

## Aviation Medical Information



This is the first of a series of articles about aviation medicine. Many would-be pilots forego flight instruction because they erroneously believe that they could not pass an FAA flight physical.

For example, some people still believe that one needs 20/20 vision to become a pilot. This is not true. Other pilots are unable to pass the physical when they first see an Aviation Medical Examiner (AME), but they eventually obtain their medical certificates after additional paperwork is submitted to the FAA. Unfortunately, some pilots are precluded from ever being able to obtain a medical certificate.

These articles will discuss why some pilots can pass a flight physical while others cannot. We will also discuss the options available if someone has a problem on the initial medical examination. Finally, we will discuss general health issues and answer questions about medication, fatigue, deep vein thrombosis, stress, high blood pressure, and other concerns.

Some types of flying do not require a medical examination. A pilot does not need to have a medical certificate to fly an ultralight, a glider (including a motorglider) or a balloon. However, the FAA expects pilots to use good judgment and stay out of the air if a medical problem is known that would make flying dangerous. This rule also goes for pilots who have passed a flight physical. Just because one has a current medical certificate in his wallet does not mean that he should fly if he is fatigued or has the flu.

In some cases a person should ground himself for reasons that he may not suspect. Obviously, he should not fly if he is temporarily taking medicine that has instructions which say one should "not drive an automobile or operate heavy machinery." But what about less obvious medication, such as nose drops (antihistamine) or allergy pills such as Zyrtec or Claritin? What about Nexium, the highly advertised "purple pill" taken to combat heartburn?

To get things started, we'll address a sexy topic, which is guaranteed to arouse attention—Viagra.

Although Viagra is a prescription medicine, most physicians have little idea if the drugs they prescribe will affect the operation of aircraft. In fact, the only person who has such specialized knowledge is an Aviation Medical Examiner. Theoretically, a pilot should consult his AME before taking any medicine at all, including Viagra.

Viagra is the patented name for sildenafil citrate. Here 's a brief description of how sildenafil works. This will make you an expert on the subject.

When sexually stimulated, the body releases nitric oxide. This in turn activates the enzyme guanylate cyclase, which increases the level of cyclic guanosine monophosphate, which in turn increases blood flow to the penis. Unfortunately, phosphodiesterase Type 5, if present in the body, can counter the effectiveness of cyclic guanosine monophosphate.

What does sildenafil (Viagra) do? It suppresses phosphodiesterase Type 5. Viagra, in short, allows cyclic guanosine monophosphate to do its job. However, in addition to affecting phosphodiesterase Type 5, sildenafil also affects phosphodiesterase Type 6.

Unfortunately, phosphodiesterase Type 6 is a retinal enzyme involved in phototransduction, which means that Viagra can cause the impairment of blue-green color discrimination. About three percent of Viagra users are affected, and report a "bluish tint" in their vision for up to six hours. As luck would have it, blue and green lights are used on airport taxiways.

In addition, the hypotensive effect of nitrate is aggravated by sildenafil. This can (and has) caused cardiac arrest by Viagra users, although it appears that the victims may have had a pre-existing cardiac condition. Viagra has also been reported to cause headaches.

Aviation physicians recommend that a pilot refrain from operating an aircraft for six hours after taking Viagra. This is especially true if he intends to fly at night. Of course, this also means that a pilot should definitely not use Viagra to enhance his performance while joining the "mile high club," in which membership is achieved by sexual activity a mile above the earth. The combination of sexual exertion at a 5,000-foot altitude at night could prove a deadly combination for a pilot and his loved one.

Since Viagra is often taken by "senior" pilots, it should be noted that the body takes 40 percent longer to metabolize sildenafil after the age of 65.

Every time a pilot takes his aviation physical he completes FAA Form 8500-8, which contains 19 medical questions (with additional alphabetical sub-sections). Question number 17 asks "Do you currently use any medication—prescription or nonprescription? Many pilots fail to mention Viagra, either because they're embarrassed to say "yes," or because they don't even think of Viagra as "medicine." Before getting a prescription for Viagra, a pilot should call his AME and ask if there might be any problems, or if it will be necessary to report the use of Viagra when he takes his next physical.

In any case, remember to wait six hours before flying after using Viagra. (Six hours from Viagra bottle to throttle.)

About the authors:

*Dr. Erwin Samuelson has been a Senior Aviation Medical Examiner for 25 years, and is a Diplomate American Board of Family Practice. He authors a pamphlet "Aviation Medicine—A Survival Guide," which can be seen at <http://www.leftseat.com/>. Dr. Samuelson contributes to Pilot Medical Solutions, which specializes in assisting pilots in regaining their medical certificates after refusal by the FAA. His e-mail address is [DrErwin@aol.com](mailto:DrErwin@aol.com).*

*Jon Thornburgh is an ultralight and FAA flight instructor and the author of numerous aviation articles. Some of his articles are archived at <http://www.ultraflight.com/JonThornburghFrame.htm>. Jon's e-mail address is [JonThornburgh@pocketmail.com](mailto:JonThornburgh@pocketmail.com).*