cause it targets the systematic exclusion of these patients. In one example, this type of algorithm used a more diverse training data set better aligned with knee pain levels among patients who were Black, had lower incomes, or had completed less education than previous algorithms based on training data from less diverse samples.[8] The key point is that algorithms are the result of people's decisions, and they require consistent attention to structural and systematic barriers to health and health care.

Centering equity within health care requires careful attention to the inequities patients have faced over their entire life course, as well as the deeply rooted structural inequities that have existed in our country for centuries. Clinicians and other decision makers can target these roots in at least 2 ways. First, aim to put patients on equal footing in the clinical setting—screening all patients for a health problem, for example—aiming for equality in medical care. Second, scrutinize all health care policies/protocols to center equity, giving careful consideration to whether they unfairly disadvantage patients who are in minoritized groups, who have low income, or have been systematically marginalized. Striving for equity is a process and will require continual evaluation and attention.

ARTICLE INFORMATION

Published Online: September 27, 2021. doi:10.1001/jamapediatrics.2021.3584

Conflict of Interest Disclosures: Dr Hernandez reported grants from the National Science Foundation (SES-1002794), the National Institute of Child Health and Human Development (1 F32 HD070595-01), the Foundation for Informed Medical Decision Making, the University of Minnesota, and the American Sociological Association.

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VIEWPOINT

Amplified Pain—A Helpful Diagnosis

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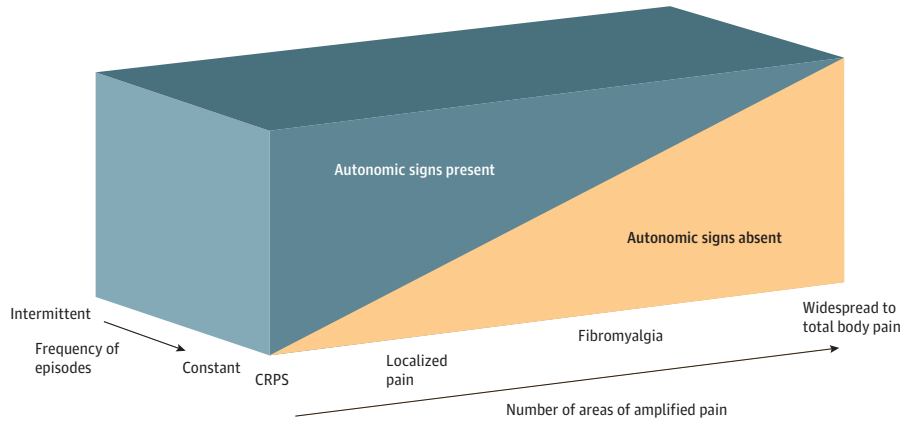
When you have 3 physicians in the room, you have 5 opinions. This is especially true when it comes to the nomenclature surrounding children with chronic pain. The primary purpose of any diagnosis is to serve the patient. They want to know what they have, even if we, as scientists, do not know the cause or mechanism. For example, we have no idea why children have juvenile idiopathic arthritis and, even though it has the word *idiopathic* in it, giving the child and family this diagnosis is reassuring, allows them to stop looking for other reasons for their symptoms, lets them tell others what they have, and allows for therapy to begin. The same holds true for children with amplified pain.

Amplified pain, in essence, is when the body takes a signal and amplifies it to become symptomatic. The pain is disproportional, as is, frequently, the degree of disability. This explanation validates the pain experience and supplies a tangible, plausible mechanism for the intensity of the pain. Explaining the diagnosis, potential mechanism, and treatment to the child in a way they can understand can be challenging. Using a sympathetically mediated model of pain amplification is helpful as it reinforces that a real pain signal is amplified.[1] If one were to prick one's finger, the pain is real but, in these cases, the body then shuts down blood flow to the area, which, like having a rubber band on your finger too long, causes pain. This new signal is again fed into a vicious cycle leading to more pain. It is akin to the feedback one gets when a microphone is too close to the speaker when a soft sound is amplified to the point of being painfully loud. Pain, by definition, is subjective and there is no question that children with amplified pain hurt; it is just that the pain is not associated with bodily damage.

This brings up the question of mechanism. As John J. Bonica, the founder of the world's first pain clinic was wont to say, "all pain is in the head." Of course it is. However, to tell someone with a fractured finger that their pain is in their head would be counterproductive albeit accurate. Likewise, you cannot presume someone with a fractured finger is in pain. Committees and thought leaders have proposed many terms and worked hard to establish classification systems but telling a child with amplified pain that their chronic pain is chronic pain, primary pain, central sensitization, functional pain, or nociplastic pain is of no help. Many of these children have already been told they are malingering, and these terms do not allay these concerns. This is especially true of those with intermittent pain who are excluded from most classification criteria.[2] The sympathetically mediated model many pediatric rheumatologists use to explain how a bodily signal is amplified to cause severe pain makes it tangible, understandable to a child, and validates their pain.[1] Many of these children are accused of faking or looking for

Figure. Amplified Pain Spectrum



The amplified pain spectrum includes those with overt autonomic signs (complex regional pain syndrome [CRPS]) who may have pain at another site that is not CRPS or diffuse amplified pain (widespread pain involving 5 or more body areas) or fibromyalgia.[2] Not all those who meet criteria for fibromyalgia have diffuse amplified pain and many with diffuse amplified pain do not meet criteria for fibromyalgia. Additionally, children may have only intermittent episodes of diffuse, localized, or CRPS.[2]

attention, they are relieved to know that their pain experience is real, that there is a reason for the intensity of the pain, and they have a name for their pain they can use and understand. Indeed, multiple centers that see these children use this term such as Cleveland Clinic, Johns Hopkins, and University of California, San Francisco as does the American College of Rheumatology.

Multiple models to explain the pain have been proposed including small fiber neuropathy, central sensitization, and neuroinflammation. Our model proposes ischemia is based on biopsy data.[3-5] It may be that all these models are epiphenomena and not the core cause. It is presumptuous to presume one is correct.

There is a worry that various labels are stigmatizing. However, either public stigma or self stigma is already present in those with chronic pain, regardless of label. Stigmatization exists for most diagnoses (eg, obesity, psoriasis, autism, mental health disorders, suicide). We still make those diagnoses and use those terms. We know of no data to say that one label is more or less stigmatizing than another in childhood chronic pain. Albeit not scientific, when asked, patients prefer the name *amplified pain* since it explains that their body is taking a normally nonpainful signal and amplifying it to an extremely painful level. Where the amplification occurs is moot; it is the experience that is important.

Fortunately, these children can be helped once the diagnosis is established. They can work through their pain and disability with an interdisciplinary treatment approach (psychological counseling combined with physical and occupational therapy) and get better. This has been known in pediatric rheumatology circles since 1978 and has been demonstrated in multiple sites.[6-10]

I propose the following conceptual framework for amplified pain (**Figure**). One can be in one part of the figure and migrate to another, resolve one form and have a second episode of another form, but it is all part of our concept of amplified pain. It seems lumping, rather than splitting, is indicated. Indeed, the International Association for the Study of Pain lists 20 different forms of chronic primary pain. It is more reasonable that a child with amplified pain of the jaw, head, back, and abdomen has a single diagnosis rather than 4 different discrete pain diagnoses.

It is time to think about the child's experience and how we can best communicate that we understand they are in pain, can help them regain normal function, and, in most, resolve their pain. Using the term *amplified pain* is useful, understandable, and rational. These children are not exaggerating their pain complaint, rather they are experiencing a bodily signal being amplified so that their experience is very real, very painful, and yet not due to bodily damage. Amplified pain remains a very suitable diagnosis and one can always use the *International Classification of Diseases* categories for coding for researchers to carry out investigations on this population of children.

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Published Online: October 4, 2021. doi:10.1001/jamapediatrics.2021.3587

Conflict of Interest Disclosures: None reported.

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