2020 EUROPEAN YEAR FOR THE PREVENTION OF PAIN

EFIC

Factsheet

Primary Prevention of Chronic Pain

Introduction

Primary prevention of pain is defined as preventing acute pain, secondary prevention addresses the transition from acute to chronic pain and tertiary prevention aims to reduce the impact of chronic pain [5]. In the following, the evidence for primary prevention interventions for post-surgical pain and workplace injuries is summarized.

Primary Prevention of Pain in Research

Chronic post-surgical pain Surgical procedures are common, often cause acute pain, affect a large proportion of the population and are probably the most researched pain condition in relation to primary prevention [1]. Preventive measures include pre-habilitation, pre- and perioperative pharmacotherapy and anaesthesia as well as post-discharge interventions. Pre-habilitation, consisting mainly of aerobic and resistance exercise may improve physical function, length of stay and pain following surgery compared with standard care (low quality of evidence) [8]. Patient education is assumed to reduce fear or anxiety of pain from surgical procedures, however, current low-quality evidence suggests that preoperative education alone may not improve post-operative pain, function and health-related quality of life or postoperative anxiety any more than usual care [6]. However, preoperative psychological interventions including information, cognitive interventions or relaxation strategies may have small, but significant positive effects on postoperative pain, length of stay, or negative affect (very low to low quality of evidence) [7].

The efficacy of pharmacotherapy and anaesthesia for preventing chronic pain after surgery was investigated and is discussed in detail in another fact sheet (see “Prevention of Chronic Post-Surgical Pain” Fact Sheet).

Investigation of post-discharge interventions to reduce severity of chronic pain after total knee arthroplasty, consisting mainly of physiotherapy, suggests that these interventions appear to be effective [15].

As indicated by recent flagship projects (but without an RCT supporting this so far) an interdisciplinary approach that includes pre-surgical, in-hospital post-surgical and out-of-hospital post-discharge interventions performed by a multi-professional “transitional pain service” seems promising to prevent chronic pain after surgery in patients at risk [4, 13]. As a prerequisite, prediction tools to identify patients at high risk for developing chronic pain after surgery are needed and many research groups are working on this [9].

Occupational interventions aim to reduce work-related incidents and injuries leading to acute pain. Interventions should address modifiable physical and psychological risk factors that increase significantly the odds of a new onset of back pain. These include exposure to manual tasks involving awkward positioning (OR 8.0, 95% CI 5.5–11.8) or being distracted during a task or activity (OR 25.0, 95% CI 3.4–184.5) or being fatigued (OR 3.7, 95% CI 2.2–6.3) [11]. However, there is moderate quality evidence that manual material handling advice and training with or without assistive devices does not prevent back pain or back pain-related disability when compared to no intervention or alternative interventions [14].

Common occupational interventions include exercise alone (RR 0.65, 95%KI 0.50-0.86) or in combination with education (RR 0.55, 95% KI 0.41-0.74) that both reduce the risk of developing LBP in the first place (low to moderate quality of evidence) [12], findings supported by a recent overview of reviews [10]. Other occupational interventions such as education alone (booklets, back schools, videos), foot orthoses or shoe insoles or lumbar support (back belts, braces, chair back rests) had no effect on the incidence of LBP [10].

Physical ergonomic interventions include improving equipment and environment of the workplace to reduce the physical strain to the musculoskeletal system [3]. One meta-analysis found inconclusive low to moderate quality evidence for arm support with an alternative computer mouse in reducing the incidence of neck or shoulder or right upper limb musculoskeletal disorders, and very low-quality evidence that supplementary breaks reduce discomfort of the neck (MD −0.25; 95% CI −0.40 to −0.11), right shoulder or upper arm (MD −0.33; 95% CI −0.46 to −0.19), and right forearm or wrist or hand (MD -0.18; 95% CI -0.29 to -0.08) among office workers [3]. No effect on upper limb pain or discomfort was found for workstation adjustment and sit-stand desks [3].

Conclusion

Few studies explicitly address the efficacy and efficiency of primary prevention interventions for chronic pain highlighting the need for high quality research in this area. One future approach to primary prevention of chronic pain may be public health interventions aimed at both the general population and high-risk groups [5]. Public education may heighten awareness about pain and its health consequences, improve public knowledge about strategies that individuals can use to manage their own pain, and address disparities that exist in the experience of pain [2].

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AUTHOR

Prof. Dr. Axel Schaefer
University of Applied Science and Arts
Faculty of Social Work and Health
Hildesheim, Germany

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