Supplementary Table 1. Summarizes literature that was identified for this review.

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Chronic Pain Studies									
Arthritis	Lin, D. H., Lin, Y. F., Chai, H. M., Han, Y. C., & Jan, M. H. (2007). Comparison of proprioceptive functions between computerized proprioception facilitation exercise and closed kinetic chain exercise in patients with knee osteoarthritis. Clinical rheumatology, 26(4), 520–528.	https://pubmed.ncbi.nlm.nih.gov/16786252/	89	Arthritis patients engaged with a computerized proprioception facilitation exercise video game using a control board to improve overall proprioceptive functioning	N/A			●	●
Arthritis	Allam, A., Kostova, Z., Nakamoto, K., & Schulz, P. J. (2015). The effect of social support features and gamification on a Web-based intervention for rheumatoid arthritis patients: randomized controlled trial. Journal of medical Internet research, 17(1), e14.	https://pubmed.ncbi.nlm.nih.gov/25574939/	155	Rheumatoid arthritis patients visited a web-based gamified social support website	N/A				●
Headache	de Tommaso, M., Ricci, K., Laneve, L., Savino, N., Antonaci, V., & Livrea, P. (2013). Virtual visual effect of hospital waiting room on pain modulation in healthy subjects and patients with chronic migraine. Pain research and treatment, 2013, 515730.	https://pubmed.ncbi.nlm.nih.gov/23365736/	16	Patients with headaches woere wore-mounted displays that simulated different waiting-room environments(e.g., seascape or standard hospital)	N/A		●		
Headache	Shiri, S., Feintuch, U., Weiss, N., Pustilnik, A., Geffen, T., Kay, B., Meiner, Z., & Berger, I. (2013). A virtual reality system combined with biofeedback for treating pediatric chronic headache--a pilot study. Pain medicine (Malden, Mass.), 14(5), 621–627.	https://pubmed.ncbi.nlm.nih.gov/23659372/	9	Participants wore a head-mounted virtual display while doing galvanic skin response-based biofeedback training	N/A				●
Other Pain	Leibovici, V., Magora, F., Cohen, S., & Ingber, A. (2009). Effects of virtual reality immersion and audiovisual distraction techniques for patients with pruritus. Pain research & management, 14(4), 283–286.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2734514/	24	Pruitus patients played an augmented reality game displayed on head-mounted to distract themselves from itching	N/A		●		●
Other Pain	Jones, T., Skadberg, R., & Moore, T. (2018). A Pilot Study of the Impact of Repeated Sessions of Virtual Reality on Chronic Neuropathic Pain. International Journal of Virtual Reality, 18(1), 19-34	https://ijvr.eu/article/view/2901	10	Participants with chronic neuropathic pain played a virtual reality game on a HTC Vive system to distract themselves from pain	N/A	●	●		●
Other Pain	Agrawal, A. K., Robertson, S., Litwin, L., Tringale, E., Treadwell, M., Hoppe, C., & Marsh, A. (2019). Virtual reality as complementary pain therapy in hospitalized patients with sickle cell disease. Pediatric blood & cancer, 66(2), e27525.	https://pubmed.ncbi.nlm.nih.gov/30362236/	21	Pediatric sickle cell disease patients wore a head-mounted display and played an aquatic exploration game to distract themselves from pain	N/A	●	●		●
Cancer Pain	Li, W. H., Chung, J. O., & Ho, E. K. (2011). The effectiveness of therapeutic play, using virtual reality computer games, in promoting the psychological well-being of children hospitalised with cancer. Journal of clinical nursing, 20(15-16), 2135–2143.	https://pubmed.ncbi.nlm.nih.gov/21651633/	122	Pediatric cancer patients played virtual reality computer games to reduce anxiety and depressive symptoms.	N/A		●		●
Cancer Pain	Bani Mohammad, E., & Ahmad, M. (2019). Virtual reality as a distraction technique for pain and anxiety among patients with breast cancer: A randomized control trial. Palliative & supportive care, 17(1), 29–34.	https://pubmed.ncbi.nlm.nih.gov/30198451/	80	Immersive virtual reality aquatic game to distract from cancer-related pain.	N/A		●		
Neck Pain	Sarig-Bahat, H., Weiss, P. L., & Laufer, Y. (2010). Neck pain assessment in a virtual environment. Spine, 35(4), E105–E112.	https://pubmed.ncbi.nlm.nih.gov/20110842/	25	Participants with neck pain wore a head-mounted display with tracking sensors that assessed the range of motion in their cervical spine during gameplay.	N/A		●		●

** Studies categorized with a ● denote inclusion of experiential factor in the virtual intervention. For 'presence', ● indicates that presence was assessed as part of intervention.*
*** "High" and "Fair" quality RCTs refer to ratings provided by formal systematic reviews and meta-analyses; citation for reviews listing the study are provided.*
**** "Not Rated" refers to ostensible RCTs which have not (yet) been rated in systematic reviews or meta-analyses; "N/A" stands for not applicable.*

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Chronic Pain Studies									
Neck Pain	Sarig Bahat, H., Weiss, P. L., Sprecher, E., Krasovsky, A., & Laufer, Y. (2014). Do neck kinematics correlate with pain intensity, neck disability or with fear of motion?. Manual therapy, 19(3), 252–258.	https://pubmed.ncbi.nlm.nih.gov/24291364/	25	Participants with neck pain wore a head-mounted display with tracking sensors that assessed the range of motion in their cervical spine duringgameplay.	N/A		●		●
Neck Pain	Sarig Bahat, H., Takasaki, H., Chen, X., Bet-Or, Y., & Treleaven, J. (2015). Cervical kinematic training with and without interactive VR training for chronic neck pain - a randomized clinical trial. Manual therapy, 20(1), 68–78.	https://pubmed.ncbi.nlm.nih.gov/25066503/	32	Participants with neck pain wore a head-mounted display with tracking sensors to play cervical kinematic training games.	High [64]		●		●
Neck Pain	Harvie, D. S., Broecker, M., Smith, R. T., Meulders, A., Madden, V. J., & Moseley, G. L. (2015). Bogus visual feedback alters onset of movement-evoked pain in people with neck pain. Psychological science, 26(4), 385–392.	https://pubmed.ncbi.nlm.nih.gov/25691362/	24	Participants with neck pain wore a head-mounted display with tracking sensors that measured the range of motion in their necks while exploring avirtual environment.	High [64]		●		
Neck Pain	Rezaei, I., Razeghi, M., Ebrahimi, S., Kayedi, S., Rezaeian Zadeh, A. (2019). A Novel Virtual Reality Technique (Cervigame®) Compared to Conventional Proprioceptive Training to Treat Neck Pain: A Randomized Controlled Trial. Journal of Biomedical Physics and Engineering, 9(3), 355-366. doi: 10.31661/jbpe.v0i0.556	https://pubmed.ncbi.nlm.nih.gov/31341881/	44	Participants with neck pain wore a head mounted display to play "Cervigame" - virtual reality proprioceptive training.	N/A		●		●
CRPS	Sato, K., Fukumori, S., Matsusaki, T., Maruo, T., Ishikawa, S., Nishie, H., Takata, K., Mizuhara, H., Mizobuchi, S., Nakatsuka, H., Matsumi, M., Gofuku, A., Yokoyama, M., & Morita, K. (2010). Nonimmersive virtual reality mirror visual feedback therapy and its application for the treatment of complex regional pain syndrome: an open-label pilot study. Pain medicine (Malden, Mass.), 11(4), 622–629.	https://pubmed.ncbi.nlm.nih.gov/20202141/	5	Participants with CRPS wore a custom glove with sensors on their non affected limb. The data from the glove created a real-time computer simulation of their affected limb.	N/A			●	●
CRPS	Jeon, B., Cho, S., & Lee, J. H. (2014). Application of virtual body swapping to patients with complex regional pain syndrome: a pilot study. Cyberpsychology, behavior and social networking, 17(6), 366–370.	https://pubmed.ncbi.nlm.nih.gov/24892199/	10	Participants with CRPS looked through a head-mounted display to see a human figure posing. Participants were asked to copy the figure's posture.	N/A	●	●	●	
CRPS	Won, A. S., Tataru, C. A., Cojocaru, C. M., Krane, E. J., Bailenson, J. N., Niswonger, S., & Golianu, B. (2015). Two Virtual Reality Pilot Studies for the Treatment of Pediatric CRPS. Pain medicine (Malden, Mass.), 16(8), 1644–1647.	https://pubmed.ncbi.nlm.nih.gov/25930099/	2	Pediatric CRPS patients wore a head-mounted display and controlled a 1st person avatar to complete target-hitting tasks, with the goal of improving overall mobility.	N/A		●	●	●
CRPS	Solcà, M., Ronchi, R., Bello-Ruiz, J., Schmidlin, T., Herbelin, B., Luthi, F., Konzelmann, M., Beaulieu, J. Y., Delaquaize, F., Schnider, A., Guggisberg, A. G., Serino, A., & Blanke, O. (2018). Heartbeat-enhanced immersive virtual reality to treat complex regional pain syndrome. Neurology, 91(5), e479–e489.	https://pubmed.ncbi.nlm.nih.gov/29980635/	48	Participants with CRPS wore a head-mounted display and observed a virtual depiction of their affected limb, which flashed synchronously or asynchronously with their heartbeat.	N/A	●	●	●	
Musculoskeletal Pain	Sveistrup, H., McComas, J., Thornton, M., Marshall, S., Finestone, H., McCormick, A., Babulic, K., & Mayhew, A. (2003). Experimental studies of virtual reality-delivered compared to conventional exercise programs for rehabilitation. Cyberpsychology & behavior : the impact of the Internet, multimedia and virtual reality on behavior and society, 6(3), 245–249.	https://pubmed.ncbi.nlm.nih.gov/12855079/	14	A motion capture device displayed participants' movements during exercise rehab in real-time on a tv screen.	N/A			●	●
Musculoskeletal Pain	Jansen-Kosterink, S. M., Huis In 't Veld, R. M., Schönauer, C., Kaufmann, H., Hermens, H. J., & Vollenbroek-Hutten, M. M. (2013). A Serious Exergame for Patients Suffering from Chronic Musculoskeletal Back and Neck Pain: A Pilot Study. Games for health journal, 2(5), 299–307.	https://pubmed.ncbi.nlm.nih.gov/24761327/	10	Participants with musculoskeltal pain wore a motion capture suit and walked on a treadmill to move within a non-immersive ovirtual environment in hopes of improving their mobility.	N/A	●		●	●

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Chronic Pain Studies									
Musculoskeletal Pain	Powell, W., & Simmonds, M. J. (2014). Virtual reality and musculoskeletal pain: manipulating sensory cues to improve motor performance during walking. Cyberpsychology, behavior and social networking, 17(6), 390–396.	https://pubmed.ncbi.nlm.nih.gov/24892203/	36	A virtual camera captured participants' movements while walking on a of self-paced treadmill. Their movements were projected onto a screen in front of the treadmill in real-time.	Fair [64]				
Spinal Cord Injury Pain	M. Villiger et al., (2011). Virtual reality rehabilitation system for neuropathic pain and motor dysfunction in spinal cord injury patients. International Conference on Virtual Rehabilitation, Zurich, Switzerland, 1-4.	https://ieeexplore.ieee.org/document/5971865	2	A PC and a large-screen display showed life-size virtual representations of feet and legs. Spinal cord injured participants played minigames using kicking motions to improve their neuropathic pain.	N/A			●	●
Spinal Cord Injury Pain	Villiger, M., Bohli, D., Kiper, D., Pyk, P., Spillmann, J., Meilick, B., Curt, A., Hepp-Reymond, M. C., Hotz-Boendermaker, S., & Eng, K. (2013). Virtual reality-augmented neurorehabilitation improves motor function and reduces neuropathic pain in patients with incomplete spinal cord injury. Neurorehabilitation and neural repair, 27(8), 675–683.	https://pubmed.ncbi.nlm.nih.gov/23757298/	14	Motion capture sensors were placed on the lower limbs of participants with spinal cord injury. Participants played minigames on a non-immersive display by kicking their legs to improve their mobility.	N/A			●	●
Spinal Cord Injury Pain	Jordan, M., & Richardson, E. J. (2016). Effects of Virtual Walking Treatment on Spinal Cord Injury-Related Neuropathic Pain: Pilot Results and Trends Related to Location of Pain and at-level Neuronal Hypersensitivity. American journal of physical medicine & rehabilitation, 95(5), 390–396.	https://pubmed.ncbi.nlm.nih.gov/26544859/	35	Spinal cord injured participants underwent virtual walking therapy on a 3D-video screen to determine which types of pain benefit from illusory walking.	N/A			●	
Spinal Cord Injury Pain	Roosink, M., Robitaille, N., Jackson, P. L., Bouyer, L. J., & Mercier, C. (2016). Interactive virtual feedback improves gait motor imagery after spinal cord injury: An exploratory study. Restorative neurology and neuroscience, 34(2), 227–235.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4927914/	9	Spinal cord injured participants wore motion sensors their arm to control a walking 3rd person avatar (projected on a 3D screen).	N/A	●		●	●
Spinal Cord Injury Pain	Richardson, E. J., McKinley, E. C., Rahman, A., Klebine, P., Redden, D. T., & Richards, J. S. (2019). Effects of virtual walking on spinal cord injury-related neuropathic pain: A randomized, controlled trial. Rehabilitation psychology, 64(1), 13–24.	https://pubmed.ncbi.nlm.nih.gov/30407030/	59	Spinal cord injured participants watched a 3D video of legs walking from 1st-person.	Not Rated			●	
Fibromyalgia	Botella, C., Garcia-Palacios, A., Vizcaíno, Y., Herrero, R., Baños, R. M., & Belmonte, M. A. (2013). Virtual reality in the treatment of fibromyalgia: a pilot study. Cyberpsychology, behavior and social networking, 16(3), 215–223.	https://pubmed.ncbi.nlm.nih.gov/23496678/	6	Participants with fibromalgia underwent 10 sessions of cognitive behavioral therapy supported by audiovisual virtual reality to improve mindfullness	N/A				●
Fibromyalgia	Herrero, R., García-Palacios, A., Castilla, D., Molinari, G., & Botella, C. (2014). Virtual reality for the induction of positive emotions in the treatment of fibromyalgia: a pilot study over acceptability, satisfaction, and the effect of virtual reality on mood. Cyberpsychology, behavior and social networking, 17(6), 379–384.	https://pubmed.ncbi.nlm.nih.gov/24892201/	40	Participants with fibromyalgia watched various virtual environments being explored on large projection screen to improve their mood.	N/A				
Fibromyalgia	Garcia-Palacios, A., Herrero, R., Vizcaíno, Y., Belmonte, M. A., Castilla, D., Molinari, G., Baños, R. M., & Botella, C. (2015). Integrating virtual reality with activity management for the treatment of fibromyalgia: acceptability and preliminary efficacy. The Clinical journal of pain, 31(6), 564–572.	https://pubmed.ncbi.nlm.nih.gov/25551475/	61	Cognitive behavioral therapy was paired with virtual reality environments on a large projection screen	N/A				
Fibromyalgia	Mortensen, J., Kristensen, L. Q., Brooks, E. P., & Brooks, A. L. (2015). Women with fibromyalgia's experience with three motion-controlled video game consoles and indicators of symptom severity and performance of activities of daily living. Disability and rehabilitation. Assistive technology, 10(1), 61–66.	https://pubmed.ncbi.nlm.nih.gov/24028282/	15	Patients with fibromyalgia played motion-capture based video games (e.g., Wii, PS3 Move, Kinect) to exercise and distract themselves from pain.	N/A				●

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
			Chronic Pain	URL					
Fibromyalgia	Morris, L. D., Louw, Q. A., Grimmer, K. A., & Meintjes, E. (2015). Targeting pain catastrophization in patients with fibromyalgia using virtual reality exposure therapy: a proof-of-concept study. Journal of physical therapy science, 27(11), 3461–3467.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4681926/	22	Patients with fibromyalgia underwent virtual reality exposure therapy, where patients wore a head-mounted display and watched visuals of feared exercise movements to reduce pain catastrophizing	N/A		●		
Low Back Pain	Kim, S. S., Min, W. K., Kim, J. H., & Lee, B. H. (2014). The Effects of VR-based Wii Fit Yoga on Physical Function in Middle-aged Female LBP Patients. Journal of physical therapy science, 26(4), 549–552.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3996419/	30	Female patients with low back pain engaged in Wii Fit yoga using a balance board to improve their overall physical functioning.	Fair [62]			●	●
Low Back Pain	Roosink, M., McFadyen, B. J., Hébert, L. J., Jackson, P. L., Bouyer, L. J., & Mercier, C. (2015). Assessing the perception of trunk movements in military personnel with chronic non-specific low back pain using a virtual mirror. PloS one, 10(3), e0120251.	https://pubmed.ncbi.nlm.nih.gov/25799009/	30	Participants with low back pain did trunk exercises while wearing a motion capture suit and watching a virtual avatar copy their movements in realtime on a screen.	N/A	●		●	●
Low Back Pain	Thomas, J. S., France, C. R., Applegate, M. E., Leitkam, S. T., & Walkowski, S. (2016). Feasibility and Safety of a Virtual Reality Dodgeball Intervention for Chronic Low Back Pain: A Randomized Clinical Trial. The journal of pain : official journal of the American Pain Society, 17(12),1302–1317.	https://pubmed.ncbi.nlm.nih.gov/27616607/	52	Participants with low back pain underwent a 3D-TV dodgeball intervention to elicit graded increases in lumbar spine flexion while reducing expectations of fear.	High [62]				●
Low Back Pain	Yilmaz Yelvar, G. D., Çırak, Y., Dalkılınç, M., Parlak Demir, Y., Guner, Z., & Boydak, A. (2017). Is physiotherapy integrated virtual walking effective on pain, function, and kinesiophobia in patients with non-specific low-back pain? Randomised controlled trial. European spine journal : official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society, 26(2), 538–545.	https://pubmed.ncbi.nlm.nih.gov/27981455/	44	Participants with low back pain passively watched a virtual walking video through video glasses. Participants were asked to imagine themselves walking to reduce kinesiophobia.	High [62]			●	
Low Back Pain	France, C. R., & Thomas, J. S. (2018). Virtual immersive gaming to optimize recovery (VIGOR) in low back pain: A phase II randomized controlled trial. Contemporary clinical trials, 69, 83–91.	https://pubmed.ncbi.nlm.nih.gov/29730393/	42	Participants with low back pain wore a head-mounted display with kinematic sensors to play a game where they reached down to hit targets with the goal of increasing lumbar spine flexion.	Not Rated		●	●	●
Low Back Pain	Applegate, M. E., France, C. R., Russ, D. W., Leitkam, S. T., & Thomas, J. S. (2018). Determining Physiological and Psychological Predictors of Time to Task Failure on a Virtual Reality Sørensen Test in Participants With and Without Recurrent Low Back Pain: Exploratory Study. JMIR serious games, 6(3), e10522.	https://pubmed.ncbi.nlm.nih.gov/30201604/	24	An Oculus Rift displayed a sky environment where participants with low back pain "flew" through hoops by extending and flexing their trunk region.	N/A		●		●
Low Back Pain	Alemanno, F., Houdayer, E., Emedoli, D., Locatelli, M., Mortini, P., Mandelli, C., Raggi, A., & Iannaccone, S. (2019). Efficacy of virtual reality to reduce chronic low back pain: Proof-of-concept of a non-pharmacological approach on pain, quality of life, neuropsychological and functional outcome. PloS one, 14(5), e0216858.	https://pubmed.ncbi.nlm.nih.gov/31120892/	20	Participants with low back pain played an exercise game on an LCD monitor with motion trackers. Participants used their trunk flexion to control the game.	N/A			●	●
Mixed Pain	Gromala, Diane & Song, Meehae & Yim, Ji-Dong & Fox, Tyler & Barnes, Steven & Nazemi, Mark & Shaw, Christopher & Squire, Pam. (2011). Immersive VR: A Non-pharmacological Analgesic for Chronic Pain?. Conference on Human Factors in Computing Systems - Proceedings. 1171-1176.	https://dl.acm.org/doi/10.1145/1979742.1979704	N/A	Participants with chronic pain wore a head mounted display and walked on a treadmill to move through a virtual environment to improve their mobility.	N/A		●		●
Mixed Pain	Wiederhold, B. K., Gao, K., Sulea, C., & Wiederhold, M. D. (2014). Virtual reality as a distraction technique in chronic pain patients. Cyberpsychology, behavior and social networking, 17(6), 346–352.	https://pubmed.ncbi.nlm.nih.gov/24892196/	6	Participants with chronic pain wore head mounted displays with physiological sensors to measure their distraction from pain while exploring a virtual environment.	N/A		●		

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Chronic Pain Studies									
Mixed Pain	Wiederhold, B. K., Gao, K., Kong, L., & Wiederhold, M. D. (2014). Mobile devices as adjunctive pain management tools. Cyberpsychology, behavior and social networking, 17(6), 385–389.	https://pubmed.ncbi.nlm.nih.gov/24892202/	31	Participants either wore a head-mounted display or used a mobile device to distract themselves from chronic pain.	Fair [64]		●		
Mixed Pain	Gromala, Diane & Tong, Xin & Choo, Amber & Karamnejad, Mehdi & Shaw, Christopher. (2015). The Virtual Meditative Walk: Virtual Reality Therapy for Chronic Pain Management.	https://dl.acm.org/doi/10.1145/2702123.2702344	6	Participants with chronic pain wore a head mounted display and walked on a treadmill to move through a virtual environment in hopes of reducing stress.	N/A		●		●
Mixed Pain	Jones, T., Moore, T., & Choo, J. (2016). The Impact of Virtual Reality on Chronic Pain. PloS one, 11(12), e0167523.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5172565/	30	Participants with chronic pain wore a head-mounted display and played the "Cool!" game application to distract themselves from pain.	N/A	●	●		●
Mixed Pain	Tong, X., Gromala, D., Gupta, D., & Squire, P. (2016). Usability Comparisons of Head-Mounted vs. Stereoscopic Desktop Displays in a Virtual Reality Environment with Pain Patients. Studies in health technology and informatics, 220, 424–431.	https://pubmed.ncbi.nlm.nih.gov/27046617/	20	Participants with chronic pain watched virtual scenery through either a head-mounted or stereoscopic display to compare usability.	N/A	●	●		
Mixed Pain	Jin, W., Choo, A., Gromala, D., Shaw, C., & Squire, P. (2016). A Virtual Reality Game for Chronic Pain Management: A Randomized, Controlled Clinical Study. Studies in health technology and informatics, 220, 154–160.	https://pubmed.ncbi.nlm.nih.gov/27046570/	20	Participants with chronic pain wore a head-mounted display and played "Cryoslide" game to distract from their pain.	Fair [64]		●		●
Mixed Pain	Garrett, B., Taverner, T., & McDade, P. (2017). Virtual Reality as an Adjunct Home Therapy in Chronic Pain Management: An Exploratory Study. JMIR medical informatics, 5(2), e11.	https://pubmed.ncbi.nlm.nih.gov/28495661/	8	Participants with chronic pain used an Oculus rift to explore virtual environments, perform mindfullness tasks, and play problem solving games over 3-week period.	N/A		●		●
Mixed Pain	Matamala-Gomez, M., Diaz Gonzalez, A. M., Slater, M., & Sanchez-Vives, M. V. (2019). Decreasing Pain Ratings in Chronic Arm Pain Through Changing a Virtual Body: Different Strategies for Different Pain Types. The journal of pain : official journal of the American Pain Society, 20(6), 685–697.	https://pubmed.ncbi.nlm.nih.gov/30562584/	19	Participants wore a head-mounted display and watched a virtual arm being modified to assess changes in chronic arm pain perception.	N/A	●	●	●	
Mixed Pain	Benham, S., Kang, M., & Grampurohit, N. (2019). Immersive Virtual Reality for the Management of Pain in Community-Dwelling Older Adults. OTJR : occupation, participation and health, 39(2), 90–96.	https://pubmed.ncbi.nlm.nih.gov/30595096/	12	Elderly adults played various HTC Vive games to improve their quality of life.	N/A		●		●
Phantom Pain	Murray, C. D., Patchick, E., Pettifer, S., Howard, T., Caillette, F., Kulkarni, J., & Bamford, C. (2006). Investigating the efficacy of a virtual mirror box in treating phantom limb pain in a sample of chronic sufferers. International Journal on Disability and Human Development, 5(3), 227–234.	https://psycnet.apa.org/record/2008-18788-006	5	Participants with phantom limb pain wore a head-mounted display to engage with an interactive virtual mirror box.	N/A		●	●	●
Phantom Pain	Jonathan Cole, Simon Crowle, Greg Austwick & David Henderson Slater (2009) Exploratory findings with virtual reality for phantom limb pain; from stump motion to agency and analgesia, Disability and Rehabilitation, 31:10, 846-854,	https://europepmc.org/article/med/19191061	14	Participants with phantom limb pain played a custom computer game that used motion capture to generate a virtual limb from the participant's stump.	N/A	●		●	●
Phantom Pain	Ortiz-Catalan, M., Sander, N., Kristoffersen, M. B., Håkansson, B., & Brånemark, R. (2014). Treatment of phantom limb pain (PLP) based on augmented reality and gaming controlled by myoelectric pattern recognition: a case study of a chronic PLP patient. Frontiers in neuroscience, 8, 24.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3935120/	1	A patient with phantom limb pain engaged with a myoelectrically controlled augmented reality environment. Electrodes were placed on the participant's stump to generate a responsive virtual limb displayed on a screen.	N/A				●

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Chronic Pain Studies									
Phantom Pain	Sano, Yuko & Ichinose, Akimichi & Wake, Naoki & Osumi, Michihiro & Sumitani, Masahiko & Kumagaya, Shin-Ichiro & Kuniyoshi, Yasuo. (2015). Reliability of Phantom Pain Relief in Neurorehabilitation using a Multimodal Virtual Reality System.	https://ieeexplore.ieee.org/document/7318897	6	Participants with phantom limb pain wore a head-mounted display and a Cyberglove to control and feel a virtual arm, providing visual tactile feedback.	N/A		●	●	●
Phantom Pain	Diers, M., Kamping, S., Kirsch, P., Rance, M., Bekrater-Bodmann, R., Foell, J., Trojan, J., Fuchs, X., Bach, F., Maaß, H., Cakmak, H., & Flor, H. (2015). Illusion-related brain activations: a new virtual reality mirror box system for use during functional magnetic resonance imaging. Brain research, 1594, 173–182.	https://pubmed.ncbi.nlm.nih.gov/25446453/	20	Participants with phantom limb pain used a custom virtual reality mirror box application made specifically for use during an fMRI.	N/A	●	●	●	●
Phantom Pain	Ortiz-Catalan, M., Guðmundsdóttir, R. A., Kristoffersen, M. B., Zepeda-Echavarria, A., Caine-Winterberger, K., Kulbacka-Ortiz, K., Widehammar, C., Eriksson, K., Stockselius, A., Ragnö, C., Pihlar, Z., Burger, H., & Hermansson, L. (2016). Phantom motor execution facilitated by machine learning and augmented reality as treatment for phantom limb pain: a single group, clinical trial in patients with chronic intractable phantom limb pain. Lancet (London, England), 388(10062), 2885–2894.	https://pubmed.ncbi.nlm.nih.gov/27916234/	14	Participants with phantom limb pain played an augmented reality game that was controlled by electrodes on their stump.	N/A			●	●
Phantom Pain	Osumi, M., Ichinose, A., Sumitani, M., Wake, N., Sano, Y., Yozu, A., Kumagaya, S., Kuniyoshi, Y., & Morioka, S. (2017). Restoring movement representation and alleviating phantom limb pain through short-term neurorehabilitation with a virtual reality system. European journal of pain (London, England), 21(1), 140–147.	https://pubmed.ncbi.nlm.nih.gov/27378656/	8	Participants with phantom limb pain wore a head-mounted display that showed a mirror-reversed computer graphic of an intact arm.	N/A		●	●	●
Phantom Pain	Sano, Y., Wake, N., Ichinose, A. et al. (2016) Tactile feedback for relief of deafferentation pain using virtual reality system: a pilot study. J NeuroEngineering Rehabil 13, 61	https://jneuroengrehab.biomedcentral.com/articles/10.1186/s12984-016-0161-6#citeas	7	Participants with phantom limb pain wore a head-mounted display and a Cyberglove to control and feel a virtual arm, providing visual tactile feedback.	N/A		●	●	●
Phantom Pain	Ichinose, A., Sano, Y., Osumi, M., Sumitani, M., Kumagaya, S., & Kuniyoshi, Y. (2017). Somatosensory Feedback to the Cheek During Virtual Visual Feedback Therapy Enhances Pain Alleviation for Phantom Arms. Neurorehabilitation and Neural Repair, 31(8), 717–725.	https://journals.sagepub.com/doi/10.1177/1545968317718268	9	Participants with phantom limb pain wore a head-mounted displpay to explore an immersive virtual environment while researchers provided tactile feedback on participants' cheeks.	N/A	●	●	●	●
Phantom Pain	Chau, B., Phelan, I., Ta, P., Humbert, S., Hata, J., & Tran, D. (2017). Immersive Virtual Reality Therapy with Myoelectric Control for Treatment-resistant Phantom Limb Pain: Case Report. Innovations in clinical neuroscience, 14(7-8), 3–7.	https://pubmed.ncbi.nlm.nih.gov/29616149/	1	Participants with phantom limb pain wore a motion-tracked head-mounted display and electrodes on their stump to play with an Interactive virtual kitchen.	N/A	●	●	●	●
Phantom Pain	Ambron, E., Miller, A., Kuchenbecker, K. J., Buxbaum, L. J., & Coslett, H. B. (2018). Immersive Low-Cost Virtual Reality Treatment for Phantom Limb Pain: Evidence from Two Cases. Frontiers in neurology, 9, 67.	https://pubmed.ncbi.nlm.nih.gov/29515513/	2	Participants with phantom limb pain wore motion sensors on their lower limbs and a head-mounted display. The virtual environment rendered intact lower limbs in real-time, which were used to play games.	N/A		●	●	●
Phantom Pain	Perry, B. N., Armiger, R. S., Wolde, M., McFarland, K. A., Alphonso, A. L., Monson, B. T., Pasquina, P. F., & Tsao, J. W. (2018). Clinical Trial of the Virtual Integration Environment to Treat Phantom Limb Pain With Upper Extremity Amputation. Frontiers in neurology, 9, 770.	https://pubmed.ncbi.nlm.nih.gov/30319522/	8	Participants with phantom limb pain wore sensors on their stump to control a virtual arm shown on a computer screen.	N/A			●	●

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Chronic Pain Studies									
Phantom Pain	Rothgangel, A., Braun, S., Winkens, B., Beurskens, A., & Smeets, R. (2018). Traditional and augmented reality mirror therapy for patients with chronic phantom limb pain (PACT study): results of a three-group, multicentre single-blind randomized controlled trial. Clinical rehabilitation, 32(12), 1591–1608.	https://pubmed.ncbi.nlm.nih.gov/30012007/	75	Participants with phantom limb pain underwent augmented reality "teletreatment" mirror therapy using a smart tablet.	Not Rated			●	●
Phantom Pain	Rutledge, T., Velez, D., Depp, C., McQuaid, J. R., Wong, G., Jones, R., Atkinson, J. H., Giap, B., Quan, A., & Giap, H. (2019). A Virtual Reality Intervention for the Treatment of Phantom Limb Pain: Development and Feasibility Results. Pain medicine (Malden, Mass.), 20(10), 2051–2059.	https://pubmed.ncbi.nlm.nih.gov/31165893/	14	Participants with phantom limb pain navigated a non-immersive virtual environment with a motion-tracked bike pedaler	N/A			●	●
Acute Clinical Pain Studies									
Wound Care	McSherry, T., Atterbury, M., Gartner, S., Helmold, E., Searles, D. M., & Schulman, C. (2018). Randomized, Crossover Study of Immersive Virtual Reality to Decrease Opioid Use During Painful Wound Care Procedures in Adults. Journal of burn care & research : official publication of the American Burn Association, 39(2), 278–285.	https://pubmed.ncbi.nlm.nih.gov/28570305/	18	Virtual reality goggles delivered an immersive, computer generated, interactive, 3D virtual world to patients during wound care to distract from pain	High [64]		●		●
Wound Care	Guo, C., Deng, H., & Yang, J. (2015). Effect of virtual reality distraction on pain among patients with hand injury undergoing dressing change. Journal of clinical nursing, 24(1-2), 115–120.	https://pubmed.ncbi.nlm.nih.gov/24899241/	98	Patients with hand injuries wore 3D glasses and watched a 3D interactive film during dressing changes to distract from pain.	High [64]				●
Wound Care	Hua, Y., Qiu, R., Yao, W. Y., Zhang, Q., & Chen, X. L. (2015). The Effect of Virtual Reality Distraction on Pain Relief During Dressing Changes in Children with Chronic Wounds on Lower Limbs. Pain management nursing : official journal of the American Society of Pain Management Nurses, 16(5), 685–691.	https://pubmed.ncbi.nlm.nih.gov/25972074/	65	Pediatric patients wore a head-mounted display and played a 3D video game during wound dressing changes to distract from pain.	High [28]		●		●
Wound Care	Esumi, R., Yokochi, A., Shimaoka, M., & Kawamoto, E. (2020). Virtual reality as a non-pharmacologic analgesic for fasciotomy wound infections in acute compartment syndrome: a case report. Journal of medical case reports, 14(1), 46.	https://pubmed.ncbi.nlm.nih.gov/32290865/	1	Patient with severe leg wound infection underwent 2 days of immersive virtual reality therapy (head-mounted display with beach simulation).	N/A		●		
Post-surgical Pain	Vázquez JLM, Santander A, Mosso Jr JL, Gao K, Wiederhold B, et al. (2013) Using Cybertherapy to Reduce Postoperative Anxiety in Cardiac Recovery Intensive Care Units. J Anesth Clin Res 4: 363.	https://www.longdom.org/abstract/using-cybertherapy-to-reduce-postoperative-anxiety-in-cardiac-recovery-intensive-care-units-49125.html	22	Patients wore a head-mounted display and viewed a virtual enchanted forest environment to reduce postoperative anxiety.	N/A		●		
Post-surgical Pain	Mosso-Vázquez, J. L., Gao, K., Wiederhold, B. K., & Wiederhold, M. D. (2014). Virtual reality for pain management in cardiac surgery. Cyberpsychology, behavior and social networking, 17(6), 371–378.	https://pubmed.ncbi.nlm.nih.gov/24892200/	67	Patients wore a head-mounted display and viewed 5 unique virtual environments to reduce postoperative anxiety.	N/A		●		
Post-surgical Pain	Cacau, L., Oliveira, G. U., Maynard, L. G., Araújo Filho, A. A., Silva, W. M., Jr, Cerqueria Neto, M. L., Antoniolli, A. R., & Santana-Filho, V. J. (2013). The use of the virtual reality as intervention tool in the postoperative of cardiac surgery. Revista brasileira de cirurgia cardiovascular : orgao oficial da Sociedade Brasileira de Cirurgia Cardiovascular, 28(2), 281–289.	https://pubmed.ncbi.nlm.nih.gov/23939326/	102	Patients played virtual reality exercise games in conjuction with physical therapy following cardiac surgery.	N/A		●		●
Post-surgical Pain	Ding J, He Y, Chen L, et al. (2019) Virtual reality distraction decreases pain during daily dressing changes following haemorrhoid surgery. The Journal of International Medical Research, 47(9), 4380-4388.	https://europepmc.org/article/med/31342823	182	Patients wore a head-mounted display to play "SnowWorld" game during dressing changes following surgery to distract from pain.	N/A		●		●

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Acute Clinical Pain Studies									
Mixed Pain	Patterson DR, Jensen MP, Wiechman SA, Sharar SR. Virtual reality hypnosis for pain associated with recovery from physical trauma. Int J Clin Exp Hypn. 2010;58(3):288-300.	https://pubmed.ncbi.nlm.nih.gov/20509069/	21	Patients recovering from physical trauma wore a head-mounted display and played SnowWorld paired with analgesic hypnotic suggestions.	N/A		●		●
Mixed Pain	Spiegel, B., Fuller, G., Lopez, M., Dupuy, T., Noah, B., Howard, A., Albert, M., Tashjian, V., Lam, R., Ahn, J., Dailey, F., Rosen, B. T., Vrahas, M., Little, M., Garlich, J., Dzubur, E., IsHak, W., & Danovitch, I. (2019). Virtual reality for management of pain in hospitalized patients: A randomized comparative effectiveness trial. PloS one, 14(8), e0219115.	https://pubmed.ncbi.nlm.nih.gov/31412029/	120	Patients wore a head-mounted display (Samsung Gear with Oculus) and viewed 21 unique virtual experiences to distract from pain.	Not Rated		●		●
Mixed Pain	Sikka, N., Shu, L., Ritchie, B., Amdur, R. L., & Pourmand, A. (2019). Virtual Reality-Assisted Pain, Anxiety, and Anger Management in the Emergency Department. Telemedicine journal and e-health : the official journal of the American Telemedicine Association, 25(12), 1207–1215.	https://pubmed.ncbi.nlm.nih.gov/30785860/	93	Patients in the ER wore a head-mounted display with headphones to watch various audiovisual virtual scenes designed to relax or distract.	N/A		●		
Mixed Pain	Tashjian, V. C., Mosadeghi, S., Howard, A. R., Lopez, M., Dupuy, T., Reid, M., Martinez, B., Ahmed, S., Dailey, F., Robbins, K., Rosen, B., Fuller, G., Danovitch, I., IsHak, W., & Spiegel, B. (2017). Virtual Reality for Management of Pain in Hospitalized Patients: Results of a Controlled Trial. JMIR mental health, 4(1), e9.	https://pubmed.ncbi.nlm.nih.gov/28356241/	100	Hospitalized patients wore a head-mounted display and watched either 3D or 2D visuals to distract from pain.	N/A		●		
Surgical Pain	Eijlers, R., Dierckx, B., Staals, L. M., Berghmans, J. M., van der Schroeff, M. P., Strabbing, E. M., Wijnen, R., Hillegers, M., Legerstee, J. S., & Utens, E. (2019). Virtual reality exposure before elective day care surgery to reduce anxiety and pain in children: A randomised controlled trial. European journal of anaesthesiology, 36(10), 728–737.	https://pubmed.ncbi.nlm.nih.gov/31356373/	191	Pediatric patients wore a head-mounted display showing a child-friendly virtual operating room to expose patients to surgery beforehand and reduce pre-operative anxiety.	Not Rated		●		
Surgical Pain	Mosso, J. L., Gorini, A., De La Cerda, G., Obrador, T., Almazan, A., Mosso, D., Nieto, J. J., & Riva, G. (2009). Virtual reality on mobile phones to reduce anxiety in outpatient surgery. Studies in health technology and informatics, 142, 195–200.	https://pubmed.ncbi.nlm.nih.gov/19377147/	21	Patients wore a head-mounted display while receiving anaesthesia to reduce anxiety.	N/A		●		
Surgical Pain	JahaniShoorab, N., Ebrahimzadeh Zagami, S., Nahvi, A., Mazluom, S. R., Golmakani, N., Talebi, M., & Pabarja, F. (2015). The Effect of Virtual Reality on Pain in Primiparity Women during Episiotomy Repair: A Randomize Clinical Trial. Iranian journal of medical sciences, 40(3), 219–224.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4430883/	30	Patients wore video glasses and watched a 3D film during episiotomy repair to distract from pain.	High [64]		●		
Surgical Pain	Walker, M. R., Kallingal, G. J., Musser, J. E., Folen, R., Stetz, M. C., & Clark, J. Y. (2014). Treatment efficacy of virtual reality distraction in the reduction of pain and anxiety during cystoscopy. Military medicine, 179(8), 891–896.	https://pubmed.ncbi.nlm.nih.gov/25102532/	45	Patients wore a head-mounted display and played SnowWorld game during cytoscopy to distract from pain.	High [64]	●	●		●
Surgical Pain	Chan, P. Y., & Scharf, S. (2017). Virtual Reality as an Adjunctive Nonpharmacological Sedative During Orthopedic Surgery Under Regional Anesthesia: A Pilot and Feasibility Study. Anesthesia and analgesia, 125(4), 1200–1202	https://pubmed.ncbi.nlm.nih.gov/28598921/	19	Patients wore a head-mounted display and played SnowWorld game during orthopedic surgery to distract from pain	N/A		●		
Surgical Pain	Vàsquez, M., Lara, M., Vaca, L., Weiderhold, B. K., Rivas, M., & Weiderhold, M. D. (2019). Virtual Reality Pain Mitigation During Elective Cesarean Surgical Delivery. Annual Review of Cybertherapy and Telemedicine , 17, 105–112.	https://scila.hse.ru/data/2020/05/26/1551532937/ARCTT_2019_FINAL.pdf#page=119	8	Women receiving c-sections wore a head-mounted display and interacted with virtual scenarios (enchanted forest, cliff, castle) using a joystick to distract from pain.	N/A		●		●

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Acute Clinical Pain Studies									
Other Pain	Wender, C., Ahn, S. J., & O'Connor, P. J. (2019). Interactive Virtual Reality Reduces Quadriceps Pain during High-Intensity Cycling. Medicine and science in sports and exercise, 51(10), 2088–2097.	https://pubmed.ncbi.nlm.nih.gov/31033903/	94	Cyclists wore a head-mounted display and used an exercise bike to "cycle" through a virtual city to distract from quadricep pain.	N/A		●		
Other Pain	Wright, J. L., Hoffman, H. G., & Sweet, R. M. (2005). Virtual reality as an adjunctive pain control during transurethral microwave thermotherapy. Urology, 66(6), 1320.	https://pubmed.ncbi.nlm.nih.gov/16360473/	1	Patients wore a head-mounted display and played SnowWorld game during thermotherapy to distract from pain.	N/A		●		●
Other Pain	Pandya, P. G., Kim, T. E., Howard, S. K., Stary, E., Leng, J. C., Hunter, O. O., & Mariano, E. R. (2017). Virtual reality distraction decreases routine intravenous sedation and procedure-related pain during preoperative adductor canal catheter insertion: a retrospective study. Korean journal of anesthesiology, 70(4), 439–445.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5548947/	136	Patients wore a head-mounted display with gaze-interactive scenery during catheter insertion to distract from pain.	N/A		●		●
Other Pain	Schneider, S. M., Ellis, M., Coombs, W. T., Shonkwiler, E. L., & Folsom, L. C. (2003). Virtual reality intervention for older women with breast cancer. Cyberpsychology & behavior : the impact of the Internet, multimedia and virtual reality on behavior and society, 6(3), 301–307.	https://pubmed.ncbi.nlm.nih.gov/12855087/	16	Breast cancer patients wore a head-mounted display with choice of virtual environment (Oceans Below, World of Art or Titanic) to distract from their pain.	N/A		●		
Other Pain	Aubriana M. Teeley, Maryam Soltani, Shelley A. Wiechman, Mark P. Jensen, Sam R. Sharar & David R. Patterson (2012) Virtual Reality Hypnosis Pain Control in the Treatment of Multiple Fractures: A Case Series, American Journal of Clinical Hypnosis, 54:3, 184-194.	https://www.tandfonline.com/doi/abs/10.1080/00029157.2011.619593	3	Patients with multiple fractures wore a head-mounted display with virtual hypnotic scenery to reduce pain.	N/A		●		
Other Pain	Frey, D. P., Bauer, M. E., Bell, C. L., Low, L. K., Hassett, A. L., Cassidy, R. B., Boyer, K. D., & Sharar, S. R. (2019). Virtual Reality Analgesia in Labor: The VRAIL Pilot Study-A Preliminary Randomized Controlled Trial Suggesting Benefit of Immersive Virtual Reality Analgesia in Unmedicated Laboring Women. Anesthesia and analgesia, 128(6), e93–e96.	https://pubmed.ncbi.nlm.nih.gov/31094789/	27	Women undergoing labor wore a head-mounted display with a smartphone screen displaying an ocean simulation to distract from pain.	High [64]		●		
Other Pain	Glennon, C., McElroy, S. F., Connelly, L. M., Mische Lawson, L., Bretches, A. M., Gard, A. R., & Newcomer, L. R. (2018). Use of Virtual Reality to Distract From Pain and Anxiety. Oncology nursing forum, 45(4), 545–552.	https://pubmed.ncbi.nlm.nih.gov/29947355/	97	Patients wore a head-mounted display and watched a DVD of relaxing nature scenes during a biopsy to distract from pain.	N/A		●		
Other Pain	Smith, V., Warty, R. R., Kashyap, R., Neil, P., Adriaans, C., Nair, A., Krishnan, S., Da Silva Costa, F., Vollenhoven, B., & Wallace, E. M. (2020). A randomised controlled trial to assess the feasibility of utilising virtual reality to facilitate analgesia during external cephalic version. Scientific reports, 10(1), 3141.	https://pubmed.ncbi.nlm.nih.gov/32081989/	50	Women undergoing external cephalic version wore a head-mounted display and played Skylights VR game to distract from pain.	Not Rated		●		●
Dental Pain	Hunter G. Hoffman, Azucena Garcia-Palacios, David R. Patterson, Mark Jensen, Thomas FurnessIII, and William F. Ammons Jr. (2001). The Effectiveness of Virtual Reality for Dental Pain Control: A Case Study. CyberPsychology & Behavior, 527-535.	https://www.liebertpub.com/doi/10.1089/109493101750527088	2	Patients undergoing a dental procedure wore a head-mounted display and played SnowWorld game to distract from pain.	N/A	●	●		●
Dental Pain	Furman, E., Jasinevicius, T. R., Bissada, N. F., Victoroff, K. Z., Skillicorn, R., & Buchner, M. (2009). Virtual reality distraction for pain control during periodontal scaling and root planing procedures. Journal of the American Dental Association (1939), 140(12), 1508–1516.	https://pubmed.ncbi.nlm.nih.gov/19955069/	38	Patients wore a head-mounted display and played a virtual reality game (Second Life) during dental procedures to distract from pain.	N/A	●	●		●
Dental Pain	Wiederhold, M. D., Gao, K., & Wiederhold, B. K. (2014). Clinical use of virtual reality distraction system to reduce anxiety and pain in dental procedures. Cyberpsychology, behavior and social networking, 17(6), 359–365.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4043252/	5	Patients undergoing dental work wore virtual reality goggles to interact with a virtual environment during to distract from pain and reduce anxiety.	N/A	●	●		●

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Acute Clinical Pain Studies									
Dental Pain	Tanja-Dijkstra, K., Pahl, S., White, M. P., Andrade, J., Qian, C., Bruce, M., May, J., & Moles, D. R. (2014). Improving dental experiences by using virtual reality distraction: a simulation study. PloS one, 9(3), e91276.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3951355/	69	Patients undergoing dental procedures wore a head-mounted display with either active or passive virtual environments to distract from pain and reduce anxiety.	N/A	●	●		●
Dental Pain	Tanja-Dijkstra, K., Pahl, S., White, M. P., Andrade, J., May, J., Stone, R. J., Bruce, M., Mills, I., Auvray, M., Gabe, R., & Moles, D. R. (2014). Can virtual nature improve patient experiences and memories of dental treatment? A study protocol for a randomized controlled trial. Trials, 15, 90.	https://pubmed.ncbi.nlm.nih.gov/24655569/	N/A	Patients undergoing dental procedures wore a head-mounted display and viewed either an urban or rural environment to reduce anxiety.	N/A		●		
Dental Pain	Tanja-Dijkstra, K., Pahl, S., White, M. P., Auvray, M., Stone, R. J., Andrade, J., … Moles, D. R. (2018). The Soothing Sea: A Virtual Coastal Walk Can Reduce Experienced and Recollected Pain. Environment and Behavior, 50(6), 599–625.	https://journals.sagepub.com/doi/10.1177/0013916517710077	85	Patients wore a head-mounted display and used a joystick to explore a coastal virtual environment during a dental procedure to distract from pain.	N/A		●		
Dental Pain	Alshatrat, S. M., Alotaibi, R., Sirois, M., & Malkawi, Z. (2019). The use of immersive virtual reality for pain control during periodontal scaling and root planing procedures in dental hygiene clinic. International journal of dental hygiene, 17(1), 71–76.	https://pubmed.ncbi.nlm.nih.gov/30216688/	50	Patients wore a head-mounted display and watched a comedy or documentary film during dental procedures to distract from pain.	N/A	●	●		
Dental Pain	Asl Aminabadi, N., Erfanparast, L., Sohrabi, A., Ghertasi Oskouei, S., & Naghili, A. (2012). The Impact of Virtual Reality Distraction on Pain and Anxiety during Dental Treatment in 4-6 Year-Old Children: a Randomized Controlled Clinical Trial. Journal of dental research, dental clinics, dental prospects, 6(4), 117–124.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3529924/	120	Pediatric patients wore virtual reality glasses and viewed multiple audiovisual tracks during dental treatment to distract from pain and reduce anxiety.	Fair [28]		●		
Dental Pain	Niharika, P., Reddy, N. V., Srujana, P., Srikanth, K., Daneswari, V., & Geetha, K. S. (2018). Effects of distraction using virtual reality technology on pain perception and anxiety levels in children during pulp therapy of primary molars. Journal of the Indian Society of Pedodontics and Preventive Dentistry, 36(4), 364–369.	https://pubmed.ncbi.nlm.nih.gov/30324926/	40	Pediatric patients wore virtual reality eyeglasses to watch cartoons during dental procedure to reduce anxiety and distract from pain.	N/A		●		
Dental Pain	Shetty, V., Suresh, L. R., & Hegde, A. M. (2019). Effect of Virtual Reality Distraction on Pain and Anxiety During Dental Treatment in 5 to 8 Year Old Children. The Journal of clinical pediatric dentistry, 43(2), 97–102.	https://pubmed.ncbi.nlm.nih.gov/30730798/	120	Pediatric patients wore virtual reality eyeglasses to watch cartoons during dental procedure to distract from pain.	N/A		●		
Needle Insertion	Gold, J. I., Kim, S. H., Kant, A. J., Joseph, M. H., & Rizzo, A. S. (2006). Effectiveness of virtual reality for pediatric pain distraction during i.v. placement. Cyberpsychology & behavior : the impact of the Internet, multimedia and virtual reality on behavior and society, 9(2), 207–212.	https://pubmed.ncbi.nlm.nih.gov/16640481/	20	Pediatric patients wore a head-mounted display and played a street luge sports game during i.v. placement to distract from pain.	High [28]		●		●
Needle Insertion	Nilsson, S., Finnström, B., Kokinsky, E., & Enskär, K. (2009). The use of Virtual Reality for needle-related procedural pain and distress in children and adolescents in a paediatric oncology unit. European journal of oncology nursing : the official journal of European Oncology Nursing Society, 13(2), 102–109.	https://pubmed.ncbi.nlm.nih.gov/19230769/	42	Pediatric patients played a non-immersive interactive virtual reality game (The Hunt of the Diamonds) during needle insertion to distract from pain and reduce distress.	N/A				●
Needle Insertion	Atzori, B., Hoffman, H. G., Vagnoli, L., Patterson, D. R., Alhalabi, W., Messeri, A., & Lauro Grotto, R. (2018). Virtual Reality Analgesia During Venipuncture in Pediatric Patients With Onco-Hematological Diseases. Frontiers in psychology, 9, 2508.	https://pubmed.ncbi.nlm.nih.gov/30618938/	15	Pediatric patients wore a head-mounted display and interacted with virtual scenery during venipucture to distract from pain.	N/A	●	●		●
Needle Insertion	Gershon, J., Zimand, E., Pickering, M., Rothbaum, B. O., & Hodges, L. (2004). A pilot and feasibility study of virtual reality as a distraction for children with cancer. Journal of the American Academy of Child and Adolescent Psychiatry, 43(10), 1243–1249.	https://pubmed.ncbi.nlm.nih.gov/15381891/	59	Pediatric cancer patients wore a head-mounted display and interacted with a virtual gorilla during needle insertion to distract from pain.	Fair [28]		●		●

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Acute Clinical Pain Studies									
Needle Insertion	Kate Wolitzky, Robyn Fivush, Elana Zimand, Larry Hodges & Barbara Olasov Rothbaum PhD (2005) Effectiveness of virtual reality distraction during a painful medical procedure in pediatric oncology patients, Psychology & Health, 20:6, 817-824.	https://www.tandfonline.com/doi/abs/10.1080/14768320500143339	20	Pediatric cancer patients wore a head-mounted display and interacted with a virtual gorilla during needle insertion to distract from pain.	Fair [28]		●		●
Needle Insertion	Windich-Biermeier, A., Sjoberg, I., Dale, J. C., Eshelman, D., & Guzzetta, C. E. (2007). Effects of distraction on pain, fear, and distress during venous port access and venipuncture in children and adolescents with cancer. Journal of pediatric oncology nursing : official journal of the Association of Pediatric Oncology Nurses, 24(1), 8–19.	https://pubmed.ncbi.nlm.nih.gov/17185397/	50	Pediatric patients could choose between ISpy, Bubbles, Music, VR Glasses/environment or a gameboy to play with during venipuncture to reduce distress.	N/A		●		●
Needle Insertion	Piskorz, J., & Czub, M. (2018). Effectiveness of a virtual reality intervention to minimize pediatric stress and pain intensity during venipuncture. Journal for specialists in pediatric nursing : JSPN, 23(1), 10.1111/jspn.12201.	https://pubmed.ncbi.nlm.nih.gov/29155488/	38	Pediatric patients wore a head-mounted display and completed a multiple tracking object task during venipuncture to distract from pain.	N/A		●		●
Needle Insertion	Sander Wint, S., Eshelman, D., Steele, J., & Guzzetta, C. E. (2002). Effects of distraction using virtual reality glasses during lumbar punctures in adolescents with cancer. Oncology nursing forum, 29(1), E8–E15.	https://pubmed.ncbi.nlm.nih.gov/11845217/	30	Patients wore virtual reality glasses and watched a video while receiving a lumbar puncture to distract from pain.	High [28]		●		
Needle Insertion	Chad, R., Emaan, S., & Jillian, O. (2018). Effect of virtual reality headset for pediatric fear and pain distraction during immunization. Pain management, 8(3), 175–179.	https://pubmed.ncbi.nlm.nih.gov/29722606/	17	Pediatric patients wore a head-mounted display with an Iphone showing fun virtual scenery during immunizations to distract from pain and reduce needle-related fear.	N/A		●		
Needle Insertion	Gerçeker, G. Ö., Binay, Ş., Bilsin, E., Kahraman, A., & Yılmaz, H. B. (2018). Effects of Virtual Reality and External Cold and Vibration on Pain in 7- to 12-Year-Old Children During Phlebotomy: A Randomized Controlled Trial. Journal of perianesthesia nursing : official journal of the American Society of PeriAnesthesia Nurses, 33(6), 981–989.	https://pubmed.ncbi.nlm.nih.gov/29559294/	121	Pediatric patients wore a head-mounted display (Oculus) and watched cartoons during phlebotomy to distract from pain.	Not Rated		●		
Needle Insertion	Chan, E., Hovenden, M., Ramage, E., Ling, N., Pham, J. H., Rahim, A., Lam, C., Liu, L., Foster, S., Sambell, R., Jeyachanthiran, K., Crock, C., Stock, A., Hopper, S. M., Cohen, S., Davidson, A., Plummer, K., Mills, E., Craig, S. S., Deng, G., … Leong, P. (2019). Virtual Reality for Pediatric Needle Procedural Pain: Two Randomized Clinical Trials. The Journal of pediatrics, 209, 160–167.e4.	https://pubmed.ncbi.nlm.nih.gov/31047650/	254	Pediatric patients wore a head-mounted display and viewed an aquatic environment during needle insertion to distract from pain.	N/A		●		
Needle Insertion	Walther-Larsen, S., Petersen, T., Friis, S. M., Aagaard, G., Drivenes, B., & Opstrup, P. (2019). Immersive Virtual Reality for Pediatric Procedural Pain: A Randomized Clinical Trial. Hospital pediatrics, 9(7), 501–507.	https://pubmed.ncbi.nlm.nih.gov/31160472/	59	Pediatric patients played an Immersive and interactive virtual reality game during needle insertion to distract from pain.	Not Rated		●		●
Needle Insertion	Wong, C.L., Lui, M.M.W. & Choi, K.C. (2019) Effects of immersive virtual reality intervention on pain and anxiety among pediatric patients undergoing venipuncture: a study protocol for a randomized controlled trial. Trials 20, 369.	https://trialsjournal.biomedcentral.com/articles/10.1186/s13063-019-3443-z	250	Pediatric patients wore Google cardboard googles and played a custom kid-friendly virtual reality game during venipuncture to distract from pain.	Not Rated		●		
Needle Insertion	Basak, T., Duman, S., & Demirtas, A. (2020). Distraction-based relief of pain associated with peripheral intravenous catheterisation in adults: a randomised controlled trial. Journal of clinical nursing, 29(5-6), 770–777.	https://onlinelibrary.wiley.com/doi/abs/10.1111/jocn.15131	120	Patients undergoing intravenous catheterisation watched 3D videos through VR goggles to distract from pain.	Not Rated		●		

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Acute Clinical Pain Studies									
Needle Insertion	Bebic, Z. and Thomas, J.J. (2020), Use of virtual reality for epidural placement in an adolescent with ischemic priapism. Paediatr Neonatal Pain, 2: 16-17.	https://onlinelibrary.wiley.com/doi/full/10.1002/pne2.12021	1	Patient wore ahead-mounted display and played Space Pups game during epidural catheter placement to distract from pain.	N/A		●		●
Needle Insertion	İnangil, D., Şendir, M., & Büyükyılmaz, F. (2020). Efficacy of Cartoon Viewing Devices During Phlebotomy in Children: A Randomized Controlled Trial. Journal of perianesthesia nursing : official journal of the American Society of PeriAnesthesia Nurses, S1089-9472(20)30022-8.	https://pubmed.ncbi.nlm.nih.gov/32360128/	120	Pediatric patients receiving a phlebotomy wore a head-mounted display or used a tablet to watch cartoons to distract from pain.	Not Rated		●		
Needle Insertion	Özalp Gerçeker, G., Ayar, D., Özdemir, E. Z., & Bektaş, M. (2020). Effects of virtual reality on pain, fear and anxiety during blood draw in children aged 5-12 years old: A randomised controlled study. Journal of clinical nursing, 29(7-8), 1151–1161.	https://pubmed.ncbi.nlm.nih.gov/31889358/	136	Children wore a head-mounted display and watched either a virtual rollercoaster or ocean while having their blood drawn to distract from pain and reduce anxiety.	N/A		●		
Burn Care	Hoffman, H. G., Doctor, J. N., Patterson, D. R., Carrougher, G. J., & Furness, T. A., 3rd (2000). Virtual reality as an adjunctive pain control during burn wound care in adolescent patients. Pain, 85(1-2), 305–309.	https://pubmed.ncbi.nlm.nih.gov/10692634/	2	Patients with burns wore a head-mounted display with tactile feedback on hand. Patients interacted with and could "feel" a virtual kitchen to distract from pain during burn wound care.	Fair [72]	●	●	●	●
Burn Care	Hoffman, H. G., Patterson, D. R., Magula, J., Carrougher, G. J., Zeltzer, K., Dagadakis, S., & Sharar, S. R. (2004). Water-friendly virtual reality pain control during wound care. Journal of clinical psychology, 60(2), 189–195.	https://pubmed.ncbi.nlm.nih.gov/14724926/	1	Patients wore a head-mounted display and played SnowWorld game during burn wound care to distract from pain.	Fair [72]	●	●		●
Burn Care	Patterson, D. R., Tininenko, J. R., Schmidt, A. E., & Sharar, S. R. (2004). Virtual reality hypnosis: a case report. The International journal of clinical and experimental hypnosis, 52(1), 27–38.	https://pubmed.ncbi.nlm.nih.gov/14768967/	1	The patient wore a head-mounted display equipped with a modified Snow World game. Hypnotic audio guided the patient through SnowWorld during burn wound care to distract from pain.	N/A		●		
Burn Care	Patterson, D. R., Wiechman, S. A., Jensen, M., & Sharar, S. R. (2006). Hypnosis delivered through immersive virtual reality for burn pain: A clinical case series. The International journal of clinical and experimental hypnosis, 54(2), 130–142.	https://pubmed.ncbi.nlm.nih.gov/16581687/	13	Patients wore a head-mounted display equipped with a modified Snow World game. Hypnotic audio guided patients through SnowWorld during burn wound care to distract from pain.	N/A		●		●
Burn Care	van Twillert, B., Bremer, M., & Faber, A. W. (2007). Computer-generated virtual reality to control pain and anxiety in pediatric and adult burn patients during wound dressing changes. Journal of burn care & research : official publication of the American Burn Association, 28(5), 694–702.	https://pubmed.ncbi.nlm.nih.gov/17667488/	19	Patients wore a head-mounted display and played SnowWorld game during burn wound dressing changes to distract from pain and reduce anxiety.	High [72]		●		●
Burn Care	Hoffman, H. G., Patterson, D. R., Seibel, E., Soltani, M., Jewett-Leahy, L., & Sharar, S. R. (2008). Virtual reality pain control during burn wound debridement in the hydrotank. The Clinical journal of pain, 24(4), 299–304.	https://pubmed.ncbi.nlm.nih.gov/18427228/	11	Patients wore 3D glasses and played a virtual Ice Cream Factory game during burn wound care to distract from pain.	High [72]	●	●		●
Burn Care	Maani, C. V., Hoffman, H. G., Morrow, M., Maiers, A., Gaylord, K., McGhee, L. L., & DeSocio, P. A. (2011). Virtual reality pain control during burn wound debridement of combat-related burn injuries using robot-like arm mounted VR goggles. The Journal of trauma, 71(1 Suppl), S125–S130.	https://pubmed.ncbi.nlm.nih.gov/21795888/	12	Patients wore virtual reality goggles and an arm-mounted system to play SnowWorld during burn wound care to distract from pain.	High [64]	●	●		●

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Acute Clinical Pain Studies									
Burn Care	Maani, C. V., Hoffman, H. G., Fowler, M., Maiers, A. J., Gaylord, K. M., & Desocio, P. A. (2011). Combining ketamine and virtual reality pain control during severe burn wound care: one military and one civilian patient. Pain medicine (Malden, Mass.), 12(4), 673–678.	https://pubmed.ncbi.nlm.nih.gov/21481162/	2	Patients wore a head-mounted display and played SnowWorld with ketamine to distract from pain during burn wound care.	N/A	●	●		●
Burn Care	Kipping, B., Rodger, S., Miller, K., & Kimble, R. M. (2012). Virtual reality for acute pain reduction in adolescents undergoing burn wound care: a prospective randomized controlled trial. Burns : journal of the International Society for Burn Injuries, 38(5), 650–657.	https://pubmed.ncbi.nlm.nih.gov/22348801/	41	Patients wore a head-mounted display and played a Chicken Little VR game during burn wound care to distract from pain.	High [62]	●	●		●
Burn Care	Faber, A. W., Patterson, D. R., & Bremer, M. (2013). Repeated use of immersive virtual reality therapy to control pain during wound dressing changes in pediatric and adult burn patients. Journal of burn care & research : official publication of the American Burn Association, 34(5), 563–568.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3770783/	36	Patients wore a head-mounted display and played SnowWorld during burn wound care to distract from pain.	N/A		●		●
Burn Care	Jeffs, D., Dorman, D., Brown, S., Files, A., Graves, T., Kirk, E., Meredith-Neve, S., Sanders, J., White, B., & Swearingen, C. J. (2014). Effect of virtual reality on adolescent pain during burn wound care. Journal of burn care & research : official publication of the American Burn Association, 35(5), 395–408.	https://pubmed.ncbi.nlm.nih.gov/24823326/	30	Patients wore a head-mounted display and played SnowWorld during burn wound care to distract from pain.	High [62]		●		●
Burn Care	Small, C., Stone, R., Pilsbury, J., Bowden, M., & Bion, J. (2015). Virtual restorative environment therapy as an adjunct to pain control during burn dressing changes: study protocol for a randomised controlled trial. Trials, 16, 329.	https://pubmed.ncbi.nlm.nih.gov/26242401/	25	Patients played a computer game with a joystick and headphones during burn wound dressing changes to distract from pain.	Not Rated	●	●		●
Burn Care	Ford, C. G., Manegold, E. M., Randall, C. L., Aballay, A. M., & Duncan, C. L. (2018). Assessing the feasibility of implementing low-cost virtual reality therapy during routine burn care. Burns : journal of the International Society for Burn Injuries, 44(4), 886–895.	https://pubmed.ncbi.nlm.nih.gov/29305105/	10	Patients wore a head-mounted display and could choose from 8 virtual reality nature scenes to watch during burn care to distract from pain.	N/A		●		
Burn Care	Das, D. A., Grimmer, K. A., Sparnon, A. L., McRae, S. E., & Thomas, B. H. (2005). The efficacy of playing a virtual reality game in modulating pain for children with acute burn injuries: a randomized controlled trial [ISRCTN87413556]. BMC pediatrics, 5(1), 1.	https://pubmed.ncbi.nlm.nih.gov/15745448/	7	Pediatric patients wore a head-mounted display and played "Quake" game during burn wound treatment to distract from pain.	High [72]		●		●
Burn Care	Chan, E. A., Chung, J. W., Wong, T. K., Lien, A. S., & Yang, J. Y. (2007). Application of a virtual reality prototype for pain relief of pediatric burn in Taiwan. Journal of clinical nursing, 16(4), 786–793.	https://pubmed.ncbi.nlm.nih.gov/17402961/	8	Pediatric patients wore 3D glasses and played a virtual Ice Cream Factory game during burn care to distract from pain.	Fair [72]	●	●		●
Burn Care	Mott, J., Bucolo, S., Cuttle, L., Mill, J., Hilder, M., Miller, K., & Kimble, R. M. (2008). The efficacy of an augmented virtual reality system to alleviate pain in children undergoing burns dressing changes: a randomised controlled trial. Burns : journal of the International Society for Burn Injuries, 34(6), 803–808.	https://pubmed.ncbi.nlm.nih.gov/18325675/	42	Pediatric patients played with an augmented reality Interactive screen (Hospital Harry) during burn dressing changes to distract from pain.	Not Rated				●
Burn Care	Khadra, C., Ballard, A., Déry, J., Paquin, D., Fortin, J. S., Perreault, I., Labbe, D. R., Hoffman, H. G., Bouchard, S., & LeMay, S. (2018). Projector-based virtual reality dome environment for procedural pain and anxiety in young children with burn injuries: a pilot study. Journal of pain research, 11, 343–353.	https://pubmed.ncbi.nlm.nih.gov/29491717/	15	Pediatric patients played with a dome-shaped projector based virtual reality system, which housed an interactive bubble game played during burn wound care to distract from pain and reduce anxiety.	N/A				●

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Acute Clinical Pain Studies									
Burn Care	Hoffman, H. G., Rodriguez, R. A., Gonzalez, M., Bernardy, M., Peña, R., Beck, W., Patterson, D. R., & Meyer, W. J., 3rd (2019). Immersive Virtual Reality as an Adjunctive Non-opioid Analgesic for Pre-dominantly Latin American Children With Large Severe Burn Wounds During Burn Wound Cleaning in the Intensive Care Unit: A Pilot Study. Frontiers in human neuroscience, 13, 262.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6694842/	48	Pediatric patients wore a head-mounted display and played SnowWorld during burn wound cleaning to distract from pain.	N/A	●	●		●
Burn Care	Khadra, C., Ballard, A., Paquin, D., Cotes-Turpin, C., Hoffman, H. G., Perreault, I., Fortin, J. S., Bouchard, S., Théroux, J., & Le May, S. (2020). Effects of a projector-based hybrid virtual reality on pain in young children with burn injuries during hydrotherapy sessions: A within-subject randomized crossover trial. Burns : journal of the International Society for Burn Injuries, S0305-4179(19)30635-7.	https://pubmed.ncbi.nlm.nih.gov/32389349/	38	Pediatric burn patients entered a water-friendly Projector-Based Hybrid Virtual Reality dome environment during hydrotherapy to distract from pain.	Not Rated				●
Experimental Pain Studies									
Pain-related Affect	Riva, G., Mantovani, F., Capideville, C. S., Preziosa, A., Morganti, F., Villani, D., Gaggioli, A., Botella, C., & Alcañiz, M. (2007). Affective interactions using virtual reality: the link between presence and emotions. Cyberpsychology & behavior : the impact of the Internet, multimedia and virtual reality on behavior and society, 10(1), 45–56.	https://pubmed.ncbi.nlm.nih.gov/17305448/	61	Participants wore a head-mounted display and navigated through either an anxiety-provoking or relaxing virtual landscape.	N/A	●	●		●
Pain-related Affect	Bouchard, S., Bernier, F., Boivin, É., Dumoulin, S., Laforest, M., Guitard, T., Robillard, G., Monthuy-Blanc, J., & Renaud, P. (2013). Empathy toward virtual humans depicting a known or unknown person expressing pain. Cyberpsychology, behavior and social networking, 16(1), 61–71.	https://pubmed.ncbi.nlm.nih.gov/23320872/	42	Participants entered an immersive virtual reality (Cave-like system) that showed an animal or human figure in pain.	N/A	●	●		●
Painful Stimulus	Tse, M. M., Ng, J. K., Chung, J. W., & Wong, T. K. (2002). The effect of visual stimulation via the eyeglass display and the perception of pain. Cyberpsychology & behavior : the impact of the Internet, multimedia and virtual reality on behavior and society, 5(1), 65–75.	https://pubmed.ncbi.nlm.nih.gov/11990976/	72	Participants wore an eyeglass display and received a painful stimulus while viewing various virtual environments to distract from pain and reduce anxiety.	N/A	●	●		
Painful Stimulus	Hoffman, H. G., Sharar, S. R., Coda, B., Everett, J. J., Ciol, M., Richards, T., & Patterson, D. R. (2004). Manipulating presence influences the magnitude of virtual reality analgesia. Pain, 111(1-2), 162–168.	https://pubmed.ncbi.nlm.nih.gov/15327820/	39	Participants wore either a head-mounted display (Hi-tech) or goggles (Low-tech) to play SnowWorld while receiving a painful stimulus.	N/A	●	●		●
Painful Stimulus	Hoffman, H. G., Richards, T. L., Coda, B., Bills, A. R., Blough, D., Richards, A. L., & Sharar, S. R. (2004). Modulation of thermal pain-related brain activity with virtual reality: evidence from fMRI. Neuroreport, 15(8), 1245–1248.	https://pubmed.ncbi.nlm.nih.gov/15167542/	8	Participants wore a head-mounted display and played SnowWorld while receiving thermal pain in an fMRI.	N/A		●		●
Painful Stimulus	Hoffman, H. G., Seibel, E. J., Richards, T. L., Furness, T. A., Patterson, D. R., & Sharar, S. R. (2006). Virtual reality helmet display quality influences the magnitude of virtual reality analgesia. The journal of pain : official journal of the American Pain Society, 7(11), 843–850.	https://pubmed.ncbi.nlm.nih.gov/17074626/	77	Participants wore a head-mounted display and played SnowWorld with varying graphic display quality while receiving a painful stimulus.	N/A	●	●		●
Painful Stimulus	Patterson, D. R., Hoffman, H. G., Palacios, A. G., & Jensen, M. J. (2006). Analgesic effects of posthypnotic suggestions and virtual reality distraction on thermal pain. Journal of abnormal psychology, 115(4), 834–841.	https://pubmed.ncbi.nlm.nih.gov/17100541/	103	Participants wore a head-mounted display and played SnowWorld paired with analgesic hypnotic suggestions while receiving painful thermal stimuli.	N/A		●		●
Painful Stimulus	Mühlberger, A., Wieser, M. J., Kenntner-Mabiala, R., Pauli, P., & Wiederhold, B. K. (2007). Pain modulation during drives through cold and hot virtual environments. Cyberpsychology & behavior : the impact of the Internet, multimedia and virtual reality on behavior and society, 10(4), 516–522.	https://pubmed.ncbi.nlm.nih.gov/17711359/	48	Participants wore a head-mounted display showing an Enchanted Forest in Summer (Hot) and Winter (Cold) while receiving a painful stimulus.	N/A	●	●		

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Experimental Pain Studies									
Painful Stimulus	Dahlquist, L. M., McKenna, K. D., Jones, K. K., Dillinger, L., Weiss, K. E., & Ackerman, C. S. (2007). Active and passive distraction using a head-mounted display helmet: effects on cold pressor pain in children. Health psychology : official journal of the Division of Health Psychology, American Psychological Association, 26(6), 794–801.	https://pubmed.ncbi.nlm.nih.gov/18020853/	40	Children wore a head-mounted display while undergoing a cold pressor task and playing a Playstation2 Finding Nemo to distract from pain.	N/A		●		●
Painful Stimulus	Wender, R., Hoffman, H. G., Hunner, H. H., Seibel, E. J., Patterson, D. R., & Sharar, S. R. (2009). INTERACTIVITY INFLUENCES THE MAGNITUDE OF VIRTUAL REALITY ANALGESIA. Journal of cyber therapy and rehabilitation, 2(1), 27–33.	https://pubmed.ncbi.nlm.nih.gov/20390047/	21	Participants wore a head-mounted display and played different versions of SnowWorld with differing levels of interactivity while receiving a painful stimulus.	N/A	●	●		●
Painful Stimulus	Rutter, C. E., Dahlquist, L. M., & Weiss, K. E. (2009). Sustained efficacy of virtual reality distraction. The journal of pain : official journal of the American Pain Society, 10(4), 391–397.	https://pubmed.ncbi.nlm.nih.gov/19231295/	28	Participants wore a head-mounted display while receiving a painful stimulus and playing a PlayStation2 Finding Nemo game to distract from pain.	N/A		●		●
Painful Stimulus	Dahlquist, L. M., Weiss, K. E., Clendaniel, L. D., Law, E. F., Ackerman, C. S., & McKenna, K. D. (2009). Effects of videogame distraction using a virtual reality type head-mounted display helmet on cold pressor pain in children. Journal of pediatric psychology, 34(5), 574–584.	https://pubmed.ncbi.nlm.nih.gov/18367495/	41	Children wore a head-mounted display while undergoing a cold pressor task and playing a Free Dive game controlled via joystick to distract from pain.	N/A		●		●
Painful Stimulus	Gutierrez-Maldonado, J., Gutierrez-Martinez, O., Loreto, D., Peñaloza, C., & Nieto, R. (2010). Presence, involvement and efficacy of a virtual reality intervention on pain. Studies in health technology and informatics, 154, 97–101.	https://pubmed.ncbi.nlm.nih.gov/20543278/	45	Participants wore a head-mounted display showing stereoscopic figures that represented pain while receiving a painful stimulus. These figures could be transformed into relaxed figures using a mouse.	N/A	●	●		●
Painful Stimulus	Dahlquist, L. M., Herbert, L. J., Weiss, K. E., & Jimeno, M. (2010). Virtual-reality distraction and cold-pressor pain tolerance: does avatar point of view matter?. Cyberpsychology, behavior and social networking, 13(5), 587–591.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3131807/	41	Patients wore a head-mounted display while undergoing a cold pressor task and playing the PlayStation2 Need for Speed game in either 1st or 3rd person.	N/A	●	●		●
Painful Stimulus	Law, E. F., Dahlquist, L. M., Sil, S., Weiss, K. E., Herbert, L. J., Wohlheiter, K., & Horn, S. B. (2011). Videogame distraction using virtual reality technology for children experiencing cold pressor pain: the role of cognitive processing. Journal of pediatric psychology, 36(1), 84–94.	https://pubmed.ncbi.nlm.nih.gov/20656761/	79	Children wore a head-mounted display and underwent a cold pressor task while playing the Nintendo Wii game "Nights: Journey of Dreams- Aqua Garden" to distract from pain. The game was played actively or passively.	N/A		●		●
Painful Stimulus	Gutierrez-Maldonado, J., Gutierrez-Martinez, O., & Cabas-Hoyos, K. (2011). Interactive and passive virtual reality distraction: effects on presence and pain intensity. Studies in health technology and informatics, 167, 69–73.	https://pubmed.ncbi.nlm.nih.gov/21685644/	68	Participants wore a head-mounted display and received a painful stimulus while playing an active or passive version of the "Surreal World" game to distract from pain.	N/A	●	●		●
Painful Stimulus	Gutiérrez-Martínez, O., Gutiérrez-Maldonado, J., & Loreto-Quijada, D. (2011). Control over the virtual environment influences the presence and efficacy of a virtual reality intervention on pain. Studies in health technology and informatics, 167, 111–115.	https://pubmed.ncbi.nlm.nih.gov/21685651/	94	Participants wore a head-mounted display showing stereoscopic figures that represented pain while receiving a painful stimulus. These figures could be transformed into relaxed figures using a mouse.	N/A	●	●		●
Painful Stimulus	Hänsel, A., Lenggenhager, B., von Känel, R., Curatolo, M., & Blanke, O. (2011). Seeing and identifying with a virtual body decreases pain perception. European journal of pain (London, England), 15(8), 874–879.	https://pubmed.ncbi.nlm.nih.gov/21570328/	15	Participants wore a head-mounted display and received a painful stimulus while looking at either a virtual human avatar or square object.	N/A	●	●	●	

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Experimental Pain Studies									
Painful Stimulus	Gutiérrez-Maldonado, J., Gutiérrez-Martínez, O., Loreto-Quijada, D., & Nieto-Luna, R. (2012). The use of virtual reality for coping with pain with healthy participants. Psicothema, 24(4), 516–522.	https://pubmed.ncbi.nlm.nih.gov/23079345/	45	Participants wore a head-mounted display showing stereoscopic figures that represented pain while receiving a painful stimulus. These figures could be transformed into relaxed figures using a mouse.	N/A		●		●
Painful Stimulus	Sil, S., Dahlquist, L. M., Thompson, C., Hahn, A., Herbert, L., Wohlheiter, K., & Horn, S. (2014). The effects of coping style on virtual reality enhanced videogame distraction in children undergoing cold pressor pain. Journal of behavioral medicine, 37(1), 156–165.	https://pubmed.ncbi.nlm.nih.gov/23184062/	62	Children wore a head-mounted display and underwent a cold pressor task while playing Sonic the Hedgehog for Wii.	N/A		●		●
Painful Stimulus	Martini, M., Perez-Marcos, D., & Sanchez-Vives, M. V. (2013). What Color is My Arm? Changes in Skin Color of an Embodied Virtual Arm Modulates Pain Threshold. Frontiersin human neuroscience, 7, 438.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3728482/	30	Participants wore a head-mounted display and finger sensors to a control virtual arm of varying skin tone while receiving a painful stimulus.	N/A	●	●	●	
Painful Stimulus	Loreto-Quijada, D., Gutiérrez-Maldonado, J., Gutiérrez-Martínez, O., & Nieto, R. (2013). Testing a virtual reality intervention for pain control. European journal of pain (London, England), 17(9), 1403–1410.	https://pubmed.ncbi.nlm.nih.gov/23580493/	64	Participants wore a head-mounted display showing stereoscopic figures that represented pain while receiving a painful stimulus. These figures could be transformed into relaxed figures using a mouse.	N/A				●
Painful Stimulus	Martini, M., Perez-Marcos, D., & Sanchez-Vives, M. V. (2014). Modulation of pain threshold by virtual body ownership. European journal of pain (London, England), 18(7), 1040–1048.	https://pubmed.ncbi.nlm.nih.gov/24449513/	32	Participants wore a head-mounted display showing a virtual arm while receiving a painful stimulus.	N/A	●	●	●	
Painful Stimulus	Vigil, J. M., Torres, D., Wolff, A., & Hughes, K. (2014). Exposure to virtual social stimuli modulates subjective pain reports. Pain research & management, 19(4), e103–e108.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4158939/	120	Participants watched a video screen either with (social pressure) or without a researcher (no social pressure) in the room while undergoing a during cold pressor task.	N/A				
Painful Stimulus	Sulea, C., Soomro, A., Wiederhold, B. K., & Wiederhold, M. D. (2014). Quantifying the effectiveness of virtual reality pain management: a pilot study. Studies in health technology and informatics, 199, 94–97.	https://pubmed.ncbi.nlm.nih.gov/24875698/	6	Participants wore a head-mounted display and received a painful stimulus while playing "Icy Cool World" game to distract from pain.	N/A		●		●
Painful Stimulus	Loreto-Quijada, D., Gutiérrez-Maldonado, J., Nieto, R., Gutiérrez-Martínez, O., Ferrer-García, M., Saldaña, C., Fusté-Escolano, A., & Liutsko, L. (2014). Differential effects of two virtual reality interventions: distraction versus pain control. Cyberpsychology, behavior and social networking, 17(6), 353–358.	https://pubmed.ncbi.nlm.nih.gov/24892197/	77	Participants recived a painful stimulus wearing either 3D glasses (SurrealWorld interactive environment) or watching a virtual pain control with stereoscopic figures.	N/A				●
Painful Stimulus	Enea, V., Dafinoiu, I., Opriş, D., & David, D. (2014). Effects of hypnotic analgesia and virtual reality on the reduction of experimental pain among high and low hypnotizables. The International journal of clinical and experimental hypnosis, 62(3), 360–377.	https://pubmed.ncbi.nlm.nih.gov/24837064/	120	Participants wore a head-mounted display and played SnowWorld paired with analgesic hypnotic suggestions while receiving a painful stimulus.	N/A	●	●		●
Painful Stimulus	Romano, D., Llobera, J., & Blanke, O. (2016). Size and Viewpoint of an Embodied Virtual Body Affect the Processing of Painful Stimuli. The journal of pain : official journal of the American Pain Society, 17(3), 350–358.	https://pubmed.ncbi.nlm.nih.gov/26656236/	21	Participants wore a head-mounted display while receiving a painful stimulus and veiwing a virtual syringe puncture an avatar's arm. The avatar's body size and viewpoint were altered.	N/A	●	●	●	

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Experimental Pain Studies									
Painful Stimulus	Demeter, N., Josman, N., Eisenberg, E., & Pud, D. (2015). Who can benefit from virtual reality to reduce experimental pain? A crossover study in healthy subjects. European journal of pain (London, England), 19(10), 1467–1475.	https://pubmed.ncbi.nlm.nih.gov/25716105/	82	Paticipants played an augmented reality game (EyeToy) that required limb movement while receiving a painful stimulus to distract from pain.	N/A				●
Painful Stimulus	Martini, M., Kilteni, K., Maselli, A. et al., (2015). The body fades away: investigating the effects of transparency of an embodied virtual body on pain threshold and body ownership. Scientific Reports 5,13948.	https://www.nature.com/articles/srep13948	24	Participants wore a head-mounted display and received a painful stimulus while observing a virtual arm that varied in transparency.	N/A	●	●	●	
Painful Stimulus	Sharar, S. R., Alamdari, A., Hoffer, C., Hoffman, H. G., Jensen, M. P., & Patterson, D. R. (2016). Circumplex Model of Affect: A Measure of Pleasure and Arousal During Virtual Reality Distraction Analgesia. Games for health journal, 5(3), 197–202.	https://pubmed.ncbi.nlm.nih.gov/27171578/	74	Participants wore a Head-mounted display and received thermal/electrical pain while playing SnowWorld to distract from pain.	N/A	●	●		●
Painful Stimulus	Johnson, S., & Coxon, M. (2016). Sound can enhance the analgesic effect of virtual reality. Royal Society open science, 3(3), 150567.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4821257/	32	Participants wore a head-mounted display and received a painful stimulus while playing a racing game on with sound on or off.	N/A		●		●
Painful Stimulus	Fusaro, M., Tieri, G., & Aglioti, S. M. (2016). Seeing pain and pleasure on self and others: behavioral and psychophysiological reactivity in immersive virtual reality. Journal of neurophysiology, 116(6), 2656–2662.	https://pubmed.ncbi.nlm.nih.gov/27655965/	24	Participants wore a head-mounted display and received painful stimuli while watching a virtual hand receive painful or pleasing stimuli from 1st or 3rd person.	N/A	●	●	●	
Painful Stimulus	Nierula, B., Martini, M., Matamala-Gomez, M., Slater, M., & Sanchez-Vives, M. V. (2017). Seeing an Embodied Virtual Hand is Analgesic Contingent on Colocation. The journal of pain : official journal of the American Pain Society, 18(6), 645–655.	https://pubmed.ncbi.nlm.nih.gov/28108385/	19	Participants wore a head-mounted display and received painful stimuli while observing a virtual rubber hand. The physical distance between the real and virtual body were varied.	N/A	●	●	●	
Painful Stimulus	Smith, A., Carlow, K., Biddulph, T., Murray, B., Paton, M., & Harvie, D. S. (2017). Contextual modulation of pain sensitivity utilising virtual environments. British journal of pain, 11(2), 71–80.	https://pubmed.ncbi.nlm.nih.gov/28491299/	25	Participants wore a head-mounted display and received painful stimuli while observing socially positive or negative virtual contexts.	N/A	●	●		
Painful Stimulus	Weeth, A., Mühlberger, A., & Shiban, Y. (2017). Was it less painful for knights? Influence of appearance on pain perception. European journal of pain (London, England), 21(10), 1756–1762.	https://pubmed.ncbi.nlm.nih.gov/28758311/	32	Participants wore a head-mounted display and received painful stimuli on their arm while observing a virtual arm with and without armor.	N/A	●	●	●	●
Painful Stimulus	Karafotias, G., Korres, G., Teranishi, A., Park, W., Eid, M., Karafotias, G., Korres, G., Teranishi, A., Wanjoo Park, Eid, M., Teranishi, A., Korres, G., Park, W., Karafotias, G., & Eid, M. (2018). Mid-Air Tactile Stimulation for Pain Distraction. IEEE transactions on haptics, 11(2), 185–191.	https://pubmed.ncbi.nlm.nih.gov/29911977/	50	Participants wore a head-mounted display and a hand motion tracker with mid-air haptics to complete virtual ball-balancing task while receiving a painful stimulus.	N/A		●	●	●
Painful Stimulus	Zeroth, J. A., Dahlquist, L. M., & Foxen-Craft, E. C. (2019). The effects of auditory background noise and virtual reality technology on video game distraction analgesia. Scandinavian journal of pain, 19(1), 207–217.	https://pubmed.ncbi.nlm.nih.gov/30422807/	164	Participants wore a head-mounted display and received painful stimuli while playing Mario Kart in a noisy or quiet environment.	N/A		●		
Painful Stimulus	Phelan, I., Furness, P. J., Fehily, O., Thompson, A. R., Babiker, N. T., Lamb, M. A., & Lindley, S. A. (2019). A Mixed-Methods Investigation Into the Acceptability, Usability, and Perceived Effectiveness of Active and Passive Virtual Reality Scenarios in Managing Pain Under Experimental Conditions. Journal of burn care & research : official publication of the American Burn Association, 40(1), 85–90.	https://pubmed.ncbi.nlm.nih.gov/30247616/	15	Participants wore a head-mounted display and received painful stimuli while playing either an active game (sheep herding, basketball) or watching passive scenarios (stories).	N/A	●	●		●

Category	Citation	URL	"N"	Intervention	RCT Quality	Presence	Immersion	Embodiment	Interactivity
Experimental Pain Studies									
Painful Stimulus	Harvie, D. S., Sterling, M., & Smith, A. D. (2018). Do pain-associated contexts increase pain sensitivity? An investigation using virtual reality. Scandinavian journal of pain, 18(3), 525–532.	https://pubmed.ncbi.nlm.nih.gov/29794263/	48	Participants wore a head-mounted display and observed various virtuals scenes while recieving electro and vibrotactile stimulation to wrist.	N/A		●		
Painful Stimulus	Fusaro, M., Tieri, G., & Aglioti, S. M. (2019). Influence of cognitive stance and physical perspective on subjective and autonomic reactivity to observed pain and pleasure: An immersive virtual reality study. Consciousness and cognition, 67, 86–97.	https://pubmed.ncbi.nlm.nih.gov/30553938/	36	Participants wore a head-mounted display and received painful stimuli while watching a virtual hand receive painful or pleasing stimuli from 1st or 3rd person.	N/A	●	●	●	
Painful Stimulus	Karaman, D., Erol, F., Yılmaz, D., & Dikmen, Y. (2019). Investigation of the effect of the virtual reality application on experimental pain severity in healthy. Revista da Associacao Medica Brasileira (1992), 65(3), 446–451.	https://pubmed.ncbi.nlm.nih.gov/30994846/	172	Participants wore a head-mounted display while receiving painful stimuli and watching a virtual roller coaster ride to distract from pain.	N/A		●		
Painful Stimulus	Lier, E.J., Oosterman, J.M., Assmann, R. et al. (2020) The effect of Virtual Reality on evoked potentials following painful electrical stimuli and subjective pain. Sci Rep 10, 9067.	https://www.nature.com/articles/s41598-020-66035-4	30	Participants wore a head-mounted display and received noxious electrical stimuli while playing a virtual river game to distract from pain. The game could be active (playable) or passive (observation only)	N/A		●		●
Painful Stimulus	Daniel, A., Barker, L., & Martini, M. (2020). Pain modulation by illusory body rotation: A new way to disclose the interaction between the vestibular system and pain processing. European journal of pain (London, England), 10.1002/ejp.1556.	https://pubmed.ncbi.nlm.nih.gov/32170809/	24	Participants wore a head-mounted display and viewed virtual room which could appear with five degrees of rotation in the sagittal axis. Participants' heat pain thresholds and subjective reports of perceived body rotation were measured.	N/A	●	●		
Painful Stimulus	Patel, P., Ivanov, D., Bhatt, S., Mastorakos, G., Birckhead, B., Khera, N., & Vittone, J. (2020). Low-Cost Virtual Reality Headsets Reduce Perceived Pain in Healthy Adults: A Multicenter Randomized Crossover Trial. Games for health journal, 9(2), 129–136.	https://pubmed.ncbi.nlm.nih.gov/31804853/	48	Participants wore Google Cardboard glasses equipped with a Samsung Smartphone while receiving cold-pressor pain.	Not Rated		●		

Literature Reviews			
Category	**Citation**	**URL**	**Review Type**
General	Wiederhold, B. K., Soomro, A., Riva, G., & Wiederhold, M. D. (2014). Future directions: advances and implications of virtual environments designed for pain management. Cyberpsychology, behavior and social networking, 17(6), 414–422.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4043364/	Narrative review
General	Gupta, A., Scott, K., & Dukewich, M. (2018). Innovative Technology Using Virtual Reality in the Treatment of Pain: Does It Reduce Pain via Distraction, or Is There More to It?. Pain medicine (Malden, Mass.), 19(1), 151–159.	https://pubmed.ncbi.nlm.nih.gov/29025113/	Narrative review
General	Gold, J. I., Belmont, K. A., & Thomas, D. A. (2007). The neurobiology of virtual reality pain attenuation. Cyberpsychology & behavior : the impact of the Internet, multimedia and virtual reality on behavior and society, 10(4), 536–544.	https://pubmed.ncbi.nlm.nih.gov/17711362/	Narrative review

Literature Reviews			
Category	**Citation**	**URL**	**Review Type**
General	Malloy, K. M., & Milling, L. S. (2010). The effectiveness of virtual reality distraction for pain reduction: a systematic review. Clinical psychology review, 30(8), 1011–1018.	https://pubmed.ncbi.nlm.nih.gov/20691523/	Systematic review
General	Riva, G., Wiederhold, B. K., & Mantovani, F. (2019). Neuroscience of Virtual Reality: From Virtual Exposure to Embodied Medicine. Cyberpsychology, behavior and social networking, 22(1), 82–96.	https://pubmed.ncbi.nlm.nih.gov/30183347/	Systematic review and meta-analysis
General	Mallari, B., Spaeth, E. K., Goh, H., & Boyd, B. S. (2019). Virtual reality as an analgesic for acute and chronic pain in adults: a systematic review and meta-analysis. Journal of pain research, 12, 2053–2085.	https://pubmed.ncbi.nlm.nih.gov/31308733/	Systematic review and meta-analysis
General	Li, A., Montaño, Z., Chen, V. J., & Gold, J. I. (2011). Virtual reality and pain management: current trends and future directions. Pain management, 1(2), 147–157.	https://pubmed.ncbi.nlm.nih.gov/21779307/	Scoping review
Clinical Pain	Garrett, B., Taverner, T., Gromala, D., Tao, G., Cordingley, E., & Sun, C. (2018). Virtual Reality Clinical Research: Promises and Challenges. JMIR serious games, 6(4), e10839.	https://pubmed.ncbi.nlm.nih.gov/30333096/	Narrative review
Clinical Pain	Wittkopf, P. G., Lloyd, D. M., Coe, O., Yacoobali, S., & Billington, J. (2019). The effect of interactive virtual reality on pain perception: a systematic review of clinical studies. Disability and rehabilitation, 1–12. Advance online publication.	https://pubmed.ncbi.nlm.nih.gov/31067135/	Systematic review
Clinical Pain	Pourmand, A., Davis, S., Marchak, A., Whiteside, T., & Sikka, N. (2018). Virtual Reality as a Clinical Tool for Pain Management. Current pain and headache reports, 22(8),53.	https://pubmed.ncbi.nlm.nih.gov/29904806/	Systematic review
Clinical Pain	Chan, E., Foster, S., Sambell, R., & Leong, P. (2018). Clinical efficacy of virtual reality for acute procedural pain management: A systematic review and meta-analysis. PloS one, 13(7),e0200987.	https://pubmed.ncbi.nlm.nih.gov/30052655/	Systematic review and meta-analysis
Clinical Pain	Indovina, P., Barone, D., Gallo, L., Chirico, A., De Pietro, G., & Giordano, A. (2018). Virtual Reality as a Distraction Intervention to Relieve Pain and Distress During Medical Procedures: A Comprehensive Literature Review. The Clinical journal of pain, 34(9), 858–877.	https://pubmed.ncbi.nlm.nih.gov/29485536/	Scoping review
Phantom Pain	Rothgangel, A., & Bekrater-Bodmann, R. (2019). Mirror therapy versus augmented/virtual reality applications: towards a tailored mechanism-based treatment for phantom limb pain. Pain management, 9(2), 151–159.	https://pubmed.ncbi.nlm.nih.gov/30681034/	Narrative review

Literature Reviews			
Category	**Citation**	**URL**	**Review Type**
Phantom Pain	Perry, B. N., Mercier, C., Pettifer, S. R., Cole, J., & Tsao, J. W. (2014). Virtual reality therapies for phantom limb pain. European journal of pain (London, England), 18(7), 897–899.	https://pubmed.ncbi.nlm.nih.gov/25045000/	Narrative review
Phantom Pain	Herrador Colmenero, L., Perez Marmol, J. M., Martí-García, C., Querol Zaldivar, M., Tapia Haro, R. M., Castro Sánchez, A. M., & Aguilar-Ferrándiz, M. E. (2018). Effectiveness of mirror therapy, motor imagery, and virtual feedback on phantom limb pain following amputation: A systematic review. Prosthetics and orthotics international, 42(3), 288–298.	https://pubmed.ncbi.nlm.nih.gov/29153043/	Systematic review
Phantom Pain	Darbois, N., Guillaud, A., & Pinsault, N. (2018). Do Robotics and Virtual Reality Add Real Progress to Mirror Therapy Rehabilitation? A Scoping Review. Rehabilitation research and practice, 2018, 6412318.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6120256/	Scoping review
Burn Care	Sharar, S. R., Miller, W., Teeley, A., Soltani, M., Hoffman, H. G., Jensen, M. P., & Patterson, D. R. (2008). Applications of virtual reality for pain management in burn-injured patients. Expert review of neurotherapeutics, 8(11), 1667–1674.	https://pubmed.ncbi.nlm.nih.gov/18986237/	Narrative review
Burn Care	Scapin, S., Echevarría-Guanilo, M. E., Boeira Fuculo Junior, P. R., Gonçalves, N., Rocha, P. K., & Coimbra, R. (2018). Virtual Reality in the treatment of burn patients: A systematic review. Burns : journal of the International Society for Burn Injuries, 44(6), 1403–1416.	https://pubmed.ncbi.nlm.nih.gov/29395400/	Systematic review
Burn Care	Morris, L. D., Louw, Q. A., & Grimmer-Somers, K. (2009). The effectiveness of virtual reality on reducing pain and anxiety in burn injury patients: a systematic review. The Clinical journal of pain, 25(9), 815–826.	https://pubmed.ncbi.nlm.nih.gov/19851164/	Systematic review
Burn Care	Luo, H., Cao, C., Zhong, J., Chen, J., & Cen, Y. (2019). Adjunctive virtual reality for procedural pain management of burn patients during dressing change or physical therapy: A systematic review and meta-analysis of randomized controlled trials. Wound repair and regeneration : official publication of the Wound Healing Society [and] the European Tissue Repair Society, 27(1), 90–101.	https://pubmed.ncbi.nlm.nih.gov/30480854/	Systematic review and meta-analysis
Pediatric Pain	Won, A. S., Bailey, J., Bailenson, J., Tataru, C., Yoon, I. A., & Golianu, B. (2017). Immersive Virtual Reality for Pediatric Pain. Children (Basel, Switzerland), 4(7), 52.	https://pubmed.ncbi.nlm.nih.gov/28644422/	Narrative review
Pediatric Pain	Arane, K., Behboudi, A., & Goldman, R. D. (2017). Virtual reality for pain and anxiety management in children. Canadian family physician Medecin de famille canadien, 63(12), 932–934.	https://pubmed.ncbi.nlm.nih.gov/29237632/	Narrative review
Pediatric Pain	Eijlers, R., Utens, E., Staals, L. M., de Nijs, P., Berghmans, J. M., Wijnen, R., Hillegers, M., Dierckx, B., & Legerstee, J. S. (2019). Systematic Review and Meta-analysis of Virtual Reality in Pediatrics: Effects on Pain and Anxiety. Anesthesia and analgesia, 129(5), 1344–1353.	https://pubmed.ncbi.nlm.nih.gov/31136330/	Systematic review and meta-analysis

Literature Reviews			
Category	**Citation**	**URL**	**Review Type**
Pediatric Pain	Eijlers, R., Utens, E., Staals, L. M., de Nijs, P., Berghmans, J. M., Wijnen, R., Hillegers, M., Dierckx, B., & Legerstee, J. S. (2019). Systematic Review and Meta-analysis of Virtual Reality in Pediatrics: Effects on Pain and Anxiety. Anesthesia and analgesia, 129(5), 1344–1353.	https://pubmed.ncbi.nlm.nih.gov/31136330/	Systematic review and meta-analysis
Cancer Pain	Austin, P., Lovell, M., & Siddall, P. (2019). The Efficacy of Virtual Reality for Persistent Cancer Pain: A Call for Research. Journal of pain and symptom management, 58(4), e11–e14.	https://pubmed.ncbi.nlm.nih.gov/31323287/	Narrative review
Cancer Pain	Chirico, A., Lucidi, F., De Laurentiis, M., Milanese, C., Napoli, A., & Giordano, A. (2016). Virtual Reality in Health System: Beyond Entertainment. A Mini-Review on the Efficacy of VR During Cancer Treatment. Journal of cellular physiology, 231(2), 275–287.	https://pubmed.ncbi.nlm.nih.gov/26238976/	Narrative review
Spinal Cord Injury Pain	Opsommer, E., Chevalley, O., & Korogod, N. (2020). Motor imagery for pain and motor function after spinal cord injury: a systematic review. Spinal cord, 58(3), 262–274.	https://pubmed.ncbi.nlm.nih.gov/31836873/	Systematic review
Spinal Cord Injury Pain	Austin, P. D., & Siddall, P. J. (2019). Virtual reality for the treatment of neuropathic pain in people with spinal cord injuries: A scoping review. The journal of spinal cord medicine, 1–11. Advance online publication.	https://pubmed.ncbi.nlm.nih.gov/30707649/	Scoping review
Musculoskeletal Pain	Lin, H. T., Li, Y. I., Hu, W. P., Huang, C. C., & Du, Y. C. (2019). A Scoping Review of The Efficacy of Virtual Reality and Exergaming on Patients of Musculoskeletal System Disorder. Journal of clinical medicine, 8(6), 791.	https://pubmed.ncbi.nlm.nih.gov/31167435/	Scoping review