



Dealing with diabetes

Dr Chris King takes a look at the causes and treatments of this worldwide epidemic.



Diabetes is a condition where there is a chronically raised blood sugar. It is caused by an absolute or relative lack of insulin in the blood, which is produced by the pancreas.

There are two types of diabetes:

- Type 1 where there is absolute insulin deficiency which is more common in childhood and early life. This diabetes requires insulin and is not compatible with holding a UK JAA medical certificate.
- Type 2 diabetes is more common in middle age or later and is caused by impaired insulin production and 'resistance' to its action. It can be treated through dietary means or through

Managing the disease

Poorly controlled diabetes can lead to complications in the eyes, the cardiovascular system, the renal system and the nervous system as well as impairing blood flow to the extremities of the body. Investigations from the flying perspective include blood tests for HbA1c, kidney function, liver function and lipids. The HbA1c blood test is specific in measuring the degree of control of the diabetes. To exclude eye complications, a retinal photograph is required which can be undertaken at most good opticians. A review with a consultant cardiologist to include the result of an exercise ECG is also required to exclude any problems with the blood

certificate. In addition some diabetic patients are prescribed aspirin and an ACE inhibitor tablet to prevent heart and kidney problems, and a statin for lowering the cholesterol, thereby reducing the overall cardiac risk and preventing damage to the kidneys.

The treatment programme is designed to reduce the risks of complications of diabetes. A combined approach with diet, medication, exercise and lifestyle changes can produce an excellent treatment response, reduce the risk of complications and keep the pilot in the air for many years.

Once satisfactory reports have been made available and the HbA1c blood test is less than 7.5 per cent, the pilot should be able to resume flying, with a restriction if required. The CAA will

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diet plus approved medication, and is compatible with holding a UK JAA medical certificate.

Diabetes is a common disease with a worldwide prevalence of at least 150 million people, a figure that is expected to double by 2025. There is a high incidence of diabetes in ethnic minorities living in industrial and westernised societies, for example Asians living in the UK. A lot of this is attributable to the western diet and reduction in exercise, which is coupled to the 'obesity epidemic'. Diabetes has major implications to the economy as the cost to the health service of managing the complications is huge, adding to the need for firm control.

The illness can be picked up on the urine test at your medical when sugar is found in the urine sample. If so, a blood test often, but not always, confirms the diagnosis.

It is diagnosed by a fasting blood sugar of over 7.0 millimoles per litre (mmol/l), with or without symptoms, which might include weight loss, thirst, increased urination and chronic fungal infections. Upon diagnosis the pilot is made temporarily unfit until various investigations have been undertaken and a response to treatment is confirmed.

supply to the heart muscle as a result of the diabetes.

Treatment through lifestyle changes (exercise and diet) can be used initially to treat the condition. Many type 2 diabetic pilots are overweight and the excess weight prevents the insulin produced from doing its job in reducing the blood sugar, so called 'insulin resistance'. Simply by losing weight the pilot can make his/her insulin more effective and lower the elevated blood sugar without the need of medication.

If medication is required, insulin is not allowed. However drugs of the 'alpha-glucosidase' (Acarbose), 'biguanides' (Metformin) and 'glitazones' (Rosiglitazone or Pioglitazone) families are permitted, some in combination, some not. With some of these preparations, an 'as or with co-pilot' limitation is put on the medical

require annual reports from your doctors and an annual review with a cardiologist to include an exercise ECG.

It is worth discussing with your AME and GP's practice ways of co-ordinating any blood tests, reports etc required by the CAA so that results can be made available by the time of your medical. If all is well, the medical certificate can be issued in the normal way and reports sent off to the CAA. ■

