Screening with a FPG should be considered every 3 years in individuals older than 45 years; and in those younger than 45 who are overweight and have another risk factor for diabetes.

The ADA has defined the goal for diabetes as HbA1c <7%. The goal for the individual is an HbA1c as close as possible to normal (< 6%) without significant hypoglycaemia. Less stringent goals may be appropriate for patients with a history of severe hypoglycaemia, those with limited life expectancies, and those in whom the long-term benefits of tight control do not outweigh the risk of hypoglycaemia, such as the elderly.

The most important addition to the Standards of Medical Care is a clear recommendation for the initiation of therapy. The key principle is that normoglycaemia should be achieved as soon as possible by increasing doses and adding medications at as rapid a rate as reasonable.

The ADA recommends instruction on lifestyle modifications – diet and exercise – and at the same time starting metformin, because most patients do not respond to lifestyle modifications alone. Metformin is cheap, has a low incidence of hypoglycaemia, and is not associated with weight gain. Start at 500 mg od/bd to minimise GIT side effects, and then, after a week, increase to 850-1,000 mg after breakfast and dinner.

If good glycaemia is not achieved, then add therapy, preferably within 2-3 months. The options are insulin, a sulphonylurea, or a thiazolidinedione. If two agents do not achieve good glucose control, then the next step depends on how far the patient is from the goal. If the HbA1c is close to goal (< 8%), then consider a third oral agent. If not, then consider insulin as the next agent.

Insulin can be started with bedtime intermediate-acting insulin or bedtime/morning long-acting insulin at 10 units or 0.2 units/kg. Fasting finger stick glucose should be checked daily, and the insulin dose increased by 2 units every 3 days until fasting levels are in the 4-7 mmol/l range. For patients who are able to increase the insulin on their own, this provides a clear algorithm, and allows normal levels of glucose to be achieved sooner.

The prevention and management of diabetes complications remain important goals. BP should be <130/80 mm Hg; if medications are needed, then use either an ACE inhibitor or ARB. The LDL-C goal is <100 mg/dL. For patients older than age 40, statin therapy to achieve an LDL-C reduction of 30%-40% – regardless of baseline LDL-C – is recommended. For patients with diabetes and coronary disease, use a statin to achieve a target LDL-C of <70 mg/dL. Aspirin should be used at a dosage of 75-162 mg/day as primary prevention in >40 years of age, or those <40 who have additional risk factors. All patients should be advised not to smoke. In patients >55 – with or without hypertension but with some other CV risk factor – an ACE inhibitor should be considered. Screening for microalbuminuria with a spot sample for the albumin:creatinine ratio should be done annually, and an ACE inhibitor / ARB should be used if microalbuminuria is present.

In addition, patients should have an annual ophthalmologic exam., an annual examination of their feet, and should be taught to examine their feet daily. Screening for peripheral vascular disease by asking about claudication, assessing pedal pulses, and considering an ankle-brachial index – is recommended.

Stress testing before beginning a vigorous exercise program is recommended, although the guidelines state that there are no data to suggest that beginning an exercise program with walking or a similar level of exercise increases the risk of a cardiac event.²
New recommendations from the American Heart Association call for more targeted screening and treatment of lipid disorders in children. Though the guidelines currently used for managing lipid disorders in children were released by the National Cholesterol Expert Program (NCEP) in 1992 and focused on children with a family history of lipid disorders, the current statement suggests that other at-risk children should also be screened for lipid disorders and that treatment with statins is appropriate if lifestyle management is not adequate. The AHA panel's statement reflects research showing that the pathogenesis of cardiovascular disease begins many years before it is manifested in adulthood.

“It has become clear that atherosclerotic cardiovascular disease begins in childhood and is progressive,” stated Brian W. McKrindle, of the Hospital for Sick Children in Toronto, and his colleagues in the April 10 issue of Circulation.

The AHA recommends more widespread lipid testing in children, testing for other parameters of the metabolic syndrome in overweight and obese children with lipid abnormalities, and a major change in recommended drug therapy for children with lipid disorders.

Guidelines released by the NCEP in 1992 recommended that healthy children older than age 2 years follow a low-fat diet and eat a variety of foods in order to promote good cardiovascular health. They also stated that only children from high-risk families required lipid screening, and that children with lipid abnormalities should be placed on a low-fat diet and encouraged to exercise for 6-12 months. If repeat screening revealed elevated LDL-cholesterol levels, children should be treated, with LDL-cholesterol cut-offs similar to those in adults.

The current guidelines target mostly children with a family history of hyperlipidaemia, and researchers are concerned that inadequate numbers of children are being screened.

Children with a strong family history as well as overweight and obese children should undergo testing for lipid abnormalities. Overweight and obese children with lipid disorders should also be screened for hypertension, diabetes, and other metabolic abnormalities, such as central adiposity.

Given the increasing complexity of caring for children with certain chronic diseases, the statement also expounded on certain situations in which treating physicians should consider screening and close monitoring of children with lipid disorders. The panelists recommended that early screening should be considered in male children, those with hypertension, obesity, and those with chronic conditions such as lupus, HIV, and a history of organ transplantation that can increase their risk for atherosclerotic disease. The LDL-cholesterol goal of 2.7 mmol/l or less for children with no additional cardiovascular disease risk factors remains the same. But the new statement emphasises that the LDL-cholesterol goal of 2.5 mmol/l or less should be considered in children with additional risk factors.

The AHA statement also recommends changes in the treatment of lipid disorders in children. Past guidelines recommended that children with lipid disorders be treated with bile-acid-binding resins. But the statement released today says that statins should be the first-line therapy in these children. “Bile-acid-binding resins are associated with very poor compliance and are incompletely effective,” McKrindle said. He added that studies show that statins have similar safety and efficacy in the treatment of lipid disorders in children as in adults.

Despite the modifications that the expert panel recommended, the emphasis will remain on lifestyle modification rather than drug therapy. McKrindle pointed out that lipid abnormalities in most children result from obesity, and not from familial hypercholesterolaemia. Physicians caring for overweight and obese children who have lipid disorders should emphasise the importance of diet and exercise rather than drug therapy for most of their patients.

Noting that preventive health care lowers health care costs in the long-run, inadequate funding for screening and treating lipid disorders in children should not prevent physicians from changing how they manage children at risk of cardiovascular disease. The consequences of not treating patients with familial hypercholesterolaemia are well known.
Weight Loss a Cornerstone of Polycystic Ovarian Syndrome Treatment

Weight loss can go a long way towards improving androgen levels in the adolescent with polycystic ovarian syndrome, Patricia S. Simmons said. In the obese patient, this can be all she needs. If you can normalise their weight, you normalise their insulin levels and their androgens. “It is certainly the most effective long-term treatment we have,” she added.

Polycystic ovarian syndrome (PCOS) can be associated with a different pathophysiology in different individuals, said Simmons, a professor of paediatrics at the Mayo Clinic. About 2%-3% of the general female population has PCOS, and it's present in about 53% of adolescents with chronic anovulation and amenorrhoea.

One of the condition’s hallmarks, hyperinsulinaemia, is present in about 20% of adolescents with PCOS. In such individuals who are also obese, the hyperinsulinaemia affects androgen, which is why weight loss and improving insulin sensitivity can help improve androgen levels, Simmons said.

Weight loss alone may be treatment enough for some individuals, however, others may also require drug therapy. The first-line drug for adolescents is an oestrogen / progestin oral contraceptive, she said. The progestin inhibits luteinising hormone, which leads to decreased androgen production by the ovaries, and in turn inhibits adrenal androgen production. The oestrogen elevates serum hormone-binding globulin, which further inhibits the effects of androgen. Over the long term, those effects also protect the endometrium from the dysplasia and cancer associated with PCOS.

The oral contraceptive that many experts recommend is drospirenone and ethinyl estradiol (Yasmin), because the form of progestin it contains, drospirenone, is structurally similar to spironolactone, which itself is used as a treatment for PCOS, Simmons said.

Having said that, there are no data that say that Yasmin is any better than the other oral contraceptives in the management of PCOS, she said. “When you have a patient who fails on one, you try the other.”

Patients tend to appreciate oral contraceptive therapy because it improves their acne, makes their menstruation more regular, and stops the progression of their hirsutism.

The health of adolescents with PCOS who are on oral contraceptives is better than that of their counterparts who are not on them, so it’s an easy thing to prescribe with great confidence, she added. The diagnosis of PCOS in the adolescent can be difficult, especially since one would like to identify it early and begin addressing some of the long-term health impacts.

Oral contraceptives do not influence insulin levels, hence the necessity for weight loss in overweight PCOS patients. The use of oral glycaemic agents in children and adolescents has not been rigorously studied and is considered experimental, she said, adding “We don’t use them unless we have great cause.”

Prevalence of peripheral artery disease and association with other cardiovascular risk factors

Measurement of ankle-brachial index was used to assess the prevalence of peripheral artery disease (PAD) in a random population sample of 748 subjects aged over 40 years. The prevalence of PAD in this sample was 10.5% (9.7% in females and 11.4% in males). After adjustment for age and gender, PAD was associated with smoking, hypertension, diabetes and hypercholesterolaemia. The vast majority (91%) of subjects with PAD had at least one other cardiovascular risk factor considered sufficiently advanced to warrant aggressive treatment.

As kidney stones are associated with obesity, this study looked at whether patients with kidney stones may also have a high prevalence of diabetes.

The relative risk of diabetes, hypertension and obesity was found to be greater in 260 patients with kidney stones than in matched controls. The risk for diabetes remained significant after adjustment for age, sex, calendar year, hypertension, and obesity. Prevalence of diabetes was higher in patients with uric acid stones compared with those with all other stone types. The authors conclude that diabetes may be a risk factor for development of uric acid kidney stones.


Modification of dietary carbs reduces cholesterol absorption

This study looked at the potential to alter cholesterol metabolism by means of dietary carbohydrate modification in 74 subjects with the metabolic syndrome. Subjects were randomly assigned to diets with rye bread and pasta (RPa) or oat, wheat bread, and potato (OWPo) as the main carbohydrate source (34% and 37% of energy intake, respectively) for a period of 12 weeks. With the OWPo diet, cholesterol synthesis was lower and absorption higher than at baseline. The opposite effects were seen with the RPa diet, which increased synthesis and reduced absorption of cholesterol compared with baseline. Therefore consumption of rye bread and pasta as the main carbohydrate source may be preferable as it inhibits absorption of cholesterol and may therefore have beneficial effects on the development of atherosclerosis.


ADA-AHA Consensus statement on primary prevention of CVD in patients with type 2 diabetes

This statement from the ADA and AHA emphasises the importance of primary prevention of cardiovascular disease in patients with type 2 diabetes and seeks to harmonise guidelines, which have been issued by each organisation. Patients with diabetes have twice the risk of incident myocardial infarction and stroke as that of the general population, and furthermore they are also less likely to survive a first event.

Lifestyle intervention via structured programmes is recommended. This should include education regarding food selection (for example limiting the intake of saturated fats and increase in dietary fibre) and regular physical activity (at least 150 min of moderate-intensity aerobic physical activity or at least 90 min of vigorous aerobic exercise per week). Hba1c goal for patients in general is <7%, and individual patients should try to achieve Hba1c as close to normal (<6%) as possible, without causing significant hypoglycaemia.

Regular monitoring of blood pressure should be undertaken with a goal of <130/80 mmHg. It is recognised that multiple-drug therapy is generally required to achieve blood pressure targets. Regular monitoring of lipids is recommended with target LDL at <2.5 mmol/l. Combination therapy of LDL-lowering drugs (e.g. statins) and fibrates or niacin may be necessary to achieve lipid targets.