



## High-Impact Chronic Pain

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Chronic pain is a major public health problem reported by approximately 20% of adults in the Western world [1]. Despite slightly different definitions, chronic pain can be operationalized as a condition in which an individual experiences pain on most days or every day for more than three months [2]. While chronic pain is a burden to the individual sufferer, not everyone is impacted equally.

High-impact chronic pain (HICP) is a subcategory of chronic pain that significantly impacts the affected person's daily life and functioning, such as work, socializing, and self-care [2]. The identification of HICP is important as it is associated with a range of emotional and social difficulties and may require a different approach to management, e.g. interdisciplinary pain management programs, than chronic pain with lower impact.

### Clinical Manifestations and Possible Mechanisms

Individuals with HICP report poor sleep, worries, fear of movement and have often tried several treatments with an unsatisfactory clinical response [3]. Compared with individuals with chronic pain with lower impact, individuals with HICP report poorer mental and physical health, as well as higher levels of pain, anxiety, depression, fatigue, and cognitive difficulties [4]. A tendency towards a higher number of painful body areas has also been shown [4]. In addition, Individuals with HICP have a higher consumption of pain medication, including opioids, and use of healthcare services [5]. Individuals with HICP also have increased work absenteeism and decreased employment [6]. Fear of pain, catastrophic thoughts, moderate to severe pain intensity, multi-morbidity, and shorter education have been associated with an increased likelihood of HICP [4, 7]. The mechanisms underlying HICP are not yet fully understood. Facilitation of central pain processing or impaired pain inhibition have been identified in a large proportion of

individuals with HICP [8], but it is still unknown whether altered pain processing differentiates HICP from chronic pain with lower impact.

### Prevalence

On a population level, 6.9% to 8.0% of adults have HICP, according to data from The National Health Interview Survey (NHIS) in the US [1, 9]. Similar estimates between 5.7% and 7.8% have been reported in the UK [10]. Data from the Middle East indicates that 4% of the adult population report HICP [11]. In children and adolescents, the prevalence of HICP is 5% [12]. Across several different specific pain populations, the prevalence of HICP is even higher. Among individuals undergoing surgery on the hip, knee, shoulder or back, the prevalence of HICP has been estimated to be between 10 and 15% [7, 13], and in individuals with back pain, prevalence rates between 15.7% and 62.2% have been reported [6].

### Identification of HICP

The National Center for Health Statistics under the U.S. Department of Health and Human Services, Centers for Disease Control and Prevention identifies HICP as chronic pain (i.e. pain on most days or every day in the past three months) that interferes with life or work activities on most or all days in the past 3 months [2]. This approach to identification of HICP has shown good concurrent validity in its ability to differentiate HICP from less impactful chronic pain [14]. In line with this, a standardized tool not restricted to a specific bodily site, that can facilitate the assessment of HICP and the monitoring of treatment outcomes has been developed [14]. The Graded Chronic Pain Scale Revised (GCPS-R) is a brief, freely available questionnaire that assesses frequency and severity of pain and its impact. The GCPS-R uses 5 items to categorize pain into mild chronic pain, bothersome chronic pain, and HICP [14].

Slightly different identification methods have been proposed. Pitcher et al. identify HICP as pain on most days or every day in the previous 3 months accompanied by least 1 activity limitation or participation restriction among 8 activity/participation questions, such as being unable to work outside the home, go to school, do household chores or getting out with friends and families [4].

High-impact chronic pain are somewhat similar to the more recent IASP classification of chronic primary pain defined as pain that has lasted more than 3 months and is associated with significant emotional distress and/or functional disability, where pain is not better accounted for by another condition [15]. However, HICP does not require that pain is not better accounted for by another condition and may also be present along with chronic secondary pain syndromes. .

## Conclusion

Chronic pain, particularly high-impact chronic pain, has leading public health implications on both personal- and societal levels implying a high loss of earnings, productivity, and quality-adjusted life years worldwide.

Identification of individuals with HICP in research and clinical practice along with development and evaluation of treatments targeting HICP is recommended to advance the field and reduce disability and suffering of the individual. Stratification of chronic pain based on impact may also influence future organization of pain care services and health care planning.

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