

United States Senate

WASHINGTON, DC 20510

January 27, 2023

Mr. Billy Nolen
Acting Administrator
Federal Aviation Administration

Dr. Susan Northrup
Federal Air Surgeon
Office of Aerospace Medicine

Dear Acting Administrator Nolen and Dr. Northrup:

I write to request information about changes the Federal Aviation Administration (FAA) made to its guidance for aviation medical examiners.

As previously reported, “[i]n October [2022], the FAA widened the acceptable parameters it uses when screening pilots for a specific heart condition.”¹ The FAA made this change in its “Guide for Aviation Medical Examiners,” a nearly 600-page document.² The document contains a section titled “normal variants” that lists certain electrocardiograms (ECG) findings that “are considered normal variants and are not cause for deferment unless the airman is symptomatic or there are other concerns.”³ In that section, the FAA widened the acceptable PR interval – a “heart health metric measured by electrocardiograms” – for a first-degree atrioventricular block.⁴ In the FAA guidance dated May 25, 2022, the acceptable PR interval was less than 0.21 seconds for individuals younger than 51 years old.⁵ On October 26, 2022, the FAA changed the acceptable PR interval to less than 0.30 seconds and removed the reference to the individuals’ age.⁶ According to a media report, a “PR interval that exceeds 0.2 indicates a first-degree atrioventricular block, which can cause a slower heartbeat or abnormal rhythm.”⁷ The images below highlight this change in the FAA document:

¹ Melissa Goldin, New FAA cardiac health rules not prompted by COVID-19 shots, Associated Press, Jan. 20, 2023, <https://apnews.com/article/fact-check-faa-pilots-heart-covid-373861551871>.

² Guide for Aviation Medical Examiners, Federal Aviation Administration, updated Dec. 28, 2022, https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/media/AME_GUIDE.pdf (accessed Jan. 23, 2023).

³ *Id.* at 256 (accessed Jan. 23, 2023).

⁴ Ciara O’Rourke, FAA: Medical guidelines changed on advice from cardiologists, not because of the COVID-19 vaccine, Politifact, Jan. 20, 2023, <https://www.politifact.com/factchecks/2023/jan/20/instagram-posts/faa-medical-guidelines-changed-advice-cardiologist/>.

⁵ Guide for Aviation Medical Examiners, Federal Aviation Administration, updated May 25, 2022, https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/media/guide.pdf at 250 (accessed Jan. 23, 2023).

⁶ Guide for Aviation Medical Examiners, Federal Aviation Administration, updated Dec. 28, 2022, https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/media/AME_GUIDE.pdf at 256 (accessed Jan. 23, 2023).

⁷ Ciara O’Rourke, FAA: Medical guidelines changed on advice from cardiologists, not because of the COVID-19 vaccine, Politifact, Jan. 20, 2023, <https://www.politifact.com/factchecks/2023/jan/20/instagram-posts/faa-medical-guidelines-changed-advice-cardiologist/>.

Guide for Aviation Medical Examiners –Dated May 25, 2022

Normal Variants - The following common ECG findings are considered normal variants and are not cause for deferment unless the airman is symptomatic or there are other concerns. Airmen who have these findings may be certified, if otherwise qualified:

- Early repolarization
- Ectopic atrial rhythm
- First-degree AV (atrioventricular) block with PR interval less than 0.21 in age < 51
- Incomplete Right Bundle Branch Block (IRBBB)
- Indeterminate axis
- Intraventricular conduction delay (IVCD)
- Left atrial abnormality
- Left axis deviation, less than or equal to -30 degrees
- Left ventricular hypertrophy by voltage criteria only
- Low atrial rhythm
- Low voltage in limb leads (May be a sign of obesity or hypothyroidism.)
- Premature Atrial Contraction (PAC) – multiple, asymptomatic
- Premature Ventricular Contraction (PVC) - single only; 2 or more on ECG require evaluation.
- Short QT – if no history of arrhythmia
- Sinus arrhythmia
- Sinus bradycardia. Up to age 49 if heart rate is >44; Age 50 and older if heart rate is >48
- Sinus tachycardia – heart rate < 110
- Wandering atrial pacemaker

Guide for Aviation Medical Examiners – Updated October 26, 2022

Normal Variants – (Updated 10/26/2022)

The following common ECG findings are considered normal variants and are not cause for deferment unless the airman is symptomatic or there are other concerns. Airmen who have these findings may be certified, if otherwise qualified:

- Early repolarization
- Ectopic atrial rhythm
- First-degree AV (atrioventricular) block with PR interval less than 300 ms (0.30 sec)
- Incomplete Right Bundle Branch Block (IRBBB)
- Indeterminate axis
- Intraventricular conduction delay (IVCD)
- Left atrial abnormality
- Left axis deviation, less than or equal to -30 degrees
- Left ventricular hypertrophy by voltage criteria only
- Low atrial rhythm
- Low voltage in limb leads (May be a sign of obesity or hypothyroidism.)
- Premature Atrial Contraction (PAC) – multiple, asymptomatic
- Premature Ventricular Contraction (PVC) - single only; 2 or more on ECG require evaluation.
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- Sinus tachycardia – heart rate < 110
- Wandering atrial pacemaker

After members of the public noticed this change in the FAA’s guidance, some individuals raised concerns that this update was a result of pilots experiencing heart-related injuries connected to the COVID-19 vaccines.⁸ Indeed, over the last several months and before the FAA updated its guidance, pilots and air traffic controllers have come forward to share their first-hand accounts of COVID-19 vaccine-related injuries.⁹ These testimonials provide a glimpse at the types of severe adverse events pilots have experienced after receiving the COVID-19 vaccines. Below are a few examples:

Name	Age (at time of adverse event)	Job Description	Date of Vaccination	Date of Adverse Event	Description of Adverse Event	Diagnosis
Cody Flint ¹⁰	33	Agricultural pilot	Feb. 1, 2021 – Pfizer	Feb. 1-3, 2021	Experienced tunnel vision, burst of pressure in ears, while flying	Left and right perilymphatic fistulas, and elevated intracranial pressure
Hayley Lopez ¹¹	29	Air traffic controller	Oct. 8, 2021 – Pfizer	Oct. 8-31, 2021	Chest pain, dizziness, high heart rate, high blood pressure	Postural orthostatic tachycardia syndrome (POTS), dysautonomia, fibromyalgia, orthostatic hypotension
Greg Pierson ¹²	60	Commercial pilot	Aug. 26, 2021 – Pfizer	Within 24 hours of receiving the vaccine	Erratic and highly elevated heart rate	Atrial fibrillation

⁸ *Id.*

⁹ Michael Nevradakis, Pilots Injured by COVID Vaccines Speak Out: ‘I Will Probably Never Fly Again’, The Defender, May 8, 2022, https://www.theepochtimes.com/health/exclusive-pilots-injured-by-covid-vaccines-speak-out-i-will-probably-never-fly-again_4452922.html?utm_source=ai&utm_medium=search.

¹⁰ Phone call between Cody Flint and Sen. Ron Johnson staff, Jan. 26, 2023; Cody Flint statement, Expert Panel on Federal Vaccine Mandates, Nov. 2, 2021, <https://rumble.com/vokrf7-sen.-johnson-expert-panel-on-federal-vaccine-mandates.html> at 57:26.

¹¹ Phone call between Hayley Lopez and Sen. Ron Johnson staff, Jan. 25, 2023.

¹² Phone call between Greg Pierson and Sen. Ron Johnson staff, Jan. 25, 2023.

Bob Snow ¹³	60	Commercial pilot	Nov. 4, 2021 – Johnson & Johnson	April 9, 2022	Cardiac arrest immediately after landing at Dallas-Fort Worth International Airport	Sudden cardiac arrest
Wil Wolfe ¹⁴	56	Commercial pilot	Nov. 9, 2021 – Johnson & Johnson	Nov. 22, 2021	Seizure, paralysis on the right side of body	Mr. Wolfe died on Nov. 26, 2021

It remains unclear what, if anything, the FAA has done as it relates to these individuals' experiences or if it is actively monitoring COVID-19 vaccine adverse events in the aviation industry. Altogether, according to the Vaccine Adverse Event Reporting System (VAERS), as of January 13, 2023, there have been 1,505,275 adverse events and 33,746 deaths associated with the COVID-19 vaccines.¹⁵

Notably, my office recently received data from a Department of Defense (DoD) whistleblower showing an increase in disease and injuries in pilots across the DoD in years 2020-2022 compared to years 2016-2019.¹⁶ Based on data from the Defense Medical Epidemiology Database, the whistleblower reported that the total number of disease and injuries in pilots across DoD was 265 in 2016; 252 in 2017; 164 in 2018; 223 in 2019; 2,194 in 2020; 2,861 in 2021; and 4,059 in 2022.¹⁷ These increases in disease and injuries in pilots across the DoD over the last three years, and particularly over the last year, raise questions as to whether FAA has seen similar increases in disease and injuries in individuals in the aviation industry.

¹³ Phone call between Bob Snow and Sen. Ron Johnson staff, Jan. 24, 2023.

¹⁴ Phone call between Claudia Wolfe and Sen. Ron Johnson staff, Jan. 25, 2023.

¹⁵ See VAERS database query: United States Department of Health and Human Services (DHHS), Public Health Service (PHS), Centers for Disease Control (CDC) / Food and Drug Administration (FDA), Vaccine Adverse Event Reporting System (VAERS) 1990 - 01/13/2023, CDC WONDER On-line Database. Accessed at <http://wonder.cdc.gov/vaers.html> on Jan 23, 2023 2:47:35 PM. Query criteria – Vaccine Products: COVID-19 Vaccine (COVID19); COVID-19-2 (COVID-192). Group By: Month Received. State/Territory: All locations. Event Category: All Events. Show Totals: True. Show Zero Values: False; VAERS database query: United States Department of Health and Human Services (DHHS), Public Health Service (PHS), Centers for Disease Control (CDC) / Food and Drug Administration (FDA), Vaccine Adverse Event Reporting System (VAERS) 1990 - 01/13/2023, CDC WONDER On-line Database. Accessed at <http://wonder.cdc.gov/vaers.html> on Jan 23, 2023 2:59:31 PM. Query criteria – Vaccine Products: COVID-19 Vaccine (COVID19); COVID-19-2 (COVID-192). Group By: Month Received. State/Territory: All locations. Event Category: Death. Show Totals: True. Show Zero Values: False.

¹⁶ Data provided by DoD whistleblower, Jan. 24, 2023 (on file with office).

¹⁷ *Id.*

Despite increases in reports of adverse events associated with the COVID-19 vaccines, on January 20, 2023, an FAA representative assured my office that the change to the FAA's guidance "had nothing to do with COVID vaccinations."¹⁸ The representative noted that, "new scientific evidence enabled the FAA to safely raise the tolerance used to screen for a certain heart condition. The update was an effort to save pilots at the expense of an unnecessary cardiac evaluation that did not contribute to a fly or no-fly decision."¹⁹ FAA's full response to my office is included below:

Email from FAA to Senator Ron Johnson's Office – January 20, 2023

Apologies for my delay here. First, let me say that the change had nothing to do with COVID vaccinations.

New scientific evidence enabled the FAA to safely raise the tolerance used to screen for a certain heart condition. The update was an effort to save pilots the expense of an unnecessary cardiac evaluation that did not contribute to a fly or no-fly decision.

More specifically, the Guide for Aviation Medical Examiners (AME Guide) contains policy and guidance for AMEs as they evaluate applicants for Airman Medical Certificates. The AME Guide is a living document that is updated routinely based on emerging scientific evidence and expert consensus. Projected modifications are reviewed by experts in the particular field and aerospace medicine specialists. The safety of the National Air Space is paramount. Conditions that could result in a sudden or subtle incapacitation for the duration of the certificate are not permitted. According to the Federal Air Surgeon's Cardiology Consultants and a review of the literature, first-degree AV blocks between 200 and 300 milliseconds (ms) do not require a cardiac work up and can be followed as a normal variant. First-degree AV blocks in this range are not associated with sudden or subtle incapacitation, abnormal cardiac rhythms, or lost beats. As a result, first-degree AV blocks up to 300 ms were added to the FAA's list of normal variants in 2017. The AME Guide was updated to reflect this in October 2022 for clarity and to provide guidance for AMEs.

FAA physicians do review all EKGs performed as part of a First Class Medical Certificate application and compare them to previous results. If an AV block progresses, pilots are referred for a cardiology evaluation.

Even though the FAA has assured my office and other media outlets²⁰ that the change in its guidance for aviation medical examiners has "nothing to do with COVID vaccinations," questions still remain regarding the FAA's decision to issue this change and its awareness of adverse events connected to the COVID-19 vaccines. Accordingly, please provide the following information by no later than February 10, 2023:

1. What steps has FAA taken or will FAA take to investigate whether Cody Flint, Hayley Lopez, Greg Pierson, Bob Snow, Wil Wolfe, and other pilots experienced COVID-19 vaccine adverse events?

¹⁸ Email from the Federal Aviation Administration to Sen. Ron Johnson staff, Jan. 20, 2023 at 9:30am (on file with office).

¹⁹ *Id.*

²⁰ See e.g. Ciara O'Rourke, FAA: Medical guidelines changed on advice from cardiologists, not because of the COVID-19 vaccine, Politifact, Jan. 20, 2023, <https://www.politifact.com/factchecks/2023/jan/20/instagram-posts/faa-medical-guidelines-changed-advice-cardiologist/>; Melissa Goldin, New FAA cardiac health rules not prompted by COVID-19 shots, Associated Press, Jan. 20, 2023, <https://apnews.com/article/fact-check-faa-pilots-heart-covid-373861551871>.

2. Is FAA aware of any individuals experiencing adverse events connected to the COVID-19 vaccines?
3. On December 12, 2020, one day after the Food and Drug Administration issued an Emergency Use Authorization for Pfizer's COVID-19 vaccine, FAA announced that it "has determined that pilots may receive the vaccine under the conditions of their FAA-issued airman medical certification."²¹ Please provide all records²² relating to how FAA made this determination.
4. Has FAA evaluated whether any changes should be made to its guidance for aviation medical examiners based on adverse events associated with the COVID-19 vaccines? If so, please explain when those evaluations occurred and what was found. If not, please explain why.
5. In correspondence with my office, FAA wrote that it made the decision to change the guidance for aviation medical examiners relating to atrioventricular block based on "new scientific evidence."²³ Please provide this evidence and indicate when FAA first became aware of each piece of evidence.
6. For each year from 2013 through 2022, provide the number of individuals who had a first-degree atrioventricular block with PR intervals greater than 0.21 seconds.
7. How many individuals are currently certified to fly that have PR intervals greater than 0.21 seconds?
8. How often has FAA updated this specific section of its guidance relating to the PR intervals associated with first-degree atrioventricular blocks in the past ten years? Please provide those dates.

²¹ Press release, Pilots and Air Traffic Controllers May Receive Pfizer COVID-19 Vaccine, with Appropriate Precaution, Federal Aviation Administration, Dec. 12, 2020, <https://www.faa.gov/newsroom/pilots-and-air-traffic-controllers-may-receive-pfizer-covid-19-vaccine-appropriate>; Press release, FDA Takes Key Action in Fight Against COVID-19 By Issuing Emergency Use Authorization for First COVID-19 Vaccine, Federal Aviation Administration, Dec. 11, 2020, <https://www.fda.gov/news-events/press-announcements/fda-takes-key-action-fight-against-covid-19-issuing-emergency-use-authorization-first-covid-19>.

²² "Records" include any written, recorded, or graphic material of any kind, including letters, memoranda, reports, notes, electronic data (emails, email attachments, and any other electronically-created or stored information), calendar entries, inter-office communications, meeting minutes, phone/voice mail or recordings/records of verbal communications, and drafts (whether or not they resulted in final documents).

²³ Email from the Federal Aviation Administration to Sen. Ron Johnson staff, Jan. 20, 2023 at 9:30am (on file with office).

Mr. Billy Nolen and Dr. Susan Northrup
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Thank you for your attention to this important matter.

Sincerely,

A handwritten signature in blue ink that reads "Ron Johnson". The signature is written in a cursive, flowing style.

Ron Johnson
United States Senator

cc: The Honorable Maria Cantwell
Chairman
Committee on Commerce, Science, and Transportation

The Honorable Ted Cruz
Ranking Member
Committee on Commerce, Science, and Transportation

The Honorable Eric Soskin
Inspector General
U.S Department of Transportation