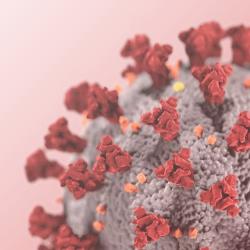
My Evolving Approach To The Treatment of Covid Spike Protein Induced Disease

Presented By:

Pierre Kory, MD, MPA

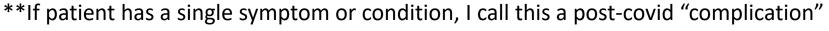
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Diagnosis of Post-Covid, Post-Vaccination Syndromes

"A constellation of symptoms that begin in temporal association with either COVID mRNA vaccination or acute Covid infection"

- Temporal Association With Vaccination
 - 1/3? minutes to hours from injection
 - 1/3?– days to 2 weeks
 - 1/3?– 2 weeks out to 2-3 months
- Temporal Association with Acute COVID
 - Majority recover fully from acute illness then weeks later symptoms emerge
 - Minority progress directly from acute COVID into "long-haul" symptoms





Symptoms of Post-Covid, Post-Covid Vaccination Syndromes

The three most common symptoms are pronounced fatigue, post-exertional malaise, and "brain fog" – deficits in memory, concentration, processing
 Symptom prevalence list

Top 10 most common	
[Fatigue]	82.0%
[Exercise Intolerance]	76.3%
[Brain Fog]	71.5%
[Heart Palpitations]	64.8%
[Muscle Weakness]	63.2%
[Tingling (numbness) in Extremities]	63.0%
[Dizziness]	60.0%
[Muscle Aches]	59.4%
[Sleep Disturbances]	58.4%
[Joint Pain (Arthritic)]	57.6%

[Fatigue] - 82.0% [Exercise Intolerance] - 76.3% [Brain Fog] - 71.5% [Heart Palpitations] - 64.8% [Muscle Weakness] - 63.2% [Tingling (numbness) in Extremities] - 63.0% [Dizziness] - 60.0% [Muscle Aches] - 59.4% [Sleep Disturbances] - 58.4% [Joint Pain (Arthritic)] - 57.6% [Anxiety / Adrenaline Surges] - 56.9% [High Heart Rate] - 55.5% [Insomnia] - 55.5% [Shortness of Breath] - 55.4% [Nerve Pain] - 52.0% [New Persistent Headaches] - 50.5% [Feeling off balanced, or motion at rest] - 48.7% [Muscle Twitching] - 48.5% [Heaviness in Legs] - 47.6% [Memory Loss] - 45.6% [Tinnitus] - 45.2% [Severe Anxiety] - 44.2% [Visual Disturbances] - 41.6% [Abdominal/Stomach Pain] - 40.0% [Sound Sensitivity] - 39.0% [Nausea] - 37.9% [Frequent Urination] - 37.0% [Chills] - 36.3% [Muscle Loss] - 35.9% [Burning Sensation on Skin] - 35.6% [Light Sensitivity] - 35.0%

[Heartburn, Indigestion] - 34.9%

[Internal Vibrations] - 34.9% [Increased Thirst] - 34.3% [Excessive Sleep] - 33.9% [Heat intolerance] - 33.6% [Dry Eyes] - 32.8% [Diarrheal - 31.8% [High Blood Pressure] - 31.6% [Dry Mouth] - 30.0% [Tremors] - 29.7% [Swollen Lymph Nodes] - 29.3% [Skin redness, hives, petechiae, or rashes] - 29.3% [Hair Loss] - 26.4% [Excessive Gas] - 24.0% [Constipation] - 23.8% [Sore Throat] - 22.0% [Swelling of Extremities] - 21.3% [Irregular Menstrual Cycle] - 20.2% [Low Blood Pressure] - 20.0% [Persistent Cough] - 19.5% [Bulging Veins] - 19.0% [New Food Allergies] - 16.1% [Disturbances in Glucose Levels] - 13.4% [Myocarditis] - 13.3% [White, or blue finger tips (digital ischemia)] - 10.4% [Paralysis] - 8.1% [Bloody, or black tar-like stool] - 7.3% [Loss of Bowel Control] - 7.1% [Anaphylaxis] - 6.4% [Yellowing of skin, (or yellowing in whites of eyes)] - 5.5% [Temporary Blindness] - 4.2% [Glaucoma] - 3.2% [Seizures] - 3.1%



^{*}This survey's methodology may overreport some symptoms

Pathogenesis – "Spike-opathy"

- Spike protein one of the most toxic proteins in history
- Multiple intersecting and overlapping pathophysiologic processes
 - S1 protein induced persistent inflammatory response
 - The production of myriad autoantibodies
 - Complement Mediated Vasculitis
 - Activation of the clotting cascade
 - Secondary viral reactivation due to Vaccine Induced Immunosuppression
 - Mast Cell Activation syndrome, new/worsened allergies
 - Mitochondrial dysfunction



BASELINE TESTING

- CBC with differential and platelet count.
- Standard blood chemistries including liver function tests
- D-Dimer (as a marker of clotting activation).
- CRP as a marker of ongoing inflammation. A comprehensive extensive cytokine/chemokine panel is unnecessary and very costly the results of which will not change the treatment approach.
- Early morning cortisol (some patients develop autoimmune adrenal failure)
- TSH to exclude thyroid disease
- HbA1C. Vaccine inured patients are at an increased risk of developing diabetes
- Troponin and BNP to exclude cardiac disease
- CMV and EBV, HSV serology to exclude viral reactivation
- Vitamin D level
- Limited screening autoantibodies.
- *Live Blood Analysis



The Treatment Approach In My Practice – Continually Evolving Based on Experiences and Collaborations

- My partner, Scott Marsland, DNP and I opened a tele-health practice to treat Acute Covid, Long-Haul, Post-Vax patients in February 2022 – we meet weekly to discuss new insights and positive clinical responses (drpierrekory.com)
- Daily interactions with Paul Marik and the FLCCC working group –
 Suzanne Gazda, JP Saleeby, Mobeen Syed, Eugene Shippen, Keith Berkowitz, Flavio Cadegiani et al.
 - Ria Heslop of longhaulers.world in the UK decades of experience in therapies and supporting clinics for chronic lyme, CFS, endocrinone disorders and has been helping care for the COVID injured since early 2021. Employs comprehensive, mechanistic protocols



Challenges in Developing a Treatment Approach

- Training and practice style evolution and adaptation to complex, chronic illness
 - "natural" compounds vs. "pharmaceutical" functional/integrative/naturopathic/allopathic background and interests
 - "Minimalists" beware dozens of treatment options available
 - I do not employ a straight-forward FLCCC approach my approach is driven by comfort/experience and avoidance of long med lists/large pill burdens
- New, potentially effective therapies proposed... on a daily basis
 - Difficult to integrate new approaches while developing comfort with existing approaches
 - To learn optimally from current practice, need better and more careful data collection and analysis
- Patient finances/insurance prescriptions, HBOT, infrared
- Patient location rural vs. urban limited access to HBOT, IR, IVIG centers
- Patient's treatment history some favored treatments may have already been tried and failed or not tolerated
- Patient preferences medication sensitivity, medication reluctance



Our Treatment Approach

- Must be individualized not all patients respond to the same treatments (at all)
- Patients should serve as their own controls, response to treatment dictates the modifications of the plan
 - Must identify whether each component brings about a response
 - Easy to "get lost" and end up with along medication list/high pill burden
- Start with a core protocol, and depending on response, move to 2nd and 3rd line therapies
 - Even with core protocol, sequential additions of components separated by time, to serve as a "control" for each element – how long to wait depends on the medication being trialed – some medicines induce rapid responses, others can take days to weeks to have an effect

**The following slides are for a standard patient without significant lab abnormalities or viral reactivation

Treatment Strategies Are Mechanistic

- De-activating/Expelling spike protein Via use of Intermittent Fasting,
 Autophagy Inducers, avoiding authophagy inhibitors
- **Down-Regulating/Blocking Inflammation** Ivermectin, Low-Dose Naltrexone, Fish-oils, CGRP Inhibitors, IVIG, HBOT, steroids (rare)
- Micro-clotting/Anticoagulation using either "natural" triple anticoagulation protocol or "pharmaceutical" triple (ASA, clopidogrel, apixiban)
- Mast Cell Activation loratadine, famotidine, ketotifen, DAO enzymes
- **Viral Persistence/Reactivation** EBV/HSV/CMV etc Ivermectin, valcyclovir, monolaurin, HBOT, Ozone
- Mitochondrial Recovery Methylene blue, HBOT, D-Ribose, CO-Q10, Magnesium, Infrared light



Our First Line Treatment Strategy

Avoiding Over-Exertion

- Some patients may already be aware of the importance of this, others not
- Some cannot pace themselves when they have a "good day" and then "pay for it later"
 - Some don't mind "paying the price," some cannot "afford it"
- Keep HR < 100, outings short
- Avoid heat, stress (easier said than done)







Our First-Line Treatment Strategy

- Ivermectin
 - Numerous anti-inflammatory, cytokine blocking mechanisms, repolarizes monocytes/macrophages, tightly binds to spike protein, induces autophagy
 - Highest incidence of positive response (70-90% of patients) myriad symptoms can respond – fatigue, brain fog, neuropathic symptoms, taste/smell/tinnitus
 - I start with 0.3mg/kg daily
 - Clinical responses seen as early as 1 day up to ten days in general
 - In some cases, patients unable to identify improvement initially but "discover" its efficacy when discontinued
 - Duration of therapy in responders indefinite (I have less than a handful of patients who have "graduated" off all medicines to date)
 - Dose Response at first follow-up, I am now "doubling the dose" (0.6mg/kg) for a ten-day period to assess for additional improvement (seen in 40%?)
 - If stronger response seen, I continue at a dose of 0.5-0.6mg/kg

OUR FIRST LINE TREATMENT STRATEGY

- Low-dose Naltrexone
 - Like ivermectin, numerous anti-inflammatory and immunomodulatory properties (Dr. Berkowitz lecture)
 - Start low, titrate slowly I have been using solution (5mg/ml) where 1 drop
 - = 0.5mg, I increase by one drop every 5 nights until max 9 drops = 4.5mg
 - Stop increasing at any dose where refreshed sleep is felt
 - Decrease to half the dose for 2 weeks if nausea/insomnia develop, then titrate up again
 - Some patients dislike the taste of the solution, so once dose has been established, I switch to capsules in these patients
 - Like ivermectin, has a high frequency of positive responses, particularly with neuropathic symptoms followed by brain fog and fatigue
 - Improvements generally noted over 2-4 weeks

Our First-Line Treatment Strategy

- Autophagy
 - Intermittent Fasting The Complete Guide to Fasting by Jason Fung
 - Discontinue autophagy inhibitors PPI's, HCQ (unless unable)
 - Autophagy not applicable to all
 - some patients not well enough to adhere initially
 - Some patients unwilling or non-adherent
 - Dose-response? Optimal would be one meal a day or regular prolonged fasts if able
 - Add autophagy inducers Spermidine, Resveratrol
 - Double wood SPERMIDINE take two capsules twice daily, with or without food <u>https://doublewoodsupplements.com/products/spermidine</u>
 - Trans-Resveratrol (Toniiq brand on Amazon) 600mg two caps twice daily https://www.amazon.com/Ultra-Purity-Resveratrol-Capsules-Trans-Resveratrol/dp/B07R634S5D?th=1



Our 2nd Line Treatment Strategies

At first follow-up, depending on patient's treatment history and response, here I do a sequence of treatment trials, order varies depending on patient

- I spell these out carefully in a written note with time durations of each trial
- Patients are instructed to update me after each trial before progressing to the next
- I discontinue any treatment trials that did not produce noticeable improvements
- i.e. Trial of MCAS Rx then EPA or DHA fish oil then Fluvoxamine then triple-anticoagulation (ubrelvy trial can be done at anytime given rapid feedback)

MCAS – two week trial, re-assess and continue or discontinue

Loratidine 20mg BID, Famotidine 40mg BID, Ketotifen – 1mg/5ml solution. Take 0.5 ml by mouth orally at night, and increase by 0.5 ml increments up to 5ml nightly.

Medication has a strong hypnotic effect, so proceed slowly

Low Histamine diet

DAO enzymes - NaturDAO 1,000,000 HDU food supplements can reduce food reactions and histamine in various food and drinks

Fluvoxamine – start low 12.5 mg, increase to 25 mg as tolerated – can treat for short



Second Line Strategy – Fish Oil (also an anti-coagulant)

- Two main fish oils: Eicosapentaenoic Acid (EPA) and Docosahexaenoic acid (DHA)
 - Some hypothesize that pure EPA more potent than mixture of DHA/EPA
 - Poorly supported by meta-analyses and head-to-head comparisons which suggest DHA more potent and combination ideal
 - However, an impressive case series using pure EPA (Vascepa) led to significant improvements in numerous symptoms – within 2 weeks
 - Scott and I have been using this strategy and have observed consistent positive responses, in patients who had been in combination fish oils
 - This may be a dose effect however we have noted improvements at relatively low doses of EPA
 - I am evolving a strategy of starting EPA first then adding DHA later to assess optimal approach
- Purified EPA available in prescription (Vascepa) and OTC forms (Carlsson's Elite EPA Gems)
 - Start at 0.5 grams daily increase to 2 grams twice daily as tolerated (Gi side effects) for two weeks, then one gram twice daily

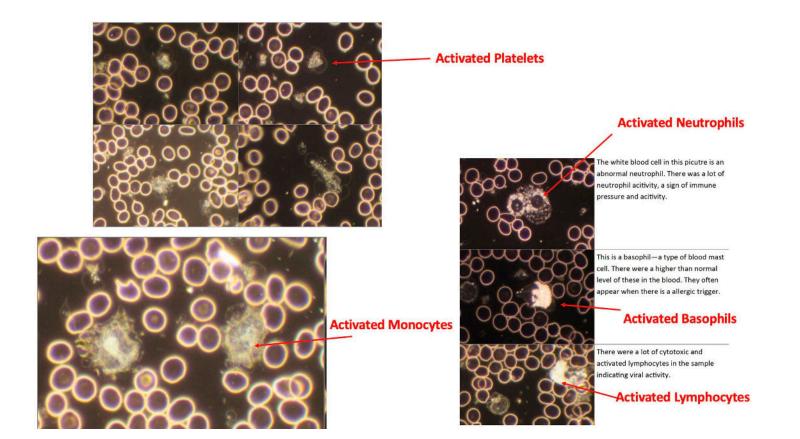


SLIDE TITLE

- Prefer to have Live Blood Analysis (LBA) first done in UK, in U.S more difficult to find LBA practitioners, one U.S directory is here:
 - https://livebloodonline.com/directory-of-practitioners/
- Shira Mustarde world expert in LBA who works with Ria Heslop and longhaulers.world provides detailed, comprehensive reports – I have been sending examples of these reports to patients to bring to LBA practitioners so they can "grade" microclots
 - Video by Shira is here: https://longhaulers.world/live-blood-analysis/
- If done empirically, risks/benefits/cautions emphasized, elevated D-dimer helpful but does not generally predict response/need
 - Caution in elderly, hypertensives



Second Line Treatment Strategy – Micro-clotting





LONGHAULERS.WORLD LBA REPORT GRADING —SHIRA MOUTARDE

Thrombocytes/Platelets Assessment

The blood sample was scanned to assess the size, appearance and amount of thrombocytes/platelets.

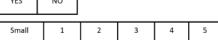
- Thrombocyte/platelets normal: no activated, aggregated thrombocytes/platelets and no microclots.
- Thrombocyte/platelet activation and aggregation: this will be divided into sizes, small (generally half the size of a red blood cell), medium (generally the size of a red blood cell) and large (larger than a red blood cell). They will also be assessed by frequency of occurrence on a scale of 1 to 5, 1 being rare and 5 being very common.
- Micro-clots: specific type of thrombocyte/platelet aggregation these will be noted as present or not present. When present the frequency of occurrence will be expressed on a scale of 1 to 5, 1 being rare and 5 being very common.

Patient's Results

Thrombocyte/platelets - normal

YES NO

Thrombocyte/platelet activation and aggregation



Fibrin Assessment

Scoring Guide

- If fibrin appears within the first 12 minutes it is considered clinically relevant.
- Fibrin's presence can be weak or strong. It is scored on a scale between 1 and 10, 1 being a weak presence and 10 being an extremely strong presence.

Patient's Results

Fibrin present in first 12 minutes

Fibrin levels in plasma



Monocyte Assessment

Scoring Guide

The blood sample was scanned and assessed for three monocyte references.

- Normal monocytes
- Higher than normal presence of monocytes
- Presence of activated monocytes/macrophages

Patient's Results

Normal monocytes

YES NO

Higher than normal monocytes

YES NO

Activated monocytes/macrophages

NO



Our Second Line Treatment Strategy: Triple Anti-Coagulation

- "Pharmaceutical Triple" with statin for 28 days, majority of patients will respond –
 micro-clotting, particularly in the vaccine injured is very common
 - Aspirin 81 mg daily
 - Clopidogrel 75mg daily
 - Apixiban 5mg BID
 - Pravastatin 10mg
- "Natural Triple" is started at 28 days
 - Nattokinase, 2,000 FUs "Doctors Best" daily
 - Serrapeptase High Potency 120,000 SPU "Doctors Best" daily
 - 14 days later, add Lumbrokinase Enzymes by Dr. Mercola, 1 pill every other day with Nattokinase and Serrapeptase
 - * Take all on empty stomach, *may not need all three if in EPA fish oil

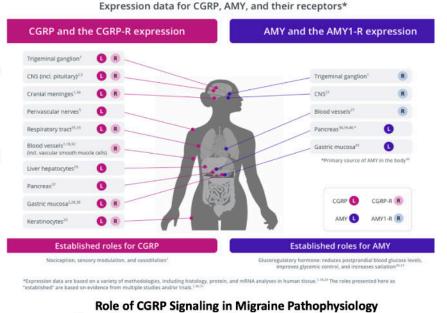


Another 2nd Line Strategy Trial –ubrogepant – if patient responds, will happen in 24 hours

Calcitonin gene-related peptide (CGRP)

Calcitonin Gene-Related Peptide: Physiology and Pathophysiology (F. A. Russell et. al., 2013)

- 37-amino acid neuropeptide. It is produced as a consequence of alternative RNA processing of the calcitonin gene.
 - "The gene family is comprised of adrenomedullin, adrenomedullin 2 (intermedin), and amylin, in addition to the calcitonin gene."
 - Two Forms αCGRP is the principal form found in the central and peripheral nervous system, whereas βCGRP is found mainly in the enteric nervous system.
- Primarily localized to C and Aδ sensory fibers and displays a wide innervation throughout the body, with extensive perivascular localization, and have a dual role in sensory (nociceptive) and efferent (effector) function.
- "As a microvascular vasodilator, CGRP has a potency that is ~10-fold higher than the most potent prostaglandins and 10-100 times greater than other vasodilators such as ACh and SP."



https://www.scienceofmigraine.com/pathophysiology/cgrp

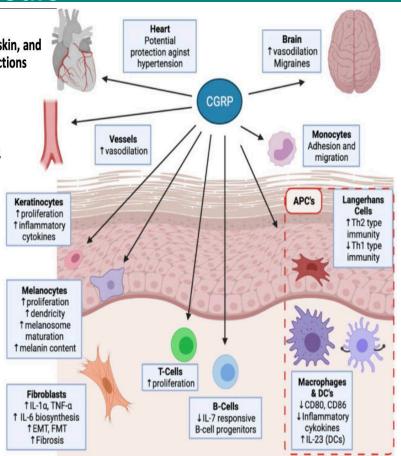


Another 2nd Line Strategy Trial –ubrogepant – if patient responds, will happen in 24 hours

Roles of calcitonin gene-related peptide in the skin, and other physiological and pathophysiological functions (Yee Jung Kim et.al., 2021)

"Effect of CGRP on the heart, the brain, the skin and vessels. CGRP impacts monocytes, macrophages, LCs, dendritic cells, endothelial cells, vascular smooth muscle and neutrophils, along with epidermal cells such as keratinocytes, melanocytes, and fibroblasts, likely contributing to a number of disease states, as described in the text. EMT, epithelial-mesenchymal transition; FMT, fibroblast to myofibroblast transdifferentiation; APC, antigen presenting cell; LC, Langerhans Cell; DC, dendritic cell."

Probable Role of CGRP in inflammatory skin disorders.





Another 2nd Line Strategy Trial –ubrogepant – if patient responds, will happen in 24 hours

50 mg tablets – first dose, one tablet, if no response, increase to 100mg next day.

Only approved for 8 doses/month however, there is a long-acting injectable form called ajovy

Excellent safety profile – minimal side effects reported

Can get ten tablets for free with a coupon as a trial. Insurance coverage may or may not be problematic beyond that

CGRP Expression and Cytokine Release

CGRP Induces Differential Regulation of Cytokines from Satellite Glial Cells in Trigeminal Ganglia and Orofacial Nociception (Shaista Afroz et. Al., 2019)

"Cytokines released were evaluated in the supernatant using R&D system's rat cytokine antibody array. 29 cytokines were simultaneously checked for the change in release after stimulation with 1 μM GGRP. The level of 20 cytokines was more than 1.5 fold, which included- IL-1β, IL-6 and IL-1RA, 6 cytokines showed 1-1.5 fold change, and three were below 1 fold. TNF-α expression was found to be below 1 fold change. The average is taken from three independent experiments, and in each experiment TG from three animals were dissociated and passaged to obtain alial rich culture. SEM: Standard error of the mean."

Average fold change in the level of cytokines release in glial rich cell culture after exposure to CGRP compared to co

Cytoldine	Average Fold Change $(n - 3)$	SEM
MIG/CXCL9	6.81	2.84
L-SELECTIN/CD62L/LECAM-1	4.64	2.55
IL-3	4.08	1.25
LIX	3.81	2.12
IL-2	3.10	0.64
IL-6	2.78	0.40
IL-17	2.71	0.90
FRACTALKALINE	2.69	1.40
CNTF	2.63	1.23
MIP-1α/CCL-3	2.51	1.10
IL-1α	2.50	0.75
IL-13	2.38	0.69
IP-10/CXCL10	2.30	0.92
IL-4	2.23	1.37
GM-CSF	1.98	1.51
IL-1ra	1.96	0.31
CINC-2α/β	1.90	0.75
IL-1β	1.86	0.35
IL-10	1.75	0.77
VEGF	1.64	0.46
IFN-Y	1.21	0.36
sICAM-1	1.17	0.15
THYMUS CHEMOKINE/CXCL7	1.15	0.69
CINC-3	1.15	0.40
TIMP-1	1.13	0.10
CINC-1	1.13	0.35
RANTES/CCL5	0.95	0.11
TNF-α	0.93	0.45
MIP-3α/CCL20	0.88	0.10



Can text UBRELVY to 48764

Mitochondrial Recovery – Generally Begun At End of 2nd Line Treatment Trials

- **1.D-Ribose** use 5grams on waking and at night dissolved in water. ATP can be made very quickly from "D-ribose" If there is no ATP available, this causes the mitochondria to fail, then the lactic acid rises and persist for many minutes, or hours causing pain and PEM
- 2. CoQ10 60mg 1 pill twice daily
- **3. Magnesium** Magnesium must be Mag taurate, Mag Glycinate or Mag Malate, I have been using Higher Nature Super Magnesium 300mg capsule daily
- **4. Melatonin** 6-10mg, combo short/lacting

Above with or without

Oral Methylene Blue – must be pharmaceutical grade, sourcing difficult of late, titration and dosing approach available on request (*urine will turn green)

HBOT – see Paul Harch lecture

Adjunctive Therapies I Have Used With Positive Responses

- HDAC inhibition
 - Valproic Acid/Resveratrol cream
 - Resveratrol protects against side effects and increase activity of VPA
- Hydroxychloroquine, Nigella Sativa
- Nitric Oxide Pathways
 - Sildenafil with L-Arginine, L Citrulline powder -5000mg powder twice daily.
 - CardioMiracle product
- Refractory/Severe cases
 - Intensive Clinic Based, IV treatment protocols Ria Heslop in the UK works with clinics that employ sequenced E.B.O.O/ Apheresis/HBOT/IV methylene Blue/IV Vitamin C
 - See Asher Milgram, PhD Lecture



Adjunctive Therapies My Colleagues Have Used With Positive Responses

Stress management and controlled breathing programs
Gut Health
NeuroRehab Programming
Lymphatic Drainage – Perrin Technique



SURVEY DATA FROM REACT-19 ORGANIZATION

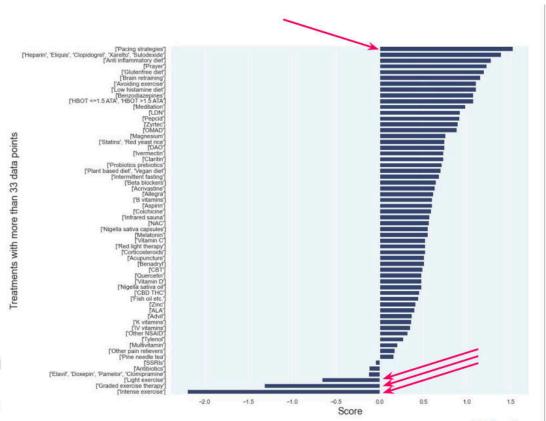
Exercise and energy management



The most obvious finding is that most surveyees reported worsening from exercise:

- Intense exercise (with sweating)
- Light exercise (no sweating)
- Graded exercise therapy

Pacing strategies (e.g. 'spoon theory') ended up scoring #1. Pacing strategies consist of planning out uses of energy and not exceeding an individual's limit (e.g. by avoiding chores, showering, etc.).





SURVEY DATA FROM REACT-19 ORGANIZATION

Highlights



These interventions likely cause more harm than good:

- Exercise
- COVID vaccines
- SSRI anti-depressants (selective serotonin reuptake inhibitor)
- TCA anti-depressants (tricyclic antidepressant)





These interventions are promising:

- Pacing strategies
- Diet
- Fasting
- Magnesium

- Antihistamines
- LDN (low-dose naltrexone)
- DAO enzymes
- Ivermectin
- Statins





REFERENCES

See Reference Lists of companion guides:

- 1. https://covid19criticalcare.com/wp-content/uploads/2022/10/l-RECOVER-Long-Covid-v3-September-6.pdf
- 2. https://covid19criticalcare.com/wp-content/uploads/2022/10/l-RECOVER-AN-APPROACH-TO-THE-MANAGEMENT-OF-POST-VACCINE-SYNDROME.pdf





THANK YOU

