

預防下背痛：從年輕時開始做起

介紹

慢性下背痛（Low back pain; LBP）是一個全球性問題，影響著個人和社會。研究顯示，下背痛的終生盛行率高達 84%，而慢性下背痛的盛行率約為 23%，其中 11-12% 的人因下背痛而失能[1]。慢性下背痛的危險因子包括遺傳傾向(genetic predisposition)、生活方式、職業以及衰老[25]。儘管下背痛的預防可以改善生活品質和失能損失人年數(years lived with disability; YLD)，但與下背痛治療評估的大量研究數相比，評估預防（尤其是一級預防）的證據不足，即使有，多數來源亦是針對高收入社會中成年人的研究。現有的指引是否適用在兒童或在中低收入國家中國實行尚不清楚[7]。患有骨質疏鬆症，退化性脊椎病變和椎管狹窄的人經常會經歷下背痛。然而，由於生物學和社會心理因素的相互作用，很難確定疼痛的具體來源[11，23]。

骨質疏鬆症

骨質疏鬆症的定義是當骨密度降低致增加骨折風險之程度。超過 50% 的女性到 70 多歲時會發展成骨質疏鬆症，而男性則是約有 17% 至 80 多歲左右會發展為骨質疏鬆症；60 歲以上、有症狀的椎骨骨折風險，女性為 18%，男性為 11%[16，24]。即使沒有明確的骨折，骨質疏鬆症也會引起下

背疼痛 [17]。骨質疏鬆性骨折可引起急性疼痛，且導致脊柱畸形（主要是後凸畸形，俗稱駝背），同時也增加慢性疼痛風險。儘管遺傳因子佔骨質疏鬆症風險的 40-80%，但後天因素：如營養狀況、運動習慣和內科疾病均為可影響因素[12, 18]。

介入措施

早期介入可預防骨質疏鬆症的發作。如確保飲食中鈣和維生素 D 的攝入量充足，並參與體育運動（例如體操、排球、籃球和壘球等），可以有效地增加 18 歲以下族群的骨量，並降低日後骨折的風險[5, 15, 21, 22]。將這些介入措施持續到中年對於保持骨量和降低骨折風險也很重要[2]。但是，老年族群必須注意，不熟悉的運動可能會引起不良影響，例如肌肉拉傷、關節受傷和骨折而引起疼痛加重[13]。

退化性脊柱病可能與脊柱畸形（例如駝背）和不穩定有關，這也是發展為下背痛的已知危險因素[4]。研究顯示，糾正骨盆傾角異常，改善脊柱肌肉力量和神經控制對於預防或減少下背痛至關重要，通過鍛鍊可改善正位體態（alignment）和核心肌肉力量，例如鍛鍊下背部和腹部肌肉，都是有效果的[9]。合理地建議每週進行 2-3 次伸展、有氧運動和強化鍛鍊相結合，以預防一般族群的下背痛 [19]。

想要預防職業所造成的下背痛，運動也是一個很有效的方法，不管您是只有採行一般的運動，或者也有搭配特定活動的教練課程。有一些人因工程的設計例如可以支撐腰部的背靠、升降裝置、調整工作環境、工作輪調、以及產線的調整，成效都沒有運動來得好[8,10,20]。

在孩童[14]、成人[6]、或是工作職場中[10]，單靠教育宣導是無法達到有效預防下背痛的成果的。有些國家也嘗試利用一些大眾傳播媒體的宣傳試圖改變民眾對於背痛的看法，並且也企圖要鼓勵民眾做出行為改變，不過這個做法的成效成有待商榷[3]。

結論

需要開展更多的研究來制定和實施有效並具有成本效益的策略，以預防下背痛並促進人們參與體育和社會活動。

總體來說，下背痛是一個全球性問題，需要以創新方法來制定、實施預防策略，以減少失能與改善生活品質。改善營養和鼓勵運動是從小就可以預防下背痛的最有效策略。

參考文獻 REFERENCES

- [1] Airaksinen O, Brox JI, Cedraschi C, Hildebrandt J, Kläber-Moffett J, Kovacs F, Mannion AF, Reis S, Staal J, Ursin H. Chapter 4 European guidelines for the management of chronic nonspecific low back pain. European spine journal 2006;15:s192-s300.
- [2] Bradney M, Pearce G, Naughton G, Sullivan C, Bass S, Beck T, Carlson J, Seeman E. Moderate exercise during growth in prepubertal boys: changes in bone mass, size, volumetric density, and bone strength: a controlled prospective study. Journal of bone and mineral research : the official journal of the American Society for Bone and Mineral Research 1998;13(12):1814-1821.

- [3] Buchbinder R, Gross DP, Werner EL, Hayden JA. Understanding the characteristics of effective mass media campaigns for back pain and methodological challenges in evaluating their effects. *Spine* 2008;33(1):74-80.
- [4] Chaléat-Valayer E, Mac-Thiong J-M, Paquet J, Berthonnaud E, Siani F, Roussouly P. Sagittal spino-pelvic alignment in chronic low back pain. *European spine journal* 2011;20(5):634.
- [5] De Laet C, Kanis J, Odén A, Johanson H, Johnell O, Delmas P, Eisman J, Kroger H, Fujiwara S, Garnero P. Body mass index as a predictor of fracture risk: a meta-analysis. *Osteoporosis international* 2005;16(11):1330-1338.
- [6] Demoulin C, Marty M, Genevay S, Vanderthommen M, Mahieu G, Henrotin Y. Effectiveness of preventive back educational interventions for low back pain: a critical review of randomized controlled clinical trials. *European Spine Journal* 2012;21(12):2520-2530.
- [7] Foster NE, Anema JR, Cherkin D, Chou R, Cohen SP, Gross DP, Ferreira PH, Fritz JM, Koes BW, Peul W. Prevention and treatment of low back pain: evidence, challenges, and promising directions. *The Lancet* 2018;391(10137):2368-2383.
- [8] Hegewald J, Berge W, Heinrich P, Staudte R, Freiberg A, Scharfe J, Girbig M, Nienhaus A, Seidler A. Do Technical Aids for Patient Handling Prevent Musculoskeletal Complaints in Health Care Workers?—A Systematic Review of Intervention Studies. *International journal of environmental research and public health* 2018;15(3):476.
- [9] Hodges PW. Core stability exercise in chronic low back pain. *Orthopedic Clinics* 2003;34(2):245-254. [10] Huang R, Ning J, Chuter VH, Taylor JB, Christophe D, Meng Z, Xu Y, Jiang L. Exercise alone and exercise combined with education both prevent episodes of low back pain and related absenteeism: systematic review and network meta-analysis of randomised controlled trials (RCTs) aimed at preventing back pain. *British journal of sports medicine* 2019.
- [11] Jacobs JM, Hammerman-Rozenberg R, Cohen A, Stessman J. Chronic back pain among the elderly: prevalence, associations, and predictors. *Spine* 2006;31(7):E203-E207.
- [12] Kaufman J-M, Ostertag As, Saint-Pierre A, Cohen-Solal M, Boland A, Van Pottelbergh I, Toye K, de Verneuil M-C, Martinez M. Genome-Wide Linkage Screen of Bone Mineral Density (BMD) in European Pedigrees Ascertained through a Male Relative with Low BMD Values: Evidence for Quantitative Trait Loci on 17q21–23, 11q12–13, 13q12–14, and 22q11. *The Journal of Clinical Endocrinology & Metabolism* 2008;93(10):3755-3762.
- [13] Krein SL, Abdul-Wahab Y, Kadri R, Richardson CR. Adverse events experienced by participants in a back pain walking intervention: A descriptive study. *Chronic illness* 2016;12(1):71-80.
- [14] Michaleff ZA, Kamper SJ, Maher CG, Evans R, Broderick C, Henschke N. Low back pain in children and adolescents: a systematic review and meta-analysis evaluating the effectiveness of conservative interventions. *European Spine Journal* 2014;23(10):2046-2058.
- [15] Miyabara Y, Onoe Y, Harada A, Kuroda T, Sasaki S, Ohta H. Effect of physical activity and nutrition on bone mineral density in young Japanese women. *Journal of bone and mineral metabolism* 2007;25(6):414-418.
- [16] Nguyen ND, Ahlborg HG, Center JR, Eisman JA, Nguyen TV. Residual lifetime risk of fractures in women and men. *Journal of Bone and Mineral Research* 2007;22(6):781-788.

- [17] Ohtori S, Akazawa T, Murata Y, Kinoshita T, Yamashita M, Nakagawa K, Inoue G, Nakamura J, Orita S, Ochiai N, Kishida S, Takaso M, Eguchi Y, Yamauchi K, Suzuki M, Aoki Y, Takahashi K. Risedronate decreases bone resorption and improves low back pain in postmenopausal osteoporosis patients without vertebral fractures. *Journal of clinical neuroscience : official journal of the Neurosurgical Society of Australasia* 2010;17(2):209-213.
- [18] Runyan SM, Stadler DD, Bainbridge CN, Miller SC, Moyer-Mileur LJ. Familial resemblance of bone mineralization, calcium intake, and physical activity in early-adolescent daughters, their mothers, and maternal grandmothers. *Journal of the American Dietetic Association* 2003;103(10):1320-1325.
- [19] Shiri R, Coggon D, Falah-Hassani K. Exercise for the prevention of low back pain: systematic review and meta-analysis of controlled trials. *American journal of epidemiology* 2017;187(5):1093-1101.
- [20] Steffens D, Maher CG, Pereira LS, Stevens ML, Oliveira VC, Chapple M, Teixeira-Salmela LF, Hancock MJ. Prevention of low back pain: a systematic review and meta-analysis. *JAMA internal medicine* 2016;176(2):199-208.
- [21] Tanaka S, Kuroda T, Saito M, Shiraki M. Overweight/obesity and underweight are both risk factors for osteoporotic fractures at different sites in Japanese postmenopausal women. *Osteoporosis International* 2013;24(1):69-76.
- [22] Tenforde AS, Carlson JL, Sainani KL, Chang AO, Kim JH, Golden NH, Fredericson M. Sport and triad risk factors influence bone mineral density in collegiate athletes. *Medicine & Science in Sports & Exercise* 2018;50(12):2536-2543.
- [23] Williams JS, Ng N, Peltzer K, Yawson A, Biritwum R, Maximova T, Wu F, Arokiasamy P, Kowal P, Chatterji S. Risk factors and disability associated with low back pain in older adults in low-and middle-income countries. Results from the WHO study on global AGEing and adult health (SAGE). *PLoS One* 2015;10(6):e0127880.
- [24] Willson T, Nelson SD, Newbold J, Nelson RE, LaFleur J. The clinical epidemiology of male osteoporosis: a review of the recent literature. *Clinical epidemiology* 2015;7:65.
- [25] Wong AY, Karppinen J, Samartzis D. Low back pain in older adults: risk factors, management options and future directions. *Scoliosis and spinal disorders* 2017;12(1):14.

作者 AUTHORS

Shuhei Nagai, MD
Multidisciplinary Pain Center, Aichi Medical University
Nagakute, Aichi, Japan

Takahiro Ushida, MD, PhD
Multidisciplinary Pain Center, Aichi Medical University
Nagakute, Aichi, Japan

Owen Williamson, FRCS (Orthopedic Surgery & Pain Medicine)
Chronic Pain Clinic, Fraser Health Authority, Surrey, British Columbia, Canada
Department of Epidemiology and Preventive Medicine, Monash University, Melbourne, Australia

審稿者 REVIEWERS

Brona M. Fullen, PhD
Associate Professor
UCD School of Public Health
Physiotherapy and Sports Science
Dublin, Ireland

Professor Esther Pogatzki-Zahn, MD, PhD
Department of Anesthesiology, Intensive Care and Pain Medicine
University Hospital Muenster
Muenster, Germany

Seiji Ohtori, Dr. med.
Chiba University
Chiba, Japan

譯者 TRANSLATOR

莊淨為 醫師

Ching-Wei Chuang, MD

佛教慈濟醫療財團法人台北慈濟醫院 麻醉部疼痛科

Pain Management Unit of Department of Anesthesiology,

Taipei Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Taipei, Taiwan

©Copyright 2020 International Association for the Study of Pain. 版權所有。

IASP 匯集了科學家、臨床工作者、健康照護工作者、以及政策制定人員，共同促進並支持疼痛相關研究，且致力於將知識應用在改善全世界的疼痛狀況。

