



Arthritis Talks: Non-surgical Approaches for Arthritis Treatment

Dr. Gordon Ko, Psychiatrist
November 2, 2023

Presenters



Sian Bevan

Chief Science Officer
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(Moderator)



Dr. Gordon Ko

Physiatrist
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Webinar tips

- Use the **Q&A** section to ask the presenters your questions. Some of the questions will be chosen for the live question period at the end of the webinar.
- Click on the **Chat** box to connect with other participants and the Arthritis Society's chat moderator.
- If you have further issues, email arthritistalks@arthritis.ca

The screenshot shows the Arthritis Society Canada webinar interface. At the top center is the Arthritis Society Canada logo. Below the logo are two buttons: 'Q&A' and 'Chat'. At the bottom left is an 'Audio Settings' button. At the bottom right is a red 'Leave' button. A yellow callout box at the top right points to a red icon in the top right corner of the interface, with the text 'Click on the red icon to exit out of the Q&A or Chat'. A yellow callout box at the bottom left points to the 'Audio Settings' button, with the text 'Click here to access your audio settings'. A yellow callout box at the bottom right points to the 'Chat' button, with the text 'Click here to chat or to submit a question'. On the right side, a 'Q&A' window is open, displaying a 'Welcome to Q&A' message and a text input field labeled 'Type your question here...'.

Overview

[1]

Integrative Medicine



[2]

Functional Medicine



[3]

Medical Cannabis



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What is Integrative Medicine?



What is Integrative Medicine?

Non-mainstream medicine:

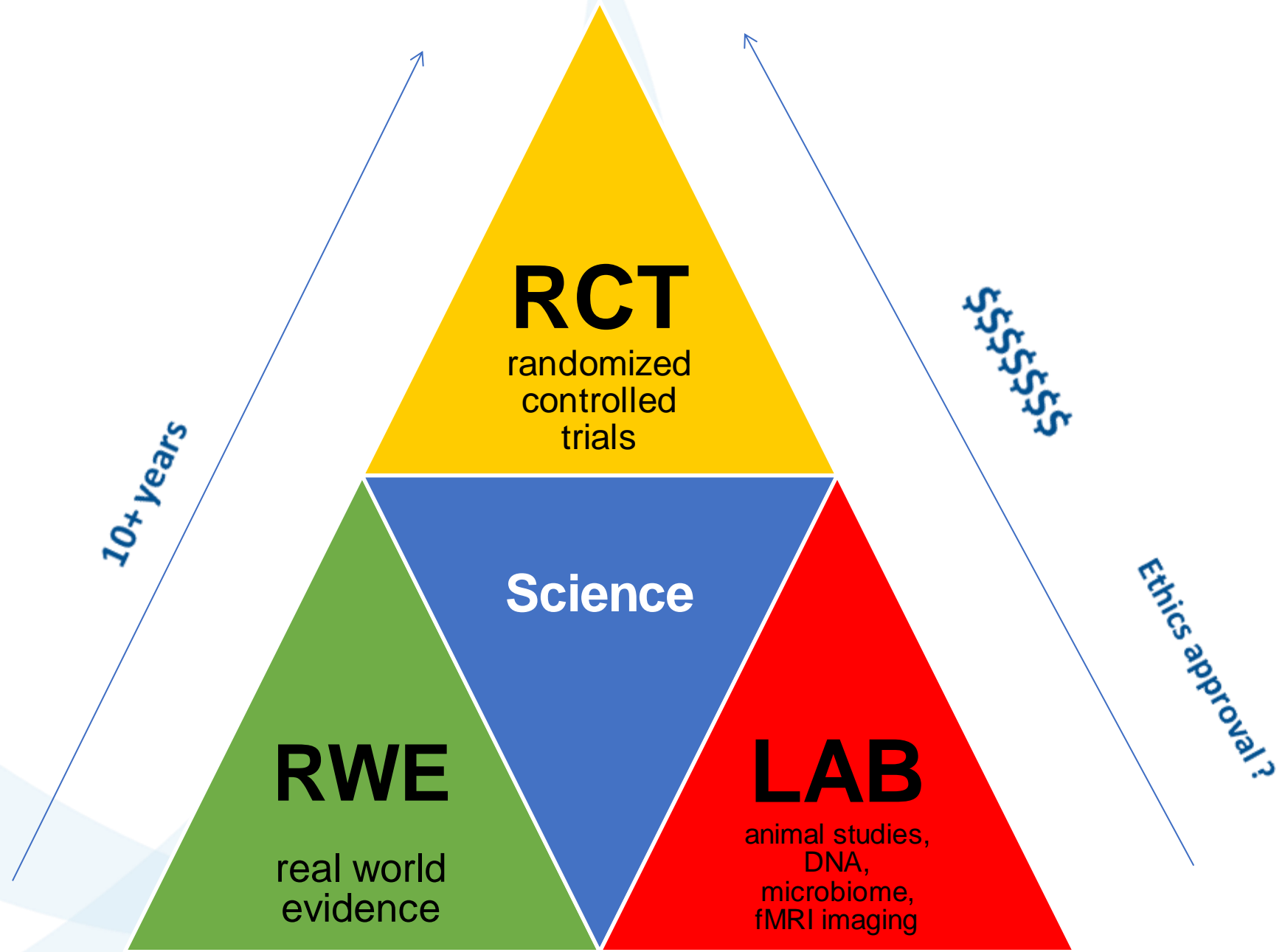
Alternative Medicine—**in place of** conventional drugs & surgery

Complementary—**together with** conventional drugs & surgery

INTEGRATIVE—coordinated with conventional which is also a holistic, patient-focused approach to health care and wellness.

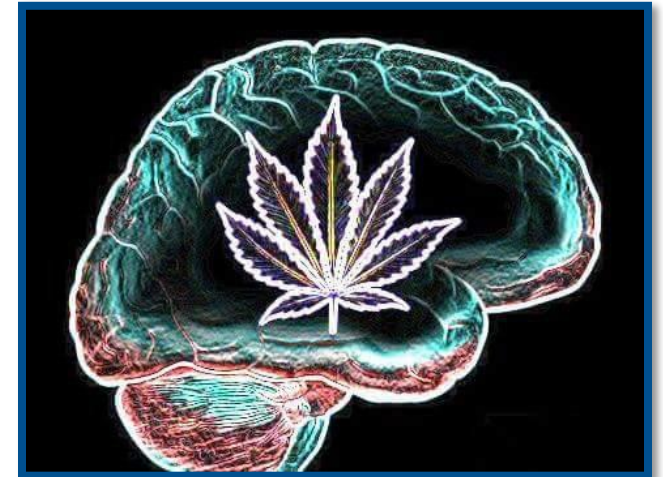
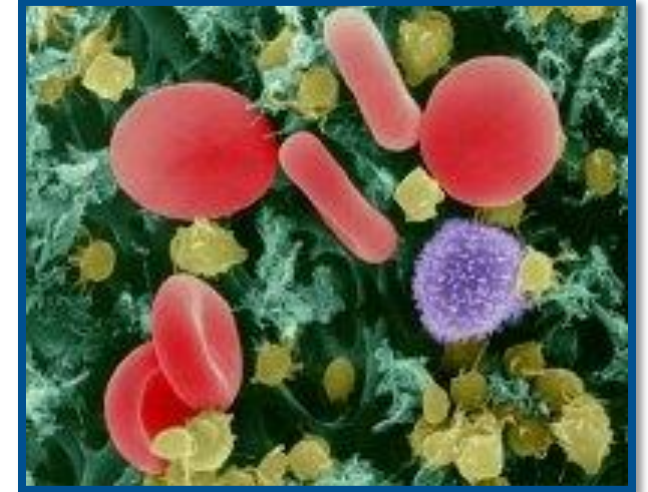


Mainstream medicine: in hospitals



Three emerging areas

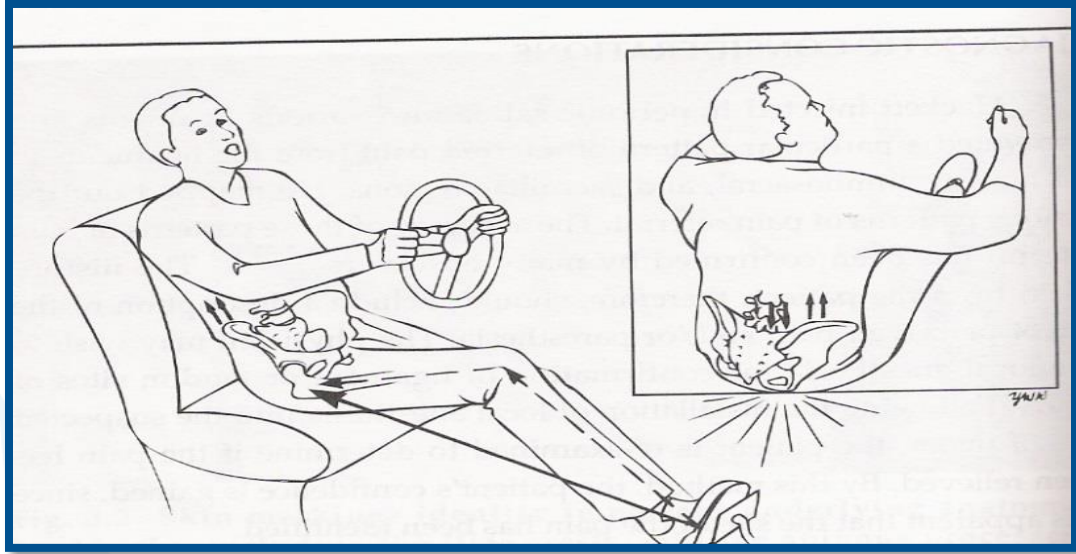
- ▼ **Regenerative Medicine**
- ▼ **Functional Medicine**
- ▼ **Neuroplasticity (Mind-body Medicine)**



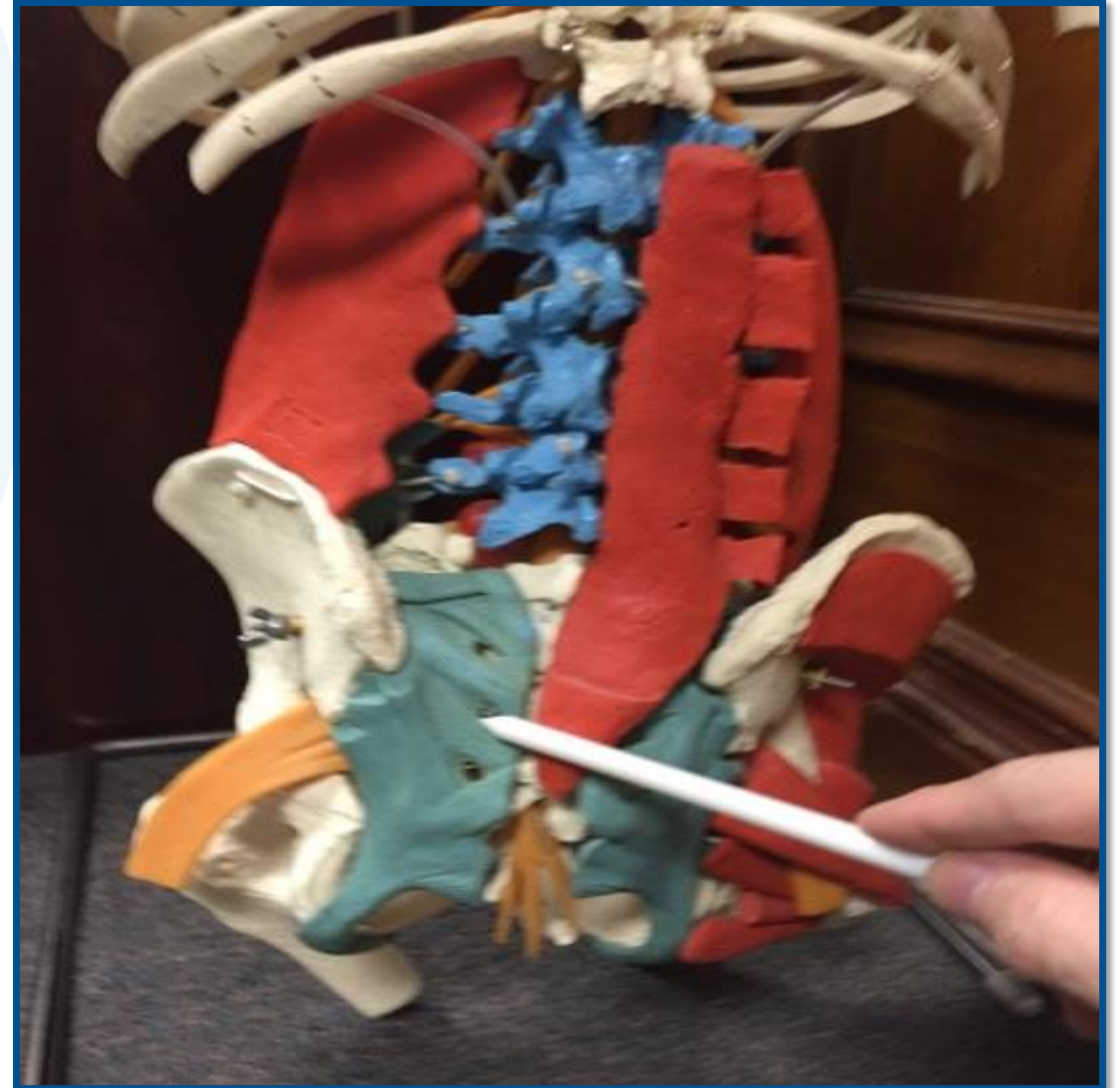
Platelet-Rich Plasma (PRP)



Sacroiliac Joint Ligament Laxity



DEXTROSE → PLATELET-RICH PLASMA
PROLOTHERAPY INJECTIONS INTO
LIGAMENTS



Case Study

Case series of ultrasound-guided platelet-rich plasma injections for sacroiliac joint dysfunction

Gordon D. Ko^{a,*}, Sean Mindra^b, Gordon E. Lawson^c, Scott Whitmore^d and Leigh Arseneau^d

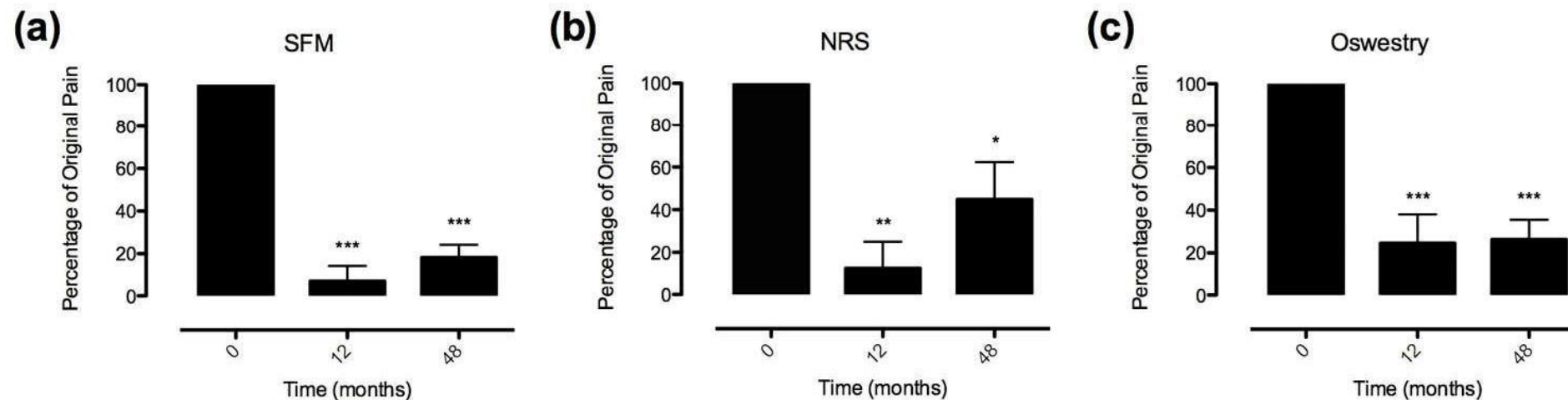
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Significant improvements in PAIN (Short-Form McGill Pain Questionnaire and Numerical Rating Scale for Pain) and in FUNCTION (Oswestry Low Back Pain & Disability Questionnaire) after 2 treatments **at 1 and 4 years follow-up.**



Randomized controlled trials (RCTs) comparing PRP vs. cortisone in chronic low back pain

Steroid vs. Platelet-Rich Plasma in Ultrasound-Guided Sacroiliac Joint Injection for Chronic Low Back Pain

Varun Singla MD ✉, Yatindra K. Batra MD, Neerja Bharti DNB, Vijay G. Goni MS, Neelam Marwaha MD

First published: 27 September 2016
<https://doi.org/10.1111/papr.12526>

A Prospective Study Comparing Platelet-Rich Plasma and Local Anesthetic (LA)/Corticosteroid in Intra-Articular Injection for the Treatment of Lumbar Facet Joint Syndrome





Jiuping Wu MSc, Jingjing Zhou MSc, Chibing Liu MSc, Jun Zhang MSc, Wei Xiong MSc, Yang Lv MSc, Rui Liu MSc, Ruiqiang Wang MSc, Zhenwu Du MD, PhD, Guizhen Zhang MD, PhD, Qinyi Liu MD, PhD ✉

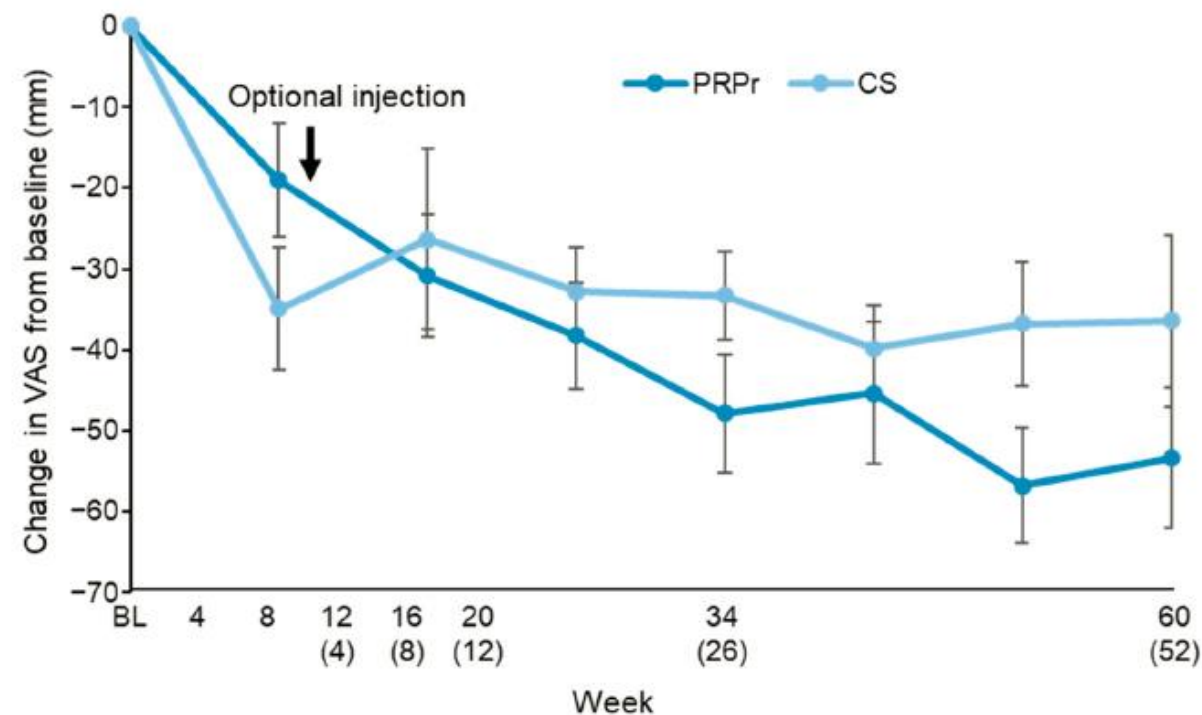
First published: 18 December 2016
<https://doi.org/10.1111/papr.12544>



Article

Platelet-Rich Plasma Releasate versus Corticosteroid for the Treatment of Discogenic Low Back Pain: A Double-Blind Randomized Controlled Trial




Koji Akeda ^{1,*} , Kohshi Ohishi ², Norihiko Takegami ¹, Takao Sudo ¹, Junichi Yamada ¹ , Tatsuhiko Fujiwara ¹, Rui Niimi ³, Takeshi Matsumoto ², Yuki Nishimura ⁴, Toru Ogura ⁴, Satoshi Tamaru ⁴  and Akihiro Sudo ¹ 





Systematic Review

Systematic Review of Platelet-Rich Plasma for Low Back Pain

Edilson Silva Machado ^{1,2,*} , Fabiano Pasqualotto Soares ¹ , Ernani Vianna de Abreu ^{1,3},
Taís Amara da Costa de Souza ¹, Robert Meves ⁴, Hans Grohs ⁴, Mary A. Ambach ⁵, Annu Navani ⁶,
Renato Bevillaqua de Castro ⁷, Daniel Humberto Pozza ^{8,9}  and José Manuel Peixoto Caldas ^{10,11}

Conclusions: In this systematic review, we analyzed articles from English, Spanish and Russian language, from large databases and grey literature. **PRP was in general an effective and safe treatment for degenerative LPB. Positive results were found in almost studies, a small number of adverse events were related, the risk of bias of the RCTs was low.** Based on the evaluation of the included studies, we **graded as level II** the quality of the evidence supporting the use of PRP in LBP. Large-scale, multicenter RCTs are still needed to confirm these findings.



OPEN ACCESS

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Efficacy and safety of platelet-rich plasma injections for the treatment of osteoarthritis: a systematic review and meta-analysis of randomized controlled trials

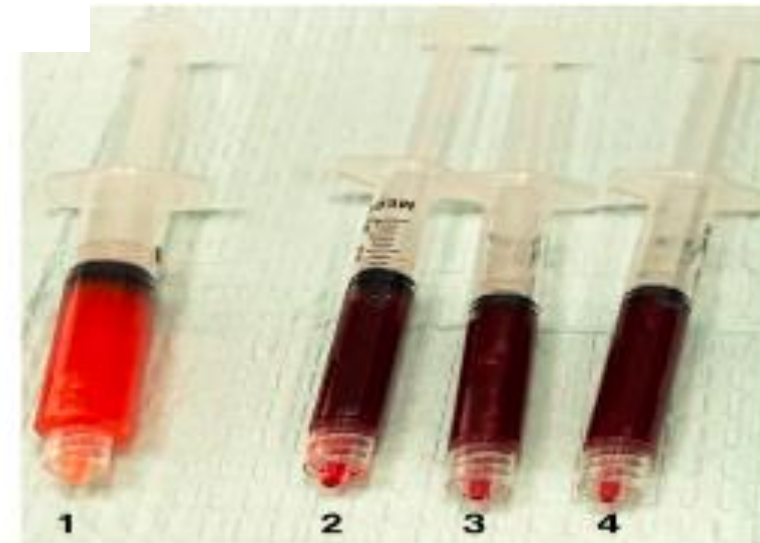
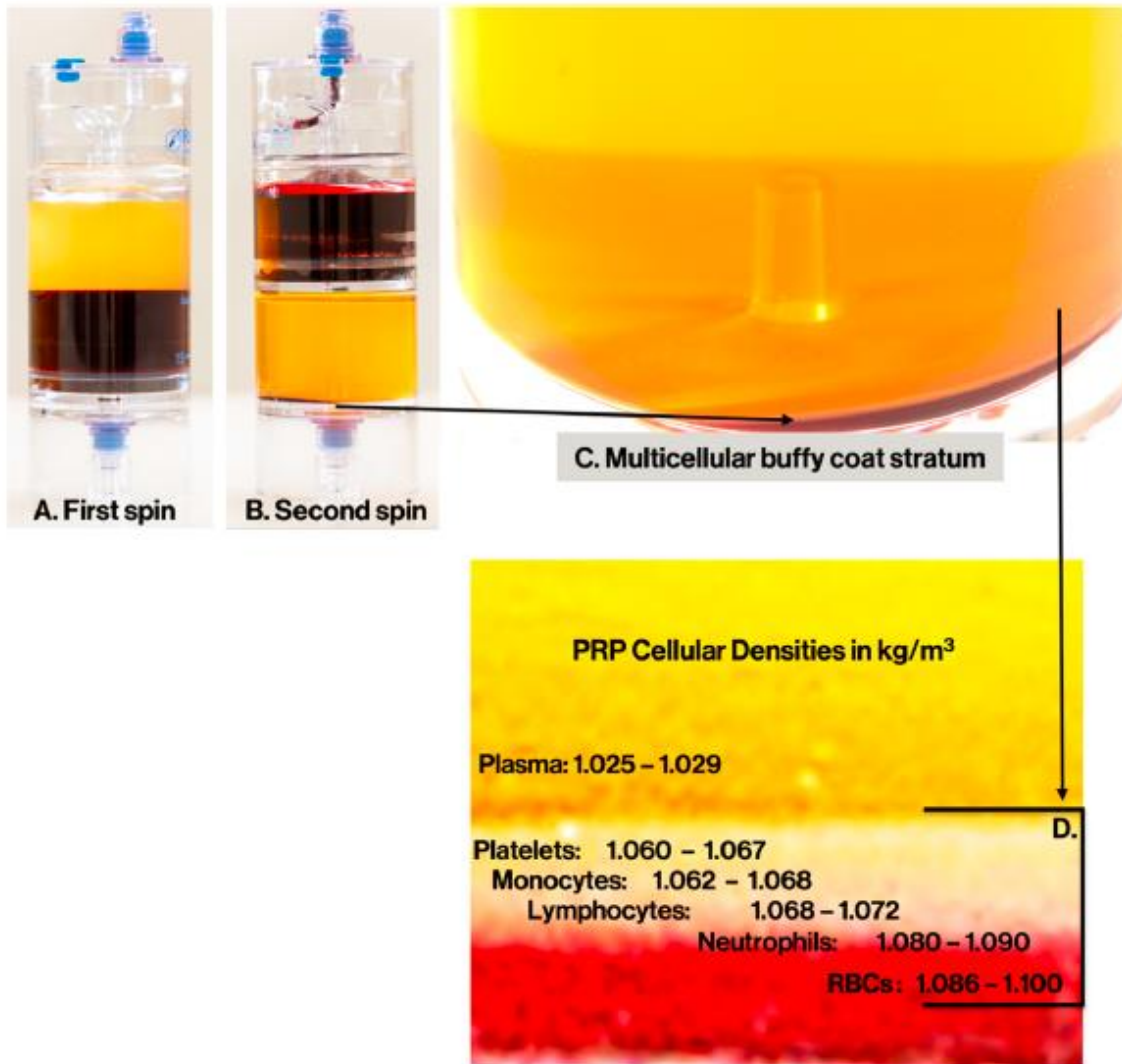
Yongqing Xiong[†], Cheng Gong[†], Xumiao Peng[†], Xianlei Liu,
Xinda Su, Xi Tao, Ying Li^{*}, Youliang Wen^{*} and Wei Li^{*}

Conclusion: PRP injection therapy can **safely and effectively improve functional activity in patients with OA and produce positive analgesic effects in patients with KOA, TMJOA, and AOA**. However, PRP injection therapy did not significantly reduce pain symptoms in patients with HOA. In addition, the analgesic effect of **LP-PRP was greater** than that of LR-PRP.

Review

Modifying Orthobiological PRP Therapies Are Imperative for the Advancement of Treatment Outcomes in Musculoskeletal Pathologies

Peter A. Everts ^{1,*}, Timothy Mazzola ², Kenneth Mautner ³, Pietro S. Randelli ⁴ and Luga Podesta ⁵



	Syringe 1: NP-PRP	Syringe 2: NR-PRP	Syringe 3: NR-PRP	Syringe 4: NR-PRP
Platelet Dose, × 10 ⁹	9.1	3.9	3.5	3.3
Injected volume, mL	4.5	2.4	2.1	2.0
Monocytes, × 10 ⁶ /mL	5.73	4.39	4.39	4.39
Neutrophils, × 10 ⁶ /mL	0.60	6.13	6.13	6.13
RBCs, × 10 ⁹ /mL	0.08	1.23	1.23	1.23
Neutrophil Reduction	98%			
Knee Structures Injected	Intra-articular knee joint Peri-articular synovial capsule	Medial meniscus tear Meniscus femoral ligament Meniscus tibial ligament	Medial Collateral Ligament	ACL

AAOMed.org: drugs affecting PRP results (Nov 2022)

Medication	Evidence?	Risk of Stopping?	When to stop?	When to restart?	Additional considerations
ASA	Yes	Primary or Secondary?	7 days / ASRA	7 days / ASRA	<u>Rx'ing MD/DO</u>
Plavix	Yes	Yes	7 days / ASRA	ASRA	<u>Rx'ing MD/DO</u>
Anticoagulants	Maybe	Yes	ASRA	ASRA	<u>Rx'ing MD/DO</u>
NSAID (non-selective)	Yes	No	7 days	7 days	
COX-2 specific NSAIDs	No?	No	5 days	7 days	
Acetaminophen	No	No	N/A	N/A	
Statins	Yes	Primary or Secondary?	2 weeks	7 days	<u>Rx'ing MD/DO</u> (If secondary)
Cannabis	Yes	No	7-14 days	7 days	
Supplements*	Yes	No	7 days	7 days	

*COX-Inhibitor supplements: Turmeric/Curcumin, Omega-3/fish-oils, Ginger, Salicin (Willow Bark), Echinacea, Garlic, Ginkgo, Ginseng, Grape Seed extract, Kava Kava, Saw palmetto, St John's Wort

Don't inject blood if the blood's not healthy!-Dr. G. Ko

Case Series

Platelet Rich Plasma for Treatment of Rheumatoid Arthritis: Case Series and Review of Literature

Humeira Badsha ¹, Ghita Harifi,¹ and William D. Murrell^{2,3,4,5}

¹Dr. Humeira Badsha Medical Center, Dubai, UAE

²Emirates Integra Medical & Surgery Centre, Dubai, UAE

³Emirates Healthcare, Dubai, UAE

⁴Seventh- Medical Support Unit-Europe, Kaiserslautern, Germany




⁵Lansthul Regional Medical Center, Division Surgery, Dept. Orthopaedic Surgery, Landstul, Germany

The Cooper Rowan
Medical Journal

Mazzei N, Hall A, Clinton C. Treatment of Knee Synovitis from Psoriatic Arthritis with Platelet Rich Plasma Injection. *CRMJ*.;54-57. [doi:10.31986/issn.2578.3343.vol5iss1.7](https://doi.org/10.31986/issn.2578.3343.vol5iss1.7)

Case Reports and Case Series

Treatment of Knee Synovitis from Psoriatic Arthritis with Platelet Rich Plasma Injection

Nicolle Mazzei, OMS-IV¹ ^a, Arielle Hall, OMS-III² , Cody Clinton, DO³ 

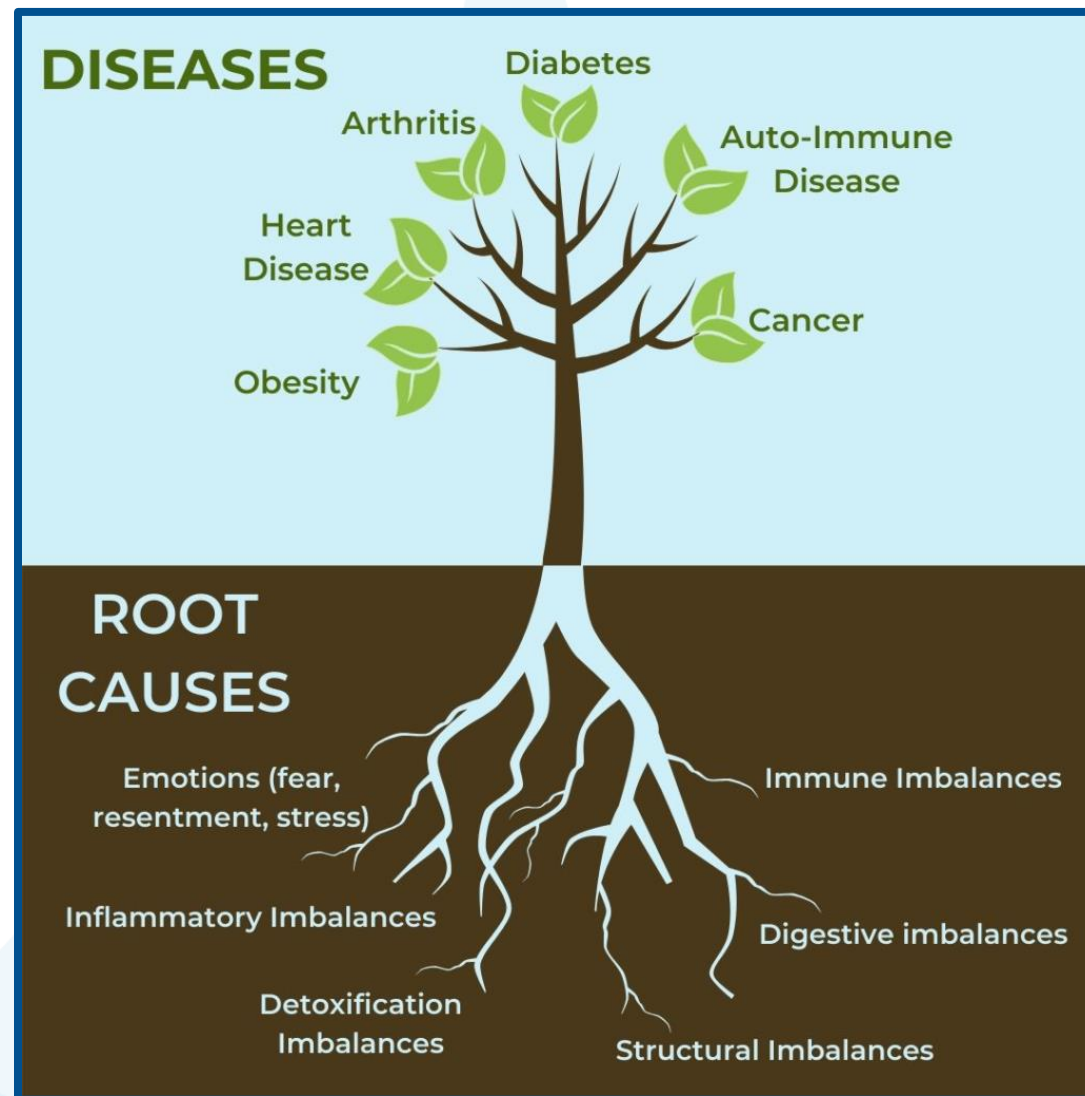
¹ Rowan University School of Osteopathic Medicine, ² Rowan University School of Osteopathic Medicine, ³ Cooper Medical School of Rowan University

Regenerative Medicine Summary

- 1) Platelet-rich plasma injections (PRP)** is an emerging evidence-based treatment approach for chronic low back pain and osteoarthritis-TMJ, knee, ankle (**level 2 evidence**)
- PRP is available in Canada but still not considered mainstream for arthritis management (i.e. **not covered by Provincial Health Plans**).
- For osteoarthritis, leucocyte-poor (low WBCs) PRP is more effective than leucocyte-rich (with WBCs) PRP.** For chronic tendonitis, LR-PRP is more effective. Dextrose prolotherapy may also be useful for chronic sacroiliac joint ligament laxity pain, knee OA and TMJ pain.
- There is **emerging research** (case studies) for other conditions including rheumatoid and psoriatic arthritis.
- Adipose and Bone Marrow Stem cells (combined with PRP)** treatments are available in the USA but not yet in Canada (awaiting results of further completed RCTs for Health Canada approval).
- To explore this as a treatment approach, consult with a MD trained in ultrasound/ x-ray guided injections through the **Canadian Association of Orthopaedic Medicine (CAOM.ca)** or equivalent
- For optimal results: **“There’s no point injecting blood, if the blood’s not “healthy”!** Do your pre-rehab and post-rehab!



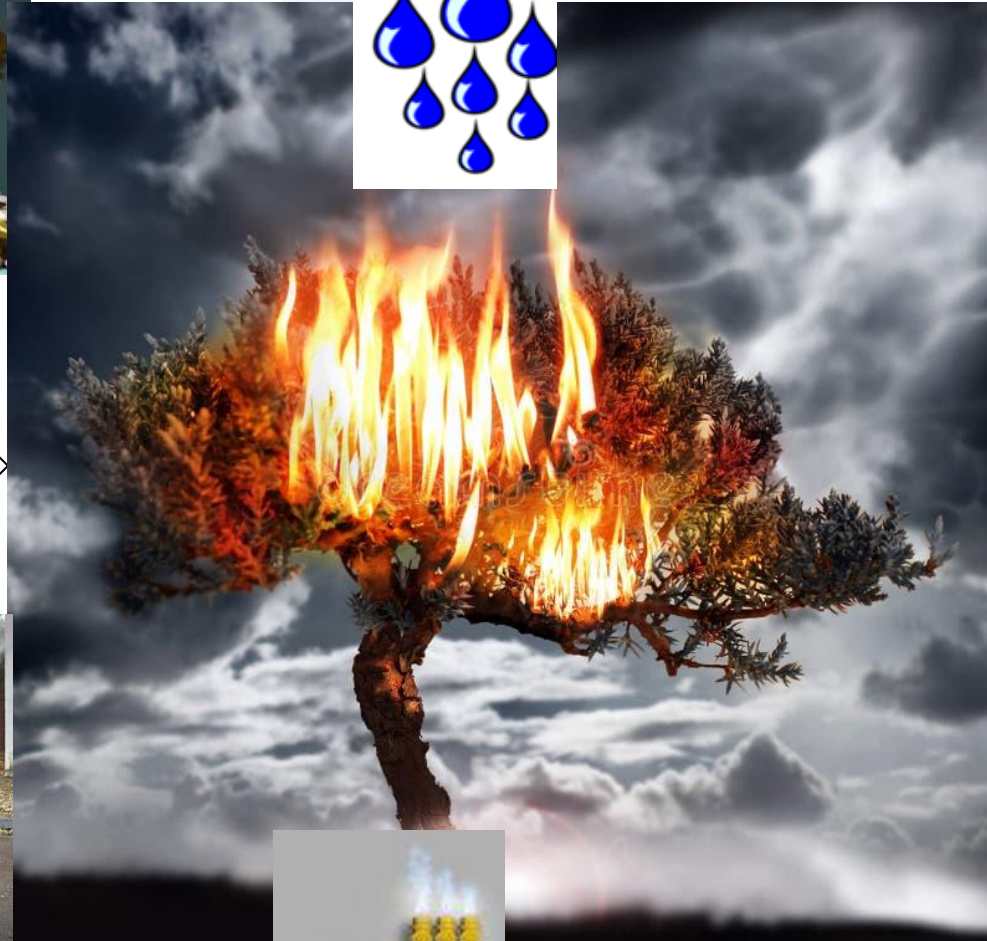
What is Functional Medicine?



Drops of **water** for the fire like Tylenol, Advil + other anti-inflammatories, muscle relaxants, anti-depressants, opioids, neuropathic pain drugs, sleeping pills

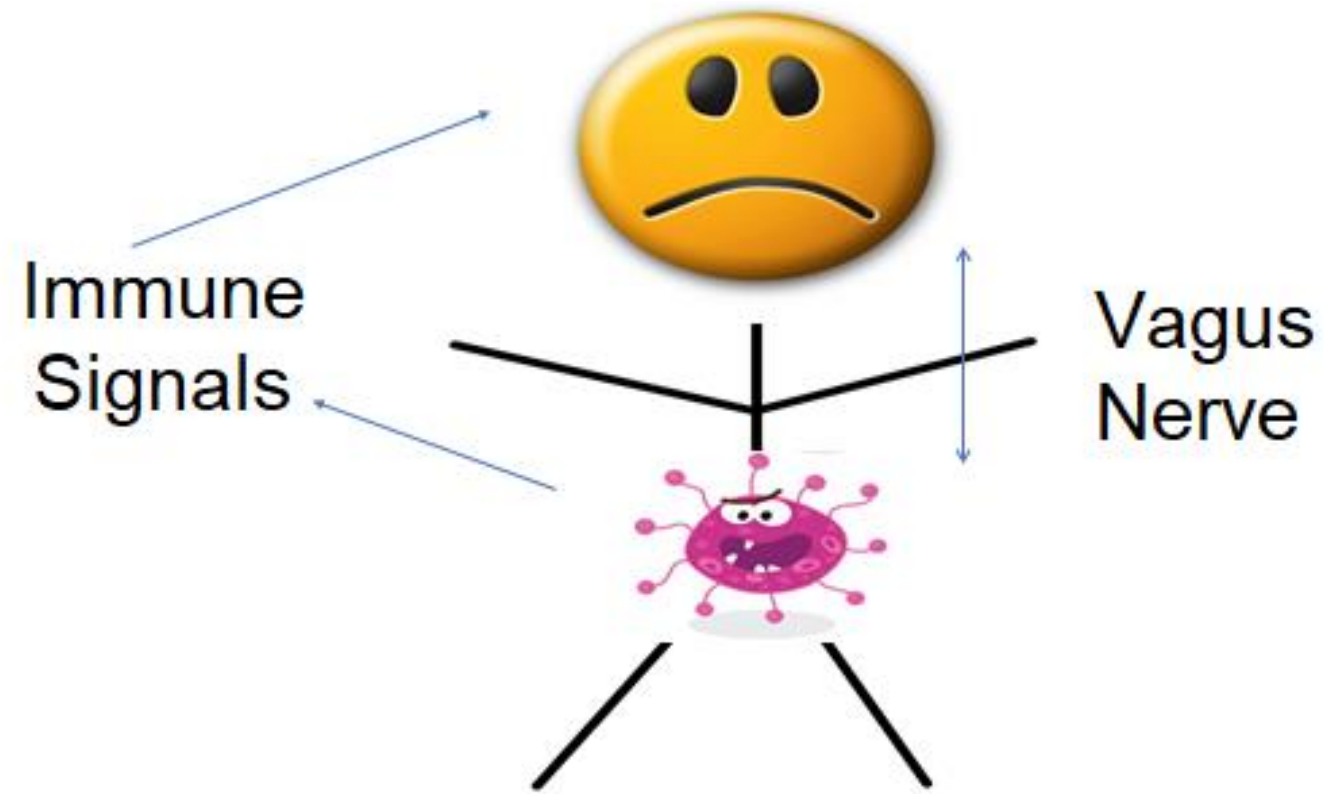


Cortisone injections, nerve blocks, Visco, **DMARDs**, **biologics**, **biosimilars**

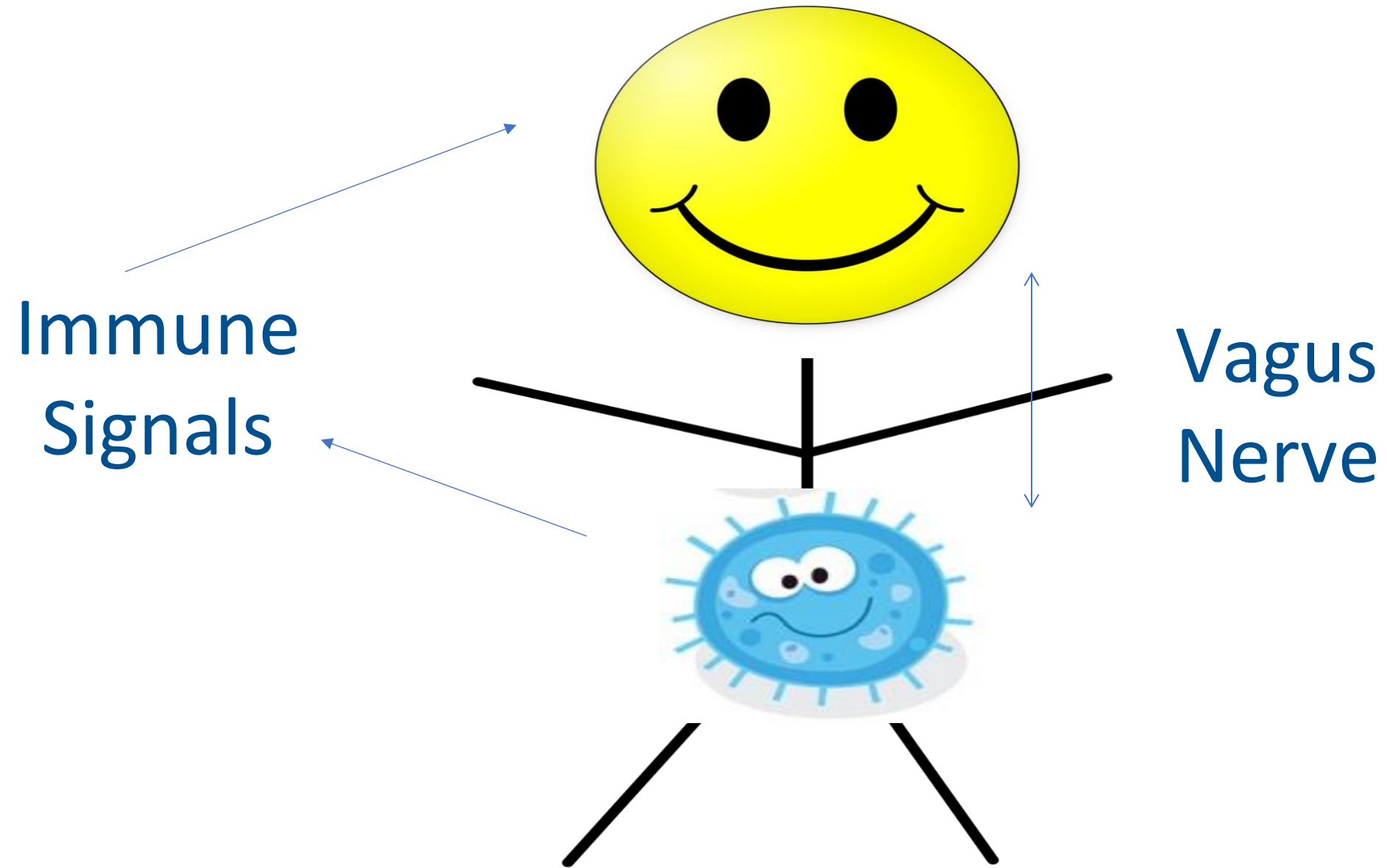


Functional Medicine: identify and eliminate the **gasoline fueling "FIT"**
Food (Gut). Infection (Lyme, viral, parasites). Toxins (Heavy metal, pesticide, mould)

Brain – Immune System - Gut



Brain – Immune system – Gut



Real World Evidence: Data analytics e.g. U.K. Biobank




- ▼ Charitable organization collecting data on genetic predisposition and environmental exposure to the development of disease
- ▼ 500,000 volunteers in UK ages 40-69 from 2006 followed for at least 30 years
- ▼ Automated questionnaires; interviews on lifestyle, medical history, nutritional habits; measurements on height, weight, BP, lung VC, bone density, IOP etc; blood and urine samples; preserved for DNA extraction
- ▼ All disease events, drug prescriptions, deaths recorded in database (centralized UK National Health Service)
- ▼ Data extraction anonymous; started in 2017 with ~1.3 million hospitalizations, 40,000 cancer incidents-> 14,000 deaths.

Ultra-processed foods linked to rheumatoid and knee osteoarthritis



Article

Nutrition and Rheumatoid Arthritis Onset: A Prospective Analysis Using the UK Biobank

Camilla Barbero Mazzucca^{1,2}, Lorenza Scotti³, Giuseppe Cappellano^{1,2} , Francesco Barone-Adesi^{3,†}  and Annalisa Chiocchetti^{1,2,*} 

Ultra-Processed Food Consumption, Genetic Susceptibility, and the Risk of Hip/Knee Osteoarthritis

32 Pages

Posted: 24 Jan 2023

Yingliang Wei

(https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=5664725)

China Medical University - Department of Orthopedics



Ultra-processed foods = more depression and anxiety



Lane M.M. et.al. Ultra-Processed Food Consumption and Mental Health: a Systematic Review and Meta-Analysis of Observational Studies. **Nutrients 2022.**

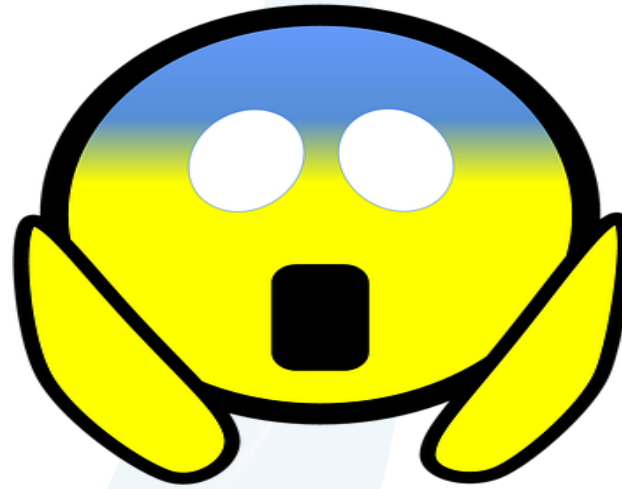
Hecht EM et.al. Cross-sectional examination of ultra-processed food consumption and adverse mental health symptoms. **Public Health Nutrition 2022.**

Ultra-processed foods = bad for brain



Li H et.al. Association of Ultraprocessed Food Consumption with Risk of Dementia: a prospective cohort study. **Neurology** 2022. (717,333 person-years –biobank 19% lower risk)
Goncalves NG et.al. Association between Consumption of Ultraprocessed Food and Cognitive decline. **JAMA Neurology** 2023. (10,700x9yrs- 25-28% lower memory, verbal fluency).

Ultra-processed foods = cancer



- ▼ Every 10% increase in UPF = 16% increase in breast cancer deaths and 30% increase in ovarian cancer deaths
- ▼ Men have 29% increased colon cancer risk.

Chang K et.al. Ultra-processed food consumption, cancer risk and cancer mortality: a large-scale prospective analysis within the UK Biobank. **Lancet 2023**.-> 197,426-10yrs

Wang L et.al. Association of Ultra-processed food consumption with colorectal cancer risk among men and women: results from three prospective US cohort studies. **BMJ 2023**

Functional Medicine Gut Foundation #1

Cut the “CRAP”

Calorie-

Rich sugary snacks + high fructose corn syrup

Alcohol

Processed junk food with trans-fat,
MSG, deli meats (nitrites), fried (omega 6)



#2: READ LABELS: 5-10-10-5

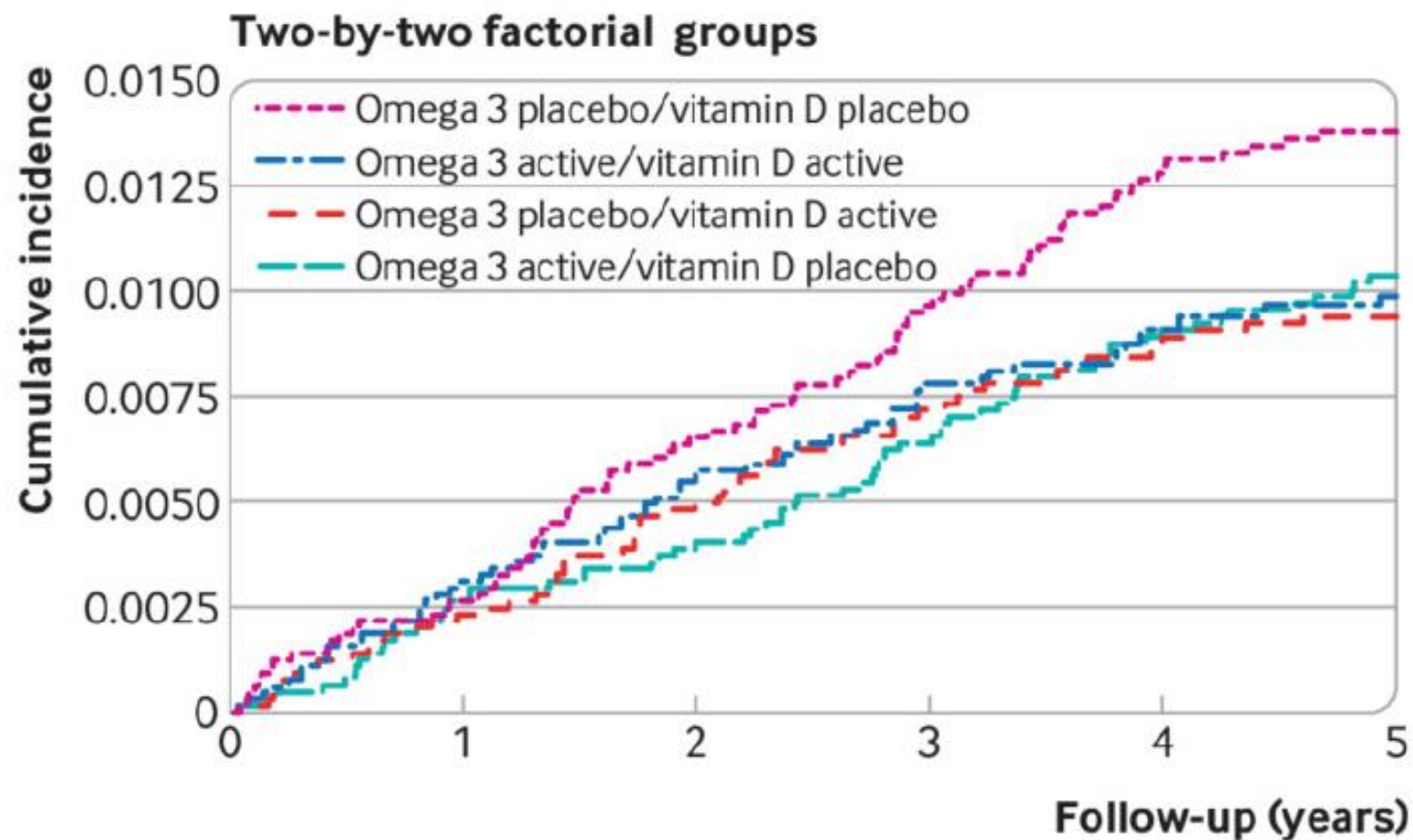
- < 5 ingredients
- < 10 gm sugars
- > 10 gm protein
- > 5 gm fibre
- Carb: Fibre < 5

Nutrition Facts	
Serving Size	1 Pastry (50g)
Servings per Package	8
Amount/Serving	
Calories	210 • Fat Calories 60
	% Daily Value*
Total Fat 7g	11%
Saturated Fat 1.5g	8%
Cholesterol 0mg	0%
Sodium 180mg	8%
Total Carbohydrate 34g	11%
Dietary Fiber 1g	4%
Sugars 17g	
Protein 3g	
Vitamin A 10% • Vitamin C 0% • Calcium 0%	
Iron 10% • Thiamin 10% • Riboflavin 10%	
Niacin 10% • Vitamin B ₆ 10% • Folic Acid 10%	
Phosphorus 4%	
* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories 2,000 2,500
Total Fat	Less than 65g 80g
Sat. Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram: Fat 9 • Carbohydrate 4 • Protein 4	
Ingredients: Brown sugar cinnamon filling (brown sugar, dextrose, partially hydrogenated soybean oil, enriched wheat flour, crackermeal, cinnamon, dried egg whites, soy lecithin), enriched wheat flour, partially hydrogenated soybean oil, sugar, corn syrup, water, dextrose, salt, high fructose corn syrup, leavening (baking soda, sodium acid pyrophosphate, monocalcium phosphate, calcium sulfate), gelatin, caramel color, niacinamide, reduced iron, vitamin A palmitate, pyridoxine hydrochloride (vitamin B ₆), riboflavin (vitamin B ₂), thiamin hydrochloride (vitamin B ₁) and folic acid.	
CONTAINS WHEAT AND EGG INGREDIENTS	

Vitamin D and marine omega 3 fatty acid supplementation and incident autoimmune disease: VITAL randomized controlled trial

BMJ 2022; 376 doi: <https://doi.org/10.1136/bmj-2021-066452> (Published 26 January 2022) Cite this as: BMJ 2022;376:e066452

25,871 adults
>50 years old
followed for 5.3
years



**Vitamin D3 2000
iu/ day reduced
risk by 22%;**

**Omega 3 1000
mg/day reduced
risk by 15%**

Omega 3 placebo/vitamin D placebo: reference
Omega 3 active/vitamin D active: hazard ratio 0.69 (95% CI 0.49 to 0.96)
Omega 3 placebo/vitamin D active: hazard ratio 0.68 (95% CI 0.48 to 0.94)
Omega 3 active/vitamin D placebo: hazard ratio 0.74 (95% CI 0.54 to 1.03)

#3: Titrate based on 25(OH) vitamin D nmol/L levels...

- ▼ **Levels below 50 nmol/ L:** higher risk for fibromyalgia
 - > 80: decreased risk for osteoporotic hip fracture by 30%, decreased risk of falls by 17%
 - >100: decreased severe covid
 - > 130: decreased risk for colon, breast, prostate, lung cancer by up to 50%
- ▼ **Aim for optimal levels: 100-170 nmol/L**
 - Note: 2.5nmol/L = 1 ng/ml (40-68 ng/ml)
 - Potential toxicity > 375 nmol/ L (150 ng/ml)
- ▼ **Take D3 form: 2000-4000 units/day (50-100 ug/ day)**
 - For every \uparrow 1000 units = \uparrow 20-25 nmol/L over 3 months (note 1000 i.u. = 25 ug)
 - T1/2 life is 2 months—may take 10 months to reach steady state
 - Sunlight can result in 5-10,000 i.u.
- ▼ **Caution if history of kidney stones or hypercalcemia** (check urinary calcium/ creatinine ratio <1)



Add Vitamin K2 100ug/day to ensure calcium -> bones, not heart
("The Calcium Paradox" by Dr. Kate Rheume-Bleu ND.)
Ensure adequate Magnesium levels too !

#4: Omega 3 practical tips

- ▼ **Take Omega 3, NOT Omega 3-6-9**
 - Read labels → at least EPA 400mg (for pain) and DHA 200mg (for brain) per capsule (not per serving)
 - 1-2 capsules/ day = heart health
 - 4-6 capsules/ day x 3 months = reduced pain and inflammation
 - If burpy, nausea → enteric-coated capsules and/or freeze them.
- ▼ **Watch blood thinning at higher doses (> 5000mg EPA + DHA/day)**
 - Reduce → stop 1-2 weeks before surgery, colonoscopy, dental work
 - Oils → careful with active gall bladder disease
 - Calories → reduce bad fats (esp trans-fats), slower titration in diabetics
 - Re-esterified Triglyceride form better than Ethyl Ester for absorption
 - Quality: check www.ifosprogram.com or certifications.nutrasource.ca
- ▼ **Genomics testing can help take guesswork out to determine what may be effective**

Supplement Facts		
Serving Size 2 Soft Gels		
	Amount Per Serving	% DV
Calories	20	
Total Fat	2 g	3%**
Protein	<1 g	<1%**
Vitamin E (as natural d-alpha tocopherol)	13.4 mg	89%
Norwegian Fish Oil	2 g	†
Total Omega-3 Fatty Acids*	1,200 mg	†
EPA (Eicosapentaenoic Acid)*	600 mg	†
DHA (Docosahexaenoic Acid)*	400 mg	†

** Percent Daily Values are based on a 2,000 calorie diet.
 † Daily Value (DV) not established. *Reported as ethyl ester.

Other Ingredients: Soft gel shell (beef gelatin, glycerin, water), mixed tocopherols. Contains fish (anchovy, sardine and mackerel).

Directions: Adults: take two soft gels daily at **mealttime.**

PURITY GUARANTEED

This product is regularly tested by independent FDA registered laboratories. It has been determined to be fresh and fully potent (per AOCS international protocols) and is free of detrimental levels of mercury, cadmium, lead, PCBs and 28 other contaminants.

Functional Medicine Summary

- 1) **Address root causes**---starting with your lifestyle habits and exposures that affect gut (microbiome) health.
- 2) **Test, don't guess**; but avoid rabbit holes (false positive results), invest wisely in your health.
- 3) **Check with family MD/ RN practitioner/ pharmacist** on use of supplements and medications to avoid interactions
- 4) **Read labels** (supplements and food)
- 5) **Do no harm: start with topical Rx** (before oral → injectables/inhalables)
- 6) Eat, move, sleep for better health: <https://youtu.be/XVtupZRLKnk>
- 7) Work with a **functional medicine doctor** who is up to date on current studies and practices www.IFM.org

For chronic arthritis - move away from synthetic foods to more natural plant-based whole foods



For chronic arthritis consider natural plant-based medicine



Marijuana IS Medicine.

"Every 19 minutes someone dies from a prescription drug overdose. It doesn't happen with marijuana."

-Dr. Sanjay Gupta

@MarijuanaCure

The advertisement features a smiling man in a white lab coat holding a cannabis leaf. A green speech bubble contains the text. The background is white with a blue border.



Why do some people living with arthritis find relief with medical cannabis?



Start low, go slow

Neurological

**Neuropathic pain
neuromodulation**

↑CBD



↓THC

**Anti-inflammatory
immunomodulation**

Biochemical

Anti-anxiety

Psychological

**Arthritis
“nociceptive” pain**



What are the primary side effects related to medical cannabis?



THC side effects

Most common

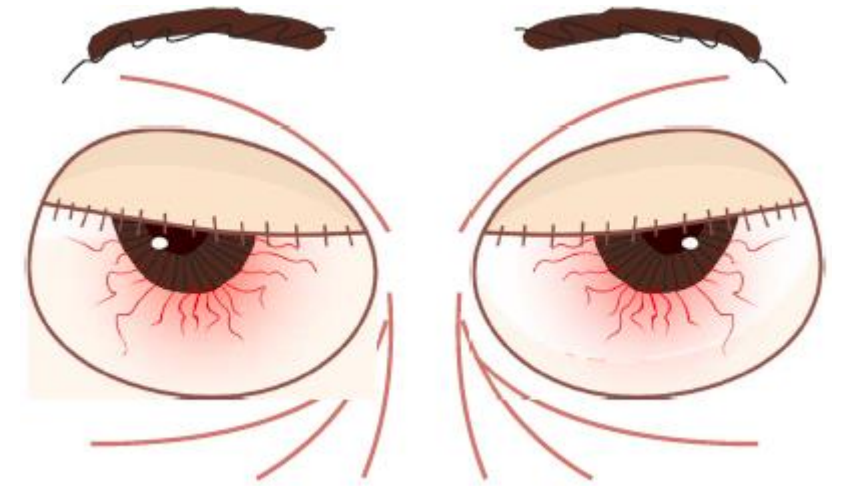
- ▼ Dizziness, Dry mouth & Drowsiness
- ▼ The use of marijuana can **Decrease the ability to react** and can cause a lower concentration

Common

- ▼ **Euphoria/"high"** (inhaled > oral); **tachycardia (fast heart rate)**; blurred vision, postural hypotension, red eyes & headache

Rare

- ▼ Nausea-vomiting (high oral); Hyperemesis syndrome (heavy recreational use)
- ▼ Paranoia-anxiety (high inhaled, Sativa); Depression/ anxiety (heavy rec. use)
- ▼ Mild amnesia (inhaled, short term memory)
- ▼ Hallucinations, psychosis, paranoid delusions (NNH 1:23,000)
- ▼ Decreased sperm production



Source: www.hc-sc.gc.ca/dhp-mps/marihuana/med/infoprof-eng.php

Drug Interactions Cytochrome P450 Enzymes

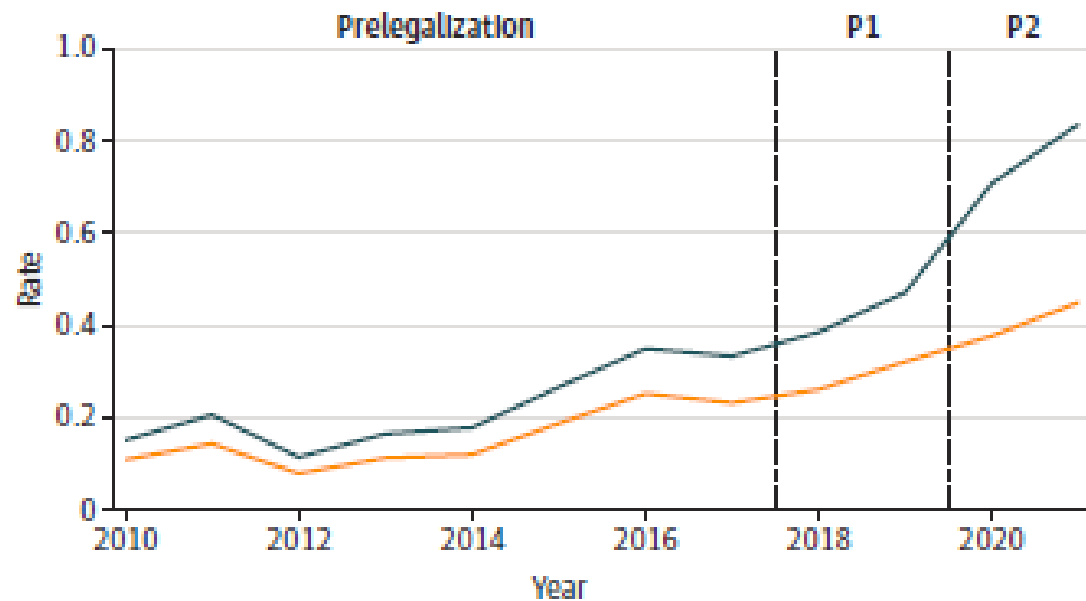
- ▼ THC and CBD are metabolized by CYP3A4 and CYP2C9 (Yamaori et al 2012, Watanabe et al 2007).
 - CYP3A4 inhibitors slightly increase THC levels
 - CYP3A4 inducers slightly decrease THC and CBD levels
- ▼ CBD but not THC is metabolized by CYP2C19 (Stout and Cimino 2014).
- ▼ THC is a CYP1A2 inducer.
 - Theoretically, THC can decrease serum concentrations of clozapine, duloxetine, naproxen, cyclobenzaprine, olanzapine, haloperidol and chlorpromazine (Flockhart 2007, Watanabe et al 2007).
- ▼ CBD is a potent inhibitor of CYP3A4 and CYP2D6
 - As CYP3A4 metabolizes about a quarter of all drugs, CBD may increase serum concentrations of macrolide, calcium channel blockers, benzodiazepines, cyclosporine, sildenafil (and other PDE5 inhibitors), antihistamines, haloperidol, antiretrovirals, and some statins (atorvastatin and simvastatin, but not pravastatin or rosuvastatin)
 - CYP2D6 metabolizes many antidepressants, so CBD may increase serum concentrations of SSRIs, tricyclic antidepressants, antipsychotics, beta blockers and opioids (including codeine and oxycodone).

Original Investigation | Substance Use and Addiction

Cannabis-Involved Traffic Injury Emergency Department Visits After Cannabis Legalization and Commercialization

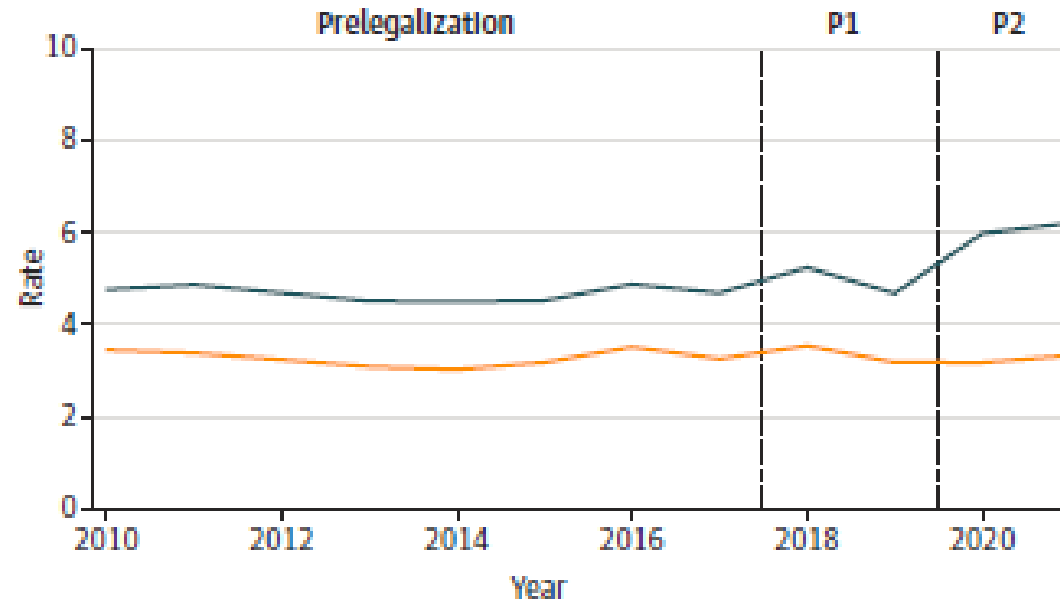
Daniel T. Myran, MD, MPH; Adrienne Gaudreault, MPH; Michael Pugliese, MSc; Douglas G. Manuel, MD, MSc; Peter Tanuseputro, MD, MHSc

C Motor vehicle occupant ED visits with cannabis involvement



Post-legalization: 94% increase; Post-commercialization: 223% increase

D Motor vehicle occupant ED visits with alcohol involvement



Alcohol: 9.4% increase

Don't C.R.A.S.H.

5 common mistakes made by cannabis naive patients

- ▼ **Cookies and edibles** - remember it takes time 1-2 hours to start working; stays in system 8-12 hours
- ▼ **Regulations** - do not bring across the federal border; abide by workplace rules
- ▼ **Automobile and machine operating** - CFPC 2016 guidelines: oral 8 hrs, inhaled 6 hrs.
- ▼ **Storage** – keep locked up, away from children and pets; degradation if not sealed (light, air, heat, moisture)
- ▼ **Hype** – do your research; → get professional guidance from doctor, nurse or pharmacist

Patient and Physician education/ training at ApolloResearch.ca

Medical cannabis – the Canadian perspective

Journal of Pain Research 2016;9 735–744

This article was published in the following Dove Press journal:
Journal of Pain Research
30 September 2016
[Number of times this article has been viewed](#)

Abstract: Cannabis has been widely used as a medicinal agent in Eastern medicine with earliest evidence in ancient Chinese practice dating back to 2700 BC. Over time, the use of medical cannabis has been increasingly adopted by Western medicine and is thus a rapidly emerging field that all pain physicians need to be aware of. Several randomized controlled trials have shown a significant and dose-dependent relationship between neuropathic pain relief and tetrahydrocannabinol – the principal psychoactive component of cannabis. Despite this, barriers exist to use from both the patient perspective (cost, addiction, social stigma, lack of understanding regarding safe administration) and the physician perspective (credibility, criminality, clinical evidence, patient addiction, and policy from the governing medical colleges). This review addresses

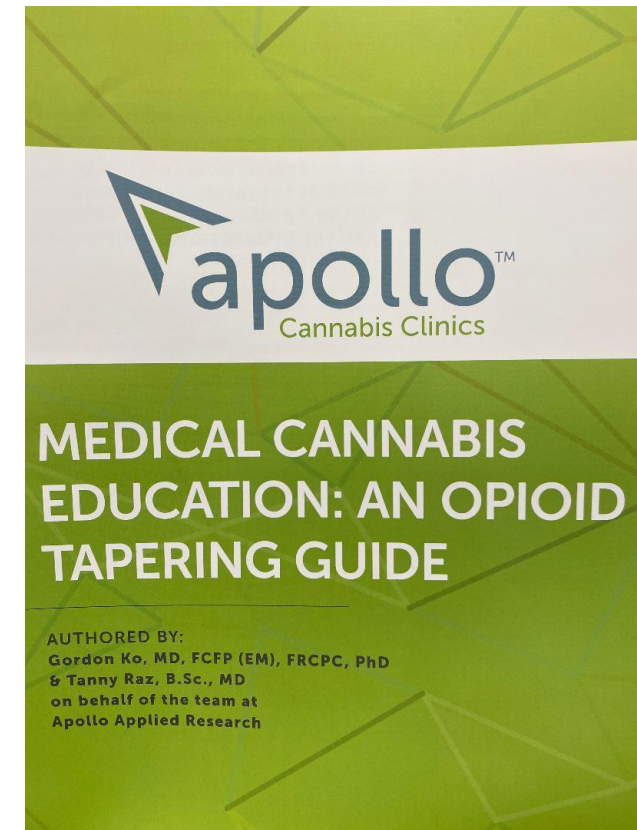
Gordon D Ko^{1,2}
Sara L Bober¹
Sean Mindra³
Jason M Moreau¹

¹Apollo Applied Research Inc.,
²Department of Medicine, Sunnybrook Health Sciences Centre, University of Toronto, Toronto,
³University of Ottawa Medical School, Ottawa, ON, Canada

Observational Study Pain Med. 2020 Nov 1;21(11):3073–3086. doi: 10.1093/pm/pnaa163.

Medical Cannabis for the Management of Pain and Quality of Life in Chronic Pain Patients: A Prospective Observational Study

Ramin Safakish¹, Gordon Ko², Vahid Salimpour³, Bryan Hendin³, Imrat Sohanpal¹, Gena Loheswaran³, Sun Young Rosalia Yoon³



Q

What excites you about the future of treatment for arthritis?



Cannabinol RCT for sleep

Cannabis and Cannabinoid Research
Volume 6, Number 5, 2021
© Mary Ann Liebert, Inc.
DOI: 10.1089/can.2021.0006

MINI-REVIEW

Cannabinol and Sleep: Separating Fact from Fiction

Jamie Corroon^{1,2,*i}

Abstract citation ID: **zsad077.0346**

0346

CANNABINOL (CBN) EFFECTS IN INSOMNIA DISORDER: A RANDOMISED, DOUBLE-BLIND, PLACEBO-CONTROLLED, CROSSOVER, CLINICAL TRIAL PROTOCOL.

*Isobel Lavender¹, Iain McGregor², Anastasia Sureav²,
Danielle McCartney², Chris Irwin³, Nathaniel Marshall¹,
Chris Gordon¹, Angela D'Rozario¹, Bandana Saini⁴,
Ron Grunstein⁵, Brendon Yee¹, Camilla Hoyos¹*

¹ Woolcock Institute of Medical Research, ² Lambert Initiative of Cannabinoid Therapeutics, University of Sydney, ³ Griffith University, ⁴ University of Sydney, ⁵ sydney

SLEEP, Volume 46, Supplement 1, 2023

Emerging treatments for OA pain: mistletoe extract injections

AdvancedMedicine.ca (Leigh Arseneau ND, FMP)



Mistletoe in Osteoarthritis Research Summary

Mistletoe (*Viscum album*) has been used since 1922 for osteoarthritis. A systemic literature review found improvement in pain and mobility in more than 80% of 17,000 patients treated (Schindler 2008). Helixor mistletoe is approved in Germany for use in chronic joint disease.

Topicals for osteoarthritis research

▼ Counter-irritants

- Biofreeze
- Salonpas (camphor, menthol)

▼ Capsaicin

▼ CBD/ THC

▼ Phytochemicals

- Arnica
- Essential oils

▼ Anesthetics

- Lidocaine

▼ NSAIDs

- Pennsaid
- Voltaren gel
- Salicylates (BenGay, Aspercreme)

▼ Compounded analgesics

- JupiterHealth.ca

Mohsenzadeh et al. *BMC Research Notes* (2023) 16:28
<https://doi.org/10.1186/s13104-023-06291-5>

BMC Research Notes

RESEARCH NOTE

Open Access



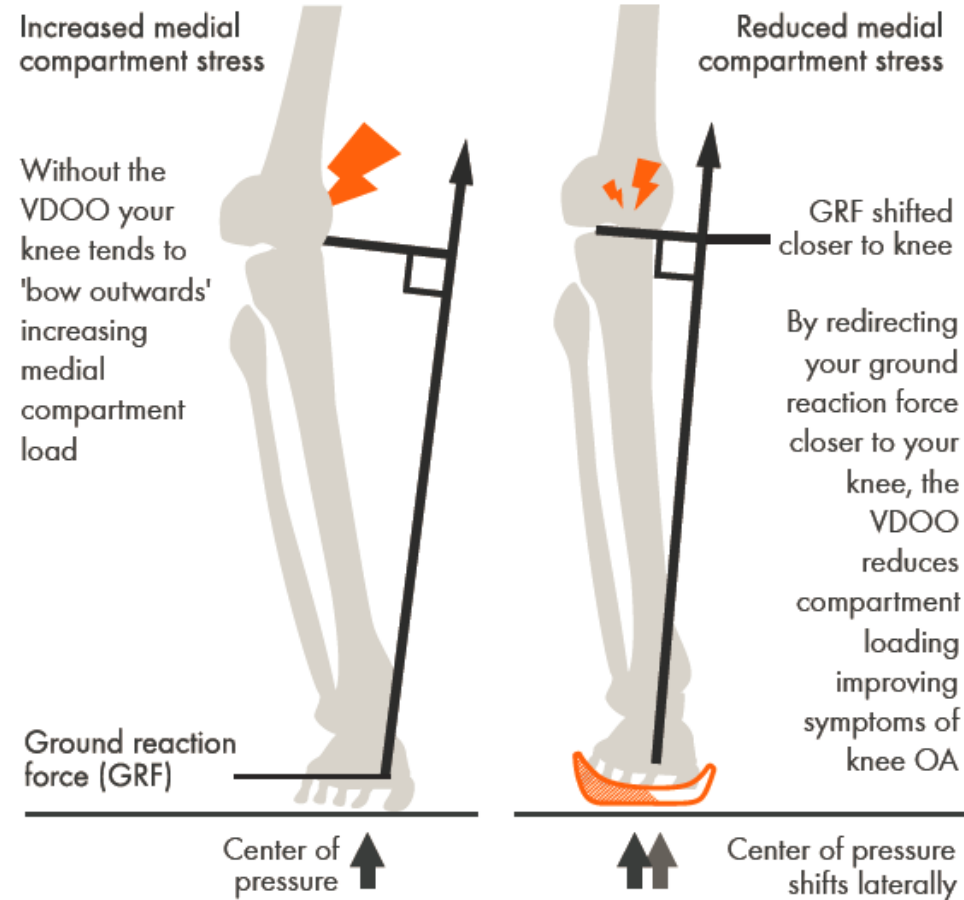
Evaluation of the effectiveness of topical oily solution containing frankincense extract in the treatment of knee osteoarthritis: a randomized, double-blind, placebo-controlled clinical trial

Afsaneh Mohsenzadeh¹, Mansoor Karimifar^{2*}, Rasool Soltani^{3,4*} and Vallollah Hajhashemi⁵



Osteoarthritis knee and footwear study

Regular Insole vs V.D.O.O Insole



Footwear Science

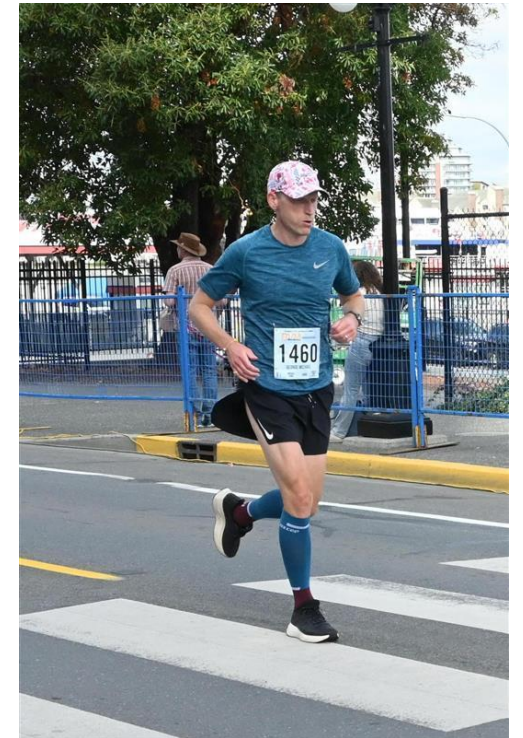
ISSN: 1942-4280 (Print) 1942-4299 (Online) Journal homepage: <https://www.tandfonline.com/loi/tfws20>

The run alternate study: examining the effect of training and footwear variability in the prevention of running pain and injuries

Michael Ryan, Michelle Haines & Jack Taunton

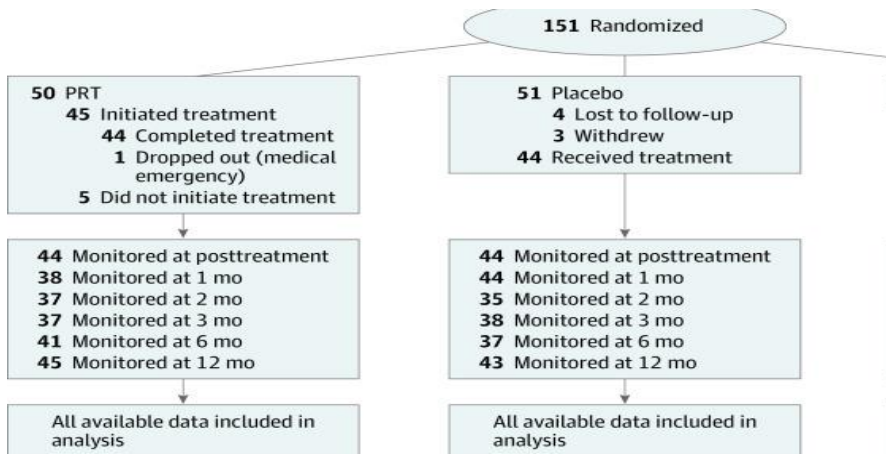
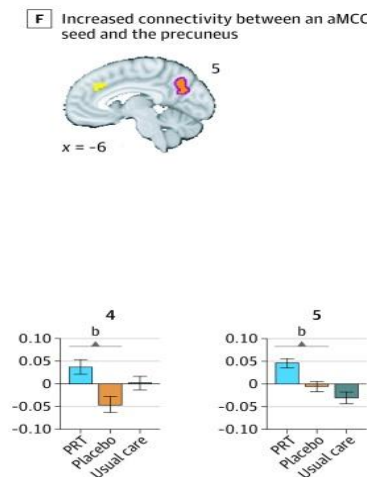
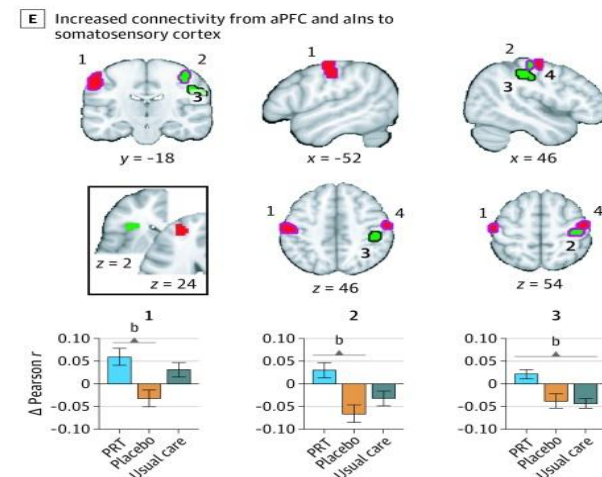
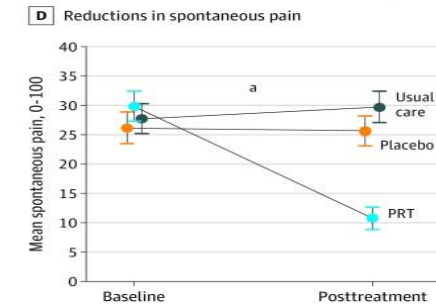
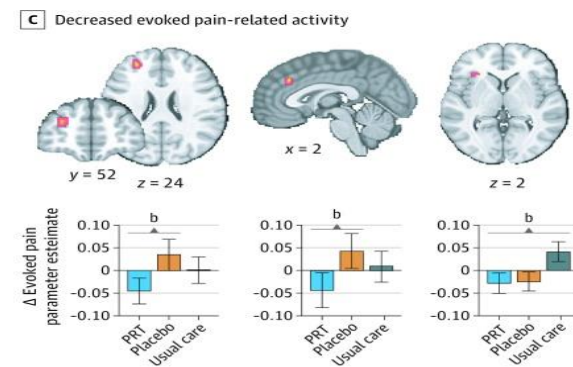
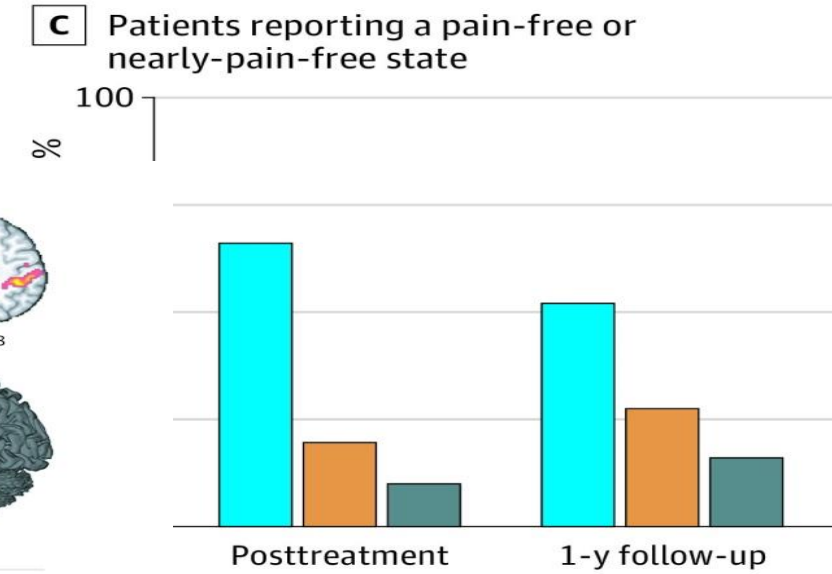
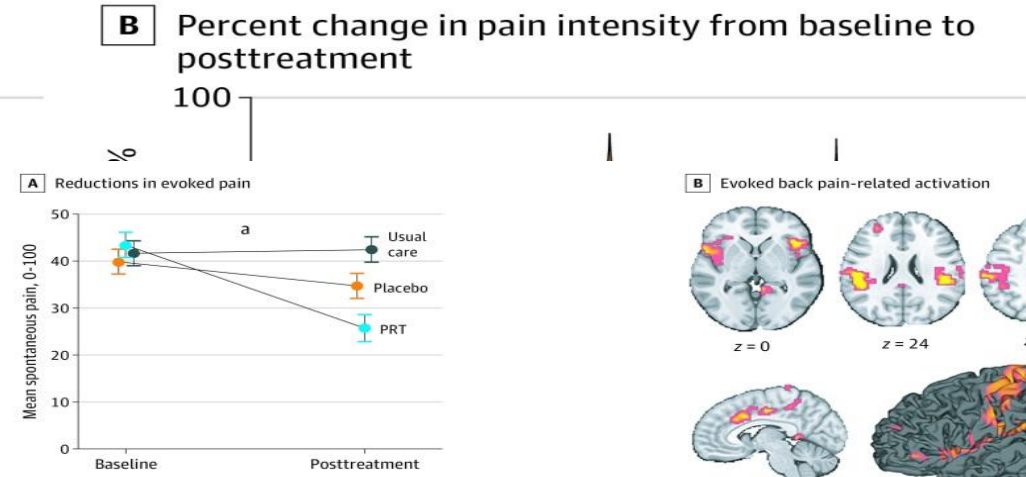
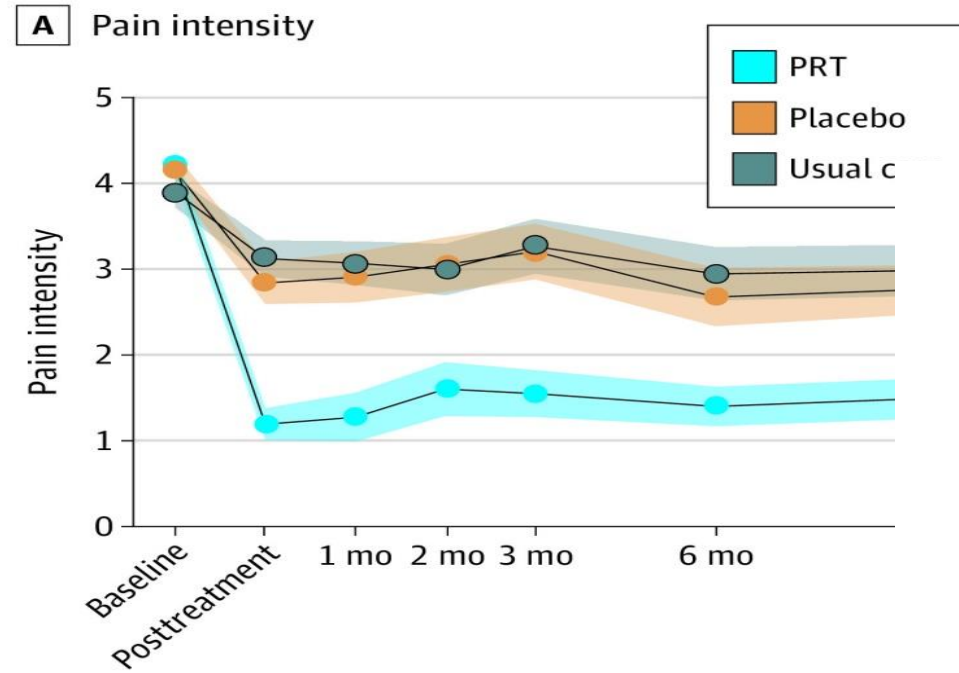
To cite this article: Michael Ryan, Michelle Haines & Jack Taunton (2019) The run alternate study: examining the effect of training and footwear variability in the prevention of running pain and injuries, *Footwear Science*, 11:sup1, S202-S203, DOI: [10.1080/19424280.2019.1606333](https://doi.org/10.1080/19424280.2019.1606333)

To link to this article: <https://doi.org/10.1080/19424280.2019.1606333>



Michael Ryan PhD with KinTec.ca

PainReprocessingTherapy.com: Ashar YK et.al. JAMA Psychiatry Sept 2021




98% improved;
66% cured

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8482298/>

44 areas in brain: medial prefrontal cortex, nucleus accumbens, anterior insula

Effects of neuroplasticity in people with knee osteoarthritis

A systematic review of the literature

Leandro Ryuchi Iuamoto, MD^a, Fábio Luis Kenji Ito, MD^b, Thales Augusto Tomé, MD^b, Wu Tu Hsing, MD, PhD^c, Alberto Meyer, MD, PhD^{d,*} , Marta Imamura, MD, PhD^e, Linamara Rizzo Battistella, MD, PhD^e



REVIEW
published: 07 December 2020
doi: 10.3389/fmed.2020.589079



The Link Between Autonomic Nervous System and Rheumatoid Arthritis: From Bench to Bedside

Francesca Ingegnoli^{1,2*†}, Massimiliano Buoli^{3,4†}, Flavia Antonucci^{5†},
Lavinia Agra Coletto^{1,2†}, Cecilia Maria Esposito^{3,4†} and Roberto Caporali^{1,2†}



Spiritual healing by prayer



Some find prayer-based strategies effective for:

- Developing feelings of peace
- Creating more positive outlook regarding pain
- Releasing control to a higher power which may reduce stress

To be completed in December 2023

MORE INFORMATION ON REGENERATIVE
MEDICINE (Prolotherapy with Dextrose, PRP and
Stem cells) at www.CAOM.CA

 U.S. National Library of Medicine

ClinicalTrials.gov

The Combined Use of PRP With Lipoaspirate and/or Bone Marrow Aspirate in Osteoarthritis

*Please refer to this study by its ClinicalTrials.gov identifier (NCT number): **NCT03984461***

Contacts

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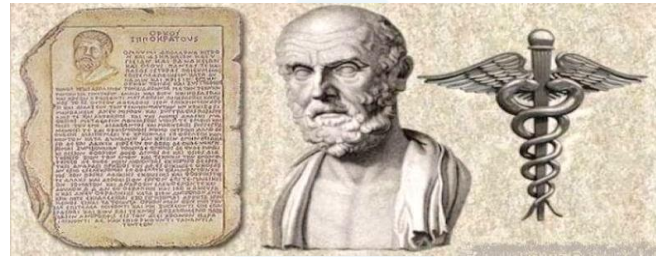


Any final thoughts or recommendations?



#1 Primum Non Nocere = First do no harm.

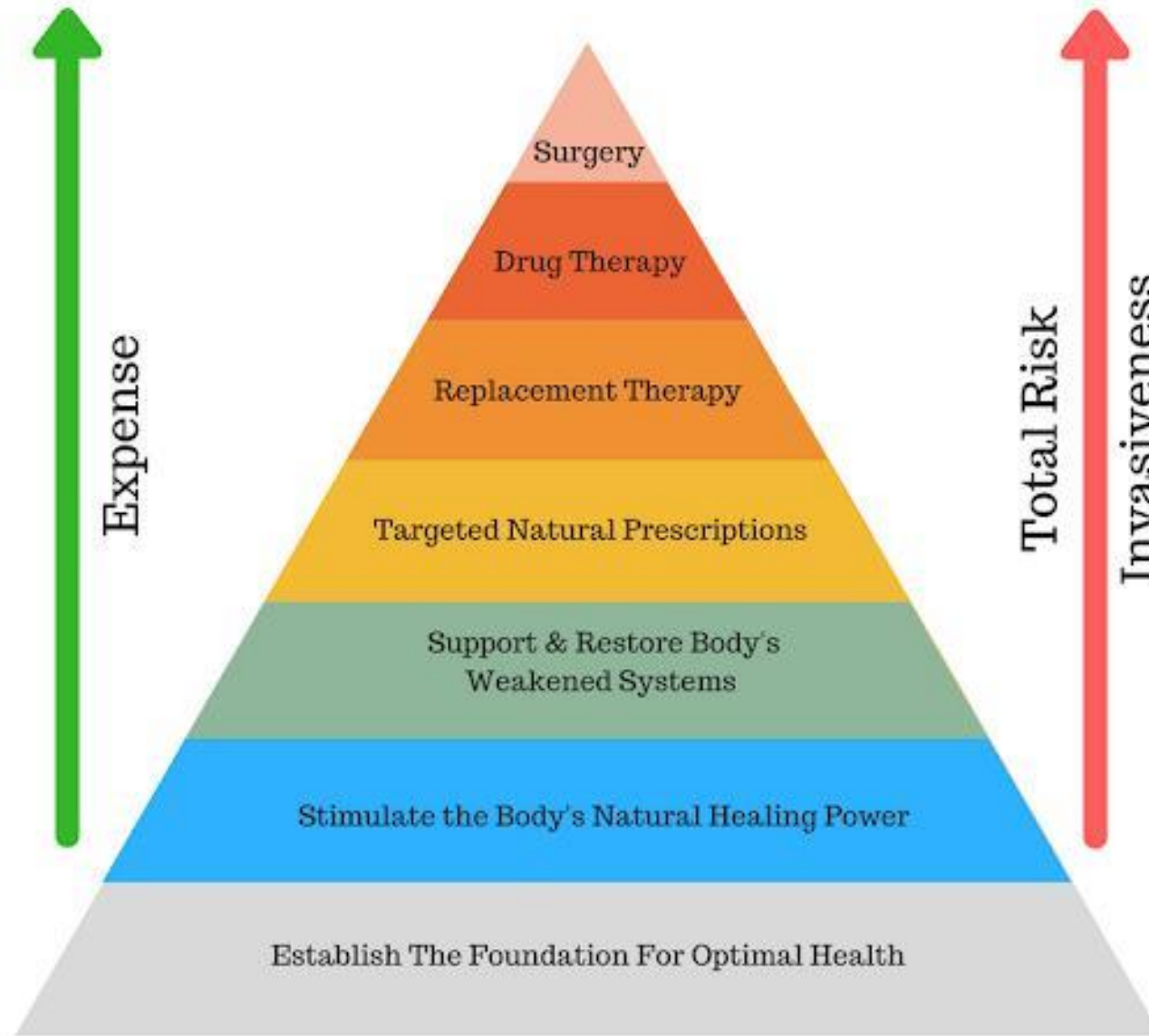
#2 Vis Medicatrix Naturae = Honour the healing power of nature.

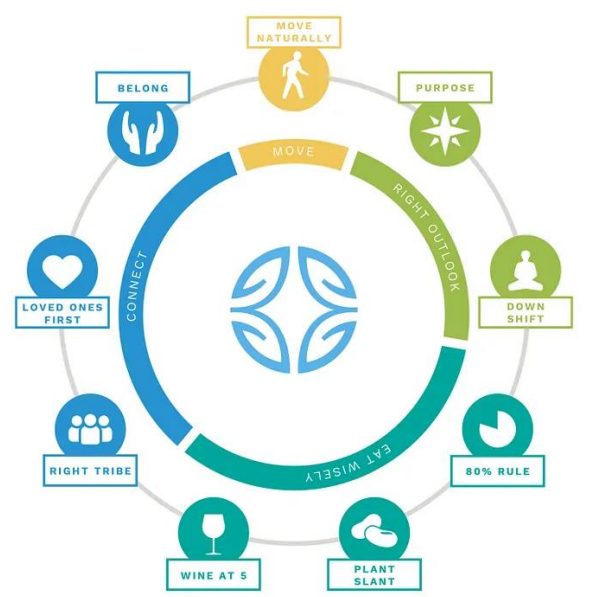
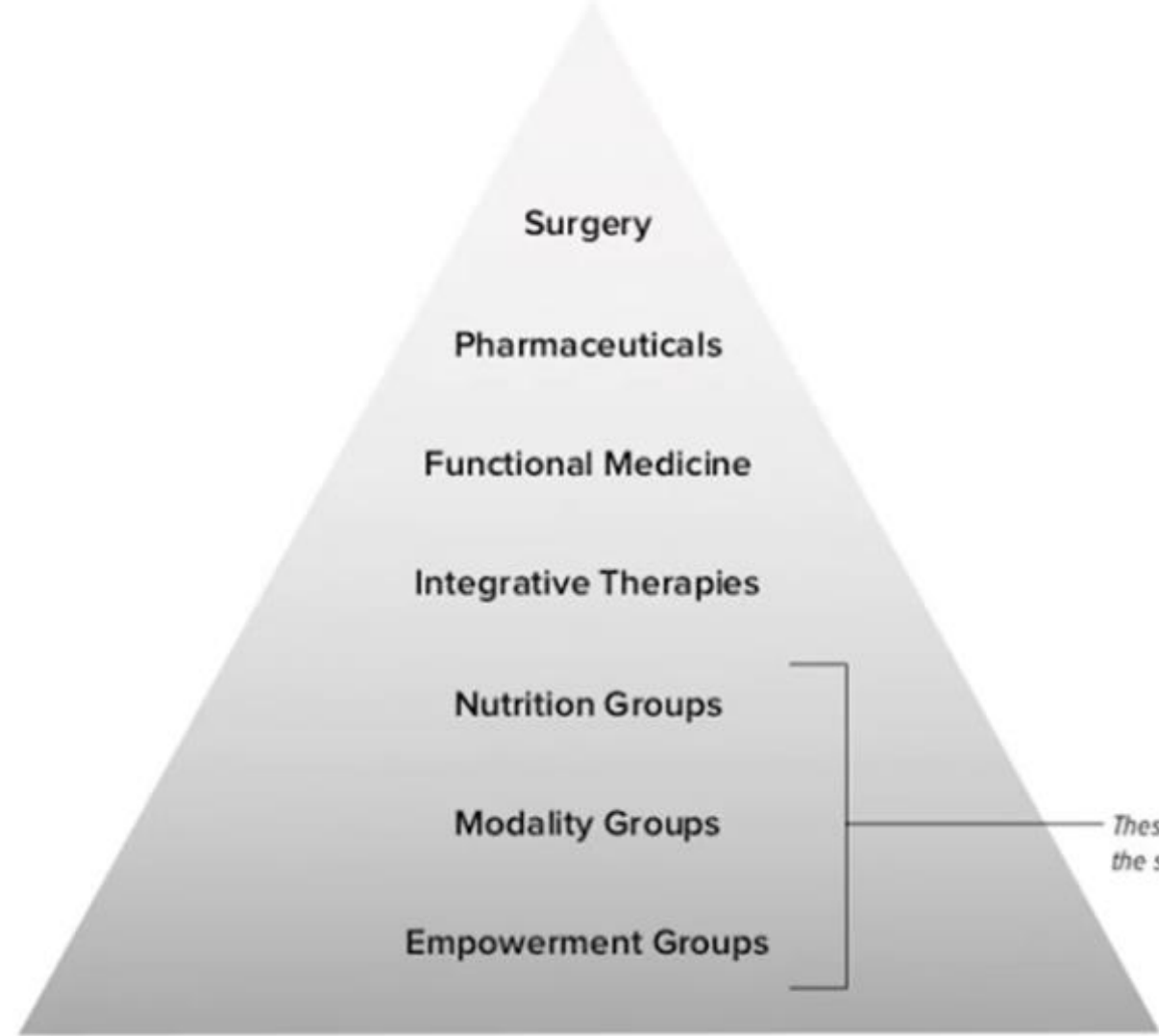


Hippocrates 460-370 BC

- ▼ **Sleep 7-8 hours/ night:** Titrate off synthetic opioids, benzos using medical cannabis. Don't use alcohol to sleep.
- ▼ **Move 150+ minutes/ week:** “Walking is man’s best medicine”. Optimize footwear +/- walking poles to reduce risk of falls and injuries +/- aquajogging
- ▼ **Inhale & meditate 12+ minutes/ day:** Avoid mouth-breathing; do belly breathing to activate the vagus nerve → brain-immune-gut microbiome.
- ▼ **Love & connect:** Be intentional with your 4-5 closest friends = Blue zone “moai”; Live with Purpose & Gratitude
- ▼ **Eat right:** avoid ultra-processed foods; fresh whole plant-based foods are the best..

INTEGRATIVE MEDICINE THERAPEUTIC ORDER





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Find your path with a
WALKING MOAI!

BLUE ZONES PROJECT™ | @BZPhawaii

hmsa



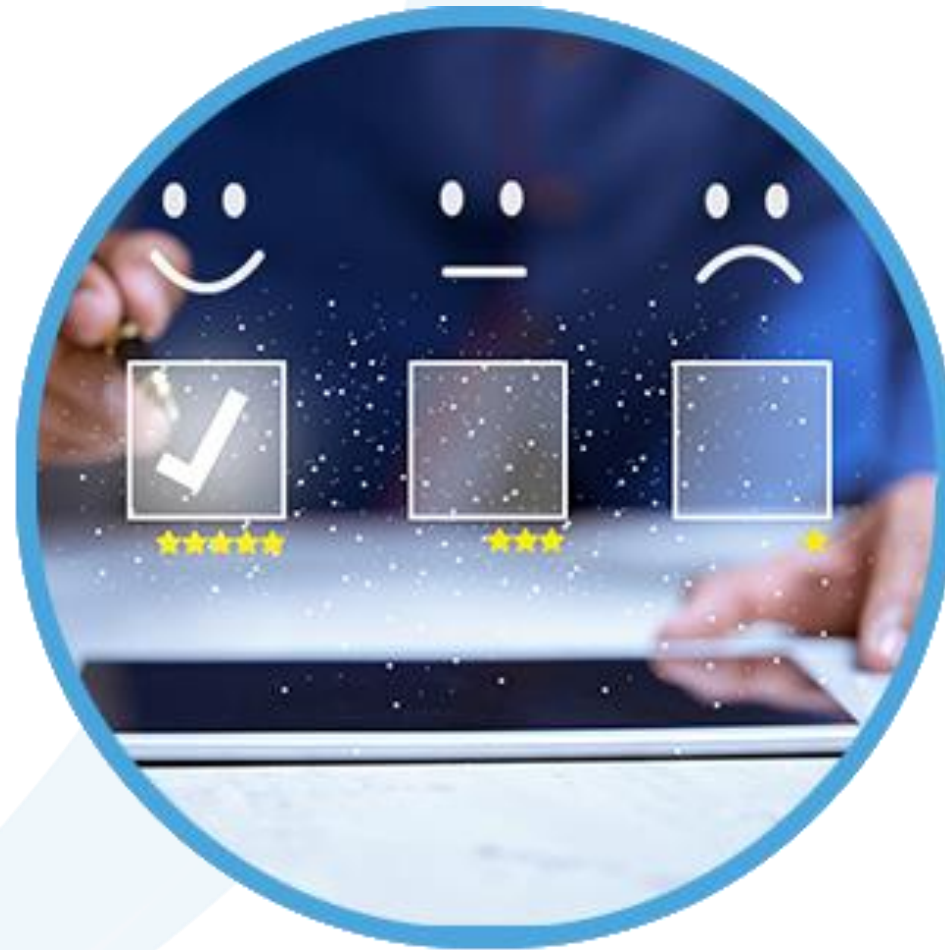
Resources

- ▼ Integrative Medicine: NIH (National Center for Complementary and Integrative Health) www.nccih.nih.gov
- ▼ Regenerative Medicine: Canadian Association of Orthopaedic Medicine www.CAOM.ca
- ▼ Functional Medicine: www.IFM.org
- ▼ Medical Cannabis: www.ApolloCannabis.ca
- ▼ Videos, articles and links at www.DrKoPRP.com

Questions



Tell us what you think...



Upcoming Events

November



Arthritis Talks: Biologics, Biosimilars and JAK Inhibitors
featuring Dr. Alan Low

6 p.m. ET

Learn about:

- Similarities and differences between biologics and biosimilars
- When and where JAK inhibitors may be a suitable treatment option
- Current research related to inflammatory arthritis medications
- How to work with your healthcare provider to make informed decisions about your medications

Register at:

Visit arthritis.ca/ArthritisTalks or click the link in your email inbox

