CANNABINOIDS: Drug Comparison Chart [1,2]

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Cannabis contains 100s of compounds including ~70 cannabinoids, of which Delta-9-tetrahydrocannabinol (aka dronabinol or THC) is most psychoactive. Two less psychoactive cannabinoids are Delta-8-THC & cannabinol. Another active agent is cannabidiol (CBD), a potential analgesic & anti-inflammatory. These agents act at the Cannabinoid receptors (CB_1 & CB_2). General dosing considerations: start low & go slow.

GENERIC/TRADE (Strength & Formulations)	THERAPEUTIC USE/COMMENTS	CONTRAINDICATIONS CI/ADVERSE EVENTS AE/DRUG INTERACTIONS DI	INITIAL, USUAL & MAXIMUM DOSE	$/30 DAYS	ADDITIONAL INFORMATION
Dronabinol MARINOL χ⊗ PL 2.5, 5 mg cap (sesame oil) -synthetic THC **D/C 2012 in Canada** Syndros [FDA'16]: oral soln	✓Treat severe **N/V** from cancer chemo ✓Treat AIDS related **anorexia** **COMMENTS:** •Oral form – some abuse potential •Schedule III [USA], was schedule II when available [CDN] •no effect on progression in progressive multiple sclerosis [104] **STORAGE:** Store in fridge	CI pregnant,breast feeding, ?sz, psychiatric hx AE N/V, ataxia, confusion, coordination problems, dizziness, somnolence, vertigo, red eyes, ↑or ↓BP, palpitations, ↑HR, flushing, panic rx, delusion of persecution, depersonalization, depression, thinking disturbance, euphoria, abuse potential DI [2C9,3A4] ↑AE: disulfiram,ethanol,fluoxetine,sedatives; ↓theophyll	**Initial**: 2.5mg po HS **Usual:** • chemo N/V: 2.5-5mg po TID-QID (~5mg/m²) • ↑ appetite: 2.5mg BID ac lunch & supper [AIDS 3] **Maximum:** 20mg/d	$75 $205-505 $140 $505	**Canadian Society of Addiction Medicine Statement:** "Cannabis is classified as a **hallucinogen** in the category of psychoactive substances. Regular use is known to cause harmful health effects, including **addiction**, with its associated consequences, among susceptible individuals. Available literature & clinical experience indicate more risk than benefit in the use of cannabis products for medicinal purposes. Ongoing clinical research into possible medicinal uses of cannabis products is essential, using the same standards that are applied to any therapeutic agent before intro into general clinical practice." Oct, 1999
Marijuana [4] χ⊗ (Banji, Cannabis sativa, Grass, Pot, Weed etc.) PL Contains: •Delta-9-THC esp ♀ flowers & leaves ~9-20-30% THC, ?? **pesticides** present •Delta-8-THC, cannabinol & CBD {USA '16: 29 states & DC permit **medical;** [8 recreational use]} •Average joint 0.5-1g cannabis [WHO estimate] •Trend towards much higher potency of products	**POSSIBLY EFFECTIVE**: ↑ appetite [AIDS], ↓ glaucoma pressure, MS/neuropathic pain/spasm [118] & tics [20] (see **Category 1** MMAR list in Additional Info Column) **UNKNOWN EFFICACY**: dandruff, hemorrhoids, obesity, asthma, urinary infections, leprosy, preventing rejection after kidney transplants **COMMENTS:** •An euphoriant (recreational use). •In Canada, may be authorized to any patient for any medical indication. •Sometimes used in baking for medicinal effect without risks of smoking. •Potency/purity concern if unregulated •1 joint= ≤5 cigarettes from lung fx view [29]; 70% more carcinogenic? •↑ risk of motor vehicle crashes [75]	CI pregnant, breast feeding, ?seizures, ?psychiatric hx, (↑ periodontal disease) [Cannabis use & exposure to 2nd hand smoke associated with ↑ stillbirth.] AE **Psychiatric disturbance** 27% (e.g. depression, anxiety, euphoria, panic, paranoia, apathy, hallucination, ?psychosis[62,73]), [COMPASS] headache 18%, nausea/vomit 17%, somnolence 13%, cough 7%, dry mouth, red eyes [?vision], heart [122], lung [29] & ↑ BP, ↑ weight & appetite, flashbacks, ?stroke, sedation, ?sexual problems, ?cancer testis; **gynecomastia;** ? ↑ steatosis with hepatitis C, impairment of driving [accident ~ 2x as likely!], withdrawal, thrombophlebitis, hyperemesis syndrome, ↓ BMD. **Rare**: Lead adulteration to THC. DI 3A4, 2C9 ↑ AE: disulfiram, **ethanol**, fluoxetine, sleep meds. Theophylline ↓theophylline level, warfarin?	**Usual:** 65-195mg for smoking; Proposed as a daily amount •e.g. ≤ 5gram/day [10] (≤ 3gram/day for neuropathic pain) [Med Let 2014] •Pain: 2.5gram/day on average (depending on THC%) via vaporizer/teas/baking (not smoking) Hashish plant resin 16-65mg	~$10-20/gram **HC** [Program] ~12.5%THC $5-10/gram Production & distribution changes in progress [2014-2016] See **Regulations**. 2016: ~130,000 CDN people registered.	**REGULATIONS** **2001 to 2014**: *MMAR* → patients authorized for medicinal marijuana (e.g. compassionate end-of-life care, multiple sclerosis, spinal cord injury, cancer, AIDS, seziures) were able to grow own product at home. **2014 to 2016**: *MMPR* → any patient for any condition could be authorized for medicinal marijuana, but could only be purchased from a Licensed Producer. **Aug 2016 to ?**: *ACMPR* → see **Online Extras** 💻 for links to forms/agreements. 1. Complete medical documentation form. Complete treatment agreement form. 2. Submit documentation to Licensed Producer who delivers marijuana to pt. 3. **Or**, patients may apply to grow their own product at home (as per previous MMAR). 4. Medical documentation must be re-authorized at least once per year. 5. No set daily limit; max possession is lesser of 150g or 30 times daily amount. 6. Cannabis oil, buds, and leaves also acceptable as of July 2015.
Nabilone ☎✆ **CESAMET,g** PL 0.5,1mg cap (0.25mg cap) χ✆ -mimics THC -compound for low-dose e.g. simple syrup 5mg/50mL	✓Treat severe **N/V** from cancer chemo ☎ EDS Sask.=nausea/anorexia in AIDS **COMMENTS:** •Sleep benefit in small fibromyalgia trial[47] n=31 •Oral form – some abuse potential •Schedule II in USA & in Canada. •Not positive in urine drug screen!	CI pregnant, breast feeding, ?sz, psychiatric hx AE Drowsiness, vertigo, psych high/euphoria, dry mouth, depression, ataxia, ↑ HR, ↓ BP, blurred vision, hallucinations, sedation, headache & still an abuse potential DI ↑ AE: disulfiram, ethanol, fluoxetine, sleep meds. Theophylline ↓theophylline level	**Initial:** 0.25-**0.5mg** po HS ↑ by 0.5mg q2days **Usual:** 1-2mg daily-BID for chemo N/V **Maximum:** 6mg/day {Neuropathic pain ~2mg/day.}	$22-18g [$36-61] $112-215 g $310 g [$1200]	
Tetranabinex/ nabidiolex [11] **SATIVEX** χ⊗ PL Buccal spray soln 10ml Natural extract contains: Delta-9-THC 2.7mg & CBD 2.5mg/spray peppermint flavour	✓**Adjunctive** relief of **advanced cancer pain**; & **MS neuropathic pain/spasticity** patients >18 years •Trial n=**66** 5week aided approval for this indication[18]; but product studied in 5 short trials with a total of 368 patients. •Trial n=38 10 wk in diabetic peripheral neuropathy; no better than placebo in patients with pain despite prior TCA tx.[54] ✓Approved as a narcotic [April05] with conditions **COMMENTS:** May ↓voids/day if urinary dysfunction.[118] ✓Canada **first** country in the world to approve its use. **STORAGE:** •Unopened: Fridge •Room temp: stable 28days May help cannabis withdrawal symptoms [111]	CI allergy cannabinoids, propylene glycol, ethanol or peppermint oil, patients with severe heart, liver or kidney impairment, pregnant, ? psychiatric hx AE mouth irritation ~20% ,dizziness, ↑ HR, euphoric mood, changes in mood & concentration, drowsiness, bad taste, vertigo, reaction time DI ↑ AE: disulfiram, ethanol, fluoxetine,sleep meds. Theophylline ↓theophylline level; may ↑ levels of amitriptyline & fentanyl	**Buccal Adminstration** (Directed below the tongue/side cheek; Prime 2-3 times initially) **Initial:** 1 spray/day;↑q1-2 days Low dose: may spray into milk **Usual:** 1 spray q4h • MS: often use 4 - **5** sprays daily • Cancer: often use ≥8 sprays daily **Maximum:** ~12 sprays/day	 ~$252/vial	

New: THC 12.5mg & CBD 12.5mg/1mL in Medium Chain Triglcerides oil CANNTRUST χ ⊗ 1:1 Cannabis Drops; 40mL bottle ≈ 5g dried cannabis for about $90.

AIDS=acquired immunodeficiency syndrome **ac**=before meals **BP**=blood pressure **CBD**=cannabidiol **dx**=disease **fx**=function **HC=Health Canada HR**=heart rate **hx**=history **GP**=general practitioner **MP=** medical practitioner **MS**=multiple sclerosis **N/V**=nausea & vomiting **pt**=patient **sz**=seizures **rx**=reaction **TCA**=tricyclic antidepressant **THC**=delta-9-tetrahydrocannabinol **tx**=treatment **χ**=not Sask. formulary ⊗=not NIHB ▼=covered NIHB ☎=Exception Drug Status Sk ✆ =prior approval NIHB ♀=female ✓=official indication

BROADER CONSIDERATIONS, AND LIMITS OF THE EVIDENCE [2-4, 9, 12, 47, 51]

♦ Limited RCT's, small short trials, differing routes, forms & types of cannabinoids makes assessing efficacy almost impossible. One observational trial in patients with posttraumatic stress found an association with worse outcomes in those with ↑marijuana use.[194]
♦ **Pain** → based on very limited evidence: no more effective than codeine,↑AE & need larger trials [5] →cannabis may be moderately efficacious for chronic pain, benefits are offset by potential harms & complicated by the psychosocial aspects of chronic pain.[51,55] {Consideration: *Fourth line* analgesic for the tx of chronic neuropathic pain.} [50 Canadian Pain Society 2007] **Not recommended for**: age <25, substance use disorder, family hx of psychosis; smoked form not if CV or respiratory disease; mood/anxiety disorders;
♦ **MS**→modest therapeutic effect & risk of AE thus caution about using cannabinoids [7,8,9] {Small spasticity benefit & possible less disability & no major safety concerns in a 12 month [CAMS MS n=502] follow up; patients felt these drugs helped their disease.} [12]
♦ **Dravet syndrome** → pure cannabidiol (CBD) at a dose of 20mg/kg/day in pediatric patients (2-18yrs of age) with Dravet syndrome showed a statistically significant reduction in seizure frequency. However 13% quit CBD due to adverse effects vs 2% placebo.[259]

POSSIBLE APPROACH

A close review of 1) the indications, 2) what meds were previously used & 3) the context of the "therapeutic trial" of marijuana. These people should have 4) a random urine screen http://www.rxfiles.ca/rxfiles/uploads/documents/members/Urine-Drug-Screening-UDS-QandA.pdf & 5) an addictions assessment/addiction services, complete with 6) collateral information from family & others. Then 7) a focused case management discussion should be held, with all the assessors & care providers, before any decision is made. 8) Use a "treatment agreement" http://www.rxfiles.ca/rxfiles/uploads/documents/**Opiod**-Informed-Consent-And-Agreement.pdf, or see below online for Marihuana Treatment Agreement form 9) Start low dose at HS to minimize AE.
10) In the end the physician may say, " I am not comfortable prescribing smoked cannabis, because it has little evidence of efficacy for your condition & considerable evidence of harm." {Caution re driving within 6 hrs.}

Changing Legal Landscape [CDN] – Cautions: Potential for variety of unintended consequences {Trend towards higher potency & potential ↑ impairment; unintentional pediatric exposure common[232]; neuroplasticity; etc.}.

Cannabinoids: Online Extras 💻

Links for Prescribing of Medical Marijuana

1. Medical documentation (complete minimum of once per year, but may authorize for shorter durations): www.hc-sc.gc.ca/dhp-mps/alt_formats/pdf/marihuana/info/med-eng.pdf
2. List of Licensed Producers: www.hc-sc.gc.ca/dhp-mps/marihuana/info/list-eng.php
3. Application to grow marijuana at home: healthycanadians.gc.ca/drugs-products-medicaments-produits/buying-using-achat-utilisation/cannabis-medical/access-acces/personal-production-personnelle/index-eng.php
4. See College Bylaws below for Saskatchewan - must complete marijuana treatment agreement form (sample below). For other provinces, refer to here for guidance https://www.cmpa-acpm.ca/-/medical-marijuana-new-regulations-new-college-guidance-for-canadian-doctors

College of Physicians & Surgeons of Saskatchewan: The College's bylaw 2014-

The College's bylaw which regulates physician authorization of medical marihuana is now in effect. A summary of the bylaw follows:

1. The bylaw begins with a statement that there has not been sufficient scientific or clinical assessment to provide evidence about the safety and efficacy of marihuana for medical purposes. The bylaw begins with an acknowledgement that federal government regulations have authorized the use of marihuana for medical purposes.

2. A physician cannot authorize the use of marihuana for a patient unless the physician is also the treating physician
for the condition for which the patient is authorized to use marihuana. For example, if a patient is to be authorized to use medical marihuana to deal with symptoms of MS, the physician must also be the treating physician for the patient's MS.

3. A physician must review the patient's medical history, review relevant records pertaining to the condition for which the use of marihuana is authorized and conduct an appropriate physical examination before authorizing the patient's use of marihuana.

4. The patient must sign a written treatment agreement which contains the following:

A) A statement from the patient that the patient will not seek a prescription for marihuana from any other physician during the period for which the marihuana is prescribed;
B) A statement by the patient that the patient will utilize the marihuana as prescribed, and will not use the marihuana in larger amounts or more frequently than is prescribed;
C) A statement by the patient that the patient will not give or sell the prescribed marihuana to anyone else, including family members;
D) A statement by the patient that the patient will store the marihuana in a safe place;

5. The physician's record for the patient must include the requirements for all medical records and, in addition, contain the following:

A) The treatment agreement signed by the patient;
B) The diagnosis for which the patient was authorized to purchase marihuana;
C) A statement of what other treatments have been attempted for the condition for which the use of marihuana was prescribed and the effect of such treatments;
D) A statement of what, if anything, the patient has been advised about the risks of the use of marihuana;
E) A statement that in the physician's medical opinion the patient is likely to receive therapeutic or palliative benefit from the use of marihuana to treat the patient's condition.

6. The physician must retain a single record, separate from other patient records, which can be inspected by the College, and which contains:

A) The patient's name, health services number and date of birth;
B) The quantity and duration for which marihuana was prescribed;
C) The medical condition for which marihuana was prescribed;
D) The name of the licensed producer from which the marihuana will be obtained, if known to the physician.

7. Physicians who prescribe marihuana will be required to provide the College with the information referenced in paragraph 6:

A) Every twelve months if the physician has prescribed marihuana to fewer than 20 patients in the preceding 12 months;
B) Every six months if the physician has prescribed marihuana to 20 or more patients in the preceding 12 months.

8. The bylaw prohibits physicians from diagnosing or treating patients at the premises of a licensed producer;

9. The bylaw prohibits physicians who prescribe marihuana from having an economic or management interest in a licensed producer;

10. The bylaw prohibits physicians from storing or dispensing marihuana from any location where the physician practices medicine.

The bylaw is numbered Bylaw 19.2 of the regulatory bylaws of the College and is available at the College's website.

Sample treatment agreement to comply with the College Bylaw

I _____ understand that I will be receiving a medical document from Dr. _____ which will authorize me to purchase marihuana for a medical purpose. I agree to the following:

A) I will not seek to obtain a medical document to authorize me to purchase marihuana from any other physician during the period for which the marihuana is authorized;
B) I will utilize the marihuana as authorized in the medical document and I will not use the marihuana in larger amounts or more frequently than is authorized in the document;
C) I will not give or sell the prescribed marihuana to anyone else, including family members;
D) I will store the marihuana in a safe place;
E) I understand that if I break any of these conditions, Dr. _____ may refuse to provide any future medical authorization to purchase marihuana.

_____ _____
Patient's signature Date

References Cannabinoids:
Prepared by: Brent Jensen BSP, Loren Regier BSP BA for www.RxFiles.ca

Link to – Health Canada - Medical Marihuana: How to Apply: http://www.hc-sc.gc.ca/dhp-mps/marihuana/how-comment/applicant-demandeur/index-eng.php
Link to CFPC: http://www.cfpc.ca/Dried_Cannabis_Prelim_Guidance/

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1. Williamson EM, Evans FJ. Cannabinoids in clinical practice. Drugs. 2000 Dec;60(6):1303-14.
2. Use of Cannabis or Cannabinoids for Non-Malignant Chronic Pain Feb 2004. Alberta Heritage Foundation for Medical Research http://www.ahfmr.ab.ca/publications
3. Beal JE, Olson R, Laubenstein L, et al. **Dronabinol** as a treatment for anorexia associated with weight loss in patients with AIDS. J Pain Symptom Manage. 1995 Feb;10(2):89-97. n-139
4. Natural Medicines Comprehensive Database 2012
   May/09 **CNN:** The average potency of marijuana, which has risen steadily for three decades, has exceeded 10 percent for the first time, the U.S. government will report on Thursday. Scientists working for the government predict that potency, as measured by the drug's concentration of the psychoactive ingredient THC, will continue to rise. At the University of Mississippi's Potency Monitoring Project, where thousands of samples of seized marijuana are tested every year, project director Mahmoud ElSohly said some samples have THC levels exceeding 30 percent. Average THC concentrations will continue to climb before leveling off at 15 percent or 16 percent in five to 10 years, ElSohly predicted. The average THC for tested marijuana during 2008 was 10.1 percent, according to the government, compared to 1983 when it was reportedly under 4 percent. Even drugs seized at the United States' southwest border are showing increasing potency, the Office of National Drug Control Policy says. The median potency increased from 4.8 percent in 2003 to 7.3 percent in 2007. Marijuana from Mexico and other southern sources traditionally had lower THC content than other sources. http://www.whitehousedrugpolicy.gov/drugfact/marijuana/index.html
5. Campbell FA, Tramer MR, Carroll D, Reynolds DJ, Moore RA, McQuay HJ. Are cannabinoids an effective and safe treatment option in the management of pain? A qualitative systematic review. BMJ. 2001 Jul 7;323(7303):13-6. Conclusion: Cannabinoids are no more effective than codeine in controlling pain and have depressant effects on the central nervous system that limit their use. Their widespread introduction into clinical practice for **pain management** is therefore undesirable. In acute postoperative pain they should not be used. Before cannabinoids can be considered for treating spasticity and neuropathic pain, further valid randomised controlled studies are needed.
6. Tramer MR, Carroll D, Campbell FA, et al. Cannabinoids for control of chemotherapy induced nausea and vomiting: quantitative systematic review. BMJ. 2001 Jul 7;323(7303):16-21. CONCLUSIONS: In selected patients, the cannabinoids tested in these trials **may be** useful as mood enhancing adjuvants for controlling **chemotherapy** related sickness. Potentially serious adverse effects, even when taken short term orally or intramuscularly, are likely to limit their widespread use.
7. Zajicek J, Fox P, et al.; UK MS Research Group. Cannabinoids for treatment of spasticity & other symptoms related to **multiple sclerosis** (**CAMS** study): multicentre randomised placebo-controlled trial. Lancet. 2003 Nov 8;362(9395):1517-26.n=630 15wk INTERPRETATION: Treatment with cannabinoids did **not** have a beneficial effect on **spasticity** when assessed with the Ashworth scale. However, though there was a degree of unmasking among the patients in the active treatment groups, objective improvement in mobility and patients' **opinion of an improvement in pain** suggest cannabinoids might be clinically useful.
8. Fox P, Bain PG, Glickman S, et al. The effect of cannabis on **tremor** in patients with **multiple sclerosis**. Neurology. 2004 Apr 13;62(7):1105-9. n=14 Cannabis extract does **not** produce a functionally significant improvement in MS-associated **tremor**.
9. Smith PF. The safety of cannabinoids for the treatment of **multiple sclerosis**. Expert Opin Drug Saf. 2005 May;4(3):443-56. Conclusion: given the modest therapeutic effects of cannabinoids demonstrated so far, & the risk of long-term adverse side effects, there is reason to be **cautious about their use** in the treatment of MS.
10. Marijuana Medical Access Division, Drug Strategy & Controlled Substances Program, AL: 3503B, Ottawa, On K1A 1B9 **1-866-337-7705**) or the **website** http://www.hc-sc.gc.ca/dhp-mps/marihuana/index-eng.php -Forms **B1** & **B2** & **Daily** Amount Fact Sheet Info for Health care professionals: www.hc-sc.gc.ca/dhp-mps/marihuana/how-comment/medpract/infoprof/information_e.html
    Marijuana Stakeholder **statistics** from Health Canada: http://www.hc-sc.gc.ca/dhp-mps/marihuana/stat/index-eng.php
    Marihuana for Medical Purposes Regulations- **MMPR**- http://www.laws-lois.justice.gc.ca/eng/regulations/SOR-2013-119/
11. Sativex Fact sheet Health Canada http://www.hc-sc.gc.ca/dhp-mps/alt_formats/hpfb-dgpsa/pdf/prodpharma/sativex_factsheet_e.pdf Trial Info at www.gwpharm.com **& www.ccohta.ca**
12. Zajicek JP, et al.. Cannabinoids in multiple sclerosis (**CAMS**) study: safety and efficacy data for 12 months follow up. J Neurol Neurosurg Psychiatry. 2005 Dec;76(12):1664-9.
13. Laumon B, Gadegbeku B, Martin JL, Biecheler MB. Cannabis intoxication and fatal road crashes in France: population based case-control study. BMJ. 2005 Dec 10;331(7529):1371. Epub 2005 Dec 1.
14. London Royal Collage of Physicians Report Cannabis and cannabis-based medicines. Potential benefits and risks to health. Report of a Working Party 2005 Summary & Conclusions: http://www.rcplondon.ac.uk/pubs/books/cannabis/cannabis_summary.pdf
15. Arendt M, Rosenberg R, Foldager L, Perto G, Munk-Jorgensen P. Cannabis-induced psychosis and subsequent schizophrenia-spectrum disorders: follow-up study of 535 incident cases. Br J Psychiatry. 2005 Dec;187:510-5. (Arseneault L, Cannon M, Poulton R, Murray R, Caspi A, Moffitt TE. Cannabis use in adolescence and risk for adult psychosis: longitudinal prospective study. BMJ. 2002 Nov 23;325(7374):1212-3.)
16. Fergusson DM, Poulton R, Smith PF, Boden JM. Cannabis and psychosis. BMJ. 2006 Jan 21;332(7534):172-5.
17. Burns TL, Ineck JR. Cannabinoid analgesia as a potential new therapeutic option in the treatment of chronic pain. Ann Pharmacother. 2006 Feb;40(2):251-60. Epub 2006 Jan 31.
18 Rog DJ, Nurmikko TJ, Friede T, Young CA. Randomized, controlled trial of cannabis-based medicine in central pain in multiple sclerosis. Neurology. 2005 Sep 27;65(6):812-9.
19. Fergusson DM, Poulton R, Smith PF, Boden JM. Cannabis and psychosis. BMJ. 2006 Jan 21;332(7534):172-5.
20. Muller-Vahl KR. Cannabinoids reduce symptoms of Tourette's syndrome. Expert Opin Pharmacother. 2003 Oct;4(10):1717-25.
21. Mehra R, Moore BA, Crothers K, Tetrault J, Fiellin DA. The association between marijuana smoking and lung cancer: a systematic review. Arch Intern Med. 2006 Jul 10;166(13):1359-67.
22. Nabilone for Chemotherapy induced nausea & vomiting. Medical Letter Dec 4/18, 2006.
23. Lynch ME, Young J, Clark AJ. A case series of patients using medicinal marihuana for management of chronic pain under the Canadian Marihuana Medical Access Regulations. J Pain Symptom Manage. 2006 Nov;32(5):497-501. n=30 Doses of marihuana ranged from less than 1 to 5g per day via the smoked or oral route of administration. Ninety-three percent of patients reported moderate or greater pain relief. Side effects were reported by 76% of patients, the most common of which were increased appetite and a sense of well-being, weight gain, and slowed thoughts. (Ave dose = 2.5g/day).
24. Collin C, Davies P, Mutiboko IK, Ratcliffe S; Sativex Spasticity in MS Study Group. Randomized controlled trial of cannabis-based medicine in spasticity caused by multiple sclerosis. Eur J Neurol. 2007 Mar;14(3):290-6. (n=189 6 weeks) The primary efficacy analysis on the intention to treat (ITT) population (n = 184) showed the active preparation to be significantly superior (P = 0.048). Secondary efficacy measures were all in favour of active preparation but did not achieve statistical significance. The responder analysis favoured active preparation, 40% of subjects achieved >30% benefit (P = 0.014). Eight withdrawals were attributed to adverse events (AEs); six were on active preparation and two on placebo. We conclude that this CBM may represent a useful new agent for treatment of the symptomatic relief of spasticity in MS.
25. Abrams DI, Jay CA, Shade SB, Vizoso H, Reda H, Press S, Kelly ME, Rowbotham MC, Petersen KL. Cannabis in painful HIV-associated sensory neuropathy: a randomized placebo-controlled trial. Neurology. 2007 Feb 13;68(7):515-21. n=50 Smoked cannabis was well tolerated and effectively relieved chronic neuropathic pain from HIV-associated sensory neuropathy. The findings are comparable to oral drugs used for chronic neuropathic pain.
26. Tetrault JM, Crothers K, Moore BA, Mehra R, Concato J, Fiellin DA. Effects of marijuana smoking on pulmonary function and respiratory complications: a systematic review. Arch Intern Med. 2007 Feb 12;167(3):221-8.
27. Moore TH, et al. Cannabis use and risk of **psychotic** or affective mental health outcomes: a systematic review. Lancet. 2007 Jul28;370(9584):319-28. The evidence is consistent with the view that cannabis **increases risk of psychotic outcomes** independently of confounding and transient intoxication effects, although evidence for affective outcomes is less strong. The uncertainty about whether cannabis causes psychosis is unlikely to be resolved by further longitudinal studies such as those reviewed here. However, we conclude that there is now sufficient evidence to warn young people that using cannabis could increase their risk of developing a psychotic illness later in life.
28. Pharmacist's Letter. **Sativex** for Advanced Cancer Pain. Sept 2007.
29. Aldington S, Williams M, Nowitz M, Weatherall M, Pritchard A, McNaughton A,Robinson G, Beasley R. THE EFFECTS OF CANNABIS ON PULMONARY STRUCTURE, FUNCTION AND SYMPTOMS. Thorax. 2007 Jul 31; [Epub ahead of print] Smoking cannabis was associated with a dose-related impairment of large airways function resulting in airflow obstruction and hyperinflation. In contrast, cannabis smoking was seldom associated with macroscopic emphysema. The 1:**2.5 to 5 dose equivalence between cannabis joints and tobacco cigarettes** for adverse effects on lung function is of major public health significance.
30. Narang S, Gibson D, Wasan AD, et al. Efficacy of Dronabinol as an Adjuvant Treatment for Chronic Pain Patients on Opioid Therapy. J Pain. 2007 Dec 12; [Epub ahead of print]
31. Skrabek RQ, Galimova L, Ethans K, Perry D. **Nabilone** for the treatment of pain in **fibromyalgia**. J Pain. 2008 Feb;9(2):164-73. n=40 4weeks Epub 2007 Nov 5. As nabilone improved symptoms and was well-tolerated, it may be a useful adjunct for pain management in fibromyalgia.
32. Wissel J, Haydn T, Müller J, Brenneis C, Berger T, Poewe W, et al. Low dose treatment with the synthetic cannabinoid Nabilone significantly reduces spasticity-related pain : a double-blind placebo-controlled cross-over trial. J Neurol 2006;253(10):1337-41.
33. Frank B, Serpell MG, Hughes J, Matthews JN, Kapur D. Comparison of analgesic effects and patient tolerability of nabilone 2mg and dihydrocodeine 240mg for chronic neuropathic pain: randomised, crossover, double blind study. BMJ. 2008 Jan 8; [Epub ahead of print] Dihydrocodeine provided better pain relief than the synthetic cannabinoid nabilone and had slightly fewer side effects, although no major adverse events occurred for either drug.
34. Svendsen KB, Jensen TS, Bach FW. Does the cannabinoid dronabinol reduce central pain in multiple sclerosis? Randomised double blind placebo controlled crossover trial. BMJ. 2004 Jul 31;329(7460):253. Epub 2004 Jul 16. Dronabinol has a modest but clinically relevant analgesic effect on central pain in patients with multiple sclerosis. Adverse events, including dizziness, were more frequent with dronabinol than with placebo during the first week of treatment.
35. Thomson WM, Poulton R, et al. Cannabis smoking and **periodontal disease** among young adults. JAMA. 2008 Feb 6;299(5):525-31. Cannabis smoking may be a risk factor for periodontal disease that is independent of the use of tobacco.
36. Mukamal KJ, Maclure M, Muller JE, Mittleman MA. An exploratory prospective study of marijuana use and mortality following acute **myocardial infarction**. Am Heart J. 2008 Mar;155(3):465-70. These preliminary results suggest possible hazards of marijuana for patients who survive acute myocardial infarction.
37. Hézode C, Zafrani ES, Roudot-Thoraval F, et al. Daily cannabis use: a novel risk factor of **steatosis** severity in patients with chronic hepatitis C. Gastroenterology. 2008 Feb;134(2):432-9. Epub 2007 Nov 28.

38. Wang T, Collet JP, Shapiro S, Ware MA. Adverse effects of **medical cannabinoids**: a systematic review. CMAJ. 2008 Jun 17;178(13):1669-78. Short-term use of existing medical cannabinoids appeared to increase the risk of nonserious adverse events. The risks associated with long-term use were poorly characterized in published clinical trials and observational studies. High-quality trials of long-term exposure are required to further characterize safety issues related to the use of medical cannabinoids.
39. Nurmikko TJ, Serpell MG, Hoggart B, et al. **Sativex** successfully treats neuropathic pain characterised by allodynia: a randomised, double-blind, placebo-controlled clinical trial. Pain. 2007 Dec 15;133(1-3):210-20. Epub 2007 Nov 7.
40. Ghaffar O, Feinstein A. Multiple sclerosis and cannabis: a cognitive and psychiatric study. Neurology. 2008 Jul 15;71(3):164-9. Epub 2008 Feb 13. Inhaled cannabis is associated with **impaired mentation** in patients with multiple sclerosis, particularly with respect to cognition.
41. Busse F, Omidi L, Timper K, Leichtle A, Windgassen M, Kluge E, Stumvoll M. **Lead poisoning** due to adulterated marijuana. N Engl J Med. 2008 Apr 10;358(15):1641-2.
42. Vandrey RG, Budney AJ, Hughes JR, Liguori A. A within-subject comparison of **withdrawal symptoms** during abstinence from **cannabis**, tobacco, and both substances. Drug Alcohol Depend. 2008 Jan 1;92(1-3):48-54. Epub 2007 Jul 23.
43. Arendt M, Mortensen PB, Rosenberg R, et al. Familial predisposition for psychiatric disorder: comparison of subjects treated for cannabis-induced psychosis and schizophrenia. Arch Gen Psychiatry. 2008 Nov;65(11):1269-74. Predisposition to both psychiatric disorders in general and psychotic disorders specifically contributes equally to the risk of later treatment because of schizophrenia and cannabis-induced psychoses. **Cannabis-induced psychosis could be an early sign of schizophrenia rather than a distinct clinical entity**.
44. Selvarajah D, Gandhi R, Emery CJ, Tesfaye S. A Randomised Placebo Controlled Double Blind Clinical Trial of Cannabis Based Medicinal Product (**Sativex**) in Painful **Diabetic Neuropathy**: Depression is a Major Confounding Factor. Diabetes Care. 2009 Oct 6. [Epub ahead of print] n=30. This first ever, trial assessing the efficacy of cannabis has shown it to be no more efficacious than placebo in painful-DPN. Depression was a major confounder and may have important implications for future painful-DPN trials.
45. Hall W, Degenhardt L. **Adverse health effects** of non-medical cannabis use. Lancet. 2009 Oct 17;374(9698):1383-91.
46. Di Forti M, Morgan C, Dazzan P, et al. High-potency cannabis and the risk of **psychosis**. Br J Psychiatry. 2009 Dec;195(6):488-91.
47. Ware MA, Fitzcharles MA, Joseph L, Shir Y. The effects of **nabilone** on sleep in fibromyalgia: results of a randomized controlled trial. Anesth Analg. 2010 Feb;110(2):604-10. Epub 2009 Dec 10.
(CADTH Rapid Response: Limited evidence suggests that nabilone may be better than placebo in relieving chronic pain but its relative benefits compared to other analgesics have not been proven. Current guidelines recommend the dosage of nabilone for treating neuropathic pain be titrated gradually until target relief is obtained.)
48. Fraser GA. The use of a synthetic cannabinoid in the management of treatment-resistant nightmares in posttraumatic stress disorder (**PTSD**). CNS Neurosci Ther. 2009;15(1):84-8.
49. Medical Letter. **Medical Marijuana**. Jan 25,2010.
50. Moulin DE, Clark AJ, Gilron I, et al. Canadian Pain Society. Pharmacological management of chronic **neuropathic pain** - consensus statement and guidelines from the Canadian Pain Society. Pain Res Manag. 2007 Spring;12(1):13-21.
51. Martín-Sánchez E, Furukawa TA, Taylor J, Martin JL. Systematic review and meta-analysis of **cannabis** treatment for chronic pain. Pain Med. 2009 Nov;10(8):1353-68. Epub 2009 Sep 1.
52. Yamreudeewong W, Wong HK, Brausch LM, et al. Probable interaction between warfarin and marijuana smoking. Ann Pharmacother. 2009;43:1347-1353.
53. Wilsey B, Marcotte T, Tsodikov A, et al. A randomized, placebo-controlled, crossover trial of cannabis cigarettes in **neuropathic pain**. J Pain. 2008;9:506-521.
54. Selvarajah D, Gandhi R, Emery CJ, Tesfaye S. Randomized placebo-controlled double-blind clinical trial of **cannabis-based** medicinal product (**Sativex**) in painful diabetic neuropathy. Diabetes Care 2010; 33(10):128-130.
55. Regier L. RxFiles **Substance Abuse Chart**, from RxFiles Drug Comparison Charts. Accessed online at 23 Mar, 2010: http://www.rxfiles.ca/rxfiles/uploads/documents/CHT-Substance-Abuse.pdf
56. Winstock Adam R, Ford Chris, Witton John. **Assessment and management of cannabis use disorders** in primary care. BMJ 2010;340:c1571, doi: 10.1136/bmj.c1571 (1 April 2010).
57. Hoffmann, Diane E., Weber, Ellen. **Medical Marijuana** and the Law. N Engl J Med 2010 362: 1453-1457.
58. Goldman RD. Drug-induced **gynecomastia** in children and adolescents. Can Fam Physician. 2010 Apr;56(4):344-5.
59. Ware, Mark A., Wang, Tongtong, Shapiro, Stan, et al. **Smoked cannabis** for chronic neuropathic pain: a randomized controlled trial. CMAJ. 2010 Oct 5;182(14):E694-701. doi: 10.1503/cmaj.091414. Epub 2010 Aug 30
60. Room R. Prohibition of cannabis. BMJ. 2010 Oct 6;341:c5492. doi:10.1136/bmj.c5492.
61. Nguyen LT, Picard-Bernard V, Perriot J. **Legionnaires disease** in cannabis smokers. Chest. 2010 Oct;138(4):989-91.
62 Large Matthew; Sharma Swapnil; Compton Michael T.; et al. Cannabis Use and Earlier **Onset of Psychosis**: A Systematic Meta-analysis. Arch Gen Psychiatry. 2011;0(2011):archgenpsychiatry.2011.5.
63. Kuepper R, van Os J, Lieb R, Wittchen H, Höfler M, Henquet C. Continued cannabis use and risk of incidence and persistence of psychotic symptoms: 10 year follow-up cohort study BMJ 342:doi:10.1136/bmj.d738 (Published 1 March 2011)Accessed online at: http://www.bmj.com/content/342/bmj.d738.full.
64. Wells Daina L, Ott Carol A. **The "New" Marijuana**. Articles Ahead of Print published on 1 March 2011, DOI 10.1345/aph.1P580. Ann Pharmacother ;45:414-417. (JWH-018 powder, K2, spice)
65. Honarmand Kimia, Tierney Mary C., O'Connor Paul, et al. Effects of cannabis on **cognitive function** in patients with multiple sclerosis. Neurology March 29, 2011 76:1153-1160.
66. Robbins MS, Tarshish S, Solomon S, Grosberg BM. Cluster attacks responsive to recreational cannabis and dronabinol. Headache. 2009 Jun;49(6):914-6. Epub 2009 Feb 11.
67. Fontes, Maria Alice, Bolla, Karen I., Cunha, Paulo Jannuzzi, et al. Cannabis use before age 15 and subsequent **executive functioning**. The British Journal of Psychiatry 2011 198: 442-447.
68. Mir Arshid, Obafemi Adebisi, Young Amy, et al. Myocardial Infarction Associated With Use of the Synthetic Cannabinoid **K2**. Pediatrics 2011; peds.2010-3823; published ahead of print November 7, 2011
69. Zajicek JP, Apostu VI. Role of **cannabinoids** in multiple sclerosis. CNS Drugs. 2011;25(3):187-201.
70. Lynch ME, Campbell F. **Cannabinoids** for treatment of chronic non-cancer pain; a systematic review of randomized trials. Br J Clin Pharmacol. 2011;72(5):735-44
71. Drugs in Pregnancy and Lactation. 9th ed. Briggs GE, Freeman RK, Yaffe SJ, editors. Williams and Wilkins; Philadelphia, PA: 2011.
72. Klumpers LE, Beumer TL, van Hasselt JG, et al. Novel Δ(9) –tetrahydrocannabinol formulation **Namisol** table has beneficial pharmacokinetics and promising pharmacodynamic effects. Br J Clin Pharmacol. 2011 Dec 28.
73. Bhattacharyya S, Crippa JA, Allen P, et al. **Induction of psychosis** by {delta}9-tetrahydrocannabinol reflects modulation of prefrontal and striatal function during attentional salience processing. Arch Gen Psychiatry. 2012 Jan;69(1):27-36.
Di Forti M, Iyegbe C, Sallis H, et al. Confirmation that the **AKT1 (rs2494732) Genotype** Influences the Risk of Psychosis in Cannabis Users. Biol Psychiatry. 2012 Nov 15;72(10):811-6.
Di Forti M, Marconi A, Carra E, et al. Proportion of patients in south London with **first-episode psychosis attributable to use of high potency cannabis**: a case-control study. Lancet Psychiatry 2015;2:233-8.
Manrique-Garcia E, Ponce de Leon A, Dalman C, et al. **Cannabis, Psychosis, and Mortality**: A Cohort Study of 50,373 Swedish Men. Am J Psychiatry. 2016 Apr 22

74. Pletcher MJ, Vittinghoff E, Kalhan R, et al. Association between marijuana exposure and **pulmonary function over 20 years**. JAMA. 2012 Jan 11;307(2):173-81.
75. Asbridge M, Hayden JA, Cartwright JL. Acute cannabis consumption and **motor vehicle collision** risk: systematic review of observational studies and meta-analysis. BMJ 2012;344:e536.
76. Cohen J, Morrison S, Greenberg J et al. Clinical Presentation of Intoxication Due to **Synthetic Cannabinoids**. Pediatrics. 2012 Mar 19.
77. Simonetto DA, Oxentenko AS, Herman ML, Szostek JH. **Cannabinoid hyperemesis**: a case series of 98 patients. Mayo Clin Proc. 2012 Feb;87(2):114-9.
78. Fitzcharles MA, McDougall J, Ste-Marie PA, Padjen I. Clinical implications for cannabinoid use in the rheumatic diseases: Potential for help or harm? Arthritis Rheum. 2012 May 17.
79. Corey-Bloom J, Wolfson T, Gamst A, et al. **Smoked cannabis for spasticity in multiple sclerosis**: a randomized, placebo-controlled trial. CMAJ. 2012 May 14.
80. Jerry J, Collins G, Streem D. Synthetic legal intoxicating drugs: The emerging 'incense' and 'bath salt' phenomenon. Cleve Clin J Med. 2012 Apr;79(4):258-64. (cannabinoids, mephedrone)
81. Health Canada June/12: **Q & N Omega Tree** The Singapore Health Sciences Authority informed of a recall after this product was found to contain controlled drug substances (cannabinol and tetrahydrocannabinol (THC)).
82. Cotten SW, Duncan DL, Burch EA, Seashore CJ, Hammett-Stabler CA. **Unexpected interference** of **baby wash products (soaps/shampoo)** with a cannabinoid (THC) immunoassay. Clin Biochem. 2012 Jun;45(9):605-9.
83. Fitzcharles MA, McDougall J, Ste-Marie PA, Padjen I. Clinical implications for **cannabinoid use in the rheumatic diseases**: Potential for help or harm? Arthritis Rheum. 2012 May 17.
84. Salomonsen-Sautel S, Sakai JT, Thurstone C, et al. **Medical marijuana use** among adolescents in substance abuse treatment. J Am Acad Child Adolesc Psychiatry. 2012 Jul;51(7):694-702.
85. Meier MH, Caspi A, Ambler A, et al. Persistent cannabis users show **neuropsychological decline** from **childhood to midlife**. Proc Natl Acad Sci U S A. 2012 Aug 27.
86. Lacson JC, Carroll JD, Tuazon E, et al. Population-based case-control study of recreational drug use and **testis cancer** risk confirms an association between **marijuana** use and nonseminoma risk. Cancer. 2012 Sep 10.
87. Stanley CP, Hind WH, O'Sullivan SE. Is the cardiovascular system a therapeutic target for cannabidiol (CBD) ? Br J Clin Pharmacol. 2012 Jun 1.
88. Zajicek JP, Hobart JC, Slade A, et al; on behalf of the **MUSEC** Research Group. **MUltiple Sclerosis** and Extract of Cannabis: results of the MUSEC trial. J Neurol Neurosurg Psychiatry. 2012 Nov;83(11):1125-1132.
89. What place for {blacktriangledown} **cannabis extract in MS**? Drug Ther Bull. 2012 Dec;50(12):141-4.
90. Blakemore SJ. Teenage kicks: cannabis and the **adolescent brain**. Lancet. 2012 Oct 29.
91. Wolff V, Armspach JP, Lauer V, et al. **Cannabis-related stroke**: Myth or reality? Stroke 2013; 44:558-563.
92. Lev-Ran S et al. Cannabis use and cannabis use disorders among individuals with **mental illness**. Compr Psychiatry 2013 Jan 30.
93. Frost L, Mostofsky E, Rosenbloom JI, Mukamal KJ, Mittleman MA. Marijuana use and long-term mortality among survivors of **acute myocardial infarction**. Am Heart J. 2013 Feb;165(2):170-5.
94. Bostwick JM, Reisfield GM, DuPont RL. Clinical decisions. **Medicinal use of marijuana**. N Engl J Med. 2013 Feb 28;368(9):866-8.
95. Wilsey B, Marcotte T, Deutsch R, et al. **Low-dose vaporized** cannabis significantly improves **neuropathic pain**. J Pain. 2013 Feb;14(2):136-48.
96. Pharmacistès Letter. **Medical Marijuana**. Feb 2013.
97. Blakemore SJ. Teenage kicks: cannabis and the **adolescent brain**. Lancet. 2013 Mar 16;381(9870):888-9.
98. Fletcher J. **Marijuana is not a prescription medicine**. CMAJ. 2013 Mar 19;185(5):369
99. Wang GS, Roosevelt G, Heard K. **Pediatric Marijuana Exposures** in a Medical Marijuana State. JAMA Pediatr. 2013 May 27:1-4.

100. Penner EA, Buettner H, Mittleman MA. The Impact of **Marijuana Use on Glucose,Insulin, and Insulin Resistance** among US Adults. Am J Med. 2013 May 9.
101. Wang GS, Roosevelt G, Heard K. **Pediatric marijuana exposures** in a medical marijuana state [published onlineMay 27, 2013]. JAMA Pediatr. 2013;167(7):630-633.
102. Bhanushali GK, Jain G, Fatima H, et al. AKI associated with **synthetic cannabinoids**: a case series. Clin J Am Soc Nephrol. 2013 Apr;8(4):523-6.
103. Hurd YL, Michaelides M, Miller ML, Jutras-Aswad D. **Trajectory of adolescent cannabis use on addiction vulnerability**. Neuropharmacology. 2013 Aug 14.
104. Zajicek J, Ball S, Wright D, et al; on behalf of the CUPID investigator group. Effect of **dronabinol on progression in progressive multiple sclerosis (CUPID)**: a randomised, placebo-controlled trial. Lancet Neurol. 2013 Jul 12.
105. Dyer O. The **growth of medical marijuana**. BMJ. 2013 Jul 31;347:f4755.
106. Borgelt, L.M., Franson, K.L., Nussbaum, et al. The pharmacologic and clinical effects of medical cannabis Pharmacotherapy 2013; 33 (2):195-209
107. Notcutt W, Price M, Miller R, et al. Initial experiences with medicinal extracts of cannabis for chronic pain: results from 34 'N of 1' studies. Anaesthesia. 2004 May;59(5):440-52.
108. Bestard JA, Toth CC. An open-label comparison of nabilone and gabapentin as adjuvant therapy or monotherapy in the management of neuropathic pain in patients with peripheral neuropathy. Pain Pract. 2011 Jul-Aug;11(4):353-68. doi: 10.1111/j.1533-2500.2010.00427.x. Epub 2010 Nov 18.
109. Are oral cannabinoids safe and effective in refractory neuropathic pain? Attal N, Brasseur L, Guirimand D, Clermond-Gnamien S, Atlami S, Bouhassira D. Eur J Pain. 2004 Apr;8(2):173-7.
110. Thomas G, Kloner RA, Rezkalla S. Adverse cardiovascular, cerebrovascular, and peripheral vascular effects of **marijuana** inhalation: what cardiologists need to know. Am J Cardiol. 2014 Jan 1;113(1):187-90.
111. Allsop DJ, Copeland J, Lintzeris N, et al. **Nabiximols** (Sativex) as an Agonist Replacement Therapy During Cannabis Withdrawal: A Randomized Clinical Trial. JAMA Psychiatry. 2014 Jan 15.
112. Freeman MJ, Rose DZ, Myers MA, Gooch CL, Bozeman AC, Burgin WS. Ischemic stroke after use of the **synthetic marijuana "spice**." Neurology 2013;81: 2090–2093.
113. Smith MJ, Cobia DJ, Wang L, et al. Cannabis-Related **Working Memory Deficits** and Associated Subcortical Morphological Differences in Healthy Individuals and Schizophrenia Subjects. Schizophr Bull. 2013 Dec 15
114. Konrad E, Reid A. **Colorado family physicians' attitudes toward medical marijuana**. J Am Board Fam Med. 2013;26:52-60.
115. Singh D, Huntwork M, Shetty V, et al. Prolonged **Atrial Fibrillatio**n Precipitated by New-Onset **Seizures** and **Marijuana** Abuse. Pediatrics. 2014 Jan 13
116. Korantzopoulos P, Liu T, Papaioannides D, et al. **Atrial fibrillation** and marijuana smoking. Int J Clin Pract. 2008 Feb;62(2):308-13.
117. Wang GS, Roosevelt G, Le Lait MC, et al. Association of **Unintentional Pediatric Exposures** With Decriminalization of Marijuana in the United States. Ann Emerg Med. 2014 Feb 3. pii: S0196-0644(14)00079-1.
118. Koppel BS, Brust JC, Fife T, et al. Systematic review: Efficacy and safety of **medical marijuana** in selected neurologic disorders: Report of the Guideline Development Subcommittee of the **American Academy of Neurology** (**AAN**). Neurology. 2014 Apr 29;82(17):1556-63.
119. Farrell M, Buchbinder R, Hall W. **Should doctors prescribe cannabinoids**? BMJ. 2014 Apr 23;348:g2737.
120. Antoniou T, Juurlink DN. **Synthetic cannabinoids**. CMAJ. 2014 Feb 18;186(3):210.
121. Morris RG, Teneyck M, Barnes JC, et al. The effect of **medical marijuana laws on crime**: evidence from state panel data, 1990-2006. PLoS One. 2014 Mar 26;9(3)
122. Jouanjus E, Lapeyre-Mestre M, Micallef J; French Association of the Regional Abuse and Dependence Monitoring Centres (CEIP-A) Working Group on Cannabis Complications. Cannabis use: signal of increasing risk of **serious cardiovascular disorders**. J Am Heart Assoc. 2014;3:e000638
Reis JP, Auer R, Bancks MP, et al. **Cumulative Lifetime Marijuana Use and Incident Cardiovascular Disease** in Middle Age: The Coronary Artery Risk Development in Young Adults (**CARDIA**) Study. Am J Public Health. 2017 Apr;107(4):601-606.
Thomas G, Kloner RA, Rezkalla S. Adverse cardiovascular, cerebrovascular, and peripheral vascular effects of **marijuana** inhalation: what cardiologists need to know. Am J Cardiol. 2014 Jan 1;113(1):187-90.

123. Walter C, Oertel BG, Ludyga D, et al. Effects of 20 mg oral Δ(9) -**tetrahydrocannabinol on the olfactory function** of healthy volunteers. Br J Clin Pharmacol. 2014 May 6.
124. Gilman JM, Kuster JK, Lee S, et al. Cannabis use is quantitatively associated with **nucleus accumbens and amygdala abnormalities** in young adult recreational users. J Neurosci. 2014 Apr 16;34(16):5529-38.
125. Rezkalla S, Kloner RA. **Recreational marijuana use: is it safe** for your patient? J Am Heart Assoc. 2014 Apr 23;3(2):e000904.
126. Richter KP, Levy S. **Big Marijuana** - Lessons from Big Tobacco. N Engl J Med. 2014 Jun 11.
127. Whitehill JM, Rivara FP, Moreno MA. **Marijuana-Using Drivers, Alcohol-Using Drivers, and Their Passengers**: Prevalence and Risk Factors Among Underage College Students. JAMA Pediatr. 2014 May 12.
128. Wilkinson ST, D'Souza DC. Problems With the **Medicalization of Marijuana**. JAMA. 2014 May 20.
129. Kuehn BM. Colorado Tackles **Medical Implications of Marijuana**. JAMA. 2014 May 14.
130. Issa MA, Narang S, Jamison RN, et al. The subjective **psychoactive effects of oral dronabinol** studied in a randomized, controlled crossover clinical trial for pain. Clin J Pain. 2014 Jun;30(6):472-8.
131. Coombes R. **Cannabis regulation**: high time for change? BMJ. 2014 May 21;348:g3382.
132. Pavisian B, MacIntosh BJ, Szilagyi G, et al. Effects of **cannabis on cognition** in patients with **MS**: A psychometric and MRI study. Neurology. 2014 May 27;82(21):1879-87.
133. Volkow ND, Baler RD, Compton WM, et al. **Adverse health effects of marijuana use**. N Engl J Med. 2014 Jun 5;370(23):2219-27.
134. Newton NC, Andrews G, Champion KE, et al. **Universal Internet-based prevention for alcohol and cannabis** use reduces truancy, psychological distress and moral disengagement: A cluster randomised controlled trial. Prev Med. 2014 May 10;65C:109-115.
135. Sara GE, Burgess PM, Malhi GS, et al. Cannabis and stimulant disorders and readmission 2 years after **first-episode psychosis**. Br J Psychiatry. 2014 Feb 27.
136. Annas GJ. **Medical Marijuana, Physicians, and State Law**. N Engl J Med. 2014 Aug 6.
137. Lee C, Moll S. Migratory superficial **thrombophlebitis** in a cannabis smoker. Circulation. 2014 Jul 8;130(2):214-5.
138. Bachhuber MA, Saloner B, Cunningham CO, Barry CL. Medical **cannabis laws and opioid analgesic overdose** mortality in the United States, 1999-2010 [online August 25, 2014]. JAMA Intern Med.
139. Greene MC, Kelly JF. The Prevalence of **Cannabis Withdrawal** and Its Influence on Adolescents' Treatment Response and Outcomes: A 12-Month Prospective Investigation. J Addict Med. 2014 Aug 5.
140. Juurlink DN. **Medicinal cannabis**: Time to lighten up? CMAJ. 2014 Sep 2;186(12):897-8.
141. Kahan M, Srivastava A. New **medical marijuana regulations**: the coming storm. CMAJ. 2014 Sep 2;186(12):895-6.
142. Ladouceur R. **Cannabis**. Can Fam Physician. 2014 Sep;60(9):775.
143. Spithoff S, Kahan M. **Cannabis and Canadian youth**: Evidence, not ideology. Can Fam Physician. 2014 Sep;60(9):785-7.
144. Turner SD, Spithoff S, Kahan M. Approach to **cannabis use disorder in primary care**: Focus on youth and other high-risk users. Can Fam Physician. 2014 Sep;60(9):801-808.
145. King C, Holmes A. **Cannabinoid hyperemesis syndrome**. CMAJ. 2014 Sep 2.
146. Collier R. MediData: **How potent is medical marijuana**? CMAJ. 2014 Oct 7;186(14):1052.
147. Collier R. MediData: How **many types of medical marijuana are for sale**? CMAJ. 2014 Sep 16;186(13):E475.
148. College of Family Physicians of Canada: **Cannabis for Chronic Pain or Anxiety** September 2014 preliminary guidance.
149. Collier R. "Early innings" in **medical weed branding**. CMAJ. 2014 Oct 21;186(15):1131.
150. Benarroch EE. **Synaptic effects** of cannabinoids: Complexity, behavioral effects, and potential clinical implications. Neurology. 2014 Nov 18;83(21):1958-67.
151. Filbey FM, Aslan S, Calhoun VD, et al. **Long-term effects of marijuana** use on the **brain**. Proc Natl Acad Sci U S A. 2014 Nov 25;111(47):16913-8.
152. Frisch S. **Medical cannabis**: US researchers battle for **access to the plant**. BMJ. 2014 Nov 21;349:g6997.
153. Kahan M, Srivastava A, Spithoff S, et al. **Prescribing smoked cannabis** for **chronic noncancer pain**: Preliminary recommendations. **Can Fam Physician**. 2014 Dec;60(12):1083-1090. http://www.cfp.ca/content/60/12/1083.full
154. Marshall K, Gowing L, Ali R, et al. **Pharmacotherapies for cannabis dependence**. Cochrane Database Syst Rev. 2014 Dec 17;12:CD008940. There is incomplete evidence for all of the pharmacotherapies investigated, and for many of the outcomes the quality was downgraded due to small sample sizes, inconsistency and risk of attrition bias. The quantitative analyses that were possible, combined with general findings of the studies reviewed, indicate that SSRI antidepressants, mixed action antidepressants, atypical antidepressants (bupropion), anxiolytics (buspirone) and norepinephrine reuptake inhibitors (atomoxetine) are probably of little value in the treatment of cannabis dependence. Preparations containing THC are of potential value but, given the limited evidence, this application of THC preparations should be considered still experimental. Further studies should compare different preparations of THC, dose and duration of treatment, adjunct medications and therapies. The evidence base for the anticonvulsant gabapentin and the glutamatergic modulator N-acetylcysteine is weak, but these medications are also worth further investigation.
155. Monte AA, Zane RD, Heard KJ. The Implications of **Marijuana Legalization in Colorado**. JAMA. 2014 Dec 8.
156. Saper CB. Up in smoke: A **neurologist's approach** to "**medical marijuana**". Ann Neurol. 2014 Dec 4.
157. Tsivgoulis G, Lachanis S, Papathanasiou MA, et al. **Cannabis-associated angiopathy**: an uncommon cause of crescendo transient ischemic attacks. Circulation. 2014 Dec 2;130(23):2069-70.
158. Ammerman S, Ryan S, Adelman WP; The Committee on Substance Abuse, The Committee on Adolescence. The **Impact of Marijuana Policies on Youth**: Clinical, Research, and Legal Update. Pediatrics. 2015 Jan 26.
159. Hall W. What has research over the past **two decades revealed about the adverse health effects of recreational cannabis use**? Addiction. 2015 Jan;110(1):19-35.
160. Naviglio S, Papanti D, Moressa V, Ventura A. An **adolescent with an altered state of mind.** BMJ. 2015 Jan 21;350:h299.
161. Di Forti M, Marconi A, Carra E, et al. Proportion of patients in south London with **first-episode psychosis attributable to use of high potency cannabis**: a case-control study. Lancet Psychiatry 2015;2:233-8.
162. Felton D, Zitomersky N, Manzi S, et al. 13-Year-Old Girl With **Recurrent, Episodic, Persistent Vomiting**: Out of the Pot and Into the Fire. Pediatrics. 2015 Mar 2.
163. Ghosh TS, Van Dyke M, Maffey A, et al. **Medical marijuana's public health lessons**--implications for retail marijuana in Colorado. N Engl J Med. 2015 Mar 12;372(11):991-3.
164. King C, Holmes A. **Cannabinoid hyperemesis syndrome**. CMAJ. 2015 Mar 17;187(5):355.
165. MacCoun RJ, Mello MM. Half-baked--the retail promotion of **marijuana edibles**. N Engl J Med. 2015 Mar 12;372(11):989-91.
166. Smith MJ, Cobia DJ, Reilly JL,et al. Cannabis-related **episodic memory deficits** and hippocampal morphological differences in healthy individuals and schizophrenia subjects. Hippocampus. 2015 Mar 11.
167. Onders B, Casavant MJ, Spiller HA, et al. **Marijuana** Exposure Among **Children Younger Than Six Years** in the United States. Clin Pediatr (Phila). 2015 Jun 7.
168. Saloner B, McGinty EE, Barry CL. **Policy Strategies** to Reduce Youth Recreational **Marijuana** Use. Pediatrics. 2015 May 4.
169. Subbaraman MS, Kerr WC. Simultaneous versus concurrent use of **alcohol and cannabis** in the national alcohol survey. Alcohol Clin Exp Res. 2015 May;39(5):872-9.

170. van den Elsen GA, Ahmed AI, Verkes RJ, et al. **Tetrahydrocannabinol for neuropsychiatric symptoms in dementia**: A randomized controlled trial. Neurology. 2015 Jun 9;84(23):2338-46.
171. Hill KP. Medical marijuana for treatment of **chronic pain and other medical and psychiatric problems**. JAMA. doi:10.1001/jama.2015.6199.
172. Stogner JM, Miller BL. Assessing the Dangers of "**Dabbing**": Mere Marijuana or Harmful New Trend? Pediatrics. 2015 Jun 15.
173. Thompson AE. JAMA **PATIENT PAGE**. Medical Marijuana. JAMA. 2015 Jun 23-30;313(24):2508.
174. Vandrey R, Raber JC, Raber ME, et al. Cannabinoid **Dose and Label Accuracy in Edible Medical Cannabis Products**. JAMA. 2015 Jun 23-30;313(24):2491-3.
175. Whiting PF, Wolff RF, Deshpande S, et al. Cannabinoids for **Medical Use**: A Systematic Review and Meta-analysis. JAMA. 2015 Jun 23-30;313(24):2456-73.
176. Lanza ST, Vasilenko SA, Dziak JJ, Butera NM. Trends Among U.S. High School Seniors in **Recent Marijuana Use and Associations With Other Substances**: 1976-2013. J Adolesc Health. 2015 Aug;57(2):198-204.
177.Trecki J, Gerona RR, Schwartz MD. **Synthetic Cannabinoid-Related Illnesses and Deaths**. N Engl J Med. 2015 Jul 9;373(2):103-7.
178. Boyd CJ, Veliz PT, McCabe SE. **Adolescents' Use of Medical Marijuana**: A Secondary Analysis of Monitoring the Future Data. J Adolesc Health. 2015 Aug;57(2):241-4.
179. Committee Opinion No. 637: **Marijuana Use During Pregnancy and Lactation**. Obstet Gynecol. 2015 Jul;126(1):234-8.
180. French L, Gray C, Leonard G, et al. **Early cannabis use, polygenic risk score for schizophrenia**, and **brain maturation in adolescence** [online August 26, 2015].JAMA Psychiatry. doi:10.1001 /jamapsychiatry.2015.1131.
181. Hasin DS, Wall M, Keyes KM, et al. **Medical marijuana laws** and **adolescent marijuana use** in the USA from 1991 to 2014: results from annual, repeated cross-sectional surveys. Lancet Psychiatry. 2015 Jul;2(7):601-8.
182. Pagliaccio D, Barch DM, Bogdan R, et al. Shared predisposition in the relationship between **cannabis use and subcortical brain structure** [online August 26, 2015].JAMA Psychiatry. doi:10 .1001/jamapsychiatry.2015.1054. 5.
183. Wilmer Reichenbach Z, Sloan J, Rizvi-Toner A, et al. A 4-Week Pilot Study With the Cannabinoid Receptor Agonist **Dronabinol** and Its Effect on **Metabolic Parameters** in a Randomized Trial. Clin Ther. 2015 Aug 14.
184. Bancks MP, Pletcher MJ, Kertesz SG, et al. Marijuana use and **risk of prediabetes and diabetes** by middle adulthood: the Coronary Artery Risk Development in Young Adults (CARDIA) study. Diabetologia. 2015 Sep 13.
185. Friedman D, Devinsky O. Cannabinoids in the Treatment of **Epilepsy**. N Engl J Med. 2015 Sep 10;373(11):1048-58.
186. Silins E, Horwood LJ, Patton GC, et al; Cannabis Cohorts Research Consortium. **Young adult sequelae of adolescent cannabis use**: an integrative analysis. Lancet Psychiatry. 2014 Sep;1(4):286-93.
186. Weitzman ER, Ziemnik RE, Huang Q, et al. **Alcohol and Marijuana Use** and Treatment Nonadherence Among Medically Vulnerable Youth. Pediatrics. 2015 Aug 31.
187. Ware MA, Wang T, Shapiro S, et al; **COMPASS** study team. **Cannabis for the Management of Pain**: Assessment of Safety Study (COMPASS). J Pain. 2015 Sep 15.
188. de Vries M, van Rijckevorsel DC, Vissers KC, et al; Pain and Nociception Neuroscience Research Group. Single dose **delta-9-tetrahydrocannabinol in chronic pancreatitis** patients: analgesic efficacy, pharmacokinetics and tolerability. Br J Clin Pharmacol. 2015 Oct 27.
189. Hasin DS, Saha TD, Kerridge BT, et al. Prevalence of **Marijuana Use Disorders** in the United States Between 2001-2002 and 2012-2013. JAMA Psychiatry. 2015 Oct 21:1-9.
190. Kleine-Brueggeney M, Greif R, Brenneisen R, et al. Intravenous **Delta-9-Tetrahydrocannabinol to Prevent Postoperative Nausea and Vomiting**: A Randomized Controlled Trial. Anesth Analg. 2015 Nov;121(5):1157-1164.
191. Wolff V, Zinchenko I, Quenardelle V, et al. Characteristics and prognosis of **ischemic stroke in young cannabis users compared** with non-cannabis users. J Am Coll Cardiol 2015; 66:2052-2053.
192. Deshpande A, Mailis-Gagnon A, Zoheiry N, et al. Efficacy and adverse effects of **medical marijuana for chronic noncancer pain**: Systematic review of randomized controlled trials. Can Fam Physician. 2015 Aug;61(8):e372-81.
193. Spithoff S, Emerson B, Spithoff A. **Cannabis legalization**: adhering to public health best practice. CMAJ. 2015 Nov 3;187(16):1211-6.
194. Wilkinson ST, Stefanovics E, Rosenheck RA. **Marijuana** use is associated with worse outcomes in symptom severity and violent behavior in patients with **posttraumatic stress disorder**. J Clin Psychiatry. 2015 Sep;76(9):1174-80.
195. Keehbauch J, Rensberry M. **Effectiveness, Adverse Effects, and Safety of Medical Marijuana**. Am Fam Physician. 2015 Nov 15;92(10):856-63.
196. Belyea DA, Alhabshan R, Del Rio-Gonzalez AM, et al. Marijuana Use Among Patients With **Glaucoma** in a City With Legalized Medical Marijuana Use. JAMA Ophthalmol. 2015 Dec 23:1-6.
197. Devinsky O, Marsh E, Friedman D, et al. Cannabidiol in patients with **treatment-resistant epilepsy**: an open-label interventional trial. Lancet Neurol. 2015 Dec 23.
198. Levy S, Weitzman ER. Building a Learning **Marijuana Surveillance System**. JAMA Pediatr. 2016 Jan 19:1-2.
199. Auer R, Vittinghoff E, Yaffe K, et al. Association Between Lifetime Marijuana Use and **Cognitive Function** in Middle Age: The Coronary Artery Risk Development in Young Adults (CARDIA) Study. JAMA Intern Med. 2016 Feb 1.
200. Murnion B. **Medicinal cannabis**. Aust Prescr. 2015 Dec;38(6):212-5. Epub 2015 Dec 1. Review.
201. Vidot DC, Prado G, Hlaing WM, et al. **Metabolic Syndrome** Among Marijuana Users in the United States: An Analysis of National Health and Nutrition Examination Survey Data. Am J Med. 2016 Feb;129(2):173-9.
202. Blanco C, Hasin DS, Wall MM, et al. Cannabis Use and **Risk of Psychiatric Disorders**: Prospective Evidence From a US National Longitudinal Study. JAMA Psychiatry. 2016 Feb 17.
203. Grucza RA, Agrawal A, Krauss MJ, et al. Recent Trends in the Prevalence of Marijuana Use and **Associated Disorders** in the United States. JAMA **Psychiatry**. 2016 Feb 10.
204. Vethanayagam D, Saad E, Yehya J. **Aspergillosis** spores and medical marijuana. CMAJ. 2016 Feb 16;188(3):217.
205. Kim HS, Hall KE, Genco EK, et al. **Marijuana Tourism** and Emergency Department Visits in Colorado. N Engl J Med. 2016 Feb 25;374(8):797-8.
206. Patel R, Wilson R, Jackson R, et al. Association of **cannabis use with hospital admission and antipsychotic treatment failure** in first episode psychosis: an observational study. BMJ Open 2016; doi:10.1136/bmjopen-2015-009888.
207. Gunn JK, Rosales CB, Center KE, et al. **Prenatal exposure to cannabis and maternal and child health outcomes**: a systematic review and meta-analysis. BMJ Open. 2016 Apr 5
208. Sherva R, Wang Q, Kranzler H, et al. **Genome-wide** association study of **cannabis dependence severity, novel risk variants**, and shared genetic risks [online March 30, 2016].JAMA Psychiatry. doi:10.1001 /jamapsychiatry.2016.0036.
209. Tsang CC, Giudice MG. **Nabilone** for the Management of Pain. Pharmacotherapy. 2016 Mar.
210. Li AM, Rassekh SR. **Hypotension** associated with ingestion of cannabinoids in two children with cancer. CMAJ. 2016 May 17;188(8):596-7.
211. Manrique-Garcia E, Ponce de Leon A, Dalman C, et al. **Cannabis, Psychosis, and Mortality**: A Cohort Study of 50,373 Swedish Men. Am J Psychiatry. 2016 Apr 22
212. Meier MH, Caspi A, Cerdá M, et al. Associations Between **Cannabis Use and Physical Health Problems in Early Midlife**: A Longitudinal Comparison of Persistent Cannabis vs Tobacco Users. JAMA Psychiatry. 2016 Jun 1.
213. Chaudhry HJ, Hengerer AS, Snyder GB. Medical Board **Expectations for Physicians Recommending Marijuana**. JAMA. 2016 Jun 16.
214. Gates PJ, Sabioni P, Copeland J, Le Foll B, Gowing L. **Psychosocial interventions for cannabis use disorder**. Cochrane Database Syst Rev 2016;5:CD005336. Included studies were heterogeneous in many aspects, and important questions regarding the most effective duration, intensity and type of intervention were raised and partially resolved. Generalisability of findings was unclear, most notably because of the limited number of localities and homogeneous samples of treatment seekers. The rate of abstinence was low and unstable although comparable with treatments for other substance use. Psychosocial intervention was shown, in comparison with minimal treatment controls, to reduce frequency of use and severity of dependence in a fairly durable manner, at least in the short term. Among the included intervention types, an intensive intervention provided over more than four sessions based on the combination of MET and CBT with abstinencebased incentives was most consistently supported for treatment of cannabis use disorder.
215. Hill KP, Weiss RD. **Minimal Physical Health Risk** Associated With Long-term Cannabis Use--But Buyer Beware. JAMA. 2016 Jun 7;315(21):2338-9.
216. Bechtold J, Hipwell A, Lewis DA, et al. Concurrent and Sustained Cumulative Effects of Adolescent Marijuana Use on Subclinical **Psychotic Symptoms**. Am J Psychiatry. 2016 Aug 1;173(8):781-9
217. Bradford AC, Bradford WD. Medical **Marijuana Laws Reduce Prescription Medication Use** In Medicare Part D. Health Aff (Millwood). 2016 Jul 1;35(7):1230-6.
218. Cooper ZD, Haney M. **Sex-dependent** effects of **cannabis**-induced analgesia. Drug Alcohol Depend. 2016 Aug 5.
219. Hoffman SJ, Habibi R. **International legal barriers** to Canada's marijuana plans. CMAJ. 2016 Jul 12;188(10):E215-6.
220. Wang GS et al. **Unintentional pediatric exposures** to marijuana in Colorado, 2009-2015. JAMA Pediatr2016 Jul 25.
221. Wang X, Derakhshandeh R, Liu J, et al. One Minute of **Marijuana Secondhand Smoke** Exposure Substantially Impairs **Vascular Endothelial Function**. J Am Heart Assoc. 2016 Jul 27;5(8).
222. Azofeifa A, Mattson ME, Grant A. **Monitoring Marijuana Use** in the **United States**: Challenges in an Evolving Environment. JAMA. 2016 Sep 1.
223. Compton W, Han B, Jones C, Blanco C, Hughes A. **Marijuana use and use disorders** in adults in the USA, 2002–14: analysis of annual cross-sectional surveys. Lancet Psychiatry 2016; published online Aug 31.
224. Hall W, Lynskey M. Why it is probably too soon to assess the **public health effects of legalisation of recreational cannabis** use in the USA. Lancet Psychiatry 2016; 3: 900–06.
225. Schoeler T, Petros N, Di Forti M, et al. Effects of continuation, frequency, and type of **cannabis** use on relapse in the first 2 years after onset of **psychosis**: an observational study. Lancet Psychiatry. 2016 Aug 23.
226. Parker LJ, Benjamin T, Archibald P, et al. The Association Between **Marijuana** Usage and **Discrimination Among Adult Black** Men. Am J Mens Health. 2016 Aug 24.
227. Patel R, Wilson R, Jackson R, et al. Association of **cannabis** use with **hospital admission and antipsychotic treatment failure in first episode psychosis**: an observational study. BMJ Open. 2016 Mar 3;6(3):e009888
228. Sophocleous A, Robertson R, Ferreira NB, et al. Heavy **Cannabis** Use Is Associated With **Low Bone Mineral Density and an Increased Risk of Fractures**. Am J Med. 2016 Sep 2.
229. Choo EK, Feldstein Ewing SW, Lovejoy TI. **Opioids Out, Cannabis In**: Negotiating the Unknowns in Patient Care for Chronic Pain. JAMA. 2016 Nov 1;316(17):1763-1764.
230. Hinton KL, Chui JS, McWhorter KA, et al. **Cannabinoid Hyperemesis Syndrome**: A Paradoxical Case. Ann Pharmacother. 2016 Dec;50(12):1071-1072.
231. Lankenau S, Fedorova EV, Reed M, et al. **Marijuanan Practices and Patterns of Use** among **Young Adult** Medical Marijuana Patients and Non-Patient Marijuana Users. Drug and Alcohol Dependence. 2016.
232. Wang GS, Le Lait MC, Deakyne SJ, Bronstein AC, Bajaj L, Roosevelt G.Unintentional Pediatric Exposures to Marijuana in Colorado, 2009-2015. JAMA Pediatr. 2016 Sep 6;170(9):e160971.
233.Carliner H, Mauro PM, Brown QL, et al. The **widening gender gap** in marijuana use prevalence in the U.S. during a period of economic change, 2002-2014. Drug Alcohol Depend. 2016 Nov 11;170:51-58.
234. Han BH, Sherman S, Mauro PM, et al. **Demographic trends** among older cannabis users in the United States, 2006-13. Addiction. 2016 Oct 21.
235. Schwitzer T, Schwan R, Albuisson E, et al. Association Between Regular **Cannabis Use and Ganglion Cell Dysfunction**. JAMA Ophthalmol. 2016 Dec 8.
236. Walsh Z, Gonzalez R, Crosby K, et al. **Medical cannabis and mental health**: A guided systematic review. Clin Psychol Rev.2016 Oct 12;51:15-29.
237. Adams AJ, Banister SD, Irizarry L, et al. "**Zombie" Outbreak** Caused by the **Synthetic Cannabinoid AMB-FUBINACA** in New York. N Engl JMed. 2016 Dec 14.
238. Brown QL, Sarvet AL, Shmulewitz D, et al. Trends in **Marijuana Use** Among Pregnant and Nonpregnant Reproductive-Aged Women, 2002-2014. JAMA. 2016 Dec 19.
239. Cerdá M, Wall M, Feng T, et al. Association of state **recreational marijuana laws** with adolescent marijuana use [online Dec 27, 2016].JAMA Pediatr. doi:10.1001/jamapediatrics .2016.3624
240. Santaella-Tenorio J, Mauro CM, Wall MM, et al. **US Traffic Fatalities**, 1985-2014, and Their Relationship **to Medical Marijuana Laws**. Am J Public Health. 2016 Dec 20:e1-e7.
241. Compton WM, Han B, Hughes A, et al. Use of **Marijuana for Medical Purposes** Among Adults in the United States. JAMA. 2017 Jan 10;317(2):209-211.

242. Kim HS, Anderson JD, Saghafi O, et al. **Cyclic vomiting** presentations following marijuana liberalization in Colorado. Acad Emerg Med. 2015 Jun;22(6):694-9.
243. Falkstedt D, Wolff V, Allebeck P, et al. Cannabis, Tobacco, Alcohol Use, and the **Risk of Early Stroke**: A Population-Based Cohort Study of 45 000 Swedish Men. Stroke. 2017 Feb;48(2):265-270.
244. Kilmer B. **Recreational Cannabis** - **Minimizing the Health Risks from Legalization**. N Engl J Med. 2017 Feb 23;376(8):705-707.
245. Ryan SA, Ammerman SD; Committee on Substance Use and Prevention. **Counseling Parents and Teens About Marijuana Use in** the Era of Legalization of Marijuana. Pediatrics. 2017 Feb 27.
246. van Amerongen G, Kanhai K, Baakman AC, et al. Effects on **Spasticity and Neuropathic Pain of an Oral Formulation of Δ9-Tetrahydrocannabinol** in Patients With Progressive **Multiple Sclerosis**. Clin Ther. 2017 Feb 9.
247. Clayton HB, Lowry R, Ashley C et al. Health Risk Behaviors with **Synthetic Cannabinoids Versus Marijuana**. Pediatrics. 2017;139(4):e20162675
248. Hill KP. **Cannabis Use and Risk for Substance Use Disorders** and Mood or Anxiety Disorders. JAMA. 2017 Mar 14;317(10):1070-1071.
249. Laporte C, Vaillant-Roussel H, Pereira B, et al. **Cannabis** and Young Users-A **Brief Intervention** to Reduce Their Consumption (**CANABIC**): A Cluster Randomized Controlled Trial in Primary Care. Ann Fam Med. 2017 Mar;15(2):131-139.
250. Meda SA, Gueorguieva RV, Pittman B, et al. Longitudinal influence of **alcohol and marijuana use** on academic performance in college students. PLoS One. 2017 Mar 8;12(3):e0172213.
251. Ninnemann AL, Jeong Choi H, Stuart GL, et al. Longitudinal Predictors of **Synthetic Cannabinoid** Use in Adolescents. Pediatrics. 2017;139(4):e20163009
252. Hasin DS, Sarvet AL, Cerdá M, et al. **US adult illicit cannabis use, cannabis use disorder, and medical marijuana laws**: 1991-1992 to 2012-2013 [online Apr 26, 2017].JAMA Psychiatry. doi:10.1001/jamapsychiatry.2017.0724
253. Richards JR, Gordon BK, Danielson AR, et al. Pharmacologic **Treatment of Cannabinoid Hyperemesis Syndrome**: A Systematic Review. Pharmacotherapy. 2017 Mar 31.
254. Volkow ND, Han B, Compton WM, Blanco C. **Marijuana Use During Stages of Pregnancy** in the United States. Ann Intern Med. 2017 Apr 18.
255. Bradford AC, Bradford WD. **Medical Marijuana Laws May Be Associated With A Decline In The Number Of Prescriptions** For Medicaid Enrollees. Health Aff (Millwood). 2017 Apr 19.
256. Patel S, Williams JW Jr, Wallace RB. What We Do (and Don't) Know About the Health Effects of Cannabis and **Whether Marijuana Is Medicine**. Ann Intern Med. 2017 Apr 4.
257. Reis JP, Auer R, Bancks MP, et al. **Cumulative Lifetime Marijuana Use and Incident Cardiovascular Disease** in Middle Age: The Coronary Artery Risk Development in Young Adults (CARDIA) Study. Am J Public Health. 2017 Apr;107(4):601-606.
258. Charilaou P, Agnihotri K, Garcia P, et al. **Trends of Cannabis Use Disorder in the Inpatient**: 2002 to 2011. Am J Med. 2017 Jun;130(6):678-687.
259. Devinsky O, Cross JH, Laux L, et al. Trial of **cannabidiol** for drug-resistant **seizures in the Dravet syndrome**. N Engl J Med 2017;376:2011-20.
260. Newton-Howes G. **Cannabis as medicine**. BMJ. 2017 May 16;357:j2130.