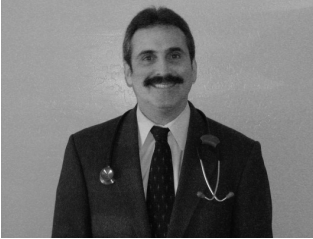


## **Diabetes, Airman and the FAA Medical**



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Since the 1960's obesity in America has increased by 75%. At that time, it accounted for approximately 5 % of the population. Today it accounts for over 33% of the general population (1). In fact 66% of Americans are considered overweight or obese. We have become the heaviest people on the earth, and unfortunately, pilots are following the same trend in weight gain as the general public.

The morbidity and mortality of overweight and obesity have been well recognized in the medical community for many years. "Weight gain itself carries an increased risk of morbidity and mortality from obesity-related diseases" (2). One study showed a 100% increase in the risk of diabetes with a weight gain of 5-8 kg and a 200% increase with a weight gain of 22 kg (3).

The prevalence of Diabetes in America is increasing dramatically, and as a result more pilots have been diagnosed with this condition. It used to be that all diabetics had to be deferred to the FAA for initial and re-certification, but now AME's can re-certify if the pilot has the necessary information and meets the standards through the FAA's quick cert program( more on this later).

Diabetes is a condition where the body is unable to maintain a normal blood sugar. The glucose in the blood is produced from the liver as a result of the food that you consume. In a healthy person, the blood glucose level is regulated by several hormones, one of which is insulin. Insulin is produced by the pancreas and is also an important organ for the digestion of food.

People who have diabetes either do not produce enough insulin (type 1 diabetes) *or* cannot use insulin properly (type 2 diabetes), or both. Because of this insulin problem in diabetics , glucose in the blood cannot move into cells, and therefore stays in the blood. This not only harms the cells that need the glucose for fuel, but also damages certain organs and tissues exposed to the high glucose levels.

The damage from diabetes can affect the eyes causing a condition known as a diabetic retinopathy. This complication is a leading cause of blindness in the USA. Kidney failure is not uncommon in diabetics as a result of diabetic nephropathy. Patients usually wind

up on dialysis when advanced kidney failure occurs. A pilot with kidney failure will not have the same mental ability and therefore will be unable to operate an aircraft if advanced disease is present.

Other problems that can occur with diabetes involve damage to the nervous system. When involving the stomach, this is known as diabetic gastroparesis. This can lead to delayed emptying of the stomach, bloating, heartburn, nausea and vomiting. If it involves other areas of the autonomic nervous system, then the patient may have chronic diarrhea, postural changes and difficulty controlling heart rate and blood pressure. If the nerves in the hands and feet are involved then decrease sensation occurs called peripheral neuropathy. This can ultimately lead to foot infections and amputations.

Diabetes when associated with obesity is typically associated with a variety of conditions known as metabolic syndrome. This is a set of abnormalities in which insulin-resistant diabetes (type 2) is almost always present and includes hypertension, hyperlipidemia (increased serum lipids, predominant elevation of LDL, decrease in HDL, and elevated triglycerides), central obesity, and abnormalities in blood clotting and inflammatory responses. A high rate of cardiovascular disease is associated with the metabolic syndrome. The diabetic is most likely to die of heart disease as the disorder speeds up the process of atherosclerosis which can lead to blocked blood vessels causing heart attacks and strokes.

The aeromedical considerations that affect pilot certification have to do with both the disease state and medical treatment the airman is receiving. Of course it's easier to certify a diabetic that is under good control rather than one who has multiple complications of diabetes.

If the pilot is treated with diet and exercise alone, the AME will be able to issue at the time of visit if the pilot brings a recent lab test that includes a hemoglobin A1C test to assure that the condition is controlled. This lab test reflects the blood sugar for the past 3 months and is a good marker for a patient and physician to follow.

If the airman is treated with oral medication and 2 months have passed to assure stability and absence of side effects then the pilot can apply for an FAA medical. The pilot must bring a letter from his treating physician that states absence of side effects, and no evidence of diabetic complications such as ophthalmological, renal, cardiovascular and neurological disorders. He/she also needs recent lab work including a hemoglobin A1C.

There needs to be a statement as well from his physician that discusses any hypoglycemic episodes (low blood sugar) that the pilot may have had from his medication. This is very important as the symptoms of hypoglycemia can be very dramatic and can certainly render a pilot incapacitated. If the information looks good, the AME will be able to facilitate issuance of a time-limited medical certificate usually valid for one year at a time. After the initial medical, the AME will have authorization to re-issue if the pilots condition remains stable.

The airman that is treated with insulin presents a more challenging situation for the AME and must be deferred to the FAA in Oklahoma city for medical certification. The pilot can only apply for a third class medical if treated with insulin and has to follow an extremely regimented certification program for renewal. Also, the pilot is limited to flying inside the borders of the United States as most other countries do not permit insulin use in airmen.

Diabetes has become all too common a condition in our country due to the obesity epidemic. Medical treatment is very common among pilots and the diagnosis is not career ending as many pilots think.

If a pilot is treated with medication for diabetes, it is very important to work closely with an AME and come to your medical appointment prepared. Certification is relatively easy if all the lab and letters are there at the time of the medical exam.

If the diagnosis of diabetes is made, it is important to follow a good diabetic diet and take medication correctly. Remember, weight loss and exercise is very important in treating diabetes and lowering the risk of getting diabetic complications.

### **Reference:**

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