

Bibliografie

overgenomen uit het promotieonderzoek

Physical (in)activity and cognition in cognitively impaired older people Volkers, K.M. (2012)

- [1] Kinsella K, Velkoff VA. An Aging World. Printing Office; 2001.
- [2] Le TN. Cultural values, life experiences, and wisdom. *International Journal of Aging and Human Development*. 2008;66(4):259–281.
- [3] Bianchi E. Living with elder wisdom. *Journal of Gerontological Social Work*. 2005;45(3):319–329.
- [4] Heo S, Prakash RS, Voss MW, Erickson KI, Ouyang C, Sutton BP, et al. Resting hippocampal blood flow, spatial memory and aging. *Brain Res*. 2010;1315:119–127.
- [5] Peiffer JJ, Galvao DA, Gibbs Z, Smith K, Turner D, Foster J, et al. Strength and functional characteristics of men and women 65 years and older. *Rejuvenation Research*. 2010;13(1):75–82.
- [6] Jellinger KA, Attems J. Prevalence of dementia disorders in the oldestold: an autopsy study. *Acta Neuropathol*. 2010;119(4):421–33.
- [7] Wancata J. [Epidemiology of dementia]. *Wien Med Wochenschr*. 2002;152(3-4):52–6.
- [8] Korczyn AD. Why have we failed to cure Alzheimer’s disease? *J Alzheimers Dis*. 2012;29(2):275–82.
- [9] Nithianantharajah J, Hannan AJ. Mechanisms mediating brain and cognitive reserve: experience-dependent neuroprotection and functional compensation in animal models of neurodegenerative diseases. *Prog Neuropsychopharmacol Biol Psychiatry*. 2011;35(2):331–339.
- [10] Bartres-Faz D, Arenaza-Urquijo EM. Structural and functional imaging correlates of cognitive and brain reserve hypotheses in healthy and pathological aging. *Brain Topogr*. 2011;24(3-4):340–357.
- [11] Lista I, Sorrentino G. Biological mechanisms of physical activity in preventing cognitive decline. *Cell Mol Neurobiol*. 2010;30(4):493–503.
- [12] Mattson MP. Evolutionary aspects of human exercise-Born to run purposefully. *Ageing Res Rev*. 2012;.
141
- [13] Marlatt MW, Potter MC, Lucassen PJ, van PH. Running throughout middle-age improves memory function, hippocampal neurogenesis and BDNF levels in female C57Bl/6J mice. *Dev Neurobiol*. 2012;.
- [14] Yarrow JF, White LJ, McCoy SC, Borst SE. Training augments resistance exercise induced elevation of circulating brain derived neurotrophic factor (BDNF). *Neurosci Lett*. 2010;479(2):161–165.
- [15] Colcombe SJ, Erickson KI, Scalf PE, Kim JS, Prakash R, McAuley E, et al. Aerobic exercise training increases brain volume in aging humans. *J Gerontol A Biol Sci Med Sci*. 2006;61(11):1166–1170.
- [16] Roe CM, Fagan AM, Grant EA, Marcus DS, Benzinger TL, Mintun MA, et al. Cerebrospinal fluid biomarkers, education, brain volume, and future cognition. *Arch Neurol*. 2011;68(9):1145–1151.
- [17] Kramer AF, Erickson KI, Colcombe SJ. Exercise, cognition, and the aging brain. *J Appl Physiol*. 2006;101(4):1237–1242.
- [18] Hamer M, Chida Y. Physical activity and risk of neurodegenerative disease: a systematic review of prospective evidence. *Psychol Med*. 2009;39(1):3–11.
- [19] Nemati Karimooy H, Hosseini M, Nemati M, Esmaily HO. Lifelong physical activity affects mini mental state exam scores in individuals over 55 years of age. *J Bodyw Mov Ther*. 2012;16(2):230–235.
- [20] Obisesan TO, Umar N, Paluvoi N, Gillum RF. Association of leisuretime

- physical activity with cognition by apolipoprotein-E genotype in persons aged 60 years and over: the National Health and Nutrition Examination Survey (NHANES-III). *Clin Interv Aging*. 2012;7:35–43.
- [21] Wilbur J, Marquez DX, Fogg L, Wilson RS, Staffileno BA, Hoyem RL, et al. The Relationship Between Physical Activity and Cognition in Older Latinos. *J Gerontol B Psychol Sci Soc Sci*. 2012;.
- [22] Volkers KM, de Kieviet JF, Wittingen HP, Scherder EJ. Lower limb muscle strength (LLMS): why sedentary life should never start? A review. *Arch Gerontol Geriatr*. 2012;54(3):399–414.
- [23] James BD, Boyle PA, Bennett DA, Buchman AS. Total Daily Activity Measured With Actigraphy and Motor Function in Community-dwelling Older Persons With and Without Dementia. *Alzheimer Dis Assoc Disord*. 2011;.
- [24] Bieuzen F, Vercruyssen F, Hausswirth C, Brisswalter J. Relationship between strength level and pedal rate. *Int J Sports Med*. 2007;28(7):585–589.
- 142
- [25] Voelcker-Rehage C, Godde B, Staudinger UM. Physical and motor fitness are both related to cognition in old age. *Eur J Neurosci*. 2010;31(1):167–176.
- [26] McGough EL, Kelly VE, Logsdon RG, McCurry SM, Cochrane BB, Engel JM, et al. Associations between physical performance and executive function in older adults with mild cognitive impairment: gait speed and the timed üp & go"test. *Phys Ther*. 2011;91(8):1198–1207.
- [27] Huh Y, Yang EJ, Lee SA, Lim JY, Kim KW, Paik NJ. Association between executive function and physical performance in older Korean adults: findings from the Korean Longitudinal Study on Health and Aging (KLoSHA). *Arch Gerontol Geriatr*. 2011;52(3):e156–e161.
- [28] Abellan van Kan G, Rolland Y, Gillette-Guyonnet S, Gardette V, Annweiler C, Beauchet O, et al. Gait Speed, Body Composition, and Dementia. The EPIDOS-Toulouse Cohort. *J Gerontol A Biol Sci Med Sci*. 2011;.
- [29] Sattler C, Erickson KI, Toro P, Schroder J. Physical fitness as a protective factor for cognitive impairment in a prospective population-based study in Germany. *J Alzheimers Dis*. 2011;26(4):709–718.
- [30] Fitzpatrick AL, Buchanan CK, Nahin RL, Dekosky ST, Atkinson HH, Carlson MC, et al. Associations of gait speed and other measures of physical function with cognition in a healthy cohort of elderly persons. *J Gerontol A Biol Sci Med Sci*. 2007;62(11):1244–1251.
- [31] Scherder E, Eggermont L, Visscher C, Scheltens P, Swaab D. Understanding higher level gait disturbances in mild dementia in order to improve rehabilitation: 'last in-first out'. *Neurosci Biobehav Rev*. 2011;35(3):699–714.
- [32] Canon ME, Crimmins EM. Sex Differences in the Association between Muscle Quality, Inflammatory Markers, and Cognitive Decline. *J Nutr Health Aging*. 2011;15(8):695–698.
- [33] Annweiler C, Schott AM, bellan van KG, Rolland Y, Blain H, Fantino B, et al. The Five-Times-Sit-to-Stand test, a marker of global cognitive functioning among community-dwelling older women. *J Nutr Health Aging*. 2011;15(4):271–276.
- [34] Boyle PA, Buchman AS, Wilson RS, Leurgans SE, Bennett DA. Association of muscle strength with the risk of Alzheimer disease and the rate of cognitive decline in community-dwelling older persons. *Arch Neurol*. 2009;66(11):1339–1344.
- 143
- [35] Buchman AS, Wilson RS, Boyle PA, Bienias JL, Bennett DA. Grip strength and the risk of incident Alzheimer's disease. *Neuroepidemiology*.

2007;29(1-2):66–73.

- [36] Auyeung TW, Lee JS, Kwok T, Woo J. Physical frailty predicts future cognitive decline - a four-year prospective study in 2737 cognitively normal older adults. *J Nutr Health Aging*. 2011;15(8):690–694.
- [37] Wang L, Larson EB, Bowen JD, van BG. Performance-based physical function and future dementia in older people. *Arch Intern Med*. 2006;166(10):1115–1120.
- [38] Persad CC, Jones JL, shton Miller JA, Alexander NB, Giordani B. Executive function and gait in older adults with cognitive impairment. *J Gerontol A Biol Sci Med Sci*. 2008;63(12):1350–1355.
- [39] Carlson MC, Fried LP, Xue QL, Bandeen-Roche K, Zeger SL, Brandt J. Association between executive attention and physical functional performance in community-dwelling older women. *J Gerontol B Psychol Sci Soc Sci*. 1999;54(5):S262–S270.
- [40] Pereira FS, Yassuda MS, Oliveira AM, Forlenza OV. Executive dysfunction correlates with impaired functional status in older adults with varying degrees of cognitive impairment. *Int Psychogeriatr*. 2008;20(6):1104–1115.
- [41] Ijmker T, Lamoth CJ. Gait and cognition: The relationship between gait stability and variability with executive function in persons with and without dementia. *Gait Posture*. 2011;.
- [42] Gibbs J, Hughes S, Dunlop D, Singer R, Chang RW. Predictors of change in walking velocity in older adults. *J Am Geriatr Soc*. 1996;44(2):126–132.
- [43] Newman AB, Kupelian V, Visser M, Simonsick EM, Goodpaster BH, Kritchevsky SB, et al. Strength, but not muscle mass, is associated with mortality in the health, aging and body composition study cohort. *J Gerontol Ser A Biol Sci Med Sci*. 2006;61(1):72–77.
- [44] Rantanen T, Harris T, Leveille SG, Visser M, Foley D, Masaki K, et al. Muscle strength and body mass index as long-term predictors of mortality in initially healthy men. *J Gerontol Ser A Biol Sci Med Sci*. 2000;55(3):M168–M173.
- [45] Rantanen T, Sakari-Rantala R, Heikkinen E. Muscle strength before and mortality after a bone fracture in older people. *Scand J Med Sci Sports*. 2002;12(5):296–300.
- 144
- [46] Lang T, Streeper T, Cawthon P, Baldwin K, Taaffe DR, Harris TB. Sarcopenia: etiology, clinical consequences, intervention, and assessment. *Osteoporosis International*. 2010;21(4):543–559.
- [47] MacGilchrist C, Paul L, Ellis BM, Howe TE, Kennon B, Godwin J. Lower-limb risk factors for falls in people with diabetes mellitus. *Diabetic Med*. 2010;27(2):162–168.
- [48] Oya Y, Nakamura M, Tabata E, Morizono R, Mori S, Kimuro Y, et al. [Fall risk assessment and knee extensor muscle activity in elderly people]. *Nippon Ronen Igakkai Zasshi*. 2008;45(3):308–314.
- [49] De Rekeneire N, Visser M, Peila R, Nevitt MC, Cauley JA, Tylavsky FA, et al. Is a fall just a fall: correlates of falling in healthy older persons. The Health, Aging and Body Composition Study. *J Am Geriatr Soc*. 2003;51(6):841–846.
- [50] Przybysz R, Dawson H, Leeb K. Falls among top reasons for transfers from continuing care to acute care hospitals in Canada. *Healthcare Quarterly*. 2009;12:62–66.
- [51] Reid KF, Callahan DM, Carabello RJ, Phillips EM, Frontera WR, Fielding RA. Lower extremity power training in elderly subjects with mobility limitations: a randomized controlled trial. *Aging clinical and experimental research*. 2008;20(4):337–343.
- [52] Gergley JC. Comparison of two lower-body modes of endurance training

on lower-body strength development while concurrently training. *J Strength Cond Res.* 2009;23(3):979–987.

[53] Marsh AP, Miller ME, Rejeski WJ, Hutton SL, Kritchevsky SB. Lower extremity muscle function after strength or power training in older adults. *J Aging Phys Act.* 2009;17(4):416–443.

[54] Marini M, Sarchielli E, Brogi L, Lazzeri R, Salerno R, Sgambati E, et al. Role of adapted physical activity to prevent the adverse effects of the sarcopenia. A pilot study. *Italian Journal of Anatomy and Embryology.* 2008;113(4):217–225.

[55] Fatouros IG, Kambas A, Katrabasas I, Leontsini D, Chatzinikolaou A, Jamurtas AZ, et al. Resistance training and detraining effects on flexibility performance in the elderly are intensity-dependent. *J Strength Cond Res.* 2006;20(3):634–642.

[56] Connelly DM, Vandervoort AA. Effects of detraining on knee extensor strength and functional mobility in a group of elderly women. *J Orthop Sports Phys Ther.* 1997;26(6):340–346.

145

[57] Buchman AS, Boyle PA, Yu L, Shah RC, Wilson RS, Bennett DA. Total daily physical activity and the risk of AD and cognitive decline in older adults. *Neurology.* 2012;78(17):1323–1329.

[58] Tomporowski PD, Davis CL, Miller PH, Naglieri JA. Exercise and Children’s Intelligence, Cognition, and Academic Achievement. *Educ Psychol Rev.* 2008;20(2):111–131.

[59] Budde H, Voelcker-Rehage C, Pietrabyk-Kendziorra S, Ribeiro P, Tidow G. Acute coordinative exercise improves attentional performance in adolescents. *Neurosci Lett.* 2008;441(2):219–223.

[60] Angevaren M, Aufdemkampe G, Verhaar HJJ, Aleman A, Vanhees L. Physical activity and enhanced fitness to improve cognitive function in older people without known cognitive impairment. *Cochrane Database of Systematic Reviews.* 2008;16(3):CD005381.

[61] Lam LC, Chau RC, Wong BM, Fung AW, Lui VW, Tam CC, et al. Interim follow-up of a randomized controlled trial comparing Chinese style mind body (Tai Chi) and stretching exercises on cognitive function in subjects at risk of progressive cognitive decline. *Int J Geriatr Psychiatry.* 2011;26(7):733–740.

[62] Colcombe S, Kramer AF. Fitness effects on the cognitive function of older adults: a meta-analytic study. *Psychol Sci.* 2003;14(2):125–130.

[63] Yu F, Kolanowski AM, Strumpf NE, Eslinger PJ. Improving cognition and function through exercise intervention in Alzheimer’s disease. *J Nurs Scholarsh.* 2006;38(4):358–365.

[64] Kramer AF, Colcombe SJ, McAuley E, Scalf PE, Erickson KI. Fitness, aging and neurocognitive function. *Neurobiol Aging.* 2005;26 Suppl 1:124–127.

[65] Kramer AF, Erickson KI, Colcombe SJ. Exercise, cognition, and the aging brain. *J Appl Physiol.* 2006;101(4):1237–1242.

[66] Scherder EJ, Van Paasschen J, Deijen JB, Van Der Knokke S, Orlebeke JF, Burgers I, et al. Physical activity and executive functions in the elderly with mild cognitive impairment. *Aging Ment Health.* 2005;9(3):272–280.

[67] Olazarán J, Reisberg B, Clare L, Cruz I, Pena-Casanova J, Del ST, et al. Nonpharmacological therapies in Alzheimer’s disease: a systematic review of efficacy. *Dement Geriatr Cogn Disord.* 2010;30(2):161–178.

146

[68] Thom JM, Clare L. Rationale for combined exercise and cognition-focused interventions to improve functional independence in people with dementia. *Gerontology.* 2011;57(3):265–275.

[69] Forbes D, Forbes S, Morgan DG, Markle-Reid M, Wood J, Culum

- I. Physical activity programs for persons with dementia. *Cochrane Database Syst Rev.* 2008;(3):CD006489.
- [70] van Uffelen JG, Chinapaw MJ, van MW, Hopman-Rock M. Walking or vitamin B for cognition in older adults with mild cognitive impairment? A randomised controlled trial. *Br J Sports Med.* 2008;42(5):344–351.
- [71] Studenski S, Carlson MC, Fillit H, Greenough WT, Kramer A, Rebok GW. From bedside to bench: does mental and physical activity promote cognitive vitality in late life? *Sci Aging Knowledge Environ.* 2006;2006(10):e21.
- [72] Williams KN, Kemper S. Interventions to reduce cognitive decline in aging. *J Psychosoc Nurs Ment Health Serv.* 2010;48(5):42–51.
- [73] Winocur G. Environmental influences on cognitive decline in aged rats. *Neurobiol Aging.* 1998;19(6):589–597.
- [74] Meisner BA, Dogra S, Logan AJ, Baker J, Weir PL. Do or decline?: comparing the effects of physical inactivity on biopsychosocial components of successful aging. *J Health Psychol.* 2010;15(5):688–696.
- [75] Buchman AS, Boyle PA, Wilson RS, James BD, Leurgans SE, Arnold SE, et al. Loneliness and the rate of motor decline in old age: the Rush Memory and Aging Project, a community-based cohort study. *BMC Geriatr.* 2010;10:77.
- [76] Shaw BA, Spokane LS. Examining the association between education level and physical activity changes during early old age. *J Aging Health.* 2008;20(7):767–787.
- [77] Smith JM. Portraits of loneliness: emerging themes among community-dwelling older adults. *J Psychosoc Nurs Ment Health Serv.* 2012;50(4):34–39.
- [78] American College of Sports Medicine. *ACSM's Guidelines for Exercise Testing and Prescription.* 7th ed. Baltimore, MD: Lippincott Williams & Wilkins; 2006.
- [79] Scherder EJ, Bogen T, Eggermont LH, Hamers JP, Swaab DF. The more physical inactivity, the more agitation in dementia. *Int Psychogeriatr.* 2010;22(8):1203–1208.
- 147
- [80] Egerton T, Brauer SG. Temporal characteristics of habitual physical activity periods among older adults. *J Phys Act Health.* 2009;6(5):644–650.
- [81] Kolanowski AM, Fick DM, Clare L, Therrien B, Gill DJ. An intervention for delirium superimposed on dementia based on cognitive reserve theory. *Aging Ment Health.* 2010;14(2):232–242.
- [82] Blake H, Mo P, Malik S, Thomas S. How effective are physical activity interventions for alleviating depressive symptoms in older people? A systematic review. *Clin Rehabil.* 2009;23(10):873–887.
- [83] Herring MP, O'Connor PJ, Dishman RK. The effect of exercise training on anxiety symptoms among patients: a systematic review. *Arch Intern Med.* 2010;170(4):321–331.
- [84] van Someren EJ, Mirmiran M, Swaab DF. Non-pharmacological treatment of sleep and wake disturbances in aging and Alzheimer's disease: chronobiological perspectives. *Behav Brain Res.* 1993;57(2):235–253.
- [85] Katula JA, Rejeski WJ, Marsh AP. Enhancing quality of life in older adults: a comparison of muscular strength and power training. *Health Qual Life Outcomes.* 2008;6:45.
- [86] Dechamps A, Diolet P, Thiaudiere E, Tulon A, Onifade C, Vuong T, et al. Effects of exercise programs to prevent decline in health-related quality of life in highly deconditioned institutionalized elderly persons: a randomized controlled trial. *Arch Intern Med.* 2010;170(2):162–169.
- [87] Lucia A, Ruiz JR. Exercise is beneficial for patients with Alzheimer's disease: a call for action. *Br J Sports Med.* 2011;45(6):468–469.

- [88] Heyn P, Abreu BC, Ottenbacher KJ. The effects of exercise training on elderly persons with cognitive impairment and dementia: a metaanalysis. *Arch Phys Med Rehabil.* 2004;85(10):1694–1704.
- [89] Plooij B, Scherder EJ, Eggermont LH. Physical inactivity in aging and dementia: a review of its relationship to pain. *J Clin Nurs.* 2012;.
- [90] Scherder E, Eggermont L, Achterberg W, Plooij B, Volkens K, Weijenberg R, et al. [Pain and physical (in)activity in relation to cognition and behaviour in dementia]. *Tijdschr Gerontol Geriatr.* 2009;40(6):270–278.
- [91] Edwards N, Gardiner M, Ritchie DM, Baldwin K, Sands L. Effect of exercise on negative affect in residents in special care units with moderate to severe dementia. *Alzheimer Disease and Associated Disorders.* 2008;22(4):362–368.
- 148
- [92] Eggermont L, Swaab D, Luiten P, Scherder E. Exercise, cognition and Alzheimer's disease: more is not necessarily better. *Neurosci Biobehav Rev.* 2006;30(4):562–575.
- [93] Hoang VM, Dao LH, Wall S, Nguyen TK, Byass P. Multilevel analysis of covariation in socioeconomic predictors of physical functioning and psychological well-being among older people in rural Vietnam. *BMC Geriatrics.* 2010;10:7.
- [94] Larsson L, Grimby G, Karlsson J. Muscle strength and speed of movement in relation to age and muscle morphology. *J Appl Physiol.* 1979;46(3):451–456.
- [95] Lindle RS, Metter EJ, Lynch NA, Fleg JL, Fozard JL, Tobin J, et al. Age and gender comparisons of muscle strength in 654 women and men aged 20–93 yr. *J Appl Physiol.* 1997;83(5):1581–1587.
- [96] Reid KF, Naumova EN, Carabello RJ, Phillips EM, Fielding RA. Lower extremity muscle mass predicts functional performance in mobility-limited elders. *The Journal of nutrition, health & aging.* 2008;12(7):493–498.
- [97] Tseng BS, Marsh DR, Hamilton MT, Booth FW. Strength and aerobic training attenuate muscle wasting and improve resistance to the development of disability with aging. *J Gerontol Ser A Biol Sci Med Sci.* 1995;50 Spec No:113–119.
- [98] Dik M, Deeg DJ, Visser M, Jonker C. Early life physical activity and cognition at old age. *Journal of Clinical and Experimental Neuropsychology.* 2003;25(5):643–653.
- [99] Fratiglioni L, Paillard-Borg S, Winblad B. An active and socially integrated lifestyle in late life might protect against dementia. *Lancet Neurology.* 2004;3(6):343–353.
- [100] Tanaka H, Seals DR. Invited Review: Dynamic exercise performance in Masters athletes: insight into the effects of primary human aging on physiological functional capacity. *J Appl Physiol.* 2003;95(5):2152–2162.
- [101] Duque I, Parra JH, Duvallet A. Physical deconditioning in chronic low back pain. *J Rehabil Med.* 2009;41(4):262–266.
- [102] Bunyard LB, Katzel LI, Busby-Whitehead MJ, Wu Z, Goldberg AP. Energy requirements of middle-aged men are modifiable by physical activity. *American Journal of Clinical Nutrition.* 1998;68(5):1136–1142.
- 149
- [103] Bertrand AM, Mercier C, Bourbonnais D, Desrosiers J, Grave D. Reliability of maximal static strength measurements of the arms in subjects with hemiparesis. *Clin Rehabil.* 2007;21(3):248–257.
- [104] Newton MJ, Morgan GT, Sacco P, Chapman DW, Nosaka K. Comparison of responses to strenuous eccentric exercise of the elbow flexors between resistance-trained and untrained men. *J Strength Cond Res.* 2008;22(2):597–607.

- [105] Harris NK. Kinetics and kinematics of strength and power development (a thesis); 2008.
- [106] Kuh D, Bassey EJ, Butterworth S, Hardy R, Wadsworth MEJ. Grip strength, postural control, and functional leg power in a representative cohort of British men and women: Associations with physical activity, health status, and socioeconomic conditions. *J Gerontol Ser A Biol Sci Med Sci.* 2005;60(2):224–231.
- [107] Rantanen T, Sipilä S, Suominen H. Muscle strength and history of heavy manual work among elderly trained women and randomly chosen sample population. *Eur J Appl Physiol Occup Physiol.* 1993;66(6):514–517.
- [108] Muraki S, Akune T, Oka H, Mabuchi A, En-Yo Y, Yoshida M, et al. Association of occupational activity with radiographic knee osteoarthritis and lumbar spondylosis in elderly patients of population-based cohorts: A large-scale population-based study. *Arthritis Rheum.* 2009;61(6):779–786.
- [109] Andrews AW, Thomas MW, Bohannon RW. Normative values for isometric muscle force measurements obtained with hand-held dynamometers. *Phys Ther.* 1996;76(3):248–259.
- [110] Kostka T, Rahmani A, Berthouze SE, Lacour JR, Bonnefoy M. Quadriceps muscle function in relation to habitual physical activity and VO₂max in men and women aged more than 65 years. *J Gerontol Ser A Biol Sci Med Sci.* 2000;55(10):B481–B488.
- [111] Uusi-Rasi K, Sievanen H, Heinonen A, Vuori I, Beck TJ, Kannus P. Long-term recreational gymnastics provides a clear benefit in age-related functional decline and bone loss. A prospective 6-year study. *Osteoporosis International.* 2006;17(8):1154–1164.
- [112] Casey MM, Eime RM, Payne WR, Harvey JT. Using a socioecological approach to examine participation in sport and physical activity among rural adolescent girls. *Qualitative Health Research.* 2009;19(7):881–893.
- [113] Borenstein M. *Comprehensive Meta-Analysis, a Computer Program for Research Synthesis.* vol. 2nd; 1999.
150
- [114] Cohen J. *Statistical Power Analyses for the Behavioral Sciences.* vol. 2nd; 1988.
- [115] Cochran WG. The combination of estimates from different experiments. *Biometrics.* 1954;10:101–129.
- [116] Egger M, Davey SG, Schneider M, Minder C. Bias in metaanalysis detected by a simple, graphical test. *British Medical Journal.* 1997;315(7109):629–634.
- [117] Rosenthal R. Writing meta-analytic reviews. *Psychological Bulletin.* 1995;118:183–192.
- [118] Rantanen T, Parkatti T, Heikkinen E. Muscle strength according to level of physical exercise and educational background in middle-aged women in Finland. *Eur J Appl Physiol Occup Physiol.* 1992;65(6):507–512.
- [119] Sipilä S, Suominen H. Knee extension strength and walking speed in relation to quadriceps muscle composition and training in elderly women. *Clin Physiol.* 1994;14(4):433–442.
- [120] Harridge S, Magnusson G, Saltin B. Life-long endurance-trained elderly men have high aerobic power, but have similar muscle strength to nonactive elderly men. *Aging (Milano).* 1997;9(1-2):80–87.
- [121] Rantanen T, Heikkinen E. The Role of Habitual Physical Activity in Preserving Muscle Strength From Age 80 to 85 Years. *J Aging Phys Act.* 1998;6:121–132.
- [122] Ringsberg KAM, Gardsell P, Johnell O, Josefsson PO, Obrant KJ. The impact of long-term moderate physical activity on functional performance, bone mineral density and fracture incidence in elderly women. *Gerontology.* 2001;47(1):15–20.

- [123] Pearson SJ, Young A, Macaluso A, Devito G, Nimmo MA, Cobbold M, et al. Muscle function in elite master weightlifters. *Med Sci Sports Exerc.* 2002;34(7):1199–1206.
- [124] Visser M, Simonsick EM, Colbert LH, Brach J, Rubin SM, Kritchevsky SB, et al. Type and intensity of activity and risk of mobility limitation: The mediating role of muscle parameters. *J Am Geriatr Soc.* 2005;53(5):762–770.
- [125] Dreyer HC, Fujita S, Cadenas JG, Chinkes DL, Volpi E, Rasmussen BB. Resistance exercise increases AMPK activity and reduces 4E-BP1 phosphorylation and protein synthesis in human skeletal muscle. *J Physiol.* 2006;576(2):613–624.
- 151
- [126] Karamanidis K, Arampatzis A. Mechanical and morphological properties of human quadriceps femoris and triceps surae muscle-tendon unit in relation to aging and running. *J Biomech.* 2006;39(3):406–417.
- [127] Tarpenning KM, Hawkins SA, Marcell TJ, Wiswell RA. Endurance exercise and leg strength in older women. *J Aging Phys Act.* 2006;14(1):3–11.
- [128] Aagaard P, Magnusson PS, Larsson B, Kjaer M, Krstrup P. Mechanical muscle function, morphology, and fiber type in lifelong trained elderly. *Med Sci Sports Exerc.* 2007;39(11):1989–1996.
- [129] Laroche DP, Knight CA, Dickie JL, Lussier M, Roy SJ. Explosive force and fractionated reaction time in elderly low- and high-active women. *Med Sci Sports Exerc.* 2007;39(9):1659–1665.
- [130] Brooke-Wavell K, Cooling VC. Fall risk factors in older female lawn bowls players and controls. *J Aging Phys Act.* 2009;17(1):123–130.
- [131] McCrory JL, Salacinski AJ, Hunt SE, Greenspan SL. Thigh muscle strength in senior athletes and healthy controls. *J Strength Cond Res.* 2009;23(9):2430–2436.
- [132] Leong B, Kamen G, Patten C, Burke JR. Maximal motor unit discharge rates in the quadriceps muscles of older weight lifters. *Med Sci Sports Exerc.* 1999;31(11):1638–1644.
- [133] Hunter SK, Thompson MW, Adams RD. Reaction time, strength, and physical activity in women aged 20-89 years. *J Aging Phys Act.* 2001;9(1):32–42.
- [134] Kuta I, Parizkova J, Dycka J. Muscle strength and lean body mass in old men of different physical activity. *J Appl Physiol.* 1970;29(2):168–171.
- [135] Grassi B, Cerretelli P, Narici MV, Marconi C. Peak anaerobic power in master athletes. *European Journal of Applied Physiology & Occupational Physiology.* 1991;62(6):394–399.
- [136] Sipila S, Viitasalo J, Era P, Suominen H. Muscle strength in male athletes aged 70-81 years and a population sample. *Eur J Appl Physiol Occup Physiol.* 1991;63(5):399–403.
- [137] Yoshiga CC, Higuchi M, Oka J. Rowing prevents muscle wasting in older men. *Eur J Appl Physiol.* 2002;88(1-2):1–4.
- [138] Korhonen MT, Cristea A, Alen M, Hakkinen K, Sipila S, Mero A, et al. Aging, muscle fiber type, and contractile function in sprint-trained athletes. *J Appl Physiol.* 2006;101(3):906–917.
- 152
- [139] Buford TW, Cooke MB, Manini TM, Leeuwenburgh C, Willoughby DS. Effects of age and sedentary lifestyle on skeletal muscle NF-kappaB signaling in men. *J Gerontol Ser A Biol Sci Med Sci.* 2010;65(5):532–537.
- [140] Aniansson A, Sperling L, Rundgren A, Lehnberg E. Muscle function in 75-year-old men and women. A longitudinal study. *Scand J Rehabil Med Suppl.* 1983;9:92–102.
- [141] Aoyagi Y, Katsuta S. Relationship between the starting age of training

- and physical fitness in old age. *Can J Sport Sci.* 1990;15(1):65–71.
- [142] Klitgaard H, Mannoni M, Schiaffino S, Ausoni S, Gorza L, Laurent-Winter C, et al. Function, morphology and protein expression of ageing skeletal muscle: a cross-sectional study of elderly men with different training backgrounds. *Acta Physiol Scand.* 1990;140(1):41–54.
- [143] Aoyagi Y, Park H, Watanabe E, Park S, Shephard RJ. Habitual physical activity and physical fitness in older Japanese adults: the Nakanajo Study. *Gerontology.* 2009;55(5):523–531.
- [144] Alway SE, Coggan AR, Sproul MS, Abduljalil AM, Robitaille PM. Muscle torque in young and older untrained and endurance-trained men. *J Gerontol Ser A Biol Sci Med Sci.* 1996;51(3):B195–B201.
- [145] Rantanen T, Era P, Heikkinen E. Physical activity and the changes in maximal isometric strength in men and women from the age of 75 to 80 years. *J Am Geriatr Soc.* 1997;45(12):1439–1445.
- [146] Xu DQ, Hong Y, Li JX. Tai Chi exercise and muscle strength and endurance in older people. *Medicine and Sport Science.* 2008;52:20–29.
- [147] Asaka M, Usui C, Ohta M, Takai Y, Fukunaga T, Higuchi M. Elderly oarsmen have larger trunk and thigh muscles and greater strength than age-matched untrained men. *Eur J Appl Physiol.* 2009;108(6):1239–1245.
- [148] Lindstrom PJ, Suni JH, Nygard CH. Associations of leisure-time physical activity with balance and lower extremity strength: A validation of the neuromuscular part of the physical activity Pie. *Journal of Physical Activity and Health.* 2009;6(4):493–502.
- [149] Miyatake N, Saito T, Miyachi M, Tabata I, Numata T. Evaluation of muscle strength and its relation to exercise habits in Japanese. *Acta medica Okayama.* 2009;63(3):151–155.
- [150] Borges O. Isometric and isokinetic knee extension and flexion torque in men and women aged 20-70. *Scand J Rehabil Med.* 1989;21(1):45–53. 153
- [151] Bohannon RW. Comfortable and maximum walking speed of adults aged 20-79 years: Reference values and determinants. *Age Ageing.* 1997;26(1):15–19.
- [152] Neder JA, Andreoni S, Lerario MC, Nery LE. Reference values for lung function tests. II. Maximal respiratory pressures and voluntary ventilation. *Brazilian Journal of Medical and Biological Research.* 1999;32(6):719–727.
- [153] Low Choy NL, Brauer SG, Nitz JC. Age-related changes in strength and somatosensation during midlife: rationale for targeted preventive intervention programs. *Annals of the New York Academy of Sciences.* 2007;1114:180–193.
- [154] Sandler RB, Burdett R, Zaleskiewicz M, Sprowls-Repcheck C, Harwell M. Muscle strength as an indicator of the habitual level of physical activity. *Med Sci Sports Exerc.* 1991;23(12):1375–1381.
- [155] Era P, Lyyra AL, Viitasalo JT, Heikkinen E. Determinants of isometric muscle strength in men of different ages. *Eur J Appl Physiol Occup Physiol.* 1992;64(1):84–91.
- [156] Kostka T, Bonnefoy M, Arzac LM, Berthouze SE, Belli A, Lacour JR. Habitual physical activity and peak anaerobic power in elderly women. *Eur J Appl Physiol Occup Physiol.* 1997;76(1):81–87.
- [157] Rantanen T, Guralnik JM, Sakari-Rantala R, Leveille S, Simonsick EM, Ling S, et al. Disability, physical activity, and muscle strength in older women: the Women's Health and Aging Study. *Arch Phys Med Rehabil.* 1999;80(2):130–135.
- [158] Hunter SK, Thompson MW, Adams RD. Relationships among age-associated strength changes and physical activity level, limb dominance, and muscle group in women. *J Gerontol Ser A Biol Sci Med Sci.*

2000;55(6):B264–B273.

[159] Kostka T, Arsac LM, Patricot MC, Berthouze SE, Lacour JR, Bonnefoy M. Leg extensor power and dehydroepiandrosterone sulfate, insulin-like growth factor-I and testosterone in healthy active elderly people. *Eur J Appl Physiol.* 2000;82(1-2):83–90.

[160] Amara CE, Rice CL, Koval JJ, Paterson DH, Winter EM, Cunningham DA. Allometric scaling of strength in an independently living population age 55-86 years. *American Journal of Human Biology.* 2003;15(1):48–60.

154

[161] Gerdhem P, Ringsberg KA, Akesson K, Obrant KJ. Influence of muscle strength, physical activity and weight on bone mass in a populationbased sample of 1004 elderly women. *Osteoporosis International.* 2003;14(9):768–772.

[162] Boussuge PY, Rance M, Bedu M, Duche P, Praagh EV. Peak leg muscle power, peak VO₂ and its correlates with physical activity in 57 to 70-year-old women. *Eur J Appl Physiol.* 2006;96(1):10–16.

[163] Scott D, Blizzard L, Fell J, Jones G. Ambulatory activity, body composition, and lower-limb muscle strength in older adults. *Med Sci Sports Exerc.* 2009;41(2):383–389.

[164] Aniansson A, Grimby G, Rundgren A. Isometric and isokinetic quadriceps muscle strength in 70-year-old men and women. *Scand J Rehabil Med.* 1980;12(4):161–168.

[165] Greig CA, Hameed M, Young A, Goldspink G, Noble B. Skeletal muscle IGF-I isoform expression in healthy women after isometric exercise. *Growth Hormone and IGF Research.* 2006;16(5-6):373–376.

[166] Casale R, Rainoldi A, Nilsson J, Bellotti P. Can continuous physical training counteract aging effect on myoelectric fatigue? A surface electromyography study application. *Arch Phys Med Rehabil.* 2003;84(4):513–517.

[167] Pollock ML, Mengelkoch LJ, Graves JE, Lowenthal DT, Limacher MC, Foster C, et al. Twenty-year follow-up of aerobic power and body composition of older track athletes. *J Appl Physiol.* 1997;82(5):1508–1516.

[168] Tarpenning KM, Hamilton-Wessler M, Wiswell RA, Hawkins SA. Endurance training delays age of decline in leg strength and muscle morphology. *Med Sci Sports Exerc.* 2004;36(1):74–78.

[169] Kent-Braun JA, Ng AV. Specific strength and voluntary muscle activation in young and elderly women and men. *J Appl Physiol.* 1999;87(1):22–29.

[170] Aniansson A, Grimby G, Hedberg M. Compensatory muscle fiber hypertrophy in elderly men. *J Appl Physiol.* 1992;73(3):812–816.

[171] Frontera WR, Hughes VA, Fielding RA, Fiatarone MA, Evans WJ, Roubenoff R. Aging of skeletal muscle: a 12-yr longitudinal study. *J Appl Physiol.* 2000;88(4):1321–1326.

155

[172] Hughes VA, Frontera WR, Wood M, Evans WJ, Dallal GE, Roubenoff R, et al. Longitudinal muscle strength changes in older adults: influence of muscle mass, physical activity, and health. *J Gerontol Ser A Biol Sci Med Sci.* 2001;56(5):B209–B217.

[173] Kortebein P, Symons TB, Ferrando A, Paddon-Jones D, Ronsen O, Protas E, et al. Functional impact of 10 days of bed rest in healthy older adults. *J Gerontol Ser A Biol Sci Med Sci.* 2008;63(10):1076–1081.

[174] Gauchard GC, Tessier A, Jeandel C, Perrin P. Improved muscle strength and power in elderly exercising regularly. *Int J Sports Med.* 2003;24(1):71–74.

[175] Greig CA, Botella J, Young A. The quadriceps strength of healthy elderly

- people remeasured after eight years. *Muscle Nerve*. 1993;16(1):6–10.
- [176] Korhonen MT, Mero AA, Alln M, Sipila S, Hakkinen K, Liikavainio T, et al. Biomechanical and skeletal muscle determinants of maximum running speed with aging. *Med Sci Sports Exerc*. 2009;41(4):844–856.
- [177] Frank L, Schmier J, Kleinman L, Siddique R, Beck C, Schnelle J, et al. Time and economic cost of constipation care in nursing homes. *J Am Med Dir Assoc*. 2002;3(4):215–223.
- [178] Bischoff HA, Conzelmann M, Lindemann D, Singer-Lindpaintner L, Stucki G, Vonthein R, et al. Self-reported exercise before age 40: influence on quantitative skeletal ultrasound and fall risk in the elderly. *Arch Phys Med Rehabil*. 2001;82(6):801–806.
- [179] Kettunen JA, Kujala UM, Raty H, Sarna S. Jumping height in former elite athletes. *Eur J Appl Physiol Occup Physiol*. 1999;79(2):197–201.
- [180] Frontera WR, Reid KF, Phillips EM, Krivickas LS, Hughes VA, Roubenoff R, et al. Muscle fiber size and function in elderly humans: a longitudinal study. *J Appl Physiol*. 2008;105(2):637–642.
- [181] Al-Abdulwahab SS. The effects of aging on muscle strength and functional ability of healthy Saudi Arabian males. *Annals of Saudi Medicine*. 1999;19(3):211–215.
- [182] Karamanidis K, Arampatzis A. Mechanical and morphological properties of different muscle-tendon units in the lower extremity and running mechanics: Effect of aging and physical activity. *J Exp Biol*. 2005;208(20):3907–3923.
- [183] Slade JM, Miszko TA, Laity JH, Agrawal SK, Cress ME. Anaerobic power and physical function in strength-trained and non-strength-trained older adults. *J Gerontol Ser A Biol Sci Med Sci*. 2002;57(3):M168–M172.
- 156
- [184] Ainsworth BE, Haskell WL, Whitt MC, Irwin ML, Swartz AM, Strath SJ, et al. Compendium of physical activities: an update of activity codes and MET intensities. *Med Sci Sports Exerc*. 2000;32(9 Suppl):S498–S504.
- [185] Knuth AG, Hallal PC. Temporal trends in physical activity: a systematic review. *Journal of Physical Activity and Health*. 2009;6(5):548–559.
- [186] Anton MM, Spirduso WW, Tanaka H. Age-related declines in anaerobic muscular performance: weightlifting and powerlifting. *Med Sci Sports Exerc*. 2004;36(1):143–147.
- [187] Grimston SK, Nigg BM, Hanley DA, Engsborg JR. Differences in ankle joint complex range of motion as a function of age. *Foot Ankle*. 1993;14(4):215–222.
- [188] Sturnieks DL, St GR, Lord SR. Balance disorders in the elderly. *J Clin Neurophysiol*. 2008;38(6):467–478.
- [189] Rodrigues MA, Facchini LA, Thume E, Maia F. Gender and incidence of functional disability in the elderly: a systematic review. *Cadernos de Saúde Pública*. 2009;25 Suppl 3:S464–S476.
- [190] Johannsen DL, DeLany JP, Frisard MI, Welsch MA, Rowley CK, Fang X, et al. Physical activity in aging: comparison among young, aged, and nonagenarian individuals. *J Appl Physiol*. 2008;105(2):495–501.
- [191] Corder K, Ogilvie D, van Sluijs EM. Invited commentary: Physical activity over the life course—whose behavior changes, when, and why? *American Journal of Epidemiology*. 2009;170(9):1078–1081.
- [192] Bryant EC, Trew ME, Bruce AM, Cheek L. Lower limb muscle strength and physical activity in healthy individuals approaching retirement. *J Sports Sci*. 2007;25(7):835–842.
- [193] Ruuskanen JM, Parkatti T. Physical activity and related factors among nursing home residents. *J Am Geriatr Soc*. 1994;42(9):987–991.
- [194] Liu CJ, Latham NK. Progressive resistance strength training for improving physical function in older adults. *Cochrane Database Systematic*

Review. 2009;8(3):CD002759.

[195] Hurley BF. Age, gender, and muscular strength. *J Gerontol Ser A Biol Sci Med Sci.* 1995;50 Spec No:41–44.

[196] Goldspink DF. Ageing and activity: their effects on the functional reserve capacities of the heart and vascular smooth and skeletal muscles. *Ergonomics.* 2005;48(11-14):1334–1351.

157

[197] Scharhag-Rosenberger F, Meyer T, Walitzek S, Kindermann W. Time Course of Changes in Endurance Capacity: A 1-yr Training Study. *Med Sci Sports Exerc.* 2009;41(5):1130–1137.

[198] Fukunaga T, Kubo K, Kawakami Y, Fukashiro S, Kanehisa H, Maganaris CN. In vivo behaviour of human muscle tendon during walking. *Proc R Soc London Biol Sci.* 2001;268(1464):229–233.

[199] Kramer AF, Hahn S, Cohen NJ, Banich MT, McAuley E, Harrison CR, et al. Ageing, fitness and neurocognitive function. *Nature.* 1999;400(6743):418–419.

[200] Neumann NU, Frasc K. The significance of regular physical exercise for health and well-being. *Deutsche Medizinische Wochenschrift.* 2007;132(45):2387–2391.

[201] Davies CT, Wemyss-Holden J, Young K. Measurement of short term power output: comparison between cycling and jumping. *Ergonomics.* 1984;27(3):285–296.

[202] Hautier CA, Linossier MT, Belli A, Lacour JR, Arsac LM. Optimal velocity for maximal power production in non-isokinetic cycling is related to muscle fibre type composition. *European Journal of Applied Physiology & Occupational Physiology.* 1996;74(1-2):114–118.

[203] Desrosiers J, Hebert R, Bravo G, Rochette A. Comparison of cross-sectional and longitudinal designs in the study of aging of upper extremity performance. *J Gerontol Ser A Biol Sci Med Sci.* 1998;53(5):B362–B368.

[204] Middleton LE, Kirkland SA, Mitnitski A, Rockwood K. Proxy reports of physical activity were valid in older people with and without cognitive impairment. *J Clin Epidemiol.* 2010;63(4):435–440.

[205] Radak Z, Hart N, Sarga L, Koltai E, Atalay M, Ohno H, et al. Exercise plays a preventive role against Alzheimer's disease. *J Alzheimers Dis.* 2010;20(3):777–783.

[206] Erickson KI, Prakash RS, Voss MW, Chaddock L, Hu L, Morris KS, et al. Aerobic fitness is associated with hippocampal volume in elderly humans. *Hippocampus.* 2009;19(10):1030–1039.

[207] Lui CC, Wang JY, Tain YL, Chen YC, Chang KA, Lai MC, et al. Prenatal stress in rat causes long-term spatial memory deficit and hippocampus MRI abnormality: Differential effects of postweaning enriched environment. *Neurochem Int.* 2011;58(3):434–441.

158

[208] Yaguez L, Shaw KN, Morris R, Matthews D. The effects on cognitive functions of a movement-based intervention in patients with Alzheimer's type dementia: a pilot study. *Int J Geriatr Psychiatry.* 2011;26(2):173–181.

[209] Elderkin-Thompson V, Ballmaier M, Helleman G, Pham D, Kumar A. Executive function and MRI prefrontal volumes among healthy older adults. *Neuropsychology.* 2008;22(5):626–637.

[210] Rosano C, Venkatraman VK, Guralnik J, Newman AB, Glynn NW, Launer L, et al. Psychomotor speed and functional brain MRI 2 years after completing a physical activity treatment. *J Gerontol A Biol Sci Med Sci.* 2010;65(6):639–647.

[211] Aberg ND, Brywe KG, Isgaard J. Aspects of growth hormone and insulin-like growth factor-I related to neuroprotection, regeneration,

- and functional plasticity in the adult brain. *ScientificWorldJournal*. 2006;6:53–80.
- [212] Scherder EJ, Bogen T, Eggermont LH, Hamers JP, Swaab DF. The more physical inactivity, the more agitation in dementia. *Int Psychogeriatr*. 2010;22(8):1203–1208.
- [213] Kolanowski A, Fick D, Frazer C, Penrod J. It's about time: use of nonpharmacological interventions in the nursing home. *J Nurs Scholarsh*. 2010;42(2):214–222.
- [214] Kubanis P, Zornetzer SF, Freund G. Memory and postsynaptic cholinergic receptors in aging mice. *Pharmacol Biochem Behav*. 1982;17(2):313–322.
- [215] Mohammed AH, Henriksson BG, Soderstrom S, Ebendal T, Olsson T, Seckl JR. Environmental influences on the central nervous system and their implications for the aging rat. *Behav Brain Res*. 1993;57(2):183–191.
- [216] Winterfeld KT, Teuchert-Noodt G, Dawirs RR. Social environment alters both ontogeny of dopamine innervation of the medial prefrontal cortex and maturation of working memory in gerbils (*Meriones unguiculatus*). *J Neurosci Res*. 1998;52(2):201–209.
- [217] Schrijver NC, Pallier PN, Brown VJ, Wurbel H. Double dissociation of social and environmental stimulation on spatial learning and reversal learning in rats. *Behav Brain Res*. 2004;152(2):307–314.
- [218] Teather LA, Wurtman RJ. Dietary CDP-choline supplementation prevents memory impairment caused by impoverished environmental conditions in rats. *Learn Mem*. 2005;12(1):39–43.
- 159
- [219] Teather LA, Wurtman RJ. Chronic administration of UMP ameliorates the impairment of hippocampal-dependent memory in impoverished rats. *J Nutr*. 2006;136(11):2834–2837.
- [220] Bartesaghi R, Raffi M, Ciani E. Effect of early isolation on signal transfer in the entorhinal cortex-dentate-hippocampal system. *Neuroscience*. 2006;137(3):875–890.
- [221] Gregory ML, Szumlinski KK. Impoverished rearing impairs working memory and metabotropic glutamate receptor 5 expression. *Neuroreport*. 2008;19(2):239–243.
- [222] Diniz DG, Foro CA, Rego CM, Gloria DA, de Oliveira FR, Paes JM, et al. Environmental impoverishment and aging alter object recognition, spatial learning, and dentate gyrus astrocytes. *Eur J Neurosci*. 2010;32(3):509–519.
- [223] Bell JA, Livesey PJ, Meyer JF. Environmental enrichment influences survival rate and enhances exploration and learning but produces variable responses to the radial maze in old rats. *Dev Psychobiol*. 2009;51(7):564–578.
- [224] Melendez RI, Gregory ML, Bardo MT, Kalivas PW. Impoverished rearing environment alters metabotropic glutamate receptor expression and function in the prefrontal cortex. *Neuropsychopharmacology*. 2004;29(11):1980–1987.
- [225] Chida Y, Kataoka M, Abe Y, Toyosawa K. Effects of enriched and impoverished housing environments on the electrocorticograms (ECOGs) of middle-aged rats. *J Vet Med Sci*. 1995;57(4):687–691.
- [226] Kogan JH, Frankland PW, Silva AJ. Long-term memory underlying hippocampus-dependent social recognition in mice. *Hippocampus*. 2000;10(1):47–56.
- [227] Heidbreder CA, Weiss IC, Domeney AM, Pryce C, Homberg J, Hedou G, et al. Behavioral, neurochemical and endocrinological characterization of the early social isolation syndrome. *Neuroscience*. 2000;100(4):749–768.

- [228] Schrijver NC, Wurbel H. Early social deprivation disrupts attentional, but not affective, shifts in rats. *Behav Neurosci.* 2001;115(2):437–442.
- [229] Frisone DF, Frye CA, Zimmerberg B. Social isolation stress during the third week of life has age-dependent effects on spatial learning in rats. *Behav Brain Res.* 2002;128(2):153–160.
- 160
- [230] Huang LT, Holmes GL, Lai MC, Hung PL, Wang CL, Wang TJ, et al. Maternal deprivation stress exacerbates cognitive deficits in immature rats with recurrent seizures. *Epilepsia.* 2002;43(10):1141–1148.
- [231] Jones GH, Marsden CA, Robbins TW. Behavioural rigidity and rule learning deficits following isolation-rearing in the rat: neurochemical correlates. *Behav Brain Res.* 1991;43(1):35–50.
- [232] Cacioppo JT, Hawkley LC. Perceived social isolation and cognition. *Trends Cogn Sci.* 2009;13(10):447–454.
- [233] Manni L, Aloe L, Fiore M. Changes in cognition induced by social isolation in the mouse are restored by electro-acupuncture. *Physiol Behav.* 2009;98(5):537–542.
- [234] Jones GH, Hernandez TD, Kendall DA, Marsden CA, Robbins TW. Dopaminergic and serotonergic function following isolation rearing in rats: study of behavioural responses and postmortem and in vivo neurochemistry. *Pharmacol Biochem Behav.* 1992;43(1):17–35.
- [235] Bouchon R, Will B. Effects of post-weaning environment and apparatus dimension on spontaneous alternation as a function of phenotype in "dwarf" mice. *Physiol Behav.* 1983;30(2):213–219.
- [236] Depp C, Vahia IV, Jeste D. Successful aging: focus on cognitive and emotional health. *Annu Rev Clin Psychol.* 2010;6:527–550.
- [237] Davis MG, Fox KR. Physical activity patterns assessed by accelerometry in older people. *Eur J Appl Physiol.* 2007;100(5):581–589.
- [238] Haskell WL, Lee IM, Pate RR, Powell KE, Blair SN, Franklin BA, et al. Physical activity and public health: updated recommendation for adults from the American College of Sports Medicine and the American Heart Association. *Med Sci Sports Exerc.* 2007;39(8):1423–1434.
- [239] Troiano RP, Berrigan D, Dodd KW, Masse LC, Tilert T, McDowell M. Physical activity in the United States measured by accelerometer. *Med Sci Sports Exerc.* 2008;40(1):181–188.
- [240] Orsini N, Bellocco R, Bottai M, Hagstromer M, Sjoström M, Pagano M, et al. Profile of physical activity behaviors among Swedish women aged 56–75 years. *Scand J Med Sci Sports.* 2008;18(1):95–101.
- [241] Banda JA, Hutto B, Feeney A, Pfeiffer KA, McIver K, Lamonte MJ, et al. Comparing physical activity measures in a diverse group of midlife and older adults. *Med Sci Sports Exerc.* 2010;42(12):2251–2257.
- 161
- [242] Ainsworth BE, Haskell WL, Herrmann SD, Meckes N, Bassett DR, Tudor-Locke C, et al. 2011 Compendium of Physical Activities: a second update of codes and MET values. *Med Sci Sports Exerc.* 2011;43(8):1575–1581.
- [243] Matthews CE, Chen KY, Freedson PS, Buchowski MS, Beech BM, Pate RR, et al. Amount of time spent in sedentary behaviors in the United States, 2003–2004. *Am J Epidemiol.* 2008;167(7):875–881.
- [244] Meijer EP, Goris AH, Wouters L, Westerterp KR. Physical inactivity as a determinant of the physical activity level in the elderly. *Int J Obes Relat Metab Disord.* 2001;25(7):935–939.
- [245] Peters TM, Moore SC, Xiang YB, Yang G, Shu XO, Ekelund U, et al. Accelerometer-measured physical activity in Chinese adults. *Am J Prev Med.* 2010;38(6):583–591.
- [246] Davis MG, Fox KR, Hillsdon M, Sharp DJ, Coulson JC, Thompson JL. Objectively Measured Physical Activity in a Diverse Sample of Older

- Urban UK Adults. *Med Sci Sports Exerc.* 2011;43(4):647–654.
- [247] Tudor-Locke C. Steps to Better Cardiovascular Health: How Many Steps Does It Take to Achieve Good Health and How Confident Are We in This Number? *Curr Cardiovasc Risk Rep.* 2010;4(4):271–276.
- [248] Peters TM, Shu XO, Moore SC, Xiang YB, Yang G, Ekelund U, et al. Validity of a physical activity questionnaire in Shanghai. *Med Sci Sports Exerc.* 2010;42(12):2222–2230.
- [249] Carlson SA, Densmore D, Fulton JE, Yore MM, Kohl HW. Differences in physical activity prevalence and trends from 3 U.S. surveillance systems: NHIS, NHANES, and BRFSS. *J Phys Act Health.* 2009;6 Suppl 1:S18–S27.
- [250] Clark BK, Sugiyama T, Healy GN, Salmon J, Dunstan DW, Owen N. Validity and reliability of measures of television viewing time and other non-occupational sedentary behaviour of adults: a review. *Obes Rev.* 2009;10(1):7–16.
- [251] Harris TJ, Owen CG, Victor CR, Adams R, Ekelund U, Cook DG. A comparison of questionnaire, accelerometer, and pedometer: measures in older people. *Med Sci Sports Exerc.* 2009;41(7):1392–1402.
- [252] Laurin D, Verreault R, Lindsay J, MacPherson K, Rockwood K. Physical activity and risk of cognitive impairment and dementia in elderly persons. *Arch Neurol.* 2001;58(3):498–504.
- 162
- [253] Scarmeas N, Levy G, Tang MX, Manly J, Stern Y. Influence of leisure activity on the incidence of Alzheimer’s disease. *Neurology.* 2001;57(12):2236–2242.
- [254] Scarmeas N, Luchsinger JA, Schupf N, Brickman AM, Cosentino S, Tang MX, et al. Physical activity, diet, and risk of Alzheimer disease. *JAMA.* 2009;302(6):627–637.
- [255] Yaffe K, Fiocco AJ, Lindquist K, Vittinghoff E, Simonsick EM, Newman AB, et al. Predictors of maintaining cognitive function in older adults: the Health ABC study. *Neurology.* 2009;72(23):2029–2035.
- [256] Yaffe K, Barnes D, Nevitt M, Lui LY, Covinsky K. A prospective study of physical activity and cognitive decline in elderly women: women who walk. *Arch Intern Med.* 2001;161(14):1703–1708.
- [257] Weuve J, Kang JH, Manson JE, Breteler MM, Ware JH, Grodstein F. Physical activity, including walking, and cognitive function in older women. *JAMA.* 2004;292(12):1454–1461.
- [258] Podewils LJ, Guallar E, Kuller LH, Fried LP, Lopez OL, Carlson M, et al. Physical activity, APOE genotype, and dementia risk: findings from the Cardiovascular Health Cognition Study. *Am J Epidemiol.* 2005;161(7):639–651.
- [259] Middleton LE, Barnes DE, Lui LY, Yaffe K. Physical activity over the life course and its association with cognitive performance and impairment in old age. *J Am Geriatr Soc.* 2010;58(7):1322–1326.
- [260] Plassman BL, Williams JW, Burke JR, Holsinger T, Benjamin S. Systematic review: factors associated with risk for and possible prevention of cognitive decline in later life. *Ann Intern Med.* 2010;153(3):182–193.
- [261] Rolland Y, bellan van KG, Vellas B. Healthy brain aging: role of exercise and physical activity. *Clin Geriatr Med.* 2010;26(1):75–87.
- [262] Friedland RP, Fritsch T, Smyth KA, Koss E, Lerner AJ, Chen CH, et al. Patients with Alzheimer’s disease have reduced activities in midlife compared with healthy control-group members. *Proc Natl Acad Sci U S A.* 2001;98(6):3440–3445.
- [263] Rovio S, Kareholt I, Helkala EL, Viitanen M, Winblad B, Tuomilehto J, et al. Leisure-time physical activity at midlife and the risk of dementia and Alzheimer’s disease. *Lancet Neurol.* 2005;4(11):705–711.
- [264] Carlson JJ, Eisenmann JC, Pfeiffer KA, Jager KB, Sehnert ST, Yee

KE, et al. (S)Partners for Heart Health: a school-based program for enhancing physical activity and nutrition to promote cardiovascular health in 5th grade students. *BMC Public Health*. 2008;8:420.

163

[265] Verghese J, Cuijing W, Katz MJ, Sanders A, Lipton RB. Leisure activities and risk of vascular cognitive impairment in older adults. *J Geriatr Psychiatry Neurol*. 2009;22(2):110–118.

[266] van Gelder BM, Tijhuis MA, Kalmijn S, Giampaoli S, Nissinen A, Kromhout D. Physical activity in relation to cognitive decline in elderly men: the FINE Study. *Neurology*. 2004;63(12):2316–2321.

[267] Angevaren M, Vanhees L, Nooyens AC, Wendel-Vos CG, Verschuren WM. Physical activity and 5-year cognitive decline in the Doetinchem cohort study. *Ann Epidemiol*. 2010;20(6):473–479.

[268] 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):1435–1445.

[269] Pruchno RA, Rose MS. Time use by frail older people in different settings. *Journal of Applied Gerontology*. 2002;21:5–23.

[270] Bennett DA, Schneider JA, Tang Y, Arnold SE, Wilson RS. The effect of social networks on the relation between Alzheimer's disease pathology and level of cognitive function in old people: a longitudinal cohort study. *Lancet Neurol*. 2006;5(5):406–412.

[271] Karp A, Paillard-Borg S, Wang HX, Silverstein M, Winblad B, Fratiglioni L. Mental, physical and social components in leisure activities equally contribute to decrease dementia risk. *Dement Geriatr Cogn Disord*. 2006;21(2):65–73.

[272] Krueger KR, Wilson RS, Kamenetsky JM, Barnes LL, Bienias JL, Bennett DA. Social engagement and cognitive function in old age. *Exp Aging Res*. 2009;35(1):45–60.

[273] Andrew MK, Rockwood K. Social vulnerability predicts cognitive decline in a prospective cohort of older Canadians. *Alzheimers Dement*. 2010;6(4):319–325.

[274] Conroy RM, Golden J, Jeffares I, O'Neill D, McGee H. Boredomproneness, loneliness, social engagement and depression and their association with cognitive function in older people: a population study. *Psychol Health Med*. 2010;15(4):463–473.

[275] Carlson MC, Helms MJ, Steffens DC, Burke JR, Potter GG, Plassman BL. Midlife activity predicts risk of dementia in older male twin pairs. *Alzheimers Dement*. 2008;4(5):324–331.

164

[276] Meaney AM, Croke M, Kirby M. Needs assessment in dementia. *Int J Geriatr Psychiatry*. 2005;20(4):322–329.

[277] Howard AR. A fifteen-year follow-up with the Wechsler memory scale. *J Consult Psychol*. 1966;30(2):175–176.

[278] Winocur G, Moscovitch M. Paired-associate learning in institutionalized and noninstitutionalized old people: an analysis of interference and context effects. *J Gerontol*. 1983;38(4):455–464.

[279] Winocur G, Moscovitch M. A comparison of cognitive function in community-dwelling and institutionalized old people of normal intelligence. *Can J Psychol*. 1990;44(4):435–444.

[280] Wang WC, Lazzara MM, Ranganath C, Knight RT, Yonelinas AP. The medial temporal lobe supports conceptual implicit memory. *Neuron*. 2010;68(5):835–842.

[281] MacRae PG, Schnelle JF, Ouslander JG. Physical activity levels of ambulatory nursing home residents. *J Aging Phys Act*. 1996;4(3):264–278.

- [282] Voelkl JE, Fries BE, Galecki AT. Predictors of nursing home residents' participation in activity programs. *Gerontologist*. 1995;35(1):44–51.
- [283] Chin A Paw MJ, van Poppel MN, van Mechelen W. Effects of resistance and functional-skills training on habitual activity and constipation among older adults living in long-term care facilities: a randomized controlled trial. *BMC Geriatr*. 2006;6:9.
- [284] Flick U, Garms-Homolova V, Rohnsch G. 'When they sleep, they sleep': daytime activities and sleep disorders in nursing homes. *J Health Psychol*. 2010;15(5):755–764.
- [285] Perrin T. Occupational need in severe dementia: a descriptive study. *J Adv Nurs*. 1997;25(5):934–941.
- [286] Kolanowski A, Buettner L, Litaker M, Yu F. Factors that relate to activity engagement in nursing home residents. *Am J Alzheimers Dis Other Demen*. 2006;21(1):15–22.
- [287] Hill NL, Kolanowski A, Kurum E. Agreeableness and activity engagement in nursing home residents with dementia. *J Gerontol Nurs*. 2010;36(9):45–52.
- [288] Schnelle JF, Cruise PA, Alessi CA, Ludlow K, Al-Samarrai NR, Ouslander JG. Sleep hygiene in physically dependent nursing home residents: behavioral and environmental intervention implications. *Sleep*. 1998;21(5):515–523.
- 165
- [289] Chung JCC. Activity participation and well-being of people in long-term care settings. *Occupational Therapy Journal of Research*. 2004;24(1):22–31.
- [290] Buettner LL, Fitzsimmons S. Activity calendars for older adults with dementia: what you see is not what you get. *Am J Alzheimers Dis Other Demen*. 2003;18(4):215–226.
- [291] Feng Z, Hirdes JP, Smith TF, Finne-Soveri H, Chi I, Du Pasquier JN, et al. Use of physical restraints and antipsychotic medications in nursing homes: a cross-national study. *Int J Geriatr Psychiatry*. 2009;24(10):1110–1118.
- [292] Meyer G, Kopke S, Haastert B, Muhlhauser I. Restraint use among nursing home residents: cross-sectional study and prospective cohort study. *J Clin Nurs*. 2009;18(7):981–990.
- [293] Burton LC, German PS, Rovner BW, Brant LJ. Physical restraint use and cognitive decline among nursing home residents. *J Am Geriatr Soc*. 1992;40(8):811–816.
- [294] Castle NG. Mental health outcomes and physical restraint use in nursing homes {private}. *Adm Policy Ment Health*. 2006;33(6):696–704.
- [295] Engberg J, Castle NG, McCaffrey D. Physical restraint initiation in nursing homes and subsequent resident health. *Gerontologist*. 2008;48(4):442–452.
- [296] Castle NG, Engberg J. The health consequences of using physical restraints in nursing homes. *Med Care*. 2009;47(11):1164–1173.
- [297] Gulpers MJ, Bleijlevens MH, van RE, Capezuti E, Hamers JP. Belt restraint reduction in nursing homes: design of a quasi-experimental study. *BMC Geriatr*. 2010;10:11.
- [298] Zwijsen SA, Depla MF, Niemeijer AR, Francke AL, Hertogh CM. The concept of restraint in nursing home practice: a mixed-method study in nursing homes for people with dementia. *Int Psychogeriatr*. 2011;p. 1–9.
- [299] Beier MT. Pharmacotherapy for behavioral and psychological symptoms of dementia in the elderly. *Am J Health Syst Pharm*. 2007;64(2 Suppl 1):S9–17.
- [300] Chen YM. Perceived barriers to physical activity among older adults residing in long-term care institutions. *J Clin Nurs*. 2010;19(3-4):432–439.

- [301] Garms-Homolova V, Flick U, Rohnsch G. Sleep disorders and activities in long term care facilities—a vicious cycle? *J Health Psychol.* 2010;15(5):744–754.
- [302] Malone ML, Camp CJ. Montessori-Based Dementia Programming: Providing tools for engagement. *Dementia.* 2007;6(1):150–157.
- [303] MacPherson S, Bird M, Anderson K, Davis T, Blair A. An art gallery access programme for people with dementia: 'you do it for the moment'. *Aging Ment Health.* 2009;13(5):744–752.
- [304] Alessi CA, Yoon EJ, Schnelle JF, Al-Samarrai NR, Cruise PA. A randomized trial of a combined physical activity and environmental intervention in nursing home residents: do sleep and agitation improve? *J Am Geriatr Soc.* 1999;47(7):784–791.
- [305] Bates-Jensen BM, Alessi CA, Cadogan M, Levy-Storms L, Jorge J, Yoshii J, et al. The Minimum Data Set bedfast quality indicator: differences among nursing homes. *Nurs Res.* 2004;53(4):260–272.
- [306] Kostka T, Jachimowicz V. Relationship of quality of life to dispositional optimism, health locus of control and self-efficacy in older subjects living in different environments. *Qual Life Res.* 2010;19(3):351–361.
- [307] Barkay A, Tabak N. Elderly residents' participation and autonomy within a geriatric ward in a public institution. *Int J Nurs Pract.* 2002;8(4):198–209.
- [308] Drageset J. The importance of activities of daily living and social contact for loneliness: a survey among residents in nursing homes. *Scand J Caring Sci.* 2004;18(1):65–71.
- [309] Buckley C, McCarthy G. An exploration of social connectedness as perceived by older adults in a long-term care setting in Ireland. *Geriatr Nurs.* 2009;30(6):390–396.
- [310] Scocco P, Rapattoni M, Fantoni G. Nursing home institutionalization: a source of eustress or distress for the elderly? *Int J Geriatr Psychiatry.* 2006;21(3):281–287.
- [311] Drageset J, Kirkevold M, Espehaug B. Loneliness and social support among nursing home residents without cognitive impairment: a questionnaire survey. *Int J Nurs Stud.* 2011;48(5):611–619.
- [312] Bernhardt J, Dewey H, Thrift A, Donnan G. Inactive and alone: physical activity within the first 14 days of acute stroke unit care. *Stroke.* 2004;35(4):1005–1009.
- 167
- [313] Phillips CD, Hawes C, Lieberman T, Koren MJ. Where should Momma go? Current nursing home performance measurement strategies and a less ambitious approach. *BMC Health Serv Res.* 2007;7:93.
- [314] Morley JE. Clinical practice in nursing homes as a key for progress. *J Nutr Health Aging.* 2010;14(7):586–593.
- [315] Ice G. Daily life in a nursing home: Has it changed in 25 years? *Journal of Aging Studies.* 2002;16:345–359.
- [316] Robinson KM, Reinhard SC. Looking ahead in long-term care: the next 50 years. *Nurs Clin North Am.* 2009;44(2):253–262.
- [317] Brower MC, Price BH. Neuropsychiatry of frontal lobe dysfunction in violent and criminal behaviour: a critical review. *J Neurol Neurosurg Psychiatr.* 2001;71(6):720–726.
- [318] Siever LJ. Neurobiology of aggression and violence. *Am J Psychiatry.* 2008;165(4):429–442.
- [319] Witte AV, Floel A, Stein P, Savli M, Mien LK, Wadsak W, et al. Aggression is related to frontal serotonin-1A receptor distribution as revealed by PET in healthy subjects. *Hum Brain Mapp.* 2009;30(8):2558–2570.
- [320] Seo D, Patrick CJ, Kennealy PJ. Role of Serotonin and Dopamine System Interactions in the Neurobiology of Impulsive Aggression and

- its Comorbidity with other Clinical Disorders. *Aggress Violent Behav.* 2008;13(5):383–395.
- [321] Arnsten AF, Li BM. Neurobiology of executive functions: catecholamine influences on prefrontal cortical functions. *Biol Psychiatry.* 2005;57(11):1377–1384.
- [322] Adriani W, Ognibene E, Heuland E, Ghirardi O, Caprioli A, Laviola G. Motor impulsivity in APP-SWE mice: a model of Alzheimer’s disease. *Behav Pharmacol.* 2006;17(5-6):525–533.
- [323] Sultzer DL, Mahler ME, Mandelkern MA, Cummings JL, Van Gorp WG, Hinkin CH, et al. The relationship between psychiatric symptoms and regional cortical metabolism in Alzheimer’s disease. *J Neuropsychiatry Clin Neurosci.* 1995;7(4):476–484.
- [324] Cummings JL, Back C. The cholinergic hypothesis of neuropsychiatric symptoms in Alzheimer’s disease. *Am J Geriatr Psychiatry.* 1998;6(2 Suppl 1):64–78.
- [325] Hirono N, Mega MS, Dinov ID, Mishkin F, Cummings JL. Left frontotemporal hypoperfusion is associated with aggression in patients with dementia. *Arch Neurol.* 2000;57(6):861–866.
- 168
- [326] Bruen PD, McGeown WJ, Shanks MF, Venneri A. Neuroanatomical correlates of neuropsychiatric symptoms in Alzheimer’s disease. *Brain.* 2008;131(Pt 9):2455–2463.
- [327] Rosen HJ, Allison SC, Schauer GF, Gorno-Tempini ML, Weiner MW, Miller BL. Neuroanatomical correlates of behavioural disorders in dementia. *Brain.* 2005;128(Pt 11):2612–2625.
- [328] Krueger CE, Bird AC, Growdon ME, Jang JY, Miller BL, Kramer JH. Conflict monitoring in early frontotemporal dementia. *Neurology.* 2009;73(5):349–355.
- [329] Massimo L, Powers C, Moore P, Vesely L, Avants B, Gee J, et al. Neuroanatomy of apathy and disinhibition in frontotemporal lobar degeneration. *Dement Geriatr Cogn Disord.* 2009;27(1):96–104.
- [330] Qu CL, Tang JS, Jia H. Involvement of GABAergic modulation of antinociception induced by morphine microinjected into the ventrolateral orbital cortex. *Brain Res.* 2006;1073-1074:281–289.
- [331] Lorenz J, Minoshima S, Casey KL. Keeping pain out of mind: the role of the dorsolateral prefrontal cortex in pain modulation. *Brain.* 2003;126(Pt 5):1079–1091.
- [332] Casey KL, Lorenz J, Minoshima S. Insights into the pathophysiology of neuropathic pain through functional brain imaging. *Exp Neurol.* 2003;184 Suppl 1:S80–88.
- [333] Mohr C, Leyendecker S, Mangels I, Machner B, Sander T, Helmchen C. Central representation of cold-evoked pain relief in capsaicin induced pain: an event-related fMRI study. *Pain.* 2008;139(2):416–430.
- [334] Borckardt JJ, Smith AR, Reeves ST, Weinstein M, Kozel FA, Nahas Z, et al. Fifteen minutes of left prefrontal repetitive transcranial magnetic stimulation acutely increases thermal pain thresholds in healthy adults. *Pain Res Manag.* 2007;12(4):287–290.
- [335] Buffum MD, Miaskowski C, Sands L, Brod M. A pilot study of the relationship between discomfort and agitation in patients with dementia. *Geriatr Nurs.* 2001;22(2):80–85.
- [336] Cohen-Mansfield J, Werner P. Longitudinal predictors of nonaggressive agitated behaviors in the elderly. *Int J Geriatr Psychiatry.* 1999;14(10):831–844.
- [337] Bekelman DB, Black BS, Shore AD, Kasper JD, Rabins PV. Hospice care in a cohort of elders with dementia and mild cognitive impairment. *J Pain Symptom Manage.* 2005;30(3):208–214.

- [338] Manfredi PL, Breuer B, Wallenstein S, Stegmann M, Bottomley G, Libow L. Opioid treatment for agitation in patients with advanced dementia. *Int J Geriatr Psychiatry*. 2003;18(8):700–705.
- [339] Timinkul A, Kato M, Omori T, Deocaris CC, Ito A, Kizuka T, et al. Enhancing effect of cerebral blood volume by mild exercise in healthy young men: a near-infrared spectroscopy study. *Neurosci Res*. 2008;61(3):242–248.
- [340] Harada T, Miyai I, Suzuki M, Kubota K. Gait capacity affects cortical activation patterns related to speed control in the elderly. *Exp Brain Res*. 2009;193(3):445–454.
- [341] Harada T, Okagawa S, Kubota K. Jogging improved performance of a behavioral branching task: implications for prefrontal activation. *Neurosci Res*. 2004;49(3):325–337.
- [342] Colcombe SJ, Kramer AF, Erickson KI, Scalf P, McAuley E, Cohen NJ, et al. Cardiovascular fitness, cortical plasticity, and aging. *Proc Natl Acad Sci U S A*. 2004;101(9):3316–3321.
- [343] Crespo CJ, Smit E, Andersen RE, Carter-Pokras O, Ainsworth BE. Race/ethnicity, social class and their relation to physical inactivity during leisure time: results from the Third National Health and Nutrition Examination Survey, 1988-1994. *Am J Prev Med*. 2000;18(1):46–53.
- [344] Yang K, Laffrey SC, Stuifbergen A, Im EO, May K, Kouzekanani K. Leisure-time physical activity among midlife Korean immigrant women in the US. *J Immigr Minor Health*. 2007;9(4):291–298.
- [345] Hoesper K, Nierkens V, van Valkengoed I, Stronks K. Motivational factors mediating the association between acculturation and participation in sport among young Turkish and Moroccan women in the Netherlands. *Prev Med*. 2008;47(1):95–100.
- [346] Ibebunjo C, Eash JK, Li C, Ma Q, Glass DJ. Voluntary running, skeletal muscle gene expression, and signaling inversely regulated by orchidectomy and testosterone replacement. *Am J Physiol Endocrinol Metab*. 2011;300(2):E327–E340.
- [347] Rivera JA, Fried LP, Weiss CO, Simonsick EM. At the tipping point: predicting severe mobility difficulty in vulnerable older women. *J Am Geriatr Soc*. 2008;56(8):1417–1423.
- [348] Landi F, Abbatecola AM, Provinciali M, Corsonello A, Bustacchini S, Manigrasso L, et al. Moving against frailty: does physical activity matter? *Biogerontology*. 2010;11(5):537–545.
- 170
- [349] Rogers CE, Larkey LK, Keller C. A review of clinical trials of tai chi and qigong in older adults. *West J Nurs Res*. 2009;31(2):245–279.
- [350] Heyn PC, Johnson KE, Kramer AF. Endurance and strength training outcomes on cognitively impaired and cognitively intact older adults: a meta-analysis. *J Nutr Health Aging*. 2008;12(6):401–409.
- [351] Orr R, Raymond J, Fiatarone SM. Efficacy of progressive resistance training on balance performance in older adults : a systematic review of randomized controlled trials. *Sports Med*. 2008;38(4):317–343.
- [352] Chin A Paw, van Uffelen JG, Riphagen I, van Mechelen W. The functional effects of physical exercise training in frail older people : a systematic review. *Sports Med*. 2008;38(9):781–793.
- [353] Forster A, Lambley R, Young JB. Is physical rehabilitation for older people in long-term care effective? Findings from a systematic review. *Age Ageing*. 2010;39(2):169–175.
- [354] Potter R, Ellard D, Rees K, Thorogood M. A systematic review of the effects of physical activity on physical functioning, quality of life and depression in older people with dementia. *Int J Geriatr Psychiatry*. 2011;.
- [355] Forster A, Lambley R, Hardy J, Young J, Smith J, Green J, et al. Rehabilitation

- for older people in long-term care. *Cochrane Database Systematic Review*. 2009;21(1):CD004294.
- [356] Vernooij-Dassen M, Vasse E, Zuidema S, Cohen-Mansfield J, Moyle W. Psychosocial interventions for dementia patients in long-term care. *Int Psychogeriatr*. 2010;22(7):1121–1128.
- [357] Lam LC, Chau RC, Wong BM, Fung AW, Lui VW, Tam CC, et al. Interim follow-up of a randomized controlled trial comparing Chinese style mind body (Tai Chi) and stretching exercises on cognitive function in subjects at risk of progressive cognitive decline. *Int J Geriatr Psychiatry*. 2011;26(7):733–740.
- [358] Lustig C, Shah P, Seidler R, Reuter-Lorenz PA. Aging, training, and the brain: a review and future directions. *Neuropsychol Rev*. 2009;19(4):504–522.
- [359] van Uffelen JG, Chin A Paw, Hopman-Rock M, van Mechelen W. The effects of exercise on cognition in older adults with and without cognitive decline: a systematic review. *Clin J Sport Med*. 2008;18(6):486–500.
- 171
- [360] Arvanitakis Z, Leurgans SE, Barnes LL, Bennett DA, Schneider JA. Microinfarct pathology, dementia, and cognitive systems. *Stroke*. 2011;42(3):722–727.
- [361] Luijpen MW, Scherder EJ, van Someren EJ, Swaab DF, Sergeant JA. Non-pharmacological interventions in cognitively impaired and demented patients—a comparison with cholinesterase inhibitors. *Rev Neurosci*. 2003;14(4):343–368.
- [362] Korczyn AD, Halperin I. Depression and dementia. *J Neurol Sci*. 2009;283(1-2):139–142.
- [363] Windle G, Hughes G, Linck P, Russell I, Woods B. Is exercise effective in promoting mental well-being in older age? A systematic review. *Aging Ment Health*. 2010;14(6):652–669.
- [364] Martin JL, Ancoli-Israel S. Sleep disturbances in long-term care. *Clin Geriatr Med*. 2008;24(1):39–50, vi.
- [365] Lee DR, Thomas AJ. Sleep in dementia and caregiving - assessment and treatment implications: a review. *Int Psychogeriatr*. 2011;23(2):190–201.
- [366] Berger AM. Update on the state of the science: sleep-wake disturbances in adult patients with cancer. *Oncol Nurs Forum*. 2009;36(4):E165–E177.
- [367] Eggermont LH, Scherder EJ. Physical activity and behaviour in dementia: a review of the literature and implications for psychosocial intervention in primary care. *Dementia*. 2006;5(3):411–428.
- [368] Eggermont LH, Blankevoort CG, Scherder EJ. Walking and night-time restlessness in mild-to-moderate dementia: a randomized controlled trial. *Age Ageing*. 2010;39(6):746–749.
- [369] Crowley K. Sleep and sleep disorders in older adults. *Neuropsychol Rev*. 2011;21(1):41–53.
- [370] Lapid MI, Rummans TA, Boeve BF, McCormick JK, Pankratz VS, Cha RH, et al. What is the quality of life in the oldest old? *Int Psychogeriatr*. 2011;p. 1–8.
- [371] Andersen CK, Wittrup-Jensen KU, Lolk A, Andersen K, Kragh-Sorensen P. Ability to perform activities of daily living is the main factor affecting quality of life in patients with dementia. *Health Qual Life Outcomes*. 2004;2:52.
- [372] Buchman AS, Shah RC, Leurgans SE, Boyle PA, Wilson RS, Bennett DA. Musculoskeletal pain and incident disability in community-dwelling older adults. *Arthritis Care Res (Hoboken)*. 2010;62(9):1287–1293.
- 172
- [373] Hicks AL, McCartney N. Gender differences in isometric contractile properties and fatigability in elderly human muscle. *Canadian journal*

- of applied physiology = *Revue canadienne de physiologie appliquee*. 1996;21(6):441–454.
- [374] Griffith K, Wenzel J, Shang J, Thompson C, Stewart K, Mock V. Impact of a walking intervention on cardiorespiratory fitness, self-reported physical function, and pain in patients undergoing treatment for solid tumors. *Cancer*. 2009;115(20):4874–4884.
- [375] King AC, Pruitt LA, Phillips W, Oka R, Rodenburg A, Haskell WL. Comparative effects of two physical activity programs on measured and perceived physical functioning and other health-related quality of life outcomes in older adults. *J Gerontol A Biol Sci Med Sci*. 2000;55(2):M74–M83.
- [376] Liu-Ambrose TY, Khan KM, Eng JJ, Lord SR, Lentle B, McKay HA. Both resistance and agility training reduce back pain and improve health-related quality of life in older women with low bone mass. *Osteoporos Int*. 2005;16(11):1321–1329.
- [377] MacRae PG, Asplund LA, Schnelle JF, Ouslander JG, Abrahamse A, Morris C. A walking program for nursing home residents: effects on walk endurance, physical activity, mobility, and quality of life. *J Am Geriatr Soc*. 1996;44(2):175–180.
- [378] Husebo BS, Strand LI, Moe-Nilssen R, Husebo SB, Ljunggren AE. Pain behaviour and pain intensity in older persons with severe dementia: reliability of the MOBID Pain Scale by video uptake. *Scand J Caring Sci*. 2009;23(1):180–189.
- [379] Scherder E, Statema M. Huntington's disease. *Lancet*. 2010;376(9751):1464.
- [380] de Souto BP. What is the role played by physical activity and exercise in the frailty syndrome? Perspectives for future research. *Aging Clin Exp Res*. 2010;22(5-6):356–359.
- [381] Acevedo A, Loewenstein DA. Nonpharmacological cognitive interventions in aging and dementia. *J Geriatr Psychiatry Neurol*. 2007;20(4):239–249.
- [382] Faul F, Erdfelder E, Buchner A, Lang AG. Statistical power analyses using G*Power 3.1: tests for correlation and regression analyses. *Behav Res Methods*. 2009;41(4):1149–1160.
- [383] Verhage F. *Intelligence and Age: Research on Dutch People aged Twelve to Seventy-seven Years Old*; 1964. 173
- [384] Corder EH, Saunders AM, Strittmatter WJ, Schmechel DE, Gaskell PC, Small GW, et al. Gene dose of apolipoprotein E type 4 allele and the risk of Alzheimer's disease in late onset families. *Science*. 1993;261(5123):921–923.
- [385] Bizzarro A, Marra C, Acciarri A, Valenza A, Tiziano FD, Brahe C, et al. Apolipoprotein E epsilon4 allele differentiates the clinical response to donepezil in Alzheimer's disease. *Dement Geriatr Cogn Disord*. 2005;20(4):254–261.
- [386] Huang TL, Zandi PP, Tucker KL, Fitzpatrick AL, Kuller LH, Fried LP, et al. Benefits of fatty fish on dementia risk are stronger for those without APOE epsilon4. *Neurology*. 2005;65(9):1409–1414.
- [387] Ilveskoski E, Lehtimäki T, Erkinjuntti T, Koivula T, Karhunen PJ. Rapid apolipoprotein E genotyping from mailed buccal swabs. *J Neurosci Methods*. 1998;79(1):5–8.
- [388] Gioia L, Vogt LJ, Freeman WM, Flood A, Vogt BA, Vrana KE. PCR-based apolipoprotein E genotype analysis from archival fixed brain. *J Neurosci Methods*. 1998;80(2):209–214.
- [389] Reisberg B, Ferris SH, de Leon MJ, Crook T. The Global Deterioration Scale for assessment of primary degenerative dementia. *Am J Psychiatry*. 1982;139(9):1136–1139.

- [390] Guyatt GH, Pugsley SO, Sullivan MJ, Thompson PJ, Berman L, Jones NL, et al. Effect of encouragement on walking test performance. *Thorax*. 1984;39(11):818–822.
- [391] Vidt DG, Lang RS, Seballos RJ, Misra-Hebert A, Campbell J, Bena JF. Taking blood pressure: too important to trust to humans? *Cleve Clin J Med*. 2010;77(10):683–688.
- [392] Marchiando RJ, Elston MP. Automated ambulatory blood pressure monitoring: clinical utility in the family practice setting. *Am Fam Physician*. 2003;67(11):2343–2350.
- [393] Graham I, Atar D, Borch-Johnsen K, Boysen G, Burell G, Cifkova R, et al. European guidelines on cardiovascular disease prevention in clinical practice: executive summary. Fourth Joint Task Force of the European Society of Cardiology and other societies on cardiovascular disease prevention in clinical practice (constituted by representatives of nine societies and by invited experts). *Eur J Cardiovasc Prev Rehabil*. 2007;14 Suppl 2:E1–40.
- 174
- [394] Lowy A, Munk VC, Ong SH, Burnier M, Vrijens B, Tousset EP, et al. Effects on blood pressure and cardiovascular risk of variations in patients' adherence to prescribed antihypertensive drugs: role of duration of drug action. *Int J Clin Pract*. 2011;65(1):41–53.
- [395] Mossberg KA. Reliability of a timed walk test in persons with acquired brain injury. *Am J Phys Med Rehabil*. 2003;82(5):385–390.
- [396] Enright PL. The six-minute walk test. *Respir Care*. 2003;48(8):783–785.
- [397] American College of Sports Medicine. ACSM's Guidelines for Exercise Testing and Prescription. vol. 7; 2006.
- [398] Ghaffari S, Kazemi B, Aliakbarzadeh P. Abnormal heart rate recovery after exercise predicts coronary artery disease severity. *Cardiol J*. 2011;18(1):47–54.
- [399] Enright PL, Sherrill DL. Reference equations for the six-minute walk in healthy adults. *Am J Respir Crit Care Med*. 1998;158(5 Pt 1):1384–1387.
- [400] Noren AM, Bogren U, Bolin J, Stenstrom C. Balance assessment in patients with peripheral arthritis: applicability and reliability of some clinical assessments. *Physiother Res Int*. 2001;6(4):193–204.
- [401] Franzen E, Paquette C, Gurfinkel VS, Cordo PJ, Nutt JG, Horak FB. Reduced performance in balance, walking and turning tasks is associated with increased neck tone in Parkinson's disease. *Exp Neurol*. 2009;219(2):430–438.
- [402] Frandin K, Sonn U, Svantesson U, Grimby G. Functional balance tests in 76-year-olds in relation to performance, activities of daily living and platform tests. *Scand J Rehabil Med*. 1995;27(4):231–241.
- [403] Kennedy DM, Stratford PW, Wessel J, Gollish JD, Penney D. Assessing stability and change of four performance measures: a longitudinal study evaluating outcome following total hip and knee arthroplasty. *BMC Musculoskelet Disord*. 2005;6:3.
- [404] Podsiadlo D, Richardson S. The timed "Up & Go": a test of basic functional mobility for frail elderly persons. *J Am Geriatr Soc*. 1991;39(2):142–148.
- [405] Jones CJ, Rikli RE, Beam WC. A 30-s chair-stand test as a measure of lower body strength in community-residing older adults. *Res Q Exerc Sport*. 1999;70(2):113–119.
- 175
- [406] Penninx BW, Ferrucci L, Leveille SG, Rantanen T, Pahor M, Guralnik JM. Lower extremity performance in nondisabled older persons as a predictor of subsequent hospitalization. *J Gerontol A Biol Sci Med Sci*. 2000;55(11):M691–M697.

- [407] Guralnik JM, Simonsick EM, Ferrucci L, Glynn RJ, Berkman LF, Blazer DG, et al. A short physical performance battery assessing lower extremity function: Association with self-reported disability and prediction of mortality and nursing home admission. *J GERONTOL*. 1994;49(2):M85–M94.
- [408] Rossiter-Fornoff JE, Wolf SL, Wolfson LI, Buchner DM. A cross-sectional validation study of the FICSIT common data base static balance measures. *Frailty and Injuries: Cooperative Studies of Intervention Techniques. J Gerontol A Biol Sci Med Sci*. 1995;50(6):M291–M297.
- [409] Folstein MF, Folstein SE, McHugh PR. "Mini-mental state". A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research*. 1975;12(3):189–198.
- [410] Choe JY, Youn JC, Park JH, Park IS, Jeong JW, Lee WH, et al. The Severe Cognitive Impairment Rating Scale—an instrument for the assessment of cognition in moderate to severe dementia patients. *Dement Geriatr Cogn Disord*. 2008;25(4):321–328.
- [411] Lindeboom J, Jonker C. *Amsterdamse Dementie-screeningtest, handleiding*; 1989.
- [412] Wilson BA, Alderman N, Burgess PW, Emslie H, Evans JJ. Behavioural Assessment of the Dysexecutive Syndrome (BADS). *Journal of Occupational Psychology, Employment and Disability*. 2003;5(2):33–37.
- [413] Perfetti B, Varanese S, Mercuri P, Mancino E, Saggino A, Onofri M. Behavioural assessment of dysexecutive syndrome in Parkinson's disease without dementia: a comparison with other clinical executive tasks. *Parkinsonism Relat Disord*. 2010;16(1):46–50.
- [414] Wechsler D. *Wechsler Memory Scale - Revised*; 1987.
- [415] Hester RL, Kinsella GJ, Ong B. Effect of age on forward and backward span tasks. *J Int Neuropsychol Soc*. 2004;10(4):475–481.
- [416] Grégoire J, Van der Linden M. The effect of age on forward and backward digit spans. *Aging, Neuropsychology and Cognition*. 1997;4:140–149.
- [417] Wilson B, Cockburn J, Baddely A. *The Rivermead Behavioural Memory Test*; 1987. 176
- [418] Brucki SM, Rocha MS. Category fluency test: effects of age, gender and education on total scores, clustering and switching in Brazilian Portuguese-speaking subjects. *Braz J Med Biol Res*. 2004;37(12):1771–1777.
- [419] Rosen VM, Engle RW. The role of working memory capacity in retrieval. *J Exp Psychol Gen*. 1997;126(3):211–227.
- [420] Strauss E. *A Compendium of neuropsychological tests: Administration, norms, and commentary*. vol. 3rd. edition; 2006.
- [421] Snijders JT, Verhage F. *Groninger Intelligentie Test*; 1983.
- [422] Luteijn F, van der Ploeg FAE. *Handleiding Groninger Intelligentie Test [Manual Groningen intelligence Test]*; 1983.
- [423] Solomon RE, Boone KB, Miora D, Skidmore S, Cottingham M, Victor T, et al. Use of the WAIS-III picture completion subtest as an embedded measure of response bias. *Clin Neuropsychol*. 2010;24(7):1243–1256.
- [424] Hammes J. *De Stroop Kleur-woord Test: Handleiding [The Stroop Color-Word Test: Manual]*.; 1973.
- [425] May CP, Hasher L. Synchrony effects in inhibitory control over thought and action. *J Exp Psychol Hum Percept Perform*. 1998;24(2):363–379.
- [426] Moering RG, Schinka JA, Mortimer JA, Graves AB. Normative data for elderly African Americans for the Stroop Color and Word Test. *Archives of Clinical Neuropsychology*. 2003;607:1–11.
- [427] Spreen O, Strauss E. *A Compendium of Neuropsychological Tests: Administration, Norms, and CommentBook*, 2nd ed. 1998;

- [428] Usui N, Haji T, Maruyama M, Katsuyama N, Uchida S, Hozawa A, et al. Cortical areas related to performance of WAIS Digit Symbol Test: a functional imaging study. *Neurosci Lett*. 2009;463(1):1–5.
- [429] Gonzalez-Blanch C, Perez-Iglesias R, Rodriguez-Sanchez JM, Pardo-Garcia G, Martinez-Garcia O, Vazquez-Barquero JL, et al. A digit symbol coding task as a screening instrument for cognitive impairment in first-episode psychosis. *Arch Clin Neuropsychol*. 2011;26(1):48–58.
- [430] Nakahachi T, Ishii R, Iwase M, Canuet L, Takahashi H, Kurimoto R, et al. Frontal activity during the digit symbol substitution test determined by multichannel near-infrared spectroscopy. *Neuropsychobiology*. 2008;57(4):151–158.
- 177
- [431] Stephens R. Age-related decline in Digit-Symbol performance: eyemovement and video analysis. *Arch Clin Neuropsychol*. 2006;21(1):101–107.
- [432] Kok RM, Heeren TJ, van Hemert AM. De geriatric depression scale. *Tijdschrift voor Psychiatrie*. 1993;35(6):416–421.
- [433] Brink TL, Yesavage JA, Lum O, Heersema PH, Adey M, Rose TS. Screening tests for geriatric depression. *Clinical Gerontologist*. 1982;1:37–43.
- [434] Yesavage JA, Brink TL, Rose TL, Lum O, Huang V, Adey M, et al. Development and validation of a geriatric depression screening scale: a preliminary report. *J Psychiatr Res*. 1982;17(1):37–49.
- [435] Arrindell WA, Ettema JH. SCL-90. Manual to a multi-dimensional psychopathology indicator; 1986.
- [436] Derogatis LR. Symptom Checklist-90-R (SCL-90-R); 1975.
- [437] Derogatis LR. Administration, scoring and procedures manual-I for the R(evised) version and other instruments of the psychopathology rating scale series.; 1977.
- [438] van Someren EJ, Swaab DF, Colenda CC, Cohen W, McCall WV, Rosenquist PB. Bright light therapy: improved sensitivity to its effects on rest-activity rhythms in Alzheimer patients by application of nonparametric methods. *Chronobiol Int*. 1999;16(4):505–518.
- [439] Ettema TP, Droes RM, de LJ, Mellenbergh GJ, Ribbe MW. QUALIDEM: development and evaluation of a dementia specific quality of life instrument. Scalability, reliability and internal structure. *Int J Geriatr Psychiatry*. 2007;22(6):549–556.
- [440] Ettema TP, Droes RM, de LJ, Mellenbergh GJ, Ribbe MW. QUALIDEM: development and evaluation of a dementia specific quality of life instrument–validation. *Int J Geriatr Psychiatry*. 2007;22(5):424–430.
- [441] Bouman AI, Ettema TP, Wetzels RB, van Beek AP, de LJ, Droes RM. Evaluation of Qualidem: a dementia-specific quality of life instrument for persons with dementia in residential settings; scalability and reliability of subscales in four Dutch field surveys. *Int J Geriatr Psychiatry*. 2011;26(7):711–722.
- [442] Katz S, Akpom CA. A measure of primary sociobiological functions. *Int J Health Serv*. 1976;6(3):493–508.
- [443] McGrath PA, Seifert CE, Speechley KN, Booth JC, Stitt L, Gibson MC. A new analogue scale for assessing children’s pain: an initial validation study. *Pain*. 1996;64(3):435–443.
- 178
- [444] Scherder E, van Manen F. Pain in Alzheimer’s disease: nursing assistants’ and patients’ evaluations. *J Adv Nurs*. 2005;52(2):151–158.
- [445] Bieri D, Reeve RA, Champion GD, Addicoat L, Ziegler JB. The Faces Pain Scale for the self-assessment of the severity of pain experienced by children: development, initial validation, and preliminary investigation for ratio scale properties. *Pain*. 1990;41(2):139–150.
- [446] Kramer AF, Erickson KI. Capitalizing on cortical plasticity: influence

- of physical activity on cognition and brain function. *Trends Cogn Sci*. 2007;11(8):342–348.
- [447] Lautenschlager NT, Cox K, Kurz AF. Physical activity and mild cognitive impairment and Alzheimer's disease. *Curr Neurol Neurosci Rep*. 2010;10(5):352–358.
- [448] James BD, Boyle PA, Bennett DA, Buchman AS. Total Daily Activity Measured With Actigraphy and Motor Function in Community-dwelling Older Persons With and Without Dementia. *Alzheimer Dis Assoc Disord*. 2011;.
- [449] Scherder E, Eggermont L, Swaab D, van HM, Kamsma Y, de GM, et al. Gait in ageing and associated dementias; its relationship with cognition. *Neurosci Biobehav Rev*. 2007;31(4):485–497.
- [450] Kluger A, Gianutsos JG, Golomb J, Wagner A, Wagner D, Scheurich S. Clinical features of MCI: motor changes. *Int Psychogeriatr*. 2008;20(1):32–39.
- [451] Aggarwal NT, Wilson RS, Beck TL, Bienias JL, Bennett DA. Motor dysfunction in mild cognitive impairment and the risk of incident Alzheimer disease. *Arch Neurol*. 2006;63(12):1763–1769.
- [452] Franssen EH, Souren LE, Torossian CL, Reisberg B. Equilibrium and limb coordination in mild cognitive impairment and mild Alzheimer's disease. *J Am Geriatr Soc*. 1999;47(4):463–469.
- [453] Eggermont LH, Gavett BE, Volkens KM, Blankevoort CG, Scherder EJ, Jefferson AL, et al. Lower-extremity function in cognitively healthy aging, mild cognitive impairment, and Alzheimer's disease. *Arch Phys Med Rehabil*. 2010;91(4):584–588.
- [454] Lorbach ER, Webster KE, Menz HB, Wittwer JE, Merory JR. Physiological falls risk assessment in older people with Alzheimer's disease. *Dement Geriatr Cogn Disord*. 2007;24(4):260–265.
- 179
- [455] Scherder E, Dekker W, Eggermont L. Higher-level hand motor function in aging and (preclinical) dementia: its relationship with (instrumental) activities of daily life—a mini-review. *Gerontology*. 2008;54(6):333–341.
- [456] Kluger A, Gianutsos JG, Golomb J, Ferris SH, George AE, Franssen E, et al. Patterns of motor impairment in normal aging, mild cognitive decline, and early Alzheimer's disease. *J Gerontol B Psychol Sci Soc Sci*. 1997;52(1):28–39.
- [457] Burns JM, Cronk BB, Anderson HS, Donnelly JE, Thomas GP, Harsha A, et al. Cardiorespiratory fitness and brain atrophy in early Alzheimer disease. *Neurology*. 2008;71(3):210–216.
- [458] Rolland Y, bellan van KG, Nourhashemi F, Andrieu S, Cantet C, Guyonnet-Gillette S, et al. An abnormal one-leg balance"test predicts cognitive decline during Alzheimer's disease. *J Alzheimers Dis*. 2009;16(3):525–531.
- [459] Volkens KM, Scherder EJ. The effect of regular walks on various health aspects in older people with dementia: protocol of a randomizedcontrolled trial. *BMC Geriatr*. 2011;11:38.
- [460] Shinkai S, Watanabe S, Kumagai S, Fujiwara Y, Amano H, Yoshida H, et al. Walking speed as a good predictor for the onset of functional dependence in a Japanese rural community population. *Age Ageing*. 2000;29(5):441–446.
- [461] Lipnicki DM, Gunga HC, Belavy DL, Felsenberg D. Bed rest and cognition: effects on executive functioning and reaction time. *Aviat Space Environ Med*. 2009;80(12):1018–1024.
- [462] Scherder EJ, Eggermont LH, Geuze RH, Vis J, Verkerke GJ. Quadriceps strength and executive functions in older women. *Am J Phys Med Rehabil*. 2010;89(6):458–463.
- [463] Hashimoto N, Nakaaki S, Omori IM, Fujioi J, Noguchi Y, Murata Y, et al.

Distinct neuropsychological profiles of three major symptom dimensions in obsessive-compulsive disorder. *Psychiatry Res.* 2011;187(1-2):166–173.

[464] Liu-Ambrose T, Davis JC, Nagamatsu LS, Hsu CL, Katarynych LA, Khan KM. Changes in executive functions and self-efficacy are independently associated with improved usual gait speed in older women. *BMC Geriatr.* 2010;10:25.

[465] Rao SM, Bobholz JA, Hammeke TA, Rosen AC, Woodley SJ, Cunningham JM, et al. Functional MRI evidence for subcortical participation in conceptual reasoning skills. *Neuroreport.* 1997;8(8):1987–1993. 180

[466] Tamada T, Miyauchi S, Imamizu H, Yoshioka T, Kawato M. Cerebrocerebellar functional connectivity revealed by the laterality index in tool-use learning. *Neuroreport.* 1999;10(2):325–331.

[467] Leh SE, Ptito A, Chakravarty MM, Strafella AP. Fronto-striatal connections in the human brain: a probabilistic diffusion tractography study. *Neurosci Lett.* 2007;419(2):113–118.

[468] Archer T, Kostrzewa RM, Beninger RJ, Palomo T. Cognitive symptoms facilitatory for diagnoses in neuropsychiatric disorders: executive functions and locus of control. *Neurotox Res.* 2008;14(2-3):205–225.

[469] Gao T, Gao Z, Li J, Sun Z, Shen M. The perceptual root of object-based storage: an interactive model of perception and visual working memory. *J Exp Psychol Hum Percept Perform.* 2011;37(6):1803–1823.

[470] Kokkonen J, Nelson AG, Cornwell A. Acute muscle stretching inhibits maximal strength performance. *Res Q Exerc Sport.* 1998;69(4):411–415.

[471] Luo L, Craik FI. Aging and memory: a cognitive approach. *Can J Psychiatry.* 2008;53(6):346–353.

[472] Makizako H, Shimada H, Doi T, Yoshida D, Ito K, Kato T, et al. The association between decline in physical functioning and atrophy of medial temporal areas in community-dwelling older adults with amnesic and nonamnesic mild cognitive impairment. *Arch Phys Med Rehabil.* 2011;92(12):1992–1999.

[473] Honea RA, Thomas GP, Harsha A, Anderson HS, Donnelly JE, Brooks WM, et al. Cardiorespiratory fitness and preserved medial temporal lobe volume in Alzheimer disease. *Alzheimer Dis Assoc Disord.* 2009;23(3):188–197.

[474] Dawe RJ, Bennett DA, Schneider JA, Arfanakis K. Neuropathologic correlates of hippocampal atrophy in the elderly: a clinical, pathologic, postmortem MRI study. *PLoS ONE.* 2011;6(10):e26286.

[475] Jin M, Pelak VS, Cordes D. Aberrant default mode network in subjects with amnesic mild cognitive impairment using resting-state functional MRI. *Magn Reson Imaging.* 2012;30(1):48–61.

[476] Haroutunian V, Katsel P, Schmeidler J. Transcriptional vulnerability of brain regions in Alzheimer's disease and dementia. *Neurobiol Aging.* 2009;30(4):561–573.

[477] Bastin C, Feyers D, Majerus S, Balteau E, Degueldre C, Luxen A, et al. The neural substrates of memory suppression: a fMRI exploration of directed forgetting. *PLoS ONE.* 2012;7(1):e29905. 181

[478] Stingl KT, Kullmann S, Ketterer C, Heni M, Haring HU, Fritsche A, et al. Neuronal correlates of reduced memory performance in overweight subjects. *Neuroimage.* 2012;60(1):362–369.

[479] Bugg JM, Shah K, Villareal DT, Head D. Cognitive and neural correlates of aerobic fitness in obese older adults. *Exp Aging Res.* 2012;38(2):131–145.

[480] McAuley E, Szabo AN, Mailey EL, Erickson KI, Voss M, White SM, et al. Non-Exercise Estimated Cardiorespiratory Fitness: Associations

- with Brain Structure, Cognition, and Memory Complaints in Older Adults. *Ment Health Phys Act.* 2011;4(1):5–11.
- [481] Szabo AN, McAuley E, Erickson KI, Voss M, Prakash RS, Mailey EL, et al. Cardiorespiratory fitness, hippocampal volume, and frequency of forgetting in older adults. *Neuropsychology.* 2011;25(5):545–553.
- [482] Chaddock L, Erickson KI, Prakash RS, Kim JS, Voss MW, Vanpatter M, et al. A neuroimaging investigation of the association between aerobic fitness, hippocampal volume, and memory performance in preadolescent children. *Brain Res.* 2010;1358:172–183.
- [483] Volkers KM, Scherder EJ. Impoverished environment, cognition, aging and dementia. *Rev Neurosci.* 2011;22(3):259–266.
- [484] Inzitari M, Baldereschi M, Di CA, Di BM, Marchionni N, Scafato E, et al. Impaired attention predicts motor performance decline in older community-dwellers with normal baseline mobility: results from the Italian Longitudinal Study on Aging (ILSA). *J Gerontol A Biol Sci Med Sci.* 2007;62(8):837–843.
- [485] Johnson JK, Lui LY, Yaffe K. Executive function, more than global cognition, predicts functional decline and mortality in elderly women. *J Gerontol A Biol Sci Med Sci.* 2007;62(10):1134–1141.
- [486] Brookmeyer R, Johnson E, Ziegler-Graham K, Arrighi HM. Forecasting the global burden of Alzheimer’s disease. *Alzheimers Dement.* 2007;3(3):186–191.
- [487] Salloway S. Current and future treatments for Alzheimer’s disease. *CNS Spectr.* 2009;14(8 Suppl 7):4–7.
- [488] Mortimer JA, Ding D, Borenstein AR, Decarli C, Guo Q, Wu Y, et al. Changes in Brain Volume and Cognition in a Randomized Trial of Exercise and Social Interaction in a Community-Based Sample of Non-Demented Chinese Elders. *J Alzheimers Dis.* 2012; 182
- [489] West RL. An application of prefrontal cortex function theory to cognitive aging. *Psychol Bull.* 1996;120(2):272–292.
- [490] Coelho FG, Santos-Galduroz RF, Gobbi S, Stella F. [Systematized physical activity and cognitive performance in elderly with Alzheimer’s dementia: a systematic review]. *Rev Bras Psiquiatr.* 2009;31(2):163–170.
- [491] Yu F, Kolanowski AM, Strumpf NE, Eslinger PJ. Improving cognition and function through exercise intervention in Alzheimer’s disease. *J Nurs Scholarsh.* 2006;38(4):358–365.
- [492] Forbes D, Forbes S, Morgan DG, Markle-Reid M, Wood J, Culum I. Physical activity programs for persons with dementia. *Cochrane Database of Systematic Reviews.* 2008;16(3):CD006489.
- [493] Scherder E, Eggermont L, Sergeant J, Boersma F. Physical activity and cognition in Alzheimer’s disease: relationship to vascular risk factors, executive functions and gait. *Rev Neurosci.* 2007;18(2):149–158.
- [494] Frances T, Sorrell J, Butler FR. The effects of regular exercise on muscle strength and functional abilities of late stage Alzheimer’s residents. *American Journal of Alzheimer’s Disease.* 1997;12(3):122–127.
- [495] Eggermont LH, Swaab DF, Hol EM, Scherder EJ. Walking the line: a randomised trial on the effects of a short term walking programme on cognition in dementia. *J Neurol Neurosurg Psychiatry.* 2009;80(7):802–804.
- [496] Dorner T, Kranz A, Zettl-Wiedner K, Ludwig C, Rieder A, Gisinger C. The effect of structured strength and balance training on cognitive function in frail, cognitive impaired elderly long-term care residents. *Aging Clin Exp Res.* 2007;19(5):400–405.
- [497] Stevens J, Killeen M. A randomised controlled trial testing the impact of exercise on cognitive symptoms and disability of residents with dementia.

Contemp Nurse. 2006;21(1):32–40.

[498] Arkin S. Language-enriched exercise plus socialization slows cognitive decline in Alzheimer's disease. *Am J Alzheimers Dis Other Demen.* 2007;22(1):62–77.

[499] Tappen RM, Roach KE, Applegate EB, Stowell P. Effect of a combined walking and conversation intervention on functional mobility of nursing home residents with Alzheimer disease. *Alzheimer Dis Assoc Disord.* 2000;14(4):196–201.

183

[500] Friedman R, Tappen RM. The effect of planned walking on communication in Alzheimer's disease. *J Am Geriatr Soc.* 1991;39(7):650–654.

[501] Palleschi L, Vetta F, De Gennaro E, Idone G, Sottosanti G, Gianni W, et al. Effect of aerobic training on the cognitive performance of elderly patients with senile dementia of Alzheimer type. *Arch Gerontol Geriatr.* 1996;22 Suppl 1:47–50.

[502] Sobel BP. Bingo vs. physical intervention in stimulating short-term cognition in Alzheimer's disease patients. *Am J Alzheimers Dis Other Demen.* 2001;16(2):115–120.

[503] Cott CA, Dawson P, Sidani S, Wells D. The effects of a walking/talking program on communication, ambulation, and functional status in residents with Alzheimer disease. *Alzheimer Dis Assoc Disord.* 2002;16(2):81–87.

[504] Lautenschlager NT, Cox KL, Flicker L, Foster JK, van Bockxmeer FM, Xiao J, et al. Effect of physical activity on cognitive function in older adults at risk for Alzheimer disease: a randomized trial. *JAMA.* 2008;300(9):1027–1037.

[505] Colcombe SJ, Kramer AF, McAuley E, Erickson KI, Scalf P. Neurocognitive aging and cardiovascular fitness: recent findings and future directions. *J Mol Neurosci.* 2004;24(1):9–14.

[506] Rydwick E, Frandin K, Kerstin F, Akner G. Physical training in institutionalized elderly people with multiple diagnoses—a controlled pilot study. *Arch Gerontol Geriatr.* 2005;40(1):29–44.

[507] Rydwick E, Lammes E, Frändin K, Akner G. Effects of a physical and nutritional intervention program for frail elderly people over age 75. A randomized controlled pilot treatment trial. *Aging clinical and experimental research.* 2008;20(2):159–170.

[508] Teri L, Gibbons LE, McCurry SM, Logsdon RG, Buchner DM, Barlow WE, et al. Exercise plus behavioral management in patients with Alzheimer disease: a randomized controlled trial. *JAMA.* 2003;290(15):2015–2022.

[509] Foster PP, Rosenblatt KP, Kuljis RO. Exercise-induced cognitive plasticity, implications for mild cognitive impairment and Alzheimer's disease. *Front Neurol.* 2011;2:28.

[510] Wood S. *Generalized Additive Models: An Introduction with R.* Chapman and Hall/CRC; 2006.

184

[511] Schwenk M, Zieschang T, Oster P, Hauer K. Dual-task performances can be improved in patients with dementia: a randomized controlled trial. *Neurology.* 2010;74(24):1961–1968.

[512] Barnes DE, Whitmer RA, Yaffe K. Physical activity and dementia: The need for prevention trials. *Exerc Sport Sci Rev.* 2007;35(1):24–29.

[513] Chang YK, Nien YH, Tsai CL, Etnier JL. Physical activity and cognition in older adults: the potential of Tai Chi Chuan. *J Aging Phys Act.* 2010;18(4):451–472.

[514] Etnier JL, Nowell PM, Landers DM, Sibley BA. A meta-regression to examine the relationship between aerobic fitness and cognitive performance. *Brain Res Rev.* 2006;52(1):119–130.

- [515] Jak AJ. The impact of physical and mental activity on cognitive aging. *Curr Top Behav Neurosci*. 2012;10:273–291.
- [516] Liu-Ambrose T, Donaldson MG. Exercise and cognition in older adults: is there a role for resistance training programmes? *Br J Sports Med*. 2009;43(1):25–27.
- [517] Smith PJ, Blumenthal JA, Hoffman BM, Cooper H, Strauman TA, Welsh-Bohmer K, et al. Aerobic exercise and neurocognitive performance: a meta-analytic review of randomized controlled trials. *Psychosom Med*. 2010;72(3):239–252.
- [518] Kivipelto M, Rovio S, Ngandu T, Kareholt I, Eskelinen M, Winblad B, et al. Apolipoprotein E epsilon4 magnifies lifestyle risks for dementia: a population-based study. *J Cell Mol Med*. 2008;12(6B):2762–2771.
- [519] Rosano C, Aizenstein HJ, Newman AB, Venkatraman V, Harris T, Ding J, et al. Neuroimaging differences between older adults with maintained versus declining cognition over a 10-year period. *Neuroimage*. 2012;62(1):307–313.
- [520] Clement F, Belleville S. Compensation and disease severity on the memory-related activations in mild cognitive impairment. *Biol Psychiatry*. 2010;68(10):894–902.
- [521] Angevaren M, Vanhees L, Wendel-Vos W, Verhaar HJ, Aufdemkampe G, Aleman A, et al. Intensity, but not duration, of physical activities is related to cognitive function. *Eur J Cardiovasc Prev Rehabil*. 2007;14(6):825–830.
- [522] Chodzko-Zajko WJ, Proctor DN, Fiatarone Singh MA, Minson CT, Nigg CR, Salem GJ, et al. American College of Sports Medicine position stand. Exercise and physical activity for older adults. *Med Sci Sports Exerc*. 2009;41(7):1510–1530.
- 185
- [523] Swain DP, Franklin BA. VO₂ reserve and the minimal intensity for improving cardiorespiratory fitness. *Med Sci Sports Exerc*. 2002;34(1):152–157.
- [524] American College of Sports Medicine Position Stand. The recommended quantity and quality of exercise for developing and maintaining cardiorespiratory and muscular fitness, and flexibility in healthy adults. *Med Sci Sports Exerc*. 1998;30:975–991.
- [525] Grant TL, Edwards N, Sveistrup H, Andrew C, Egan M. Inequitable walking conditions among older people: examining the interrelationship of neighbourhood socio-economic status and urban form using a comparative case study. *BMC Public Health*. 2010;10:677.
- [526] Dominguez LJ, Barbagallo M, Lauretani F, Bandinelli S, Bos A, Corsi AM, et al. Magnesium and muscle performance in older persons: the InCHIANTI study. *Am J Clin Nutr*. 2006;84(2):419–426.
- [527] Eggermont LH, van Heuvelen MJ, van Keeken BL, Hollander AP, Scherder EJ. Walking with a rollator and the level of physical intensity in adults 75 years of age or older. *Arch Phys Med Rehabil*. 2006;87(5):733–736.
- [528] Borg GAV. *Borg's Rating of Perceived Exertion and Pain Scales*. Champaign, IL: Human Kinetics; 1998.
- [529] Carter J, Jeukendrup AE. Validity and reliability of three commercially available breath-by-breath respiratory systems. *Eur J Appl Physiol*. 2002;86(5):435–441.
- [530] Simonsick EM, Guralnik JM, Hennekens CH, Wallace RB, Ostfeld AM. Intermittent claudication and subsequent cardiovascular disease in the elderly. *J Gerontol A Biol Sci Med Sci*. 1995;50A(1):M17–M22.
- [531] Garby L, Astrup A. The relationship between the respiratory quotient and the energy equivalent of oxygen during simultaneous glucose and lipid oxidation and lipogenesis. *Acta Physiol Scand*. 1987;129(3):443–

444.

[532] Kozey S, Lyden K, Staudenmayer J, Freedson P. Errors in MET estimates of physical activities using $3.5 \text{ ml} \times \text{kg}^{-1} \times \text{min}^{-1}$ as the baseline oxygen consumption. *J Phys Act Health*. 2010;7(4):508–516.

[533] Harris JA, Benedict FG. A Biometric Study of Human Basal Metabolism. *Proc Natl Acad Sci U S A*. 1918;4(12):370–373.

186

[534] Garcin M, Vauiert JF, Vandewalle H, Monod H. Ratings of perceived exertion (RPE) as an index of aerobic endurance during local and general exercises. *Ergonomics*. 1998;41(8):1105–1114.

[535] Parakh N, Bhargava B. Rate control with ivabradine: angina pectoris and beyond. *American Journal of Cardiovascular Drugs : drugs, devices, and other interventions*. 2011;11(1):1–12.

[536] Morgan WP. Psychological components of effort sense. *Med Sci Sports Exerc*. 1994;26(9):1071–1077.

[537] Yesavage JA. Geriatric Depression Scale. *Psychopharmacol Bull*. 1988;24(4):709–711.

[538] Derogatis LR, Cleary PA. Confirmation of the dimensional structure of the SCL-90: A study in construct validity. *Journal of Clinical Psychology*. 1977;33:981–989.

[539] Chen J, Das S, Barlow CE, Grundy S, Lakoski SG. Fitness, fatness, and systolic blood pressure: data from the Cooper Center Longitudinal Study. *Am Heart J*. 2010;160(1):166–170.

[540] Jonas JB, Nangia V, Matin A, Joshi PP, Ughade SN. Prevalence, awareness, control, and associations of arterial hypertension in a rural central India population: the Central India Eye and Medical Study. *Am J Hypertens*. 2010;23(4):347–350.

[541] White AT, Fehlauer CS, Hanover R, Johnson SC, Dustman RE. Is VO_2max an appropriate fitness indicator for older adults? *J Aging Phys Act*. 1998;6(4):303–309.

[542] Yao ZH, Zhang JJ, Xie XF. Environmental Enrichment Prevents Cognitive Impairment and Tau Hyperphosphorylation after Chronic Cerebral Hypoperfusion. *Curr Neurovasc Res*. 2012;.

[543] Simao F, Porto JA, Nunes ML. Effects of enriched environment in spatial learning and memory of immature rats submitted to early undernourish and seizures. *Int J Dev Neurosci*. 2012;30(5):363–367.

[544] Williamson LL, Chao A, Bilbo SD. Environmental enrichment alters glial antigen expression and neuroimmune function in the adult rat hippocampus. *Brain Behav Immun*. 2012;26(3):500–510.

[545] Maesako M, Uemura K, Kubota M, Kuzuya A, Sasaki K, Asada M, et al. Environmental enrichment ameliorated high-fat diet-induced Ab deposition and memory deficit in APP transgenic mice. *Neurobiol Aging*. 2012;33(5):1011–1023.

187

[546] Zhao YY, Shi XY, Qiu X, Zhang L, Lu W, Yang S, et al. Enriched environment increases the total number of CNPase positive cells in the corpus callosum of middle-aged rats. *Acta Neurobiol Exp (Wars)*. 2011;71(3):322–330.

[547] Lee S, Doulames V, Donnelly M, Levasseur J, Shea TB. Environmental enrichment can prevent cognitive decline induced by dietary oxidative challenge. *J Alzheimers Dis*. 2012;28(3):497–501.

[548] Yager JY, Wright S, Armstrong EA, Jahraus CM, Saucier DM. The influence of aging on recovery following ischemic brain damage. *Behav Brain Res*. 2006;173(2):171–180.

[549] Korczyn AD, Vakhpova V, Grinberg LT. Vascular dementia. *J Neurol Sci*. 2012;.

[550] Giladi N, Huber-Mahlin V, Herman T, Hausdorff JM. Freezing of gait

in older adults with high level gait disorders: association with impaired executive function. *J Neural Transm.* 2007;114(10):1349–1353.

[551] Scherder EJA, Volkers KM. Physical activity for agitation and pain in dementia. *Journal of Pain Management.* 2010;3(4):373–376.

[552] Kolanowski A, Fick D, Waller JL, Ahern F. Outcomes of antipsychotic drug use in community-dwelling elders with dementia. *Arch Psychiatr Nurs.* 2006;20(5):217–225.

[553] Fukunaga T, Miyatani M, Tachi M, Kouzaki M, Kawakami Y, Kanehisa H. Muscle volume is a major determinant of joint torque in humans. *Acta Physiol Scand.* 2001;172(4):249–255.

[554] Hutzler Y, Korsensky O. Motivational correlates of physical activity in persons with an intellectual disability: a systematic literature review. *J Intellect Disabil Res.* 2010;54(9):767–786.

[555] Bjork IT, Torstad S, Hansen BS, Samdal GB. Estimating the cost of professional developmental activities in health organizations. *Nurs Econ.* 2009;27(4):239–244.

[556] Deandrea S, Lucenteforte E, Bravi F, Foschi R, La VC, Negri E. Risk factors for falls in community-dwelling older people: a systematic review and meta-analysis. *Epidemiology.* 2010;21(5):658–668.

[557] de Groot GC, Fagerstrom L. Older adults' motivating factors and barriers to exercise to prevent falls. *Scand J Occup Ther.* 2011;18(2):153–160.

188

[558] Thompson JL, Allen P, Cunningham-Sabo L, Yazzie DA, Curtis M, Davis SM. Environmental, policy, and cultural factors related to physical activity in sedentary American Indian women. *Women Health.* 2002;36(2):59–74.

[559] Schaie KW. The course of adult intellectual development. *Am Psychol.* 1994;49(4):304–313.

[560] Hilgenkamp TI, Reis D, van Wijck R, Evenhuis HM. Physical activity levels in older adults with intellectual disabilities are extremely low. *Res Dev Disabil.* 2012;33(2):477–483.

[561] Hilgenkamp TI, van Wijck R, Evenhuis HM. Low physical fitness levels in older adults with ID: results of the HA-ID study. *Res Dev Disabil.* 2012;33(4):1048–1058.

[562] Benson BA, Brooks WT. Aggressive challenging behaviour and intellectual disability. *Curr Opin Psychiatry.* 2008;21(5):454–458.

189