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The ACTTION-American Pain Society Pain Taxonomy (AAPT): An Evidence-Based and Multi-Dimensional Approach to Classifying Chronic Pain Conditions

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Abstract

Current approaches to classification of chronic pain conditions suffer from the absence of a systematically implemented and evidence-based taxonomy. Moreover, existing diagnostic approaches typically fail to incorporate available knowledge regarding the biopsychosocial mechanisms contributing to pain conditions. To address these gaps, 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 joined together to develop an evidence-based chronic pain classification system called the ACTTION-APS Pain Taxonomy (AAPT). This manuscript describes the outcome of an ACTTION-APS consensus meeting, at which experts agreed on a structure for this new taxonomy of chronic pain conditions. Several major issues around which discussion revolved are presented and summarized, and the structure of the taxonomy is presented. AAPT will include the following Dimensions: 1) Core Diagnostic Criteria, 2) Common Features, 3) Common Medical Comorbidities, 4) Neurobiological, Psychosocial and Functional Consequences, and 5) Putative Neurobiological and Psychosocial Mechanisms, Risk Factors & Protective Factors. In coming months, expert working groups will apply this taxonomy to clusters of chronic pain conditions, thereby developing a set of diagnostic criteria that have been consistently and systematically implemented across nearly all common chronic pain conditions. It is anticipated that the availability of this evidence-based and mechanistic approach to pain classification will be of substantial benefit to chronic pain research and treatment.

Perspective—The ACTTION-APS Pain Taxonomy is an evidence-based chronic pain classification system designed to classify chronic pain along the following Dimensions: 1) Core Diagnostic Criteria, 2) Common Features, 3) Common Medical Comorbidities, 4) Neurobiological, Psychosocial and Functional Consequences, and 5) Putative Neurobiological and Psychosocial Mechanisms, Risk Factors & Protective Factors.

Conflict of Interest

The views expressed in this article are those of the authors, none of whom has a financial conflict of interest related to the specific issues discussed in this manuscript.

Introduction

The purpose of clinical diagnosis is to provide a valid explanation of symptoms and signs in order to guide treatment and inform prognosis. Several characteristics of an ideal diagnostic system are presented in Table 1. While clinical diagnosis in many fields has progressed considerably in recent decades, incorporating new evidence and improved diagnostic technologies, classification of pain disorders has witnessed limited advances. Indeed, one could argue that current pain classification systems fail to fulfill the primary purpose of diagnosis (to guide treatment) and meet few of the characteristics of ideal classification systems. A challenge for pain classification is the need to account for individual differences in pain processing, which often result in a weak association between typical "diagnostic" measures of tissue damage or disease activity and the severity and clinical symptoms. The most comprehensive pain classification system available is published by the International Association for the Study of Pain (IASP). First published in 1979, revised in 1994 and updated in 2011, the IASP system intended to fulfill a mission described by IASP founder John Bonica, who said "It is possible to…develop a classification of pain syndromes which are acceptable to many… in the field; even if the adopted definitions and classifications are not perfect they are better than the Tower of Babel conditions that currently exist (p. ix)."[16] However, although it describes a large number of chronic pain conditions, this system has never been widely adopted by either the clinical or research communities. Notably, over the past 15 years, multiple authors have called for a mechanism-based approach to pain diagnosis[21–24]; however, information regarding neurobiological mechanisms is limited and has not been routinely incorporated into any existing pain classification systems. Thus, there is an increasingly urgent need to develop a standardized, systematic and evidence-based approach to pain classification, which incorporates information regarding biopsychosocial mechanisms and that can be applied to all common chronic pain conditions.

To that end, 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 joined together to develop a classification system that incorporates current knowledge of biopsychosocial mechanisms, called the ACTTION-APS Pain Taxonomy (AAPT). The overriding objective of AAPT is to develop an evidence-based chronic pain taxonomy based on a consistently applied multi-dimensional framework and then to encourage experts to apply this multi-dimensional framework to specific chronic pain conditions. A major impetus for the AAPT initiative derived from observing the transformative impact of evidence-based diagnostic classifications in related fields. For example, the third edition of Diagnostic and Statistical Manual (DSM-III) of the American Psychiatric Association arguably revolutionized research and clinical practice in psychiatry by systematically implementing an evidence-based and descriptive taxonomy to replace prior theoretically-based approaches that did not have adequate reliability and were not widely used.[1,15] The DSM-III unveiled a multi-axial system wherein specific diagnostic criteria were presented on Axes 1 and 2, and the remaining axes allowed the diagnostician to provide additional clinically relevant information, including comorbid medical conditions, psychosocial stressors, and overall functioning. The DSM has seen further developments in subsequent

editions, including the recently released DSM-5[2], and it remains an evidence-based descriptive taxonomy that is universally applied in psychiatry. Thus, DSM-III and subsequent updates served as an exemplary model for AAPT. Another successful diagnostic system from which AAPT drew guidance is the International Classification of Headache Disorders (ICHD), an evidence-based system for classifying headaches.[17,18] The ICHD, now in its third edition[19], was first released in 1988 and has been a tremendous boon to headache research and clinical practice. The ICHD is the gold standard for headache research, including clinical trials, which has led to the development of evidence-based treatments for several headache disorders.

There are multiple benefits to developing a unified and standardized evidence-based taxonomy for classifying chronic pain disorders. First, it can help align current knowledge of biopsychosocial mechanisms with, to the extent possible, an evidence-based pain taxonomy, and subsequently with tailored pain treatment. As previously described[24], current pain classification is based primarily on symptoms, signs, and body location sometimes combined with information regarding structural pathology (e.g., MRI evidence of spinal stenosis); and rarely in an integrated biopsychosocial framework. However, pain treatments produce their therapeutic effects by impacting specific neurobiological and/or psychosocial mechanisms. Hence, an integrated biopsychosocial taxonomy that includes current and emerging evidence regarding pain mechanisms can assist clinicians with treatment selection, thereby enhancing patient outcomes. Second, a taxonomy in which diagnostic criteria for all chronic pain conditions are consistently and systematically implemented will facilitate communication about chronic pain and related research by ensuring comparability across studies of the same condition. That is, at present, case definitions of the same chronic pain condition vary widely across professional organizations and studies, which limits the ability to compare findings across studies. A widely accepted, consistently applied, and evidence-based taxonomy would help overcome this impediment to research and ultimately treatment. In particular, a systematically implemented taxonomy could enhance clinical trial methodology by promoting consistently applied inclusion criteria, thereby facilitating treatment development. Third, AAPT would provide educational benefits, because this systematically developed taxonomy would represent an excellent evidence-based and mechanistic foundation for training pain researchers and clinicians. Finally, by identifying gaps in the evidence regarding diagnostic symptoms of particular disorders and their neurobiological and psychosocial underpinnings, such a taxonomy could highlight important avenues for future pain research.

Methods

In order to develop the multi-dimensional 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 and in the major chronic pain disorders in both adults and children. In order to facilitate the process, a set of foundational papers was distributed to all participants prior to the meeting and the agenda included background presentations addressing the following topics: (1) the importance of pain mechanisms in chronic pain classification (F.P., P.M.); (2) the development and evolution of the Diagnostic and Statistical Manual (DSM) of Mental Disorders to illustrate a successful classification

developed outside the area of pain; (3) three presentations describing successful efforts in developing evidence-based diagnostic criteria for specific pain disorders, namely, temporomandibular disorders (TMD; S.D.), complex regional pain syndrome (CRPS, S.B.), and chronic pain associated with spinal cord injury (SCI, E. W.-N.); and finally, (4) guiding principles for developing a new chronic pain taxonomy (R.B.F.). The remainder of the meeting was devoted to building consensus regarding the multi-dimensional framework and the organization of the taxonomy and the chronic pain disorders to which the framework would be applied. During the course of discussion, several important issues arose, which will be described individually below.

Review of Recently Developed Evidence-Based Diagnostic Criteria for Specific Pain Disorders

To provide examples of implementing an evidence-based approach to pain classification, three investigators who were involved in different initiatives to develop evidence-based diagnostic criteria for three different pain disorders presented their approach and findings. Dr. Sam Dworkin discussed the development of the Research Diagnostic Criteria (RDC) for Temporomandibular Disorders (RDC/TMD)[7]. The RDC/TMD aimed to: 1) develop standardized diagnostic criteria for major TMD subtypes to be widely used in research; 2) provide reliable specifications for clinical examination and history; 3) use two axes to reflect physical disease (Axis I) and subjective illness experience (Axis 2); and 4) invoke an iterative research process modeled after the DSM, which requires periodically re-establishing the evidence-based reliability and validity of the newly emerging iterations of the RDC/TMD. Each of these objectives has been met and the newest version to evolve is the DC-TMD-1, an evidence based diagnostic and classification system for common forms of TMD scientifically suitable for clinical practice as well as research. Thus, the RDC/TMD has evolved to become the gold standard for classification of TMDs in both research and clinical settings. Dr. Stephen Bruehl presented his experience regarding the development of revised diagnostic criteria for complex regional pain syndrome (CRPS).[10,11] Based on an external validation study conducted by their working group, the prevailing IASP consensus criteria were found to have poor specificity, leading to potential overdiagnosis of CRPS. An expert panel developed new diagnostic criteria, which on subsequent validation were found to have much greater specificity than the IASP criteria, and these new criteria were adopted by IASP in 2011. Dr. Eva Widerstrom-Noga presented the International Spinal Cord Injury Pain (ISCIP) Classification, an effort to reconcile the multiple spinal cord injury (SCI) pain taxonomies present at the time in order to develop valid diagnostic criteria for pain associated with SCI.[3,4] The newly developed classification incorporated feedback from multiple professional organizations and was subsequently validated using clinical vignettes. These three efforts in pain classification demonstrate the feasibility and utility of adopting an evidence-based approach in developing a pain taxonomy. However, each classification system differs substantially from the others, reflecting the absence of an overarching framework for pain classification. AAPT has established such a framework in order to produce a consistent pain taxonomy that includes all common chronic pain disorders.

Important Characteristics of the AAPT Taxonomy

The single most important characteristic of the taxonomy is that it be based on the best available evidence rather than based solely on consensus or expert opinion. That is, to the greatest extent possible, diagnostic criteria for specific chronic pain disorders should be determined using existing mechanistic and diagnostic evidence, rather than historical precedent or theoretical biases. When necessary, additional data will be collected to provide the required evidence to guide the working group in developing diagnostic criteria. It is acknowledged that the classification will evolve and be revised on the basis of accumulating evidence and knowledge (as in the evolution of DSM-III). It is also important to note that AAPT proposes a coordinated effort to implement the taxonomy systematically across all common chronic pain conditions. Another critical characteristic of the taxonomy is that it reflects the multidimensional and biopsychosocial nature of chronic pain in which relevant psychological and social variables are integrated with neurophysiological knowledge. Thus, the template for the AAPT taxonomy includes not only pain-related diagnostic criteria and features, but also psychosocial features and functional impact of pain conditions. Additionally, AAPT emphasizes the inclusion of existing information regarding mechanistic features and risk factors for pain conditions, including not only neurobiological processes but also psychosocial contributions, which are considered mechanisms in their own right. Another essential characteristic is that the taxonomy should be applicable for both research and clinical purposes, such that the diagnostic criteria could be as easily used by primary care providers as by pain scientists; although, it is recognized that widespread clinical use is likely to develop gradually as the evidence base expands and the taxonomy evolves further. While the taxonomy is not designed with consideration of factors related to billing or third-party reimbursement for clinical services, authors of diagnostic criteria for each condition will attempt to provide information regarding international classification of diseases (ICD) codes that are related to the AAPT condition being described. Finally, the taxonomy is meant to be a starting point based on currently available evidence and the goal is to systematically update the criteria as new evidence, especially regarding neurobiological mechanisms, becomes available. Indeed, it seems likely that refinements and enhancements to the criteria will occur based on the experience of the working groups in applying the taxonomy to specific pain conditions.

Should the New Taxonomy be an Evolution or a Revolution?

An important topic of discussion related to whether the new taxonomy should significantly depart from current and historical practice versus retaining features of current approaches to classification. Proponents of the former argued that current approaches reflect descriptive systems organized based on an inconsistently applied combination of body location, affected tissues, and associated disease states, which provides little information regarding the pathophysiological mechanisms underlying the pain itself that should in principle be the targets of treatment. Moreover, this approach treats chronic pain disorders that often share biopsychosocial mechanisms (e.g. fibromyalgia, irritable bowel syndrome, temporomandibular disorders) as completely independent.[5,20] Thus, a revolutionary approach to chronic pain taxonomy might completely abandon current diagnostic labels and approaches based on anatomical structures and organ systems in favor of an approach that prioritizes the neurobiological mechanisms underlying chronic pain disorders. Although

there was unanimity regarding the importance of incorporating pathophysiologic mechanisms into the new taxonomy, two concerns prevented endorsement of a revolutionary approach based primarily if not exclusively on mechanisms. First, there was agreement that existing knowledge regarding the mechanisms underlying many chronic pain disorders was insufficient to support such an approach. Second, there was concern that such a radical departure from prevailing practice would face resistance from clinicians and scientists who are familiar with classical systems and who would be reluctant to accept a significant change from current approaches. Therefore, the consensus dictated that the AAPT would retain similarities to existing systems, but, as exemplified by the RDC/TMD to DC-TMD-1 evolution, the AAPT approach would incorporate existing and emerging evidence regarding neurobiological and psychosocial mechanisms into all diagnostic criteria.

Should AAPT Adopt a Medical or a Syndromal Approach to Pain Classification?

Medical diagnostic approaches (e.g. ICD-10) prioritize identification of pathophysiological mechanisms, while syndromal approaches (e.g. DSM-V) classify conditions primarily based on clusters of symptoms. Arguably, AAPT represents a hybrid of these two approaches. While the AAPT Core Diagnostic Criteria (Dimension 1) dictate that signs and symptoms represent the primary basis upon which diagnoses will be based, the taxonomy also includes Dimension 4, on which biopsychosocial mechanisms contributing to the condition can be delineated. However, it is important to recognize that the AAPT mechanistic dimension differs from the historical biomedical view of the pathophysiology of pain conditions, which emphasized peripheral markers of structural pathology and/or disease severity. These pathophysiologic measures have generally corresponded poorly to chronic pain severity and have failed to account for interindividual variability in clinical symptoms. In contrast, AAPT intends the mechanistic dimension to specify the neurobiological and psychosocial factors that contribute to the development of chronic pain and account for the robust individual differences in clinical presentation that are a hallmark of chronic pain. Indeed, given the subjective and personal nature of the pain experience, a solely medical/pathophysiological approach to pain classification seems neither realistic nor advisable. Thus, ultimately, AAPT represents a syndromal taxonomy that incorporates existing information regarding mechanisms, while recognizing the importance of individual differences in clinical presentation. This approach is designed to produce a practically useful and evidence-based taxonomy that allows a person-centered approach to classification and clinical care.

How Should Chronic Pain Disorders be Categorized in the Taxonomy?

Considerable discussion addressed the basis upon which chronic pain disorders would be grouped in this taxonomy. For example, should conditions be grouped by anatomical locations (e.g. upper extremity, lower extremity, spine) or by organ system (e.g. nervous system, musculoskeletal, visceral)? Relying on anatomical site alone was rejected, because this would cluster together chronic pain conditions that have very distinct pathophysiological mechanisms. For instance, lower extremity pain would include both peripheral diabetic neuropathy of the foot and leg as well as knee osteoarthritis. Conversely, the same disorder affecting different anatomical sites (e.g. peripheral diabetic neuropathy of the foot and hand) would be separately categorized. Therefore, the consensus was that the dimension along which pain disorders will be categorized is organ system/anatomical

structure, which will include: peripheral and central neuropathic pain, musculoskeletal pain, pelvic/urogenital and visceral pain (see Table 2). Finally, it was recognized that certain types of disease related pain may not be included in one of the other categories; therefore, a category was created for disease-related pains not classified elsewhere (e.g. pain associated with active cancer, sickle cell disease, and Parkinson's disease). The preference is to classify disease-related pain in one of the primary organ system/anatomical categories (e.g. painful diabetic peripheral neuropathy would be categorized as a peripheral neuropathic pain); however, when this is not possible, the pain disorder will be classified in the disease-related pain category. It is also important to note that headache disorders were intentionally excluded from the present taxonomy, because the ICHD has been carefully and systematically developed and there was agreement that the existing criteria fully meet the standards of the AAPT.

Results

After considerable discussion, a multi-dimensional framework for the new chronic pain taxonomy was developed. The dimensions comprising the AAPT framework, which will be applied to each chronic pain disorder (see Table 2), are presented in Table 3. Each dimension will be discussed in greater detail below. It is important to recognize that the order of the dimensions is not intended to reflect their priority or significance. Indeed, the consensus meeting unanimously endorsed the importance of Dimension 5, reflecting underlying mechanisms. However, this Dimension was not included as part of the essential diagnostic criteria, because current evidence provides definitive mechanistic information for very few chronic pain disorders.

Dimension 1: Core Diagnostic Criteria

The core diagnostic criteria reflect those signs, symptoms, and test results that form the basis of the diagnosis. Ideally, the core diagnostic criteria should be applied in an algorithmic manner, such that people meeting these specific criteria would be classified as having the disorder. Signs and symptoms would include diagnostic non-pain features (e.g., diminished range of motion, edema, altered sensation) and pain-related characteristics (e.g., pain descriptors, location, and temporal qualities) that are considered pathognomonic of the disorders. For example, based on RDC/TMD, diagnostic symptoms of TMD might include periauricular pain, while diagnostic clinical signs could include palpation sensitivity, reduced pain-free range of motion, and joint sounds (e.g., popping or clicking)[7]. In addition, for some disorders, the results of clinical or laboratory tests will be incorporated into the diagnostic criteria. Finally, differential diagnoses are also considered in Dimension 1.

Dimension 2: Common Features

This dimension is intended to provide additional descriptive information regarding the disorder by including common features that often characterize the disorder, but which are not required for the diagnosis. For example, a given chronic pain disorder might commonly be associated with pain occurring in a specific body location (e.g., diabetic neuropathy pain in the feet) or described in a particular way (e.g., burning or shooting); however, these features would not be a requirement for making the diagnosis. In addition to pain-related

qualities, this dimension will also include information regarding nonpainful features as well as information regarding the epidemiology of the disorder.

Dimension 3: Common Medical Comorbidities

This dimension provides information regarding medical and psychiatric conditions that are often comorbid with, but not required for diagnosis of, the chronic pain disorder. For example, if major depression or generalized anxiety disorder are considerably more common in patients with a specific pain disorder than in the general population, then these would be noted as psychiatric comorbidities. Similarly, Sjogren's Syndrome could be included as a medical condition that is commonly comorbid with burning mouth syndrome.

Dimension 4: Neurobiological, Psychosocial, and Functional Consequences

The neurobiological, psychosocial and functional consequences of chronic pain disorders have been well-documented, and these will be included in Dimension 4. Indeed, an individual may meet diagnostic criteria for a given pain disorder, but their neurobiological, psychosocial and physical function remain excellent, while other patients with the disorder may present with considerable dysfunction across one or more of these domains. Thus, psychosocial and functional features could be used for subgrouping individuals within a given pain disorder, which could have important treatment implications. Importantly, premorbid psychosocial functioning represents a consistent predictor of the development of chronic pain; however, psychological antecedents of the pain disorder, which could reflect causal risk factors, will be specified on Dimension 5 (see below). We recognize that the distinction between causes and consequences will be challenging when applying the taxonomy. However, we also believe it is important to acknowledge that neurobiological and psychosocial differences between chronic pain cases and controls can reflect both causes (or risk factors) and consequences of chronic pain. For example, altered neurosensory processing, as measured by quantitative sensory testing (QST), has predicted future development of chronic pain in some studies[6,25]. However, other research has demonstrated that successful treatment of pain normalizes QST responses[9,12,13]. Hence, the neurobiological underpinnings of altered pain processing may be a risk factor for pain in some cases and a consequence of pain in other cases. A similar scenario exists for psychological factors, as well, since data support that depression, for example, is a risk factor for pain development and that chronic pain is a risk factor for development of depression[8,14]. Thus, we believe it is important that the taxonomy incorporates the bidirectional nature of these associations. These issues will be addressed on a case-by-case basis for each pain condition. Information reflected on this dimension may be derived from the clinical examination or via administration of psychometric instruments designed to assess these domains.

Dimension 5: Putative Mechanisms, Risk Factors and Protective Factors

This dimension is intended to provide information regarding the potential neurobiological and psychosocial mechanisms and risk factors contributing to chronic pain disorders. This includes neurobiological mechanisms, such as specific molecular or neurochemical pathways that have been demonstrated to contribute to the disorder. Risk or protective factors might include specific genetic polymorphisms. Based on current evidence,

information regarding specific mechanisms and risk factors may not be available for some chronic pain disorders, however, more general information may be available. For example, it is widely accepted that fibromyalgia is characterized by generalized hypersensitivity to painful stimuli, though the precise mechanisms underlying this phenotype remain unknown. In this instance, widespread hypersensitivity could be included as a potential mechanism or risk factor.

In addition to traditional neurobiological mechanisms, psychosocial factors also represent important pain mechanisms and risk factors to be considered in the taxonomy, including potential protective factors (e.g. social support, optimism, coping). It is recognized that psychosocial influences on pain must be transduced through more proximal neurobiological processes, though these specific mechanisms may not be well understood. For example, fear-avoidance processes can contribute to pain and pain-related disability, not only at a behavioral/functional level, but also at a neurobiological level. For each pain disorder, available and recommended methods for assessing psychosocial and neurobiological mechanisms will be described. Moreover, it is anticipated that new information regarding specific neurobiological and psychosocial risk factors and mechanisms for many pain disorders will rapidly emerge, based on genetic association studies, brain imaging research, quantitative sensory testing, and additional psychosocial mechanistic research. Thus, the intent is that the diagnostic criteria will be updated with this information on an ongoing basis.

Organization of Chronic Pain Disorders

The consensus meeting next turned its attention to organizing the chronic pain disorders that would be included in the taxonomy. As noted above, there was considerable discussion regarding the best approach for categorizing the pain disorders, and the final consensus was that chronic pain disorders would be primarily categorized by anatomical/organ system (see Table 2). There are limitations to this approach to categorization. For example, temporomandibular disorders could be considered musculoskeletal pains. Therefore, in developing the diagnostic criteria for each chronic pain disorder, the expert working groups will attempt to address features of the condition that may overlap with other conditions within and across categories. For instance, generalized hypersensitivity to painful stimuli can characterize chronic pain disorders across virtually every category, and this feature is likely relevant to the underlying pathophysiology of many chronic pain disorders. By highlighting these potentially overlapping features, it may be possible to build clusters of conditions based on underlying pathophysiological and psychosocial mechanisms.

Next Steps

This article presents the structure and organization of the proposed taxonomy, based on the outcomes of our consensus meeting. The AAPT Steering Committee has now identified leaders for each of the individual working groups who will apply the taxonomy to each group of conditions specified in Table 2. The working group leaders will proceed as follows: 1) identify and invite other experts to be included in the working group, and convene a working group meeting; 2) identify the most common pain conditions within the working group's purview for which diagnostic criteria will be specified; 3) review the existing

literature regarding current and previously proposed diagnostic criteria for each of the major disorders (including strengths/weaknesses of each); 4) propose a comprehensive list of potential signs and symptoms for each of the pain conditions identified in point 2. (It is anticipated that at this point all working group will reconvene in order to facilitate development of draft diagnostic criteria for each chronic pain condition.); 5) complete studies to demonstrate the reliability and validity of the proposed diagnostic methods and criteria; and 6) finalize the diagnostic criteria for each chronic pain condition based on the outcomes of the validation studies and submit a manuscript to a peer-reviewed journal. Working group activities will be overseen and supported by both an Executive Committee and a Research Committee.

Conclusions

Classification of chronic pain disorders has historically been a clinically driven and piecemeal exercise, and a more systematic and evidence-based approach to chronic pain diagnosis would confer considerable scientific, clinical, and educational benefit. We have proposed a multi-dimensional chronic pain taxonomy that will be evidence-based and systematically applied to all common chronic pain disorders. Notably, AAPT explicitly includes a dimension on which information regarding neurobiological and psychosocial mechanisms will be provided. AAPT working groups will use this taxonomy to develop evidence-based diagnostic criteria for most chronic pain disorders, which are intended for both research and clinical use. The intent is for AAPT to be a dynamic and evolving taxonomy that will be updated and revised as new evidence emerges. As has been the case with other newly developed taxonomies, AAPT may initially be most widely used in research settings, but as the taxonomy evolves it is expected that more widespread clinical use will follow. It is hoped that AAPT will produce robust scientific and clinical impact on the chronic pain field, similar to the transformative influence of DSM-III and ICHD on research and treatment in mental health and headache, respectively.

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Table 1

Characteristics of an Ideal Diagnostic System

Characteristic	Description
Biologically Plausible	The diagnostic system must be consistent with the biological processes underlying the signs and symptoms that characterize the disorders of interest.
Exhaustive	The diagnostic system must encompass all clinical disorders within the domain of interest.
Mutually Exclusive	The diagnostic system must encode each disorder once and only once.
Reliable	The diagnostic system must be applicable with a high degree of consistency across time and between diagnosticians.
Clinically Useful	The diagnostic system must be useful in the clinical setting, guiding prognosis and therapy.
Simple	The diagnostic system must be both straightforward and efficient enough for practical use.

Table 2

Organization of Chronic Pain Disorders to be Included in the AAPT.*

Peripheral & Central Nervous Systems
- Peripheral Neuropathic Pain
- Central Neuropathic Pain
Musculoskeletal Pain System
- Osteoarthritis
- Other Arthritides (e.g. Rheumatoid Arthritis, Gout, Connective Tissue Diseases)
- Musculoskeletal Low Back Pain
- Myofascial Pain, Chronic Widespread Pain, and Fibromyalgia
- Other Predominantly Musculoskeletal Pain
Orofacial & Head Pain System
- Headache Disorders*
- Temporomandibular Disorders
- Other Orofacial Pain
Visceral, Pelvic & Urogenital Pain
- Visceral Pain: Abdominal, Pelvic, and Urogenital Pain
Disease-Associated Pains Not Classified Elsewhere
-E.g. Pain associated with active cancer, with sickle cell disease, or with Lyme disease.

*AAPT will not develop diagnostic criteria for headache condition, because the International Classification of Headache Disorders (ICHD-2) already exists and provides an evidence-based classification that is highly consistent with the AAPT template.

Table 3

The Dimensions Comprising the AAPT.

Dimension	Description
Dimension 1: Core Diagnostic Criteria	Includes symptoms and signs required for diagnosis of the disorder (e.g. periauricular pain, palpation sensitivity, joint sounds in the case of TMD). Also includes diagnostic tests and differential diagnosis considerations.
Dimension 2: Common Features	Provides additional information regarding the disorder, including common pain characteristics (e.g. location, temporal qualities, descriptors), non-pain features (numbness, fatigue), and the epidemiology of the disorder. These features are helpful in describing the disorder but are not used as part of the diagnosis.
Dimension 3: Common Medical Comorbidities	Includes medical diagnoses that co-occur with high frequency with the pain disorder. For example, diabetes mellitus is often comorbid with osteoarthritis, and major depression is comorbid with many chronic pain disorders.
Dimension 4: Neurobiological, Psychosocial and Functional Consequences	Includes information regarding neurobiological and psychosocial consequences of chronic pain, as well as the functional impact of the pain disorder. Examples include, allostatic load, sleep quality, mood/affect, coping resources, physical function, and pain-related interference with daily activities
Dimension 5: Putative Neurobiological and Psychosocial Mechanisms, Risk Factors & Protective Factors	Includes putative neurobiological and psychosocial mechanisms contributing to the pain disorder, including potential risk factors and protective factors.