

Studies and Case Reports

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You will find scientific information on most of the studies at [Database on Clinical Studies and Case Reports](#)

- Improvement of symptoms or positive evaluation by authors
- No relevant change of symptoms or negative evaluation by authors
- ❖ Deterioration of symptoms

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Nausea and Vomiting – Cancer Chemotherapy

Controlled Studies

Dronabinol

- Artim R, DiBella N. Tetrahydrocannabinol (THC) plus prochlorperazine (PCZ) for refractory nausea and vomiting (N/V). Proceedings of the American Society for Clinical Oncology 1983;2:84.
- Chang AE, Shiling DJ, Stillman RC, Goldberg NH, Seipp CA, Barofsky I. Delta-9-tetrahydrocannabinol as an antiemetic in cancer patients receiving high-dose methotrexate. Annals of Internal Medicine 1979;91:819-824.
- Chang AE, Shiling DJ, Stillman RC, Goldberg NH, Seipp CA, Barofsky I, Rosenberg SA. A prospective evaluation of delta-9-tetrahydrocannabinol as an antiemetic in patients receiving adriamycin and cytoxan chemotherapy. Cancer 1981; 47: 1746-1751.
- Colls BM, Ferry DG, Gray AJ, Harvey VJ, McQueen EG. The antiemetic activity of tetrahydrocannabinol versus metoclopramide and thiethylperazine in patients undergoing cancer chemotherapy. New Zealand Medical Journal 1980;91:449-451.
- Ekert H, Waters KD, Jurk KH, Mobilia J, Loughnan P. Amelioration of cancer chemotherapy-induced nausea and vomiting by delta-9-tetrahydrocannabinol. Medical Journal of Australia 1979;2:657-659.
- Frytak S, Moertel CG, O'Fallon JR, Rubin J, Creagan ET, O'Connell MJ. Delta-9-tetrahydrocannabinol as an antiemetic for patients receiving cancer chemotherapy. A comparison with prochlorperazine and a placebo. Annals of Internal Medicine 1979;91:825-830.
- Gralla RJ, Tyson LB, Bordin LA, Clark RA, Kelsen DP, Kris MG. Antiemetic therapy: a review of recent studies and a report of a random assignment trial comparing metoclopramide with delta-9-tetrahydrocannabinol. Cancer Treatment Report 1984;68:163-172.
- Kluin-Nelemans JC, Nelemans FA, Meuwissen OJATH, Maes RAA. Δ^9 -tetrahydrocannabinol (THC) as an antiemetic in patients treated with cancer chemotherapy; a double-blind cross-over trial against placebo. Veterinary and Human Toxicology 1979;21:338-340.
- Lane M, Vogel CL, Ferguson J, Krasnow S, Saiers JL, Hamm J. Dronabinol and prochlorperazine in combination for treatment of cancer chemotherapy-induced nausea and vomiting. Journal of Pain and Symptom Management 1991;6:352-359.
- Levitt M, Faiman C, Hawks R, Wilson A. Randomized double blind comparison of delta-9-tetrahydrocannabinol (THC) and marijuana as chemotherapy antiemetics. Proceedings of the American Society for Clinical Oncology 1984;3:91.
- Levitt M, Wilson A, Bowman D, Faiman C, Kemel S, Krepart G. Dose vs response of tetrahydrocannabinol (THC) vs prochlorperazine as chemotherapy antiemetics. Proceedings of the American Society for Clinical Oncology 1981;22:422.
- McCabe M, Smith FP, Goldberg D, Macdonald J, Woolley PV, Warren R. Efficacy of tetrahydrocannabinol in patients refractory to standard anti-emetic therapy. Investigational New Drugs 1988;6:243-246.
- Neidhart JA, Gagen MM, Wilson HE, Young DC. Comparative trial of the antiemetic effects of THC and haloperidol. International Journal of Clinical Pharmacology Research 1981; 21: 38-42S.
- Orr LE, McKernan JF, Bloome B. Antiemetic effect of tetrahydrocannabinol. Compared with placebo and prochlorperazine in chemotherapy-associated nausea and emesis. Archives of Internal Medicine 1980;140:1431-433.
- Sallan SE, Cronin C, Zelen M, Zinberg NE. Antiemetics in patients receiving chemotherapy for cancer. A randomized comparison of delta-9-tetrahydrocannabinol and prochlorperazine. New England Journal of Medicine 1980;302:135-138.
- Sallan SE, Zinberg NE, Frei E. Antiemetic effect of delta-9-tetrahydrocannabinol in patients receiving cancer chemotherapy. New England Journal of Medicine 1975;293:795-797.

- Ungerleider JT, Andrysiak T, Fairbanks L, Goodnight J, Sarna G, Jamison K. Cannabis and cancer chemotherapy. A comparison of oral delta-9-THC and prochlorperazine. *Cancer* 1982;50:636-645.
- Ungerleider JT, Sarna G, Fairbanks LA, Goodnight J, Andrysiak T, Jamison K. THC or compazine for the cancer chemotherapy patient —the UCLA study. Part II: patient drug preference. *American Journal of Clinical Oncology* 1985; 8: 142-147.
- Meiri E, Jhangiani H, Vredenburgh JJ, Barbato LM, Carter FJ, Yang HM, Baranowski V. Efficacy of dronabinol alone and in combination with ondansetron versus ondansetron alone for delayed chemotherapy-induced nausea and vomiting. *Curr Med Res Opin* 2007;23(3):533-43.

Cannabis (smoked)

- Levitt M, Faiman C, Hawks R, Wilson A. Randomized double blind comparison of delta-9-tetrahydrocannabinol (THC) and marijuana as chemotherapy antiemetics. *Proceedings of the American Society for Clinical Oncology* 1984;3:91.

Cannabis (oral, sublingual)

- Duran M, Pérez E, Abanades S, Vidal X, Saura C, Majem M, Arriola E, Rabanal M, Pastor A, Farré M, Rams N, Laporte JR, Capellà D. Preliminary efficacy and safety of an oromucosal standardized cannabis extract in chemotherapy-induced nausea and vomiting. *Br J Clin Pharmacol* 2010;70(5):656-63.

Nabilone

- Ahmedzai S, Carlyle DL, Clader IT, Moran F. Anti-emetic efficacy and toxicity of nabilone, a synthetic cannabinoid, in lung cancer chemotherapy. *British Journal of Cancer* 1983;48:657-663.
- Chan HS, Correia JA, MacLeod SM. Nabilone versus prochlorperazine for control of cancer chemotherapy-induced emesis in children: a double-blind, crossover trial. *Pediatrics* 1987; 79: 946-952
- Crawford SM, Buckman R. Nabilone and metoclopramide in the treatment of nausea and vomiting due to cisplatin: a double blind study. *Medical Oncology and Tumor Pharmacotherapy* 1986; 3: 39-42.
- Cunningham D, Bradley CJ, Forrest GJ, Hutcheon AW, Adams L, Sneddon M, et al. A randomized trial of oral nabilone and prochlorperazine compared to intravenous metoclopramide and dexamethasone in the treatment of nausea and vomiting induced by chemotherapy regimens containing cisplatin or cisplatin analogues. *European Journal of Cancer and Clinical Oncology* 1988; 24: 685-689.
- Dalzell AM, Bartlett H, Lilleyman JS. Nabilone: An alternative antiemetic for cancer chemotherapy. *Archives of Disease in Childhood* 1986;61:502-505.
- Einhorn LH, Nagy C, Furnas B, Williams SD. Nabilone: an effective antiemetic in patients receiving cancer chemotherapy. *Journal of Clinical Pharmacology*. 1981 Aug-Sep;21(8-9 Suppl):64S-69S.
- George M, Pejovic MH, Thuairé M, Kramar A, Wolff JP. Randomized comparative trial of a new anti-emetic: nabilone, in cancer patients treated with cisplatin. *Biomedicine and Pharmacotherapy* 1983; 37: 24-27.
- Herman TS, Einhorn LH, Jones SE, Nagy C, Chester AB, Dean JC, et al. Superiority of nabilone over prochlorperazine as an antiemetic in patients receiving cancer chemotherapy. *New England Journal of Medicine* 1979; 300: 1295-1297.
- Johansson R, Kilkku P, Groenroos M. A double-blind, controlled trial of nabilone vs prochlorperazine for refractory emesis induced by cancer chemotherapy. *Cancer Treatment Reviews* 1982; 9: 25-33.
- Jones SE, Durant JR, Greco FA, Robertone A. A multi-institutional phase III study of nabilone vs placebo in chemotherapy-induced nausea and vomiting. *Cancer Treatment Reviews* 1982; 9: 45-48
- Levitt M. Nabilone vs placebo in the treatment of chemotherapy-induced nausea and vomiting in cancer patients. *Cancer Treatment Reviews* 1982; 9(suppl B): 49-53.
- Nagy CM, Furnas BE, Einhorn LH, Bond WH. Nabilone: antiemetic crossover study in cancer

chemotherapy patients. *Proceedings of the American Society for Cancer Research* 1978;19:30.

- Niederle N, Schutte J, Schmidt CG. Crossover comparison of the antiemetic efficacy of nabilone and alizapride in patients with nonseminomatous testicular cancer receiving cisplatin therapy. *Klinische Wochenschrift* 1986; 64: 362-365.
- Niiranen Aila, Mattson K. A cross-over comparison of nabilone and prochlorperazine for emesis induced by cancer chemotherapy. *American Journal of Clinical Oncology* 1985;8:336-340.
- Pomeroy M, Fennelly JJ, Towers M. Prospective randomized double-blind trial of nabilone versus domperidone in the treatment of cytotoxic-induced emesis. *Cancer Chemotherapy and Pharmacology* 1986;17:285-288.
- Priestman SG, Priestman TJ, Canney PA. A double-blind randomised cross-over comparison of nabilone and metoclopramide in the control of radiation-induced nausea. *Clinical Radiology* 1987; 38: 543-544.
- Steele N, Gralla RJ, Braun Jr DW, Young CW. Double-blind comparison of the antiemetic effects of nabilone and prochlorperazine on chemotherapy-induced emesis. *Cancer Treatment Report* 1980; 64: 219-224.
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Levonantradol

- Citron ML, Herman TS, Vreeland F, Krasnow SH, Fossieck BE, Jr. Antiemetic efficacy of levonantradol compared to delta-9-tetrahydrocannabinol for chemotherapy-induced nausea and vomiting. *Cancer Treatment Reports* 1985;69:109-112.
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- Hutcheon AW, Palmer JB, Soukop M, Cunningham D, McArdle C, Welsh J, et al. A randomised multicentre single blind comparison of a cannabinoid anti-emetic (levonantradol) with ychlorpromazine in patients receiving their first cytotoxic chemotherapy. *European Journal for Cancer and Clinical Oncology* 1983; 19: 1087-1090
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Uncontrolled Studies

Delta-8-THC

- Abrahamov A, Abrahamov A, Mechoulam R. An efficient new cannabinoid antiemetic in pediatric oncology. *Life Sciences* 1995;56:2097-2102.

Cannabis (smoked)

- Vinciguerra V, Moore T, Brennan E. Inhalation marijuana as an antiemetic for cancer chemotherapy. *New York State Journal of Medicine* 1988;88:525-527.
- Musty RE, Rossi R. Effects of smoked cannabis and oral delta-9-tetrahydrocannabinol on nausea and emesis after cancer chemotherapy: A review of state clinical trials. *J Cannabis Ther* 2001;1(1):29-42.

Case Reports, Surveys

- Doblin RE, Kleiman MA. Marijuana as antiemetic medicine: a survey of oncologists' experiences and attitudes. *American Journal of Clinical Oncology* 1991; 9: 1314-1319.
- Schwartz RH, Voth EA, Sheridan MJ. Marijuana to prevent nausea and vomiting in cancer patients: a survey of clinical oncologists. *South Medical Journal* 1997;90(2):167-72.

Nausea and Vomiting – Radiotherapy

Controlled Studies

Dronabinol

- Ungerleider JT, Andrysiak TA, Fairbanks LA, Tesler AS, Parker RG. Tetrahydrocannabinol vs. prochlorperazine. The effects of two antiemetics on patients undergoing radiotherapy. *Radiology* 1984;150(2):598-9.

Levonantradol

- Lucraft HH, Palmer MK. Randomised clinical trial of levonantradol and chlorpromazine in the prevention of radiotherapy-induced vomiting. *Clinical Radiology* 1982; 33: 621-622.

Nausea and Vomiting – Metastases

Uncontrolled Studies

Dronabinol

- Zutt M, Hanssle H, Emmert S, Neumann C, Kretschmer L. [Dronabinol for supportive therapy in patients with malignant melanoma and liver metastases] [Article in German]. *Hautarzt* 2006;57(5):423-7.

Case Reports, Surveys

Dronabinol

- Gonzalez-Rosales F, Walsh D. Intractable nausea and vomiting due to gastrointestinal mucosal metastases relieved by tetrahydrocannabinol (dronabinol). *Journal of Pain and Symptom Management* 1997;14(5):311-314.

Nausea and Vomiting – Surgery

Controlled Studies

Dronabinol

- Layeeque R, Siegel E, Kass R, Henry-Tillman RS, Colvert M, Mancino A, Klimberg VS. Prevention of nausea and vomiting following breast surgery. *Am J Surg* 2006;191(6):767-72.

Nabilone

- Lewis IH, Campbell DN, Barrowcliffe MP. Effect of nabilone on nausea and vomiting after total abdominal hysterectomy. *British Journal of Anaesthesia* 1994; 73: 244-246.

Nausea and Vomiting – HIV/AIDS

Uncontrolled Studies

Cannabis (smoked)

- de Jong BC, Prentiss D, McFarland W, Machekano R, Israelski DM. Marijuana use and its association with adherence to antiretroviral therapy among HIV-infected persons with moderate to severe nausea. *J Acquir Immune Defic Syndr* 2005;38(1):43-6.

Case Reports, Surveys

Cannabis (smoked)

- Woolridge E, Barton S, Samuel J, Osorio J, Dougherty A, Holdcroft A. Cannabis use in HIV for pain and

other medical symptoms. *J Pain Symptom Manage* 2005;29(4):358-67.

- Sidney S. Marijuana use in HIV-positive and AIDS patients: Results of a an anonymous mail survey. *J Cannabis Ther* 2001;1(3-4):35-43.
- Corless IB, Lindgren T, Holzemer W, Robinson L, Moezzi S, Kirksey K, Coleman C, Tsai YF, Sanzero Eller L, Hamilton MJ, Sefcik EF, Canaval GE, Rivero Mendez M, Kemppainen JK, Bunch EH, Nicholas PK, Nokes KM, Dole P, Reynolds N. Marijuana Effectiveness as an HIV Self-Care Strategy. *Clin Nurs Res* 2009;18(2):172-93.

Nausea and Vomiting – Therapy of Hepatitis C

Uncontrolled Studies

Dronabinol, Nabilone

- Costiniuk CT, Mills E, Cooper CL. Evaluation of oral cannabinoid-containing medications for the management of interferon and ribavirin-induced anorexia, nausea and weight loss in patients treated for chronic hepatitis C virus. *Can J Gastroenterol* 2008;22(4):376-80.

Cannabis (smoked)

- Sylvestre DL, Clements BJ, Malibu Y. Cannabis use improves retention and virological outcomes in patients treated for hepatitis C. *Eur J Gastroenterol Hepatol* 2006;18(10):1057-63.

Nausea and Vomiting – Pregnancy

Case Reports, Surveys

Cannabis (smoked)

- Curry W-NL. Hyperemesis gravidarum and clinical cannabis: To eat or not to eat? *J Cannabis Ther* 2002;2(3-4):63-83.
- Westfall RE, Janssen PA, Lucas P, Capler R. Survey of medicinal cannabis use among childbearing women: patterns of its use in pregnancy and retroactive self-assessment of its efficacy against 'morning sickness'. *Complement Ther Clin Pract* 2006;12(1):27-33.

Nausea and Vomiting – Motion Sickness

Uncontrolled Studies

Parabolic Flight (no substance)

- Choukèr A, Kaufmann I, Kreth S, Hauer D, Feuerecker M, Thieme D, Vogeser M, Thiel M, Schelling G. Motion sickness, stress and the endocannabinoid system. *PLoS One* 2010;5(5):e10752.

Nausea and Vomiting – Other

Case Reports, Surveys

Dronabinol

- Merriman AR, Oliak DA. Use of medical marijuana for treatment of severe intractable nausea after laparoscopic Roux-en-Y gastric bypass surgery: case report. *Surg Obes Relat Dis* 2008;4(4):550-1.

Nausea and Vomiting – Healthy Subjects

Controlled Studies

Cannabis (smoked)

- Soderpalm AH, Schuster A, de Wit H. Antiemetic efficacy of smoked marijuana: subjective and

behavioral effects on nausea induced by syrup of ipecac. *Pharmacology, Biochemistry and Behavior* 2001;69(3-4):343-50.

Appetite Loss – HIV/AIDS

Controlled Studies

Dronabinol

- Beal JE, Olson R, Laubenstein L, Morales JP, Bellman P, Yangco B, Lefkowitz L, Plasse TF, Shepard KV. Dronabinol as a treatment for anorexia associated with weight loss in patients with AIDS. *Journal of Pain and Symptom Management* 1995;10(2):89-97.
- Timpone JG, Wright DJ, Li N, Egorin MJ, Enama ME, Mayers J, Galetto G, and the DATRI 004 Study Group. The safety and pharmacokinetics of single-agent and combination therapy with megestrol acetate and dronabinol for the treatment of HIV wasting syndrome. *AIDS Research and Human Retroviruses* 1997;13:305-315.
- Abrams DI, Hilton JF, Leiser RJ, Shade SB, Elbeik TA, Aweeka FT, Benowitz NL, Bredt BM, Kosel B, Aberg JA, Deeks SG, Mitchell TF, Mulligan K, Bacchetti P, McCune JM, Schambelan M. Short-term effects of cannabinoids in patients with HIV-1 infection: a randomized, placebo-controlled clinical trial. *Ann Intern Med* 2003;139(4):258-66.
- Haney M, Rabkin J, Gunderson E, Foltin RW. Dronabinol and marijuana in HIV(+) marijuana smokers: acute effects on caloric intake and mood. *Psychopharmacology (Berl)* 2005;181(1):170-8.
- Haney M, Gunderson EW, Rabkin J, Hart CL, Vosburg SK, Comer SD, Foltin RW. Dronabinol and marijuana in HIV-positive marijuana smokers. Caloric intake, mood, and sleep. *J Acquir Immune Defic Syndr* 2007;45(5):545-54.
- Bedi G, Foltin RW, Gunderson EW, Rabkin J, Hart CL, Comer SD, Vosburg SK, Haney M. Efficacy and tolerability of high-dose dronabinol maintenance in HIV-positive marijuana smokers: a controlled laboratory study. *Psychopharmacology (Berl)* 2010;212(4):675-86.

Cannabis (smoked)

- Haney M, Rabkin J, Gunderson E, Foltin RW. Dronabinol and marijuana in HIV(+) marijuana smokers: acute effects on caloric intake and mood. *Psychopharmacology (Berl)* 2005;181(1):170-8.
- Haney M, Gunderson EW, Rabkin J, Hart CL, Vosburg SK, Comer SD, Foltin RW. Dronabinol and marijuana in HIV-positive marijuana smokers. Caloric intake, mood, and sleep. *J Acquir Immune Defic Syndr* 2007;45(5):545-54.

Uncontrolled Studies

Dronabinol

- Gorter R, Seefried M, Volberding P. Dronabinol effects on weight in patients with HIV infection. *AIDS* 1992;6:127.
- Plasse TF, Gorter RW, Krasnow SH, Lane M, Shepard KV, Wadleigh RG. Recent clinical experience with dronabinol. *Pharmacology, Biochemistry and Behavior* 1991;40:695-700.
- Plasse T, Conant M, Gorter R, Shepard KV. Dronabinol stimulates appetite and causes weight gain in HIV patients. *International Conference on AIDS* 1992;8(3):122 (abstract no. PuB 7442).
- Struwe M, Kaempfer SH, Geiger CJ, Pavia AT, Plasse TF, Shepard KV, Ries K, Evans TG. Effect of dronabinol on nutritional status in HIV infection. *Annals of Pharmacotherapy* 1993;27:827-831.
- Beal JE, Olson R, Lefkowitz L, Laubenstein L, Bellman P, Yangco B, Morales JO, Murphy R, Powderly W, Plasse TF, Mosdell KW, Shepard KV. Long-term efficacy and safety of dronabinol for acquired immunodeficiency syndrome-associated anorexia. *Journal of Pain and Symptom Management* 1997;14(1):7-14.
- Dejesus E, Rodwick BM, Bowers D, Cohen CJ, Pearce D. Use of dronabinol improves appetite and

reverses weight loss in HIV/AIDS-infected patients. *J Int Assoc Physicians AIDS Care* 2007;6(2):95-100.

Case Reports, Surveys

Cannabis (smoked)

- Prentiss D, Power R, Balmas G, Tzuang G, Israelski DM. Patterns of marijuana use among patients with HIV/AIDS followed in a public health care setting. *J Acquir Immune Defic Syndr* 2004;35(1):38-45.
- Woolridge E, Barton S, Samuel J, Osorio J, Dougherty A, Holdcroft A. Cannabis use in HIV for pain and other medical symptoms. *J Pain Symptom Manage* 2005;29(4):358-67.
- Sidney S. Marijuana use in HIV-positive and AIDS patients: Results of a an anonymous mail survey. *J Cannabis Ther* 2001;1(3-4):35-43.
- Corless IB, Lindgren T, Holzemer W, Robinson L, Moezzi S, Kirksey K, Coleman C, Tsai YF, Sanzero Eller L, Hamilton MJ, Sefcik EF, Canaval GE, Rivero Mendez M, Kempainen JK, Bunch EH, Nicholas PK, Nokes KM, Dole P, Reynolds N. Marijuana Effectiveness as an HIV Self-Care Strategy. *Clin Nurs Res* 2009;18(2):172-93.

Appetite Loss – Cancer

Controlled Studies

Dronabinol

- Jatoi A, Windschitl HE, Loprinzi CL, Sloan JA, Dakhil SR, Mailliard JA, Pundaleeka S, Kardinal CG, Fitch TR, Krook JE, Novotny PJ, Christensen B. Dronabinol versus megestrol acetate versus combination therapy for cancer-associated anorexia: a North Central Cancer Treatment Group study. *Journal of Clinical Oncology* 2002;20(2):567-573.
- Regelson W, Butler JR, Schulz J, Kirk T, Peek L, Green ML, Zalis MO. Delta-9-tetrahydrocannabinol as an effective antidepressant and appetite-stimulating agent in advanced cancer patients. In: Braude MC, Szara S, editors. *Pharmacology of marijuana*. Vol 2. New York: Raven Press, 1976. p. 763-776.
- Wadleigh R, Spaulding GM, Lumbersky B, Zimmer M, Shepard K, Plasse T. Dronabinol enhancement of appetite in cancer patients. *Proc Am Soc Oncology* 1990; 9: 331.
- Strasser F, Luftner D, Possinger K, Ernst G, Ruhstaller T, Meissner W, Ko YD, Schnelle M, Reif M, Cerny T. Comparison of orally administered cannabis extract and delta-9-tetrahydrocannabinol in treating patients with cancer-related anorexia-cachexia syndrome: a multicenter, phase III, randomized, double-blind, placebo-controlled clinical trial from the Cannabis-in-Cachexia-Study-Group. *J Clin Oncol* 2006;24(21):3394-400.
- Brisbois TD, de Kock IH, Watanabe SM, Mirhosseini M, Lamoureux DC, Chasen M, Macdonald N, Baracos VE, Wismer WV. Delta-9-tetrahydrocannabinol may palliate altered chemosensory perception in cancer patients: results of a randomized, double-blind, placebo-controlled pilot trial. *Ann Oncol*. 2011 Feb 22. [Epub ahead of print]

Cannabis (oral, sublingual)

- Strasser F, Luftner D, Possinger K, Ernst G, Ruhstaller T, Meissner W, Ko YD, Schnelle M, Reif M, Cerny T. Comparison of orally administered cannabis extract and delta-9-tetrahydrocannabinol in treating patients with cancer-related anorexia-cachexia syndrome: a multicenter, phase III, randomized, double-blind, placebo-controlled clinical trial from the Cannabis-in-Cachexia-Study-Group. *J Clin Oncol* 2006;24(21):3394-400.

Uncontrolled Studies

Dronabinol

- Plasse TF, Gorter RW, Krasnow SH, Lane M, Shepard KV, Wadleigh RG. Recent clinical experience with

dronabinol. *Pharmacology, Biochemistry and Behavior* 1991;40:695-700.

- Nelson K, Walsh D, Deeter P, Sheehan F. A phase II study of delta-9-tetrahydrocannabinol for appetite stimulation in cancer-associated anorexia. *Journal of Palliative Care* 1994;10:14-18.
- Gottschling S. [Cannabinoids in children] [Article in German] Cannabinoide bei Kindern. *Angewandte Schmerztherapie und Palliativmedizin* 2011;(1):55-57.

Appetite Loss – Alzheimer's Disease

Controlled Studies

Dronabinol

- Volicer L, Stelly M, Morris J, McLaughlin J, Volicer BJ. Effects of dronabinol on anorexia and disturbed behavior in patients with Alzheimer's disease. *International Journal of Geriatric Psychiatry* 1997;12:913-919.

Uncontrolled Studies

Dronabinol

- Patel S, Shua-Haim JR, Pass M. Safety and efficacy of dronabinol in the treatment of agitation in patients with Alzheimer's disease with anorexia: A retrospective chart review. Abstract, 11th International Conference of the IPA, 17-22 August 2003, Chicago.

Appetite Loss – Geriatrics

Uncontrolled Studies

Dronabinol

- Wilson MM, Philpot C, Morley JE. Anorexia of aging in long term care: is dronabinol an effective appetite stimulant? - a pilot study. *J Nutr Health Aging* 2007;11(2):195-8.

Appetite Loss - Anorexia nervosa

Controlled Studies

Dronabinol

- Gross H, Ebert MH, Faden VB, Goldberg SC, Kaye WH, Caine ED, Hawks R, Zinberg N. A double-blind trial of delta 9-tetrahydrocannabinol in primary anorexia nervosa. *Journal of Clinical Psychopharmacology* 1983;3(3):165-171.

Appetite Loss – COPD

Uncontrolled Studies

Dronabinol

- Bergmann K-C. [Dronabinol, a possible new therapeutic option in patients with COPD and pulmonary cachexia] [Article in German]. Abstract, 2005 Conference of the German Society for Pneumology, 17 March 2005, Berlin.

Appetite Loss – Healthy Subjects

Uncontrolled Studies

Cannabis (smoked)

- Morgan CJ, Freeman TP, Schafer GL, Curran HV. Cannabidiol attenuates the appetitive effects of

Delta 9-tetrahydrocannabinol in humans smoking their chosen cannabis. *Neuropsychopharmacology*. 2010;35(9):1879-85.

Controlled Studies

Cannabis (smoked)

- Foltin RW, Fishman MW, Brady JV. Behavioral analysis of marijuana effects on food intake in humans. *Pharmacology, Biochemistry and Behavior* 1986;25:577-582.
- Foltin RW, Fischman MW, Byrne MF. Effects of smoked marijuana on food intake and body weight of humans living in a residential laboratory. *Appetite* 1988;11(1):1-14.

Spasticity – Multiple Sclerosis

Controlled Studies

Dronabinol

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Nabilone

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Cannabis (oral, sublingual)

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Cannabis (smoked)

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Case Reports, Surveys

Dronabinol

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Cannabis (smoked)

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Spasticity – Spinal Cord Injury

Controlled Studies

Dronabinol

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Controlled Studies

Nabilone

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Uncontrolled Studies

Dronabinol

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Case Reports, Surveys

Cannabis (smoked)

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Spasticity – Different Causes

Controlled Studies

Cannabis (oral, sublingual)

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Uncontrolled Studies

Dronabinol

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Case Reports, Surveys

Dronabinol

- Lorenz R. A casuistic rationale for the treatment of spastic and myocloni in a childhood neurodegenerative disease: neuronal ceroid lipofuscinosis of the type Jansky-Bielschowsky. *Neuro*

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Cannabis (smoked)

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Pain – Chronic, Neuropathic/Multiple Sclerosis

Controlled Studies

Dronabinol

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Nabilone

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Cannabis (oral, sublingual)

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Cannabis (smoked)

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Cannabidiol

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CT-3 (Ajulemic Acid)

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Uncontrolled Studies

Dronabinol

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Cannabis (oral, sublingual)

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Nabilone (oral)

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syndromes and response to pharmacological therapy. *Pain* 2008;138(3):657-66.

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Case Reports, Surveys

Cannabis (smoked)

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Pain – Chronic, Cancer

Controlled Studies

Dronabinol

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- Noyes R, Brunk ST, Avery DH, Canter A. The analgesic properties of delta-9-tetrahydrocannabinol and codeine. *Clinical Pharmacology and Therapeutics* 1975;18:84-89.
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Cannabis (oral, sublingual)

- Johnson JR, Burnell-Nugent M, Lossignol D, Ganae-Motan ED, Potts R, Fallon MT. Multicenter, Double-Blind, Randomized, Placebo-Controlled, Parallel-Group Study of the Efficacy, Safety, and Tolerability of THC:CBD Extract and THC Extract in Patients With Intractable Cancer-Related Pain. *J Pain Symptom Manage* 2010;39(2):167-79.

Benzopyranoperidine

- Jochimsen PR, Lawton RL, VerSteeg K, Noyes Jr R. Effect of benzopyranoperidine, a delta-9-THC congener, on pain. *Clinical Pharmacology and Therapeutics* 1978;24:223-7.

NIB

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Uncontrolled Studies

Dronabinol

- Butler JR, Peek LA, Regelson W, Moore MM, Lubin LA. Treatment effects of delta-9-THC in an advanced cancer population. In: Cohen S, Stillman RC, eds. The therapeutic potential of marijuana. Plenum Medical Book, New York 1976.

Nabilone

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Pain – Rheumatic

Controlled Studies

Cannabis (oral, sublingual)

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Pain - Fibromyalgia

Controlled Studies

Nabilone

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Uncontrolled Studies

Dronabinol

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Case Reports, Surveys

Cannabis (smoked)

- Fiz J, Duran M, Langohr K, Capellà D, Farré M. Symptoms relief and improved mental health in fibromyalgia patients using cannabis. Results of an observational study. IACM 4th Conference on Cannabinoids in Medicine, 5-6 October 2007, Cologne, International Association for Cannabis as Medicine.

Pain – Chronic

Controlled Studies

Dronabinol

- Notcutt W, Price M, Miller R, Newport S, Phillips C, Simmons S, Sansom C. Initial experiences with medicinal extracts of cannabis for chronic pain: results from 34 'N of 1' studies. *Anaesthesia* 2004;59(5):440-52.
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Cannabis (oral, sublingual)

- Holdcroft A, Smith M, Jacklin A, Hodgson H, Smith B, Newton M, Evans F. Pain relief with oral cannabinoids in familial Mediterranean fever. *Anaesthesia* 1997;52:483-488.
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Cannabis (smoked)

- Ware MA, Ducruet T, Robinson AR. Evaluation of herbal cannabis characteristics by medical users: a randomized trial. *Harm Reduct J* 2006;3(1):32

Nabilone

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N-palmitoylethanolamine (topical)

- Phan NQ, Siepmann D, Gralow I, Ständer S. Adjuvant topical therapy with a cannabinoid receptor agonist in facial postherpetic neuralgia. *J Dtsch Dermatol Ges* 2010;8(2):88-91.

Uncontrolled Studies

Cannabis (oral, sublingual)

- Haroutiunian S, Rosen G, Shouval R, Davidson E. Open-label, add-on study of tetrahydrocannabinol for chronic nonmalignant pain. *J Pain Palliat Care Pharmacother* 2008;22(3):213-7.

Nabilone

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Case Reports, Surveys

Dronabinol

- Elsner F, Radbruch L, Sabatowski R. [Tetrahydrocannabinol for treatment of chronic pain] [Article in German]. *Pain* 2001;15(3):200-4.

Cannabis (smoked)

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Pain – Acute, Surgery

Controlled Studies

Dronabinol

- Raft D, Gregg J, Ghia J, Harris L. Effects of intravenous tetrahydrocannabinol on experimental and surgical pain: psychological correlates of the analgesic response. *Clinical Pharmacology and Therapeutics* 1977;21:26-33.
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Cannabis (oral, sublingual)

- Holdcroft A, Maze M, Dore C, Tebbs S, Thompson S. A multicenter dose-escalation study of the analgesic and adverse effects of an oral cannabis extract (Cannador) for postoperative pain management. *Anesthesiology* 2006;104(5):1040-1046.

Nabilone

- Beaulieu P. Effects of nabilone, a synthetic cannabinoid, on postoperative pain. *Can J Anaesth* 2006;53(8):769-75.

Levonantradol

- Jain AK, Ryan JR, McMahon FG, Smith G. Evaluation of intramuscular levonantradol and placebo in acute postoperative pain. *Journal of Clinical Pharmacology* 1981;21(suppl 8-9):S320-S326.
- Kantor TG, Hopper M. A study of levonantradol, a cannabinol derivative, for analgesia in post operative pain. *Pain* 1981; (suppl): S37.

GW842166

- Ostenfeld T, Price J, Albanese M, Bullman J, Guillard F, Meyer I, Leeson R, Costantin C, Ziviani L, Nocini PF, Milleri S. A randomized, controlled study to investigate the analgesic efficacy of single doses of the cannabinoid receptor-2 agonist GW842166, ibuprofen or placebo in patients with acute pain following third molar tooth extraction. *Clin J Pain* 2011;27(8):668-76.

Pain – Acute, Healthy Subjects

Controlled Studies

Dronabinol

- Naef M, Curatolo M, Petersen-Felix S, Arendt-Nielsen L, Zbinden A, Brenneisen R. The analgesic effect of oral delta-9-tetrahydrocannabinol (THC), morphine, and a THC-morphine combination in healthy subjects under experimental pain conditions. *Pain* 2003;105(1-2):79-88.
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Nabilone

- Redmond WJ, Goffaux P, Potvin S, Marchand S. Analgesic and antihyperalgesic effects of nabilone on experimental heat pain. *Curr Med Res Opin* 2008;24(4):1017-24.

Cannabis (smoked)

- Greenwald MK, Stitzer ML Antinociceptive, subjective and behavioral effects of smoked marijuana in humans. *Drug Alcohol Depend* 2000;59(3):261-75.

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Cannabis (oral, sublingual)

- Kraft B, Frickey NA, Kaufmann RM, Reif M, Frey R, Gustorff B, Kress HG. Lack of analgesia by oral standardized cannabis extract on acute inflammatory pain and hyperalgesia in volunteers. *Anesthesiology* 2008;109(1):101-10.

Uncontrolled Studies

Cannabis (smoked)

- Hill SY, Schwin R, Goodwin DW, Powell B. Marihuana and pain. *J Pharmacol Exp Ther* 1974;188:415-8.
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Headache/Migraine

Case Reports, Surveys

Dronabinol

- Raby WN, Modica PA, Wolintz RJ, Murtaugh K. Dronabinol reduces signs and symptoms of idiopathic intracranial hypertension: a case report. *J Ocul Pharmacol Ther* 2006;22(1):68-75.
- Robbins MS, Tarshish S, Solomon S, Grosberg BM. Cluster Attacks Responsive to Recreational Cannabis and Dronabinol. *Headache* 2009;49(6):914-6.

Cannabis (smoked)

- Raby WN, Modica PA, Wolintz RJ, Murtaugh K. Dronabinol reduces signs and symptoms of idiopathic intracranial hypertension: a case report. *J Ocul Pharmacol Ther* 2006;22(1):68-75.
- Robbins MS, Tarshish S, Solomon S, Grosberg BM. Cluster Attacks Responsive to Recreational Cannabis and Dronabinol. *Headache* 2009;49(6):914-6.

Cannabis (historical)

- Russo EB. Hemp for headache: An in-depth historical and scientific review of cannabis in migraine treatment. *J Cannabis Ther* 2001;1(2):21-92.

Amyotrophic Lateral Sclerosis

Controlled Studies

Dronabinol

- Weber M, Goldman B, Truniger S. Tetrahydrocannabinol (THC) for cramps in amyotrophic lateral sclerosis: a randomised, double-blind crossover trial. *J Neurol Neurosurg Psychiatry* 2010;81(10):1135-40.

Case Reports, Surveys

Cannabis (smoked)

- Amtmann D, Weydt P, Johnson KL, Jensen MP, Carter GT. Survey of cannabis use in patients with amyotrophic lateral sclerosis. *Am J Hosp Palliat Care* 2004;21(2):95-104.

Bladder Dysfunction

Controlled Studies

Dronabinol

- Hagenbach U, Ghafoor N, Brenneisen R, Luz S, Mäder M. Clinical investigation of Δ -9-tetrahydrocannabinol (THC) as an alternative therapy for overactive bladders in spinal cord injury (SCI) patients? Abstract, 2001 Congress on Cannabis and the Cannabinoids, International Association for Cannabis as Medicine, 25-27 October 2001, Cologne, Germany.
- Freeman RM, Adekanmi O, Waterfield MR, Waterfield AE, Wright D, Zajicek J. The effect of cannabis on urge incontinence in patients with multiple sclerosis: a multicentre, randomised placebo-controlled trial (CAMS-LUTS). *Int Urogynecol J Pelvic Floor Dysfunct* 2006;17(6):636-41.

Cannabis (oral, sublingual)

- Brady CM, DasGupta R, Dalton C, Wiseman OJ, Berkley KJ, Fowler CJ. An open-label pilot study of cannabis-based extracts for bladder dysfunction in advanced multiple sclerosis. *Multiple Sclerosis* 2004;10(4):425-33.
- de Ridder D, Constantinescu CS, Fowler C, Kavia R, Sarantis N. Randomised controlled study of cannabis-based medicine (Sativex®) in patients suffering from multiple sclerosis associated detrusor overactivity. 22nd Congress of the ECTRIMS, 27-30 September 2006, Madrid, Spain.
- Freeman RM, Adekanmi O, Waterfield MR, Waterfield AE, Wright D, Zajicek J. The effect of cannabis on urge incontinence in patients with multiple sclerosis: a multicentre, randomised placebo-controlled trial (CAMS-LUTS). *Int Urogynecol J Pelvic Floor Dysfunct* 2006;17(6):636-41.
- Kavia RB, De Ridder D, Constantinescu CS, Stott CG, Fowler CJ. Randomized controlled trial of Sativex to treat detrusor overactivity in multiple sclerosis. *Mult Scler* 2010;16(11):1349-59.

Gastro-Oesophageal Reflux

Controlled Studies (Experimental in Healthy Subjects)

Dronabinol

- Beaumont H, Jensen J, Carlsson A, Ruth M, Lehmann A, Boeckstaens GE. Effect of Delta(9)-tetrahydrocannabinol, a cannabinoid receptor agonist, on the triggering of transient lower oesophageal sphincter relaxations in dogs and humans. *Br J Pharmacol* 2009;156(1):153-62.

Irritable Bowel Syndrome, Diarrhoea

Controlled Studies (Experimental in Healthy Subjects)

Dronabinol

- Esfandyari T, Camilleri M, Busciglio I, Burton D, Baxter K, Zinsmeister AR. Effects of a cannabinoid receptor agonist on colonic motor and sensory functions in humans: a randomized, placebo-controlled study. *Am J Physiol Gastrointest Liver Physiol* 2007;293(1):G137-45.
- Klooker TK, Leliefeld KE, Van Den Wijngaard RM, Boeckstaens GE. The cannabinoid receptor agonist delta-9-tetrahydrocannabinol does not affect visceral sensitivity to rectal distension in healthy volunteers and IBS patients. *Neurogastroenterol Motil* 2011;23(1):30-5, e2.
- Wong BS, Camilleri M, Busciglio I, Carlson P, Szarka LA, Burton D, Zinsmeister AR. Pharmacogenetic Trial of a Cannabinoid Agonist Shows Reduced Fasting Colonic Motility in Patients with Non-Constipated Irritable Bowel Syndrome. *Gastroenterology*, 28. Juli 2011 [im Druck]

Crohn's Disease

Case Reports, Surveys

Cannabis

- Lal S, Prasad N, Ryan M, Tangri S, Silverberg MS, Gordon A, Steinhart H. Cannabis use amongst

patients with inflammatory bowel disease. *Eur J Gastroenterol Hepatol* 2011;23(10):891-6.

Uncontrolled Studies

Cannabis

- Naftali T, Lev LB, Yablekovitz D, Half E, Konikoff FM. Treatment of Crohn's disease with cannabis: an observational study. *Isr Med Assoc J* 2011;13(8):455-8.

Ulcerative Colitis

Case Reports, Surveys

Cannabis

- Lal S, Prasad N, Ryan M, Tangri S, Silverberg MS, Gordon A, Steinhart H. Cannabis use amongst patients with inflammatory bowel disease. *Eur J Gastroenterol Hepatol* 2011;23(10):891-6.

Obstetrics and Gynecology

Case Reports, Surveys

Cannabis (historical)

- Russo E. Cannabis treatments in obstetrics and gynecology: A historical review. *J Cannabis Ther* 2002;2(3-4):5-35.

Tremor

Controlled Studies

Dronabinol

- Clifford DB. Tetrahydrocannabinol for tremor in multiple sclerosis. *Annals of Neurology* 1983;13:669-671.

Cannabis (oral, sublingual)

- Fox P, Bain PG, Glickman S, Carroll C, Zajicek J. The effect of cannabis on tremor in patients with multiple sclerosis. *Neurology* 2004;62(7):1105-9.

Dystonia

Uncontrolled Studies

Nabilone

- Fox SH, Kellett M, Moore AP, Crossman AR, Brotchie JM. Randomised, double-blind, placebo-controlled trial to assess the potential of cannabinoid receptor stimulation in the treatment of dystonia. *Movement Disorders* 2002;17(1):145-149.

Cannabidiol

- Snider SR, Consroe P. Treatment of Meige's syndrome with cannabidiol. *Neurology* 1984;34(Suppl):147.
- Sandyk R, Snider SR, Consroe P, Elias SM. Cannabidiol in dystonic movement disorders. *Psychiatry Research* 1986;18:291.
- Consroe P, Sandyk R, Snider SR. Open label evaluation of cannabidiol in dystonic movement disorders. *International Journal of Neuroscience* 1986;30:277-282.

L-Dopa-induced Dyskinesia (Tardive Dyskinesia)

Controlled Studies

Nabilone

- Sieradzan KA, Fox SH, Dick J, Brotchie JM. The effects of the cannabinoid receptor agonist nabilone on L-DOPA induced dyskinesia in patients with idiopathic Parkinson's disease (PD). *Movement Disorders* 1998;13(Suppl 2):29.

Case Reports, Surveys

Cannabis (smoked)

- Beckmann Y, Seçil Y, Güngör B, Yiğit T. Tardive Dystonia and the Use of Cannabis. *Turk Psikiyatri Derg* 2010;21(1):90-91.

Dronabinol

- Beckmann Y, Seçil Y, Güngör B, Yiğit T. Tardive Dystonia and the Use of Cannabis. *Turk Psikiyatri Derg* 2010;21(1):90-91.

Hiccups (Singultus)

Case Reports, Surveys

Cannabis (smoked)

- Gilson I, Busalacchi M. Marijuana for intractable hiccups. *Lancet* 1998; 351(9098): 267.

Tourette's Syndrome, Tics

Controlled Studies

Dronabinol

- Müller-Vahl KR, Schneider U, Koblenz A, Jobges M, Kolbe H, Daldrup T, Emrich HM. Treatment of Tourette's syndrome with Delta 9-tetrahydrocannabinol (THC): a randomized crossover trial. *Pharmacopsychiatry* 2002;35(2):57-61.
- Müller-Vahl KR, Schneider U, Prevedel H, Theloe K, Kolbe H, Daldrup T, Emrich HM. Delta 9-tetrahydrocannabinol (THC) is effective in the treatment of tics in Tourette syndrome: a 6-week randomized trial. *Journal of Clinical Psychiatry*. 2003;64(4):459-65.

Uncontrolled Studies

Dronabinol

- Müller-Vahl KR, Schneider U, Kolbe H, Emrich HM. Treatment of Tourette-Syndrome with delta-9-Tetrahydrocannabinol. *American Journal of Psychiatry* 1999;156:495.

Case Reports, Surveys

Dronabinol

- Deutsch SI, Rosse RB, Connor JM, Burket JA, Murphy ME, Fox FJ. Current status of cannabis treatment of multiple sclerosis with an illustrative case presentation of a patient with MS, complex vocal tics, paroxysmal dystonia, and marijuana dependence treated with dronabinol. *CNS Spectr* 2008;13(5):393-403.
- Müller-Vahl KR, Schneider U, Emrich HM. Combined treatment of Tourette syndrome with delta-9-THC and dopamine receptor agonists. *J Cannabis Ther* 2002;2(3-4):145-54.
- Hasan A, Rothenberger A, Münchau A, Wobrock T, Falkai P, Roessner V. Oral delta9-tetrahydrocannabinol improved refractory Gilles de la Tourette syndrome in an adolescent by

increasing intracortical inhibition: a case report. *J Clin Psychopharmacol* 2010;30(2):190-2.

- Brunbauer A, Segmiller FM, Volkamer T, Laux G, Müller N, Dehning S. Cannabinoids improve driving ability in a Tourette's patient. *Psychiatry Res*, 9 June 2011 [im Druck]

Cannabis (smoked)

- Müller-Vahl KR, Kolbe H, Schneider U, Emrich HM. Cannabinoids: Possible role in pathophysiology of Gilles de la Tourette-syndrome. *Acta Psychiatrica Scandinavica* 1998;97:1-5.
- Sandyk R, Awerbuch G. Marijuana and Tourette's Syndrome. *Journal of Clinical Psychopharmacology* 1988;8:444-445.
- Hemming M, Yellowlees PM. Effective treatment of Tourette's syndrome with marijuana. *J Psychopharmacol* 1993; 7: 389-91.

Hyperkinetic Movement Disorder

Case Reports, Survey

Dronabinol

- Farooq MU, Ducommun E, Goudreau J. Treatment of a hyperkinetic movement disorder during pregnancy with dronabinol. *Parkinsonism Relat Disord* 2009;15(3):249-51.

Attention-Deficit/Hyperactivity Disorder

Uncontrolled Studies

Cannabis (smoked)

- Aharonovich E, Garawi F, Bisaga A, Brooks D, Raby WN, Rubin E, Nunes EV, Levin FR. Concurrent cannabis use during treatment for comorbid ADHD and cocaine dependence: effects on outcome. *Am J Drug Alcohol Abuse*. 2006;32(4):629-35.

Case Reports, Surveys

Dronabinol

- Strohbeck-Kuehner P, Skopp G, Mattern R. [Fitness to drive in spite (because) of THC] [Article in German]. *Arch Kriminol* 2007;220(1-2):11-9.

Cannabis (smoked)

- Strohbeck-Kuehner P, Skopp G, Mattern R. [Fitness to drive in spite (because) of THC] [Article in German]. *Arch Kriminol* 2007;220(1-2):11-9.
- O'Connell TJ, Bou-Matar CB. Long term marijuana users seeking medical cannabis in California (2001-2007): demographics, social characteristics, patterns of cannabis and other drug use of 4117 applicants. *Harm Reduct J* 2007;4:16.

Obsessive Compulsive Disorder

Case Reports, Surveys

Dronabinol, Cannabis (smoked)

- Schindler F, Anghelescu I, Regen F, Jockers-Scherubl M. Improvement in refractory obsessive compulsive disorder with dronabinol. *Am J Psychiatry* 2008;165(4):536-7.

Trichotillomania

Uncontrolled Studies

Dronabinol

- Grant JE, Odlaug BL, Chamberlain SR, Kim SW. Dronabinol, a cannabinoid agonist, reduces hair pulling in trichotillomania: a pilot study. *Psychopharmacology (Berl)*, 19 May 2011 [im Druck]

Parkinson's Disease

Controlled Studies

Cannabis (oral, sublingual)

- Carroll CB, Bain PG, Teare L, Liu X, Joint C, Wroath C, Parkin SG, Fox P, Wright D, Hobart J, Zajicek JP. Cannabis for dyskinesia in Parkinson disease: a randomized double-blind crossover study. *Neurology* 2004;63(7):1245-50.

Uncontrolled Studies

Cannabis (smoked)

- Frankel JP, Hughes A, Lees AJ, Stern GM. Marijuana for Parkinsonian tremor. *Journal of Neurology, Neurosurgery and Psychiatry* 1990;53:436.

Huntington's Disease

Controlled Studies

Cannabidiol

- Consroe P, Laguna J, Allender J, Snider S, Stern L, Sandyk R, Kennedy K, Schram K. Controlled clinical trial of cannabidiol in Huntington's disease. *Pharmacology, Biochemistry and Behavior*. 1991;40(3):701-8.

Uncontrolled Studies

Nabilone

- ❖ Müller-Vahl KR, Schneider U, Emrich HM. Nabilone deteriorates choreatic movements in Huntington's disease. *Movement Disorders* 1999b;14:1038-40.

Case Reports, Surveys

Dronabinol/Cannabis (smoked)

- Beckmann Y, Seçil Y, Güngör B, Yiğit T. Tardive Dystonia and the Use of Cannabis. *Turk Psikiyatri Derg* 2010;21(1):90-91.

Traumatic Brain Injury

Controlled Studies

Dexanabinol

- Maas AI, Murray G, Henney H 3rd, Kassem N, Legrand V, Mangelus M, Muizelaar JP, Stocchetti N, Knoller N; Pharmos TBI investigators. Efficacy and safety of dexanabinol in severe traumatic brain injury: results of a phase III randomised, placebo-controlled, clinical trial. *Lancet Neurol* 2006;5(1):38-45.

Tinnitus

Case Reports, Surveys

Dronabinol/Cannabis (smoked)

- Raby WN, Modica PA, Wolintz RJ, Murtaugh K. Dronabinol reduces signs and symptoms of idiopathic intracranial hypertension: a case report. *J Ocul Pharmacol Ther* 2006;22(1):68-75.

Pruritus

Uncontrolled Studies

Cream with Endocannabinoids

- Szepietowski JC, Szepietowski T, Reich A. Efficacy and tolerance of the cream containing structured physiological lipids with endocannabinoids in the treatment of uremic pruritus: a preliminary study. *Acta Dermatovenerol Croat* 2005;13(2):97-103.
- Ständer S, Reinhardt HW, Luger TA. [Topical cannabinoid agonists: An effective new possibility for treating chronic pruritus.] [Article in German]. *Hautarzt* 2006;57(9):801-7.

Case Reports, Surveys

Dronabinol

- Neff GW, O'Brien CB, Reddy KR, Bergasa NV, Regev A, Molina E, Amaro R, Rodriguez MJ, Chase V, Jeffers L, Schiff E. Preliminary observation with dronabinol in patients with intractable pruritus secondary to cholestatic liver disease. *Am J Gastroenterol* 2002;97(8):2117-9.

Night Sweats

Uncontrolled Studies

Nabilone

- Maida V. Nabilone for the treatment of paraneoplastic night sweats: a report of four cases. *J Palliat Med* 2008;11(6):929-34.

Epilepsy

Controlled Studies

Cannabidiol

- Cunha JM, Carlini EA, Pereira AE, Ramos OL, Pimentel C, Gagliardi R, Sanvito WL, Lander N, Mechoulam R. Chronic administration of cannabidiol to healthy volunteers and epileptic patients. *Pharmacology* 1980;21(3):175-85.

Uncontrolled Studies

Cannabis (smoked)

- Consroe PF, Wood GC, Buchsbaum H. Anticonvulsant nature of marihuana smoking. *JAMA* 1975;234(3):306-7.

Cannabidiol

- Ames FR, Cridland S.: Anticonvulsant effect of cannabidiol [letter]. *South African Medical Journal* 1986;69:14.
- Trembly B, Sherman M. Double-blind clinical study of cannabidiol as a secondary anticonvulsant. Conference on Cannabis and Cannabinoids, Kolympari/Crete, July 1990, cited according to: Consroe P, Sandyk R. Potential role of cannabinoids for therapy of neurological disorders. In: Murphy L, Bartke A, eds. *Marijuana/Cannabinoids, Neurobiology and Neurophysiology*. Boca Raton: CRC Press 1992, 459-524. [**Commentary:** No effect of Cannabidiol (300 mg/day) in 10 patients.]
- Trembly B, Sherman M. Double-blind clinical study of cannabidiol as a secondary anticonvulsant. Conference on Cannabis and Cannabinoids, Kolympari/Crete, July 1990, cited according to: Consroe

P, Sandyk R. Potential role of cannabinoids for therapy of neurological disorders. In: Murphy L, Bartke A, eds. Marijuana/Cannabinoids, Neurobiology and Neurophysiology. Boca Raton: CRC Press 1992, 459-524. [**Commentary:** Reduction in Reduzierung in frequency of seizures with cannabidiol (900-1200 mg/day) in one patient.]

Case Reports, Surveys

Cannabis (smoked)

- Corral VL. Differential effects of medical marijuana based on strain and route of administration: A three-year observational study. *J Cannabis Ther* 2001;1(3-4):43-59.
- Mortati K, Dworetzky B, Devinsky O. Marijuana: an effective antiepileptic treatment in partial epilepsy? A case report and review of the literature. *Rev Neurol Dis* 2007;4(2):103-6.

Isaacs' Syndrome

Case Report

Dronabinol

- Meyniel C, Ollivier Y, Hamidou M, Péréon Y, Derkinderen P. Dramatic improvement of refractory Isaacs' syndrome after treatment with dronabinol. *Clin Neurol Neurosurg* 2011;113(4):323-4.

Intraocular Pressure - Glaucoma

Controlled Studies

Cannabis (smoked)

- Crawford WJ, Merritt JC. Effects of tetrahydrocannabinol on arterial and intraocular hypertension. *International Journal of Clinical Pharmacology and Biopharmacy* 1979;17(5):191-196.
- Merritt JC, Crawford WJ, Alexander PC, Anduze AL, Gelbart SS. Effect of marijuana on intraocular and blood pressure in glaucoma. *Ophthalmology* 1980;87(3):222-8.

Dronabinol

- Tomida I, Azuara-Blanco A, House H, Flint M, Pertwee RG, Robson PJ. Effect of sublingual application of cannabinoids on intraocular pressure: a pilot study. *J Glaucoma* 2006;15(5):349-353.

Cannabidiol

- Tomida I, Azuara-Blanco A, House H, Flint M, Pertwee RG, Robson PJ. Effect of sublingual application of cannabinoids on intraocular pressure: a pilot study. *J Glaucoma* 2006;15(5):349-353.

Uncontrolled Studies

Cannabis (smoked)

- Hepler RS, Frank IM, Petrus R. Ocular effects of marijuana smoking. In: Braude MC, Szara S, eds. *The pharmacology of marijuana*. Raven Press: New York: 1976;815-828.

Case Reports, Surveys

Cannabis (smoked)

- Russo EB, Mathre ML, Byrne A, Velin R, Bach PJ, Sanchez-Ramos J, et al. Chronic cannabis use in the Compassionate Investigational New Drug Program: An examination of benefits and adverse effects of legal clinical cannabis. *J Cannabis Ther* 2002;2(1):3-57.

Topical Administration

Dronabinol

- Merritt JC, Perry DD, Russell DN, Jones BF. Topical delta 9-tetrahydrocannabinol and aqueous dynamics in glaucoma. *Journal of Clinical Pharmacology* 1981;21(8-9 Suppl):467S-471S.

Intraocular Pressure - Healthy Subjects

Controlled Studies

Dronabinol

- Cooler P, Gregg JM. Effect of delta-9-tetrahydrocannabinol on intraocular pressure in humans. *Southern Medical Journal* 1977;70(8):951-954.
- Jones RT, Benowitz N, Herning RI. The clinical relevance of cannabis tolerance and dependence. *Journal of Clinical Pharmacology* 1981;21:143S-152S.
- Levitt M, Wilson A, Bowman D, Kemel S, Krepart G, Marks V, Schipper H, Thomson G, Weinerman B, Weinerman R. Physiologic observations in a controlled clinical trial of the antiemetic effectiveness of 5, 10, and 15 mg of delta 9-tetrahydrocannabinol in cancer chemotherapy. Ophthalmologic implications. *J Clin Pharmacol* 1981;21(8-9 Suppl):103S-109S.

Delta-9-THC, Delta-8-THC, 11-OH-THC, CBD, CBN

- Perez-Reyes M, Wagner D, Wall ME, Davis KH. Intravenous administration of cannabinoids and intraocular pressure. In: Braude MC, Szara S, ed. *Pharmacology of marijuana*. New York: Raven Press, 1976;829-832.

Uncontrolled Studies

Dronabinol

- Plange N, Arend KO, Kaup M, Doehmen B, Adams H, Hendricks S, Cordes A, Huth J, Sponsel WE, Remky A. Dronabinol and retinal hemodynamics in humans. *Am J Ophthalmol* 2007;143(1):173-4.

Cannabis (smoked)

- Hepler RS, Frank IM. Marijuana smoking and intraocular pressure. *Journal of the American Medical Association* 1971;217:1392.
- Flom MC, Adams AJ, Jones RT. Marijuana smoking and reduced intraocular pressure in human eye: Drug action or epiphenomenon? *Investigative Ophthalmology* 1975;14:52-55.
- Hepler R S, Frank I M, Petrus R. Ocular effects of marijuana smoking. In: Braude MC, Szara S, eds. *The pharmacology of marijuana*. New York: Raven Press, 1976;815-828.

Night Vision

Controlled Studies

Dronabinol

- Russo EB, Merzouki A, Molero Mesa J, Frey KA, Bach PJ. Cannabis improves night vision: A pilot study of dark adaptometry and scotopic sensitivity in kif smokers of the Rif Mountains of Northern Morocco. *J Ethnopharmacol* 2004;93(1):99-104.

Uncontrolled Studies

Cannabis (smoked)

- Russo EB, Merzouki A, Molero Mesa J, Frey KA, Bach PJ. Cannabis improves night vision: A pilot study of dark adaptometry and scotopic sensitivity in kif smokers of the Rif Mountains of Northern Morocco. *J Ethnopharmacol* 2004;93(1):99-104.

Asthma

Controlled Studies

Dronabinol

- Tashkin DP, Reiss S, Shapiro BJ, Calvarese B, Olsen JL, Lodge JW. Bronchial effects of aerosolized delta 9-tetrahydrocannabinol in healthy and asthmatic subjects. *American Review of Respiratory Disease* 1977;115(1):57-65.
- Williams SJ, Hartley JP, Graham JD. Bronchodilator effect of delta1-tetrahydrocannabinol administered by aerosol of asthmatic patients. *Thorax* 1976;31(6):720-723.

Cannabis (smoked)

- Tashkin DP, Shapiro BJ, Lee YE, Harper CE. Effects of smoked marijuana in experimentally induced asthma. *American Review of Respiratory Disease* 1975;112(3):377-386.
- Vachon L, Mikus P, Morrissey W, FitzGerald M, Gaensler E. Bronchial effect of marijuana smoke in asthma. In: Braude MC, Szara S, eds. *The pharmacology of marijuana*. Raven Press: New York: 1976;777-784.

Nabilone

- Gong H Jr, Tashkin DP, Calvarese B. Comparison of bronchial effects of nabilone and terbutaline in healthy and asthmatic subjects. *Journal of Clinical Pharmacology* 1983;23(4):127-133

Uncontrolled Studies

Dronabinol

- Tashkin DP, Shapiro BJ, Frank IM. Acute effects of smoked marijuana and oral delta9-tetrahydrocannabinol on specific airway conductance in asthmatic subjects. *American Review for Respiratory Diseases*. 1974 Apr;109(4):420-8.

Cannabis (smoked)

- Tashkin DP, Shapiro BJ, Frank IM. Acute effects of smoked marijuana and oral delta9-tetrahydrocannabinol on specific airway conductance in asthmatic subjects. *American Review for Respiratory Diseases* 1974 Apr;109(4):420-8.

Bronchodilation - Healthy Subjects

Controlled Studies

Dronabinol

- Gong H Jr, Tashkin DP, Simmons MS, Calvarese B, Shapiro BJ. Acute and subacute bronchial effects of oral cannabinoids. *Clinical Pharmacology and Therapeutics* 1984;35(1):26-32.
- Tashkin DP, Reiss S, Shapiro BJ, Calvarese B, Olsen JL, Lodge JW. Bronchial effects of aerosolized delta 9-tetrahydrocannabinol in healthy and asthmatic subjects. *American Review of Respiratory Disease* 1977;115(1):57-65.

Nabilone

- Gong H Jr, Tashkin DP, Calvarese B. Comparison of bronchial effects of nabilone and terbutaline in healthy and asthmatic subjects. *Journal of Clinical Pharmacology* 1983;23(4):127-133.

COPD (Chronic Obstructive Pulmonary Disease)

Controlled Studies

Cannabis (oral, sublingual)

- Pickering EE, Semple SJ, Nazir MS, Murphy K, Snow TM, Cummin AR, Moosavi S, Guz A, Holdcroft A. Cannabinoid effects on ventilation and breathlessness: A pilot study of efficacy and safety. *Chron Respir Dis* 2011;8(2):109-18.

Blood Pressure/Hypertension

Case Reports, Surveys

Cannabis (smoked)

- Vandrey R, Umbricht A, Strain EC. Increased Blood Pressure Following Abrupt Cessation of Daily Cannabis Use. *J Addict Med* 2011;5(1):16-20.

Cancer

Uncontrolled Studies

Dronabinol

- Guzmán M, Duarte MJ, Blázquez C, Ravina J, Rosa MC, Galve-Roperh I, Sánchez C, Velasco G, González-Feria L. A pilot clinical study of Delta9-tetrahydrocannabinol in patients with recurrent glioblastoma multiforme. *Br J Cancer* 2006;95(2):197-203.

Case Reports, Surveys

Cannabis (smoked)

- Liang C, McClean MD, Marsit C, Christensen B, Peters E, Nelson HH, Kelsey KT. A population-based case-control study of marijuana use and head and neck squamous cell carcinoma. *Cancer Prev Res (Phila Pa)* 2009;2(8):759-68.
- Foroughi M, Hendson G, Sargent MA, Steinbok P. Spontaneous regression of septum pellucidum/forniceal pilocytic astrocytomas-possible role of Cannabis inhalation. *Childs Nerv Syst* 2011;27(4):671-9.

Alzheimer's Disease

Controlled Studies

Dronabinol

- Volicer L, Stelly M, Morris J, McLaughlin J, Volicer BJ. Effects of dronabinol on anorexia and disturbed behavior in patients with Alzheimer's disease. *International Journal of Geriatric Psychiatry* 1997;12:913-919.

Uncontrolled Studies

Dronabinol

- Patel S, Shua-Haim JR, Pass M. Safety and efficacy of dronabinol in the treatment of agitation in patients with Alzheimer's disease with anorexia: A retrospective chart review. Abstract, 11th International Conference of the IPA, 17-22 August 2003, Chicago.
- Ross JS, Shua-Haim JR. Open-label study of dronabinol in the treatment of refractory agitation in Alzheimer's disease: a pilot study. Abstract, ASCP's 34th Annual Meeting, 12-15 November 2003, San Antonio, USA.
- Walther S, Mahlberg R, Eichmann U, Kunz D. Delta-9-tetrahydrocannabinol for nighttime agitation in severe dementia. *Psychopharmacology (Berl)* 2006;185(4):524-8.

Nabilone

- Passmore MJ. The cannabinoid receptor agonist nabilone for the treatment of dementia-related agitation. *Int J Geriatr Psychiatry* 2008;23(1):116-7.

Neuroprotection

Case Reports, Surveys

Cannabis (smoked)

- Jacobus J, McQueeney T, Bava S, Schweinsburg BC, Frank LR, Yang TT, Tapert SF. White matter integrity in adolescents with histories of marijuana use and binge drinking. *Neurotoxicol Teratol* 2009;31(6):349-55.

Schizophrenic Psychosis

Controlled Studies

Cannabidiol

- Leweke FM, Koethe D, Gerth CW, Nolden BM, Schreiber D, Hänsel A, Neatby MA, Juelicher A, Hellmich M, Klosterkötter J. Cannabidiol as an antipsychotic. A double-blind, controlled clinical trial on cannabidiol vs. amisulpride in acute schizophrenia. IACM 3rd Conference on Cannabinoids in Medicine, 9-10 September 2005, Leiden, International Association for Cannabis as Medicine.
- Zuardi AW, Hallak JE, Dursun SM, Morais SL, Faria Sanches R, Musty RE, Crippa JA. Cannabidiol monotherapy for treatment-resistant schizophrenia. *J Psychopharmacol* 2006;20(5):683-6.

Uncontrolled Studies

Cannabidiol

- Zuardi AW, Morais SL, Guimarães FS, Mechoulam R. Antipsychotic effect of cannabidiol. *Journal of Clinical Psychiatry* 1995;56:485-486.

Case Reports, Surveys

Dronabinol

- Schwarcz G, Karajgi B, McCarthy R. Synthetic delta-9-tetrahydrocannabinol (dronabinol) can improve the symptoms of schizophrenia. *J Clin Psychopharmacol* 2009;29(3):255-8.
- Schwarcz G, Karajgi B. Improvement in refractory psychosis with dronabinol: four case reports. *J Clin Psychiatry*. 2010;71(11):1552-3.

Case Reports, Surveys

Cannabis (smoked)

- Schwarcz G, Karajgi B, McCarthy R. Synthetic delta-9-tetrahydrocannabinol (dronabinol) can improve the symptoms of schizophrenia. *J Clin Psychopharmacol* 2009;29(3):255-8.
- Schwarcz G, Karajgi B. Improvement in refractory psychosis with dronabinol: four case reports. *J Clin Psychiatry*. 2010;71(11):1552-3.

Bipolar Disorder

Case Reports, Surveys

Cannabis (smoked)

- Grinspoon L, Bakalar JB. The use of cannabis as a mood stabilizer in bipolar disorder: anecdotal evidence and the need for clinical research. *Journal of Psychoactive Drugs* 1998;30(2):171-7.
- El-Mallakh RS, Brown C. The effect of extreme marijuana use on the long-term course of bipolar I illness: a single case study. *J Psychoactive Drugs* 2007;39(2):201-2.
- Ringen PA, Vaskinn A, Sundet K, Engh JA, Jónsdóttir H, Simonsen C, Friis S, Opjordsmoen S, Melle I, Andreassen OA. Opposite relationships between cannabis use and neurocognitive functioning in bipolar disorder and schizophrenia. *Psychol Med* 2010;40(8):1337-47.

Depression

Controlled Studies

Dronabinol

- Regelson W, Butler JR, Schulz J, Kirk T, Peek L, Green ML, Zalis MO. Delta-9-tetrahydrocannabinol as an effective antidepressant and appetite-stimulating agent in advanced cancer patients. In: Braude MC, Szara S, editors. *Pharmacology of marijuana*. Vol 2. New York: Raven Press, 1976. p. 763-776.

Case Reports, Surveys

Cannabis (smoked)

- Ware MA, Adams H, Guy GW. The medicinal use of cannabis in the UK: results of a nationwide survey. *Int J Clin Pract* 2005;59(3):291-5.

Anxiety

Controlled Studies

Cannabidiol

- Bergamaschi MM, Queiroz RH, Chagas MH, de Oliveira DC, De Martinis BS, Kapczinski F, Quevedo J, Roesler R, Schröder N, Nardi AE, Martín-Santos R, Hallak JE, Zuardi AW, Crippa JA. Cannabidiol Reduces the Anxiety Induced by Simulated Public Speaking in Treatment-Naïve Social Phobia Patients. *Neuropsychopharmacology*. 2011 Feb 9. [Epub ahead of print]
- Crippa JA, Derenusson GN, Ferrari TB, Wichert-Ana L, Duran FL, Martin-Santos R, Simões MV, Bhattacharyya S, Fusar-Poli P, Atakan Z, Santos Filho A, Freitas-Ferrari MC, McGuire PK, Zuardi AW, Busatto GF, Hallak JE. Neural basis of anxiolytic effects of cannabidiol (CBD) in generalized social anxiety disorder: a preliminary report. *J Psychopharmacol* 2011;25(1):121-30.

Posttraumatic Stress Disorder

Case Reports, Surveys

Cannabis (smoked)

- Villagonzalo KA, Dodd S, Ng F, Mihaly S, Langbein A, Berk M. The relationship between substance use and posttraumatic stress disorder in a methadone maintenance treatment program. *Compr Psychiatry* 2011;52(5):562-6.
- Cornelius JR, Kirisci L, Reynolds M, Clark DB, Hayes J, Tarter R. PTSD contributes to teen and young adult cannabis use disorders. *Addict Behav* 2010;35(2):91-4.
- Reznik I. Medical cannabis use in post-traumatic stress disorder: a naturalistic observational study. Abstract presented at the Cannabinoid Conference 2011, 8-10 September, Bonn, Germany.

Alcohol Dependency

Case Reports, Surveys

Cannabis (smoked)

- Mikuriya TH. Cannabis substitution. An adjunctive therapeutic tool in the treatment of alcoholism. *Medical Times* 1970;98(4):187-91.
- Mikuriya TH. Cannabis as a substitute for alcohol: a harm-reduction approach. *J Cannabis Ther* 2004;4(1):79-93.
- Reiman A. Cannabis as a substitute for alcohol and other drugs *Harm Reduct J* 2009;6:35.

Opioid Dependency

Case Reports, Surveys

Cannabis (smoked)

- Hermann D, Klages E, Welzel H, Mann K, Croissant B. Low efficacy of non-opioid drugs in opioid withdrawal symptoms. *Addict Biol* 2005;10(2):165-9.
- O'Connell TJ, Bou-Matar CB. Long term marijuana users seeking medical cannabis in California (2001-2007): demographics, social characteristics, patterns of cannabis and other drug use of 4117 applicants. *Harm Reduct J* 2007;4:16.

Uncontrolled Studies

Cannabis (smoked)

- Raby WN, Carpenter KM, Rothenberg J, Brooks AC, Jiang H, Sullivan M, Bisaga A, Comer S, Nunes EV. Intermittent marijuana use is associated with improved retention in naltrexone treatment for opiate-dependence. *Am J Addict* 2009;18(4):301-8.

Cocaine/Crack Dependency

Uncontrolled Studies

Cannabis (smoked)

- Aharonovich E, Garawi F, Bisaga A, Brooks D, Raby WN, Rubin E, Nunes EV, Levin FR. Concurrent cannabis use during treatment for comorbid ADHD and cocaine dependence: effects on outcome. *Am J Drug Alcohol Abuse*. 2006;32(4):629-35.
- Labigalini E Jr, Rodrigues LR, Da Silveira DX. Therapeutic use of cannabis by crack addicts in Brazil. *J Psychoactive Drugs* 1999;31(4):451-5.

Case Reports, Surveys

Cannabis (smoked)

- Dreher M. Crack heads and roots daughters: The therapeutic use of cannabis in Jamaica. *J Cannabis Ther* 2002;2(3-4):121-33.

Cannabis Dependency

Controlled Studies

Dronabinol

- Haney M, Hart CL, Vosburg SK, Nasser J, Bennett A, Zubarán C, Foltin RW. Marijuana withdrawal in humans: effects of oral THC or divalproex. *Neuropsychopharmacology* 2004;29(1):158-70.

Case Reports, Surveys

Dronabinol

- Levin FR, Kleber HD. Use of dronabinol for cannabis dependence: two case reports and review. *Am J Addict* 2008;17(2):161-4.

Sleep

Controlled Studies

Dronabinol, Cannabidiol

- Nicholson AN, Turner C, Stone BM, Robson PJ. Effect of Delta-9-tetrahydrocannabinol and cannabidiol on nocturnal sleep and early-morning behavior in young adults. *J Clin Psychopharmacol* 2004;24(3):305-13.

Different Diseases

Case Reports, Surveys

Cannabis (smoked)

- Grinspoon L, Bakalar JB. *Marihuana, the forbidden medicine*. Rev. and exp. ed. New Haven: Yale University Press; 1997.
- Randall RC, O'Leary AM. *Marijuana Rx: The patients' fight for medicinal pot*. New York: Thunder's Mouth Press; 1998.
- Corral VL. Differential effects of medical marijuana based on strain and route of administration: A three-year observational study. *J Cannabis Ther* 2001;1(3-4):43-59.
- Grotenhermen F, Schnelle M. Survey on the medical use of cannabis and THC in Germany. *J Cannabis Ther* 2003;3(2):17-40.
- Gieringer D. Medical use of cannabis: Experience in California. In: Grotenhermen F, Russo E, editors. *Cannabis and cannabinoids: Pharmacology, toxicology, and therapeutic potential*. Binghamton, NY: Haworth Press; 2001. p. 153-70.
- Ware MA, Adams H, Guy GW. The medicinal use of cannabis in the UK: results of a nationwide survey. *Int J Clin Pract* 2005;59(3):291-5.
- Russo EB, Mathre ML, Byrne A, Velin R, Bach PJ, Sanchez-Ramos J, et al. Chronic cannabis use in the Compassionate Investigational New Drug Program: An examination of benefits and adverse effects of legal clinical cannabis. *J Cannabis Ther* 2002;2(1):3-57.
- O'Connell TJ, Bou-Matar CB. Long term marijuana users seeking medical cannabis in California (2001-2007): demographics, social characteristics, patterns of cannabis and other drug use of 4117 applicants. *Harm Reduct J* 2007;4:16.
- Botorff JL, Johnson JL, Moffat BM, Mulvogue T. Relief oriented use of marijuana by teens. *Subst Abuse Treat Prev Policy* 2009;4(1):7.