clin. Orthop. Relat. Res. 2015;473(4):1224–33.
 40. Shon WY, Yun HH, Yang JH, Song SY, Park SB, Lee JW. The Use of the Posterior Lesser Trochanter Line to Estimate Femoral Neck Version. An Analysis of Computed Tomography Measurements. J. Arthroplasty. Elsevier

- Inc.; 2013;28(2):352–8.
41. Dorr LD, Malik A, Dastane M, Wan Z. Combined anteversion technique for total hip arthroplasty. *Clin. Orthop. Relat. Res.* 2009;467(1):119–27.
 42. Karthikeyan D, Chegu D. Step by Step CT Scan. Step by Step CT Scan. 2005.
 43. Gao XH, Lan N, Chouhan H, Stocchi L, Remer E, Shen B. Pelvic MRI and CT images are interchangeable for measuring peripouch fat. *Sci. Rep.* Springer US; 2017;7(1):1–10.
 44. Kleinman PL, Strauss KJ, Zurakowski D, Buckley KS, Taylor GA. Patient size measured on CT images as a function of age at a tertiary care children's hospital. *Am. J. Roentgenol.* 2010;194(6):1611–9.
 45. Boese CK, Jostmeier J, Oppermann J, Dargel J, Chang DH, Eysel P, u. a. The neck shaft angle: CT reference values of 800 adult hips. *Skeletal Radiol.* 2016;45(4):455–63.
 46. Khalid MSM, Yunus R. Multiplanar reconstructed CT study of normal acetabulum – Inclination angle, anteversion angle and acetabular depth. *J. Teknol.* 2015;77(6):1–5.
 47. Atkinson HD, Johal KS, Willis-Owen C, Zadow S, Oakeshott RD. Differences in hip morphology between the sexes in patients undergoing hip resurfacing. *J. Orthop. Surg. Res.* BioMed Central Ltd; 2010;5(1):76.
 48. De Wilde L, Defoort S, Verstraeten TRGM, Speeckaert W, Debeer P. A 3D-CT scan study of the humeral and glenoid planes in 150 normal shoulders. *Surg. Radiol. Anat.* 2012;34(8):743–50.
 49. Abdel MP, Trousdale RT, Berry DJ. Pelvic discontinuity associated with total hip arthroplasty: Evaluation and management. *J. Am. Acad. Orthop. Surg.* 2017.
 50. Saxler G, Marx A, Vandervelde D, Langlotz U, Tannas M, Wiese M, u. a. The accuracy of free-hand cup positioning - A CT based measurement of cup placement in 105 total hip arthroplasties. *Int. Orthop.* 2004;
 51. Reikeras O, Høiseth A, Regstad A, Fønstelien E. Femoral neck angles: A specimen study with special regard to bilateral differences. *Acta Orthop.* 1982;53(5):775–9.
 52. Noble PC, Alexander JW, Lindahl LJ, Yew DT, Granberry WM, Tullos HS. The anatomic basis of femoral component design. *Clin. Orthop. Relat. Res.* 1988;(235):148–65.
 53. Husmann O, Rubin PJ, Leyvraz PF, De Roguin B, Argenson JN. Three-dimensional morphology of the proximal femur. *J. Arthroplasty.*

- 1997;12(4):444–50.
54. Wright SJ, Boymans TAEJ, Grimm B, Miles AW, Kessler O. Strong correlation between the morphology of the proximal femur and the geometry of the distal femoral trochlea. *Knee Surgery, Sport. Traumatol. Arthrosc.* 2014;22(12):2900–10.
 55. Tuck SP, Rawlings DJ, Scane AC, Pande I, Summers GD, Woolf AD, u. a. Femoral Neck Shaft Angle in Men with Fragility Fractures. *J. Osteoporos.* 2011;2011:1–7.
 56. Otsianyi WK, Naipanoui AP, Koech A. The femoral collodiaphyseal angle amongst selected Kenyan ethnic groups. *J. Morphol. Sci.* 2011;28(2):129–31.
 57. Cho HJ, Kwak DS, Kim IB. Morphometric evaluation of Korean femurs by geometric computation: Comparisons of the sex and the population. *Biomed Res. Int.* 2015;2015.
 58. Jiang N, Peng L, Al-Qwbani M, Xie GP, Yang QM, Chai Y, u. a. Femoral Version, Neck-Shaft Angle, and Acetabular Anteversion in Chinese Han Population. *Med. (United States).* 2015;94(21):1–9.
 59. Schatzker J. Subcapital and intertrochanteric fractures. *Ration. Oper. Fract. Care* Third Ed. Berlin/Heidelberg: Springer-Verlag; 2005. p. 343–65.
 60. Iyem C, Güvençer M, Karatosun V, Ünver B. Morphometric evaluation of proximal femur in patients with unilateral total hip prosthesis. *Clin. Anat.* 2014;27(3):478–88.
 61. Duthie RA, Bruce MF, Hutchison JD. Changing proximal femoral geometry in north east Scotland: An osteometric study. *Br. Med. J.* 1998;316(7143):1498.
 62. Hoaglund FT, Low WD. Anatomy of the femoral neck and head, with comparative data from Caucasians and Hong Kong Chinese. *Clin. Orthop. Relat. Res.* 1980;NR. 152:10–6.
 63. Soodmand E, Zheng G, Steens W, Bader R, Nolte L, Kluess D. Surgically Relevant Morphological Parameters of Proximal Human Femur: A Statistical Analysis Based on 3D Reconstruction of CT Data. *Orthop. Surg.* 2019;11(1):135–42.
 64. Chantarapanich N, Rojanasthien S, Chernchujit B, Mahaisavariya B, Karunratanakul K, Chalermkarnnon P, u. a. 3D CAD/reverse engineering technique for assessment of Thai morphology: Proximal femur and acetabulum. *J. Orthop. Sci. The Japanese Orthopaedic Association;* 2017;22(4):703–9.
 65. Lee CK, Kwan MK, Merican AM, Ng WM, Saw LB, The KK, u. a. Femoral

- head diameter in the Malaysian population. *Singapore Med. J.* 2014;55(8):436–8.
66. Painter N. Why White People Are Called 'Caucasian? Proc. Fifth Annu. Gilder Lehrman Cent. Int. Conf. Yale Univ. 2003;1–37.
 67. Lipson M, Loh PR, Patterson N, Moorjani P, Ko YC, Stoneking M, u. a. Reconstructing Austronesian population history in Island Southeast Asia. *Nat. Commun.* Nature Publishing Group; 2014;5:1–7.
 68. Miyamoto T, Tomita M, Koseki H, Hozumi A, Goto H, Shindo H, u. a. Morphology of the femoral neck in Japanese persons: Analysis using CT data. *Acta Med. Nagasaki.* 2014;58(4):119–24.
 69. Argenson JNA, Flecher X, Parratte S, Aubaniac JM. Anatomy of the dysplastic hip and consequences for total hip arthroplasty. *Clin. Orthop. Relat. Res.* 2007;(465):40–5.
 70. Atilla B, Oznur A, Çağlar O, Tokgözoglu M, Alpaslan M. Osteometry of the femora in Turkish individuals: a morphometric study in 114 cadaveric femora as an anatomic basis of femoral component design. *Acta Orthop. Traumatol. Turc.* 2007;41(1):64–8.
 71. Elmorsy A, Whitehouse S, Timperley J, Veitch S. Proximal Femoral Cortical Thickness and Medullary Canal Diameter in Soft and Hard Water Regions. *Open J. Orthop.* 2016;06(03):58–62.
 72. Zhang Y, Wang J, Li ZH, Xiao J, Zhao L, Yan G, u. a. The geometry of the bone structure associated with total hip arthroplasty. *PLoS One.* 2014;9(3).
 73. Baharuddin MY, Salleh SH, Zulkifly AH, Lee MH, Mohd Noor A. Morphological study of the newly designed cementless femoral stem. *Biomed Res. Int.* 2014;2014.
 74. Saikia K, Bhuyan S, Rongphar R. Anthropometric study of the hip joint in Northeastern region population with computed tomography scan. *Indian J. Orthop.* Medknow Publications; Juli 2008;42(3):260–6.⁵⁰
 75. Murphy SB, Kijewski PK, Millis MB, Harless A. Acetabular dysplasia in the adolescent and young adult. *Clin. Orthop. Relat. Res.* 1990;(261):214–23.
 76. Daysal GA, Goker B, Gonen E, Demirag MD, Haznedaroglu S, Ozturk MA, u. a. The relationship between hip joint space width, center edge angle and acetabular depth. *Osteoarthr. Cartil.* 2007;15(12):1446–51.
 77. Loder RT, Mehbod AA, Meyer C, Meisterling M. Acetabular Depth and Race in Young Adults: A Potential Explanation of the Differences in the Prevalence of Slipped Capital Femoral Epiphysis Between Different Racial Groups? *J. Pediatr. Orthop.* 2003;23(6):699–702.

78. Mimura T, Mori K, Kitagawa M, Ueki M, Furuya Y, Kawasaki T, u. a. Multiplanar evaluation of radiological findings associated with acetabular dysplasia and investigation of its prevalence in an Asian population: a CT-based study. *BMC Musculoskelet. Disord.* *BMC Musculoskeletal Disorders*; 2017;18(1):1–8.
79. Umer M, Thambyah A, Tan WT, Das De S. Acetabular morphometry for determining hip dysplasia in the Singaporean population. *J. Orthop. Surg. (Hong Kong)*. 2006;14(1):27–31.
80. Klasan A, Neri T, Sommer C, Leie MA, Dworschak P, Schofer MD, u. a. Analysis of acetabular version: Retroversion prevalence, age, side and gender correlations. *J. Orthop. Transl.* Elsevier Ltd; 2019;18:7–12.
81. Anda S, Svenningsen S, Dale LG, Benum P. The acetabular sector angle of the adult hip determined by computed tomography. *Acta radiol.* 1986;27(4):443–7.
82. Jihua L, Bentao Y, Aide X. CT measurement of acetabular sector angle in normal adult. *Chinese J. Radiol. China*; 1999;33(5):324–6.
83. Nelitz M, Guenther KP, Gunkel S, Puhl W. Reliability of radiological measurements in the assessment of hip dysplasia in adults. *Br. J. Radiol.* 1999;72(APR.):331–4.
84. Sahin S, Akata E, Sahin O, Tuncay C, Özkan H. A novel computer-based method for measuring the acetabular angle on hip radiographs. *Acta Orthop. Traumatol. Turc.* 2017;51(2):155–9.
85. Laborie LB, Engesæter IØ, Lehmann TG, Sera F, Dezateux C, Engesæter LB, u. a. Radiographic measurements of hip dysplasia at skeletal maturity - New reference intervals based on 2,038 19-year-old Norwegians. *Skeletal Radiol.* 2013;42(7):925–35.
86. Jacobsen S, Sonne-Holm S, Søballe K, Gebuhr P, Lund B. Hip dysplasia and osteoarthritis: A survey of 4 151 subjects from the Osteoarthritis Substudy of the Copenhagen City heart study. *Acta Orthop.* 2005;76(2):149–58.
87. Ma H, Han Y, Yang Q, Gong Y, Hao S, Li Y, u. a. Three-dimensional computed tomography reconstruction measurements of acetabulum in Chinese adults. *Anat. Rec.* 2014;297(4):643–9.
88. Bubalo P, Baković M, Tkalcic M, Petrovečki V, Mayer D. Acetabular Osteometrie standards for sex estimation in contemporary Croatian population. *Croat. Med. J.* 2019;60(3):221–6.
89. Köhnlein W, Ganz R, Impellizzeri FM, Leunig M. Acetabular morphology: Implications for joint-preserving surgery. *Clin. Orthop. Relat. Res.* 2009;467(3):682–91.

90. Vandenbussche E, Saffarini M, Taillieu F, Mutschler C. The asymmetric profile of the acetabulum. *Clin. Orthop. Relat. Res.* 2008;466(2):417–23.
91. Effenberger H, Koebke J, Wilke R, Hautmann J, Witzel U, Imhof M, u. a. Acetabulumform und zementfreie hüftpfannen: Vergleich von arthroseacetabula mit implantatformen. *Orthopade*. 2004;33(9):1042–50.
92. Thompson MS, Dawson T, Kuiper JH, Northmore-Ball MD, Tanner KE. Acetabular morphology and resurfacing design. *J. Biomech.* 2000;33(12):1645–53.
93. Aksu FT, Çerİ NG, Arman C, Tetİk S. Morphology and Morphometry of the Acetabulum,. *Dokuz Eylül Üniversitesi Tıp Fakültesi Derg.* 2006;20(3):143–8.
94. Devi TB, X CP. Acetabulum-Morphological and Morphometrical Study Research Journal of Pharmaceutical , Biological and Chemical Sciences Acetabulum- Morphological and Morphometrical Study . 2019;(November 2014).
95. Varodompon N, Thinley T, Visutipol B, Ketmalasiri B, Pattarabunjerd N. Correlation between the acetabular diameter and thickness in Thais. *J. Orthop. Surg.* 2002;10(1):41–4.
96. Center JR, Nguyen T V., Pocock NA, Noakes KA, Kelly PJ, Eisman JA, u. a. Femoral neck axis length, height loss and risk of hip fracture in males and females. *Osteoporos. Int.* 1998;8(1):75–81.
97. Ishii S, Cauley JA, Greendale GA, Danielson ME, Safaei Nili N, Karlamangla A. Ethnic differences in composite indices of femoral neck strength. *Osteoporos. Int.* 2012;23(4):1381–90.
98. Christensen AM, Leslie WD, Baim S. Ancestral differences in femoral neck axis length: Possible implications for forensic anthropological analyses. *Forensic Sci. Int. Elsevier Ireland Ltd;* 2014;236:193.e1-193.e4.
99. Branco de Sousa E, Mota Pacheco Fernandes R, Bezerra Mathias M, Roberto Rodrigues M, James Ambram A, Antonio Babinski SOUSA M DE. Morphometric Study of the Proximal Femur Extremity in Brazilians Estudio Morfométrico del Extremo Proximal del Fémur en Brasileños. *Int. J. Morphol.* 2010;28(3):835–40.
100. Maheshwari A V., Zlowodzki MP, Siram G, Jain AK. Femoral neck anteversion, acetabular anteversion and combined anteversion in the normal Indian adult population: A computed tomographic study. *Indian J. Orthop.* 2010;44(3):277–82.
101. Hofmann UK, Ipach I, Rondak IC, Syha R, Götze M, Mittag F. Influence of age on parameters for femoroacetabular impingement and hip dysplasia in x-

- rays. *Acta Ortop. Bras.* 2017;25(5):197–201.
102. Yin Y, Zhang R, Jin L, Li S, Hou Z, Zhang Y. The Hip Morphology Changes with Ageing in Asian Population. *Biomed Res. Int.* Hindawi; 2018;2018.
 103. Teichtahl AJ, Wang Y, Smith S, Wluka AE, Zhu M, Urquhart D, u. a. Bone geometry of the hip is associated with obesity and early structural damage-- a 3.0 T magnetic resonance imaging study of community-based adults. *Arthritis Res. Ther.* BioMed Central; April 2015;17(1):112.
 104. Ledet EH, Liddle B, Kradinova K, Harper S. Smart implants in orthopedic surgery, improving patient Outcomes : a Review. *Innov Entrep Heal.* 2018;5:41–51.
 105. Verma M, Joshi S, Tuli A, Raheja S, Jain P, Srivastava P. Morphometry of proximal femur in Indian population. *J. Clin. Diagnostic Res.* 2017;11(2):AC01–4.
 106. Mushtaq N, To K, Gooding C, Khan W. Radiological imaging evaluation of the failing total hip replacement. *Front. Surg.* 2019;6(June):1–13.
 107. MT M. Failure Causes in Total Hip Replacements: A Review. *Austin J. Orthop. Rheumatol.* 2018;5(1):1–7.
 108. Kennedy JG, Rogers WB, Sofe KE, Sullivan RJ, Griffen DG, Sheehan LJ. Effect of acetabular component orientation on recurrent dislocation, pelvic osteolysis, polyethylene wear, and component migration. *J. Arthroplasty.* United States; August 1998;13(5):530–4.
 109. Lewinnek GE, Lewis JL, Tarr R, Compere CL, Zimmerman JR. Dislocations after total hip-replacement arthroplasties. *J. Bone Joint Surg. Am.* United States; März 1978;60(2):217–20.
 110. Widmer KH, Majewski M. The impact of the CCD-angle on range of motion and cup positioning in total hip arthroplasty. *Clin. Biomech.* 2005;20(7):723–8.
- 50
111. Anderson SE, Siebenrock KA, Tannast M. Femoroacetabular impingement. *Eur. J. Radiol.* 2012.
 112. Brown TD, Elkins JM, Pedersen DR, Callaghan JJ. Impingement and dislocation in total hip arthroplasty: mechanisms and consequences. *Iowa Orthop. J.* 2014;34:1–15.

Lampiran



KOMITE ETIK PENELITIAN KESEHATAN RSUD Dr. SOETOMO SURABAYA

KETERANGAN KELAIKAN ETIK ("ETHICAL CLEARANCE")

1760/KEPK/I/2020

KOMITE ETIK RSUD Dr. SOETOMO SURABAYA TELAH MEMPELAJARI SECARA SEKSAMA RANCANGAN PENELITIAN YANG DIUSULKAN, MAKA DENGAN INI MENYATAKAN BAHWA PENELITIAN DENGAN JUDUL :

"Studi Morfometri Hip Joint dengan Metode CT- Scan di RSUD Dr. Soetomo "

PENELITI UTAMA : Dr. Dwikora Novembri Utomo, dr., Sp.OT (K)

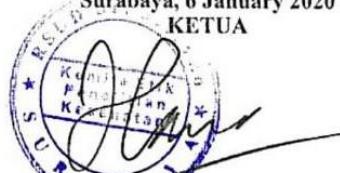
PENELITI LAIN : 1. Dr. Rosy Setiawati, dr., Sp.Rad (K)
2. Raden Taufan Mulyo Wibisono, dr

UNIT / LEMBAGA / TEMPAT PENELITIAN : RSUD Dr. Soetomo

DINYATAKAN LAIK ETIK

Berlaku dari : 06/01/2020 s,d 06/01/2021
Surabaya, 6 January 2020

KETUA



(Dr. Elizeus Planindito, dr., Sp.An, KIC,KAP)
NIP. 19511007 197903 1 002

**) Sertifikat ini dinyatakan sah apabila telah mendapatkan stempel asli dari Komite Etik Penelitian Kesehatan*