

Références

- [1] A. Rouviere, Coll, *Anatomie humaine (descriptive, topographique et fonctionnelle)*, tome 2, 13^{ème} édition Masson, 1999.
- [2] C. Cabrol, *Anatomie (tome3)*, Edition Flammarion Médecine – sciences, 1999.
- [3] J. Santini. *Ostéologie du rachis et du crâne*, Masson Editeur, 1981.
- [4] M. Panjabi, A. White, *Basic biomechanics of the spine*, Neurosurg 7(1):pp;76- 93, 1980.
- [5] L. Kapandji. *Physiologie articulaire*, Tome 3 : Tronc et rachis, (Malouine S.A, éditeur), 1986 :255.
- [6] H. Rouvière and A. Delmas. *Anatomie humaine*, Volume 1, Tête et cou, Editions Massons 1991.
- [7] M. Panjabi, A. Vasavada, A. White, *Biomécanique du rachis: éléments de stabilité*, Edition Masson, 1994
- [8] D. Bonneau, *le rachis cervical, aide mémoire d'anatomie*, édité au laboratoire de l'école Nationale Supérieur des Arts et Métiers de Paris , 2003.
- [9] H. Mestdagh, *Anatomie fonctionnelle du rachis cervical inférieur (de C3 à C7)*, Faculté de Médecine Lille, Thèse soutenue de Doctorat en Médecine soutenue en 1969.
- [10] M. Panjabi, J. Dvorak, J. Duranceau, J. Yamamoto, M. Gerber, W. Rauschnig, H. Bueff, *Three dimensional movements of the upper cervical spine*, Spine 13(7): pp. 726-730, 1988.
- [11] M. Panjabi, T. Oda, J. J. 3rd Crisco, J. Dvorak, and D. Grob, *Articular facets of human Spine quantitative three - dimensional anatomy*, spine, 18 (10), pp.1298-1310, 1993.
- [12] W. Parkhe, and H. Sherk, *Normal Adult anatomy. In the cervical spine Research.society*, editor, The cervical Spine (Second Edition). Lippincott, 1983
- [13] T. Tamaki, M. Panjabi, *Identification of visco elastic property of intervertebral disc under flexion extension and lateral bending*, Bio-Med Mat and Eng 1:203- pp. 214, 1991.
- [14] J. Y. Lazennec, *Anatomie du rachis, Bases fondamentales du rachis*, sous la direction de L. Kapandji, édition, 1994

- [15] M. Panjabi, T. Miura, A. S. Nain, J. L. Wang, P. A. Cipton, *Development of a system for in vitro neck muscle force replication in whole cervical spine experiments*, Spine, 26(20): pp.2214-2219, 2001.
- [17] M. Bendoukha, A. Benkalfat, *Modélisation et simulation des interactions biomécaniques entre le tissu et l'endoscope*, Communication présentée au Congrès National de la Physique ses Applications, 'CNPA 2002', Université de Batna, décembre 2002
- [18] I-H. Chen, M. Panjabi, A. Vasavada, *Kinematics of the cervical spine canal: Changes with sagittal plane loads*, J. Spinal Disord 7(2): pp.93-101,1994.
- [19] Bertrand Freschede, *Contribution à l'étude du comportement du rachis cervical soumis à un choc*, Thèse soutenue en décembre 2003 à ENSAM Paris
- [20] S. Moroney, A. Shultz, J. Miller and G. Anderson, *Load-displacement properties of lower cervical spine motion segments*, J. Biomechanic, 21(9): pp. 769-779, 1988.
- [21] N. Yoganandan, S. Kumaresan, and F. A. Pintar, *Biomechanics of the cervical spine part 2. cervical spine soft tissue response and biomechanical modelling*, Clinic Biomechanical (Bristol, Avon) 16(1): pp.1-27, 2001.
- [22] J. Chazal, A. Tanguy, M. Bourges, G. Gaurel, G. Escande, M. Guillot and M. Vanneuville, *Biomechanical properties of spinal ligaments and a histological study of the supraspinal ligament in traction*, J. Biomechanic, 1985.
- [23] J. B. Mayklebust, F. Pintar, N. Yoganandan, J. F. Cusick, D. Maiman, T. J. Meyers and Jr. Sances, *A tensile strength of spinal ligaments*, spine , 13(5): pp.526-531, 1988.
- [24] B. Watier, *Etude expérimentale du rachis cervical: comportement mécanique in vitro et cinématique in vivo*, PhD thésis, 1998, ENSAM, Paris
- [25] F. Rannou, S. Poiraudreau, M. Corvol, M. Revel, *Contraintes mécaniques et disque intervertébral lombaire*, Rev Rhum [Ed Fr], 67 Suppl 4, 219-224, 2000.
- [26] Nalimov, V. P., Tschernova, N. A. *Statisticheski Methodi Planirovania*, Extremalnick Experimentov, Naouka, Moscou. 1965.
- [27] P. Lanteri et C. Bordes, *Formulation des composés siliconés et fluorés*, édition EDP Sciences, les Ulis cedex 91944, 2005.
- [28] CARMA, Centre d'animation régionale en matériaux avancés, *les silicones et leurs propriétés de surface dans le secteur médical*, document interne, ENSAM, Aix-en-Provence, 2004.
- [29] A. Hebbar, *Méthode statistique de planification extrême des expériences*, Polycopié, Université de Mostaganem 2006.

- [30] F. Gillon, *Modélisation et optimisation par les plans d'expériences d'un moteur à commutations électroniques*, Thèse de Doctorat, Université de Lille, 1997
- [31] S. Vivier, *Stratégie d'optimisation par la méthode des plans d'expériences et application aux dispositifs électroniques modélisés par éléments finis* Thèse de Doctorat, Ecole centrale de Lille, Université des sciences et technologies de Lille, Ch. 8, pp. 78-84, 2002
- [32] E. Scheffler, *Einführung in die Praxis der statistischen Versuchsplanung*, (VEB deutscher Verlag für Grundstoffindustrie, Leipzig 1986).
- [33] G. J. Dohrmann, M. M. Panjabi, *Spinal Cord déformation, velocity impulse and energy related to lesion volume "standardized" trauma*, surgical forum 27 : pp. 466-468, 1976.
- [34] S. M. Foreman, A. C. Croft, *whiplash injuries: the cervical acceleration / deceleration syndrome*, Editor J. W. Pine, 1998.
- [35] Cengiz Cokluk, Masakazu Takayasu, Jun Yoshida, *Pedicle fracture of the axis: report of two cases and a review of literature*, Clinical Neurology and Neurosurgery 107, pp: 136–139, 2005.
- [36] S. C. Lim *Recent developments in wear - mechanism maps*, Tribology International, Volume 31, Issues 1-3, pp. 87-97, 1998.
- [37] Thc.Childs, *The sliding wear mechanisms of metals, mainly steels*, Tribology International, Volume 13, pp. 285-293, 1980.
- [38] NC. Welchs, *The dry wear of steel, part I, The general pattern of behaviour*, Phil. Trans. R. Soc, vol A265, pp: 31-50, 1965.
- [39] John J. Regan, MD, *Orthopaedic Surgeon, Arthritis and Your Spine: Introduction*, Beverly Hills, CA, 2006. <http://www.spineuniverse.com/di>
- [40] <http://www.doctissimo.fr/html/dossiers/arthrose.htm>
- [41] H.J. Jäger, M.D., FRCS, U.-M. Mehring, G.F. Goetz, K.D. Mathias, *Degenerative change in the cervical spine and load-carrying on the head*, Skeletal Radiol 26: pp.475–481, 1997.
- [42] J. J. Echarri, F. Forriol, *Influence of the type of load on the cervical spine: a study on Congolese bearers*, The spine journal 5, pp: 291-296, 2005.
- [43] V. Makarand, Risbud and Michael Sittinger, *Tissue engineering: advanced in vitro cartilage generation*, trends in biotech, vol 20 N°8? 2002;
- [44] J.M. Jr. Fenlin, *Pathology of degenerative disease of the cervical spine*. Orthop Clin North am; 2: 371–387, 1971.

- [45] Lestini WF, Wiesel SW. *The pathogenesis of cervical spondylosis*. Clin Orthop 239: 69–39. 1989.
- [46] Beck, *Ergebnisse vergleichender Röntgenuntersuchungen der Halswirbelsäulen von Pressluftarbeitern und Nicht-Pressluftarbeitern*. Hefte Unfallheilkunde, 42: pp.63–74, 1951.
- [47] J. AG. van Roon, F.PJG. Lafeber, *Role of interleukin-7 in degenerative and inflammatory joint diseases*, Department of Rheumatology and Clinical Immunology, University Medical Center Utrecht, Heidelberglaan, 3584 CX Utrecht, The Netherlands, Arthritis Research & Therapy, 10:107, 2008
- [48] J.M. Bremner, J. S. Lawrence, W.E. Miall, *Degenerative joint disease in a Jamaican rural population*. Ann Rheum Dis; 27,pp: 326–332, 1968.
- [49] D. T. Felson, *Comparing the prevalence of rheumatic diseases in China with the rest of the world*, Arthritis Research & Therapy, 10:106 (doi:10.1186/ar2369), 2008.
- [50] Aurélie Duruflé, Sabine Pétrilli, Jean - Luc Le Guiet, Gilles Brassier, Benoit Nicolas, Hélène Le Tallec, Philippe Gallien, *Cervical spondylotic myelopathy in athetoid cerebral palsy patients: about five cases*, Joint Bone Spine 72, pp. 270–274. 2008.
- [51] M. Cartier, Y. Terrasse, *fatigue superficielle des pièces en frottement. Influence des traitements de surface*. In : Matériaux Mécanique Electricité, pp. 13-17, 1990.
- [52] U. Lange, S. Edeling, C. Knop, L. Bastian, M. Oeser, C. Krettek, M. Blauth, *Anterior vertebral body replacement with a titanium implant of adjustable height: a prospective clinical study*, Euro spine 16: pp: 161-172, 2007.
- [53] C. Tournier , S. Aunoble, J. C. Le Huec, J.P. Lemaire, P. Tropiano,V. Lafage, W. Skalli, *Total disc arthroplasty: consequences for sagittal balance and lumbar spine movement*, Euro spine 16: pp: 411-421, 2007.
- [54] Mc Afee. Paul, C. Fedder, Ira L. Saiedy, Samer. Shucosky, Erin M. RN. Cunningham, Bryan W. MSc, *Experimental Design of Total Disk Replacement- Experience with a Prospective Randomized Study of the SB Charite*, Spine. 28(20S) Supplement:S153-S162, October 15, 2003.
- [55] D. Skrzypiec, P. Pollintine, A. Przybyla, T. Dolan, M. Adams, *Compressive load-sharing in the cervical spine*, European Spine Journal, vol (16) 10, pp: 1707-1709, 2007.
- [56] Yu. Tong Gu, Lian-Shun Jia, Tong-Yi Chen, *Biomechanical study of a hat type cervical intervertebral fusion cage*, International orthopaedics (SICOT) 31, pp:101-105, 2007

- [57] K. Büttner-Janz, *remplacement prothétique total ou partiel du disque lombaire bilan après 10 ans de recul : bilan et résultats*, Revue de chirurgie orthopédique ; 88 53-54, 2002.
- [58] K. J. Quin, J. M. Courtney, *Silicones as biomaterials*, British polymer journal vol 20, N° 1, pp. 25-32, 1988;
- [59] M. M. Panjabi, Shigeki Ito, Paul C. Ivancic, Wolfgang Rubin, *Evaluation of the intervertebral neck injury criterion using simulated rear impacts*, Journal of Biomechanics, Vol. 38, Issue 8, pp. 1694-1701, 2005.
- [60] M. Brabant, *Maitriser la topographie*, (Ed. Eyrolles, 2003)
- [61] J. N. Goubier, J. P. Benazet, G. Saillant, *Décompression chirurgicale et des myélopathies cervicoarthrosiques : comparaison des abords antérieur postérieur*, Revue de chirurgie orthopédique, 88, pp. 561-600, 2002
- [62] J. Brunon, C. Nuti, M. J. Fotso, *Myélopathies cervicales*, EMC - Neurologie pp :1-20, 2005.
- [63] S. Moroney, A. Shultz, J. Miller, and G. Anderson, *lower displacement properties of lower cervical spine motion segments*, J. Biomech, 21 (9), pp. 769-779, 1988.
- [64] J.J. Echarri, F. Forriol, *Influence of the type of load on the cervical spine: a study on Congolese bearers*, The spine journal 5, pp: 291-296, 2005.
- [65] Z. B. Friedenberger, S. Edeiken, HN. Spencer, *Degenerative changes in cervical spine*, J. Bone joint surgery, 41, pp. 459-463, 1959.
- [66] C. C. Francis, *Dimension of the cervical vertebrae, the anatomical record*, vol 122, pp. 603-609, 1955.
- [67] J. Minne, and all, *sur le canal transversaire du rachis cervical de C3 à C7*, Bull de l'ass. Des anatomistes, vol 56, pp. 1081-1088, 1071.
- [68] P. R. Katz, and all, *Mid sagittal dimensions of cervical vertebral bodies*, J. of Phys and Anthropology, vol 43, pp. 319-326, 1975.
- [69] A. Delmas, H. pineau, *sur l'inclinaison des apophyses épineuses du rachis cervical*, Bul de l'ass . des anatomistes, vol 59, N° 164, pp. 601-608, 1975.
- [70] I. Gilad, M. Nissan, *a study of vertebrae and disc geomrtric relations of the human cervical and lumbar spine*, spine, vol 11, N°2, pp. 154-157, 1986.
- [71] P. Matsuura, and all., *compataison of computerizedb tomography parameters of the cervica spine in normal control subjects and spinal cord-injured patient*, J. of Biom, vol 71-A, N°2, pp. 183-188, 1989.

- [72] N. Milne, the role of zygapophysial joint orientation and uncinatè processes in controlling motion in the cervical spine, *J. Anat*, vol 178, pp. 189-201, 1991.
- [73] M. M. Panjabi, and all, thoracic human vertebrae- quantitative three dimensional anatomy, *Spine* vol. 16, N°7, pp. 888-901, 1991.
- [74] O.C.Zenkiewicz, R. L. Taylor, *The finite Element Method. Basic Formation and Problems(tomes 1 et 2)*, 1991.
- [75] K. J. Nathe, E. L Wilson, *Numerical methods in finite element analysis*, New Jersey Prentice Hall Inc, 1976.
- [76] E. Hinton, D. R. J. Orwen, *Finite element programming*, London Academic Press London,1977.
- [77] G. Dhatt, G. Touzot, *Une présentation de la méthode des éléments finis*, Maloine SA (Edition), Paris 1981.
- [78] N. Yoganandan, A. Sances, F.Pintar, *Biomechanical evaluation of the axial compressive responses of the human cadaveric and manikin necks*. *J. Biomech Engineering*,;111: pp.250–255, 1989.
- [79] MS. Coffee, WT. Edwards, WC. Hays, AA. White III. *Biomechanical properties and strength of the human cervical spine*. *Orthop Trans*;12:476, 1988.
- [80] M. Shea, WT. Edwards, AA. White, WC. Hayes. *Variations of stiffness and strength along the human cervical spine*. *J. Biomech*;24(2): pp.92–107, 1991.
- [81] N. Wen, F. Lavaste, JJ. Santin, Lassau. *Three-dimensional biomechanical properties of the human cervical spine in vitro: II. Analysis of instability after ligamentous injuries*. *J Eur Spine* ;2: pp.12–15, 1993.
- [82] Zdeblick TA, Abitbol JJ, Kunz DN, McCabe RP, Garfin S. *Cervical Stability after sequential capsule resection*. *Spine* ;18:22, 1993.
- [83] N. Yoganandan, SC. Kumaresan, L. Voo, FA. Pintar, SJ Larson. *Finite element modeling of the C4–C6 cervical spine unit*. *Med Engng Phys*;18(7):569–74, 1993.
- [84] N.Maurel, F. Lavaste, W. Skalli. *A three-dimensional parameterized finite element model of the lower cervical spine. Study of the influence of the posterior articular facets*. *J Biomech* ;30(9): pp.921–31, 1997.
- [85] P. Heitplatz, S.L. Hartle, C.R. Gentle, *A 3-dimensional large deformation FEA of a ligamentous C4–C7 spine unit. Third International Symposium on Computer Methods in Biomechanics and Biomedical Engineering*, Barcelona, Spain, pp. 387–394, 1998.
- [86] VK. Goel, JD. Clausen. *Prediction of load sharing among spinal components of a C5–C6 motion segment using the finite element approach*. *Spine*;23(6): pp.684–91, 1998.

- [87] F. Marchand, A. M. Ahmed, *Investigation of the laminate structure of lumbar disc annulus fibrosus*. *Spine* 15, pp.402-10, 1998.
- [88] K. Goto, N. Tajima, E. Chosa, K. Totoribe, H. Kuroki, Y. Arizumi, T. Arai. *Mechanical analysis of the lumbar vertebrae in three-dimensional finite element method model in which intradiscal pressure in the nucleus pulposus was used to establish the model*. *Journal of Orthopaedic Science*.; 7(2): pp.243-246, 2002.
- [89] H. Schmidt, A. Kettler, F. Heuer, U. Simon, L. Claes, HJ. Wilke. *Intradiscal pressure, shear strain and fiber strain in the intervertebral disc under combined loading*. *Spine*. April; 32(7): pp.748-755, 2007.
- [90] M. Asher, D. Burton D. *Adolescent idiopathic scoliosis: natural history and long term treatment effects*. *Scoliosis*.; 1(2), 2006 March.
- [91] P. Lafortune P, CE. Aubin, H. Boulanger, I. Villemure, K. Bagnell, A. Moreau. *Biomechanical simulations of scoliotic deformation process in the pinealectomized chicken: a preliminary study*. *Scoliosis*.; 2(16), 2007 November.
- [92] J. Berry, J. Moran, W. Berg, A. Steffee. *A morphometric study of human lumbar and selected thoracic vertebrae*. *Spine*.; 12(4): pp.362-367, 1987 May.
- [93] U. Willers, EE. Transfeldt and R. Hedlund. *The segmental effect of Cotrel-Dubousset instrumentation on vertebral rotation, rib hump and the thoracic cage in idiopathic scoliosis*. *European Spine Journal*.; 5: pp.387-93, 1996.
- [94] BJ. Sawatzky, SJ. Tredwell, SB. Jang and AH. Black. *Effects of three-dimensional assessment on surgical correction and on hook strategies in multi-hook instrumentation for adolescent idiopathic scoliosis*. *Spine*.; 23: pp.201-5, 1998.
- [95] JP. Steib, X. Ducrocq, C. Averous and J. Bogorin. *Surgical correction of lumbar scoliosis: a comparison of different techniques. Results*. *European Journal of Orthopedics Surgery and Traumatology*.; 9: pp;151-156, 1999.
- [96] J.B. Martinez, and all, *biomechanics of load-bearing of the intervertebral disc:an experimental and finite element model*, *Engineering and physics*, vol 19, N° 2, pp. 145-156, 1997.
- [97] A. Perez del Palomar, B. Calvo, M. Doblaré, *An accurate finite element of the cervical spine under quasi-static loading*, *J. of Biomec* 41, pp; 523-531, 2008.
- [98] S. Basa, V. Belasubramanian, *Development and validation of a three dimensional finite element model of whole cervical spine*, *J. of Biomec*, vol 39, sup1, S420, 2006;
- [99] Sung Kyu HA, *Finite element modeling of multi-level cervical spinal segments (C3-C6) and biomechanical analysis of an elastomer-type prosthetic disc*, *Medical Engineering and physics* 28, pp. 534-541, 2006.