

Low back pain

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Low back pain: a call for action

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Low back pain is the leading worldwide cause of years lost to disability and its burden is growing alongside the increasing and ageing population.¹ Because these population shifts are more rapid in low-income and middle-income countries, where adequate resources to address the problem might not exist, the effects will probably be more extreme in these regions. Most low back pain is unrelated to specific identifiable spinal abnormalities, and our Viewpoint, the third paper in this *Lancet* Series,^{2,3} is a call for action on this global problem of low back pain.

The panel summarises the most pressing political, public health, and health-care challenges and identifies actions to meet them. Prevention of the onset and persistence of disability associated with low back pain requires recognition that the disability is inseparable from the social and economic context of people's lives and is entwined with personal and cultural beliefs about back pain.⁴ Health and workplace policies and disability payment systems are often ineffective and wasteful, and they are key targets for improvements. Socioeconomically disadvantaged people are overrepresented among those with disabling low back pain.⁵ In many settings they will be further disadvantaged by restricted access to accurate information sources, health-care approaches that provide appropriate support for self-management of uncomplicated low back pain, and to specialised effective interventions, such as multidisciplinary rehabilitation, for complex persistent low back pain.

Public health programmes that tackle obesity and low levels of physical activity might provide a model and structure for reducing the effects of low back pain on daily life,⁶ although independent associations between the life-style issues and low back pain are uncertain.

Implementation of these programmes is especially urgent in some low-income and middle-income countries where increasing obesity rates and rapid industrial growth and consequent reductions in physical activity are occurring in urban areas. Health system and societal initiatives addressing low back pain should act in synergy with the WHO European Region action plan for the prevention and control of non-communicable diseases, which recognises the need for comprehensive promotion of musculoskeletal health. Because low back pain disability often affects employability in the informal sector, integration between health, workplace, and social services should also be a key goal.

Disabling low back pain is partly iatrogenic. Studies in low-income countries and Indigenous and assimilated populations in high-income countries show that exposure to health care can sometimes have harmful consequences.^{7–9} Such negative effects of health care reflect a change in views, from low back pain being a fairly benign part of daily life, to it being seen as a problem requiring medical attention. Increased use of ineffective potentially unsafe treatments has wasted limited health-care resources and harmed patients. The epidemic of addiction and rising mortality resulting from increased opioid prescribing in the USA over the past 20 years is a dramatic example of the disastrous effects of damaging medical intervention.¹⁰ In low-income and middle-income countries, epidemiological evidence suggests that improving social and economic conditions could prevent or reduce incidence of low back pain, but could also create expectations and demands for medical investigations and low-value health care that paradoxically increase the risk of long-term back-related disability (what we term the low back pain paradox).

The global challenge is to prevent the use of practices that are harmful or wasteful while ensuring equitable access to effective and affordable health care for those who need it. High rates of advice to rest and use of ineffective treatments are already a reality in low-income and middle-income countries. Over-medicalisation disproportionately affects the wealthy minority, but it also threatens to reduce availability of high-value health-care services for the poor majority and further widen health and social disparities. Contextual factors, such as scarcity of suitable work, might also mean that advice that would be regarded as appropriate in high-income countries, such as encouragement to remain in work or return to work early, might not always be appropriate—or even an option—in low-income or middle-income countries.

Protection of the public from unproven or harmful approaches to managing low back pain requires that governments and health-care leaders tackle entrenched

Key messages

- Use the notion of positive health—the ability to adapt and to self-manage in the face of social, physical and emotional challenges—for the treatment of non-specific low back pain
- Avoid harmful and useless treatments by adopting a framework similar to that used in drug regulation—ie, only include treatments in public reimbursement packages if evidence shows that they are safe, effective, and cost-effective
- Address widespread misconceptions in the population and among health professionals about the causes, prognosis, and effectiveness of different treatments for low back pain, and deal fragmented and outdated models of care
- Policy, public health, health-care practice, social services, and workplaces must jointly tackle the low back pain paradox in low-income and middle-income countries, where improving social and economic conditions could prevent or reduce low back pain incidence, but at the same time create expectations and demands for medical investigations and low-value health care that increase the risk of long-term back-related disability

Panel: Call for actions to meet the challenges associated with prevention of disabling low back pain

Political challenge: increase recognition of the effects and burden of back pain by international and national policy makers

- Call on WHO to put disabling low back pain on the target list for all nations and increase attention on the burden it causes, the need to avoid excessively medical solutions, and the need to integrate low back pain into all chronic disease initiatives
- Call on international and national political, medical and social policy leaders to adequately fund public health strategies focused on preventing low back pain from interfering with life, ensuring inclusion of disadvantaged and culturally diverse populations
- Call on national and international funding agencies to make low back pain research a global health priority in recognition of its impact on people's lives in all countries

Public health challenge: prevent onset and persistence of disability associated with low back pain

Change priorities

- Prioritise low back pain, together with other musculoskeletal conditions, as a public health problem
- Develop and implement positive strategies for primary prevention of disabling low back pain that are integrated with strategies for preventing other chronic conditions (physical activity, maintenance of healthy weight, mental health)
- Develop and implement strategies to address modifiable risk factors for disabling low back pain at all levels (society, workplace, health professionals, individuals)

Change systems and change practice

- Integrate back pain care with public health initiatives providing credible advice that people who develop low back pain should stay active and remain working, and that people with low back pain should be supported in early return to work
- Develop and implement strategies to ensure early identification and adequate education of patients with low back pain at risk for persistence of pain and disability
- Promote a healthy lifestyle and address common comorbidities in patients with persistent low back pain, tackle social determinants of disability, incentivise work through change and adaptation of the workplace and the job, and change worker disability policies which do not improve, promote, or support return to work
- Consider provision of financial incentives to resume appropriate work without risk of loss of benefits for people who are off work because of low back pain
- Promote active multidisciplinary rehabilitation to support return to work

Health-care challenge: move away from emphasis on a biomedical and fragmented model of care

Change culture

- Develop interventions to address misconceptions about low back pain among health professionals, patients, the media, and the general public

- Promote the concept of living well with low back pain: person-centred care focusing on self-management and healthy lifestyles as a means of restoring and maintaining function and optimising participation
- Investigate the effectiveness and place of traditional practices for reducing disability associated with low back pain in low-income and middle-income countries

Change clinician behaviour

- Invest in implementation research to address evidence-practice gaps across all relevant health-care providers
- Identify and implement effective behaviour change and training interventions to improve and integrate care
- Deliver a workforce fit-for-purpose, which includes targeted training of health-care professionals and others with the right competencies and resolve to deliver evidence-based care
- Build consensus across clinical disciplines, patient groups, and journal editors for shared guidelines of care that are straightforward and non-denominational

Change systems

- Develop clear care pathways, referral, funding, and information technology systems to enable people to see the right person for delivery of the right treatment at the right time, while precluding use of alternative inappropriate pathways
- Develop consistent evidence-based clinical care standards and key indicators integrated across health-care systems and settings
- Develop and implement cost-effective strategies that provide access to effective care in low-income and middle-income countries for all

Tackle vested interests

- Government, insurers, and commissioners should consider tackling conflicts of interest through regulation and contracts, including not paying for inappropriate tests and for unnecessary, ineffective, and harmful treatments
- Existing and new tests and procedures for low back pain should be regulated in the same way as drugs; evidence should be available showing that they are safe, effective, and cost-effective before they get reimbursed within public health-care systems
- Introduce incentives for effective and efficient care and disincentives for continued use of ineffective and potentially harmful approaches

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and counterproductive reimbursement strategies, vested interests, and financial and professional incentives that maintain the status quo. Funders should pay only for high-value care, stop funding ineffective or harmful tests and treatments, and commission research into tests and treatments without supporting evidence. As with drugs, which are subject to strict regulation in many countries, new diagnostic tests and non-drug treatments should be available only in trials until their efficacy, safety, and cost-effectiveness is established by robust research evidence.

Some countries are testing these approaches. In Australia, a clinician-led taskforce is reviewing all government-subsidised tests and procedures, with the aim of removing funding for those that are unnecessary, outdated, or potentially unsafe. In the Netherlands, unproven interventions are conditionally included in the public health insurance package only if there is evidence from high quality randomised controlled trials to inform a final decision that show whether or not the intervention is efficacious and safe. Stakeholders, including patients, agree to design and eligibility criteria for the assessment. Because radiofrequency denervation for patients with chronic low back pain does not provide clinically significant added benefit compared with a standardised exercise programme alone, it is no longer covered in the public health insurance package.¹¹

Awareness of the biopsychosocial model of low back pain has greatly advanced the understanding of the prognostic significance of psychosocial factors in individual patients. The model has had less success in shifting practitioners away from managing patients within a biomedical framework. The importance of behavioural approaches to back pain management does not preclude the continuing need to investigate mechanisms and potential biological determinants of non-specific low back pain in phenotypically distinct subgroups.

We propose adoption of the so-called positive health concept as the overarching strategic approach to the prevention of long-term disability from low back pain.¹² Positive health, as proposed by Huber and colleagues, is “the ability to adapt and to self-manage, in the face of social, physical, and emotional challenges”. This term encompasses a much broader idea of health than simply absence of disease and its emphasis on medicalisation and cure.

Evidence suggests that prevalence of long-term disabling low back pain could be reduced by adopting this positive health approach.^{13,14} For health professionals, positive health focuses on alternatives to treatments and cures and promotes high-quality, meaningful lives for people with persistent low back pain. Public and patients' expectations need to change, so that people are less likely to expect a diagnosis or complete cure for their pain. This adjustment of attitude requires initiatives to change widespread and inaccurate beliefs about back pain,¹³ helping future generations to avoid counterproductive patterns of illness behaviour, eg, prolonged rest,

avoidance of usual activities, or staying away from work.

For people with persistent low back pain, positive health entails learning how to cope with a long-term health problem through self-management activities, and learning to seek health care only when needed. Passive approaches such as rest and medication are linked with worsening disability, whereas active strategies such as exercise are associated with reduced disability and less reliance on formal health care. Many behavioural and cognitive strategies are used by people with chronic pain in the community, regardless of whether or not they seek care.¹⁵ In the occupational setting, interventions focusing on positive health, including peer support for the notion that low back pain is not an injury in need of medical treatment,¹⁶ and redirecting problem-solving efforts away from seeking cures and towards improved individual adaptation to the pain, yield beneficial outcomes.¹⁷

Improved training and support of primary care doctors and other professionals engaged in activity and lifestyle facilitation, such as physiotherapists, chiropractors, nurses, and community workers, could minimise the use of unnecessary medical care. Crucial to changing behaviour and improving delivery of effective care are system changes that integrate and support health professionals from diverse disciplines and care settings to provide patients with consistent messages about mechanisms, causes, prognosis and natural history of low back pain, as well as the benefits of physical activity and exercise. Traditional healers, where integrated into the health-care system, community health workers, and family remain important providers of lower cost basic education and care in many low-income countries for most people with low back pain who do not require medical attention.¹⁸ In rural and remote regions rehabilitation advice and support given online, combined with self-management, might be an option where internet access is available.

The success of a positive health approach will depend on whether relevant stakeholders share the same mission, vision, and objectives and on the success of strategies for knowledge transfer and exchange. The appendix lists information that well informed consumers, patients, clinicians, and policy makers should know about low back pain and its global burden.

Policy makers in all countries should look to local stakeholders to help decide what overall strategies should be put in place. Similar to other areas of research low-income and middle-income countries should ensure that investment in musculoskeletal services is effective for patients and does not damage local health systems.¹⁹ Local participation and ownership, integration with existing priorities and policies, and coordination with national and regional systems and processes are crucial.

Funding for low back pain research is inadequate and uncoordinated. This scarcity of funds especially affects low-income and middle-income countries, where the effects of disabling low back pain remain under-recognised and research priorities and funding remain focused on

See Online for appendix

infectious diseases. One way forward would be to establish a global network of researchers from developed and developing countries, pooling experience and knowledge and building research capacity where it is needed.

The appendix lists major research priorities, which align with those previously identified by the international low back pain primary care research community.²⁰ Implementation research is necessary in all countries to ascertain how best to use existing knowledge and evidence through changes in patient and clinician behaviour and health system design. For low-income and middle-income countries, priorities include identifying interventions that are optimal in the context of the social, political, cultural, and health-resource factors. Although available evidence-based guidelines might be well suited for high-income countries and highly developed health-care systems, they might need adaptation to assure feasibility and cultural appropriateness for low-resource settings.

An active ongoing monitoring system is crucial to assess the effects of new strategies on outcomes such as disability, ability to work, and social participation. There is a pressing need for surveys and health-care databases in different countries that use common metrics for measuring the burden of low back pain, use of active self-management strategies such as exercise, tests, and treatments, and outcomes and costs of care. The appendix shows a set of indicators of success for surveillance. Uniform data collection would encourage benchmarking of health services within and across countries. Standardised definitions of low back pain for prevalence studies have already been developed and incorporated into the Global Alliance for Musculoskeletal Health Surveillance Taskforce survey module for musculoskeletal conditions.

Action is needed to address the growing burden of low back pain on many millions of people worldwide. Future social changes, including ageing, urbanisation, increasingly sedentary lifestyles, and the development of new technologies, will probably exacerbate this problem. For example, the use of increasingly sensitive imaging techniques, such as MRI, can reveal findings that might be incorrectly inferred to be the cause of a patient's symptoms.

Improved recognition of the growing burden of low back pain is essential to stimulate new, more effective, strategies of prevention and care. The effects of disabling low back pain can be reduced through social change that supports full participation in daily life. In low-income and middle-income countries, the paradox of low back pain needs to be addressed. Other barriers to optimal evidence-based management include widespread misconceptions of the general public and health professionals about the causes and prognosis of low back pain and the effectiveness of different treatments, fragmented and outdated models of care, and the widespread use of ineffective and harmful care, particularly in countries regarded as models of high quality care.

We have described actions all countries can take to reduce the effect of disabling low back pain on their populations. Strong and coordinated political action from international and national policy makers, including WHO and research funding agencies, is needed. Such action could substantially reduce disability and suffering and improve the effectiveness and efficiency of care for people with low back pain throughout the world.

Contributors

RB and MvT were part of the team that developed the original proposal for the series and RB coordinated the development and amendment of the paper. RB, MvT, BÖ, LMC, AW, MS, and PC all contributed to drafting and writing of this paper, and have edited it for key content. RB, LC, and PC drafted and analysed the survey of the *Lancet* Low Back Pain Series Working Group that populated the draft version of the panels in this paper. RB, MvT, BÖ, LMC, AW, and PC participated in the authors' meeting and discussion during the drafting process. All other authors have read and provided substantive intellectual comments on the draft and approved the final version of the paper.

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Declaration of interests

RB is chief investigator or associate investigator on multiple previous and current research grants from government research agencies from Australia (eg, NHMRC, ARC), and overseas (eg, ZonMW in the Netherlands and PCORI in the USA). Her research has also received funding from philanthropy (eg, Arthritis Australia) and government agencies (eg, NSW WorkCover). She has been funded by research fellowships from NHMRC since 2005. She has received travel expenses for speaking at conferences from the professional organisations hosting the conferences. She chaired the back pain expert group for the 2010 Global Burden of Diseases, Injuries, and Risk Factors (GBD) Study. She was appointed to the Australian Medical Services Advisory Committee in May 2016. She has published multiple papers on low back pain, some of which might be referenced in the series. LMC is chief investigator or associate investigator on multiple previous and current research grants from government research agencies FAPESP and CNPq from Brazil. She has published multiple papers on low back pain some of which

may be referenced in the series. PC has been chief investigator or co-investigator on multiple previous research grants for musculoskeletal pain research from UK government agencies (including National Institute for Health Research and the Medical Research Council) and UK charitable organisations (Arthritis Research UK and the Wellcome Trust), but none from industry. His travel expenses have been covered by the organising professional organisations (including rheumatology, pain specialists, physical therapy, primary care) when he has been an invited speaker at conferences. He has received honoraria for reviewing grant proposals from government organisations in Canada, Norway and Sweden. PC's department has received payment for two reports to the UK Committee on Advertising Practice. He has published multiple papers on low back pain, some of which might be referenced in the series. BÖ is head of research at the division and is responsible for previous and ongoing research funded by government research agencies in Sweden. She has received travel expenses for speaking at conferences from the professional organisations hosting the conferences. She chaired the Scientific Council of Medicine and Health from 2013 to 2016 and has been a member from 2010 to 2012. MS receives most of his funding from the publishing company Wolters Kluwer for writing and editing an international newsletter on spine and back pain research (The BackLetter). He authors all the articles and shares editorial control with the executive editor (a researcher, academic spine surgeon, and Chairman, Department of Orthopaedics at Georgetown University Medical Center). Neither has any conflicts of interest with drug or device companies. MS has co-authored several editorials for journals owned by publishers (The Spine Journal and Spine—owned respectively by Elsevier and Wolters Kluwer). The editorials concerned the inadequacy of the evidence base for regulated surgical devices or drugs and biologics. He received nothing of value for those editorials. The remainder of his funding comes from the non-profit Sports Health and Safety Institute at the University of Washington for research, writing, and editing in the concussion area. He was previously a paid consultant for the non-profit Informed Medical Decisions Foundation in Boston, involved in the preparation of Decision Aids and Shared Decision Making materials. He occasionally receives travel funding from professional societies to take part in symposia sponsored by those societies. MS has been an unpaid editorial board member and Consumer Representative at the Cochrane Collaboration Back and Neck Group since 1999. MvT is chief investigator, or co-investigator on multiple previous and current research grants from government research agencies in the Netherlands (ZONMW; the Dutch Health Insurance Council) and Australia (NMHRC). His research has also received funding from professional organisations (eg, the Royal Dutch Association for Physiotherapy, the Netherlands National Chiropractic Association, and the European Chiropractic Union). His travel expenses have been covered by the organising professional organizations when he has been an invited speaker at conferences. He has received honoraria for reviewing grant proposals from the Swedish Medical Research Council and VINNOVA (Sweden's innovation agency). He has not received any honoraria or travel expenses from the industry. MvT was chairman of the Netherlands National Multidisciplinary Guideline on Low Back Pain. He has published multiple papers on low back pain, some of which might be referenced in the series. AW has been chief investigator or co-investigator on projects to identify burden of musculoskeletal conditions and to develop strategies for their control. He has been an expert adviser to WHO. He is chair of the Global Alliance for Musculoskeletal Health. The European Community, professional bodies, and research agencies have supported his work. Professional bodies or organisers of scientific meetings have supported his travel expenses. He has not received any funding from the private sector.

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