

DAFTAR PUSTAKA

- Abu EO, 2000. The Localization of the Functional Glucocorticoid Receptor α in Human Bone. *The Journal of Clinical Endocrinology & Metabolism*, Vol. 85, No. 2, pp.883-889.
- Adler RA, 2003. Suggested Guidelines for Evaluation and Treatment of Glucocorticoid-Induced Osteoporosis for the Department of Veteran Affairs. *Arch Intern Med*, Vol. 163, pp. 2619-2624.
- Baron R, 2006. Anatomy and Ultrastructure of Bone Histogenesis, Growth and Remodeling. <http://www.endotext.org> (accessed 7/5/2008).
- Baziad A, 2003. Menopause dan andropause. Ed1, Jakarta: Yayasan Bina Pustaka Sarwono Prawirohardjo, hlm 177-182.
- Bompa OT, 1994. Theory and methodology of training. The key to Athletic Performance. Third edition, Dubuque, Iowa: Kendall/ Hunt Publishing Company, pp 29-48, 75-92.
- Bonewald LF, 2006. Mechanosensation and Transduction in Osteocytes. *Bonekey Osteovision*. 2006 October ; 3(10): 7–15.
- Bouassida A, Zalleg D, Zaouali-Ajina M, 2006. Parathyroid Hormone And Physical Exercise: A Brief Review. *Journal of Sports Science and Medicine*; 5: 367-374.
- Bouchard C, Shepard RJ and Stephen T, 1993. Physical Activity, fitness and health consensus statement. Kingwood, South Australia: Human Kinetics Publisher, pp 40-41, 186-208.
- Bucay N, 1998. Osteoprotegerin-deficient mice develop early onset osteoporosis and arterial calcification. *Genes Dev* 12:1260-8.
- Burguera, 2001. Leptin reduces ovariectomy-induced bone loss in rats. *Endocrinology* 142:3546—53.
- Burger EH and Klein-Nulend J, 1999. Mechanotransduction in Bone. Role of The Lacuno-canalicular Network. *The FASEB Journal* 13: S101-S112.
- Burr DB dan Martin RB, 1992. Mechanism of Bone adaptation to the Mechanical Environment in: The changing Architecture of the skeleton. *Triangle Sandoz Journal of Medical Science*, 31(2/3). pp.59-76.
- Burrows M, A M Nevill, S Bird and D Simpson, 2003. Physiological factors associated with low bone mineral density in female endurance runners. *Br. J. Sports Med.*37;67-71.

- Calderwood DA, 2004. Integrin Activation. *Journal of Cell Science*, Vol. 117, pp.657-666.
- Carson E, Clifton D and Lee T, 2005. Mus musculus. Dr House Mouse in the House. Available from URL: [http://www.bio.unc.edu/courses/2005Spring/biol050h/Genome%20prenations/House](http://www.bio.unc.edu/courses/2005Spring/biol050h/Genome%20prenations/House%20FINAL.ppt) Mouse%20FINAL.ppt (accessed 2/3/2008).
- Caulfield MP and Reitz RE, 2004. Biochemical Marker of Bone Turnover and heir Utulity in Osteoporosis. *Medical Laboratory Observer. Montvale* 36: 34-38.
- Chatzitheodorou D, 2007. A Pilot Study of the Effects of High-Intensity Aerobic Exercise Versus Passive Interventions on Pain, Disability, Psychological Strain, and Serum Cortisol Concentrations in People With Chronic Low Back Pain. *Physical Therapy*, Vol. 87, No. 3, pp. 304312.
- Cullen MD, Iwaniec UT, and Lux MJB, 2000. Skeletal Respon to Exercise and Training. Philadelphia, pp. 227-229.
- Derakhsan M, 2007. Apoptosis at a glance: death or life? *Pak J Med Sci*: 23(6): 979-982.
- Dorland's Illustrated Medical Dictionary 31st ed., 2007. Saunders Elsevier, USA, pp. 1161.
- Downey PA, Siegel MU, 2006. Bone Biology and the Clinical Implications for Transcriptional Activator of Osteoblast Differentiation. *Cell*, Vol. 89, pp, 747-754.
- Dvorak J, 2006. Glucocorticosteroids in football: use and misuse. *British Journal of Sports Medicine*; 40(supplement 1): 148-154.
- Ehrman JK, 2009. Clinical Exercise Physiology Second Edition. Human Kinetics, United States. Pp. 485-495.
- Elmore, 2007. Apoptosis: A review of programmed cell death. *Toxicol Pathol*, 35: 495-516.
- Ferreti JL, Cointry GR, Capozza RF, Capiglion R dan Chiappe MA, 200. Analysis of Biomechanical Effects on Bone and on the Muscle Bone Interactions in Small Animal Models. *J. Musculoskeletal Neuron Interact*, 1(3). Pp.263-274.
- Fox EL and Mathews DK, 1985. The Physiological Basis of Physical Education and Athletics. 3th ed. Philadephia: Saunders College Publishing, pp574-578.

- Galli C, 2008. Targeted Deletion of a Distant Transcriptional Enhancer of the Receptor Activator of Nuclear Factor- κ B Ligand Gene Reduces Bone Remodeling and Increases Bone Mass. *Endocrinology* 149(1): 146-153.
- Ganong WF, 2004. Review of Medical Physiology. The McGraw-Hill Companies, Inc. USA. Pp. 342-380.
- Garcia AJ, Rayes CD, 2005. Bio-adhesive Surface to Promote Osteoblast Differentiation and Bone Formation. *J of Dental Research*, Vol84, No. 5, pp. 407-413.
- Ghavani S, Hashemi M, Ande SR, Yeganeh B, Xiao W, Eshragi M, et al., 2009. Apoptosis and cancer: mutations within caspase genes. *J Med Genet*, 46: 497-510.
- Gibbon, Barry, Herman & Joan, 1997. True and Quasi Experimental Designs. Practical Assessment, *Research and Evaluation* 5(14).
- Giustina A, 1998. Pathophysiology of the Neuroregulation of Growth Hormone Secretion in Experimental Animals and the Human. *Endocrine Reviews* 19(6): 717-797.
- Gleeson M, 2007. Immune Function in Sport and Exercise. *J. Appl Physiol*, Vol. 103, pp. 693-699.
- Goping IS, Barry M, Liston P, Sawchuk T, 2003. Granzyme B-induced apoptosis requires both direct caspase activation and relief of caspase inhibition. *Immunity* 18, 355-365.
- Gori F, Hofbauer LC, Dunstan CR, et al., 2000. The Expression of Osteoprotegerin and RANK Ligand and the Support of Osteoclast Formation by Stromal-Osteoblast Lineage Cells Is Developmentally Regulated. *Endocrinology* Vol. 141, No. 12, pp. 4768-4776.
- Gu G, Kurata K, Chen Z dan Vaananen K, 2007. Osteocyte: a cellular Basis for Mechanotransduction. *MCB*, 3(4):183-184.
- Guo Y, 2002. Caspase-2 Induces Apoptosis by Releasing Proapoptotic Proteins from Mitochondria. *The Journal of Biological Chemistry*, Vol. 277, No. 16, pp. 13430-13437.
- Guyton AC, 2006. Textbook of Medical Physiology. WB Saunders Company.
- Hanafiah KA, 2004. Rancangan Percobaan Teori dan Aplikasi. Jakarta: PT Raja Grafindo Persada, hlm. 5-12.
- Handojo I, 2003. Pengantar Imunoasai Dasar. Airlangga University Press.

- Handojo I, 2008. Imunoasai dari Sitokin (Cytokine), Hand out kuliah. Bagian Patologi Klinik, FK Unair/Dr.Soetomo, Surabaya.
- Harada S and Rodan GA, 2003. Control of osteoblast function and regulation of Bone Mass. *Nature* 423 (15 May 2003): 349-355.
- Hart KJ, Shaw JM, Vajda E, 2001. Swim Trained Rat Hve Greater Bone Mass, Density, Stregth, and Dynamics. *J Appl Physio*, Vol. 91, pp. 1663-1668.
- Hermann, 2004. The assessment of bone metabolism in female elite endurance athletes by biochemical bone markers. *Clin. Chem Lab Med* 2004: 42:1384-9.
- Hofbauer, 1999. Stimulation of osteoprotegerin ligand and inhibition of osteoprotegerin production by glucocorticoid in human osteoblastic lineage cells: potential paracrine mechanisms of glucocorticoid-induced. *Endocrinology* 140:4382-9.
- Hofbauer, 2001. Role of receptor activator of nuclear factor-kappa B ligand and osteoprotegerin in bone cell biology. *J Mol Med* 279:243-53.
- Honda A, 2003. High-impact Exercise Strengthens Bone in Osteopenic Ovariectomized Rats with the Same Outcame as Sham Rat. *J Appl Physiol* 95: 1032-1037.
- Howard B, 2000. Getting Start With Endurance Exercise Aerobic Activities. *Health and Fitness Report*, Vol 1.
- Huang TH, 2003. Effects of different exercise modes on mineralization, structure, and biomechanical properties of growing bone. *J. Appl. Physiol* 95: 300-307.
- Hurwitz S, 2004. Diurnal variation of aldosterone and plasma rennin activity: timing relation to melatonin and cortisol and consistency after prolonged bed rest. *J. Appl Physiol*, Vol. 96, pp. 1406-1414.
- Ikeda T, 2001. Expression profiles of receptor activator of nuclear factor kappaB ligand, receptor activator of nuclear factor kappaB, and osteoprotegerin messenger RNA in aged and ovariectomized rat bones. *J Bone Miner res* 16:1416-25.
- Jia D, 2006. Glucocorticoids Act Directly on Osteoclasts to Increase Their Life Span and reduce Bone Density. *Endocrinology* 147(12): 5592-5599.
- Judex s, 2000. High-impact Exercise and Gowing Bone: Relation between High Strain Rates and Enhanced Bone Formation. *J Appl Physiol* 88: 2183-2191.

- Kahl KG, Rudolf S, Dibbelt L, 2005. Decreased osteoprotegerin and increased bone turnover in young female patients with major depressive disorder and a lifetime history of anorexia nervosa. *Osteoporos Int* 2005; 16:424-9.
- Kaniawati M, 2005. Biochemical Markers of Bone Turnover. The 2nd National Congress Indonesian Osteoporosis Association, Surabaya.
- Kawanaka K, 1998. Effects of high-intensity intermittent swimming on glucose transport in rat epitrochlearis muscle. *J. Appl. Physiol.* 84(6): 1852-1857, 1998.
- Kearns AE, Khosla S and Kostenuik PJ, 2008. Receptor Activator of Nuclear Factor κ B Ligand and Osteoprotegerin Regulation of Bone Remodeling in Health and Disease. *Endocrine Reviews*, April 2008, 29(2):155–192
- Kemmler W, 2002. Exercise Effect on Fitness and Bone Mineral Density in Early Post menopausal Women: 1-year EFOPS results. *Med. Science Sport Exercise* 34 (2): 2115-2123.
- Kim R, Emi M, Tabnabe K, 2006. The role of apoptosis in cancer cell survival and therapeutic outcome. *Cancer Biol Ther* 5(11): 1429-42.
- Kohort WM, 2004. Physical Activity and Bone Health. *Medicine and Science in Sport and Exercise* : 1985.
- Kregel KC, 2006. Resource Book for the Design of Animal Exercise Protocols. *American Physiological Society*, pp. 1-35.
- Kumar V, Abbas AK and Fausto N, 2005. Robbins and Cotran Pathologic Basic of Disease, 7th ed. China: Elsevier Saunders, pp. 26-106.
- Kim HJ, 2006. Glucocorticoids suppress bone formation via the osteoclast. *The Journal of Clinical Investigation*, volume 116, Number 8. pp. 2152-2160.
- Kondo H, 2005. Unloading Induces Osteoblastic Cell Suppression and Osteoclastic Cell Activation to Lead to Bone Loss via Sympathetic Nervous System. *The journal of Biological Chemistry*, Vol.280, No. 34, pp. 30192-30200.
- Lacey DL, 1998. Osteoprotegerin ligand is a cytokine that regulates osteoclast differentiation and activation. *Cell* 93:165-76.
- Lacey DL, 2000. Osteoprotegerin ligand modulates murine osteoclast survival in vitro and in vivo. *Am J Pathol* 157:435-48.
- Lee SK, 1999. Parathyroid hormone stimulates TRANCE and inhibits osteoprotegerin messenger ribonucleic acids expression in murine

- bone marrow cultures: correlation with osteoclast-like cell formation. *Endocrinology* 140:3552-61.
- Lane NE, 2006. Glucocorticoid-Treated Mice Have Localized Changes in Trabecular Bone Material Properties and Osteocyte Lacunar Size That Are Not Observed in Placebo-Treated or Estrogen-Deficient Mice. *J Bone Miner Res.* 21(3): pp. 466–476.
- Losel RM, 2003. Nongenomic Steroid Actin: Controversies, Questions, and Answers. *Physiol Rev* 83: 965-1016.
- Lu NZ, 2007. Selective regulation of Bone Cell Apoptosis by Translational Isoforms of the Glucocorticoid Receptor. *Molecular and Cellular Biology*, Vol. 27, No. 20, pp. 7143-7160.
- Madden CC, Putukian M, Young CC, McCarty EC, 2010. Netter's Sports Medicine. Saunders Elsevier, Philadelphia. Pp 72-85, 128-133, 189-194, 455-463.
- Marieb EN, 2008. Human Anatomy fifth edition. Pearson Education, Inc., publishing as Pearson Benjamin Cummings, 1301 Sansome St., San Francisco, CA 94111. Pp. 126-145.
- Manolagas SC, 2000. Birth and Death of Bone Cells: Basic regulatory Mechanisms and Implications for the Pathogenesis and Treatment of Osteoporosis. *Endocrine Reviews* 21(2): 115-137.
- Manolagas SC, 2002. Sex Steroid and Bone. *Recent Progress in Hormone Research.* 57: 385-409.
- Martini FH, Timmons MJ, Tallitsch RB, 2009. Human Anatomy 6th edition. Pearson Education, Inc. San Francisco, CA 94111. Pp. 112-130.
- Mazziotti, 2006. Clinical study. Increased serum osteoprotegerin values in long-lived subjects: different effects of inflammation and bone metabolism. *European Journal of Endocrinology*, 154 373–377.
- Mitchell RN, 2009. Robbins & Cotran, Buku Saku Dasar Patologis Penyakit. Penerbit Buku Kedokteran EGC, Jakarta, hlm 2-28.
- Montecucco C, Caporali R, Caprotti P, Notario A, 1992. Sex hormones and bone metabolism in postmenopausal rheumatoid arthritis treated with two different glucocorticoids, *J Rheumatol* 19:1895-900.
- Nakamichi Y, Udagawa N, Kobayashi Y, Takahashi N, 2007. *The Journal of Immunology*, 178: 192-200.
- Nakamura, 2003. Osteoprotegerin Regulates Bone Formation through Coupling Mechanism with Bone Resorption. *Endocrinology* Vol. 144 (12), pp. 5441-5449.

- Neiman DC, 1993. Fitness and your health. California: Bull Publishing Company, pp 23-31.
- O'Brien CA, Jia D, Plotkin LI, Bellido T, Powers CC, Stewart SA, 2004. Glucocorticoids acts directly on osteoblasts and osteocytes to induce their apoptosis and reduce bone formation and strength. *Endocrinology* 145:1835-41.
- Owen GRH, 2005. Focal Adhesion Quantification – A New Assay of material Biocompatibility. *European Cell and Material* 9: 85-96.
- Park SY, Avraham S, 2004. RAFTK/Pyk2 Activation Is Mediated by Trans-acting Autophosphorylation in a Src-independent Manner. *The Journal of Biological Chemistry* Vol. 279, No. 32, pp. 33315–33322.
- Pavalko FM, Gerard RL, Ponik SM, Gallagher PJ, Jin Y dan Nobell S, 2002. Fluid Shear Stress Inhibits TNF- α Induced Apoptosis in Osteoblasts: A Role for Fluid Shear Stress-Induced Activation of PI3-kinase and Inhibition of Caspase 3. *Journal of Cellular Physiology*; 194:194-205.
- Pedersen BK, 2000. Exercise and the Immune System: Regulation, Integration, and Adaptation. *Physiological Reviews*, Vol. 80, NO.3, pp. 1055-1081.
- Pellinen T and Ivaska J, 2006. Integrin Traffic. *Journal of Cell Science* 119, pp. 3723-3731.
- Plotkin LI, 2005. Mechanical Stimulation prevents osteocyte apoptosis: requirement of integrins, Src kinases, and ERKs. *Am J Physiol Cell Physiol* 289: C633-C643.
- Plotkin LI, 2007. Glucocorticoids Induce Osteocyte Apoptosis by Blocking Focal Adhesion Kinase-mediated Survival. *The Journal of Biological Chemistry*, Vol. 282, No. 33, pp. 24120-24130.
- Ralston SH and Benoit de Crombrughe, 2006. Genetic regulation of bone mass and susceptibility to osteoporosis. Cold Spring Harbor Laboratory Press. *Genes & Dev.* 2006 20: 2492-2506.
- Raison, CL, 2003. When Not Enough Is Too Much: The Role of Insufficient Glucocorticoid Signaling in the Pathophysiology of Stress-Related Disorders. *Am J Psychiatry*, 160:1554–1565.
- Raiz, 1999. Physiology and Pathophysiology of Bone Remodeling. *Clinical Chemistry* 45(8): 1353-1358.
- Raisz GL, 2005. Pathogenesis of osteoporosis: Concept, Conflicts, and Prospect. *J.Clin.Invest.* 115: 3318-3325.

- Reid IR, 2005. Effects of a β -Blocker on Bone Turnover in Normal Postmenopausal Women: A Randomized Conytrrolled Trial. *The Journal of Clinical Endicrinology & Metabolism* 90(9):5212-5216.
- Riggs BL, Khosla S, and Melton JL, 2002. Sex steroid and The Construction and Conservation of the Adult Skeleton. *Endocrinology Reviews* 23(3): 279-302.
- Robergs RA, 2003. Fundamentals of Execise Physiology, For Fitness, Performance, and Health, Second Edition. McGraw Hill Higher Education, pp. 208-213, 356-358.
- Rubin J, 2002. Insulin Like Growth Factor-I (IGF-I) regulates osteoprotegerin (OPG) and RANK Ligand (RANKL) in vitro and osteoprotegerin in vivo. *Journal of Clinical Endocrinology and Metabolism* 87:4273-9.
- Salingcarnboriboon R, 2006. Runx is Target of Mechanical Unloading to alter Osteoblastic Activity and Bone Formation in Vivo. *Endocrinology* 147 (6): 2296-2305.
- Sambrook P, 2002. Bone Structure and Function in Normal and Disease States.
- Schroder K, Hual J, Jockel H, Oberle C, Bomer C, 2010. Non-caspase proteases: triggers or amplifiers of apoptosis? *Cell Mol Life Sc*: 67(10): 1607-18.
- Selim AA, Mahon M, Juppner H, Bringhurst FR dan Divieti P, 2006. Role of calcium channels in carboxy-terminal parathyroid hormone receptor signaling. *Am J Physiol Cell*; 291:C114-121.
- Simonet, WS, 1997. Osteoprotegerin: a novel secreted protein involved in the regulation of bone density. *Cell* 89:309-19
- Schnermann J, 2002. E x e r c l s e. *Am J Physiol Regulatory Integrative Comp Physiol*, Vol. 283, pp. R2-R6.
- Seibel MJ, 2005. Biochemical Markers of Bone Turnover Part I: Biochemistry and Variability. *Clin Biochem Rev* 26: 97-116.
- Sharan K, Siddiqui JA, Swarnkar G dan Chattopadhyay N, 2008. Role of calcium-sensing receptor in bone biology. *Indian J Med Res*; 127(March 2008):274-286.
- Sherwood L, 2004. Human Physiology From Cells to Systems. Australia: Thomson, pp. 769.
- Smith JB and Mangkoewidjojo S, 1987. The Care, Breeding and Management of Experimental animals for Research in the Tropics. Canberra: *The*

International development Program of Australian Universities and Colleges Limited (IDP), pp.11-57.

- Sperelakis N, 2001. Cell Physiology Sourcebook, A Molecular Approach 3rd edition. Academic Press, A Harcourt Science and Technology Company, Sandiego, California, USA, pp. 191-204; 1171-1182.
- Steel RGD, Torrie , 1991. Prinsip dan Prosedur Statistika Suatu Pendekatan Biometrik. Alih bahasa Bambang Sumantri, Jakarta: PT Gramedia Pustaka Utama, hlm.139-148.
- Suatmadji DW, 2001. Pathogenesis of Steroid-Induced Osteoporosis. Naskah lengkap Simposium Asma & Osteoporosis. PDPI Cabang Malang/ RSUD Dr Saiful Anwar. Pp. 41-55
- Sudiana IK, 2005. Teknologi Ilmu Jaringan dan Imunohistokimia. CV Sagung Seto, Jakarta.
- Swanson, 2006. Glucocorticoid Regulation of Osteoclast Differentiation and Expression of Receptor Activator of Nuclear Factor- κ B (NF- κ B) in Mouse Calvarial Bones. *Endocrinology* Vol. 147, pp. 3613-3622.
- Takuma A, 2003. Dexamethasone Enhances Osteoclast Formation Synergistically with transforming Growth Factor- β by Stimulating the Priming of Osteoclast Progenitors for Differentiation into Osteoclasts. *The Journal of Biological Chemistry*, vol. 278, No. 45, pp. 44667-44674.
- Tanaka Y, 2005. Osteoblasts and osteoclasts in bone remodeling and inflammation. *Cur Drug Targets Inflamm Allergy*, 4(3):325-328.
- Tandra H, 2009. Segala sesuatu yang harus anda ketahui tentang osteoporosis, mengenal, mengatasi, dan mencegah tulang keropos. Gramedia Pustaka Utama, Jakarta, hlm. 4-77.
- Teitelbaum, 2007. Osteoclasts: What Do They Do and How Do They Do It? *The American Journal of Pathobiology*, Vol. 170, NO. 2, pp. 427-435.
- Tsujimoto K, 2005. Regulation of the Expression of Caspase-9 by the transcription Factor Activator Protein-4 in Glucocorticoid-induced Apoptosis. *The Journal of Biological Chemistry*, vol 280, No. 30, pp. 27638-27644.
- Udagawa N, 2000. Osteoprotegerin Produced by Osteoblasts Is an Important Regulator in Osteoclast Development and Function. *Endocrinology*, Vol. 147 (12), pp. 3478-84; 5592-5599.

- Umemura Y, 2002. Effect of 6-Month Whole Body Vibration Training on Hip density, Muscle Strength and Postural Control in Post Menopausal Women: Randomized Controlled Pilot Studi. *J Bone Mine Res* 19: 352-359.
- Wahyuni S, 1998. Pengaruh Pb asetat terhadap gambaran histologist tubulus contortus proksimalis, tubulus contortus distalis, glomerulus ginjal mencit (*Mus musculus*). Tesis Program Pasca Sarjana Universitas Airlangga, Surabaya.
- Wang Y, McNamara LM, Schaffler MB dan Weinbaum S, 2007. A model for the role of integrins in flow induced mechanotransduction in osteocyte. *PNAS* 104(40): 15941-15946.
- Warren MP, Constantini NW, 2000. Sports Endocrinology. Humana Press, Totowa, New Jersey, pp. 43-76.
- Watkins J, 2010. Structure and Function of the Musculoskeletal System Second Edition. Human Kinetics Premier Print Group, United States of America, pp. 76-93.
- Watts NB, 1999. Clinical Utility of Biochemical Markers of Bone remodeling. *Clinical Chemistry* 45: 1359-1368.
- Weinstein RS, Jilka RL, Parfitt AM, Manolagas SC, 1998. Inhibition of osteoblastogenesis and promotion of apoptosis of osteoblasts and osteocytes by glucocorticoids. Potential mechanism of their deleterious effects on bone, *J Clin Invest* 102:274-82.
- West SL, 2009. The effect of exercise and estrogen on osteoprotegerin in premenopausal women. *Bone* 44(2009): 137-144.
- Wilmore JH, Costill DL, Kenney WL, 2008. Physiology of Sport and Exercise, fourth edition. Human Kinetics, United States of America, pp. 295-315; 381-446.
- Yirmiya R, 2006. Depression induces bone loss through stimulation of the sympathetic nervous system. *PNAS*, Vol. 103, No. 45, pp. 16876-16881.