

# WHAT IS MAL DE DEBARQUEMENT SYNDROME

& How We Treat It!



DR. MADISON OAK



# HOW IS MD DS DIAGNOSED?

Criteria for the diagnosis of Mal de Débarquement syndrome

- A. Non-spinning vertigo characterized by an oscillatory perception ('rocking,' 'bobbing,' or 'swaying') present continuously or for most of the day.
- B. Onset occurs within 48 hours after the end of exposure to passive motion.
- C. Symptoms temporarily reduce with exposure to passive motion.
- D. Symptoms continue for >48 hours.
  - MdDS in evolution: symptoms are ongoing but the observation period has been less than 1 month
  - Transient MdDS: symptoms resolve at or before 1 month and the observation period extends at least to the resolution point
  - Persistent MdDS: symptoms last for more than 1 month
- E. Symptoms not better accounted for by another disease or disorder.

# PPPD VS. MDDS

## Persistent Postural Perceptual Dizziness

- Psychological & central dizziness disorder
- Specific diagnostic criteria in the PPPD module
- Rocking, bobbing, swaying, etc
- Worse In the car (usually)
- Worse with walking/movement (usually)

## Mal de Debarquement Syndrome

- Central Vestibular Disorder
- Diagnostic criteria, previous page
- Rocking, bobbing, swaying, etc.
- Better in the car (usually)
- worse with walking (usually)







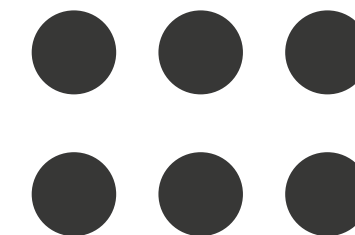
Cha YH, Baloh RW, Cho C, Magnusson M, Song JJ, Strupp M, Wuyts F, Staab JP. Mal de débarquement syndrome diagnostic criteria: Consensus document of the Classification Committee of the Bárány Society. J Vestib Res. 2020;30(5):285-293. doi: 10.3233/VES-200714. PMID: 32986636; PMCID: PMC9249277.

# WHAT ABOUT SPONTANEOUS MDSDS?

## Non-motion triggered MdDS

- It's up for debate!
- Some say yes, you CAN get this, others say no and it's another form of chronic dizziness.
- A 2020 research study calls it: "Non motion-triggered motion-moderated oscillating vertigo"

At this point, no one can agree which is which... or if it's even real!

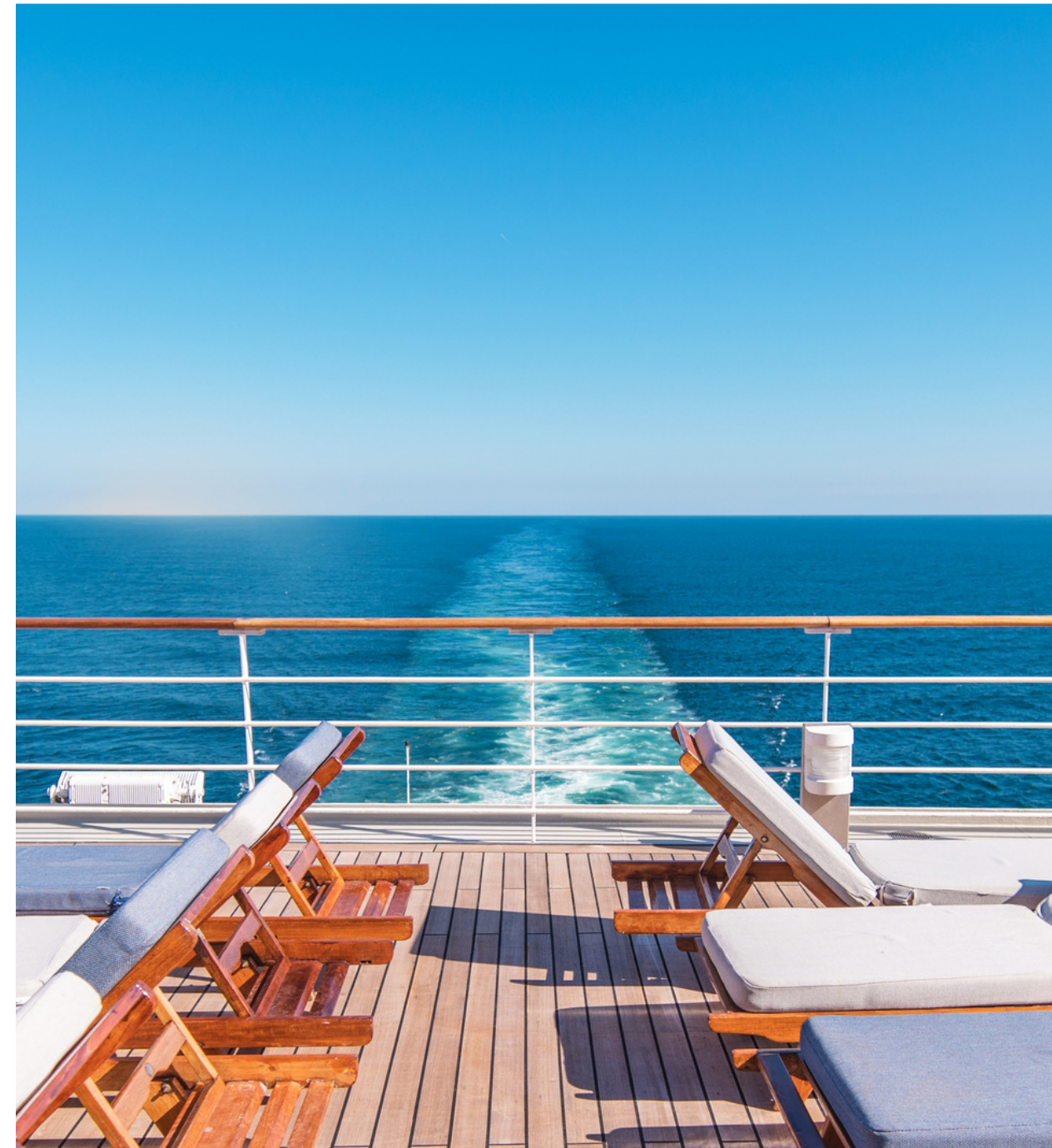
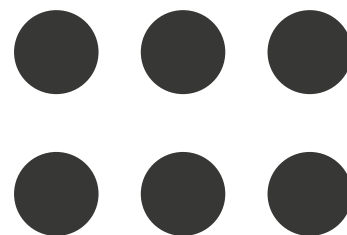




# WHAT IS NON MOTION- TRIGGERED MOTION- MODERATED OSCILLATING VERTIGO

## Non motion triggered MdDS

- It's up for debate!
- Some say yes, you CAN get this, others say no and it's another form of chronic dizziness, or that it's NM MdDS
- A 2020 research study calls it: "Non motion-triggered motion-moderated oscillating vertigo"



Cha YH, Baloh RW, Cho C, Magnusson M, Song JJ, Strupp M, Wuyts F, Staab JP. Mal de débarquement syndrome diagnostic criteria: Consensus document of the Classification Committee of the Bárány Society. J Vestib Res. 2020;30(5):285-293. doi: 10.3233/VES-200714. PMID: 32986636; PMCID: PMC9249277.

## Vestibular Migraine

- Central Vestibular Disorder
- Can be acute or chronic
- Can cause rocking and swaying that's worse during attacks
- Can cause rocking and swaying that exists between attacks
- Also causes other vestibular/migraine symptoms (see VM module)
- Can cause rocking and swaying in any position
- Can be related to spontaneous MdDS (according to some research/providers)

## VM vs. MdDS

## Mal de Debarquement Syndrome

- Central Vestibular Disorder
- Diagnostic criteria, previous page
- Rocking, bobbing, swaying, etc.
- Better in the car (usually)
- worse with walking (usually)





# VESTIBULAR MIGRAINE & MD DS?!

## Treat the Vestibular Migraine Disorder

get this under control  
first!

## Vestibular Migraine can Present just like MdDS

Some research says NMT  
MdDS is potentially just  
VM...

## The Dai Protocol Could make you worse!

Too much head  
movement + OPK's  
could exacerbate MdDS!

## If VM Is under-control and MdDS is still there...

then try the Dai protocol!

- Should I do the Dai Protocol if  
I have both?

...it depends!

# DOES ALL INTERNAL MOVEMENT MDDDS?

**DEFINITELY NOT!**

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Internal rocking and swaying is typical of many different vestibular disorders

I personally have seen it in:

- Persistent Postural Perceptual Dizziness
- Vestibular migraine
- Meniere's Disease (interictally)
- Vestibular Neuritis
- & others!





# TREATMENT OPTIONS FOR MDDDS

PT & VRT & Dai & Benzos! Oh my!

Table 8

Therapeutic responses.

1= very effective  
6= made it worse

	Motion triggered (MT)				Non-MT			
	# participants	Median	Range	Response <sup>a</sup>	# participants	Median	Range	Response <sup>a</sup>
Benzodiazepines	39	2	1–5	34 (87%)	14	1.5	1–6	11 (79%)
SSRI	17	3	1–6	9 (53%)	9	5	1–6	3 (33%)
Mixed SSRI/SNRI	10	3	2–6	6 (60%)	5	2	1–6	3 (60%)
TCA	11	4	1–6	4 (36%)	5	5	2–5	1 (20%)
Antiemetics	23	5	3–6	2 (9%)	10	5	3–6	1 (10%)
Physical therapy	39	3	1–5	22 (56%)	13	5	3–6	2 (15%)
Vestibular therapy	32	4	1–6	12 (38%)	10	5	4–6	0 (0%)
Stress reduction	20	3	1–6	11 (55%)	12	4	2–5	5 (42%)

\*\* The Dai protocol is not on here.

Cha YH, Cui YY, Baloh RW. Comprehensive Clinical Profile of Mal De Debarquement Syndrome. Front Neurol. 2018 May 7;9:261. doi: 10.3389/fneur.2018.00261. PMID: 29867709; PMCID: PMC5950831.

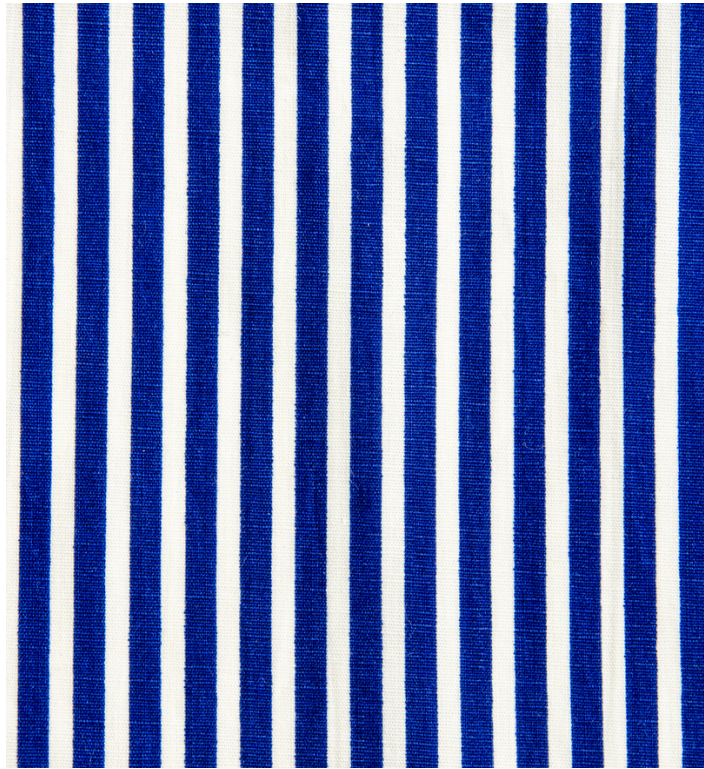
# DOES THE DAI PROTOCOL WORK?



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"75% of the MdDS patients had significant improvement in a 12-month observation, which was the first successful treatment of this debilitating illness. Since then, 330 MdDS patients have been treated with a similar initial success rate. This report documents the follow-up of 141 of these treated patients who had a year observation, of whom 120 had the classic MdDS and 21 had the spontaneous MdDS." - Dai, 2018





# THE DAI PROTOCOL!



- 1. Fukada Step Test to determine direction (or direction of pull you feel)
- 2. Have patient 'match' their motion and count rotations/sways per minute for 1 minute.
- 3. Play OPK stripes in the REVERSE direction of the pull/step test (if step test right, stripes go left)
- 4. Roll patients head passively right, left, center every beat. This beat is set by sways/minute in step 2.
- 5. Repeat 1-8x/day for 5 days.



# DISEMBARK BY DR. SHIN BEH

## WHY MdDS happens:

- Your body is trying to predict and anticipate your needs (allostasis).
  - Your body is trying to predict the future and compares the prediction to reality of the outside to adjust. In MdDS you have conflicting issues and your brain/body get stuck, leading to the rocking and swaying.
- when we are stabilizing on an uneven surface (the trigger) we predict and respond correctly.
  - When you're on a stable surface again, your brain is used to the original (unstable) and when the environment changes (to stable) our brain then incorrectly predicts and doesn't adjust to the new/stable environment, which leads to the constant rocking and swaying that does not exist.

## Medications

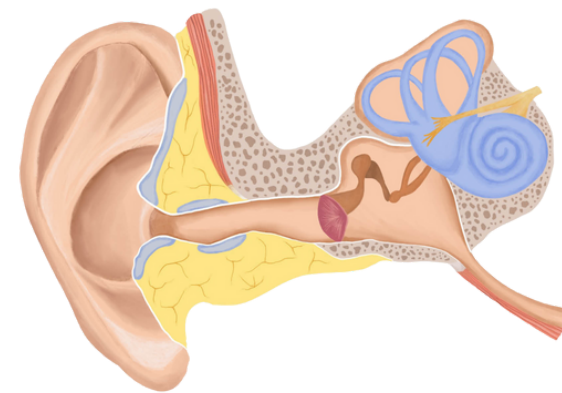
- SSRI/SNRI (increase neurotransmitters to brain)
- Benzo's (suppressants!)

## Neuro-modulation

## Lifestyle

- Sleep
- Diet
- Exercise
- Stress management - HPA axis is disturbed with a threat, which increases the autonomic NS which increases stress more - cycle!
- Vestibular exercises
- Thinking patterns(system 1 vs. 2)





THANK YOU



# THE DAI PROTOCOL INSTUCITONS

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Do not do this without a Physical Therapist to tell you exactly how you need to perform this for YOU!

# THE DAI PROTOCOL INSTUCITONS



## Settings

Direction of movement(?) Left to right	Number of stripes (?) 20	Speed (seconds across screen) (?) 20
Stripe color (?) Black	Background color (?) White	
Metronome (?) On	Metronome frequency (Hz) (?) 0.2 <small>A full scale will be played every 5 seconds.</small>	
Stop after (seconds) (?) 240	Fullscreen mode (?) On	

## Usage

To exit the application and return to the settings, click anywhere on the screen or press any key.

[Start Web Application](#) [Reset Defaults](#)

1. choose the Direction of Movement of stripes based on the results of the Fukuda or the patient's perceived direction of gravitational pull as described above.
2. Number of stripes across the screen at any given time defaults to 20.
3. Select the Speed (seconds stripes moving across the screen) in the dropdown box (20 is the slowest, 7 is the fastest). The speed of the stripes may vary depending on the screen size.
4. You can keep the defaults of the metronome on at a frequency of 0.2 Hz. You can turn the metronome off and set a metronome at 12 bpm (equivalent to 0.2 Hz). Note: Unless you can do the calculation of Hz. from personal sway.
5. Enter the time (Stop after) at 240 seconds (4 minutes). You can adjust the time as needed. Below is a screenshot of the app.



# THE DAI PROTOCOL INSTUCITONS



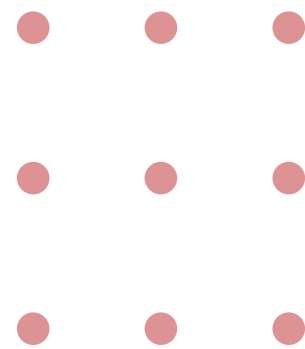
*Recommended sets and durations for each day performed.*

- **Day 1:** 1 set of 4 min. Rest 15 min. Repeat.
- **Day 2:** 3 sets of 4 min with 10-minute rest between sets.
- **Day 3:** Repeat Day 2.
- **Day 4:** If improving, repeat Day 3. If the patient's symptoms are worsening or not changing, switch the direction of the OPK stripes on the 4th day. If the patient perceives a gravitational pull forward or backward, add 2 sets of 4-minute exposure to horizontal stripes w/10 min rest w/o head movement.
- **Day 5:** If improving with the original protocol, repeat Day 3. If the protocol was modified on Day 4, repeat Day 4.



Linked here! <https://www.youtube.com/watch?v=Q9ul6lnXpZk>

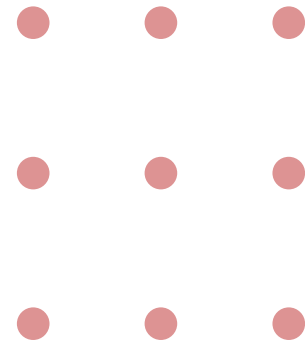
# WHAT WOULD DR. MADISON DO?



- Evaluate PPPD vs. MdDS vs. VM-sway
- Figure out if VM is causing MdDS-like-symptoms
  - If it's this, then please treat the VM first!
- Fukada Step test
- Ask patient about their frequency of sway
- Initiate OPK protocol with a partner!



# WHAT WOULD DR. MADISON DO?



- Dai protocol, but not by itself!
- Stress management
- Exercise
- Diet
- Thought process changes

## DISCLAIMER

REMEMBER: THIS MODULE IS FOR INFORMATIONAL PURPOSES ONLY AND MAY NOT BE THE BEST FIT FOR YOU AND YOUR PERSONAL SITUATION. IT SHALL NOT BE CONSTRUED AS MEDICAL ADVICE. THE INFORMATION AND EDUCATION PROVIDED HERE IS NOT INTENDED OR IMPLIED TO SUPPLEMENT OR REPLACE PROFESSIONAL MEDICAL TREATMENT, ADVICE, AND/OR DIAGNOSIS. ALWAYS CHECK WITH YOUR OWN PHYSICIAN OR MEDICAL PROFESSIONAL BEFORE TRYING OR IMPLEMENTING ANY INFORMATION READ HERE.