



Medical Certification



Session Time: One, 50-minute session

DESIRED RESULTS

ESSENTIAL UNDERSTANDINGS

Pilots must be aware of their physical and mental condition in order to conduct safe flights.
Pilot certification involves medical qualifications as well as aviator qualifications.

ESSENTIAL QUESTIONS

1. What medical certification options are available to a pilot?
2. How does a pilot assess their health prior to a flight?

LEARNING GOALS

Students Will Know

- The various medical certificates required for acting as pilot-in-command.
- Which medical conditions may require a special issuance medical certificate.
- How to make a personal health assessment before flying.

Students Will Be Able To

- *Explain* the importance of medical certification. [DOK-L2]
- *Organize* medical certification standards according to medical certificate class. [DOK L-2]
- *List* conditions that may require a pilot to obtain a special issuance medical certificate. [DOK L-1]
- *Assess* a pilot's go/no-go decisions in relation to the IMSAFE checklist. [DOK-L3]

ASSESSMENT EVIDENCE

Warm-up

Teacher will lead a brief class discussion in which students think about different activities they engage in that may require some form of medical qualification. This topic segues into a discussion of why medical requirements are important for pilots.

Formative Assessment

Students will complete a Certification Standards Table and answer questions about the various levels of medical certification required by pilots.

Summative Assessment

Students will make "go/no-go" decisions for three scenarios involving pilot symptoms, signs, or other medical conditions that may impact flight safety.

MATERIALS/RESOURCES

- [Medical Certification Presentation](#)
- [Medical Certification Student Activity 1](#)
- [Medical Certification Student Activity 2](#)
- [Medical Certification Student Activity 3](#)
- [Medical Certification Student Activity 4](#)
- [Medical Certification Teacher Notes 1](#)
- [Medical Certification Teacher Notes 2](#)
- [Medical Certification Teacher Notes 3](#)
- [Medical Certification Teacher Notes 4](#)

LESSON SUMMARY

The lesson will begin with a discussion about the need for medical certification for pilots and the Federal Aviation Regulations that relate to certification. The different types of medical certification will then be detailed, as will the types of flying that do not require any special certification.

During the next part of the lesson, students will learn about the conditions that will automatically disqualify a pilot from obtaining a medical certificate, as well as conditions that will require additional testing and documentation. Students will then complete a formative assessment in which they compare and contrast the different classes of medical certification.

Next, students will explore how the IMSAFE checklist functions to help pilots self-evaluate their fitness for flight on any given day. Finally, students will complete a summative assessment in which they apply their understanding of medical certifications and the IMSAFE checklist to several scenarios involving “go/no-go” decisions.

BACKGROUND

Pilots, mechanics, air traffic controllers, and dispatchers form a cohesive system in modern aviation. Every person who operates, repairs, directs, or controls aircraft must be deemed fit for service in order to ensure maximum public safety. Just as pilots and others must prove their skills and competencies in performing their particular functions, they must also demonstrate that they meet the required medical standards and obtain official certification. For pilots, this can be accomplished in two ways: 1) by submitting to a physical examination conducted by a specially certified physician known as an Aviation Medical Examiner; or 2) by completing an FAA medical questionnaire followed by an examination by a state-licensed physician. Option 2 is available only to non-commercial pilots. This lesson will present the facts and regulations pertaining to medical certification for pilots and detail those conditions for which certification may require additional testing and documentation.

MISCONCEPTIONS

A common misconception is that all pilots must obtain the same level of medical certification. This is not the case. Some pilots, particularly those flying light sport aircraft, don't require any medical certification other than their state-issued driver's license. At the other end of the spectrum, airline pilots must be recertified every six months, and must undergo special testing for cardiac or other potentially dangerous conditions. Non-airline commercial pilots and private pilots must be certified to standards above those of the light sport pilot but not as high as the airline professional.

Another misconception is that, once a pilot loses their medical certification it is lost forever. Pilots have a variety of paths to regain certification, from appealing the original decision to getting additional medical treatments to resolve the condition. Sometimes, time alone returns the pilot to certification status.

Finally, it is not true that all pilots need to have 20/20 vision. Pilots at all levels of certification are permitted to wear corrective lenses as long as, while wearing the corrective lenses, their vision meets the medical standards for their level of certification.

DIFFERENTIATION

To support long-term memorization of the material, encourage students to create flash cards or play online games such as Kahoot or Quizlet. Give students time to pair up and quiz each other prior to assessments.

To aid student comprehension in the **EVALUATE** section, allow students to create scenarios to evaluate whether a proposed flight can be conducted safely. Allow students to present their scenario to the class during a review session for students to apply their learning.

LEARNING PLAN

ENGAGE

Session 1

Teacher Material: [Medical Certification Presentation](#)

Slides 1-3: Introduce the topic and learning objectives of the lesson.

Slide 4: Conduct the **Warm-Up**.

Warm-Up

Use the following questions to lead a brief class discussion about the importance of medical certification for pilots.

1.

What activities in your daily life require some form of medical certification? (In other words, when do you need to pass a medical examination before you can participate in an activity?)

Answers will vary, but here are some grade-appropriate possibilities: passing a vision test to obtain a driver's license, passing a physical exam to become eligible to play sports at school, obtaining the necessary vaccinations to attend public school or go on field trips.

1.

What occupations can you think of that may require medical certification or testing?

Answers will vary may include bus and truck drivers, doctors and nurses, operators of heavy construction equipment, and professional athletes.

1.

Why is medical certification important for these activities?

The basic justification for medical testing and certification is to protect public safety. For example, it would be dangerous, and potentially lethal, for a bus driver to pass out or suffer a heart attack while on the job. Medical testing and certification provide a level of assurance that a major unforeseen medical or health-related event will not occur while on the job.

2.

Why is medical certification important for pilots?

Pilots must remain physically capable of completing every flight, as hundreds of people may be

depending on the pilot to fly and land the plane safely and without incident. A disabled pilot is a danger to passengers in the air as well as to people and property on the ground.

EXPLORE

Teacher Materials: [Medical Certification Presentation](#), [Medical Certification Teacher Notes 1](#)

Student Material: [Medical Certification Student Activity 1](#)

Slide 5: Any time people get on an airplane, they are placing an enormous amount of trust and faith in the pilot or pilots. They trust that the pilots have undergone the required training, that they possess the necessary skills and knowledge to conduct the flight safely, and that they have gained the experience to work through any unforeseen circumstances that might come up. They also trust that the pilots are physically well enough to perform their duties, and that a knowledgeable doctor has examined them recently to confirm that they have no medical condition that could disable them in flight or affect their ability to perform their duties as professional pilots.

Slide 6: Divide students into small groups of two or three and distribute **Medical Certification Student Activity 1**. After student groups have completed the activity, discuss their responses as a class. Possible responses to the questions are provided in **Medical Certification Teacher Notes 1**.

EXPLAIN

Teacher Materials: [Medical Certification Presentation](#), [Medical Certification Teacher Notes 2](#)

Student Material: [Medical Certification Student Activity 2](#)

Slide 7: Most pilots require some form of medical certification to act as pilot-in-command or as a required crew member. However, different kinds of missions require different levels of certification. Depending on the type of flying being done, pilots may choose between a traditional medical certification and a BasicMed certification.

There are three classes of traditional medical certification: first class, second class, and third class. Future slides in this lesson will detail the differences. To obtain one of these certifications, a pilot must submit to a physical exam by a specially authorized physician called an Aviation Medical Examiner, or AME for short. An AME receives special training in FAA requirements for pilots and is designated by the Civil Aviation Medical Institute (CAMI).

Pilots who do not fly commercially, and are willing to limit the types and sizes of airplanes they fly, can go to their family doctor for BasicMed certification as an alternative to seeing an AME regularly. BasicMed was designed to make it easier for pilots who do not fly for hire and who limit their flying to smaller aircraft to obtain medical certification. To qualify for BasicMed, pilots must have been issued a traditional medical certificate—either first, second, or third class—at any time since July 15, 2006.

Balloon and glider pilots are exempt from medical certification, and pilots certified as sport pilots may fly if they meet the medical requirements for their driver's license. As long as they have a driver's license, sport pilots are medically certified to fly light sport airplanes.

Slide 8: Getting traditional medical certification—first, second, or third class—starts by logging on to the FAA's MedXpress website (<https://medxpress.faa.gov/MedXpress/>) and establishing an account. Once logged on, pilots simply follow the prompts as the site steps through the various pages. Pilots are asked to read the Pilot's Bill of Rights, fill in their name and contact information, state which class of medical certificate is desired, and submit the form. Pilots then print out the receipt containing a tracking number.



Teaching Tips

You can read—and share with your students—the text of the Pilot’s Bill of Rights here: <https://www.govtrack.us/congress/bills/112/s1335/text>

Pilots then call their local Aviation Medical Examiner, provide them with the tracking number, and schedule an appointment. The medical exam will consist of a health questionnaire provided by the doctor, an eye and ear exam, a physical exam, and urinalysis. First class medical certificates require additional testing, including an EKG to confirm heart health. At the end of the successful exam, the pilot will receive a paper document that will serve as the medical certificate. The certificate will state the class of medical certification, the date, and the doctor’s signature. The pilot will then sign the certificate and keep it in their possession when flying. The medical certificate is a required document to serve as PIC or as a required crew member.

The following video walks students through this process:

- “AOPA Video: How to Obtain Medical Certification” (Length 2:27)

<https://video.link/w/mtL1>

For teachers unable to access Safe YouTube links, the video is also available here: https://www.youtube.com/watch?time_continue=21&v=Yop4fLr6bpo&feature=emb_logo



Teaching Tips

The following video was created by the FAA to promote the use of the MedXPress application and website. It shows the online form that applicants for a medical certificate must fill out before their doctor’s appointment:

- “MedXPress: It’s Easy” (Length 3:00)
<https://video.link/w/FtW1>

For teachers unable to access Safe YouTube links, the video is also available here: <https://www.youtube.com/watch?v=fh9KGs6Z47k>

Slide 9: The three classes of medical certification were designed to take into consideration the fact that not all pilots or missions require the same level of health scrutiny. The requirements for the three classes are spelled out in detail in Part 67 of the FARs, as are the types of medical conditions that might prevent a pilot from getting certification or would, at least, require additional testing and documentation.

- Private pilots require a third-class medical certificate. Private pilots may not fly for hire or get paid for their flying. Since private pilots do not generally fly larger airplanes and are not flying the public for commercial purposes, the FAA requires a relatively low level of medical scrutiny for these pilots.
 - A third-class medical certificate is valid for 5 years if the pilot is under 40; it is valid for 2 years if the pilot is 40 or over at the time the certificate is issued.
- Commercial pilots require a second-class medical certificate. The medical exam for this certificate involves slightly more evaluation than for a third-class certificate.
 - A second-class medical certificate is valid for 1 year, regardless of the pilot’s age.
- Airline transport pilots—mainly pilots flying for airlines or other large commercial operators—require a first-class medical certificate. This certificate is valid for 1 year for pilots under 40 and for 6 months for pilots 40 and over.

Because the medical standards for each level of certificate become more rigorous as you move from third-class to first-class, each certificate level includes the level or levels below it. So, a pilot with a first-class medical certificate has also met the standards for the second-class and third-class certificates.

The valid period of a medical certificate can be extended if the pilot is using it exclusively to operate at a “lower” level. For example, a 30-year-old pilot who holds an airline transport pilot certificate and a first-class medical certificate can use that medical certificate to exercise the privileges of an ATP for 1 year. But the pilot can use that same medical certificate to exercise the privileges of a private pilot for 5 years.

Slide 10: Not everybody who applies for a medical certificate is approved. Some medical conditions are grounds for immediate disapproval; pilots with these conditions may receive a permanent denial of medical certification, or they may be subject to conditional approval based on additional testing or documentation.

Disqualifying conditions are detailed in FAR 67.401 and include the following:

- Diabetes mellitus requiring oral hypoglycemic medication or insulin
- Angina pectoris
- Coronary heart disease that has been treated or, if untreated, has been symptomatic or clinically significant
- Myocardial infarction
- Cardiac valve replacement
- Permanent cardiac pacemaker
- Heart replacement
- Psychosis
- Bipolar disorder
- Personality disorder that is severe enough to have repeatedly manifested itself by overt acts
- Substance dependence (including alcohol)
- Substance abuse
- Epilepsy
- Disturbance of consciousness without satisfactory explanation of cause
- Transient loss of control of nervous system function(s) without satisfactory explanation of cause

There are many additional conditions that require further testing or documentation before a medical certificate is issued. A common example of this is people who have been diagnosed with attention deficit hyperactivity disorder (ADHD) or who, if undiagnosed, take medication to treat symptoms of ADHD. The FAA requires an extensive evaluation before issuing a certificate to such individuals.

Slide 11: Sometimes, pilots with otherwise-disqualifying conditions can still get certification under the FAA’s special issuance program. If the pilot works closely with their doctor and AME and undergoes treatment and further testing, and if it can be documented that the underlying condition is stable and does not present a danger to the pilot or the public, then a special issuance medical certificate may be granted. These special issuance certificates may have conditions and limitations placed on the pilot (e.g., no night flight), or they may be valid for a shorter time than a standard medical certificate (e.g., must be renewed in 6 or 12 months instead of 2 years).

In general, if an applicant for a medical certificate has any concerns about whether something in their medical history could delay or hinder the issuance of a certificate, they are advised to contact AOPA’s medical certification specialists prior to visiting an AME: www.aopa.org/medical.



Teaching Tips

Show students this statement from Chapter 17 of the PHAK:

The important thing to remember is that with very few exceptions, all disqualifying medical conditions may be considered for special issuance. If you can present satisfactory medical documentation to the FAA that your condition is stable, the chances are good that you will be able to qualify for an Authorization.

Slide 12: Another way for some pilots to get medical certification is through the BasicMed program. This type of certification is for pilots who don't fly for hire and only fly smaller, slower airplanes. Pilots who fly commercially or get paid to fly may not use BasicMed; they must receive a traditional FAA medical certification.

Several limitations apply to pilots flying under BasicMed. For example, pilots may not operate aircraft that weigh more than 6,000 lbs or have a capacity of more than 6 seats. Pilots flying under BasicMed may not fly above 18,000 feet or have an indicated airspeed greater than 250 knots. Finally, all operations carried out under BasicMed must be made within the United States. Flights into Mexico, Canada, or other places outside the boundaries of the United States are prohibited.

While BasicMed pilots may not fly commercially or for hire, they can operate both VFR and IFR and may be paid for flight or ground instruction.

Slide 13: Obtaining BasicMed certification is fairly simple. The only caveat is that a pilot must first have been issued a traditional medical certificate at some time after July 15, 2006. Pilots who have never held a traditional medical certificate may not use BasicMed as their initial medical certification.

The first step to flying under BasicMed is to log into the FAA BasicMed website and complete the form called the Medical Examination Checklist:

- https://www.faa.gov/documentLibrary/media/Form/FAA_Form_8700-2_.pdf

Print out the pages for the doctor to review and complete, and schedule an appointment with any licensed physician who has agreed to certify pilots under BasicMed. The forms you provide the doctor will spell out in detail the extent of the exam. Once the exam is complete, the doctor signs the form and returns it to you. You then go on to another website and complete the Medical Assessment Self Course; AOPA's course is entirely online:

- <https://basicmedicalcourse.aopa.org/client/app.html?source=bold#/auth/logon>

Once the course is complete, print out the Course Completion Certificate and keep it in your logbook or other safe place along with the Medical Examination Checklist that the doctor signed.

A major advantage to BasicMed is that pilots may use their own physician to conduct the examination instead of an AME. The pilot must be re-examined every 48 calendar months.

Unlike traditional medical certification, BasicMed documentation is not sent to the FAA. The pilot is the only party who maintains records of BasicMed, so pilots are cautioned not to lose their documentation. Emphasize that the pilot's physician is only required to examine certain things and discuss any potential issues with the pilot; the pilot is ultimately responsible for determining if they are fit for flight.

Slide 14: Complete the **Formative Assessment**.

Formative Assessment

Distribute to each student a copy of **Medical Certification Student Activity 2**, which contains a blank Certification Standards Table. Students will use an AOPA article as a reference to complete the table, and then answer several analysis questions about the table. Correct answers are in **Medical Certification Teacher Notes 2**.

[DOK-L2; *organize*]

EXTEND

Teacher Materials: [Medical Certification Presentation](#), [Medical Certification Teacher Notes 3](#)

Student Material: [Medical Certification Student Activity 3](#)

Slide 15: What does it mean to be fit for flight? Many people drive when they are tired, taking medication, experiencing stress, or getting sick; however, these are not conditions under which a pilot should be flying an aircraft.

Remind students that before a flight, a pilot performs a preflight inspection on the aircraft. The pilot would not fly if the airplane was low on fuel. The pilot would not fly if the oil were contaminated or if the fuel had water in it. The pilot would not fly if there were cracks in the wing skin. These might seem like minor things, but a pilot should not take to the air when something, however minor, is wrong with the aircraft.

Similarly, before each flight pilots perform a personal self-check to determine their own fitness to fly. Pilots are trained from their early days to implement the IMSAFE checklist before each flight. The items represented in the IMSAFE acronym identify potential problem areas in a pilot's fitness to fly, helping the pilot to think clearly about their present fitness before making the critical go/no-go decision.



Teaching Tips

Ask students to speculate about what the acronym IMSAFE stands for. Write their answers on the board to review after students have learned what the acronym stands for.

The following video reviews the six elements of the IMSAFE checklist:

- “Fly Well - Pilot Preflight” (Length 2:47)
<https://aopalive.aopa.org/detail/videos/fly-well---aopa-pilot-protection-services/video/5561102113001/fly-well---pilot-preflight>

Note: This video cites “Eating” as the reference to the letter “E”, while the Aeronautical Information Manual (AIM) uses “Emotion” for the same letter reference. Both are in common use.

Slide 16: Divide the class into six groups, and assign each group a letter from IMSAFE. Distribute a copy of **Medical Certification Student Activity 3** to each group. Each group will use the provided resources to identify possible causes and effects of problems related to their assigned letter. Sample responses are provided in **Medical Certification Teacher Notes 3**. [DOK L-1; *list*]

EVALUATE

Teacher Materials: [Medical Certification Presentation](#), [Medical Certification Teacher Notes 4](#)

Student Material: [Medical Certification Student Activity 4](#)

Slides 17-26: Students complete sample FAA exam questions. Remind students that these questions are very similar to the actual questions found on the Private Pilot FAA Knowledge Test. Studying these and similar questions is an excellent way to prepare for the Knowledge Test, the passing of which is a primary objective of this course.

Slide 27: Conduct the **Summative Assessment**.

Summative Assessment

Distribute **Medical Certificates Student Activity 4**. Working individually, students will review three flight scenarios and answer questions related to each pilot's "go/no-go" decision. Correct answers are in **Medical Certificates Teacher Notes 4**.

[DOK-L3; assess]

Summative Assessment Scoring Rubric

- Follows assignment instructions
- Responses show evidence of the following:
 - Knowledge of the differences among the various medical certificates
 - Knowledge of the factors that should influence a pilot's "go/no-go" decision
 - Ability to apply the IMSAFE checklist to different flight scenarios
- Contributions show understanding of the concepts covered in the lesson
- Contributions show in-depth thinking including analysis or synthesis of lesson objectives

| Points | Performance Levels |
|--------|---------------------------------------|
| 9-10 | Consistently demonstrates criteria |
| 7-8 | Usually demonstrates criteria |
| 5-6 | Sometimes demonstrates criteria |
| 0-4 | Rarely to never demonstrates criteria |

STANDARDS ALIGNMENT

COMMON CORE STATE STANDARDS

- **RST.11-12.2** - Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
- **RST.11-12.4** - Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11-12 texts and topics*.
- **WHST.11-12.6** - Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
- **WHST.11-12.8** - Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
- **WHST.11-12.9** - Draw evidence from informational texts to support analysis, reflection, and research

PRIVATE PILOT

I. Preflight Preparation

Task A. Pilot Qualifications References

- Knowledge - The applicant demonstrates understanding of:
 - **PA.I.A.K1** Certification requirements, recent flight experience, and recordkeeping.
 - **PA.I.A.K2** Privileges and limitations.
 - **PA.I.A.K3** Medical certificates: class, expiration, privileges, temporary disqualifications.
 - **PA.I.A.K4** Documents required to exercise private pilot privileges.
 - **PA.I.A.K5** Part 68 BasicMed privileges and limitations.
- Skills - The applicant demonstrates the ability to:
 - **PA.I.A.S1** Apply requirements to act as PIC under Visual Flight Rules (VFR) in a scenario given by the evaluator

REFERENCES

- Pilot's Handbook of Aeronautical Knowledge, Chapter 17, pages 17-2 to 17-3
 - https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak/media/19_phak_ch17.pdf
- Aeronautical Information Manual 8-1-1
 - https://www.faa.gov/air_traffic/publications/atpubs/aim_html/chap8_section_1.htm
- Federal Aviation Regulation 61.23 Medical certificates: Requirement and duration
 - https://www.ecfr.gov/cgi-bin/text-idx?pitd=20170501&node=se14.1.61_123&rgn=div8
- Federal Aviation Regulation 61.53 Prohibition on operations during medical deficiency
 - https://ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=377a1ce4362fae15b173c228ec511fb8&pitd=20170501&n=sp14.2.61.a&r=SUBPART&ty=HTML#se14.2.61_153
- FAA Medical Certification Questions and Answers Fact Sheet
 - <https://www.faa.gov/pilots/safety/pilotsafetybrochures/media/Checklist.pdf>
- FAA Medications and Flying Fact Sheet
 - https://www.faa.gov/pilots/safety/pilotsafetybrochures/media/Meds_brochure.pdf
- FAA links to MedExpress and list of Aviation Medical Examiners
 - https://www.faa.gov/licenses_certificates/medical_certification/get/
- FAA Medical Certification FAQ page
 - https://www.faa.gov/licenses_certificates/medical_certification/faq/

- FAA Certification Questions: See pages 3 and 4
 - https://www.faa.gov/training_testing/testing/media/questions_answers.pdf
- AOPA Resources
 - Airman Medical Certification: Understanding Airmen Medical Standards
 - <https://www.aopa.org/go-fly/medical-resources/airman-medical-certification>
 - AOPA video: How to Obtain Airman Medical Certification
 - https://www.youtube.com/watch?time_continue=21&v=Yop4fLr6bpo&feature=emb_logo
 - Medical Certification Options: Fit To Fly? What You Must Know About Medical Certification
 - <https://www.aopa.org/news-and-media/all-news/2020/april/you-can-fly/medical-certification-options-fit-to-fly>
 - Membership: BasicMed Primer For Students - Getting A One-time Medical Certificate
 - <https://www.aopa.org/news-and-media/all-news/2017/september/flight-training-magazine/membership-basicmed-primer>
 - Technique: BasicMed Is This The Medical Certification Path For You?
 - <https://www.aopa.org/news-and-media/all-news/2017/august/flight-training-magazine/technique-basicmed>
 - AOPA video: A Guide to Understanding BasicMed (length is 8:39 but comprehensive)
 - <https://www.youtube.com/watch?v=COE5-UjVgEE>
 - ADHD and the FAA
 - <https://pilot-protection-services.aopa.org/news/2018/february/01/adhd-and-the-faa>
 - AOPA video: Am I Good to Go?
 - <https://www.youtube.com/watch?v=i6Ose5CvgE4&list=WL&index=2&t=0s>
 - AOPA video: Fly Well - Pilot Preflight
 - <https://aopalive.aopa.org/detail/videos/fly-well---aopa-pilot-protection-services/video/5561102113001/fly-well---pilot-preflight>
 - AOPA video: Medical Tips 10 - IM SAFE
 - <https://aopalive.aopa.org/detail/videos/fly-well---aopa-pilot-protection-services/video/5550338943001/medical-tips-10---im-safe?autoStart=true&page=2>
- Sporty's Pilot Academy: Your Student Pilot Certificate and Medical
 - <https://sportysacademy.com/medical/>