



## AAM-300: Aerospace Medical Certification Division - Hypertension Information

### Background

Hypertension (or high blood pressure) is a condition where the pressure of the blood flowing through the arteries of the body is higher than it should be. Much like the pressure of the air in a tire, if the pressure of the blood is too high it can damage the arteries and organs of the body. Just like the tire, if the pressure suddenly becomes very high, catastrophic events can happen. Similarly, if the pressure remains somewhat elevated for a long enough period of time, premature wear and failure can occur.

Hypertension has its worst effects on the heart, kidneys, eyes, and brain. High blood pressure is a risk factor for heart attack, stroke, kidney failure, hemorrhages of the retina of the eye, and generalized atherosclerosis (hardening of the arteries all over the body).

It is easy to understand, then, why we are concerned about pilots who have high blood pressure. We don't like to see aviators flying when they are at increased risk for these conditions. Fortunately, hypertension is easy to treat. For many people, simply achieving an appropriate weight, exercising regularly, and watching dietary salt will control their mild hypertension. Other individuals may be required to take medications to reduce their blood pressure. Either way, hypertension and its treatment should have little effect on one's ability to be medically certified to fly.

### Measuring Blood Pressure

Blood pressure can be measured with the individual lying down, sitting, or standing. Regardless of the position, the blood pressure recording will always consist of two numbers written like a fraction with the top number called the systolic pressure and the bottom number called the diastolic pressure. In the example 120/80, the systolic pressure is 120 and the diastolic pressure is 80. These numbers are in units of "millimeters of mercury". (That means that a pressure of 120 is enough to support a column of mercury 120 millimeters high.) One can think about the systolic pressure as representing the peak pressure during the heart's contraction and the diastolic pressure as representing the resting or baseline pressure within the blood stream between contractions.

Most doctors today believe that people who consistently run blood pressures higher than 140/90 are at increased risk for the complications noted above and should be considered for treatment. Remember, however, that blood pressure is variable and occasional readings above this level are to be expected. It is a preponderance of readings above 140/90 that defines hypertension.

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## Aerospace Medical Disposition

If an individual with no known history of hypertension is found during the FAA exam to have blood pressure readings consistently higher than 155/95 then further investigation is required. Initially, this should consist of recording the blood pressure twice a day (morning and evening) for three consecutive days. If at least 4 of these 6 readings are 155/95 or less and the applicant is otherwise qualified, then no further action is required and the certificate can be issued.

If the three-day blood pressure checks confirm the presence of hypertension, then treatment of some kind will generally be required for certification. Once a person is on a stable treatment plan and their blood pressure is adequately controlled without significant adverse effects, certification can be considered. When the FAA is notified for the first time about an aviator who has initiated treatment for high blood pressure, the following items will need to be reviewed and cleared by an Aviation Medical Examiner (AME):

- a. Complete review of pertinent history including personal, social, and family history related to hypertension and risk factor analysis for complications;
- . Statement from treating physician describing the effects of treatment and any risk factor modification program;
- . Representative blood pressure readings;
- . Laboratory testing to include electrolyte, lipid profile, and glucose;
- . Resting ECG.

If the above is acceptable, the AME may issue the medical certificate, good for its normal duration.

For an individual who has already reported the hypertension and received an initial clearance, the follow-up requirements at the next and subsequent FAA medical exams are very simple. All that is required is a statement from the treating physician that the individual is in good health and having no blood pressure related problems and including some sample blood pressure readings.

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