

Literaturverzeichnisse 2018

Inhaltsverzeichnis

[06-2018: Literaturverzeichnis Jerosch](#)

[07/08-2018: Literaturverzeichnis Schütz](#)

[07/08-2018: Literaturverzeichnis Steinmeyer](#)

[07/08-2018: Literaturverzeichnis Tibesku](#)

Vollständige Literatur zu Jörg Jerosch: Vergleich des humeralen Offsets von drei verschiedenen inversen Schulterprothesen-Designs OUP 06-2018

Literatur

1. Abdelfattah A, Otto RJ, Simon P et al.: Classification of instability after reverse shoulder arthroplasty guides surgical management and outcomes. *J Shoulder Elbow Surg.* 2017; pii: S1058-2746: 30610-9
2. Ackland DC et al.: Moment arms of the shoulder musculature after reverse total shoulder arthroplasty. *J Bone Joint Surg Am.* 2010; 92: 1221-30
3. Bufquin T, Hersan A, Hubert L, Massin P: Reverse shoulder arthroplasty for the treatment of three- and four-part fractures of the proximal humerus in the elderly: A prospective review of 43 cases with a short-term follow-up. *J Bone Joint Surg Br* 2007; 89: 516-20
4. Cazeneuve JF, Cristofari DJ: The reverse shoulder Prosthesis in the treatment of fractures of the proximal humerus in the elderly. *J Bone Joint Surg Br* 2010; 92: 535-9
5. Chalmers PN et al.: Early dislocation after reverse total shoulder arthroplasty. *J Shoulder Elbow Surg.* 2014; 23: 737-44
6. Cheung E et al.: Complications in reverse total shoulder arthroplasty. *J Am Acad Orthop Surg.* 2011; 19: 439-49
7. Clouthier AL, Hetzler MA, Fedorak G, Bryant JT, Deluzio KJ, Bicknell RT: Factors affecting the stability of reverse shoulder arthroplasty: a biomechanical study. *J Shoulder Elbow Surg.* 2013; 22: 439-44
8. Cuff DJ, Pupello DR, Santoni BG, Clark RE, Frankle MA: Reverse Shoulder Arthroplasty for the Treatment of Rotator Cuff Deficiency: A Concise Follow-up, at a Minimum of 10 Years, of Previous Reports. *J Bone Joint Surg Am.* 2017; 99: 1895-9
9. Day JS, Paxton ES, Lau E, Gordon VA, Abboud JA, Williams GR: Use of reverse total shoulder arthroplasty in the Medicare population. *J Shoulder Elbow Surg.* 2015; 24: 766-72
10. Edwards TB, Williams MD, Labriola JE, Elkousy HA, Gartsman GM, O'Connor DP: Subscapularis insufficiency and the risk of shoulder dislocation after reverse shoulder arthroplasty. *J Shoulder Elbow Surg* 2009; 18: 892-6
11. Engesaeter LB, Lie SA, Espehaug B, Furnes O, Vollset SE, Havelin LI: Antibiotic prophylaxis in total hip arthroplasty; Effects of antibiotic prophylaxis systemically and in bone cement on the revision rate of 22, 170 primary hip replacements followed 0-14 years in the Norwegian Arthroplasty Register. *Acta Orthop Scand* 2003; 74: 644-51
12. Erickson BJ, Frank RM, Harris JD, Mall N, Romeo AA: The influence of humeral head inclination in reverse total shoulder arthroplasty: a systematic review. *J Shoulder Elbow Surg.* 2015; 24: 988-93
13. Farshad M, Gerber C: Reverse total shoulder arthroplasty - from the most to the least common complication. *Int Orthop.* 2010; 34: 1075-82
14. Frankle M, et al: The reverse shoulder prosthesis for glenohumeral arthritis associated with severe rotator cuff deficiency. A minimum 2-year follow-up study of 60 patients. *J Bone Joint Surg Am.* 2005; 87: 1697-705
15. Gerber C, Pennington SD, Nyffeler RW: Reverse total shoulder arthroplasty. *J Am Acad Orthop Surg.* 2009; 17: 284-95
16. Gutiérrez S, Keller TS, Levy JC, Lee WE, Luo ZP: Hierarchy of stability factors in reverse shoulder arthroplasty. *Clin Orthop Relat Res* 2008; 466: 670-6
17. Hattrup SJ, Waldrop R, Sanchez-Sotelo J: Reverse Total Shoulder Arthroplasty for Posttraumatic Sequelae. *J Orthop Trauma.* 2016; 30: e41-7
18. Henninger HB, Barg A, Anderson AE, Bachus KN, Burks RT, Tashjian RZ: Effect of lateral offset center of rotation in reverse total shoulder arthroplasty: a biomechanical study. *J Shoulder Elbow Surg.* 2012; 21: 1128-35
19. Hernandez NM, Chalmers BP, Wagner ER, Sperling JW, Cofield RH, Sanchez-Sotelo J: Revision to Reverse Total Shoulder Arthroplasty Restores Stability for Patients With Unstable Shoulder Prostheses. *Clin Orthop Relat Res.* 2017; 475: 2716-22
20. Jarrett CD, Brown BT, Schmidt CC: Reverse shoulder arthroplasty. *Orthop Clin North Am.* 2013; 44: 389-408
21. Klein SM, Dunning P, Mulieri P, Pupello D, Downes K, Frankle MA: Effects of acquired glenoid bone defects on surgical technique and clinical outcomes in reverse shoulder arthroplasty. *J Bone Joint Surg Am* 2010; 92: 1144-54
22. Kohan EM, Chalmers PN, Salazar D, Keener JD, Yamaguchi K, Chamberlain AM: Dislocation following reverse total shoulder arthroplasty. *J Shoulder Elbow Surg.* 2017; 26: 1238-45
23. Lädermann A, Edwards TB, Walch G: Arm lengthening after reverse shoulder arthroplasty: a review. *Int Orthop.* 2014; 38: 991-1000
24. Manzke M, von Engelhardt LV, Jerosch J: Rezidivierende Instabilität nach periprothetischer Humerusschaftfraktur bei inverser Schulterprothese. Der Anbindungsschlauch als zusätzliche Therapieoption? *OUP* 2017; 11: 574-6
25. Padegimas EM, Zmistowski BM, Restrepo C, Abboud JA, Lazarus MD, Ramsey ML, Williams GR, Namdari S: Instability After Reverse Total Shoulder Arthroplasty: Which Patients Dislocate? *Am J Orthop (Belle Mead NJ).* 2016; 45: E444-E450
26. Randelli P, Randelli F, Arrigoni P, Ragnone V, D'Ambrosi R, Masuzzo P, Cabitza P, Banfi G: Optimal glenoid component inclination in reverse shoulder arthroplasty. How to improve implant stability. *Musculoskelet Surg.* 2014; 98 Suppl 1: 15-8
27. Seebauer L: Total reverse shoulder arthroplasty: European lessons and future trends. *Am J Orthop (Belle Mead NJ)* 2007; 36 (12 suppl 1): 22-8
28. Teusink MJ, Pappou IP, Schwartz DG, Cottrell BJ, Frankle MA: Results of closed management of acute dislocation after reverse shoulder arthroplasty. *J Shoulder Elbow Surg.* 2015; 24: 621-7
29. Valenti P, Boutens D, Nerot C: Delta 3 reversed prosthesis for arthritis with massive rotator cuff tear: Long term results (> 5 years). In: Walch G., Boileau P., Molé D., eds: 2000 Shoulder Prosthesis: Two to Ten Year Follow-up. Montpellier, France, Sauramps Medical, 2001, 253-9
30. Villacis D, Sivasundaram L, Pannell WC, Heckmann N, Omid R, Hatch GF 3rd: Complication rate and implant survival for reverse shoulder arthroplasty versus total shoulder arthroplasty: results during the initial 2 years. *J Shoulder Elbow Surg.* 2016; 25: 927-35
31. Walch G, Bacle G, Lädermann A, Nové-Josserand L, Smithers CJ: Do the indications, results, and complications of reverse shoulder arthroplasty change

with surgeon's experience? J Shoulder Elbow Surg. 2012; 21: 1470–7

32. Walch G, Wall B, Mottier F: Complications and revision of the reverse prosthesis: A multicenter Study of 457 cases. In : Walch G., Boileau P. Molé P., Farvard L., Lévigne C., Sirveaux F., eds : Re-

verse Shoulder Arthroplasty: Clinical Results; Complications, Revision. Montpellier, France, Sauramps Médical, 2006, 335–52

33. Werner CM, et al: Treatment of painful pseudoparesis due to irreparable rotator cuff dysfunction with the Delta III

reverse-ball-and-socket total shoulder prosthesis. J Bone Joint Surg Am. 2005; 87: 1476–86

Vollständige Literatur zu Uwe Schütz: Moderne bildgebende Diagnostik der Arthrose im Allgemeinen und der großen Gelenke der unteren Extremität

OUP 07/08-2018

Literatur

- Altman R, Alarcón G, Appelrouth D et al.: The American College of Rheumatology criteria for the classification and reporting of osteoarthritis of the hip. *Arthritis Rheum* 1991; 34: 505–514
- Altman RD, Hochberg M, Murphy WA Jr. et al.: Atlas of individual radiographic features in osteoarthritis. *Osteoarthritis Cartilage*. 1995; 3 Suppl A: 3–70
- Anderson AF, Irrgang JJ, Kocher MS et al.: The International Knee Documentation Committee Subjective Knee Evaluation Form: normative data. *Am. J. Sports Med* 2006; 34: 128–135
- Bachmann G, Heinrichs C, Jürgensen I et al.: [Comparison of different MRT techniques in the diagnosis of degenerative cartilage diseases. In vitro study of 50 joint specimens of the knee at T1.5]. *Rofo*. 1997; 166: 429–436
- Bachmann GF, Basad E, Rauber K, Damian MS, Rau WS: Degenerative joint disease on MRI and physical activity: a clinical study of the knee joint in 320 patients. *Eur Radiol*. 1999; 9: 145–152
- Beck M, Leunig M, Parvizi J et al.: Anterior femoroacetabular impingement: part II. Midterm results of surgical treatment. *Clin Orthop Relat Res* 2004; 418: 67–73
- Bittersohl B, Hosalkar HS, Hesper T et al.: Advanced imaging in femoroacetabular impingement: Current state and future prospects. *Front Surg* 2015; 2: 34
- Blackburn WD Jr, Bernreuter WK, Rominger M Loose LL: Arthroscopic evaluation of knee articular cartilage: a comparison with plain radiographs and magnetic resonance imaging. *J Rheumatol*. 1994; 21: 675–679
- Boegård T, Rudling O, Petersson IF et al.: Correlation between radiographically diagnosed osteophytes and magnetic resonance detected cartilage defects in the tibiofemoral joint. *Ann Rheum Dis*. 1998; 57: 401–407
- Bogunovic L, Gottlieb M, Pashos G, Baca G, Clohisy JC: Why do hip arthroscopy procedures fail? *Clin Orthop Relat Res* 2013; 471: 2523–2529
- Braunschweig R, Tiemann AHH: *Bildgebung: Was wirklich nötig ist*. OUP 2017; 12: 602–607 DOI 10.3238/oup.2017.0602–0607
- Brian J. Cole, M. Mike Malek (ed.): *Articular cartilage lesions*. New York: Springer, c2004
- Brittberg M, Winanski CS: Evaluation of cartilage injuries and repair. *J. Bone Joint Surg. Am.* 2003; 85-A Suppl 2: 58–69
- Broderick LS, Turner DA, Renfrew DL, Schnitzer TJ, Huff JP, Harris C. Severity of articular cartilage abnormality in patients with osteoarthritis: evaluation with fast spin-echo MR vs arthroscopy. *Am J Roentgenol*. 1994; 162: 99–103
- Bruns J, Steinhagen J: [Lesions of articular cartilage and osteoarthritis – Biological background]. *Dt. Zeitschr f Sport-med.* 2000; 2: 42–47
- Bruyere O, Dardenne C, Lejeune E et al.: Subchondral tibial bone mineral density predicts future joint space narrowing at the medial femoro-tibial compartment in patients with knee osteoarthritis. *Bone* 2003; 32: 541–545
- Burr DB: The importance of subchondral bone in the progression of osteoarthritis. *J Rheumatol*. 2004; 31: 77–8
- Burstein D, Velyvis J, Scott KT et al.: Protocol issues for delayed Gd (DTPA)(2-)-enhanced MRI (dGEMRIC) for clinical evaluation of articular cartilage. *Magn Reson Med* 2001; 45: 36–41
- Cameron ML, Briggs KK, Steadman JR: Reproducibility and reliability of the Outerbridge classification for grading chondral lesions of the knee arthroscopically. *Am J Sports Med* 2003; 31: 83–86
- Carballido-Gamio et al.: Feasibility and reproducibility of relaxometry, morphometric, and geometrical measurements of the hip joint with magnetic resonance imaging at 3T. *J Magn Reson Imaging* 2008; 28: 227–235
- Clohisy JC, Carlisle JC, Beaulé PE et al.: A systematic approach to the plain radiographic evaluation of the young adult hip. *J Bone Joint Surg Am.* 2008; 90 Suppl 4: 47–66
- Disler DG, McCauley TR, Kelman CG: Fat-suppressed three-dimensional spoiled gradient-echo MR imaging of hyaline cartilage defects in the knee: comparison with standard MR imaging and arthroscopy. *Am J Roentgenol*. 1996; 167: 127–132
- Domb BG, Gui C, Lodhia P: How much arthritis is too much for hip arthroscopy: a systematic review. *Arthroscopy* 2015; 31: 520–529
- Drapé JL, Pessis E, Auleley GR et al.: Quantitative MR imaging evaluation of chondropathy in osteoarthritic knees. *Radiology*. 1998; 208: 49–55
- Dunn TC, Lu Y, Jin H, Ries MD, Majumdar S: T2 relaxation time of cartilage at MR imaging: comparison with severity of knee osteoarthritis. *Radiology*. 2004 Aug; 232: 592–8
- Eckstein F, Hudelmaier M, Wirth W et al.: Double echo steady state magnetic resonance imaging of knee articular cartilage at 3 Tesla: a pilot study for the Osteoarthritis Initiative. *Ann Rheum Dis*. 2006; 65: 433–441
- Fairbank TJ: Knee joint changes after meniscectomy. *J. Bone Joint Surg. Br.* 1948; 30B: 664–670
- Falah M, Nierenberg G, Soudry M et al.: Treatment of articular cartilage lesions of the knee. *Int Orthop*. 2010; 34: 621–630
- Field RE, Rajakulendran K: The labroacetabular complex. *J Bone Joint Surg Am.* 2011; 93 Suppl 2: 22–7
- Fontana A, de Girolamo L: Sustained five-year benefit of autologous matrix-induced chondrogenesis for femoral acetabular impingement-induced chondral lesions compared with microfracture treatment. *Bone Joint J* 2015; 97-b: 628–635
- Friemert B, Oberlander Y, Schwarz W: Diagnosis of chondral lesions of the knee joint: can MRI replace arthroscopy? A prospective study. *Knee Surg Sports Traumatol Arthrosc.* 2004; 12: 58–64
- Gaissmaier C, Fritz J, Mollenhauer JA: [Outcome of clinically overt cartilage injuries without and with biological reconstruction]. *Dtsch Ärztebl.* 2003; 100: 2448–2453
- Gold GE, Reeder SB, Yu H: Articular cartilage of the knee: rapid three-dimensional MR imaging at 3.0 T with IDEAL balanced steady-state free precession-initial experience. *Radiology*. 2006; 240: 546–551
- Hackenbroch MH. *Arthrosen: Basiswissen zu Klinik, Diagnostik und Therapie*. Stuttgart: Thieme Verlag, 2002
- Haviv B, Singh PJ, Takla A, O'Donnell J: Arthroscopic femoral osteochondroplasty for cam lesions with isolated ace-

- tabular chondral damage. *J Bone Joint Surg Br* 2010; 92: 629–633
36. Hayes CW, Jamadar DA, Welch GW et al.: Osteoarthritis of the knee: comparison of MR imaging findings with radiographic severity measurements and pain in middle-aged women. *Radiology*. 2005; 237: 998–1007
 37. Horisberger M, Brunner A, Herzog RF: Arthroscopic treatment of femoral acetabular impingement in patients with preoperative generalized degenerative changes. *Arthroscopy* 2010; 26: 623–629
 38. Huda W, Nickoloff EL, Boone JM: Overview of patient dosimetry in diagnostic radiology in the USA for the past 50 years. *Med Phys* 2008; 35: 5713–5728.
 39. Huétink K, Nelissen RG, Watt I, van Erkel AR, Bloem JL: Localized development of knee osteoarthritis can be predicted from MR imaging findings a decade earlier. *Radiology*. 2010; 256: 536–546
 40. Hunter DJ, Lo GH, Gale D et al.: The reliability of a new scoring system for knee osteoarthritis MRI and the validity of bone marrow lesion assessment: BLOKS. *Ann. Rheum. Dis.* 2008; 67: 206–211
 41. Imhof H, Czerny C, Gahleitner A et al.: Koxarthrose. *Radiologe* 2002; 42: 416–431
 42. Imhof H, Nöbauer-Huhmann I, Trattning S: Koxarthrose – ein Update. *Radiologe* 2009; 49: 400–409
 43. Insall JN, Dorr LD, Scott RD et al.: Rationale of the Knee Society clinical rating system. *Clin Orthop Relat Res*, 1989: 13–14
 44. Ito K, Minka MA 2nd, Leunig M, Werlen S, Ganz R: Femoroacetabular impingement and the cam-effect. A MRI-based quantitative anatomical study of the femoral head-neck offset. *J Bone Joint Surg Br*. 2001; 83: 171–6
 45. Jäger M, Wirth CJ: *Praxis der Orthopädie*. Stuttgart, New York: Thieme, 1986
 46. Jaroma A, Suomalainen JS, Niemitukka L, Soiniivaara T, Salo J, Kröger H: Imaging of symptomatic total knee arthroplasty with cone beam computed tomography. *Acta Radiol*. 2018; Jan 1: 284185118762247. doi: 10.1177/0284185118762247.
 47. Jerosch J: Akuter Gelenkinfekt. *Orthopäde* 2004; 33, 1309–1320
 48. Jungius KP, Schmid MR, Zanetti M, Hodler J, Koch P, Pfirrmann CW: Cartilaginous defects of the femorotibial joint: accuracy of coronal short inversion time inversion-recovery MR sequence. *Radiology*. 2006; 240: 482–488
 49. Katthagen BD, Zahedi AR: Indikationen und klinische Anwendung der 3-fachen Beckenosteotomie nach Tönnis/Kalchschmidt. *OUP* 2015; 02: 072–075
 50. Kawahara Y, Uetani M, Nakahara N: Fast spin-echo MR of the articular cartilage in the osteoarthrotic knee. Correlation of MR and arthroscopic findings. *Acta Radiol*. 1998; 39: 120–125
 51. Kellgren JH, Lawrence JS: Radiological assessment of osteo-arthritis. *Ann Rheum Dis*. 1957; 16: 494–502
 52. Keppler P, Strecker W, Kinzl L: Analysis of leg geometry--standard techniques and normal values]. *Chirurg*. 1998; 69: 1141–1152
 53. Kijowski R, Blankenbaker DG, Davis KW et al.: Comparison of 1.5- and 3.0-T MR imaging for evaluating the articular cartilage of the knee joint. *Radiology*. 2009; 250: 839–848
 54. Kijowski R, Blankenbaker DG, Woods MA et al.: 3.0-T evaluation of knee cartilage by using three-dimensional IDEAL GRASS imaging: comparison with fast spin-echo imaging. *Radiology*. 2010; 255: 117–127
 55. Kijowski R, Davis KW, Woods MA et al.: Knee joint: Comprehensive assessment with 3D isotropic resolution fast spin-echo MR imaging – Diagnostic performance compared with that of conventional MR imaging at 3.0 T. *Radiology*. 2009; 252: 486–495
 56. Kijowski R: Clinical cartilage imaging of the knee and hip joints. *AJR Am J Roentgenol* 2010; 195: 618–628
 57. Kornaat PR, Bloem JL, Ceulemans RY et al.: Osteoarthritis of the knee: association between clinical features and MR imaging findings. *Radiology*. 2006; 239: 811–817
 58. Kornaat PR, Bloem JL, Ceulemans RY: Osteoarthritis of the knee: association between clinical features and MR imaging findings. *Radiology*. 2006; 239: 811–817
 59. Krampla W, Roesel M, Svoboda K et al.: MRI of the knee: how do field strength and radiologist's experience influence diagnostic accuracy and interobserver correlation in assessing chondral and meniscal lesions and the integrity of the anterior cruciate ligament? *Eur. Radiol*. 2009; 19: 1519–1528
 60. Kwee RM, Hafezi-Nejad N, Roemer FW et al: Association of Mucoid Degeneration of the Anterior Cruciate Ligament at MR Imaging with Medial Tibiofemoral Osteoarthritis Progression at Radiography: Data from the Osteoarthritis Initiative. *Radiology*. 2018; doi: 10.1148/radiol.2018171565. [Epub ahead of print]
 61. Lanyon P, O'Reilly S, Jones A et al.: Radiographic assessment of symptomatic knee osteoarthritis in the community: definitions and normal joint space. *Ann Rheum Dis* 1998; 57: 595–601
 62. Larson CM, Giveans MR, Taylor M: Does arthroscopic FAI correction improve function with radiographic arthritis? *Clin Orthop Relat Res* 2011; 469: 1667–1676
 63. Lattanzi R, Petchprapa C, Ascani D et al.: Detection of cartilage damage in femoroacetabular impingement with standardized dGEMRIC at 3 T. *Osteoarthritis Cartilage* 2014; 22: 447–456
 64. Liess C, Lüsse S, Karger N et al.: Detection of changes in cartilage water content using MRI T2-mapping in vivo. *Osteoarthritis Cartilage* 2002; 10: 907–913
 65. Link TM, Steinbach LS, Ghosh S et al.: Osteoarthritis: MR imaging findings in different stages of disease and correlation with clinical findings. *Radiology*. 2003; 226: 373–381
 66. Link TM, Steinbach LS, Ghosh S et al.: Osteoarthritis: MR imaging findings in different stages of disease and correlation with clinical findings. *Radiology*. 2003; 226: 373–381
 67. Link TM. MR imaging in osteoarthritis: hardware, coils, and sequences. *Radiol Clin North Am*. 2009; 47: 617–632
 68. Llopis E, Fernandez E, Cerezal L: MR and CT arthrography of the hip. *Semin Musculoskelet Radiol* 2012; 16: 42–56
 69. Llopis et al.: Direct MR arthrography of the hip with leg traction: feasibility for assessing articular cartilage. *AJR Am J Roentgenol* 2008; 190: 1124–1128
 70. Mamisch TC, Werlen S, Zilkens C et al.: Radiologische Diagnose des femoroacetabulären Impingements. *Radiologe* 2009; 49: 425–433
 71. Masi JN, Sell CA, Phan C et al.: Cartilage MR imaging at 3.0 versus that at 1.5 T: preliminary results in a porcine model. *Radiology*. 2005; 236: 140–150
 72. Mathieu L, Bouchard A, Marchaland JP: Knee MR-arthrography in assessment of meniscal and chondral lesions. *Orthop Traumatol Surg Res*. 2009; 95: 40–47
 73. Matikka H, Virén T. Radiation dose reduction in cone-beam computed tomography of extremities: evaluation of a novel radiation shield. *J Radiol Prot*. 2014; 34: N57–63
 74. McCarthy JC, Jarrett BT, Ojeifo O, Lee JA, Bragdon CR: What factors influence long-term survivorship after hip arthroscopy? *Clin Orthop Relat Res* 2011; 469: 362–371
 75. McCormick F, Nwachukwu BU, Alpaugh K, Martin SD: Predictors of hip arthroscopy outcomes for labral tears at minimum 2-year follow-up: the influence of age and arthritis. *Arthroscopy* 2012; 28: 1359–1364
 76. McNicholas MJ, Brooksbank AJ, Walker CM: Observer agreement analysis of MRI grading of knee osteoarthritis. *R Coll Surg Edinb*. 1999; 44: 31–33
 77. Mosher TJ, Smith H, Dardzinski BJ et al.: MR imaging and T2 mapping of femoral cartilage: in vivo determination of the magic angle effect. *Am J Roentgenol* 2001; 177: 665–669

78. Mosher TJ: MRI of osteochondral injuries of the knee and ankle in the athlete. *Clin Sports Med.* 2006; 25: 843–66
79. Muraoka T, Hagino H, Okano T et al.: Role of subchondral bone in osteoarthritis development: a comparative study of two strains of guinea pigs with and without spontaneously occurring osteoarthritis. *Arthritis Rheum* 2007; 56: 3366–3374
80. Naal FD, Impellizzeri FM, Sieverding M et al.: The 12-item Oxford Knee Score: cross-cultural adaptation into German and assessment of its psychometric properties in patients with osteoarthritis of the knee. *Osteoarthritis Cartilage* 2009; 17: 49–52
81. Nakanishi et al.: MR evaluation of the articular cartilage of the femoral head during traction. Correlation with resected femoral head. *Acta Radiol* 1999; 40: 60–63
82. Nikolaou VS, Chronopoulos E, Savvidou C: MRI efficacy in diagnosing internal lesions of the knee: a retrospective analysis. *J Trauma Manag Outcomes.* 2008; 2: 4
83. Nishii et al.: Articular cartilage evaluation in osteoarthritis of the hip with MR imaging under continuous leg traction. *Magn Reson Imaging* 1998; 16: 871–875
84. Nishii T, Tanaka H, Sugano N et al.: Evaluation of cartilage matrix disorders by T2 relaxation time in patients with hip dysplasia. *Osteoarthritis Cartilage* 2008; 16: 227–233
85. Outerbridge RE: The etiology of chondromalacia patellae. *J Bone Joint Surg Br.* 1961; 43-B: 752–757
86. Outerbridge RE: Further studies on the etiology of chondromalacia patellae. *J. Bone Joint Surg.Br.* 1964; 46: 179–190
87. Pagenstert GI, Bachmann M: Klinische Untersuchung bei patellofemorale Problemen. *Orthopädie.* 2008; 37: 890–903
88. Pan J, Pialat JB, Joseph T et al.: Knee cartilage T2 characteristics and evolution in relation to morphologic abnormalities detected at 3-T MR imaging: a longitudinal study of the normal control cohort from the Osteoarthritis Initiative. *Radiology.* 2011; 261: 507–515
89. Pastoureaux, PC, Chomel AC, Bonnet J: Evidence of early subchondral bone changes in the meniscectomized guinea pig (a densitometric study using dual X-ray absorptiometry subregional analysis). *Osteoarthritis Cart* 1999; 7: 466–473
90. Petchprapa CN, Recht MP: Imaging of chondral lesions including femoroacetabular impingement. *Semin Musculoskelet Radiol* 2013; 17: 258–271
91. Peterfy CG, Guermazi A, Zaim S et al.: Whole-Organ Magnetic Resonance Imaging Score (WORMS) of the knee in osteoarthritis. *Osteoarthritis.Cartilage.* 2004; 12: 177–190
92. Pfirrmann CW, Mengiardi B, Dora C et al.: Cam and pincer femoroacetabular impingement: characteristic MR arthrographic findings in 50 patients. *Radiology* 2006; 240: 778–785
93. Philippon MJ, Briggs KK, Yen YM, Kuppersmith DA: Outcomes following hip arthroscopy for femoroacetabular impingement with associated chondrolabral dysfunction: minimum two-year followup. *J Bone Joint Surg Br* 2009; 91: 16–23
94. Potter HG, Linklater JM, Allen AA, Hannafin JA, Haas SB: Magnetic resonance imaging of articular cartilage in the knee: an evaluation with use of fast-spin-echo imaging. *J Bone Joint Surg Am* 1998; 80: 1276–1284
95. Quatman CE, Hettrich CM, Schmitt LC et al.: The Clinical Utility and Diagnostic Performance of MRI for Identification of Early and Advanced Knee Osteoarthritis: A Systematic Review. *Am J Sports Med.* 2011; 39: 1557–1568
96. Rächle M, Cemerka M, Eibenberger B et al.: Arthrose – Update 2012. *Radiologe* 2012; 52: 149–155
97. Rehnitz C, Weber MA: Morphologische und funktionelle Knorpeldiagnostik. *Orthopädie* 2015; 44: 317–336
98. Roemer FW, Eckstein F, Guermazi A: Magnetic resonance imaging-based semiquantitative and quantitative assessment in osteoarthritis. *Rheum Dis Clin North Am.* 2009; 35: 521–55
99. Roos EM, Roos HP, Lohmander LS: WOMAC Osteoarthritis Index – additional dimensions for use in subjects with post-traumatic osteoarthritis of the knee. *Western Ontario and MacMaster Universities. Osteoarthritis Cartilage,* 1999; 7: 216–221
100. Roos EM, Roos HP, Ekdahl C et al.: Knee injury and Osteoarthritis Outcome Score (KOOS)- validation of a Swedish version. *Scand J Med Sci Sports,* 1998; 8: 439–48
101. Rosenberg TD, Paulos LE, Parker RD et al.: The forty-five degree posteroanterior flexion weight-bearing radiograph of the knee. *J Bone Joint Surg Am.* 1988; 70A: 1479–1483
102. S2k-Leitlinie Gonarthrose, Stand 18.01.2018. AWMF Registernummer: 033-004. Federführende Fachgesellschaft: Deutsche Gesellschaft für Orthopädie und Orthopädische Chirurgie (DGOOC), Deutsche Gesellschaft für Orthopädie und Unfallchirurgie (DGOU).
103. Sankar WN, Matheney TH, Zaltz I: Femoroacetabular impingement: current concepts and controversies. *Orthop Clin North Am* 2013; 44: 575–589
104. Saris DB, Dhert WJ, Verboort AJ: Joint homeostasis. The discrepancy between old and fresh defects in cartilage repair. *J Bone Joint Surg Br.* 2003; 85: 1067–1076
105. Schaefer FK, Kurz B, Schaefer PJ: Accuracy and precision in the detection of articular cartilage lesions using magnetic resonance imaging at 1.5 Tesla in an in vitro study with orthopedic and histopathologic correlation. *Acta Radiol.* 2007; 48: 1131–1137
106. Scheidt-Nave C, Kamtsiuris P, Gosswald A et al.: German health interview and examination survey for adults (DEGS) – design, objectives and implementation of the first data collection wave. *BMC Public Health,* 2012; 12: 730
107. Schmid MR, Pfirrmann CW, Koch P et al.: Imaging of patellar cartilage with a 2D multiple-echo data image combination sequence. *Am. J. Roentgenol.* 2005; 184: 1744–1748
108. Schmitt F, Grosu D, Mohr C et al.: [3 Tesla MRI: successful results with higher field strengths]. *Radiologe.* 2004; 44: 31–48
109. Schröder RJ, Fischbach F, Unterhauser FN et al.: [Value of various MR sequences using 1.5 and 3.0 Tesla in analyzing cartilaginous defects of the patella in an animal model]. *Rofo.* 2004; 176: 1667–1675
110. Schütz UH, Billich C, Schoss D, Beer M, Ellermann J: MRI Cartilage Assessment of the Subtalar and Midtarsal Joints During a Transcontinental Ultramarathon – New Insights into Human Locomotion. *Int J Sports Med.* 2018; 39: 37–49
111. Schütz UH, Ellermann J, Schoss D, Wiedelbach H, Beer M, Billich C: Biochemical cartilage alteration and unexpected signal recovery in T2* mapping observed in ankle joints with mobile MRI during a transcontinental multi-stage footrace over 4486 km. *Osteoarthritis Cartilage.* 2014; 22: 1840–1850
112. Schütz UH, Schmidt-Trucksäss A et al.: The Transeurope Footrace Project: Longitudinal data acquisition in a cluster randomized mobile MRI observational cohort study on 44 endurance runners at a 64-stage 4,486km transcontinental ultramarathon. *BMC Med.* 2012; 10: 78
113. Schütz UH: Komplikationen bei der bildgebenden Diagnostik. In: Wirth CJ, Mutschler W, Bischoff HP, Püschmann H, Neu J (Hrsg.): *Komplikationen in Orthopädie und Traumatologie. Vermeiden, erkennen, behandeln.* Stuttgart: Georg Thieme Verlag, 2010: 72–81
114. Seitlinger G, Scheurecker G, Högler R, Kramer J, Hofmann S: *Bildgebende Diagnostik des Patellofemoralegelenks. Arthroskopie* 2010; 23: 176–83
115. Sharma L, Kapoor D: Epidemiology of Osteoarthritis 8. In: Moskowitz RW et al.: (Hrsg.): *Osteoarthritis. Diagnosis, Medical/Surgical Management.* 4th ed. Philadelphia: Lippincott Williams & Wilkins; 2007: 3–26
116. Skendzel JG, Philippon MJ, Briggs KK, Goljan P: The effect of joint space on

- midterm outcomes after arthroscopic hip surgery for femoroacetabular impingement. *Am J Sports Med* 2014; 42: 1127–1133
117. Sonin AH, Pency RA, Mulligan ME, Hatem S: Grading articular cartilage of the knee using fast spin-echo proton density-weighted MR imaging without fat suppression. *Am J Roentgenol.* 2002; 179: 1159–1166
118. Spahn G, Schiltenswolf M, Hartmann B et al.: [The time-related risk for knee osteoarthritis after ACL injury. Results from a systematic review]. *Orthopäde* 2016; 45: 81–90
119. Spahn G, Stojanowic I, Biehl M, Klemm HT, Hofmann GO: Klassifikation von Knorpelschaden und Arthrose. *OUP* 2016; 9: 509–514
120. Steppacher SD, Tannast M, Siebenrock KA: Labrumläsionen des Hüftgelenks. *Orthopädie und Unfallchirurgie up2date* 2008; 3: 215–232
121. Suh JS, Lee SH, Jeong EK et al.: Magnetic resonance imaging of articular cartilage. *Eur Radiol.* 2001; 11: 2015–2025
122. Sutter R, Zanetti M, Pfirrmann CW: New developments in hip imaging. *Radiology* 2012; 264: 651–667
123. Sutter R, Zubler V, Hoffmann A et al.: Hip MRI: how useful is intraarticular contrast material for evaluating surgically proven lesions of the labrum and articular cartilage? *Am J Roentgenol* 2014; 202: 160–169
124. Tesch C: Fokussierte Sonografie in Orthopädie und Unfallchirurgie. *Symptom-orientierte Sonografie zum raschen Erkenntnisgewinn.* *OUP* 2018; 1: 005–009
125. Thorey F: Grenzen der erhaltenden Knorpel- und Arthrosetherapie am Hüftgelenk. *OUP* 2016; 9: 646–650
126. Tibor LM, Leunig M: The pathoanatomy and arthroscopic management of femoroacetabular impingement. *Bone Joint Res* 2012; 1: 245–257
127. Tiderius CJ, Tjornstrand J, Akeson P et al.: Delayed gadolinium-enhanced MRI of cartilage (dGEMRIC): intra- and interobserver variability in standardized drawing of regions of interest. *Acta Radiol.* 2004; 45: 628–634
128. Tiemann AHH: Muskuloskeletale Infektionen: Handlungsleitfaden für Diagnostik und Therapie. Berlin: Walter de Gruyter, 2016
129. Turunen MJ, Töyräs J, Kokkonen HT, Jurvelin JS: Extremity cone-beam CT for evaluation of medial tibiofemoral osteoarthritis: Initial experience in imaging of the weight-bearing and non-weight-bearing knee. *Eur J Radiol.* 2015; 84: 2564–2570
130. Turunen MJ, Töyräs J, Kokkonen HT, Jurvelin JS: Quantitative evaluation of knee subchondral bone mineral density using cone beam computed tomography. *IEEE Trans Med Imaging.* 2015; 34: 2186–2190
131. Vallotton JA, Meuli RA, Leyvraz PF et al.: Comparison between magnetic resonance imaging and arthroscopy in the diagnosis of patellar cartilage lesions: a prospective study. *Knee. Surg. Sports Traumatol Arthrosc* 1995; 3: 157–162
132. von Engelhardt LV, Jerosch J: Bildgebende Diagnostik der Arthrose im klinischen Alltag. *OUP* 2015; 05: 252–257
133. von Engelhardt LV, Kraft CN, Pennekamp PH et al.: The evaluation of articular cartilage lesions of the knee with a 3-Tesla magnet. *Arthroscopy.* 2007; 23: 496–502
134. von Engelhardt LV, Lahner M, Klusmann A: Arthroscopy vs. MRI for a detailed assessment of cartilage disease in osteoarthritis: diagnostic value of MRI in clinical practice. *BMC Musculoskelet Disord.* 2010; 11: 75
135. von Engelhardt LV, Raddatz M, Haage P, Bouillon B, David A, Lichtinger TK: Is MRI reliable for diagnostics chondral and osteochondral lesions in patients with acute lateral patella dislocation? *BMC Musculoskelet Disord.* 2010; 11: 149
136. von Engelhardt LV, Schmitz A, Burian B: [3-Tesla MRI vs. arthroscopy for diagnostics of degenerative knee cartilage diseases: preliminary clinical results]. *Orthopäde.* 2008; 37: 916–922
137. Wagner D: Patellofemorales Schmerzsyndrom. *OUP* 2017; 6: 301–305
138. Weber MA, Egermann M, Thierjung H et al.: Moderne radiologische postoperative Diagnostik des Hüftgelenks im Kindes- und Erwachsenenalter. *Fortschr Röntgenstr* 2015; 187: 525–542
139. Weber MA, Merle C, Rehnitz C, Gotterbarm T: Modern Radiological Imaging of Osteoarthritis of The Hip Joint With Consideration of Predisposing Conditions. *Rofo.* 2016; 188: 635–651
140. Weber MA, Rehnitz C, Ott H et al.: Leistenschmerz beim Sportler. *Fortschr Röntgenstr* 2013; 185: 1139–1148
141. Wettstein et al.: Direct MR arthrography of the hip with leg traction: feasibility for assessing articular cartilage. *AJR Am J Roentgenol* 2008; 191: W206
142. Wong S, Steinbach L, Zhao J, Stehling C, Ma CB, Link TM: Comparative study of imaging at 3.0 T versus 1.5 T of the knee. *Skeletal Radiol.* 2009; 38: 761–769
143. Wrixon AD: New ICRP recommendations. *J Radiol Prot* 2008; 28: 161–168
144. Yamamoto S, Watanabe A, Nakamura J et al.: Quantitative T2 mapping of femoral head cartilage in systemic lupus erythematosus patients with noncollapsed osteonecrosis of the femoral head associated with corticosteroid therapy. *J Magn Reson Imaging* 2011; 34: 1151–1158
145. Yoshioka H, Stevens K, Genovese M, Dillingham MF, Lang P: Articular cartilage of knee: normal patterns at MR imaging that mimic disease in healthy subjects and patients with osteoarthritis. *Radiology.* 2004; 231: 31–38
146. Yoshioka H, Stevens K, Hargreaves BA: Magnetic resonance imaging of articular cartilage of the knee: comparison between fat-suppressed three-dimensional SPGR imaging, fat-suppressed FSE imaging, and fat-suppressed three-dimensional DEFT imaging, and correlation with arthroscopy. *J Magn Reson Imaging.* 2004; 20: 857–864
147. Zacher J, Gursche A: Diagnostik der Arthrose. *Orthopäde* 2001; 30: 841–847
148. Zilkens C, Jäger M, Bittersohl B et al.: Delayed Gadolinium Enhanced MRI of Cartilage (dGEMRIC) – Molekulare MRT-Bildgebung des Hüftgelenkknorpels. *Orthopäde* 2009; 38: 591–599

Vollständige Literatur zu Steinmeyer et al.: Medikamentöse Therapie der Gonarthrose – besondere Aspekte der neuen Leitlinie OUP 07-2018

Literatur

- Fuchs J, Rabenberg M, Scheidt-Nave C: Prävalenz ausgewählter muskuloskelettaler Erkrankungen. Ergebnisse der Studie zur Gesundheit Erwachsener in Deutschland (DEGS1). Bundesgesundheitsbl 2013; 56: 678–86
- Steinmeyer J, Konttinen YT: Oral treatment options for degenerative joint disease--presence and future. Adv Drug Deliv Rev 2006; 58: 168–211
- Grandt D, Schubert I: Arzneimittelreport 2016. Analysen zur Arzneimitteltherapie und Arzneimitteltherapiesicherheit. In: Barmer GEK (Hrsg.): Schriftenreihe zur Gesundheitsanalyse. Berlin: Asgard Verlagsservice GmbH, 2016, Bd. 39
- Beglinger C: Ethics related to drug therapy in the elderly. Dig Dis 2008; 41: 1411–1426
- Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften (AWMF): S2k-Leitlinie Gonarthrose. Registernummer 033–004, Stand 18.01.2018, unter: <http://www.awmf.org/leitlinien/detail/ll/033-004.html> (abgerufen am 20.03.2018)
- NICE National Institute for Health and Care Excellence: Osteoarthritis: care and management. Clinical guideline. Publiziert am 12.02.2014, unter: <http://www.nice.org.uk/guidance/cg177/resources/osteoarthritis-care-and-management-35109757272517> (abgerufen am 20.03.2018)
- McAlindon TE, Bannuru RR, Sullivan MC et al.: OARSI guidelines for the non-surgical management of knee osteoarthritis. Osteoarthritis Cartilage 2014; 22: 363–88
- Bannuru RR, Schmid CH, Kent DM et al.: Comparative effectiveness of pharmacologic interventions for knee osteoarthritis. A systematic review and network meta-analysis. Ann Intern Med 2015; 152: 46–54
- da Costa BR, Reichenbach S, Keller N et al.: Effectiveness of non-steroidal anti-inflammatory drugs for the treatment of pain in knee and hip osteoarthritis: a network meta-analysis. Lancet 2016; 387: 2093–105
- Machado GC, Maher CG, Ferreira PH et al.: Efficacy and safety of paracetamol for spinal pain and osteoarthritis: systematic review and meta-analysis of randomised placebo controlled trials. BMJ 2014; 350: h1225
- Stamer, UM, Gundert-Remy U, Biermann E et al.: Metamizol – Überlegungen zum Monitoring zur frühzeitigen Diagnose einer Agranulozytose. Schmerz 2017; 31: 5–13
- Arzneimittelkommission der deutschen Ärzteschaft (AkdÄ): Agranulozytose nach Metamizol – sehr selten, aber häufiger als gedacht. Dtsch Arztebl 2011; 108: A-1758
- Jerosch J, Breil-Wirth A: Worauf müssen wir beim Einsatz von Metamizol achten? OUP 2017; 6: 577–81
- Bundesinstitut für Arzneimittel- und Medizinprodukte: Metamizol (Novalgine, Berlosin, Novaminsulfon, etc.): BfArM weist auf richtige Indikationsstellung und Beachtung von Vorsichtsmaßnahmen und Warnhinweisen hin. Publiziert 28.05.2009, unter: <https://www.bfarm.de/SharedDocs/Risikoinformationen/Pharmakovigilanz/DE/RI/2009/RI-metamizol.html> (abgerufen am 20.03.2018)
- Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften (AWMF): Empfehlungen der S3-Leitlinie – Langzeitanwendung von Opioiden bei nicht tumorbedingten Schmerzen – „LONTS“. Registernummer 145/003, Stand 09/2014, Überarbeitung 01/2015, unter: http://www.awmf.org/uploads/tx_szleitlinien/145-003l_S3_LONTS_2015-01.pdf (abgerufen am 20.03.2018)
- da Costa BR, Nüesch E, Kasteler R et al.: Oral or transdermal opioids for osteoarthritis of the knee or hip. Cochrane Database Syst Rev 2014; CD003115
- Welsch P, Sommer C, Schiltenswolf M, Häuser W: Opioids in chronic non-cancer pain: Are opioids superior to non-opioid analgesics? A systematic review and metaanalysis of efficacy and harms of randomized head-to-head comparisons of opioids versus non-opioid analgesics in studies of at least four weeks duration. Schmerz 2015; 29: 85–95
- Miller M, Sturmer T, Azrael D et al.: Opioid analgesics and the risk of fractures in older adults with arthritis. J Am Geriatr Soc 2011; 59: 430–8
- Andresen V, Wedel T: Opioidinduzierte Obstipation. Arzneiverordnung in der Praxis 2016; 43, 21–9. Unter: <https://www.akdae.de/Arzneimitteltherapie/AVP/Artikel/201601/021h/index.php> (abgerufen am 20.03.2018)
- Coxib and traditional NSAID Trialists' (CNT) Collaboration: Vascular and upper gastrointestinal effects of non-steroidal anti-inflammatory drugs: meta-analyses of individual participant data from randomised trials. Lancet 2013; 382: 769–79
- Derry S, Conaghan P, Da Silva JAP et al.: Topical NSAIDs for chronic musculoskeletal pain in adults. Cochrane Database Syst Rev 2016; CD007400
- Hochberg MC, Altman RD, April KT et al.: American College of Rheumatology 2012 recommendations for the use of nonpharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee. Arthritis Care & Research 2012; 64: 465–74
- AAOS American Academy of Orthopaedic Surgeons: Treatment of osteoarthritis of the knee, evidence-based guideline, 2nd edition. Publiziert am 18.05.2013, unter: http://www.aaos.org/uploadedFiles/PreProduction/Quality/Guidelines_and_Reviews/Osteoarthritis%20of%20the%20Knee%20-%20non-arthroplasty.pdf (abgerufen am 20.03.2018)
- Fischbach W, Baerwald C, Darius H et al.: Schmerztherapie mit traditionellen NSAR und Coxiben – eine interdisziplinäre Betrachtung. Dtsch Med Wochenschr, 2013; 138: 91–6
- Nissen SE, Yeomans ND, Solomon DH et al.: Cardiovascular safety of celecoxib, naproxen, or ibuprofen for arthritis. N Engl J Med 2016; 375: 2519–29
- Arzneimittelkommission der deutschen Ärzteschaft (AkdÄ): Nichtsteroidale Antirheumatika (NSAR) im Vergleich: Risiko von Komplikationen im oberen Gastrointestinaltrakt, Herzinfarkt und Schlaganfall. Dtsch Arztebl 2013; 110: A1447–8
- Hippisley-Cox J, Coupland C, Logan R: Risk of adverse gastrointestinal outcomes in patients taking cyclo-oxygenase-2 inhibitors or conventional non-steroidal anti-inflammatory drugs: population based nested case-control analysis. BMJ 2005; 331: 1310–6
- Lewis SC, Langman MJS, Laporte J-R et al.: Dose-response relationships between individual nonaspirin nonsteroidal anti-inflammatory drugs (NSAIDs) and serious upper gastrointestinal bleeding: a meta-analysis based on individual patient data. Brit J Clin Pharm 2002; 54: 320–6

29. Castellsague J, Riera-Guardia N, Calingaert B et al.: Individual NSAIDs and upper gastrointestinal complications: a systematic review and meta-analysis of observational studies (the SOS project). *Drug Saf* 2012; 35: 1127–46
30. Rostom A, Muir K, Dube C et al. Prevention of NSAID-related upper gastrointestinal toxicity: a meta-analysis of traditional NSAIDs with gastroprotection and COX-2 inhibitors. *Drug Healthc Patient Saf* 2009; 1: 47–71
31. Spiegel BM, Farid M, Dulai GS et al.: Comparing rates of dyspepsia with Coxibs vs NSAID+PPI: a meta-analysis. *Am J Med* 2006; 119: 448.e27–36
32. Bundesärztekammer (BÄK), Kassenärztliche Bundesvereinigung (KBV), Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften (AWMF): Nationale Versorgungs-Leitlinie Nicht-spezifischer Kreuzschmerz – Langfassung, 2. Auflage. Version 1, 2017. Unter: http://www.awmf.org/uploads/tx_szleitlinien/nvl-0071_S3_Kreuzschmerz_2017-03.pdf (abgerufen am 20.03.2018).
33. European Medicines Evaluation Agency (EMA): Public assessment report for medicinal products containing non-selective non steroidal antiinflammatory drugs (NSAIDs). Publiziert am 07.11.2006, unter: http://www.ema.europa.eu/docs/en_GB/document_library/Report/2010/01/WC500054344.pdf (abgerufen am 20.03.2018)
34. EMA: PRAC recommends the same cardiovascular precautions for diclofenac as for selective COX-2 inhibitors. EMA/353084/2013. Publiziert am 14.06.2013, unter: http://www.ema.europa.eu/docs/en_GB/document_library/Press_release/2013/06/WC500144451.pdf (abgerufen am 20.03.2018)
35. Arzneimittelkommission der deutschen Ärzteschaft (AkdÄ). Diclofenac – Neue Kontraindikationen und Warnhinweise nach europaweiter Überprüfung der kardiovaskulären Sicherheit. Rote-Hand-Brief vom 15.07.2013, unter: <https://www.akdae.de/Arzneimittelsicherheit/RHB/Archiv/2013/20130715.pdf> (abgerufen am 20.03.2018)
36. Varas-Lorenzo C, Riera-Guardia N, Calingaert B et al.: Myocardial infarction and individual nonsteroidal anti-inflammatory drugs meta-analysis of observational studies. *Pharmacoepidemiol Drug Saf* 2013; 22: 559–70
37. Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften (AWMF): S1-Leitlinie Intraartikuläre Punktionen und Injektionen: Hygienemaßnahmen. Registernummer 029/006, letzte Überarbeitung 08/2015, unter: http://www.awmf.org/uploads/tx_szleitlinien/029-006l_S1_Hygiene_intraartikuläre_Punktionen_und_Injektionen_2015-08_01.pdf (abgerufen am 20.03.2018)
38. Hepper CT, Halvorson JJ, Duncan ST et al.: The efficacy and duration of intra-articular corticosteroid injection for knee osteoarthritis: a systematic review of level I studies. *J Am Acad Orthop Surg* 2009; 17: 638–66
39. Arden NK, Reading IC, Jordan KM et al. A randomised controlled trial of tidal irrigation vs corticosteroid injection in knee osteoarthritis: the KIVIS Study. *Osteoarthritis Cartilage* 2008; 16: 733–9
40. Arroll B, Goodyear-Smith F: Corticosteroid injections for osteoarthritis of the knee: metaanalysis. *BMJ* 2004; 328: 869
41. Hirsch G, Kitas G, Klocke R: Intra-articular corticosteroid injection in osteoarthritis of the knee and hip: factors predicting pain relief—a systematic review. *Semin Arthritis Rheum* 2013; 42: 451–73
42. McAlindon TE, LaValley MP, Harvey WF et al.: Effect of intra-articular triamcinolone vs saline on knee cartilage volume and pain in patients with knee osteoarthritis: A randomized clinical trial. *JAMA* 2017; 317: 1967–75
43. Kosinska MK, Ludwig TE, Liebisch G et al.: Articular joint lubricants during osteoarthritis and rheumatoid arthritis display altered levels and molecular species. *PLoS One* 2015; 10: e0125192
44. Bannuru RR, Natov NS, Dasi UR et al.: Therapeutic trajectory following intra-articular hyaluronic acid injection in knee osteoarthritis-meta-analysis. *Osteoarthritis Cartilage* 2011; 19: 611–9
45. Miller LE, Block JE: US-approved intra-articular hyaluronic acid injections are safe and effective in patients with knee osteoarthritis: Systematic review and meta-analysis of randomized saline-controlled trials. *Clin Med Insights Arthritis Musculoskelet Disord* 2013; 6: 57–63
46. Bruyere O, Cooper C, Pelletier JP et al.: An algorithm recommendation for the management of knee osteoarthritis in Europe and internationally: a report from a task force of the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO). *Semin Arthritis Rheum* 2014; 44: 253–63
47. Bruyere O, Cooper C, Pelletier JP et al.: A consensus statement on the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO) algorithm for the management of knee osteoarthritis-From evidence-based medicine to the real-life setting. *Semin Arthritis Rheum* 2016; 45: S3–11
48. Wandel S, Juni P, Tendal B et al.: Effects of glucosamine, chondroitin, or placebo in patients with osteoarthritis of hip or knee: network meta-analysis. *BMJ* 2010; 341: c4675
49. Henrotin Y, Marty M, Mobasheri A: What is the current status of chondroitin sulfate and glucosamine for the treatment of knee osteoarthritis? *Maturitas* 2014; 78: 184–7
50. Hochberg MC, Zhan M, Langenberg P: The rate of decline of joint space width in patients with osteoarthritis of the knee: a systematic review and meta-analysis of randomized placebo-controlled trials of chondroitin sulfate. *Curr Med Res Opin* 2008; 24: 3029–35
51. Lee YH, Woo JH, Choi SJ et al.: Effect of glucosamine or chondroitin sulfate on the osteoarthritis progression: a meta-analysis. *Rheumatol Int* 2010; 30: 357–63
52. Martel-Pelletier J, Roubille C, Abram F et al.: First-line analysis of the effects of treatment on progression of structural changes in knee osteoarthritis over 24 months: data from the osteoarthritis initiative progression cohort. *Ann Rheum Dis* 2015; 74: 547–56
53. Raynauld JP, Pelletier JP, Abram F et al.: Long-term effects of glucosamine and chondroitin sulfate on the progression of structural changes in knee osteoarthritis: Six-year followup data from the osteoarthritis initiative. *Arthritis Care Res (Hoboken)* 2016; 68: 1560–6
54. Sawitzke AD, Shi H, Finco MF et al.: The effect of glucosamine and/or chondroitin sulfate on the progression of knee osteoarthritis: a report from the glucosamine/chondroitin arthritis intervention trial. *Arthritis Rheum* 2008; 58: 3183–91
55. Yang S, Eaton CB, McAlindon TE et al.: Effects of glucosamine and chondroitin supplementation on knee osteoarthritis: an analysis with marginal structural models. *Arthritis Rheumatol* 2015; 67: 714–23
56. Clegg DO, Reda DJ, Harris CL et al. Glucosamine, chondroitin sulphate, and the two in combination for painful knee osteoarthritis. *New Engl J Med* 2006; 354: 795–808
57. Steinmeyer J. Weihrauch zur Behandlung der Arthrose? *Arzneiverordnung in der Praxis* 2017; 44: 132–4

Vollständige Literatur zu Carsten Tibesku: Gelenkersetzende Therapie bei Gonarthrose OUP 07-2018

Literatur

- DGOU DGfOuU. Leitlinie Gonarthrose. www.awmf.org/leitlinien/detail/ll/033-004.html 2018
- Berchuck M, Andriacchi TP, Bach BR, Reider B: Gait adaptations by patients who have a deficient anterior cruciate ligament. *J Bone Joint Surg Am.* 1990; 72: 871-7
- Andriacchi TP: Dynamics of pathological motion: applied to the anterior cruciate deficient knee. *J Biomech.* 1990; 23 Suppl 1: 99-105
- Chassin EP, Mikosz RP, Andriacchi TP, Rosenberg AG: Functional analysis of cemented medial unicompartmental knee arthroplasty. *J Arthroplasty.* 1996; 11: 553-9
- Argenson JN, Komistek RD, Aubaniac JM et al.: In vivo determination of knee kinematics for subjects implanted with a unicompartmental arthroplasty. *J Arthroplasty.* 2002; 17: 1049-54
- Becker R, Mauer C, Starke C et al.: Anteroposterior and rotational stability in fixed and mobile bearing unicompartmental knee arthroplasty: a cadaveric study using the robotic force sensor system. *Knee Surg Sports Traumatol Arthrosc.* 2013; 21: 2427-32
- Fuchs S, Tibesku CO, Flören M, Thorwesten L: Interdependence of clinical and isokinetic results after bicondylar knee prostheses with special emphasis on quality of life results. *Int Orthop.* 2000; 24: 268-71
- Fuchs S, Tibesku CO, Genkinger M, Laass H, Rosenbaum D: Proprioception with bicondylar sledge prostheses retaining cruciate ligaments. *Clin Orthop Relat Res.* 2003; 148-54
- Fuchs S, Tibesku CO, Frisse D, Laass H, Rosenbaum D: Quality of life and gait after unicompartmental knee prosthesis are inferior to age-matched control subjects. *Am J Phys Med Rehabil.* 2003; 82: 441-6
- Dalury DE, Fisher DA, Adams MJ, Gonzales RA: Unicompartmental knee arthroplasty compares favorably to total knee arthroplasty in the same patient. *Orthopedics.* 2009; 32 (4)
- Von Keudell A, Sodha S, Collins J, Minas T, Fitz W, Gomoll AH: Patient satisfaction after primary total and unicompartmental knee arthroplasty: an age-dependent analysis. *The Knee.* 2014; 21: 180-4
- Berend KR, Berend ME, Dalury DE, Argenson JN, Dodd CA, Scott RD: Consensus Statement on Indications and Contraindications for Medial Unicompartmental Knee Arthroplasty. *J Surg Orthop Adv.* 2015; 24: 252-6
- Niinimäki TT, Murray DW, Partanen J, Pajala A, Leppilähti JI: Unicompartmental knee arthroplasties implanted for osteoarthritis with partial loss of joint space have high re-operation rates. *The Knee.* 2011; 18: 432-5
- Pandit H, Gulati A, Jenkins C et al.: Unicompartmental knee replacement for patients with partial thickness cartilage loss in the affected compartment. *The Knee.* 2011; 18: 168-71
- Cheng M, Chen D, Guo Y, Zhu C, Zhang X: Comparison of fixed- and mobile-bearing total knee arthroplasty with a mean five-year follow-up: A meta-analysis. *Experimental and therapeutic medicine.* 2013; 6: 45-51
- Kleeblad LJ, van der List JP, Zuiderbaan HA, Pearle AD: Larger range of motion and increased return to activity, but higher revision rates following unicompartmental versus total knee arthroplasty in patients under 65: a systematic review. *Knee Surg Sports Traumatol Arthrosc.* 2017 Nov 28 (Epub ahead of print)
- Svärd UC, Price AJ: Oxford medial unicompartmental knee arthroplasty. A survival analysis of an independent series. *J Bone Joint Surg Br.* 2001; 83: 191-4
- Heyse TJ, Tibesku CO: Lateral unicompartmental knee arthroplasty: a review. *Arch Orthop Trauma Surg.* 2010; 130: 1539-48
- Volpi P, Marinoni L, Bait C, Galli M, Denti M: Lateral unicompartmental knee arthroplasty: indications, technique and short-medium term results. *Knee Surg Sports Traumatol Arthrosc.* 2007; 15: 1028-34
- Walker T, Zahn N, Bruckner T et al.: Mid-term results of lateral unicompartmental mobile bearing knee arthroplasty: a multicentre study of 363 cases. *Bone Joint J.* 2018; 100-B(1): 42-49
- Argenson JN, Parratte S, Ashour A, Komistek RD, Scuderi GR: Patient-reported outcome correlates with knee function after a single-design mobile-bearing TKA. *Clin Orthop Relat Res.* 2008; 466: 2669-76
- Pisanu G, Rosso F, Bertolo C et al.: Patellofemoral Arthroplasty: Current Concepts and Review of the Literature. *Joints.* 2017; 5: 237-45
- Leadbetter WB, Ragland PS, Mont MA: The appropriate use of patellofemoral arthroplasty: an analysis of reported indications, contraindications, and failures. *Clin Orthop Relat Res.* 2005 (436): 91-9
- Beckmann J, Steinert A, Zilkens C et al.: [Partial replacement of the knee joint with patient-specific instruments and implants (ConforMIS iUni, iDuo)]. *Der Orthopäde.* 2016; 45: 322-30
- Parratte S, Ollivier M, Opsomer G, Lunebourg A, Argenson JN, Thienpont E: Is knee function better with contemporary modular bicompartmental arthroplasty compared to total knee arthroplasty? Short-term outcomes of a prospective matched study including 68 cases. *Orthop Traumatol Surg Res.* 2015; 101: 547-52
- Benazzo F, Rossi SM, Ghiara M: Partial knee arthroplasty: patellofemoral arthroplasty and combined unicompartmental and patellofemoral arthroplasty implants-general considerations and indications, technique and clinical experience. *The Knee.* 2014; 21 Suppl 1: S43-6
- Thienpont E, Price A: Bicompartmental knee arthroplasty of the patellofemoral and medial compartments. *Knee Surg Sports Traumatol Arthrosc.* 2013; 21: 2523-31
- Yeo NE, Chen JY, Yew A, Chia SL, Lo NN, Yeo SJ: Prospective randomised trial comparing unlinked, modular bicompartmental knee arthroplasty and total knee arthroplasty: a five years follow-up. *The Knee.* 2015; 22: 321-7
- Fuchs S, Tibesku CO, Frisse D, Genkinger M, Laass H, Rosenbaum D: Clinical and functional comparison of uni- and bicondylar sledge prostheses. *Knee Surg Sports Traumatol Arthrosc.* 2005; 13: 197-202
- Gunston FH: Polycentric knee arthroplasty. Prosthetic simulation of normal knee movement. *J Bone Joint Surg Br.* 1971; 53: 272-7
- Coventry MB, Finerman GA, Riley LH, Turner RH, Upshaw JE: A new geometric knee for total knee arthroplasty. *Clin Orthop Relat Res.* 1972; 83: 157-62
- Riley D, Woodyard JE: Long-term results of Geomedic total knee replacement. *J Bone Joint Surg Br.* 1985; 67: 548-50
- Cloutier JM: Results of total knee arthroplasty with a non-constrained prosthesis. *J Bone Joint Surg Am.* 1983; 65: 906-19
- Cloutier JM, Sabouret P, Deghrar A: Total knee arthroplasty with retention of

- both cruciate ligaments. A nine to eleven-year follow-up study. *J Bone Joint Surg Am.* 1999; 81: 697–702
35. Baumann F, Krusch W et al.: Reduced joint-awareness in bicruciate-retaining total knee arthroplasty compared to cruciate-sacrificing total knee arthroplasty. *Arch Orthop Trauma Surg.* 2018; 138: 273–9
36. Baumann F, Bahadin O, Krusch W et al.: Proprioception after bicruciate-retaining total knee arthroplasty is comparable to unicompartmental knee arthroplasty. *Knee Surg Sports Traumatol Arthrosc.* 2017; 25:1697–704
37. Athwal KK, Hunt NC, Davies AJ, Deehan DJ, Amis AA: Clinical biomechanics of instability related to total knee arthroplasty. *Clin Biomech (Bristol, Avon).* 2014; 29: 119–28
38. Ishii Y, Noguchi H, Takeda M, Kiga H, Toyabe SI: Effect of voluntary soft tissue tension and articular conformity after total knee arthroplasty on in vivo anteroposterior displacement. *The Knee.* 2011; 18: 11–4
39. Haider H, Walker PS: Measurements of constraint of total knee replacement. *J Biomech.* 2005; 38: 341–8
40. Heesterbeek P, Keijsers N, Jacobs W, Verdonschot N, Wymenga A: Posterior cruciate ligament recruitment affects antero-posterior translation during flexion gap distraction in total knee replacement. An intraoperative study involving 50 patients. *Acta orthopaedica.* 2010; 81: 471–7
41. Zelle J, Heesterbeek PJ, De Waal Malefijt M, Verdonschot N: Numerical analysis of variations in posterior cruciate ligament properties and balancing techniques on total knee arthroplasty loading. *Med Eng Phys.* 2010; 32: 700–7
42. Fantozzi S, Catani F, Ensini A, Leardini A, Giannini S: Femoral rollback of cruciate-retaining and posterior-stabilized total knee replacements: in vivo fluoroscopic analysis during activities of daily living. *J Orthop Res.* 2006; 24: 2222–9
43. Walker PS, Sussman-Fort JM, Yildirim G, Boyer J: Design features of total knees for achieving normal knee motion characteristics. *J Arthroplasty.* 2009; 24: 475–83
44. Lattanzio PJ, Chess DG, MacDermid JC: Effect of the posterior cruciate ligament in knee-joint proprioception in total knee arthroplasty. *J Arthroplasty.* 1998; 13: 580–5
45. Matziolis G, Mehlhorn S, Schattat N et al.: How much of the PCL is really preserved during the tibial cut? *Knee Surg Sports Traumatol Arthrosc.* 2012; 20: 1083–6
46. Moro-oka TA, Muenchinger M, Canciani JP, Banks SA: Comparing in vivo kinematics of anterior cruciate-retaining and posterior cruciate-retaining total knee arthroplasty. *Knee Surg Sports Traumatol Arthrosc.* 2007; 15: 93–9
47. Victor J, Banks S, Bellemans J: Kinematics of posterior cruciate ligament-retaining and -substituting total knee arthroplasty: a prospective randomised outcome study. *J Bone Joint Surg Br.* 2005; 87: 646–55
48. Bellemans J, Banks S, Victor J, Vandenuecker H, Moemans A: Fluoroscopic analysis of the kinematics of deep flexion in total knee arthroplasty. Influence of posterior condylar offset. *J Bone Joint Surg Br.* 2002; 84: 50–3
49. Watanabe T, Ishizuki M, Muneta T, Banks SA: Knee kinematics in anterior cruciate ligament-substituting arthroplasty with or without the posterior cruciate ligament. *J Arthroplasty.* 2013; 28: 548–52
50. Heyse TJ, Becher C, Kron N et al.: Quadriceps force in relation of intrinsic anteroposterior stability of TKA design. *Arch Orthop Trauma Surg.* 2010; 130: 1–9
51. Becher C, Heyse TJ, Kron N et al.: Posterior stabilized TKA reduce patellofemoral contact pressure compared with cruciate retaining TKA in vitro. *Knee Surg Sports Traumatol Arthrosc.* 2009; 17: 1159–65
52. Bellemans J, Robijns F, Duerinckx J, Banks S, Vandenuecker H: The influence of tibial slope on maximal flexion after total knee arthroplasty. *Knee Surg Sports Traumatol Arthrosc.* 2005; 13: 193–6
53. Arabori M, Matsui N, Kuroda R et al.: Posterior condylar offset and flexion in posterior cruciate-retaining and posterior stabilized TKA. *J Orthop Sci.* 2008; 13: 46–50
54. Jacobs WC, Clement DJ, Wymenga AB: Retention versus removal of the posterior cruciate ligament in total knee replacement: a systematic literature review within the Cochrane framework. *Acta orthopaedica.* 2005; 76: 757–68
55. Abdel MP, Morrey ME, Jensen MR, Morrey BF: Increased long-term survival of posterior cruciate-retaining versus posterior cruciate-stabilizing total knee replacements. *J Bone Joint Surg Am.* 2011; 93: 2072–8
56. National Joint Replacement Registry, annual report [database on the Internet]. 2011 [cited 2013]
57. Bercik MJ, Joshi A, Parvizi J: Posterior cruciate-retaining versus posterior-stabilized total knee arthroplasty: a meta-analysis. *J Arthroplasty.* 2013; 28: 439–44
58. Lombardi AV, Jr., Berend KR: Posterior cruciate ligament-retaining, posterior stabilized, and varus/valgus posterior stabilized constrained articulations in total knee arthroplasty. *Instr Course Lect.* 2006; 55: 419–27
59. Laskin RS, Maruyama Y, Villaneuva M, Bourne R: Deep-dish congruent tibial component use in total knee arthroplasty: a randomized prospective study. *Clin Orthop Relat Res.* 2000; 380: 36–44
60. Scott RD, Thornhill TS: Posterior cruciate supplementing total knee replacement using conforming inserts and cruciate recession. Effect on range of motion and radiolucent lines. *Clin Orthop Relat Res.* 1994; 309: 146–9
61. Daniilidis K, Skwara A, Vieth V et al.: Highly conforming polyethylene inlays reduce the in vivo variability of knee joint kinematics after total knee arthroplasty. *The Knee.* 2012; 19: 260–5
62. Fisher J, Jennings LM, Galvin AL, Jin ZM, Stone MH, Ingham E: 2009 Knee Society Presidential Guest Lecture: Polyethylene wear in total knees. *Clin Orthop Relat Res.* 2010; 468: 12–8
63. Galvin AL, Kang L, Udofia I et al.: Effect of conformity and contact stress on wear in fixed-bearing total knee prostheses. *J Biomech.* 2009; 42: 1898–902
64. Huang CH, Ma HM, Liao JJ, Ho FY, Cheng CK: Osteolysis in failed total knee arthroplasty: a comparison of mobile-bearing and fixed-bearing knees. *J Bone Joint Surg Am.* 2002; 84-A (12): 2224–9
65. Pagnano MW, Trousdale RT, Stuart MJ, Hanssen AD, Jacofsky DJ: Rotating platform knees did not improve patellar tracking: a prospective, randomized study of 240 primary total knee arthroplasties. *Clin Orthop Relat Res.* 2004; 428: 221–7
66. Jacobs WC, Clement DJ, Wymenga AB: Retention versus sacrifice of the posterior cruciate ligament in total knee replacement for treatment of osteoarthritis and rheumatoid arthritis. *Cochrane Database Syst Rev.* 2005 (4): CD004803.
67. van der Voort P, Pijls BG, Nouta KA, Valstar ER, Jacobs WC, Nelissen RG: A systematic review and meta-regression of mobile-bearing versus fixed-bearing total knee replacement in 41 studies. *Bone Joint J.* 2013; 95-B (9): 1209–16
68. Girard J, Amzallag M, Pasquier G et al.: Total knee arthroplasty in valgus knees: predictive preoperative parameters influencing a constrained design selection. *Orthop Traumatol Surg Res.* 2009; 95: 260–6
69. Sculco TP: The role of constraint in total knee arthroplasty. *J Arthroplasty.* 2006; 21 (4 Suppl 1): 54–6
70. Gustke KA: Preoperative planning for revision total knee arthroplasty: avoiding chaos. *J Arthroplasty.* 2005; 20 (4 Suppl 2): 37–40
71. McAuley JP, Engh GA: Constraint in total knee arthroplasty: when and what? *J Arthroplasty.* 2003; 18 (3 Suppl 1): 51–4
72. Bauwens K, Matthes G, Wich M et al.: Navigated total knee replacement. A meta-analysis. *J Bone Joint Surg Am.* 2007; 89: 261–9

73. Tibesku CO: [Total knee arthroplasty with the use of patient specific instruments. The VISIONAIRE system]. *Der Orthopäde*. 2016; 45: 286–93
74. Mannan A, Akinyooye D, Hossain F: A Meta-analysis of Functional Outcomes in Patient-Specific Instrumented Knee Arthroplasty. *Knee Surg*. 2017; 30: 668–74
75. Mannan A, Smith TO: Favourable rotational alignment outcomes in PSI knee arthroplasty: A Level 1 systematic review and meta-analysis. *The Knee*. 2016; 23: 186–90
76. Tibesku CO, Hofer P, Portegies W, Ruys CJ, Fennema P: Benefits of using customized instrumentation in total knee arthroplasty: results from an activity-based costing model. *Arch Orthop Trauma Surg*. 2013; 133: 405–11
77. Slamin J, Parsley B: Evolution of customization design for total knee arthroplasty. *Curr Rev Musculoskelet Med*. 2012; 5: 290–5
78. Steinert AF, Holzapfel BM, Seifried L, Arnholdt J, Hoberg M, Rudert M: Totalendoprothetischer Kniegelenkersatz. Patientenspezifische Instrumente und Implantate. *Der Orthopäde*. 2016; 45: 331–40
78. Jerosch J, Heisel J, Tibesku CO: Knieendoprothetik, Indikationen, Operationstechnik, Nachbehandlung, Begutachtung. Berlin: Springer-Verlag, 2. Aufl. 2015