Multidimensional Diagnostic Criteria for Chronic Pain: Introduction to the ACTTION–American Pain Society Pain Taxonomy (AAPT)

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Abstract: A variety of approaches have been used to develop diagnostic criteria for chronic pain. The published evidence of the reliability and validity of existing diagnostic criteria is limited, and these criteria have typically not been used in clinical practice. The availability of a widely accepted, consistently applied, and evidence-based taxonomy of diagnostic criteria would improve the quality of clinical research on chronic pain and would be of great value in clinical practice. To address the need for evidence-based diagnostic criteria for the major chronic pain conditions, the Analgesic, Anesthetic, and Addiction Clinical Trial Translations, Innovations, Opportunities, and Networks (ACTTION) public-private partnership with the US Food and Drug Administration and the American Pain Society (APS) have collaborated on the development of the ACTTION-APS Pain Taxonomy (AAPT). AAPT provides a multidimensional framework that is applied systematically in the development of diagnostic criteria. This article (1) describes the background and rationale for AAPT; (2) presents the AAPT taxonomy and the specific conditions for which diagnostic criteria have been developed (to be published separately); (3) briefly reviews the 5 dimensions that constitute the AAPT multidimensional framework and describes the 7 accompanying articles that discuss these dimensions and other important issues involving AAPT; and (4) provides an overview of next steps, specifically, the general processes by which the initial set of diagnostic criteria (for which the evidence base has been drawn from the literature, systematic reviews, and secondary analyses of existing databases) will undergo additional assessments of reliability and validity.

Perspective: To address the need for evidence-based diagnostic criteria for the major chronic pain conditions, the AAPT provides a multidimensional framework that is applied systematically in the development of diagnostic criteria. The long-term objective of AAPT is to advance the scientific understanding of chronic pain and its treatment.

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In many areas of medicine, the validity and utility of diagnostic criteria have increased appreciably in recent decades. Evidence-based diagnostic criteria have had widespread adoption in clinical research and clinical practice, as has occurred, for example, with the Diagnostic and Statistical Manual (DSM) criteria for psychiatric disorders.[1,2] Unfortunately, the diagnosis of acute and chronic pain conditions has not been a focus of sustained efforts to improve validity and utility. The International Association for the Study of Pain (IASP) *Classification of Chronic Pain* was first published in 1979 and revised in 1994[19] (with an update in 2011–2012). Although it describes many chronic pain conditions, research has not confirmed the reliability of the diagnostic clasification[27] and it has seen limited application in clinical research and practice. In addition, despite widespread interest in the development of a mechanism-based approach to pain diagnosis,[16,30,32–34] current knowledge of the pathophysiologic mechanisms of acute and chronic pain and methods to identify these mechanisms in patients is not sufficiently advanced to provide the basis for classification and diagnosis. Thus, there is a critical unmet need for standardized, consistent, and evidence-based diagnostic criteria for acute and chronic pain conditions that incorporate the neurobiological and psychosocial mechanisms and consequences of pain.

As the initial step in addressing this overarching goal, the Analgesic, Anesthetic, and Addiction Clinical Trial Translations, Innovations, Opportunities, and Networks (ACTTION) public-private partnership with the US Food and Drug Administration (FDA) and the American Pain Society (APS) have collaborated on the development of the ACTTION-APS Pain Taxonomy (AAPT) for chronic pain. AAPT is an evidence-based pain taxonomy in which a multidimensional diagnostic framework has been applied to the most prevalent and important chronic pain conditions. A major impetus for the AAPT initiative derived from observing the transformative impact of evidence-based diagnostic classifications in related medical specialties. For example, DSM-III revolutionized clinical research and practice in psychiatry by implementing structured evidence-based diagnostic criteria to replace previous theory-based approaches, which were often applied in an idiosyncratic manner and lacked reliability.[1,17] The DSM-III multiaxial framework provided structured diagnostic criteria as well as a standardized format for additional clinically relevant information, including comorbid medical conditions, psychosocial stressors, and overall functioning. DSM-III has been revised on the basis of accumulating evidence (the most recent edition is DSM-5[2]), and the DSM approach[24] can serve as a valuable model for the development and revision of evidence-based diagnostic criteria for chronic pain. Another successful diagnostic system is the International Classification of Headache Disorders (ICHD), an evidence-based classification of headache.[21,22] The ICHD, now in its third edition,[23] was first released in 1988 and has made an invaluable contribution to headache research and clinical practice. The ICHD is the gold standard for clinical research, including clinical trials, and has greatly facilitated the development of evidence-based treatments for headache.

A consistent evidence-based taxonomy for classifying and diagnosing chronic pain conditions would have an important impact on pain research and practice. First, the taxonomy would be aligned with current knowledge of the biopsychosocial mechanisms of pain, which has increased greatly in the past few decades. Existing approaches to the classification and diagnosis of chronic pain are based primarily on symptoms, signs, and body location and only rarely include information regarding putative mechanisms and risk factors (eg, magnetic resonance imaging evidence of spinal stenosis, catastrophizing). Because pain treatments produce their therapeutic effects by targeting neurobiological or psychosocial mechanisms, a taxonomy that includes knowledge of these mechanisms would play an important role in developing and validating personalized approaches to pain treatment (ie, precision pain medicine). In addition, a taxonomy in which diagnostic criteria for all chronic pain conditions are consistently implemented will facilitate communication about chronic pain research by ensuring comparability across studies of the same condition. At present, definitions of the same chronic pain condition can vary widely across clinical research studies, including clinical trials, which limits the ability to compare findings across studies and conduct meta-analyses. A widely accepted, consistently applied, and evidence-based taxonomy would help overcome this obstacle and thereby potentially accelerate the development of more efficacious treatments. In particular, a standard taxonomy could enhance clinical trial methodology by promoting consistently applied inclusion and exclusion criteria.

Moreover, diagnostic criteria possess high utility to the extent that they provide important information about prognosis, treatment response, and biological and psychosocial factors.[14] From this perspective, a diagnosis has utility when it has implications that "it is clinically unsound to ignore."[18] The AAPT framework and diagnostic criteria can therefore make a major contribution to pain clinical practice and pain education by providing an evidence-based foundation for understanding and evaluating the signs, symptoms, and mechanisms of the most prevalent chronic pain conditions. Finally, by identifying gaps in the evidence regarding the diagnosis of particular pain conditions and their biopsychosocial mechanisms and consequences, AAPT highlights important unmet needs for future research.

Methods

To develop the multidimensional framework and chronic pain taxonomy, AAPT held a consensus meeting in May 2013, which brought together clinical and basic scientists with expertise in pain mechanisms, the major adult and pediatric chronic pain conditions, and the development of evidence-based diagnostic criteria for several specific chronic pain conditions. In tandem with a series of presentations, the meeting was devoted to