



Havana Syndrome

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Havana Syndrome a.k.a. “Anomalous Health Incident”

- ▶ First described by US Embassy staff stationed in Havana, Cuba, in 2016
- ▶ US government staff in Guangzhou, Vienna, London, Moscow, the DC area, and other locations have been affected
- ▶ Unknown mechanism of injury
- ▶ Theorized to be caused by “directed radio frequency energy”
- ▶ Also theorized to be caused by “mass hysteria”

Havana Syndrome

- ▶ Sudden onset of loud sound, accompanied by pressure or vibration in the head
- ▶ Often described as coming from a particular direction or occurring at a particular location in the building/dwelling
- ▶ Sudden onset tinnitus, hearing loss, dizziness, unsteady gait, visual disturbance
- ▶ Chronic symptoms of headache, dizziness, insomnia, vestibular processing and cognitive abnormalities, oculomotor dysfunction, otolithic impairment

US Government Response

- ▶ Standing Committee to Advise the Department of State on Unexplained Health Effects of U.S. Government Employees and Their Families at Overseas Embassies
- ▶ Health Incident Response Task Force
- ▶ HAVANA (Helping American Victims Afflicted by Neurological Attacks) Act of 2021 authorized payments to some injured parties.
- ▶ H.R. 4914 Havana Syndrome Attacks Response Act
 - ▶ Introduced 08/03/21; Referred to the Subcommittee on Immigration and Citizenship on 11/01/22
 - ▶ Would impose sanctions on any foreign person or government causing injury to US personnel

CONGRESS.GOV

S.1828 - HAVANA Act of 2021

117th Congress (2021-2022)

US Government Response

- ▶ National Academies of Sciences, Engineering, and Medicine. 2020. *An Assessment of Illness in U.S. Government Employees and Their Families at Overseas Embassies*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25889>.
- ▶ Recommendations:
 - ▶ Baseline testing of overseas personnel
 - ▶ Establish plans for caring for patients and investigating causes if a new cluster appears
 - ▶ Ensure accurate data collection if a new cluster appears
 - ▶ If RF energy appears to be the cause, train and equip employees to measure RF exposure in real time
 - ▶ Develop an approach and protocol for toxicological diagnoses
 - ▶ DOS should provide staff to quickly identify and respond to public health emergencies in their personnel

US Government Response

- ▶ CIA preliminary findings (Jan 2022) suggest that a foreign country is “probably not mounting a global attack aimed at U.S. personnel” – “unnamed source” in the Washington Post
- ▶ JASON scientific advisory group suggests the injured cohort is too small to conclude they all suffer from the same disorder. Also skeptical of RF as mechanism. “It is not possible to conclude at this time that these events are the result of intentional attacks that cause physical harm.”

Havana Syndrome

- ▶ Clinicians at University of Miami and University of Pennsylvania evaluated embassy personnel in 2017 and found 21 individuals who met their clinical criteria.
- ▶ Published a retrospective analysis of patients under their care.
- ▶ Tested domains included cognitive, mood, balance/vestibular, oculomotor, auditory, and MRI imaging.
- ▶ In this cohort, 86% of patients complained of vision disturbances and sleep issues. These were the most common complaints.
- ▶ *Swanson RL, Hampton S, Green-McKenzie J, et al. Neurological Manifestations Among US Government Personnel Reporting Directional Audible and Sensory Phenomena in Havana, Cuba. JAMA. 2018;319(11):1125–1133. doi:10.1001/jama.2018.1742*

Subjective Complaints

Vision and oculomotor	86%
Sleep	86%
Cognitive and behavioral	81%
Headache	76%
Balance/vestibular	71%
Auditory	68%

Subjective Complaints

Any vision or oculomotor complaint	86%
Visual problems	76%
Light sensitivity	62%
Difficulty reading	57%
Eye strain*	52%

* Particularly with reading; associated with disequilibrium, headache, nausea

Subjective Complaints

Dizziness	62%
Nausea	33%
General balance problems	67%

Symptoms exacerbated by walking quickly, moving head,
complex visual environments

Objective Findings

Convergence Insufficiency	52%
Smooth pursuit dysfunction	52%
Saccadic dysfunction	47%

Objective Findings

Static postural stability	76%
Dynamic balance	76%
VOR dysfunction	71%
Peripheral vestibular dysfunction	31%

Rehabilitation

Vestibular therapy	81%
Neuro-optometric rehabilitation	67%
Cognitive rehabilitation	62%

Havana Syndrome Patients at VCDC

- ▶ 8 AHI patients seen between 2019-2022
(full exam on 7 patients, 1 patient had telemedicine consult and pretesting, did not return for completion of optometric testing)
- ▶ 1 male, 7 female
- ▶ Ages ranged from 33-55 at time of incident
- ▶ One patient had a history of prior concussion
- ▶ One patient had a history of migraines
(though hadn't had one in over a decade prior to AHI)
- ▶ Retrospective chart review

Havana Syndrome Patients at VCDC

Common Complaints

Difficulty reading	8/8
Photophobia	8/8
Balance problems	8/8
Dizziness	7/8
Cognitive problems	7/8
Blurred vision	6/8

Havana Syndrome Patients at VCDC

Common Complaints

Headache	6/8
Bothered by screens	6/8
Sleep disturbance	6/8
Bothered by peripheral motion	5/8
Nausea	5/8
Diplopia	5/8

Havana Syndrome Patients at VCDC

Additional Complaints

Eye Pain/Foreign Body Sensation	4/8
Disequilibrium	4/8
Hearing Loss	4/8
Motion Sickness	4/8
Memory impairment	4/8
Exercise intolerance	3/8
Ear pain	3/8

Havana Syndrome Patients at VCDC

Most Common Findings

Convergence Insufficiency	7/7
Peripheral motion sensitivity	7/7
Vertical misalignment	6/7

Havana Syndrome Patients at VCDC

Additional findings

Reduced stereopsis	4/7
Oculomotor Dysfunction	3/7
Accommodative Dysfunction	3/7
Unstable perception of Visual Midline	3/7
Visual Midline Shift	1/7

Havana Syndrome Patients at VCDC Treatment

Yoked prism	1/7
Vertical prism	4/7
Low base-in prism	4/7
FL-41 tint	4/7
E-15 (blue) tint	1/7
Neutral gray tint	1/7
Vision rehabilitation	3/7

Reported Symptoms of Vertical Misalignment

- ▶ Dizziness
- ▶ Anxiety
- ▶ Motion sickness
- ▶ Headaches
- ▶ Eye strain
- ▶ Nausea
- ▶ Photophobia
- ▶ Neck pain
- ▶ Gait instability

In Summary

- ▶ Patients presented to the VCDC reporting having experienced Anomalous Health Incidents.
- ▶ Subjective complaints were similar to those described by investigators at University of Miami and University of Pennsylvania.
- ▶ The most common findings of the VCDC cohort were convergence insufficiency, peripheral motion sensitivity, and vertical eye misalignment.
- ▶ Vertical misalignment was not reported by investigators at U. Miami and U. Penn.