

# A Mini Review on Pain: Definition, Interesting Facts, Types, and Management

Ashrafal Kabir\*

Department of Biology, Cantonment Public School and College, Saidpur Cantonment–5311, Nilphamari, Bangladesh

## Corresponding Author\*

Ashrafal Kabir

Department of Biology

Cantonment Public School and College,

Nilphamari, Bangladesh

E-mail: ashrafal.mission@gmail.com

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## Abstract

Everybody should know the true causes of their pain through pathological tests. Ignoring any pain could be severe in the long run. From this perspective, this review carried out an impact on healthy living. A renowned medical dictionary of Taber (volumes 1 and 2) gave a clear conception of all pain with examples. Based on the result, out of 28 types of pain, acute and severe pain was the main two categories and could be focused on much pain (Table 1). Without proper pathological tests, sometimes it is impossible to identify the true causes of pain because occasionally different diseases indicate the same type of pain. Warm-up and stretching before any workouts could mitigate all probable injuries. A patient deserves to get proper help for any pain from health workers as well as a physiotherapist. History of pain always helps the expert in providing actual advice on such pains of the patients.

**Key Words:** Pain • Types • Management • Physiotherapy • Exercise • Pathological test • Injury • Disease • Infection

## Introduction

### Definitions of pain

The recognition of pain as a definite pathologic state is crucial to raise awareness about this neglected global health problem and promoting the exploration of new therapeutic approaches [1]. Pain has a valuable role in medical practices, as a precious and meaningful tool. The universally accepted definition of pain and related concepts was indicated by Joun J. Bonica from the International Association for the Study of Pain (IASP). Chronic pain persists during the normal time of healing [2]. Chronic and recurrent pain is a specific healthcare problem or a disease in its own right

[3]. American Academy of Pain has defined chronic pain as lasting longer than the usual course of an acute injury or disease. A study (2014) on the global burden of chronic pain, at least 10% of the world's population is affected by chronic pain, and every year, an additional 1 in 10 people develops chronic pain [4]. According to the American Academy of Pain Medicine, pain affects more Americans than diabetes, heart disease, and cancer combined. Prevalence of chronic pain shows that 19% of adult Europeans are affected by this condition, seriously compromising their life [5]. Chronic pain affects the loss of both the physical and emotional function of the patient [6]. Chronic low back pain is the single greatest cause of years due to disability [7]. A 2008 survey on the quality of life of chronic pain sufferers shows high percentages of chronic pain related to their mental health, employment status, sleep, and personal relationships [8]. A cohort record linkage study suggests that severe chronic pain is associated with an increased risk of mortality and socio-demographic factors [9]. Chronic pain is a disease with its pathology, symptoms, and signs, based on pathophysiological changes [10]. The normal state of an organism that interrupts its vital functions and concludes in many ways has to be recognized as a disease in its own right [11]. American Academy of Pain Medicine has mentioned good pain and bad pain [12].

### Interesting facts

The meaning of pain as a penalty or punishment comes from the Latin word 'Poena' [13]. Pain is likely an emotional experience, and one cannot have pain without the head. For removing pain, patients need to be treated medically, socially, and culturally. Sometimes, physicians, clinicians, and nurses have very little knowledge of pain and its management [14]. Early detection and care may mitigate any sort of acute pain from becoming chronic at all. A pain clinic employs multidisciplinary sections involving physicians, psychologists, physical therapists, and alternative healthcare practitioners as well [15].

### Chemicals and receptors for pain

Chemical substances produced by the body that excite pain receptors are bradykinin, serotonin, and histamine. Many researchers have suggested that bradykinin might be the agent most responsible for causing pain following tissue damage [16]. Prostaglandins are released when inflammation occurs and can heighten the pain sensation by sensitizing the nerve endings [17]. Several transmitters (encephalin and serotonin) are involved in the analgesia system. The cold and warmth receptors are located immediately under the skin at discrete separated spots. The gate control theory of pain describes a pathway of non-painful sensations in order to reduce painful sensations. Nerve endings and nerves of the spinal cord have been considered the latest pain receptors in the human body.

### Types of Pain

Low back pain is considered the last six months [18]. Pain that persists

**Table 1.** Examples of various pain and their causes.

Types of pain	Examples	Causes
Vascular pain	Migraine	Genetic; Catch cold; Injury
Shooting pain	Pain during travel	Travel
Sharp pain	After surgery	Surgery
Heterotopic pain/Referred pain	Pain from the diaphragm to shoulder; Myocardial ischemic pain to neck or jaw	Physiological disturbances; Diseases
Epigastric pain	Gastritis; Heartburn	Acidity
Adnexal pain	Discomfort in fallopian tubes and ovaries	Infection in fallopian tubes and ovaries
Bearing down pain/Dilating pain/Expulsive pain/Labour pain	Birth; Urination; Defaecation	Rectal pressure
Burning pain	Pain for burning	Burn
Brodie's pain	Pain near joint	Injury
Central pain	Pain in the brain and spinal cord	Diseases; Infection; Injury
Cramp pain	Contraction of the diaphragm; Muscular cramp	Lack of oxygen; Lack of proper warm-up during exercise

False pain/Idiopathic pain	Sudden pain during pregnancy	Pregnancy (no specific cause)
Fulgurant pain/Lightning pain	Sudden brief pain; Repetitive pain	Infection; Diseases
Gall bladder pain	Pain in the gallbladder	Gall bladder stones
Somatic pain	Skeletal; Tendon; Ligament; Muscle	Injury
Hunger pain	Pain before hungry	Empty stomach
Inflammatory pain	Inflammation inside or outside of the body	Inflammation
Menstrual pain/Inter-menstrual pain	Menstrual pain	Ovulation and for rupturing the uterine wall
Intractable pain	Metastatic cancer; Pancreatitis; IBS (Irritable Bowel Syndrome; Fibromyalgia)	Cancers; Other diseases; Psychological
Mental pain/Psychogenic pain	Phobia; Anxiety; Depression; Tension; Stress; etc.	Mental shock
Noise pain	Headache	Noise (unwanted sound)
Phantom limb pain	Amputation of body parts	Amputation
Postprandial pain	Abdominal pain after eating	Environmental causes; Food poisoning
Rest pain	Continuous sitting on a wheelchair; Continuous bed rest or sleep	Long time sitting or lying
Mixed pain	Several types of pain at the same time	Multiple causes (injury, infection, diseases, etc.)
Visceral pain	Pain within viscera	Multiple causes (injury, infection, diseases, etc.)
Episodic pain/Breakthrough pain	Headache (come quickly at irregular intervals)	Infection; Diseases; Psychological
Crushing pain	A strong bandage; Excessive massage	Squeezing or excessively compressing

Source: [19]

**Table 2.** Various features of pain and studied papers.

Features	Examples	References
Definitions	Need to know the definition of pain first.	Merskey & Bogduk, 1994; Niv & Devor, 2004; Siddall & Courins, 2004; Loeser, 2005; Breivik <i>et al.</i> , 2006; McCarberg <i>et al.</i> , 2008; Dubois <i>et al.</i> , 2009; Torrance <i>et al.</i> , 2010; Turk <i>et al.</i> , 2011; Rice <i>et al.</i> , 2016; Raffaelli & Arnaudo, 2017; Jackson <i>et al.</i> , 2017
Interesting facts	Need to know some unknown facts about pain.	Taber, 2004; Medical Adviser, 2009; Smith, 2010
Responsive chemicals for pain	Some chemicals are prone to much pain.	Guyton & Hall, 2015; <a href="https://www.britannica.com/science">https://www.britannica.com/science</a>
Types of pain	There are many types of pain in the human body.	Taber, 2004; Society for Study of Pain, 2009; Maitra, 2010; Guyton & Hall, 2015
Pain management	Management of pain is very urgent for everybody.	Morton & Callister, 2000; MacAuley, 2002; Muir Brad, 2009; Chakraborty, 2009; Society for Study of Pain, 2009; Medical Adviser, 2009; Khan, 2009; Maitra, 2010; Smith, 2010; Guyton & Hall, 2015; Elmagd, 2016; Islam, 2018; Prince, 2018; Joy, 2019; Wang, 2021; Walden, 2022

for more than three months is chronic [20]. Fast pain (0.1 seconds after a pain stimulus is applied) has many alternative names, such as sharp pain, pricking pain, acute pain, and electric pain. Slow pain also shows burning pain, aching pain, throbbing pain, nauseous pain, and chronic pain. Pain consists of mechanical, thermal, and chemical pain stimuli. Fast pain could be elicited by mechanical and thermal, and slow pain is mechanical, thermal, and chemical. Heart attack, gout, shingles, cluster headaches, frozen shoulder, slipped disc, arthritis, kidney stones, sickle cell disease, appendicitis, trigeminal neuralgia, pancreatitis, endometriosis, stomach ulcer, fibromyalgia, pain after surgery are the example of causing intolerable pain. Most pain occurs through injuries in the human body (Table 1).

### Causes of Pain and their Management

Perfect supplements and yoga could be the most beneficial for pain relief [21]. The real cause of back pain is muscular and it is mainly postural pain. Postural care, physiotherapy, analgesics, and calcium supplements are usually recommended. Patients' additional causes are osteoporotic fracture, metastatic bone disease, and multiple myeloma. Referred pain due to gynaecological problems should also be excluded. Forward and lateral bending of the spine has to be done carefully. Physical therapy and bed rest for a few days may also be required. For relieving neuropathic pain fish oil, glucosamine and chondroitin, and oil of evening primrose could help. Morphine injection is the priority followed by restoring patency in the blocked coronary artery [22]. After surgery and trauma, 50% of patients still have severe to intolerable pain. Osteo- and rheumatoid arthritis (40%), operations and injuries (25%), and spine problems (20%) were found as chronic pain. The International Association for the Study of Pain (IASP) has an infrastructure of members around the world who contribute to its journals and clinical bulletins. Chronic pain is not merely a symptom;

this is a disease in its own right. Poor posture, improper lifting, being overweight, congenital condition (curvature), trauma, wearing high heels, and sleeping on a poor mattress are the causes of pain. Drugs that relieve pain are often used in the treatment of arthritic problems. Direct steroidal injection into a particularly painful joint is still an effective technique for providing temporary relief without the side effects of steroids taken orally. Injection of adrenocorticotrophic hormone stimulates the body's adrenal glands to produce more steroids. People who are allergic or sensitive to penicillin may take penicillamine safely [23]. Too much rest can make muscles shorter, tighter, and weaker, actually increasing the risk of injury when you again attempt movement. Research has shown that regular exercise can diminish pain in the long run by improving muscle tone, strength, and flexibility. Exercise may also release endorphins (the body's natural painkillers). If a blood pressure cuff is placed around the upper arm and inflated until the arterial blood flow ceases causes pain. Exercise of the forearm muscles sometimes can cause muscle pain. Side effects of the above medicines for diminishing pain are not accepted by most patients as the severity of such pains at all [Table 2].

The heat improves the circulation in the skin and subcutaneous tissues. But if the patient has any varicose veins, this treatment could be dangerous because the heat will induce inflammation. Artificial sunlight has stimulating and healing properties produced by powerful bactericidal ultraviolet rays [24]. Physical therapy is suitable for treating poliomyelitis, cerebral palsy, arthritis, and muscular dystrophy. The injured will take rest immediately to minimize internal bleeding. Physical therapies may incorporate heat, cold, electricity, sound waves, traction, and hydrotherapy (pool therapy) into a treatment plan in addition to the therapeutic exercise. Stretching, strengthening, and postural exercises help to maintain healthy cartilage. A cervical collar is advisable to restrict movement of the neck

during the journey [25]. There is evidence that balance training can improve sensorimotor control in athletes with previous injuries [26]. A side stitch is a muscle spasm of the diaphragm that happens during strenuous exercise [27]. Running increases pressure on the abdominal muscle and rapid breathing, and pain gradually subsides [28]. A dislocation requires prompt medical attention to setup displaced bones to their proper positions. Rest as much as possible and stop any unnecessary activity which places additional stress on the fascia. In addition, tape in strips across the plantar fascia and cold therapy is applicable. Stretching the plantar fascia is a part of treatment and prevention. Gentle massage of the calf muscle can be helpful for this problem. Preventing injury is more important than treating the injury.

## Conclusion

Both legs allow loads during sports or exercise in the fitness club and are prominent for developing any injuries. An outstanding fitness of humans can overcome knee pain and plantar fasciitis of the feet. Proper warm-up before workouts in the gym or free-hand exercise could play a vital role in the well-being of injuries. A physiotherapist could show their expertise in these workout issues. Patients would preserve their history of pain, and those causes of the pain will come out through investigation by the physicians.

The total number of medicines in the 161 prescriptions in our analysis was 276. The average number of prescriptions per person was 1.71. This is significantly below the WHO's suggested limit of 2 and comes under the WHO's threshold for sensible drug usage. The WHO's recommended limit criteria are a useful tool for determining the rationale of prescriptions. Our findings are comparable to those of other studies with similar averages but greater in an Indian study that found an average of 1.49 prescriptions per patient, but lower than those of other similar studies.

An increase in the average number of medications per prescription is a significant indicator. This index indicates the presence of polypharmacy, which is linked to a higher risk of medication interactions. This could result in unfavourable side effects as well as an increase in prescribing and dispensing errors.

Adrenergic agonists, adrenergic antagonists, cholinergic agonists, prostaglandin analogues, and carbonic anhydrase inhibitors are the most frequent medications used to treat glaucoma. Combinations of these medication classes are also an option for treatment. Prostaglandin analogues were the most commonly prescribed anti-glaucoma medication in our survey, accounting for 37% of all prescriptions. The prostaglandin analogue latanoprost was the most commonly prescribed. Beta-blockers accounted for 25.4% of the anti-glaucoma drugs recommended in the research. Timolol was the most commonly given beta blocker, accounting for 80% of the total number of beta-blockers found in the study.

With the carbonic anhydrase inhibitors, apart from being the third most prescribed medications, they are the only group with an oral preparation. Oral acetazolamide accounted for 72.3% of the total number of drugs prescribed from this group and gutt brinzolamide (Azopt) accounted for only 27.7%.

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