

Chapter 4: References

1. Dinesh J, Patty F. Actigraph and Actical physical activity monitors: A peek under the hood. *Med Sci Sport Exerc.* 2013;44:1–6.
2. Bhopal R. Glossary of terms relating to ethnicity and race: for reflection and debate. *J Epidemiol Community Heal.* 2004;58(6):441–5.
3. Bamshad M, Olsen S. Does race exist? *Sci Am.* 2003;(December):78–85.
4. Pate RR, O'Neill JR, Lobelo F. The evolving definition of “sedentary”. *Exerc Sport Sci Rev.* 2008;36(4):173–8.
5. Ngian G. Rheumatoid arthritis. *Australian Family Physician.* 2010;39(9):626–8.
6. Firestein GS. Evolving concepts of rheumatoid arthritis. *Nature.* 2003;423:356–61.
7. Scrivo R, Franco MDI, Spadaro A, Medica T, Universit S. The Immunology of Rheumatoid Arthritis. *Ann N Y Acad Sci.* 2007;322:312–22.
8. Klareskog L, Catrina AI, Paget S. Rheumatoid arthritis. *Lancet.* 2009 Feb;373(9664):659–72.
9. Tikly M. Modern management of rheumatoid arthritis – making a case for early aggressive medical treatment. *SA Pharm Journal.* 2010;10:28–34.
10. Harris E. Rheumatoid arthritis - Pathophysiology and implications for therapy. *N Engl J Med.* 1990;332(18):1277–88.
11. Braun J, Sieper J. Classification criteria for rheumatoid arthritis and ankylosing spondylitis. *Clin Exp Rheumatol.* 2009;27:68–73.
12. Sokolove J, Strand V. Rheumatoid Arthritis Classification Criteria. *Bull NYU Hosp Jt Dis.* 2010;68(3):232–8.
13. McInnes IB, Schett G. The pathogenesis of rheumatoid arthritis. *N Engl J Med.* 2011;365(23):2205–19.
14. Van der Helm-van Mil A, van der Kooij S, Allaart C, Toes R, Huizinga T. A high body mass index has a protective effect on the amount of joint destruction in small joints in early rheumatoid arthritis. *Ann Rheum Dis.* 2008;67(6):769–74.
15. Franklin E, Holman H, Muller-Eberhard H, Kunkel H. An unusual protein component of high molecular weight in the serum of certain patients with rheumatoid arthritis. *J Exp Med.* 1957;(9):425–38.
16. Suurmond J, Schuurwegh AJ, Toes RE. Anti-citrullinated protein antibodies in rheumatoid arthritis: a functional role for mast cells and basophils? *Ann Rheum Dis.* 2011;70:55–8.
17. Bartels CM, Bridges A. Rheumatoid Vasculitis: Vanishing Menace or Target for New Treatments. *Curr Opin Rheumatol.* 2011;12(6):414–9.
18. Aletaha D, Smolen J. The Simplified Disease Activity Index (SDAI) and the Clinical Disease Activity Index (CDAI): a review of their usefulness and validity in rheumatoid arthritis. *Clin Exp Rheumatol.* 2005;23:100–8.
19. Hodgkinson B, Duuren E Van, Pettipher C. South African recommendations for the management of rheumatoid arthritis : An algorithm for the standard of care in 2013. 2013;103(8):577–85.
20. Malaviya AN. Outcome measures in rheumatoid arthritis. *J Rheumatol.* 2003;6:178–83.
21. Wells GA. Patient-Driven Outcomes in Rheumatoid Arthritis. *J Rheumatol.* 2009;36:33–8.
22. Bazzichi L, Maser J, Piccinni A, Rucci P, Del Debbio A, Vivarelli L, et al. Quality of life in rheumatoid arthritis: impact of disability and lifetime depressive spectrum symptomatology. *Clin Exp Rheumatol.* 2005;23(6):783–8.
23. Kop WJ, Lyden A, Berlin AA, Ambrose K, Olsen C, Gracely RH, et al. Ambulatory Monitoring of Physical Activity and Symptoms in Fibromyalgia and Chronic Fatigue Syndrome. *Arthritis Rheum.* 2005;52(1):296–303.
24. Song J, Semanik P, Sharma L, Chang RW, Hochberg MC, Mysiw WJ, et al. Assessing Physical Activity in Persons With Knee Osteoarthritis Using Accelerometers : Data From the Osteoarthritis Initiative. *Arthritis Care Res.* 2010;62(12):1724 –1732.
25. Ellingson L, Colbert L, Cook D. Physical Activity Is Related to Pain Sensitivity in Healthy Women. *Med Sci Sport Exerc.* 2012;DOI:10.1249/MS.1401–6.
26. Mody GM, Cardiel MH. Challenges in the management of rheumatoid arthritis in developing countries. *Best Pract Res Clin Rheumatol.* 2008;22(4):621–41.
27. Drewes AM, Svendsen L, Taagholt SJ, Bjerrega K, Dremstrup Nielsen K, Hansen B. Sleep in rheumatoid arthritis: a comparison with healthy subjects and studies of sleep/wake interactions. *Br J Rheumatol.* 1998;37:71–81.
28. Fries JF, Spitz P, Kraines RG, Holman HR. Measurement of patient outcome in arthritis. *Arthritis Rheum.* 1980;23(2):137–45.

29. Bruce B, Fries JF. The Health Assessment Questionnaire (HAQ). *Clin Exp Rheumatol*. 2005;23:14–8.
30. Benitha R, Tikly M. Functional disability and health-related quality of life in South Africans with rheumatoid arthritis and systemic lupus erythematosus. *Clin Rheumatol*. 2007;26(1):24–9.
31. Talamo J, Frater A, Gallivan S, Young A. Use of the Short Form 36 (SF36) for health status measurements in rheumatoid arthritis. *Br J Rheumatol*. 1997;36:463–9.
32. Hodkinson B, Musenge E. Functional disability and health-related quality of life in South Africans with early rheumatoid arthritis. *Rheumatol*. 2012;366–74.
33. Kalyoncu U, Dougados M, Daure J. Reporting of patient-reported outcomes in recent trials in rheumatoid arthritis : a systematic literature review. *Ann Rheum Dis*. 2009;68:183–90.
34. Her M, Kavanaugh A. Patient-reported outcomes in rheumatoid arthritis. *Curr Opin Rheumatol*. 2012;24(3):327–34.
35. Zijlstra TR, Moens HJB, Bukhari MAS. The rheumatoid arthritis articular damage score: first steps in developing a clinical index of long term damage in RA. *Ann Rheum Dis*. 2002;61:20–3.
36. Sharp JT, Lidsky MD, Collins LC, Moreland J. Methods of scoring the progression of radiologic changes in rheumatoid arthritis. *Arthritis Rheum*. 1971;14(6):706–20.
37. Olsen NJ, Stein CM. New drugs for rheumatoid arthritis. *N Engl J Med*. 2004;350(21):2167–79.
38. Swierkot J, Szechiński J. Methotrexate in rheumatoid arthritis. *Pharmacol Reports*. 2006;473–92.
39. Watkins AL. Current trends in physical medicine and rehabilitation. *N Engl J Med*. 1952;247:91–7.
40. Solomon L, Robin G, Valkenburg HA. Rheumatoid arthritis in an urban South African Negro population. *Ann Rheum Dis*. 1975;34(2):128–35.
41. Meyers O, Daynes G, Beighton P. Rheumatoid arthritis in a tribal Xhosa population in the Transkei, Southern Africa. *Ann Rheum Dis*. 1977;36(1):62–5.
42. Mody G, Meyers O. Rheumatoid arthritis in blacks in South Africa. *Ann Rheum Dis*. 1989;48(1):69–72.
43. Abdel-Nasser AM, Rasker JJ, Vaikenburg HA. Epidemiological and clinical aspects relating to the variability of rheumatoid arthritis. *Semin Arthritis Rheum*. 1997;27(2):123–40.
44. Van der Heijde D, van der Helm-van Mil AHM, Aletaha D, Bingham CO, Burmester GR, Dougados M, et al. EULAR definition of erosive disease in light of the 2010 ACR/EULAR rheumatoid arthritis classification criteria. *Ann Rheum Dis*. 2013;72(4):479–81.
45. Barwell R. A treatise on diseases of the joints. New York: W. Wood, 1881.
46. Leslie WD, Adler R a, El-Hajj Fuleihan G, Hodsman AB, Kendler DL, McClung M, et al. Application of the 1994 WHO classification to populations other than postmenopausal Caucasian women: the 2005 ISCD Official Positions. *J Clin Densitom*. 2006;9(1):22–30.
47. Gough AK, Lilley J, Eyre S, Holder RL, Emery P. Generalised bone loss in patients with early rheumatoid arthritis. *Lancet*. 1994;344(8914):23–7.
48. Laan M. Bone mineral density in patients with recent onset rheumatoid arthritis : influence of disease activity. *Ann Rheum Dis*. 1993;52:21–6.
49. Deodhar AA, Woolf AD. Bone mass measurement and bone metabolism in rheumatoid arthritis: a review. *Br J Rheumatol*. 1996;35(4):309–22.
50. Geraci A, Maria S. Osteoporosis in Rheumatoid Arthritis. 2006;75–93.
51. Coetsee M, Kruger MC. Osteoprotegerin-Receptor Activator of Nuclear Factor- κ B Ligand Ratio: A New Approach to Osteoporosis Treatment? *South Med JA*. 2004;97(5):2–6.
52. Pearson OM, Lieberman DE. The aging of Wolff's "law": ontogeny and responses to mechanical loading in cortical bone. *Am J Phys Anthropol*. 2004:63–99.
53. Turner CH. Three rules for bone adaptation to mechanical stimuli. *Bone*. 1998;23(5):399–407.
54. Pereira RMR, Carvalho JF De, Canalis E. Glucocorticoid-induced osteoporosis in rheumatic diseases. *Clinics*. 2010;65(11):1197–205.
55. Haugeberg G, Uhlig T, Falch JA, Halse JJ, Kvien TK. Bone mineral density and frequency of osteoporosis in female patients with rheumatoid arthritis: results from 394 patients in the Oslo County Rheumatoid Arthritis register. *Arthritis Rheum*. 2000;43(3):522–30.
56. Turner CH, Robling AG. Exercises for improving bone strength. *Br J Sports Med*. 2005;39(4):188–9.
57. Roubenoff R, Walsmith J, Lundgren N, Snyderman L, Dolnikowski GJ, Roberts S. Low physical activity reduces total energy expenditure in women with rheumatoid arthritis : implications for dietary intake. *Am J Clin Nutr*. 2002;76:774–9.
58. Summers GD, Deighton CM, Rennie MJ, Booth AH. Rheumatoid cachexia: a clinical perspective. *Rheumatology (Oxford)*. 2008;47(8):1124–31.
59. Rajbhandary R, Khezri A, Panush RS. Rheumatoid cachexia: what is it and why is it important? *J Rheumatol*. 2011;38(3):406–8.
60. Summers GD, Metsios GS, Stavropoulos-Kalinoglou A, Kitas GD. Rheumatoid Cachexia and Cardiovascular Disease: Cachexia in RA. *Nat Rev Rheumatology*. 2010;6:445–451.

61. Da Rocha O, Batista A, Maesta N, Burini RC, Laurindo I. Sarcopenia in rheumatoid cachexia: definition, mechanisms, clinical consequences and potential therapies. *Bras J Rheumatology*. 2009;49(3):288–301.
62. Roubenoff R, Roubenoff RA, Cannon JG, Kehayias JJ, Zhuang H, Dawson-Hughes B, et al. Rheumatoid cachexia: cytokine-driven hypermetabolism accompanying reduced body cell mass in chronic inflammation. *J Clin Invest*. 1994;93(6):2379–86.
63. Cruz-Jentoft AJ, Baeyens JP, Bauer JM, Boirie Y, Cederholm T, Landi F, et al. Sarcopenia: European consensus on definition and diagnosis: Report of the European Working Group on Sarcopenia in Older People. *Age Ageing*. 2010;39(4):412–23.
64. Marcora SM, Lemmey AB, Maddison PJ. Can progressive resistance training reverse cachexia in patients with rheumatoid arthritis? Results of a pilot study. *J Rheumatol*. 2005;32(6):1031–9.
65. Sharif S, Thomas JM, Donley DA, Gilleland DL, Bonner DE, McCrory JL, et al. Resistance exercise reduces skeletal muscle cachexia and improves muscle function in rheumatoid arthritis. *Case Rep Med*. 2011;2011:205691.
66. Stavropoulos-Kalinoglou A, Metsios GS, Koutedakis Y, Kitas GD. Obesity in rheumatoid arthritis. *Rheumatology*. 2010;DOI:10.1093/rheumatology/keq266.
67. Olson TP, Leon AS, Schmitz KH. Changes in inflammatory biomarkers following one-year of moderate resistance training in overweight women. *Int J Obes*. 2007;1:996–1003.
68. Janse Van Rensburg DC, Ker JA, Grant CC, Fletcher L. Effect of exercise on cardiac autonomic function in females with rheumatoid arthritis. *Clin Rheumatol*. 2012;31:1155–62.
69. Plasqui G. The role of physical activity in rheumatoid arthritis. *Physiol Behav*. 2008;94:270–5.
70. Ekblom B, Lovgren O, Alderin M, Fridstrom M, Satterstrom G. Effect of short term physical training on patients with rheumatoid arthritis. *Scand J Rheumatol*. 1975;4:80–6.
71. Stenstrom C, Minor MA. Evidence for the Benefit of Aerobic and Strengthening Exercise in Rheumatoid Arthritis. *Arthritis Rheum*. 2003;49(3):428–34.
72. Harkcom TM, Lampman RM, Banwell BF, Castor CW. Therapeutic value of graded aerobic exercise training in rheumatoid arthritis. *Arthritis Rheum*. 1985;28(1):32–9.
73. Lee J, Dunlop D, Ehrlich-Jones L, Semanik P, Song J, Manheim L, et al. Public Health Impact of Risk Factors for Physical Inactivity in Adults With Rheumatoid Arthritis. *Arthritis Care Res*. 2012;64(4):488–93.
74. Lemmey AB, Marcora SM, Chester K, Wilson S, Casanova F, Maddison PJ. Effects of High-Intensity Resistance Training in Patients With Rheumatoid Arthritis : A Randomized Controlled Trial. *Arthritis Rheum*. 2009;61(12):1726–34.
75. Janse van Rensburg DC, Fletcher L, Viljoen M, Coertzen C, Grant C, Ramagole D, et al. Efficacy of an exercise programme on the functional capacity and disease activity in females with rheumatoid arthritis Correspondence : *SA Orthop J*. 2010;34–43.
76. Henchoz Y, Guessous I, Theler J, Dudler J, Vollenweider P, So A. Physical activity and energy expenditure in rheumatoid arthritis patients and matched controls. *Rheumatology*. 2012;doi:10.1093/rheumatology/kes067.
77. Chantler I, Mitchell D, Fuller A. Actigraphy Quantifies Reduced Voluntary Physical Activity in Women With Primary Dysmenorrhea. *J Pain. American Pain Society*; 2009;10(1):38–46.
78. Pruitt LA, Glynn NW, King AC, Guralnik JM, Aiken EK, Miller G, et al. Use of accelerometry to measure physical activity in older adults at risk for mobility disability. *J Aging Phys Act*. 2008;16(4):416–34.
79. Mancuso CA, Rincon M, Sayles W, Paget SA. Comparison of Energy Expenditure from Lifestyle Physical Activities Between Patients With Rheumatoid Arthritis and Healthy Controls. *Arthritis Rheum*. 2007;57(4):672–8.
80. Kayes NM, Schluter PJ, Mcpherson KM, Leete M, Mawston G, Taylor D. Exploring Actical Accelerometers as an Objective Measure of Physical Activity in People With Multiple Sclerosis. *Arch Phys Med Rehabil*. 2009;90(4):594–601.
81. Crouter SE, Dellavalle DM, Horton M, Haas JD, Frongillo EA, Bassett DR. Validity of the Actical for estimating free-living physical activity. *Eur J Appl Physiol*. 2010;DOI 10.1007/s00421-010-1758-2.
82. Rothney MP, Schaefer E V, Neumann MM, Choi L, Y K. Validity of physical activity intensity predictions by ActiGraph, Actical, and RT3 Accelerometers. *Obesity*. 2009;16(8):1946–52.
83. Esliger D, Tremblay M. Technical Reliability Assessment of Three Accelerometer Models in a Mechanical Setup. *Med Sci Sport Exerc*. 2006;(13):2173–81.
84. Semanik P, Song J, Chang RW, Manheim L, Ainsworth B, Dunlop D. Assessing physical activity in persons with rheumatoid arthritis using accelerometry. *Med Sci Sports Exerc*. 2010;42(8):1493–501.
85. Cuperus N, Hoogeboom TJ, Neijland Y, Ende CHM Van Den, Keijsers N. Are people with rheumatoid arthritis who undertake activity pacing at risk of being too physically inactive? *Clin Rehabil*. 2012;DOI: 10.1177/0269215512437417.

86. Lee J, Dunlop D, Ehrlich-Jones L, Semanik P, Song J, Manheim L, et al. Public health impact of risk factors for physical inactivity in adults with rheumatoid arthritis. *Arthritis Care Res.* 2012;64(4):488–93.
87. Lavie P, Epstein R, Tzischinsky O, Gilad D, Nahir M, Lorber M, et al. Actigraphic measurements of sleep in rheumatoid arthritis: comparison of patients with low back pain and healthy controls. *J Rheumatol.* 1992;19(3):362–5.
88. Cooney JK, Law R-J, Matschke V, Lemmey AB, Moore JP, Ahmad Y, et al. Benefits of exercise in rheumatoid arthritis. *J Aging Res.* 2011;2011:681640.
89. Cairns AP, McVeigh JG. A systematic review of the effects of dynamic exercise in rheumatoid arthritis. *Rheumatol Int.* 2009;30(2):147–58.
90. Metsios GS, Stavropoulos-Kalinoglou a, Veldhuijzen van Zanten JJCS, Treharne GJ, Panoulas VF, Douglas KMJ, et al. Rheumatoid arthritis, cardiovascular disease and physical exercise: a systematic review. *Rheumatology (Oxford).* 2008;47(3):239–48.
91. Baillet A, Zeboulon N, Gossec L, Combescure C, Bodin L-A, Juvin R, et al. Efficacy of cardiorespiratory aerobic exercise in rheumatoid arthritis: meta-analysis of randomized controlled trials. *Arthritis Care Res.* 2010;62(7):984–92.
92. Munneke M, de Jong Z, Zwinderman AH, Ronda HK, van Schaardenburg D, Dijkman B a C, et al. Effect of a high-intensity weight-bearing exercise program on radiologic damage progression of the large joints in subgroups of patients with rheumatoid arthritis. *Arthritis Rheum.* 2005;53(3):410–7.
93. Wysocki A, Butler M, Shamliyan T, Kane RL. Whole-Body Vibration Therapy for Osteoporosis. *Ann Int Med.* 2011;155(10):680–686.
94. Rittweger J. Vibration as an exercise modality: how it may work, and what its potential might be. *Eur J Appl Physiol.* 2010;108(5):877–904.
95. Rauch F. Vibration therapy. *Dev Med Child Neurol.* 2009;51:166–8.
96. Cardinale M, Wakeling J. Whole body vibration exercise: are vibrations good for you? *Br J Sports Med.* 2005;39(9):585–9; discussion 589.
97. Pang MY. Whole body vibration therapy in fracture prevention among adults with chronic disease. *World J Orthop.* 2010;1(1):20–5.
98. Chanou K, Gerodimos V, Karatrantou K, Jamurtas A. Whole-body vibration and rehabilitation of chronic diseases : A review of the literature. 2012:187–200.
99. Bemben DA, Palmer IJ, Bemben MG, Knehans AW. Effects of combined whole-body vibration and resistance training on muscular strength and bone metabolism in postmenopausal women. *Bone.* 2010;47(3):650–6.
100. Pioreschi A, Oosthuysen T, Avidon I, Mcveigh J. Whole Body Vibration Increases Hip Bone Mineral Density in Road Cyclists. *Int J Sports Med.* 2012;33:593–9.
101. Rubin C, Recker R, Cullen D, Ryaby J, McCabe J, McLeod K. Prevention of postmenopausal bone loss by a low-magnitude, high-frequency mechanical stimuli: a clinical trial assessing compliance, efficacy, and safety. *J Bone Miner Res.* 2004;19(3):343–51.
102. Verschueren SMP, Roelants M, Delecluse C, Swinnen S, Vanderschueren D, Boonen S. Effect of 6-month whole body vibration training on hip density, muscle strength, and postural control in postmenopausal women: a randomized controlled pilot study. *J Bone Miner Res.* 2004;19(3):352–9.
103. Totony de Zepetnek JO, Giangregorio LM, Craven BC. Whole-body vibration as potential intervention for people with low bone mineral density and osteoporosis: A review. *J Rehabil Res Dev.* 2009;46(4):529.
104. Frost HM. Why do marathon runners have less bone than weight lifters? A vital-biomechanical view and explanation. *Bone.* 1997;20(3):183–9.
105. Umemura Y, Ishiko T, Yamauchi T, Kurono M, Mashiko S. Five jumps per day increase bone mass and breaking force in rats. *J bone Miner Res.* 1997;12:1480–5.
106. Kiiski J, Heinonen A, Kannus P. Transmission of Vertical Whole Body Vibration to the Human Body. 2008;23(8):1318–25.
107. Chang C, Chiu C, Hung S. The relationship between quality of life and aerobic fitness in patients with rheumatoid arthritis. *Clin Rheumatol.* 2009;28:685–91.
108. Semanik P, Song J, Chang RW, Manheim L, Ainsworth B, Dunlop D. Assessing Physical Activity in Persons with Rheumatoid Arthritis Using Accelerometry. *Med Sci Sport Exerc.* 2010;1493–501.
109. Leong DJ, Sun HB. Molecular Effects of Exercise in Rheumatoid Arthritis. *Rheum arthritis - Treat.* 2010;311–30.
110. Sokka T, Häkkinen A, Kautiainen H, Maillefert JF, Toloza S, Mørk Hansen T, et al. Physical inactivity in patients with rheumatoid arthritis: data from twenty-one countries in a cross-sectional, international study. *Arthritis Rheum.* 2008;59(1):42–50.
111. Plasqui G. The role of physical activity in rheumatoid arthritis. *Am J Clin Nutr.* 2008;94:270–5.
112. Farr JN, Going SB, Lohman TG, Rankin L, Kastle S, Cornett M, et al. Physical Activity Levels in Patients With Early Knee Osteoarthritis Measured by Accelerometry. *Rheumatology.* 2008;59(9):1229 –1236.

113. Reddy N, Rothschild B, Verrall E, Joshi A. Noninvasive Measurement of Acceleration at the Knee Joint in Patients with Rheumatoid Arthritis and Spondyloarthritis of the Knee. *Ann Biomed Eng.* 2001;29:1106–11.
114. Cohen S, Emery P. The American College of Rheumatology/European League Against Rheumatism criteria for the classification of rheumatoid arthritis: a game changer. *Arthritis Rheum.* 2010;62(9):2592–4.
115. Bassett DR, Rowlands A, Trost SG. Calibration and Validation of Wearable Monitors. *Med Sci Sport Exerc.* 2012;(7):32–8.
116. García-Poma A, Segami MI, Mora CS, Ugarte MF, Terrazas HN, Rhor E a, et al. Obesity is independently associated with impaired quality of life in patients with rheumatoid arthritis. *Clin Rheumatol.* 2007;26(11):1831–5.
117. Owen N, Healy GN, Matthews CE, Dunstan DW. Too much sitting: the population health science of sedentary behavior. *Exerc Sport Sci Rev.* 2010;38(3):105–13.
118. Silman AJ, Pearson JE. Epidemiology and genetics of rheumatoid arthritis. *Arthritis Res.* 2002;4:265–72.
119. Ranjbaran Z, Keefer L, Stepanski E, Farhadi A, Keshavarzian A. The relevance of sleep abnormalities to chronic inflammatory conditions. *Inflamm Res.* 2007;56:51–7.
120. De Jong Z, Munneke M, Zwinderman AH, Kroon HM, Jansen A, Runday KH, et al. Is a long-term high-intensity exercise program effective and safe in patients with rheumatoid arthritis? Results of a randomized controlled trial. *Arthritis Rheum.* 2003;48(9):2415–24.
121. Walker DJ, Kidd E, Heslop PS, Chandler C. Spontaneous ambulatory activity as a quantifiable outcome measure for rheumatoid arthritis. *J Rheumatol.* 1999;38:1234–8.
122. Van Den Ende C, Vliet Vlieland T, Munneke M, Hazes J. Dynamic exercise therapy in rheumatoid arthritis: a systematic review. *Br J Rheumatol.* 1998;37:677–87.
123. Arnett FC, Edworthy SM, Bloch DA, McShane DJ, Fries JF, Cooper NS, et al. The American Rheumatism Association 1987 revised criteria for the classification of rheumatoid arthritis. *Arthritis Rheum.* 1988;31(3):315–24.
124. Munneke M, Jong Z de, Zwinderman AH, Tijhuis GJ, Hazes JM, Vlieland TPV. The value of a continuous ambulatory activity monitor to quantify the amount and intensity of daily activity in patients with rheumatoid arthritis. *J Rheumatol.* 2001;28(4):745–50.
125. Ware JE, Sherbourne CD. The MOS 36-Item Short-Form Health Survey (SF-36). *Med Care.* 1992;30:473–83.
126. Faul F, Erdfelder E, Lang A-G, Buchner A. G*Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav Res Methods.* 2007;39(2):175–91.
127. Hewlett S, Hehir M, Kirwan JR. Measuring Fatigue in Rheumatoid Arthritis : A Systematic Review of Scales in Use. 2007;57(3):429–39.
128. Goldring SR, Gravallese EM, England N, Bone B. Mechanisms of bone loss in inflammatory arthritis : diagnosis and therapeutic implications. *Arthritis Res.* 2000;33–7.
129. Pioreschi A, Oosthuysen T, Avidon I, Mcveigh J. Whole Body Vibration Increases Hip Bone Mineral Density in Road Cyclists. *Int J Sports Med.* 2012;33:593–599.
130. Rector RS, Rogers R, Ruebel M, Hinton PS. Participation in road cycling vs running is associated with lower bone mineral density in men. *Metab Clin Exp.* 2008;57:226–32.
131. Coles, RJ.Clements, DG. Evans W. Original Article Measurement of Height : Practical Considerations for the Study of Osteoporosis. *Osteoporosis.* 1994;4:353–6.
132. Leslie WD, Lix LM, Tsang JF, Caetano PA. Single-Site vs Multisite Bone Density Measurement for Fracture Prediction. *Arch Intern Med.* 2007;167(15):1641–7.
133. Mikuls TR, Saag KG, Curtis J, Jr SLB, Alarcon GS, Westfall A, et al. Prevalence of Osteoporosis and Osteopenia among African Americans with Early Rheumatoid Arthritis : The Impact of Ethnic-Specific Normative Data. *J Natl Med Assoc.* 2005;97(8):1155–60.
134. Kim SY, Schneeweiss S, Liu J, Daniel GW, Chang C-L, Garneau K, et al. Risk of osteoporotic fracture in a large population-based cohort of patients with rheumatoid arthritis. *Arthritis Res Ther.* 2010 Jan;12(4):R154.
135. Kanis JA on behalf of the World Health Organization Scientific Group. Assessment of osteoporosis at the primary health-care level. 2007. Technical Report. World Health Organization Collaborating Centre for Metabolic Bone Diseases, University of Sheffield, UK. 2007: Printed by the University of Sheffield.
136. Mobini M, Kashi Z, Ghobadifar A. Prevalence and associated factors of osteoporosis in female patients with rheumatoid arthritis. *Casp J Intern Med.* 2012;3(3):447–50.
137. Lodder MC, de Jong Z, Kostense PJ, Molenaar ETH, Staal K, Voskuyl a E, et al. Bone mineral density in patients with rheumatoid arthritis: relation between disease severity and low bone mineral density. *Ann Rheum Dis.* 2004;63(12):1576–80.

138. Muir JM, Ye C, Bhandari M, Adachi JD, Thabane L. The effect of regular physical activity on bone mineral density in post-menopausal women aged 75 and over : a retrospective analysis from the Canadian multicentre osteoporosis study. *BMC Musculoskelet Disord*. 2013;14(253):1–9.
139. Häkkinen a, Sokka T, Kautiainen H, Kotaniemi a, Hannonen P. Sustained maintenance of exercise induced muscle strength gains and normal bone mineral density in patients with early rheumatoid arthritis: a 5 year follow up. *Ann Rheum Dis*. 2004;63(8):910–6.
140. Bailey CA, Brooke-Wavell K. Exercise for optimising peak bone mass in women. *Proc Nutr Soc*. 2008;67(1):9–18.
141. Häkkinen A, Sokka T, Kotaniemi A, Hannonen P. A randomized two-year study of the effects of dynamic strength training on muscle strength, disease activity, functional capacity, and bone mineral density in early rheumatoid arthritis. *Arthritis Rheum*. 2001;44(3):515–22.
142. Kroot EJ, Nieuwenhuizen MG, de Waal Malefijt MC, van Riel PL, Pasker-de Jong PC, Laan RF. Change in bone mineral density in patients with rheumatoid arthritis during the first decade of the disease. *Arthritis Rheum*. 2001;44(6):1254–60.
143. Prioreschi A, Hodkinson B, Avidon I, Tikly M, McVeigh J a. The clinical utility of accelerometry in patients with rheumatoid arthritis. *Rheumatology (Oxford)*. 2013;26(53):1–7.
144. Tudor-locke C, Brashear MM, Johnson WD, Katzmarzyk PT. Accelerometer profiles of physical activity and inactivity in normal weight, overweight, and obese U.S. men and women. *Int J Behav Nutr Phys Act*. 2010;7(60):doi: 10.1186/1479-5868-7-60.
145. Looker A, LG B, JP H. Lumbar Spine and Proximal Femur Bone Mineral Density, Bone Mineral Content, and Bone Area: United States, 2005-2008. *Vital Heal Stat*. 2012;11(251).
146. Newman AB, Kupelian AV, Visser AM, Simonsick E, Goodpaster B, Nevitt AM, et al. Lower Extremity Function. 2003;1602–9.
147. Figueiredo CP, Domiciano DS, Lopes JB, Caparbo VF, Scazufca M, Bonfã E, et al. Prevalence of sarcopenia and associated risk factors by two diagnostic criteria in community-dwelling older men: the São Paulo Ageing & Health Study (SPAH). *Osteoporos Int*. 2014;25(2):589–96.
148. Laan RF, Buijs WC, Verbeek AL. Bone mineral density in patients with recent onset rheumatoid arthritis : influence of disease activity. *Ann Rheum Dis*. 1993;52:21–6.
149. Hagberg J, Zmuda J, McCole S, Rodgers KS, Ferrell RE, Wilund KR, et al. Moderate Physical Activity is Associated with Higher Bone Mineral Density in Postmenopausal Women. *J Am Geriatr Soc*. 2001;49:1411–7.
150. Nelson ME, Rejeski WJ, Blair SN, Duncan PW, Judge JO, King AC, et al. Physical activity and public health in older adults: recommendation from the American College of Sports Medicine and the American Heart Association. *Med Sci Sports Exerc*. 2007;39(8):1435–45.
151. Chang R, Roubenoff R, Mayer J, Brandt KD, Schanberg LE. Work Group recommendations: 2002 Exercise and Physical Activity Conference, St Louis, Missouri. *Arthritis Rheum*. 2003;49(2):280.
152. De Laet C, Kanis J A, Odén A, Johanson H, Johnell O, Delmas P, et al. Body mass index as a predictor of fracture risk: a meta-analysis. *Osteoporos Int*. 2005;16(11):1330–8.
153. Armstrong MEG, Spencer EA, Cairns BJ, Banks E, Pirie K, Green J, et al. Body mass index and physical activity in relation to the incidence of hip fracture in postmenopausal women. *J Bone Miner Res*. 2011;26(6):1330–8.
154. Schneider M, Manabile E, Tikly M. Social aspects of living with rheumatoid arthritis: a qualitative descriptive study in Soweto, South Africa - a low resource context. *Health Qual Life Outcomes*. 2008;6(54):doi:10.1186/1477-7525-6-54.
155. Ozcivici E, Luu YK, Adler B, Qin Y-X, Rubin J, Judex S, et al. Mechanical signals as anabolic agents in bone. *Nat Rev Rheumatol*. 2010;6(1):50–9.
156. Tremblay MS, Colley RC, Saunders TJ, Healy GN, Owen N. Physiological and health implications of a sedentary lifestyle. *Appl Physiol Nutr Metab*. 2010;35(6):725–40.
157. Alentorn-Geli E, Padilla J, Moras G, Lázaro Haro C, Fernández-Solà J. Six weeks of whole-body vibration exercise improves pain and fatigue in women with fibromyalgia. *J Altern Complement Med*. 2008;14(8):975–81.
158. Park YG, Kwon BS, Park J-W, Cha DY, Nam KY, Sim KB, et al. Therapeutic effect of whole body vibration on chronic knee osteoarthritis. *Ann Rehabil Med*. 2013;37(4):505–15.
159. Kinder J, Lee K, Thompson H, Hicks K, Topp K, Madsen KA. NIH Public Access. *J Paediatr Nurs*. 2013;27(2):127–33.
160. Tudor-Locke C, Camhi SM, Troiano RP. A catalog of rules, variables, and definitions applied to accelerometer data in the National Health and Nutrition Examination Survey, 2003-2006. *Prev Chronic Dis*. 2012;9:2-16

161. Redelmeier D, Lorig K. Assessing the clinical importance of symptomatic improvements. An illustration in rheumatology. *Arch Intern Med.* 1993;153(11):1337–42.
162. McMeeken J, Stillman B, Story I, Kent P, Smith J. The effects of knee extensor and flexor muscle training on the timed-up-and-go test in individuals with rheumatoid arthritis. *Physiotherapy Res Int.* 1999;4:55–67.
163. Hakkinen A, Sokka T, Kautiainen H, Kotaniemi A, Hannonen P. Sustained maintenance of exercise induced muscle strength gains and normal bone mineral density in patients with early rheumatoid arthritis: a 5 year follow up. *Ann Rheum Dis.* 2004;63:910–7.
164. Sanderson T, Morris M, Calnan M, Richards P, Hewlett S. Patient perspective of measuring treatment efficacy: the rheumatoid arthritis patient priorities for pharmacologic interventions outcomes. *Arthritis Care Res.* 2010;62(5):647–56.
165. Healy GN, Matthews CE, Dunstan DW, Winkler E a H, Owen N. Sedentary time and cardio-metabolic biomarkers in US adults: NHANES 2003-06. *Eur Heart J.* 2011;32(5):590–7.
166. Tapp LR, Signorile JF. Efficacy of WBV as a modality for inducing changes in body composition, aerobic fitness, and muscular strength: a pilot study. *Clin Interv Aging.* 2014;9:63–72.
167. Milanese C, Piscitelli F, Zenti MG, Moghetti P, Sandri M, Zancanaro C. Ten-week whole-body vibration training improves body composition and muscle strength in obese women. *Int J Med Sci.* 2013;10(3):307–11.
168. Melo da Rocha O, de Almeida Peduti Batista A, Maestá N, Burini RC, Magalhães Laurindo IM. Sarcopenia in rheumatoid cachexia: definition, mechanisms, clinical consequences and potential therapies. *Bras J Rheumatol.* 2009;49(3):288-301.
169. Maddalozzo G, Iwaniec U, Turner R, Rosen C, Widrick J. NIH Public Access. *Int J Obes.* 2009;32(9):1348–54.
170. Bredella M, Torriani M, Ghomi R, Thomas B, Brick D, Gerweck A V, et al. Determinants of bone mineral density in obese premenopausal women. *Bone.* 2012;48(4):748–54.
171. Premaor MO, Ensrud K, Lui L, Parker RA, Cauley J, Hillier TA, et al. Risk factors for nonvertebral fracture in obese older women. *J Clin Endocr Metab.* 2011;96(8):2414–21.
172. Harrington DM, Dowd KP, Bourke AK, Donnelly AE. Cross-sectional analysis of levels and patterns of objectively measured sedentary time in adolescent females. *Int J Behav Nutr Phys Act.* 2011;8(1):doi:10.1088/0967-3334/33/11/1887.
173. Laguna M, Ruiz JR, Lara MT, Aznar S. Recommended levels of physical activity to avoid adiposity in Spanish children. *Pediatr Obes.* 2012;8:62–29.
174. Murphy SL, Lyden AK, Smith DM, Dong Q, Koliba JF. Effects of a Tailored Activity Pacing Intervention on Pain and Fatigue for Adults With Osteoarthritis. *Am J Occup Ther.* 2010;64:869–76.
175. Minor MA, Hewett JE, Webel RR, Anderson SK, Kay DR. Efficacy of physical conditioning exercise in patients with rheumatoid arthritis and osteoarthritis. *Arthritis Rheum.* 1989;32(11):1396–405.
176. Aletaha D, Neogi T, Silman AJ, Funovits J, Felson DT, Bingham CO, et al. 2010 Rheumatoid Arthritis Classification Criteria. *Am J Rheumatol.* 2010;62(9):2569–81.