Medical Marijuana Program

165 Capitol Avenue, Room 145, Hartford, CT 06106-1630 • (860) 713-6066 **E-mail:** dcp.mmp@ct.gov • **Website:** www.ct.gov/dcp/mmp

Petition to Add a Medical Condition, Medical Treatment or Disease to the List of Debilitating Conditions

INSTRUCTIONS: Please complete each section of this Petition and attach all supportive documents. All attachments must include a title referencing the Section letter to which it responds. Any Petition that is not fully or properly completed will not be submitted to the Board of Physicians.

Please Note: Any individually identifiable health information contained in a Petition shall be confidential and shall not be subject to disclosure under the Freedom of Information Act, as defined in section 1-200, Connecticut General Statutes.

Section A: Petitioner's Information

Name (First, Middle, Last): [redacted]			
Home Address (including Apartment or Suite #): [redacted]			
City: [redacted]		State: CT	Zip Code: [redacted]
Telephone Number: [redacted]	E-mail Address: [redacted]		

Section B: Medical Condition, Medical Treatment or Disease

Please specify the medical condition, medical treatment or disease that you are seeking to add to the list of debilitating medical conditions under the Act. Be as precise as possible in identifying the condition, treatment or disease.

(OA) Osteoarthritis

Section C: Background

Provide information evidencing the extent to which the condition, treatment or disease is generally accepted by the medical community and other experts as a valid, existing medical condition, medical treatment or disease.

- Attach a comprehensive definition from a recognized medical source.
- Attach additional pages as needed.

Osteoarthritis

In osteoarthritis (OA), the protective cartilage and fluid inside the joint begin breaking down due to years of use or injuries. This makes the movement of affected joints more difficult and painful. In time, bones may rub directly against one another inside the joint, causing severe pain. Inflammation can also result from this constant, painful friction. OA most often affects knees, hips, hands, and the spine. In most cases, OA does not affect the same joint on both sides of the body, such as both knees.
The intensity of pain varies from person to person. It can range from mild to moderate and may be manageable with drugs and regular physical activity. But for some it can be debilitating, making any movement of the affected joint almost impossible.

To ease pain and reduce inflammation, regular doses of nonsteroidal anti-inflammatory drugs (NSAIDs) are needed. To only relieve pain, acetaminophen may be effective with fewer gastrointestinal side effects. If pain is severe, an analgesic combined with an opioid, such as codeine or hydrocodone, is prescribed. In severe cases, surgery to replace the damaged joint may be the only effective treatment.

Non-medicinal pain relief has proven very beneficial for people with OA. These treatments include hot & cold therapy, topical rubs, exercise, physical therapy, and others.

Section D: Negative Effects of Current Treatment

If you claim a treatment, that has been prescribed for your condition causes you to suffer (i.e. severe or chronic pain, spasticity, etc.), provide information regarding the extent to which such treatment is generally accepted by the medical community and other experts as a valid treatment for your debilitating condition.

- Attach additional pages as necessary.
- If not applicable, please indicate N/A.

I have been taking "Aleve" which is what my rheumatoid DR had suggesting it take to relive the pain and swelling. Since then I have had more heartburn, stomach aches, constipation

Headaches, itching skin and major skin rashes

Section E: Negative Effects of Condition or Treatment

Provide information regarding the extent to which the condition or the treatments thereof cause severe or chronic pain, severe nausea, spasticity or otherwise substantially limits one or more major life activities.

The pain and swelling in my hands are really effecting my ability to work, do the normal yard and house work involved in owning a property, and most important the ability to fish which is my greatest passtime

☐ Attach additional pages as necessary.

Section F: Conventional Therapies

Provide information regarding the availability of conventional medical therapies, other than those that cause suffering, to alleviate suffering caused by the condition or the treatment thereof.

☐ Attach additional pages as necessary.

Soaking my hands in hot / warm water does relieve the pain temporally but not a practical method in every day work activities

Section G: General Evidence of Support for Medical Marijuana Treatment

Provide evidence, generally accepted among the medical community and other experts, that supports a finding that the use of marijuana alleviates suffering caused by the condition or the treatment thereof.

☐ Attach additional pages as necessary.

http://www.medicalmarijuanainc.com/osteoarthritis-medical-marijuana-research-overview

http://www.theweedblog.com/recent-study-shows-that-cannabis-fights-osteoarthritis-related-cartilage-breakdown

http://www.collective-evolution.com/2014/09/02/cannabis-relieves-pain-from-osteoarthritis/

Section H: Scientific Evidence of Support for Medical Marijuana Treatment

Provide any information or studies regarding any beneficial or adverse effects from the use of marijuana in patients with the condition, treatment or disease that is the subject of the petition.

- Supporting evidence needs to be from professionally recognized sources such as peer reviewed articles or professional journals.
- Attach complete copies of any article or reference, not abstracts.

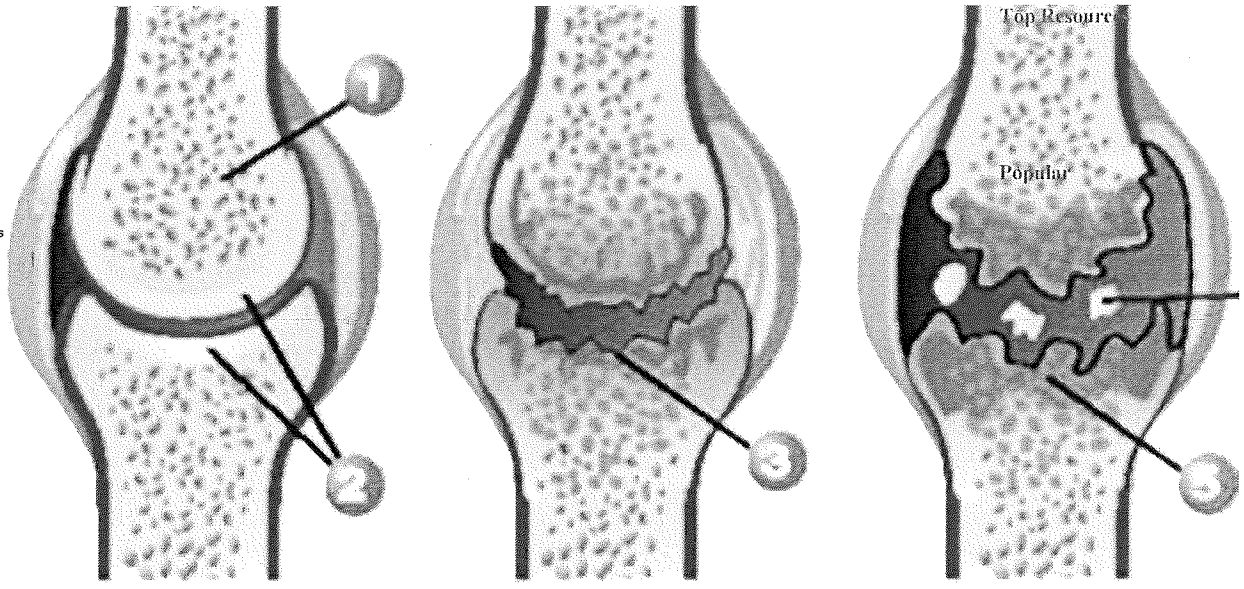
https://www.leafly.com/news/science-tech/the-medical-minute-can-cannabis-help-repair-arthritic-joints

Section I: Professional Recommendations for Medical Marijuana Treatment

Attach letters in support of your petition from physicians or other licensed health care professionals knowledgeable about the condition, treatment or disease at issue.

Section J: Submission of Petition
In the event you are unable to answer or provide the required documentation to any of the Sections above (excluding Section D); provide a detailed explanation indicating what you believe is "good cause" for not doing so. ☐ Attach additional pages as necessary.
I am willing to talk or testify to any one that this treatment improves my ability to work and continue to employee my entire workforce.

I hereby certify that the above information is correct and complete.	
My signature below attests that the information provided in this petition is true and that the attached documents are authentic. I formally request that the commissioner present my petition and all supporting evidence to the Board of Physicians for consideration.	
Signature: [redacted]	Date signed: 9/8/2016



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Osteoarthritis – Medical Marijuana Research Overview

8 December, 2015

The following information is presented for educational purposes only. Medical Marijuana Inc. provides this information to provide an understanding of the potential applications of cannabidiol. Links to third party websites do not constitute an endorsement of these organizations by Medical Marijuana Inc. and none should be inferred.

Osteoarthritis, the most common type of arthritis, is the wear and tear of joint cartilage. Studies have shown cannabis helps reduce osteoarthritic pain and limit joint damage.

Overview of Osteoarthritis

Osteoarthritis, or degenerative joint disease, is the wearing down of the protective cartilage on the ends of bones. Any joint in the body can be damaged by osteoarthritis, but the disorder most commonly affects joints within the knees, hands, hips and spine.

Cartilage is tissue that allows bones to move about a joint without causing friction. In osteoarthritis, the cartilage becomes rough rather than slick, and eventually wears down completely so that the bones rub against each other.

The symptoms associated with osteoarthritis include pain that develops during or after movement, joint tenderness and stiffness, loss of flexibility, a grating sensation that occurs when the joint moves and the forming of bone spurs around the joint. The affected joints can also become swollen after an extended activity. Over time, the pain and stiffness can become so severe that daily tasks become too difficult.

Osteoarthritis most commonly develops in women and the risk of the disorder increases with age. Being obese places more stress on the weight-bearing joints and can contribute to the development of osteoarthritis. Repetitive stress from work-related or athletic movements, can lead to the disorder.

There is no cure for osteoarthritis and the damage done is irreversible. Treatment, therefore, focuses on slowing the progression of the disease and managing pain.

Findings: Effects of Cannabis on Osteoarthritis

Cli[illegible]nces analyzing cannabis effect specifically on osteoarthritis is limited. However, studies have demonstrated cannabis' potent anti-inflammatory and pain-relieving effects, and preclinical studies support the idea that the endocannabinoid system is involved in alleviating osteoarthritis (La Porta, et al., 2014). In an animal trial, a cannabinoid found in cannabis, cannabidiol (CBD), was shown to effectively block the progression of arthritis. Researchers found that CBD protected joints against severe damage and concluded that CBD offers a potent anti-arthritic effect (Malfait, et al., 2000). Other studies have found that synthetic cannabinoids offer strong anti-inflammatory and immunosuppressive properties and reduce joint damage in mice with osteoarthritis (Sumariwalla, et al , 2004) (Sumariwalla, et al , 2009).

Pain caused by osteoarthritis can be nociceptive or neuropathic. Cannabis cannabinoids like CBD and tetrahydrocannabinol (THC) activate the CB1 and CB2 receptors of the endocannabinoid system, which have been found to regulate the release of neurotransmitter and central nervous system immune cells to manage both nociceptive and neuropathic pain levels (Woodhams, Sagar, Burston & Chapman, 2015). Activating of the CB1 receptor has been specifically found to reduce pain sensitivity in the osteoarthritic knee joints of rats (Schuelert & McDougall, 2008). Another animal study found that activating CB2 receptors reduces pain and inflammation associated with osteoarthritis (Burston, et al , 2013).

Maintaining healthy bone helps reduce the risk of osteoarthritis and studies have shown that cannabis and its cannabinoids help modulate bone growth and maintenance. By activating the CB1 and CB2 receptors, cannabinoids help manage proper bone formation by restraining bone resorption and enhancing bone formation (Bab & Zimmer, 2008) (Idris, et al., 2009) (Ofek, et al., 2006).

125 Shares

States That Have Approved Medical Marijuana for Osteoarthritis

124 Currently, no states have approved medical marijuana specifically for the treatment of osteoarthritis. California and New Mexico have approved medical marijuana for all types of arthritis. In addition, in Washington D.C , any condition can be approved for medical marijuana as long as a DC-licensed physician recommends the treatment. Plus, various other states will consider allowing medical marijuana to be used for the treatment of 124 osteoarthritis with the recommendation from a physician. These states include: Connecticut (other medical conditions may be approved by the Department of Consumer Protection), Massachusetts (other conditions as determined in writing by a qualifying patient's physician), Nevada (other conditions subject to approval), Oregon (other conditions subject to approval), Rhode Island (other conditions subject to approval), and Washington (any "terminal or debilitating condition").

Several states have approved medical marijuana specifically to treat "chronic pain," a symptom associated with osteoarthritis. These states include: Alaska, Arizona, California, Colorado, Delaware, Hawaii, Maine, Maryland, Michigan, Montana, New Mexico, Ohio, Oregon, Pennsylvania, Rhode Island and Vermont. The states of Nevada, New Hampshire, Ohio and Vermont allow medical marijuana to treat "severe pain." The states of Minnesota, Ohio, Pennsylvania and Washington have approved cannabis for the treatment of "intractable pain."

Recent Studies on Cannabis' Effect on Osteoarthritis

- **Rats with knee osteoporosis experienced a reduction in pain and inflammation following activation of CB2 receptors.** *Cannabinoid CB_2 Receptors Regulate Central Sensitization and Pain Responses Associated with Osteoarthritis of the Knee Joint.* (http://www.ncbi.nlm.nih.gov/pubmed/24282543)

- **Activating CB2 receptors found to effectively reduce pain caused by osteoarthritic knees.** Cannabinoid CB_2 Receptors Regulate Central Sensitization and Pain Responses Associated with Osteoarthritis of the Knee Joint.(http://www.ncbi.nlm.nih.gov/pubmed/24282543)

References

Bab, I., & Zimmer, A. (2008). Cannabinoid receptors and the regulation of bone mass. *British Journal of Pharmacology*, *153*(2), 182–188.

Baron, E.P. (2015, June). Comprehensive Review of Medicinal Marijuana, Cannabinoids, and Therapeutic Implications in Medicine and Headache: What a Long Strange Trip It's Been… *Headache*, 55(6), 885-916.

Burston, J. J., Sagar, D. R., Shao, P., Bai, M., King, E., Brailsford, L., Turner, J.M., Hathway, G.J., Bennett, A.J., Walsh, D.A., Kendall, D.A., Lichtman, A., and Chapman, V. (2013). Cannabinoid CB_2 Receptors Regulate Central Sensitization and Pain Responses Associated with Osteoarthritis of the Knee Joint. *PLoS ONE*, *8*(11), e80440.

Idris, A.I., Sophocleous, A., Landao-Bassonga, E., Canals, M., Milligan, G., Baker, D., van't Hof, R.J., and Ralston, S.H. (2009, August). Cannabinoid receptor type 1 protects against age-related osteoporosis by regulating osteoblast and adipocyte differentiation in marrow stromal cells. *Cell Metabolism*, 10(2), 139-47.

La Porta, C., Bura, S.A., Negrete, R., and Maldonado, R. (2014, February). Involvement of the endocannabinoid system in osteoarthritis pain. *The European Journal of Neuroscience*, 39(3), 485-500.

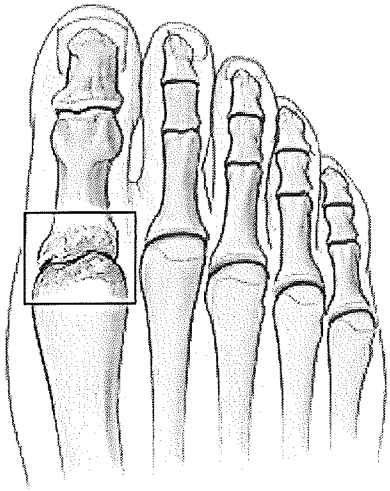
Malfait, A. M., Gallily, R., Sumariwalla, P. F., Malik, A. S., Andreakos, E., Mechoulam, R., & Feldmann, M. (2000). The nonpsychoactive cannabis constituent cannabidiol is an oral anti-arthritic therapeutic in murine collagen-induced arthritis. *Proceedings of the National Academy of Sciences of the United States of America*, *97*(17), 9561–9566.

Ofek, O., Karsak, M., Leclerc, N., Fogel, M., Frenkel, B., Wright, K., … Bab, I. (2006). Peripheral cannabinoid receptor, CB2, regulates bone mass. *Proceedings of the National Academy of Sciences of the United States of America*, *103*(3), 696–701. http://doi.org/10.1073/pnas.0504187103

Osteoarthritis. (n.d.). *Arthritis Foundation*. Retrieved from http://www.arthritis.org/about-arthritis/types/osteoarthritis/.

Osteoarthritis. (2014, October 9). *Mayo Clinic*. Retrieved from http://www.mayoclinic.org/diseases-conditions/osteoarthritis/basics/definition/con-20014749.

(https://www.theweedblog.com/)



(https://www.theweedblog.com/recent-study-shows-that-cannabis-fights-osteoarthritis-related-cartilage-breakdown/)

MARIJUANA SCIENCE
(HTTPS://WWW.THEWEEDBLOG.COM/CATEGORY/MARIJUANA-SCIENCE/)

Recent Study Shows That Cannabis Fights Osteoarthritis Related Cartilage Breakdown

Johnny Green (https://www.theweedblog.com/author/johnnygreen/) April 24, 2016

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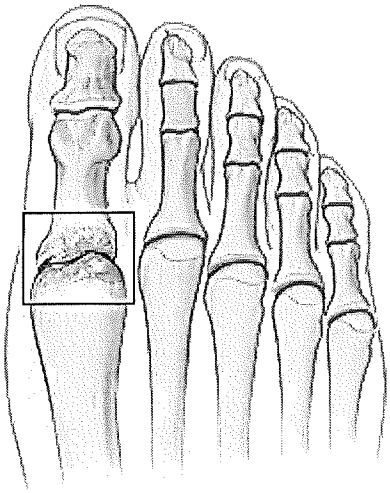

(http://www.theweedblog.com/wp-content/uploads/osteoarthritis-cartilidge-breakdown.jpg)One of my favorite things to do in life is play basketball. I'm not the best at it, and definitely don't possess the genetics and talent that I wish I had in order to have pursued my dreams as a basketball player growing up, but it's something that I've always enjoyed. It was the only form of exercise that I could do that came naturally. Running around a track gets boring. Trying to make it rain at noon ball open gym was always much funner.

I have played in a lot of city basketball leagues, and play in a basketball tournament every summer, and have for over a decade. It's something that I look forward to every summer, and I've actually over achieved at the

tournament quite a bit. But after this last summer, I noticed that there was something wrong with my foot. I went to the doctor, and it turned out that I have osteoarthritis in my foot, including cartilage breakdown. I went from knowing nothing about a metatarsophalangeal joint to knowing quite a bit more in just a handful of months. It's something that will never fully go away for the rest of my life, which is something that I'm still learning to deal with.

There are various ways to treat it, almost all of which involve pain meds that I don't want to take. One treatment is to get steroid shots into the joint. Um, no thanks. Instead, I use various forms of cannabis, especially topical rubs. A good topical rub will do wonders to make my foot feel better. Ingesting cannabis helps the pain too, which is particularly hardcore some days. A recent study found that the use of synthetic cannabinoids reduced cartilage breakdown related to osteoarthritis. Per the US National Library of Medicine National Institutes of Health (https://www.ncbi.nlm.nih.gov/pubmed/27082728):

> *A central feature of osteoarthritis (OA) is the loss of articular cartilage, which is primarily attributed to cartilage breakdown. A group of metalloproteinases termed the A disintegrin and metalloproteinase with thrombospondin motifs (ADAMTS) family are reported to be important in cartilage breakdown. Recent studies have suggested that ADAMTS-4 is a major contributor to the pathogenesis of OA and that syndecan-1 is closely associated with activation of ADAMTS-4 in human chondrocytes. Accumulating evidence also suggests that cannabinoids have chondroprotective effects. The current study explored the effects of synthetic cannabinoid WIN-55,212-2 mesylate (WIN-55) on the expression of syndecan-1 and ADAMTS-4, as well as ADAMTS-4 activity, in unstimulated and interleukin (IL)-1β-stimulated OA chondrocytes. Primary human OA articular chondrocytes were treated with WIN-55 in the presence or absence of IL-1β and cannabinoid receptor antagonists. The results of the present study demonstrated that WIN-55 inhibited ADAMTS-4 activity in unstimulated and IL-1β-stimulated primary human OA articular chondrocytes in a concentration-dependent manner. Cannabinoid receptor type 1 (CB1) and 2 (CB2) were constitutively expressed in human OA articular chondrocytes. Furthermore, selective CB2 antagonist, JTE907, but not selective CB1 antagonist, MJ15, abolished the inhibitory effect of WIN-55 on ADAMTS-4 activity. WIN55 inhibited the expression of syndecan-1 but not ADAMTS-4, and overexpression of syndecan-1 reversed the inhibitory effect of WIN-55 on the ADAMTS-4 activity in unstimulated and IL-1β-stimulated human OA articular chondrocytes. Despite having no significant effect on syndecan-1 gene promoter activity, WIN-55 markedly decreased the stability of syndecan-1 mRNA via CB2. In conclusion, to the best of our knowledge, the present study provides the first in vitro evidence supporting that the synthetic cannabinoid WIN-55 inhibits ADAMTS-4 activity in unstimulated and IL-1β-stimulated human OA articular chondrocytes by decreasing the mRNA stability/expression of syndecan-1 via CB2.* ***This suggests a novel mechanism by which cannabinoids may prevent cartilage breakdown in OA.*** *In addition, it also provides novel insights into the pharmacological effects of synthetic cannabinoids on OA.*

Obviously, there is a lot of acronyms and scientific language involved. I bolded the conclusion for those that just wanted the summary. This study involved synthetic cannabinoids. I would love to see a study measuring how much better full plant extracts would work compared to the synthetic cannabinoids. Either way, this is encouraging for those of us that suffer from OA. If you know someone that suffers from OA, I encourage you to urge them to use topicals. Not all of them are created equal, but when you find one that works, trust me, it works very well.

Please share!

cannabinoids (https://www.theweedblog.com/tag/cannabinoids/) cartilage breakdown (https://www.theweedblog.com/tag/cartilage-breakdown/) osteoarthritis (https://www.theweedblog.com/tag/osteoarthritis/)

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Pain from osteoarthritis leaves many debilitated due to stiff and swollen joints. While prescriptions are readily available for osteoarthritis sufferers, they often leave patients with the choice of living between two worlds: If they take prescription pills, they may live with less physical pain yet suffer from the wide array of side effects that pharmaceuticals are equipped with. If they choose not to take prescriptions due to side effects, they will live in the chronic physical pain caused by osteoarthritis. Basically, they are forced to choose between one form of pain or another. However, this may not be the case for much longer.

According to a study conducted by researchers from the *University of Nottingham UK*, alongside researchers from the *University of Pittsburgh* and *Virginia Commonwealth University* in the US, a specific cannabinoid is reduced during osteoarthritis, thus resulting in heightened pain and more rapid progression of the condition. Therefore it was concluded that activating the specific cannabinoid reduced in osteoarthritis patients, known as cannabinoid 2 (CB2), not only reduces pain, but also helps maintain symptoms and inhibits the speed at which the disease progresses as well.

Researchers studied human spines of deceased individuals who lived with osteoarthritis of the knee and discovered that they had lower levels of CB2 receptors. The more progressed the disease was, the lower the CB2 receptor levels were. In response, *Research UK* and the *National Institutes of Health* funded a study in which researchers activated CB2 receptors in lab rats with osteoarthritis (http://www.naturalnews.com/osteoarthritis.html) in an attempt to reduce pain. The diseased rats were injected with JWH-133, a non-psychoactive synthetic cannabinoid that binds with CB2 receptors to activate them, and the results were nothing short of fascinating.

Study Reveals A New Potential Method For Pain Relief From Osteoarthritis

cannabis-can-help-treat-osteoarthritis-thcf

Results showed treating osteoarthritis by increasing CB2 receptors with the use of JWH-133 injections reduced chemicals responsible for causing inflammation in osteoarthritis, reduced excitatory nerves in

the spine that are stimulated by inflammation, and increased the overall amount of CB2 receptor "message" (MRNA) and protein in nerve cells of the spine. To put it simply, activating the cannabinoid receptors that are drastically reduced in osteoarthritis patients reduced inflammation, thus reducing pain (http://www.naturalnews.com/pain.html) and allowing the individual to lead a higher quality of life. Furthermore, since patients with late stage osteoarthritis have drastically reduced levels of CB2 receptor "message" in the spine, increasing levels of the CB2 receptor "message" might greatly reduce the severity and rate of progression of the disease.

Sources for this article include:

http://www.nursingtimes.net (http://www.nursingtimes.net/)

http://www.plosone.org/article/info:doi/10.1371/journal.pone.0080440 (http://www.plosone.org/article/info:doi/10.1371/journal.pone.0080440)

http://www.ncbi.nlm.nih.gov (http://www.ncbi.nlm.nih.gov/)