



2528-9705



ELIMINATING PSYCHOSOMATIC PAIN AND NEGATIVE EMOTIONS WITH DEHYPNOSIS

Andrei EFREMOV^{1*}

¹Psychiatrist, psychotherapist, Delaware, USA.

***Corresponding Author**

E-mail: mindnetworksassociation@gmail.com

ABSTRACT

Negative emotions caused by trauma and fear can have destructive effects on an individual's psychological well-being, which can consequently impact their physical well-being in the form of psychosomatic pain. Emotions, negative or positive, may create pathological neural networks (PPNs) that become ingrained in the subconscious of an individual and consequently perpetuate psychosomatic pain. Therapeutic interventions such as extinction learning, cognitive behavior therapy (CBT), regression hypnotherapy, and classical hypnosis have been traditionally utilized as treatment for psychosomatic pain, sometimes alone and sometimes in conjunction with medication. These methods strive to reach a state of calmness. In practice this state of calmness does not necessarily imply that the psychosomatic pain(s) and associated negative emotion(s) have been eliminated, and therefore can still be triggered. In order to properly address psychosomatic pain and negative emotions, one must push past the state of calmness achieved by other therapies to essentially feel absolutely nothing. Traditional therapies aim to achieve a state of calmness but may not fully eliminate psychosomatic pain and negative emotions. Mindchat therapy, a form of de-hypnosis, aims to reach a state of "absolute nothingness" by shifting a person's neuropathology and destroying the inhibiting pathological neural networks. This therapy alone can successfully eliminate psychosomatic pain and negative emotions by going beyond the feelings of calmness achieved by other therapies. The objective of this article is to explore the link between negative emotions and psychosomatic pain through PPNs from a neuropsychological perspective.

Keywords: Psychosomatic pain/disorder, Chronic pain, Hypnotherapy, Symptoms, De-hypnosis, Dehypnotherapy.

INTRODUCTION

A psychosomatic disorder is a medically undiagnosed or misdiagnosed condition in which psychological stresses adversely affect physiological functioning. Physicians frequently believe that the disorder is properly diagnosed because the patient expresses improvement, but the alleviation is not 100% and not stable. It is estimated that 80% of the population throughout the world experience at least one symptom of psychosomatic pain or other symptoms (**Table 1**) in a given month (Kroenke, 2003). The term *psychosomatic pain* is often used interchangeably with the terms *somatic pain* and *chronic pain*. Therefore, the discussion in this article is based on studies with individuals who possess psychosomatic symptom(s), somatic symptom(s), and/or chronic pain symptom(s). Furthermore, psychosomatic pain has a significantly high comorbidity rate with other medically diagnosable condition(s) such as diabetes, infectious diseases, cancer, anxiety, or depression. This article broadly discusses all of these conditions and their intersection

Geliş tarihi/Received: 16.11.2022 – Kabul tarihi/Accepted: 08.03.2023 – Yayın tarihi/Published: 30.03.2023

© 2023 Journal of Organizational Behavior Research. **Open Access** - This article is under the CC BY license
(<https://creativecommons.org/licenses/by/4.0/>)



with psychosomatic pain with a focus on negative emotions associated with anxiety and depressive disorders. Indeed, these disorders are particularly prevalent in those with psychosomatic pain, are associated with worsened functional outcomes throughout the world, and are bidirectional (Elman & Borsook, 2018).

Psychosomatic, somatic, and chronic pain can be caused by and be the effect of biological, neurological, psychological, and social components. The discussion around each of these categories supports the notion that psychosomatic, somatic, and chronic pain are caused by both negative and positive emotions and consequently, they are the function of a pathological neural network (PNN) (Britannica, 2021). Negative and positive emotions exist *within* PNNs, and those emotions give energy to a PNN. In other words, they are the engines that fuel a PNN.

Among the three types of pain previously discussed, psychosomatic pain is most often misdiagnosed, undiagnosed, and/or poorly treated and thus relieved (Kroenke, 2003). This is due to the lack of a clear definition that is collectively agreed upon in the scientific and medical community, difficulty addressing causality, the failure to link somatic or physiological suffering to psychological and neurological processes, and inadequate treatment interventions. Although each of these components contributes to the continued suffering of psychosomatic pain, this article focuses on a) the bidirectional relationship between neuropathology and negative emotions, and b) why Mindchat Therapy is an effective modern therapeutic intervention that can relieve such suffering.

Many therapeutic interventions for psychosomatic pain attempt to guide individuals to a state of calmness, and then stop and label the given patient as “cured,” “relieved,” “or “healed.” Failing to address the link between psychosomatic pain and its associated negative emotions can lead to a deeper level of suffering, which consequently can lead to other psychosomatic illnesses. In other words, these methods work as a bandaid rather than a cure. From a neurological perspective, these treatments (discussed later on) *ignore* the PNN in which the negative emotion resides. The patient can feel relieved, but it is not 100% and it is temporary. Thus, when the negative emotion that fuels the PNN is re-triggered, the patient is unfortunately back to square one. On the other hand, Mindchat Therapy *destroys* the PNN(s) so it cannot be unexpectedly triggered. Conversely, Mindchat Therapy is the only therapeutic intervention to date to recognize that this state of calmness is not the end goal because disengaging from the PNN does not imply that it has been destroyed. By taking advantage of this mental state of calmness to trigger negative emotions, Mindchat Therapy addresses the self-sustaining feedback loop of PNNs to ultimately eliminate psychosomatic pain.

At the outset of this review, we utilize clinical data on psychosomatic pain, somatic pain, and chronic pain to clearly define and categorize the former with an emphasis on the results and implications of the study, *Patients presenting with somatic complaints: epidemiology, psychiatric comorbidity, and management* written and conducted by Dr. Kurt Kroenke *et al.* The work produced by Dr. Kroenke lends credence to the definition of psychosomatic pain employed in this literature review and reiterates the prevalence of comorbidity of psychosomatic pain with other conditions. Furthermore, the implications of Dr. Kroenke’s study support the notion that understanding the bidirectional interactions between neurological, psychological, and social components is frequently overlooked in many other therapies and is crucial for treatment (Kroenke, 2003). Next, we compare various therapeutic interventions for psychosomatic,



somatic, and chronic pain and identify gaps in their methods. Then, we analyze neurobiological data and their relevant implications to better understand and thus address the link(s) between psychosomatic, somatic, and chronic pain and their respective associated self-sustaining PNNs from a neurological perspective. Finally, we discuss a new innovative method, Mindchat Therapy, as a solution to eliminating negative emotions and psychosomatic pain.

MATERIALS AND METHODS

The relevant literature has been found by searching the databases ResearchGate and PubMed. Research synthesis was conducted by utilizing peer-reviewed articles from Southern Medical Journal, Encyclopedia Britannica, The American Journal of Medicine, The International Journal of Clinical and Experimental Hypnosis, The American Psychiatric Association, Critical Reviews in Neurobiology, Frontiers of Psychiatry, Neuroscience and Biobehavioral Reviews, Healthcare (Basel, Switzerland), and the International Journal of Methods in Psychiatric Research. Statistical data was retrieved from Psychology Today, the National Center for Biotechnology Information, WebMD, Centers for Disease Control and Prevention, the Asthma and Allergy Foundation of America, the National Center for Chronic Disease Prevention and Health Promotion, the National Health Council, Mayo Clinic, and the National Center for PTSD. Key search terms included hypnotherapy, chronic pain, psychosomatic pain, neuropathology of psychosomatic pain, somatic pain, and negative emotions. In addition, the scope of the review was adjusted based on relevant findings on the neuropathology of psychosomatic pain.

Key Terms

Psychosomatic, Somatic, and Chronic Pain

Clearly defining *psychosomatic pain* is crucial to discussing its prevalence, symptoms, and effective treatments. The definition of a psychosomatic disorder is arbitrarily stated across a multitude of relevant texts. The International Classification of Diseases (ICD-10) and the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-V) classification systems categorize symptoms but do not adequately address causality (Substance Abuse and Mental Health Services Administration, 2006; Flammer & Alladin, 2007; Psychology Today Staff, 2022). As a result, psychosomatic disorders are not explicitly identified or explained in either resource, respectively. Failing to address causality leads to gaps in the standardization of the definition and classification of psychosomatic disorders (Bransfield & Friedman, 2019).

Somatic pain is defined as physical symptoms such as pain, dizziness, palpitations, and fatigue. Somatic disorders are classified as such by psychiatrists and psychologists in the context of a mental disorder. There is at least a twofold greater risk of experiencing a depressive or anxiety disorder in patients with concomitant cardiovascular disease, neurological disorders, cancer, diabetes, HIV disease, and many other physical disorders. Moreover, it is estimated that 80% of individuals will experience one or more somatic symptom(s) in a given month. Importantly, 30-74% of somatic symptoms in primary care and population-based studies are medically unexplained (Kroenke, 2003).

Chronic pain is typically labeled by medical professionals as undiagnosed pain that lasts over three months. Although pain is necessary for healing by avoiding tissue damage, chronic pain serves no beneficial value. Chronic pain is driven by the failure to diminish or block nociceptive



information and unconscious threats from reaching conscious awareness. This pain starts in receptor nerve cells underneath the skin and organs. Receptor cells send messages to the spinal cord via nerve pathways, which ultimately make their way to the brain (Centers for Disease Control and Prevention, 2020; Centers for Disease Control and Prevention, 2021; Johns Hopkins Medicine, 2022). Pain brings emotional suffering, most commonly via fear and anxiety, which in turn can increase pain severity. Neural correlates of pain-related conscious states may become autonomous or disassociated from typical subcortical function and lead to eventual chronicity by giving rise to a self-sustaining forward feed loop of PNNs.

Chronic, Somatic, and Psychosomatic Pain

The human body naturally experiences pain as a response to an injury or traumatic event in different forms, such as soreness, bruising, or muscle tension. This initial pain serves as a function to avoid tissue damage. However, when the initial pain perpetuates past three months even after the injury is healed, it is typically labeled by medical professionals as *chronic pain*. Chronic pain is driven by the failure to diminish or block nociceptive information and unconscious threats from reaching conscious awareness. This pain starts in receptor nerve cells underneath the skin and organs. Receptor cells send messages to the spinal cord via nerve pathways, which ultimately make their way to the brain (Johns Hopkins Medicine, 2022). Pain brings emotional suffering, most commonly via fear and anxiety, which in turn can increase pain severity. Neural correlates of pain-related conscious states may become autonomous or disassociated from typical subcortical function and lead to eventual chronicity by giving rise to a self-sustaining forward feed loop of PNNs.

Conversely, the definition of a psychosomatic disorder is arbitrarily stated across a multitude of relevant texts. Clearly defining psychosomatic pain is crucial to discussing its prevalence, symptoms, and effective treatments. The International Classification of Diseases (ICD-10) and the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-V) classification systems categorize symptoms but do not adequately address causality (Substance Abuse and Mental Health Services Administration, 2006; Flammer & Alladin, 2007; American Lung Association, 2021). As a result, psychosomatic disorders are not explicitly identified or explained in either resource, respectively. Failing to address causality leads to gaps in the standardization of the definition and classification of psychosomatic disorders (Bransfield & Friedman, 2019).

Table 1 is an extensive but non-exhaustive list of chronic, somatic, and psychosomatic pain disorders and their respective descriptions (Rubin, 2005).

Table 1. Chronic, somatic, and psychosomatic pain disorders and their respective descriptions

Psychosomatic Disorder	Symptoms/Description
Hypertension	Abnormally high blood pressure (at or above 140/90mmHg), severe headaches, vision issues, difficulty breathing, irregular heartbeat

Respiratory ailments; (1) Asthma; (2) Chronic Obstructive Pulmonary Disease (COPD); (3) Chronic Bronchitis	Difficulty breathing, shortness of breath, stubborn cough, lingering chest pain, chronic mucus
Gastrointestinal disturbances; (1) Irritable Bowel Syndrome (IBS); (2) Gastroesophageal Reflux Disease (GERD)	Gas, bloating, constipation, heartburn, indigestion, pelvic pain
Migraine/tension headaches	Severe headache (typically throbbing or pulsing), sensitivity to light or sound, nausea, vomiting
Sexual dysfunction; (1) Erectile Dysfunction (ED); (2) Frigidity	Inability to get or keep an erection, inability to achieve orgasm
Dermatitis (Atopic)	Skin irritation, itchy or dry skin, rashes, blisters
Post-Traumatic Stress Disorder (PTSD)	Intrusive thoughts (repeated involuntary memories or flashbacks), avoidance, alterations in cognition or mood, inability to recall traumatic event(s), alterations in arousal or reactivity
Fibromyalgia	Widespread pain, fatigue, cognitive difficulties
Stomach ulcers; peptic; duodenal; gastric	(1) Sores that develop on the esophagus, stomach, or small intestine, abdominal pain (2)
Alexithymia	Difficulty or inability to understand and articulate how you or others feel, lack of motivation, unpredictable physical symptoms (i.e., racing heart rate, difficulty breathing, headaches)



(Kurata & Haile, 1984; Laumann *et al.*, 1999; Selvin, 2007; Walitt *et al.*, 2015; Burch *et al.*, 2018; Beckerman, 2020; Tores, 2020; American College of Gastroenterology, 2021; Asthma and Allergy Foundation of America, 2021a,b; Lo, 2021; Mayo Clinic Staff, 2021a,b; Veterans' Health Administration, 2021)

The terms chronic, somatic, and psychosomatic pain are frequently used interchangeably in scientific, medical, and clinical research. While many physicians and medical professionals typically regard medically undiagnosed physical pain as “chronic,” those in the psychology field (i.e., psychologists and psychiatrists) and the neurology field tend to refer to these pains as somatic or psychosomatic (Kroenke, 2003). In other words, the *practitioner* and their educational background affect how these conditions are categorized. Henceforth, this article will solely employ the term *psychosomatic pain* with the knowledge that its discussion may pertain to chronic pain and somatic pain as well.

Psychosomatic Pain Comorbidity

According to Dr. Kroenke, 70-90% of patients with depression or anxiety experience somatic symptoms. Moreover, 50-75% of patients with medically unexplained symptoms have a

depressive disorder and 40-50% have an anxiety disorder. Importantly, Dr. Kroenke's research found that the number of somatic symptoms is a powerful indicator of psychological comorbidity such as depressive or anxiety disorder. The count of somatic symptoms is non-specific but indicates potential psychopathological inflammation; the higher the count, the greater the likelihood of a patient meeting the criteria for a coexisting depressive or anxiety disorder. Below is **Table 2** from Dr. Kroenke's study regarding somatic pain and comorbid psychological disorders (Kroenke, 2003).

Table 2. Relationship between somatic symptoms count and likelihood of a depressive or anxiety disorder in primary care patients

Number of somatic symptoms*	Study A (Kroenke) (N = 1000)			Study B (Kroenke) (N = 499)	
	N	% Mood disorder	% Anxiety disorder	N	% Mood or anxiety disorder
0-1	215	1%	2%	106	4%
2-3	225	7%	12%	131	18%
4-5	191	13%	23%	129	31%
6-8	230	30%	44%	96	52%
≥ 9	139	48%	60%	37	78%

* Number of symptoms that the patient reports being 'bothered a lot' by in the past month selected from the PRIME-MD checklist of 15 somatic symptoms

The results from Dr. Kroenke's study support the notion that negative emotions can cause and be the result of psychosomatic pain by producing and strengthening pathological neural networks (PNNs). PNNs can be bidirectional and thus autonomous. But MindChat also implies that positive emotions can cause pain.

Pathological Neural Networks

When a healthy individual experiences pain, the unconditioned stimulus (US) that caused the pain (i.e., a movement or traumatic event) triggers a signal to the lateral nucleus of the amygdala (LA), which then connects to the central nucleus of the amygdala (CE). The CE controls the expression of fear in the form of behavioral responses, autonomic nervous system responses, and endocrine system responses. This can be biologically relevant because it is crucial for an individual to avoid the Unconditioned Stimulus to avoid re-injury, and therefore anticipation of this fear can be useful (Simons *et al.*, 2014).

The Neuroanatomy of Psychosomatic Pain and Negative Emotions: the Self-Sustaining Loop

Pain transitions into psychosomatic pain when an individual continues to suffer even when the US does not actually cause pain. For example, if the US is a motion that the individual made with their arm, the individual can feel pain physically and psychologically simply from the anticipation and/or association of the US. Another example of this is if an individual was assaulted by a man with a mustache during their childhood. When they come in contact with someone else with a mustache later on in life, the association of the assault by the man with the mustache is enough to trigger the PNN. Even if there is absolutely no rational threat or chance



of harm, this subconscious fear fueling the PNN can lead to pain. This is where pain and fear collide within the amygdala. The US becomes a conditioned stimulus (CS) when the given individual either: a) experiences the trigger, b) simply thinks about the CS, or c) anticipates the pain of the CS. From a neuropathological perspective, the difference between the process of pain originating from the US and what occurs to form a CS through fear-learning is the following:

- CS → projections from the hippocampus (responsible for processing contextual information) → onto the basal nucleus of the amygdala

In sum, pain occurs naturally as a part of the physiological healing process and initially involves a threatening/unconditioned stimulus and hyperactivity in the amygdala. When the unconditioned stimulus is no longer threatening but *perceived* as threatening, it transforms into a conditioned stimulus. This false perception of pain stems from the additional interaction from the hippocampus and consequently evolves into *psychosomatic pain*.

As this process continues to occur, the individual's perception becomes altered and their brain transforms this previously healing process into an *automatic generalization*. In other words, reinforcing this neural network becomes the default reaction to the given trigger, regardless if there is an actual threat involved (Simons *et al.*, 2014). This process supports the theory that psychosomatic pain is reinforced by PNNs via the association of the traumatic event or movement, the anticipation of the threat, and the negative emotions paired with fear-learning pathology. Moreover, perceiving the CS as threatening without accepting that it may not cause pain anymore leads to hypervigilance, muscular reactivity, escape/avoidance, and guarding behavior. This is specifically how pain or anticipation of pain becomes psychosomatic and bidirectional. The threat responses listed above exacerbate pain, promote pain-related disabilities, and deepen psychological suffering.

Traditional therapeutic interventions eliciting a state of calmness: an insufficient solution

It is increasingly difficult to treat the impact of fear learning once the neurological response has transformed into an automatic generalization because human brains are hard-wired to resist manipulating their default reactions. Many therapies employ extinction learning (EL) through exposure to the CS, rather than avoiding it. EL challenges the individual to correct their misinterpretations of the event and to disengage from safety behaviors. Below is a breakdown of the neuropathological process of EL, which occurs simultaneously with the fear-learning process described previously (Simons *et al.*, 2014):

- Exposure to CS triggers → ventral medial Prefrontal Cortex (vmPFC); develops inhibitory connections (IC) which are sent → to the inter-calculated cell masses (ITC)
- IC → project message to CE to inhibit fear expression
- vmPFC project IC → LA to additionally regulate fear expression
- Hippocampus sends projections → to vmPFC and LA to mediate contextual modulation of extinction expression

The pathological differences between fear learning and extinction learning are the involvement of the vmPFC and the decreased activity of the amygdala. Other therapeutic interventions such as cognitive behavioral therapy (CBT) and regression hypnotherapy employ extinction learning. Regression therapy in particular utilizes extinction learning by having a hypnotist lead you



through memories of the traumatic event (Ryder, 2014). However, in the absence of specifically addressing the negative emotions that are elicited, the associated PNN is rarely actually destroyed, and if destroyed then usually over a lengthy therapeutic process.

All of the therapeutic approaches discussed above encourage the individual to feel calm by disengaging only a few emotions/states in the PNN that trigger the psychosomatic pain. In the absence of addressing all the negative emotions associated not only with the triggering event but the inability to find all other emotions in the PNN, how does one truly destroy the PNN when it is the negative emotions that fuel the PNN that causes the psychosomatic pain?

MindChat provides an easy-to-implement way to search and find all the engines of a PNN instead of searching for numerous traumatic events, which is a very time-consuming process, which the author abandoned from his practice, including classical hypnosis, gestalt therapy, psychoanalysis, and most of CBT.

RESULTS AND DISCUSSION

The latter process is where fear and pain collide to create PNNs which reinforce psychosomatic pain. Therapeutic interventions for chronic pain and psychosomatic pain employ the approach of EL by addressing the stimulus (i.e., movement or traumatic event or any element of VAKOG, etc), and this exposure leads to the state of calmness, discussed briefly at the beginning of this article. While other treatments encourage people to disengage from these pathways, Mindchat Therapy operates to eliminate the pathways. Of course, the associated PNNs are weakened over time as the individual does not engage in them, however, they do not address and therefore treat the most important trigger of the pain: the negative emotions linked to the stimulus and the anticipation of the pain. In other words, EL inhibits fear expression, but not fear itself.

This is the difference between other traditional therapies and Mindchat Therapy. Mindchat Therapy takes advantage of this state of calmness and triggers the calmness treating it as a negative emotion derivative that is associated with the psychosomatic pain within the very same PNN which contains this state of calmness. In other words, calmness might be a production of a given PNN that is specifically created by the PNN to protect itself from destruction by psychotherapy practitioners. Basically, the PNN hides itself from being discovered and consequently cured. This deceives the specialist into believing the job was done.

Furthermore, other therapies are not effective on their own, as they must be done in conjunction with other therapeutic interventions with a professional and still only have under 50% effectiveness. On the other hand, Mindchat Therapy can be used alone and has a more than 80% effectiveness outcome. Mindchat Therapy de-hypnotizes the participant by taking advantage of this state of calmness which is a hypnotic phenomenon to trigger the negative emotion that is fueling the PNN and eliminate it. Mindchat is essentially a tool that allows you to “wake up” from this state of calmness that is caused by trauma, which leads to negative emotions, which leads to PNN, which leads to psychosomatic pain. You know that you have awoken from this state when you achieve a state of “nothingness” this is the goal. For these reasons, MindChat is going to change business not only in the scope of work of hypnosis and hypnotherapy but in the whole of medicine, psychology, and psychotherapy.

CONCLUSION



For many psychosomatic impairments, using medication or other therapeutic interventions to treat symptoms can either result in no relief of pain, temporary relief, or a decreased degree of pain. Unfortunately, when this happens, not only does this cause a person to continue feeling pain, but it also fails to address the PNN that is associated with the pain. Thus, without the elimination of the negative emotion and the PNN, the symptoms will continue to occur without decreasing the duration, frequency, or severity. Traditional forms of therapy for psychosomatic pain and negative emotions strive to achieve a state of calmness and consequently do not properly help the individual seeking relief. Therefore, taking advantage of this state of calmness through Mindchat Therapy is an ideal way to delete these engines of PNNs, their associated mental states, and their associated PNNs. This is crucial because the PNN can not only create pain, but also an unlimited full scale of symptoms. Mindchat Therapy is a novel form of a newly established by the MindChat itself form of therapy and self-therapy called DeHypnosis. Importantly, this approach does not require the participant to be a trained professional to use it and is effectively self-applied from the age of 5 years old on average.

ACKNOWLEDGMENTS: The author transfers to the founder of the journal for an unlimited period the non-exclusive rights to use the scientific article by posting full-text online versions of the issues on the journal's website.

CONFLICT OF INTEREST: None

FINANCIAL SUPPORT: None

ETHICS STATEMENT: None

References

- American College of Gastroenterology. (2021). Common GI Symptoms. American College of Gastroenterology. Available from: <https://gi.org/topics/common-gi-symptoms/#tabs2>
- American Lung Association. (2021). COPD Prevalence. *National Health Council*. Available from: <https://www.lung.org/research/trends-in-lung-disease/copd-trends-brief/copd-prevalence>
- Asthma and Allergy Foundation of America. (2021a). Asthma Facts and Figures. Asthma and Allergy Foundation of America. Available from: <https://www.aafa.org/asthma-facts/>
- Asthma and Allergy Foundation of America. (2021b). Atopic Dermatitis in America. Asthma and Allergy Foundation of America. Available from: <https://www.aafa.org/atopic-dermatitis-in-america/>
- Beckerman, J. (2020). Symptoms of High Blood Pressure. WebMD. Available from: <https://www.webmd.com/hypertension-high-blood-pressure/guide/hypertension-symptoms-high-blood-pressure>
- Bransfield, R. C., & Friedman, K. J. (2019, October). Differentiating psychosomatic, somatopsychic, multisystem illnesses and medical uncertainty. In *Healthcare* (Vol. 7, No. 4, p. 114). MDPI. doi:10.3390/healthcare7040114
- Britannica, T. (2021). Psychosomatic Disorder. *Encyclopedia Britannica*. Available from: <https://www.britannica.com/science/psychosomatic-disorder>



Burch, R., Rizzoli, P., & Loder, E. (2018). The prevalence and impact of migraine and severe headache in the United States: figures and trends from government health studies. *Headache: The Journal of Head and Face Pain*, 58(4), 496-505. doi:10.1111/head.13281

Centers for Disease Control and Prevention, N. (2020). Facts about hypertension. *Centers for Disease Control and Prevention*. Available from: <https://www.cdc.gov/bloodpressure/facts.htm> [accessed 2021-07-19].

Centers for Disease Control and Prevention. (2021). Chronic Obstructive Pulmonary Disease. *National Center for Chronic Disease Prevention and Health Promotion*. Available from: <https://www.cdc.gov/copd/basics-about.html>

Elman, I., & Borsook, D. (2018). Threat response system: parallel brain processes in pain vis-a-vis fear and anxiety. *Frontiers in Psychiatry*, 9, 29. doi:10.3389/fpsy.2018.00029

Flammer, E., & Alladin, A. (2007). The efficacy of hypnotherapy in the treatment of psychosomatic disorders: Meta-analytical evidence. *International Journal of Clinical and Experimental Hypnosis*, 55(3), 251-274. doi:10.1080/00207140701338696

Johns Hopkins Medicine. (2022). Chronic Pain. *The Johns Hopkins University, The Johns Hopkins Hospital, and Johns Hopkins Health System*. Available from: <https://www.hopkinsmedicine.org/health/conditions-and-diseases/chronic-pain>

Kroenke, K. (2003). Patients presenting with somatic complaints: epidemiology, psychiatric co-morbidity and management. *International Journal of Methods in Psychiatric Research*, 12(1), 34-43. doi:10.1002/mpr.140

Kurata, J. H., & Haile, B. M. (1984). Epidemiology of Peptic Ulcer Disease. *Clinics in Gastroenterology*, 13(2), 289-307. Available from: <https://pubmed.ncbi.nlm.nih.gov/6378441/>

Laumann, E. O., Paik, A., & Rosen, R. C. (1999). Sexual dysfunction in the United States: prevalence and predictors. *Jama*, 281(6), 537-544. doi:10.1001/jama.281.6.537

Lo, I. (2021). Alexithymia: Do You Know What You Feel? *Psychology Today*. Available from: <https://www.psychologytoday.com/us/blog/living-emotional-intensity/202102/alexithymia-do-you-know-what-you-feel>

Mayo Clinic Staff. (2021a). Fibromyalgia. *Mayo Clinic*. Available from: <https://www.mayoclinic.org/diseases-conditions/fibromyalgia/symptoms-causes/syc-20354780>

Mayo Clinic Staff. (2021b). Migraine. *Mayo Clinic*. Available from: <https://www.mayoclinic.org/diseases-conditions/migraine-headache/symptoms-causes/syc-20360201>

Psychology Today Staff. (2022). Hypnotherapy. *Psychology Today*. Available from: <https://www.psychologytoday.com/us/therapy-types/hypnotherapy>

Rubin, J. J. (2005). Psychosomatic pain: new insights and management strategies. *Southern Medical Journal*, 98(11), 1099-1111. doi:10.1097/01.smj.0000191268.48828.3a

Ryder, J. (2014). Hypnotic Regression and Healing the Unconscious Mind. *Psychology Today*. Available from: <https://www.psychologytoday.com/us/blog/hypnosis-the-power-trance/201406/hypnotic-regression-and-healing-the-unconscious-mind>



-
- Selvin, E. (2007). Prevalence and Risk Factors for Erectile Dysfunction in the US. *The American Journal of Medicine Clinical Research Study*, 120(2), 151-157. doi:10.1016/j.amjmed.2006.06.010
- Simons, L. E., Elman, I., & Borsook, D. (2014). Psychological processing in chronic pain: a neural systems approach. *Neuroscience & Biobehavioral Reviews*, 39, 61-78. doi:10.1016/j.neubiorev.2013.12.006
- Substance Abuse and Mental Health Services Administration. (2006). Table 3.31, DSM-IV to DSM-5 Somatic Symptom Disorder Comparison. National Center for Biotechnology Information. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK519704/table/ch3.t31/>
- Tores, F. (2020). What is Post Traumatic Stress Disorder? American Psychiatric Association. Available from: <https://www.psychiatry.org/patients-families/ptsd/what-is-ptsd>
- Veterans' Health Administration. (2021). How Common is PTSD in Adults? National Center for PTSD. Available from: https://www.ptsd.va.gov/understand/common/common_adults.asp
- Walitt, B., Nahin, R. L., Katz, R. S., Bergman, M. J., & Wolfe, F. (2015). The Prevalence and Characteristics of Fibromyalgia in the 2012 National Health Interview Survey. *PloS one*, 10(9). doi:10.1371/journal.pone.0138024

