A Non-Pharmaceutical Approach to Pain Management: An Occupational Therapist's Perspective

Your guide to chronic pain, the opioid crisis, and occupational therapy interventions.

By Dr. Alie Powell OTD, OTR/L



Owned by The Good Good Life Occupational Therapy, LLC.

# Table of Contents

### Contents

Table of Contents	1
Meet the Therapist	3
Chronic Pain	4
What is Chronic Pain?	4
Most Common Types of Chronic Pain:	4
Statistics of Chronic Pain:	5
Pharmaceuticals: Opioids	6
The Opioid Crisis:	6
Opioids VS. Opiates:	7
Opioid Side Effects:	7
Tolerance, Dependence, and Addiction	9
Occupational Therapy	10
What is Occupational Therapy (OT)?	10
What kinds of tasks do they work on?	11
Why would OTs help with chronic pain management?	13
What types of interventions do they use for chronic pain management?	14
What types of interventions do they use for chronic pain management? Non-Pharmaceutical Interventions	14 15
What types of interventions do they use for chronic pain management? Non-Pharmaceutical Interventions Adaptive Equipment	
What types of interventions do they use for chronic pain management? Non-Pharmaceutical Interventions Adaptive Equipment Adaptive Strategies	
What types of interventions do they use for chronic pain management? Non-Pharmaceutical Interventions Adaptive Equipment Adaptive Strategies Aquatic Therapy	
What types of interventions do they use for chronic pain management? Non-Pharmaceutical Interventions Adaptive Equipment Adaptive Strategies Aquatic Therapy Ergonomics, Body Mechanics, and Posturing	
What types of interventions do they use for chronic pain management? Non-Pharmaceutical Interventions Adaptive Equipment Adaptive Strategies Aquatic Therapy Ergonomics, Body Mechanics, and Posturing Fitness-Based Programs	
What types of interventions do they use for chronic pain management? Non-Pharmaceutical Interventions Adaptive Equipment Adaptive Strategies Aquatic Therapy Ergonomics, Body Mechanics, and Posturing Fitness-Based Programs Yoga	
What types of interventions do they use for chronic pain management? Non-Pharmaceutical Interventions Adaptive Equipment Adaptive Strategies Aquatic Therapy Ergonomics, Body Mechanics, and Posturing Fitness-Based Programs Yoga Strength Training	
What types of interventions do they use for chronic pain management? Non-Pharmaceutical Interventions Adaptive Equipment Adaptive Strategies Aquatic Therapy Ergonomics, Body Mechanics, and Posturing Fitness-Based Programs Yoga Strength Training Tai Chi	
What types of interventions do they use for chronic pain management?         Non-Pharmaceutical Interventions         Adaptive Equipment         Adaptive Strategies         Aquatic Therapy         Ergonomics, Body Mechanics, and Posturing         Fitness-Based Programs         Yoga         Strength Training         Tai Chi         Pilates	
What types of interventions do they use for chronic pain management?         Non-Pharmaceutical Interventions	
What types of interventions do they use for chronic pain management?         Non-Pharmaceutical Interventions	
What types of interventions do they use for chronic pain management?         Non-Pharmaceutical Interventions.         Adaptive Equipment         Adaptive Strategies         Aquatic Therapy         Ergonomics, Body Mechanics, and Posturing         Fitness-Based Programs.         Yoga         Strength Training.         Tai Chi         Pilates         Activities:         Word Search.         Cross Word Puzzle.	

Word Matching Puzzle	32
Glossary	33
Answers to Activities	35
Word Search Answers	35
Crossword Answers	36
Word Matching Puzzle Answers	37
References	

## Meet the Therapist

Dr. Alie Powell started her professional journey studying Gerontology with a minor in Psychology at the University of South Florida. She graduated in 2016 and furthered her education persuing a **Doctorate in Occupational Therapy** from the University of St. Augustine for Health Sciences. She graduated there in April of 2020 with honors. Dr. Powell currently owns her own outpatient practice that specializes in working with geriatric clients. She started The Good Good Life Occupational Therapy, LLC (The Good Good Life OT) due to her love of living life to the full. She believes that life is more meaningful when we are able to do the things we love. Dr. Powell believes that by doing

the activities you love it allows you to connect





more deeply to God, and further increases your quality of life. She believes that we were not created for mediocre lives, but ones filled with rich and meaningful purpose. The Good Good Life OT empowers individuals to live their lives to the full and to age well doing so. The therapists at their company will challenge you, support you, and assist you in being your best self. Their tagline is to "Live Good Good", and they will surely help you do just that!

# Chronic Pain

#### What is Chronic Pain?

Chronic pain in the United States (U.S.) is one of the most common reasons to seek medical advice [9, 28]. Chronic pain is defined by pain persisting longer than 3 months and can be a side effect from an injury, a disease/illness, medical malpractice, or other accident/trauma [10, 11].



This Photo by Unknown Author is licensed under <u>CC BY-NC-ND</u>

### Most Common Types of Chronic Pain:

- Low back pain
- Arthritic Joint Pains
- Nerve Related Pains
- Post Stroke Related Pain
- Cancer Related Pain

#### [12,31]

Feelings and Difficulties Associated with Chronic Pain:

- Feelings of suffering
- Social isolation
- Trouble maintaining employment
- Difficulties with daily activities
- Lower Quality of Life
- Life Dissatisfaction
- Loss of Roles
- Inability to fulfill work roles
- Unmet expectations for the future
- Dreams feeling unachievable
- Feeling old or being perceived as old
- Stigmas associated with using an assistive device like a cane, walker, back brace, etc.

[9, 10, 30, 31]

#### Statistics of Chronic Pain:

Approximately 70 million people in the United States (U.S.) in 2017 were diagnosed with chronic pain [5].

50 million of those Americans were considered high impact [5].

41% of people who attend pain management clinics state their pain keeps them from working [16].

1/3 of people diagnosed cannot be considered to have independent lifestyles [14].

2/3 of people diagnosed cannot independently complete their normal daily routines [14]. In U.S. adults alone over \$600 billion annually are caused from disability, lost work, and treatment of chronic pain [1, 10].

Figure 1

# Pharmaceuticals: Opioids

#### The Opioid Crisis:

The most common intervention for chronic pain is the use of pharmaceuticals. Most prescribed are opiates or opioids. Currently, America is in what is known as the "opioid crisis." The opioid crisis is defined as the misuse,

> "The Opioid Crisis is defined as the misuse, overdose, or death caused by prescription opiates or synthetic opioids."

overdose, or death caused by prescription opiates or synthetic opioids. Current statistics state that 128 people die every day due to an opioid overdose. In addition, in 2017 67,367 people died as a result of drug overdose, and approximately 70% of those deaths were caused by opioids [5].



#### **Opioids VS. Opiates:**

It should also be noted that these types of opioids or opiates are the same type of drug in their usage. However, the only difference is in the make-up of the drug itself and can be best explained that **Opiates** are narcotic alkaloids derived from opium poppy or semi-synthetic derivatives with narcotic properties. They can be natural or not natural. Examples include: morphine, opium, and heroin. On the other hand, **Opioids** are fully synthetic or semi-synthetic narcotic alkaloids that mimic the natural opiate alkaloid. These are not found in nature. Examples include fentanyl, hydrocodone, and oxycodone [5].

#### **Opioid Side Effects:**

While there are many side-effects related to opioid usage, there are a few that are significantly different than other prescription drugs. As seen in the Figure 4 opioids can cause a lower tolerance to pain. This is important to think about because as your tolerance for pain decreases your need for the drug could increase. Likewise increasing your physical dependence on the drugs, themselves. This also ties into the effectiveness of the drug, the more the drug is used, it could lead to the drug being less effective in reducing symptoms, and then can lead to people consuming higher dosages. These may be prescribed or non-prescribed and consumed against medical advice. This can also lead to people transitioning to illegal drug substances as well and can possibly lead to accidental overdosing [5].



### Tolerance, Dependence, and Addiction

When dealing with any drug, it is important to know the properties of them and how they can affect you. In addition to the side-effects of the drugs it is important to know how their use can affect an individual over time. The Centers for Disease Control and Prevention (CDC) explain the differences of tolerance, dependence, and addiction regarding opioids as follows:

# Tolerance

• Tolerance occurs when the person taking the drug starts to experience a diminished response to the medication. The patient then begins to need a higher dose of the medication to acheive the same reduction of pain as before [5].

# Dependence

• Dependence occurs when the body can no longer perform normal functioning without the use of the medications. This means that upon stopping the usage of the medications that people may experience negative physical symtptoms. This is referred to as withdrawl [5].

# Addiction

• Addiction occurs when the person using the opioids attempts to reduce dosage or quit using them altogether and is unsuccessful. Many times this is also then related to trouble in their everyday occupations such as work, school, and home life. Addiction comes after both tolerance and dependence and makes it physically challenging to stop [5].

## Occupational Therapy

#### What is Occupational Therapy (OT)?

ccording to an article written by Dahl Popolizio et al. (2016), occupational therapy is a profession that is often misunderstood, overlooked, and underutilized not only by other clinicians but by patients as well. Occupational therapy is a rehabilitation therapy that specializes in treatments related to physical dysfunctions, behavior and mental health, and the ability to work in patients of all ages. They typically work on interdisciplinary teams with physical therapy, speech therapy, nursing staff, doctors, social workers, and more. Therapists focus on a whole-body approach that address "occupations" which simply put means any purposeful activity in selfcare, productivity, or leisure [15]. Examples of this are driving, sleeping, eating, bathing, working, leisure activities, etc. [8].

Occupations are defined by AOTA as any activity in which people are engaged throughout the day.



This Photo by Unknown Author is licensed under <u>CC BY</u>



This Photo by Unknown Author is licensed under <u>CC BY-ND</u>

#### What kinds of tasks do they work on?

Occupational therapists identify their patient's ability to complete their daily tasks within their own environment [14]. Daily tasks that involve routine self-care are often referred to as activities of daily living (ADL). ADLs include eating, feeding, bathing, dressing, toileting, and transfers [8]. Working on transfers includes to/from chairs, beds, toilets, and wheelchairs. Therapists can assist you with making meals in the kitchen, safety in the bathtub or shower, modified utensils for eating, dressing techniques if you have an injury, using adaptive tools in your morning routines, or even help with driving [8, 14].

Occupational therapists work in a wide variety of settings with all different ages. Occupational therapists can work in skilled nursing facilities, schools, hospitals, home health services, private clinics, joint replacements, hand therapy, hippotherapy



This Photo by Unknown Author is licensed under CC BY-NC-ND

(which involves horseback riding as therapy), and outpatient centers too. They are skilled in many different areas.

More importantly than just addressing an area that a client has a deficit in, an occupational therapist will assess how a client's ability to complete these tasks affect the patient's health [18]. Therapists will use the patient's interests, roles, routines, and beliefs to incorporate into treatment sessions to make the therapy session more meaningful to the client. This is so that the patient has a sense of purpose and can directly see therapy relates back to their everyday lives. For example, if someone is injured and unable to work, therapy may include simulated tasks to aid in preparing to go back to work.

#### Dressing



The ability to put on, take off, secure and unfasten all garments and, as appropriate, any braces, artificial limbs or other surgical or medical appliances.

Toileting

The ability to use the lavatory or manage bowel and bladder function through the use of protective undergarments or surgical applicances if appropriate.

#### Transferring



The ability to move from a bed to an upright chair or wheelchair, and vice versa.

This Photo by Unknown Author is licensed under <u>CC BY-NC-ND</u>

#### Why would OTs help with chronic pain management?

Occupational therapists' goal is to maximize a patient's independence to encourage satisfaction in their occupations. Therapists support recovery, health, well-being, and social participation of their clients. Chronic pain affects all these components of an individual's life [15]. Many patients are unable to remain independent when dealing with chronic pain [28]. Since OT treats the whole patient and uses their individual interests for therapy, they are a well-suited fit to address these chronic pain symptoms. Therapists observe the needs of a person within their current abilities. They're able to recommend changes, exercises, adaptations, and more for the patient to improve their overall independence [14, 15]. Occupational therapy's unique approach to chronic pain allows for a more holistic approach catered to the individual, and with their focus on maximizing independence, OT should be a part of chronic pain treatment.



This Photo by Unknown Author is licensed under CC BY

What types of interventions do they use for chronic pain management?

Below are just a few examples of the types of interventions occupational therapists can utilize during treatment sessions. They will be further discussed in the sections that follow!



14

# Non-Pharmaceutical Interventions

#### Adaptive Equipment

Adaptive equipment is a physical object or tool that can help an individual complete a task independently [24]. Adaptive equipment can be globally useful or designed specifically to help one person. An example of a global product would be an electric can opener that many people use for adaptation in their homes. Not necessarily because they have a disability, but because it makes life a little easier. We all use forms of adaptive equipment. Something more personalized may be someone who has arthritic joint pain in their hands and their OT created built up handles on your utensils to make them easier for grasping [24]. There are a lot of ways to help adapt tasks people complete every day. Below are some examples of the devices that individuals can use to help complete ADL.

- Button hook and Zipper Pull these are used for assisting with buttons on a shirt and pulling up zippers when individuals have difficulty manipulating the small objects [24]
- Shoehorn this is to assist with putting on shoes for people who may have difficulty bending down that far or lack the strength to pull up the back of the shoe [24]



This photo is made and owned by The Good Good Life Occupational Therapy LLC.



<u>This Photo</u> by Unknown Author is licensed under <u>CC BY</u>

- Key Extensions This is a builtup piece for a key that can assist someone who has a hard time using smaller objects [24]
- Built Up Handles these are for someone who may have a weakened grip and has difficulty holding onto objects, some of these grips are made to be removable to be transferred between objects [24]
- Commodes this piece of equipment is a simple way to raise the toilet's height and to provide handles near the toilet, this is to assist with transfers to/from the toilet and to make sit to stand easier due its' increased stability [24]
- Universal Cuffs these are for people who may struggle with holding on to utensils due to weakness, fatigue, or tremors and can help maintain ability to use utensils independently [24]



This photo is made and owned by The Good Good Life Occupational Therapy LLC.



This Photo by Unknown Author is licensed under CC BY



This Photo by Unknown Author is licensed under <u>CC BY-NC-ND</u>



This photo is made and owned by The Good Good Life Occupational Therapy LLC.

- Shower Chairs these are for shower safety to be able to sit while showering to help people who may have trouble standing safely or who fatigue quickly during the time it takes to shower [24]
- Reachers can be used to pick things up off the floor or off higher shelves to prevent having to reach too far either direction, these can be helpful for someone with challenged balance [24]

This Photo by Unknown Author is licensed under CC BY-NC



This Photo by Unknown Author is licensed under CC BY-NC-

#### Adaptive Strategies

Occupational therapists use activity analysis to

find patients' barriers to participation. This simply means, they observe the patient for reasons that could be keeping them from maximized independence. This involves observing physical, emotional, cognitive, social, and environmental components of a task. Environment includes stores, bathrooms, kitchens, or even outside [15]. Breaking down the task into smaller components will allow the therapist to figure out which piece is causing difficulties. By identifying the difficulties, the occupational therapist can then address them. Some of the ways that occupational therapists can address deficits in an individual's performance, secondary to chronic pain, are through adaptive strategies. An adaptive strategy is a way of changing a task to make it easier to complete. Examples of these strategies include pacing, flare-up planning, grading the activity, goal setting, energy conservation, and coping strategies [15, 25]. Below are brief explanations of each of these terms.

**Pacing:** Involves planning the tasks you must complete by spreading them out throughout the day or week to prevent fatigue and pain from worsening. Usually this means spreading out the more difficult tasks to decrease the demand of the task. It also allows the participant to complete activities in chunks to be more easily attained [15].

**Flare-up Planning:** Flare up planning is becoming aware of when flare ups of an individual's pain occurs. Once that is established the OT and the patient can create a flare up plan. The flare up plan can address when to space out activities to prevent pain flare or fatigue or how to address them if a flare up occurs. With the goal of preventing them before they occur at all [27].

**Grading an Activity:** This is a fancy way of saying "to make a task easier" this can mean breaking down a task into easier steps or using another method like adaptive equipment to make the task easier. This word can also work in reverse to make a task hard in therapy, but pain management therapists are usually attempting to make tasks more easily accomplished [15, 24].

<u>This Photo</u> by Unknown Author is licensed under <u>CC BY-NC</u>





This Photo by Unknown Author is licensed under CC BY





**Goal Setting:** This involves breaking down a task into steps that are more easily accomplished so that bigger activities do not seem as intimidating. This also helps form realistic goals based on each individual patient's needs [15].

**Energy Conservation:** People living with chronic pain often also deal with fatigue. Occupational therapists can utilize the examples above to help reserve some of the patient's energy to be more independent in daily tasks [15].

**Coping Strategies:** Chronic pain is often associated with low mood, poor sleep quality, and relationship strains. Occupational therapists have training in mental health, so they are ready to address any struggles their patients may be facing. Therapists may help the patient with techniques to aid in lowering stress or anxiety such as stressor identification, mindfulness, or deep breathing [27].



This Photo by Unknown Author is licensed under CC BY-NC



This Photo by Unknown Author is licensed under CC BY-NC-ND

By utilizing any combination of these approaches, patients can not only become more aware of how their pain can affect their daily occupations, but they can also learn how to better manage them. These techniques can be helpful for several reasons outside of chronic pain management as well.

#### Aquatic Therapy

According to an article by McIlroy, Sayliss, Browning, and Bearne (2017) aquatic therapy is exercise in warm water that's between approximately 93-113 degrees Fahrenheit. It is said to improve pain and function in long term musculoskeletal conditions. Aquatic therapy combines water's buoyancy, resistance, and heat to assist in exercise performance [21]. The buoyancy, or ability to float in water, allows for the weight bearing stress that is placed on the body by gravity to be lessened. Which in turn can make range of motion improve, strength increase, and movements become easier [35]. The temperature of the water is an important note to mention too because the thermal properties of the water can lessen the pain the participant is feeling. Aquatic therapy can also cause the muscles to relax, which can lead to a reduction in pain [35].



This Photo by Unknown Author is licensed under CC BY-NC



This Photo by Unknown Author is licensed under CC BY-NC-ND



This Photo by Unknown Author is licensed under CC BY

### Ergonomics, Body Mechanics, and Posturing

Ergonomics is the performance of a task in an environment typically focusing on body mechanics and posturing [15]. This is commonly associated in a work setting. However, when it comes to chronic pain many people can become fearful of their pain during movements. This may in turn limit their daily activities secondary to fear and pain. Occupational therapists can provide instruction in safe body mechanics and positioning to encourage safety and independence during task completion [25]. These techniques can include:

Bending and lifting [27]



Transfers to/from objects [27] This Photo by Unknown Author is licensed under CC BY



Static positioning (holding a position) [27]



Dynamic Movements (movements that challenge balance) [27]

This Photo by Unknown Author is licensed under CC BY



Ergonomics are important factors in chronic pain management because they can help protect the body. Two principles of ergonomics are proper joint mechanics and proper body mechanics. Putting less strain on joints when completing a task can reduce symptoms of chronic pain and protect from any future injury or pain. Proper lifting techniques and protecting your joints can reduce low back pain by protecting the back during daily occupations that involve bending and lifting [27]. One way to lessen a heavier load on your joints would be to use both hands during a task. This could include holding a cup with both hands while carrying or drinking to avoid wrist strain [24]. Another way to avoid strain in the lower back is to keep objects close to you when lifting [24]. Some joint protection principles found in Radomski and Trombly Latham (2014) are as follows:





This Photo by Unknown Author is licensed under CC BY-NC-ND

- Respect Pain
- Distribute weight of a load over several joints
- Use correct movements and body positioning
- Avoid staying in one position for too long
- Use adaptive equipment to make the task easier
- Maintain your muscle strength and available range of motion

It may seem like ergonomics may not be that important, but they effect almost every activity we do. You may be thinking to yourself well "I don't lift heavy things"? Or "I don't have low back pain"? Ergonomics is equally as important for people with and without pain. It affects all occupations. Lifting, reaching, bending, scooping, pushing buttons, holding cups, reading a book, typing on a computer, driving a car, gardening, taking a shower, washing and folding laundry, etc. All these tasks can be affected by pain, poor posturing, and lack of good body mechanics. It is essential that therapists address these matters when assessing chronic pain.

Occupational therapists can play such a crucial role in addressing chronic pain. Due to their expertise in these combined areas, occupational therapists can look at the whole patient. They are specially trained to assess how chronic pain affects daily occupations.



This Photo by Unknown Author is licensed under <u>CC BY-ND</u>





This Photo by Unknown Author is licensed under CC BY-SA-NC

#### Fitness-Based Programs

A fitness-based program is an activity that relates to exercise. This could mean high or low impact exercise. Studies show that people living with chronic pain can begin to avoid exercise for fear of being in pain of risk hurting oneself further. However, due to the decline in physical exercise, individuals are then at risk for physical deconditioning [11]. This means decreased cardiovascular endurance, loss of strength, loss of endurance, and general decline in health. A general decline in one's health can then make one more at risk for their chronic pain to worsen [11]. The cyclic nature of this pattern is referred to as deconditioning syndrome. This supports the concept of exercise and fitness leading to the reduction of chronic pain symptoms rather than a worsening of symptoms [11]. Research suggests that mindfulness exercises that focus on the



This Photo by Unknown Author is licensed under CC BY-ND



This Photo by Unknown Author is licensed under CC BY



This Photo by Unknown Author is licensed under CC BY-NC-ND

mind body connection such as yoga, Pilates, and Tai Chi could aid in reducing chronic pain symptoms [19, 24, 26]. The mind body connection produces a sense of wellness. These exercises can also focus on breathing. Breathing is automatic but can be controlled as well as trained in order to be used to center oneself. It affects both psychological and physiological states of being. When breathing is addressed, it typically focuses on the ins and outs of the breath. Breathing techniques within these practices can be helpful in managing chronic pain, depression, anxiety, and insomnia [19, 24].

#### Yoga

Yoga combines posturing, breathing, stretching, strengthening, and relaxation [24, 33]. The practice combines movement, poses, mental focus and deep breathing [33]. Yoga improves posture, flexibility, and strength and can be adapted for any age [33]. The yoga



This Photo by Unknown Author is licensed under CC BY-NC



This Photo by Unknown Author is licensed under CC BY-NC-ND



 $\underline{\text{This Photo}}$  by Unknown Author is licensed under  $\underline{\text{CC BY-NC}}$ 

practice has demonstrated effectiveness in reducing arthritic, low back, multiple sclerosis, and upper extremity pains [24, 33]. In addition to pain relief, it can also be useful for lowering stress and anxiety [33].

#### Strength Training

Muscle strengthening is building the maximum force producing capacity for a muscle or muscle group with resistance training [24]. This process is specific to each person because it can be impacted by the person's age, conditions, level of activity, and what their goals for therapy look like [24]. Resistance training does not always have to involve huge dumbbells from a gym, sometimes it is the patient's own body weight, weighted cuffs, dumbbells of various weights, resistance bands, weighted dowel rods, or even household objects. Strength training interventions are anything that involves repetitive and effortful movements to cause muscle contraction and can be incorporated into any daily occupation the patient might find meaningful [24].

Examples can be gardening, cooking, painting, folding clothes, or making puzzles. There has been evidence to support the use of strength training to relieve chronic neck and back pain [3, 19].



This photo is taken and owned by The Good Good Life Occupational Therapy LLC



This photo is taken and owned by The Good Good Life Occupational Therapy LLC



This Photo by Unknown Author is licensed under CC BY

#### Tai Chi

Tai Chi is described as slow sequential movements while keeping a straight spine. There is an emphasis on abdominal breathing and movement of the hands [24]. It has been noted that Tai Chi can be beneficial to

reducing pain while increasing strength and balance in the lower body [24]. Studies have shown Tai Chi to be effective in fibromyalgia, osteoarthritis, neck, and rheumatoid arthritis pains [19, 24].

A study by Lauche et al.



This Photo by Unknown Author is licensed under <u>CC BY</u>



This Photo by Unknown Author is licensed under <u>CC BY-NC</u>

(2016), compared three groups: one completing simple neck exercises, one with Tai Chi practice, and one as a control group receiving no intervention. The goal of the study was to reduce neck pain. The study was performed over a 12-

week period. Upon completion of the study, the

neck exercises and Tai Chi groups were deemed

This Photo by Unknown Author is licensed under CC BY

equally effective in the reduction of neck pain. The Tai Chi group was more effective than no intervention at all. The study concluded with Tai Chi being a logical option for someone as an alternative to typical exercises for relieving neck pain [19]. Tai Chi can serve as a fun pain relief option that can also increase your mind body connection and overall wellness.

#### Pilates

Pilates training is a type of exercise that allows for increasing strength and flexibility of the muscles without increasing muscle mass or destroying them [13]. Pilates emphasizes core strength, body alignment, posture, and coordination with whole-controlled body movements [33]. Pilates may also decrease the risk for injury or joint damage because the exercises focus on deep breathing and muscle contractions. This makes Pilates suitable for any age [13]. Exercises are typically performed with a mat on the floor while either standing, sitting, or lying flat on your back. This practice focuses on physical harmony between the mind and body. The deep breathing can help with concentration and promote over all wellness. It is noted that people who participate tend to have better sleep, as well as have less signs of fatigue, stress, and anxiety [13]. There is evidence to support that Pilates can be effective in reducing lower back, arthritic, neck, ankylosing spondylitis, and fibromyalgia pain [33].



This Photo by Unknown Author is licensed under CC BY-NC-ND



This Photo by Unknown Author is licensed under CC BY-NC-ND



This Photo by Unknown Author is licensed under <u>CC BY-NC-ND</u>

Activities:

Word Search

# Chronic Pain Word Search



Pain Management	Pharmaceutical	Aquatic Therapy	Conserve Energy
Strengthening	Deep Breathing	Daily Activity	Independence
Goal Setting	Mindfulness	Occupations	Chronic Pain
Ergonomics	Arthritis	Exercise	Wellness
Stretching	Therapy	Fitness	Flare Up
Pacing	Adapt	Yoga	Opioid



# **Chronic Pain Crossword**



Crossword questions on next page!

Hint: All the answers can be learned by reading through the manual, this is a fun way to test what you've learned! Good luck.

#### **Crossword Questions**

#### Across

- 5 This type of pain can often be addressed by using better body mechanics when lifting.
- 6 Occupational therapists work with patients to improve their overall \_\_\_\_.
- 11 Type of therapy that involves your activities of daily living (ADL).
- 13 A common feeling that people with chronic pain can deal with that relates to severe sadness.
- 15 Changing a task to make it easier is referred to as \_.
- 16 A type of therapy involving a pool.
- 17 \_ million people are living with chronic pain

#### Down

- A connection between mind and body can create a mindset of \_.
- 2 Pain that persists for more than 3 months
- 3 The time when pain is worst is a \_ \_.
- 4 Program involving various exercises like yoga, tai chi, or Pilates can also be referred to as \_.
- 7 Improves posturing and anxiety and can lower stress rates.
- 8 Purposeful activities are also referred to as \_\_\_\_.
- 9 Allows for more realistic tasks to be accomplished within patients limitations.
- 10 Using this technique can help with centering yourself or being more aware of the mind body connection.
- 12 Studying the performance of a task in its' environment.
- 14 Most common drug type used for pain management

#### Word Matching Puzzle

# Non-Pharmaceutical Approach Matching Game



### Glossary

Activities of Daily Living (ADL) – Activities or tasks that an individual completes every day to maintain personal care [24].

Adaptive Equipment – A physical object or tool that can help an individual complete a task independently [24].

Adaptive Strategies – A method of changing a task to make it easier to complete [15, 25].

Aquatic Therapy – Is a form of therapy completed in a heated pool that utilizes water's buoyancy, resistance, and heat to assist in exercise performance [21].

Chronic Pain – A pain lasting longer than 3 months [10, 11].

Deconditioning Syndrome – The cycle of having pain and ceasing physical activity, only to then have the lack of physical activity cause a decline in overall health thus also increasing one's pain level.

Ergonomics – The performance of a task in an environment typically focusing on body mechanics and posturing [15].

Flare-up – The point in which pain is at its' worst [27].

Grading – The act of making a task harder or easier to complete by adding more components or breaking in down further [15, 24].

Occupational Therapy - A rehabilitation therapy that specializes in promoting independence in daily occupations that are meaningful to patients [15].

Occupations - Any activity in which people are engaged throughout the day [8].

Opiate – "Refer to natural opioids such as heroin, morphine and codeine" [5].

Opioid – "Natural, synthetic, or semi-synthetic chemicals that interact with opioid receptors on nerve cells in the body and brain and reduce the intensity of pain signals and feelings of pain" [5].

Pacing – The formation of a plan that involves spreading out daily tasks to avoid fatigue and pain flare ups [15].

The Opioid Crisis – A significant increase in the use and abuse of opioids within the United States [5].

Wellness – A picture of overall health that includes stress management, exercise, nutrition, spiritual, emotional, mental, cognitive, and environmental components [24].

Answers to Activities

Word Search Answers

# Chronic Pain Word Search

LSEWELLNESSZLXHORCUMDDJBLXJLPK V F K W O O M H U R Z P M X R M H O G I Z W W I D V C A E F CM THERAPYOHOIKWPFMGYIO FLLHGWUS <u>OCCUPATIONS</u>RUZLVEYOVTNYN NVDMZN P K V L U Y N T Z I <u>M Y A F L K H P X N G H U N T R H W O Z</u> KXNHTYRZK (GOALSETTING) TWWLINN MGR MHV(<u>STRFTCHING</u>)SHASX J X Y O I H L Y Y S S W NMSIYEUORIXOPBZHDPZRKIGAIIW SWE M K T <del>E X E R C I S E</del>) U Y V R T H K Q A J D F C B D M N S) Q A Z M B P E R J H D Z U C X Y Z I H H Z U S P T W R F U Q B H U F N O Q | T A O R Z Y O V N T S C V H F I A G B | W Y I ORIDOLLSQXO Q AQUATICTHERAPY TADE HAGFEEBARMIYAYOFEPBREATHINGJ KQXEUANQHXVZQI PHKKYGAKOODDUMOS RFWXINLLJEZEQSNHACMINDFULNESSK LASCGRNFHSUNZCTWSRJGMXXSFBECKH LILWONXSQEANLFHAA ѕ`м`∨ Ѕ ∪ Н С О Н М G G P JOODTWEJAFREDHBREWMARLMHNWUHZR DYZHRQ SADAVGCENQOWA A YAN MK Q D V E S G H E H H R J Q E P W E N G G Q E'R 8 A W F G V N AMGOPCKDRXGYXWWEVJ OITFF H W V JUG|P|XNLLPVVUEBIOBVVVFC **PBTRZ** IOHIAWHZJJEHMGJWX TEOOCOXEFHQEBIGQU D. ,Е,Е,Ж O G 🕈 N'\A' TPMISIAWZEIAWNLPC ٠C, YE'W WARN' CAZDETC ?? & FUQ C EMXLS SHCK EMW 801 L Q P A S V V E D L J Z P V & G Z K P O T E Q V M S N H I UCC | BZFVCRMH | GN GBZTQVBAM PKGOOX Q B D G B U | V Q A Z D O C L G Y O A M H X E V H C Q B V N H R V R C V D A L L Y A C T L V L T Y)N O L X P V U W S O K

#### **Crossword Answers**

# **Chronic Pain Crossword**



#### Word Matching Puzzle Answers

# Non-Pharmaceutical Approach Matching Game

Match the word on the left side to its definition on the right side.

- Chronic Pain
- 2. Aquatic Therapy
- 3. Ergonomics
- 4. Fitness-Based Exercises
- Adaptive Equipment/Strategies
- Activities of Daily Living
- Occupations
- 8. Independent



- Yoga, Strength Training, Pilates, Tai Chi, and more
- An activity in which people B. are engaged throughout the day that is meaningful
  - Pacing, Goal Setting, Built up Handles, Flare Up Planning, and more
  - Bathing, Feeding, Dressing, Eating, Toileting, etc.
  - Pain persisting for more than 3 months
  - The ability to complete a task alone
- The performance of a task in its' environment
- H. Therapy performed in a heated pool

#### References

- [1] Almutairi, A. R., Mollon, L., Lee, J., & Slack, M. (2019). A comparison of the pharmacologic and nonpharmacologic strategies used to manage chronic pain: Opioid users versus nonusers. *Journal of the American Pharmacists Association*, 59(5), 691–697. https://doi.org/10.1016/j.japh.2019.06.009
- [2] Amris, K., Bülow, C. von, Christensen, R., Bandak, E., Rasmussen, M. U., Danneskiold-Samsøe, B., & Waehrens, E. E. (2019). The benefit of adding a physiotherapy or occupational therapy intervention program to a standardized group-based interdisciplinary rehabilitation program for patients with chronic widespread pain: A randomized active-controlled non-blinded trial. *Clinical Rehabilitation*, *33*(8), 1367–1381. https://doi.org/10.1177/0269215519843986
- [3] Atalay, E., Akova, B., Gür, H., & Sekir, U. (2017). Effect of upper-extremity strengthening exercises on the lumbar strength, disability and pain of patients with chronic low back pain: A randomized controlled study. *Journal of Sports Science & Medicine*, 16(4), 595–603. Retrieved from

http://search.ebscohost.com/login.aspx?direct=true&db=s3h&AN=126631601&site=eds-live

- [4] Birke, H., Ekholm, O., Højsted, J., Sjøgren, P., & Kurita, G. P. (2019). Chronic pain, opioid therapy, sexual desire, and satisfaction in sexual life: A population-based survey. *Pain Medicine*, 20(6), 1132–1140. Retrieved from
- http://search.ebscohost.com/login.aspx?direct=true&db=s3h&AN=136864181&site=eds-live [5] Centers for Disease Control and Prevention. (2019). Opioids. Retrieved from
- https://www.cdc.gov/opioids/index.html
  [6] Cheng, M. (2017). New management strategies for patients with chronic pain. *Journal of Managed Care Medicine*, 20(3), 20–25.
- [7] Da Silva Sobrinho, A. C., De Almeida, M. L., Da Silva Rodrigues, G., & Bueno Júnior, C. R. (2019). Association of chronic pain with strength, levels of stress, sleep and quality of life in women over 50 years. *Fisioterapia e Pesquisa*, 26(2), 193–200. https://doi.org/10.1590/1809-2950/18033226022019
- [8] Dahl-Popolizio, S., Manson, L., Muir, S., & Rogers, O. (2016). Enhancing the value of integrated primary care: The role of occupational therapy. *Families, Systems & Health, 34*(3), 270. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=edsgsr&AN=edsgcl.465558430&sit e=eds-live
- [9] Dahlhamer, J., Lucas, J., Zelaya, C., Nahin, R., Mackey, S., DeBar, L., ... Helmick, C. (2018). Prevalence of chronic pain and high-impact chronic pain among adults. *Morbidity* and Mortality Weekly Report. 67(36), 1001–1006. Retrieved from: http://dx.doi.org/10.15585/mmwr.mm6736a2
- [10] Domenichiello, A. F., & Ramsden, C. E. (2019). The silent epidemic of chronic pain in older adults. *Progress in Neuropsychopharmacology & Biological Psychiatry*, 93, 284–290. https://doi.org/10.1016/j.pnpbp.2019.04.006
- [11] Gupta, P., Mohanty, P. P., & Pattnaik, M. (2019). The effectiveness of aerobic exercise program for improving functional performance and quality of life in chronic low back pain. *Indian Journal of Physiotherapy & Occupational Therapy*, 13(2), 155–160. https://doi.org/10.5958/0973-5674.2019.00064.9
- [12] Hadlandsmyth, K., Stewart, K. R., Paez, M. B., Steffen, M., Meth, M., Reisinger, H. S., & Mosher, H. J. (2019). Patient perspectives on opioids: Views of inpatient veterans with

chronic pain. *Pain Medicine*, 20(6), 1141–1147. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=s3h&AN=136864197&site=eds-live

- [13] Hasanpour-Dehkordi, A., Dehghani, A., & Solati, K. (2017). A comparison of the effects of Pilates and McKenzie training on pain and general health in men with chronic low back pain: A randomized trial. *Indian Journal of Palliative Care*, 23(1), 36–40. https://doi.org/10.4103/0973-1075.197945
- [14] Hesselstrand, M., Samuelsson, K., & Liedberg, G. (2015). Occupational therapy interventions in chronic pain - A systematic review. *Occupational Therapy International*, 22(4), 183. https://doi.org/10.1002/oti.1396
- [15] Hill, W. (2016). The role of occupational therapy in pain management. *Anaesthesia & Intensive Care Medicine*, *17*(9), 451–453. https://doi.org/10.1016/j.mpaic.2016.06.008
- [16] Hill, W., & Macartney, M. (2019). The role of occupational therapy in enabling people with chronic pain to return to work or education. *Anaesthesia & Intensive Care Medicine*. 20(8), https://doi.org/10.1016/j.mpaic.2019.05.007
- [17] Keane, L. G. (2017). Comparing AquaStretch with supervised land-based stretching for chronic lower back pain. *Journal of Bodywork & Movement Therapies*, 21(2), 297–305. Retrieved from

http://search.ebscohost.com/login.aspx?direct=true&db=s3h&AN=123132006&site=eds-live

- [18]Lagueux, É., Dépelteau, A., & Masse, J. (2018). Occupational therapy's unique contribution to chronic pain management: A scoping review. *Pain Research & Management*, 1–19. https://doi.org/10.1155/2018/5378451
- [19] Lauche, R., Stumpe, C., Fehr, J., Cramer, H., Cheng, Y. W., Wayne, P. M., Rampp, T., Langhorst, J., & Dobos, G. (2016). The effects of tai chi and neck exercises in the treatment of chronic nonspecific neck pain: A randomized controlled trial. *Journal of Pain*, 17(9), 1013–1027. https://doi.org/10.1016/j.jpain.2016.06.004
- [20] Lucio, A., Laney, J., Lake, S., Kornblau, B., & Mbiza, S. (2018). Occupational therapy interventions for the treatment of pain. *American Journal of Occupational Therapy*, 72, 1. Retrieved from

http://search.ebscohost.com/login.aspx?direct=true&db=edo&AN=134729848&site=eds-live

- [21] McIlroy, S., Sayliss, L., Browning, P., & Bearne, L. M. (2017). Aquatic therapy for people with persistent knee pain: A feasibility study. *Musculoskeletal Care*, 15(4), 350–355. https://doi.org/10.1002/msc.1179
- [22] Mehta, P., Kaur, M., Smith, C. M., Mani, R., & Baxter, G. D. (2018). Aging well with chronic musculoskeletal pain: Protocol for a systematic review of non-pharmacological interventions aimed at reducing pain in an ageing population. *Physical Therapy Reviews*, 23(6), 330–337. https://doi.org/10.1080/10833196.2018.1540167
- [23] Murray, M., Stone, A., Pearson, V., & Treisman, G. (2019). Clinical solutions to chronic pain and the opiate epidemic. *Preventive Medicine: An International Journal Devoted to Practice and Theory*, 118(2019), 171–175. https://doi.org/10.1016/j.ypmed.2018.10.004
- [24] Radomski, M.V., Trombly Latham, C.A. (2014). *Occupational therapy for physical dysfunction, Seventh Edition*, Philadelphia, PA. Lippincott. ISBN; 978-14511-2746-1
- [25] Rochman, D. (2014). Occupational therapy and pain rehabilitation. American Occupational Therapy Association (AJOT). Retrieved from https://www.aota.org/~/media/Corporate/Files/AboutOT/Professionals/WhatIsOT/HW/Facts/ Pain%20Rehabilitation%20fact%20sheet.pdf

- [26] Russell, N., Daniels, B., Smoot, B., & Allen, D. D. (2019). Effects of yoga on quality of life and pain in women with chronic pelvic pain: Systematic review and meta-analysis. *Journal of Women's Health Physical Therapy*, 43(3), 144.
- [27] Simon, A., & Collins, C. (2017). Lifestyle Redesign® for chronic pain management: a retrospective clinical efficacy study. *American Journal of Occupational Therapy*, 71(4), 1–7. https://doi.org/10.5014/ajot.2017.025502
- [28] Simsek, N., Evli, M., & Uzdil, N. (2019). Learned resourcefulness, anxiety and depression levels in patients with chronic pain. *International Journal of Caring Sciences*, 12(1), 240–247. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=ccm&AN=136698189&site=edslive
- [29] Sousa, S., Shoemaker, S., Nascimento, M., Costa, M., & Ramalho de Oliveira, D. (2018). Development and validation of a logic model for comprehensive medication management services. *International Journal of Pharmacy Practice*, 26(3), 250–257. https://doi.org/10.1111/ijpp.12392
- [30] Stensland, M. L., & Sanders, S. (2018). Not so golden after all: The complexities of chronic low back pain in older adulthood. *Gerontologist*, 58(5), 923–931. https://doi.org/10.1093/geront/gnx154
- [31] Vendrusculo-Fangel, L., Fangel, R., dos Santos Leles, T., de Melo Moura, L., & de Cássia Marqueti, R. (2019). Changes in occupational roles in women with chronic pain and rheumatoid arthritis compared to healthy women. *Brazilian Journal of Occupational Therapy*, 27(1), 135–148. https://doi.org/10.4322/2526-8910.ctoAO1798
- [32] Weissenfels, A., Wirtz, N., Dörmann, U., Kleinöder, H., Donath, L., Kohl, M., Fröhlich, M., von Stengel, S., & Kemmler, W. (2019). Comparison of whole-body electromyostimulation versus recognized back-strengthening exercise training on chronic nonspecific low back pain: A randomized controlled study. *BioMed Research International*, 1–9. https://doi.org/10.1155/2019/5745409
- [33] Wu, P. I.-K., Meleger, A., Witkower, A., Mondale, T., & Borg-Stein, J. (2015). Nonpharmacologic options for treating acute and chronic pain. *PM&R*, 7(11), S278–S294. https://doi.org/10.1016/j.pmrj.2015.09.008
- [34] Yaban, Z. S. (2019). Usage of non-pharmacologic methods on postoperative pain management by nurses: Sample of turkey. *International Journal of Caring Sciences*, 12(1), 529–541. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=ccm&AN=136698222&site=edslive
- [35] Zamuner, A. R., Andrade, C. P., Arca, E. A., & Avila, M. A. (2019). Impact of water therapy on pain management in patients with fibromyalgia: Current perspectives. *Journal of Pain Research*, 1971. https://doi.org/10.2147/JPR.S161494