Primary hypothyroidism, possibly due to Hashimoto thyroiditis in infancy, led to abnormal puberty in this girl: menstruation began at the age of 16 years, with cycle duration of 40 days and lack of axillary and pubic hair. Hypertrophic myopathy without myotony was also present, and assays showed very low levels of follicular hormone. The severity of the primary hypothyroidism was shown by the TSH level of 236 microIU/ml, a prolactin level of 390 microU/ml and a large sella turcica. This clinical-laboratory picture is the hallmark of a hormonal receptor disorder related to primary hypothyroidism and is reversible with substitution treatment [1]. Various studies of medullary thyroid carcinoma have found its apoptosis rate to be very low. Tumor growth is usually progressive but in some cases, rapid progression and high proliferation are seen. Some mutations of the RET proto-oncogene are thought to have a direct or indirect effect on this clinical process. Five characteristics are significantly associated with poor survival: tumor necrosis, squamous histology, age older than 45 years, oxyphilic tumor cells together with a lack of intermediary cytoplasm cells, and finally, less than 50% of tumor cells immunoreactive to calcitonin. Although recent studies have identified the gene involved in this cancer, its molecular pathogenesis has not yet been elucidated. Medullary thyroid carcinoma is rare, but practitioner must be familiar with it because it presents specific therapeutic and diagnostic problems. Sensitive and specific direct genetic diagnosis of the principal mutation of the RET proto-oncongene is possible in patients with familial thyroid carcinoma or multiple endocrine neoplasia type 2. Screening is based on the immunoradiometric assay of calcitonin levels before and after pentagastrin stimulation in different populations: healthy subjects, persons with family members who have medullary thyroid carcinoma, patients with thyroid nodules or autoimmune chronic thyroiditis. Recently a somatic mutation on RET codon 918 was reported in patients with medullary thyroid carcinoma and those with C cell hyperplasia and multiple endocrine neoplasia together. This finding suggests that this particular mutation may play a role in tumorigenesis. Compared with patients with endocrine neoplasia syndromes type 2A and 2B, these patients appeared to have a syndrome clinically overlapping these, and its genetic basis may be distinct from them. Family members of patients with medullary thyroid carcinoma must be screened for this inherited disease. The mutations associated with medullary thyroid carcinoma and parathyroid tumors together appear to be closely related to the centromeric region of chromosome 10. At three months of age, Wag/Rij rats show hyper secretion under secretagogues and C cell hyperplasia; both signs are described as “pretumoral” in humans. A
battery of markers are useful even though the gene for multiple endocrine neoplasia type 2 gene has recently been thought to be located in the pericentromeric region of chromosome 10 in white Europeans [2]. While deficiencies of trace minerals and vitamins are rare in humans eating a variety of food, they can occur in premature infants and those with disturbances in dietary behavior for physical or psychological reasons and during parenteral or enteral nutrition. Some deficiencies - such as iron and iodine - cause such serious specific disorders that they must be considered separately. Congenital hypothyroidism induced by iodine deficiency is a major problem. Its public health importance comes from the neurological complications that lead to the most severe forms of endemic congenital hypothyroidism (cretinism). In areas without iodine deficiency, the standard incidence of this disease in the West is 1/4,500 live births. In areas with iodine deficiency, however, its incidence varies from 1 to 5%. It is nonetheless underestimated, because the screening methods revolutionized 20 years ago are still not applied systematically. Additional factors include the thiocyanates in cassava, the selenium deficiency resulting in selenium-dependent glutathione peroxidase deficiency, and the natural goitrogens in some foods: milk, millet, walnuts, and bacterial and chemical water pollutants. Adolescents and adults need 100 microg/day, children aged 1-10 years 60-100 microg, and babies under one year, 35-40 microg, but these daily requirements are not necessarily met. This threat weighs on a billion people, 50-100 million in Europe, especially pregnant women, fetuses, newborns, and young children whose cerebral development may be negatively affected in the womb and in early life. According to some authors, subjects with cretinism syndrome should be found in places where goiter prevalence exceeds 20%. Evaluation of diffuse intellectual impairment in the population would require tools too specific for most studies. Generations of children are the victims throughout wide swaths of the African ecosystem in which it is endemic and associated with poor adaptation to the environment. But studies of isolated places cannot be transposed to entire populations. Because pregnancy in women with hypothyroidism is often thought to have a very negative prognosis, the two cases we report merit attention. In one case, despite certainly insufficient thyroid hormone replacement treatment, the child was born alive and healthy. In the second case, where hypothyroidism followed a thyroidec­tomy in a woman with Graves disease, a hydrocephalic child was live born, without any replacement treatment. In her next pregnancy, she received optimal hormonal treatment and delivered a healthy live born child. The disorders due to severe iodine deficiency did not affect our two patients. In a series of 166 cases of congenital hypothyroidism in newborns, only two cases had maternal antithyroid antibodies. Elsewhere, 9 women with hypothyroidism had 11 pregnancies, 9 normal children, 1 premature child (mother had eclampsia), and 1 with Down syndrome and an Ostium primum defect (mother aged 41 years). Ontogenesis of the hypothalamo-pituitary-thyroid axis of the fetus still appears today to develop independently of the mother in cases of hypothyroidism. An important role is played by type III deiodinase, which is especially active in the placenta during pregnancy, probably involving the T3 activity on nuclear and also mitochondrial receptors. The maturation of these receptors is not well understood [3]. Thyroid gland diseases vary according to the environment. In sub-Saharan Africa, they are also influenced by population isolation and the absence of food self-sufficiency, both factors affecting the onset and persistence of iodine-deficiency goiters. More cosmopolitan diseases are now added to these thyroid disorders. Women are mainly affected (94.2%), most often with euthyroid goiters (54.7%), followed by Graves disease (13.1%), hypothyroidism (8.8%), thyroiditis (6.6%), toxic multinodular goiters (6.6%) and unclassified goiters (10%) [Gabon]. The paucity of laboratories specializing in endocrinology and of nuclear medicine facilities, the delay in diagnosis that results in compressive or recurrent goiters, and endemic goiters are all typical in Africa. In children and adolescents, death rates increase with congenital or acquired thyroiditis as with delayed physical or mental development. In this environment, thyroiditis can also be pregnancy-related. Very recent surveys show a prevalence of endemic goiters of 28.6% in the community of Sekota, Ethiopia, 64-70% in Sahel-Sudan (population aged 10-20 years), 20-29% in KwaZulu-Natal (school children), 14.3-30.2% in Namibia (school children), 0.21% (congenital hypothyroidism or cretinism) in Plateau State, Nigeria, 55.2% at Zitenga, Burkina Faso (210 persons 0-45 years), and 10% in Hararé and Wedza, Zimbabwe (newborn TSH >10.1 microU/ml). The prevalence of goiters is 43.6% in children emigrating from Ethiopia to Israel. Millet from semi-arid zones contains apigenin at a concentration of 150 mg/kg and luteolin at 350 mg/kg, both of which can interfere with thyroid function. The harmful effects of cassava (also known as manioc) are better known: milling cassava reduces its goitrogenic potential. In addition to iodine deficiency, selenium deficiency, and the effect of the thiocyanates in cassava, ion concentrations in soil and drinking water appear to play a role. The proportion of thyroid surgery indicated for hyperthyroidism has tripled, now accounting for 18.5% of all
such operations. This disorder is found today in subjects older than 50 years, mainly from rural areas, and caused most often by Graves disease (25 of 51 cases). Graves disease in young women can cause serious problems during pregnancy; in such cases assessment of the minimal effective dose of antithyroid agents is essential. Carbimazole leads to remission in 61% of cases of Graves disease. Hypothyroidism can be auto-immune and often in patent forms because of insufficient screening in Africa: 24 cases in Dakar (1984) and 37 others noticed by us (1998). Single-nodule tumors were assessed in 89 patients in Khartoum: they were found to be simple goiters in 72% of cases, follicular adenoma in 13.5%, cancer in 13.5% (with 6 of the 12 cases follicular, 5 papillary, and 1 anaplastic). The sex ratio for thyroid cancer in Ouagadougou is 0.22, thus mainly women. It affects mainly women in their 30s. Thyroid cancer at Ibadan was found to be papillary carcinoma in 45.3% of cases; follicular forms were seen in 44.5% and this series includes 5% of medullary cancers (7 cases), with a mean age of 34 years. Already 4 other cases from Francophone sub-Saharan Africa have been noticed. Iodine deficiency is suggested to play a role because follicular cancer in southern Africa accounts for up to 55% of thyroid cancers. Thyroid cancers in Algeria are associated with low socioeconomic status and characterized by a high prevalence of cancers discovered at an advanced stage and of anaplastic carcinomas. Oral potassium iodate is recommended: 30 mg of iodate a month or 8 mg every two weeks. Iodized oil has been recommended by some authors, as well as a combination of iodine and sugar, and the iodation of drinking water; these are in addition to the proposed methods of opening up areas by new infrastructure. In conclusion, thyroid disease is due predominantly to iodine deficiency and goitrogenic products, but we also note the increasing emergence of hyperthyroidism, especially Graves disease, atrophic auto-immune hypothyroidism, and thyroid cancer. The insufficiency of infrastructure in transportation, endocrinology, and nuclear medicine are a public health challenge for the third millennium [4]. Pulmonary tuberculosis in patients with diabetes is characterized by its severity, which some physicians consider to require surgery. Many pathophysiologic explanations have been proposed for this particular disease association, in which cellular immunity is depressed with fewer T lymphocytes in the blood and a diminished capacity for blast transformation. Although the lungs are not generally considered a target organ of diabetes, the English-language literature appears to demonstrate the contrary. Non-enzymatic glycosylation and autonomic neuropathy are involved in these phenomena, which make diabetic patients more susceptible to infection, especially tuberculosis. Some authors nonetheless consider symptoms of this combination unremarkable. Thus multiple tubercular sites on the lungs are the principal observation in tuberculosis patients with and without diabetes. Prognosis is worse when associated with bacterial excretion and thus tuberculosis mortality. Patients with diabetes are more sensitive to this type of infection because of their depressed cellular immunity and cytokine production, related to harmful effect of non-enzymatic glycosylation. These factors suggest the particularity of the epidemiology, pathophysiology and symptoms of diabetes associated with tuberculosis [5].

This study included 39 patients with diabetes followed for a mean period of 27.3 +/- 3.9 years. Their mean age was 72.5 +/- 10 years and differed significantly between the 7 men (mean age 48.4 +/- 7.1 years) and 32 women (mean age 43.4 +/- 9.8 years). They resided mainly in urban and suburban areas. Mean body mass index was 29.1 +/- 2.9 kg/m² in the 87.5% of the patients who were overweight but not obese. Glycemic control differed by sex: for good glycemic control (less than 2g/L) the sex ratio was 3 women for every 2 men but it was 29 women for 5 men for poor glycemic control (more than 2 g/L). Diastolic blood pressure was normal for 78.9 % of patients. Mean blood cholesterol during the follow-up period ranged between 1.4 +/- 0.12 g/L and 2.40 +/- 0.1 g/L in 75 % of cases. Only 3 of 39 patients were insulin-dependent. Patients with long-standing diabetes tended to be women and had substantially fewer risk factors than patients with newer diabetes. Moderate chronic complications were nonetheless present: 9 retinopathies; 20 cataracts; 13 with lower-limb peripheral arterial occlusion and 29 cardiac complications [6]. Diabetes mellitus is becoming more common in African cities, where it may affect up to 7% of the hospital population. It particularly affects poor male patients and 73 to 80% of those affected have non insulin-dependent diabetes. The frequency of non-obese, poorly cetogenic patients is high in Sub-Saharan Africa. This may be due to malnutrition, with a deficit either in protein or in calories. Such malnutrition is a major public health problem affecting children in Sudanese and Sahelian areas and may interact with environmental and genetic factors. In equatorial environments, the toxic effects of alcohol abuse on the pancreas are simply another environmental factor, reducing the endocrine function of the pancreas. These observations are important because: 1) diabetes mellitus has a severe social impact in this area and 2) nutrition has a general effect on the pathogenesis of diabetes mellitus [7].
took place between January and September 1996. The inclusion criterion was a blood cholesterol concentration of at least 2.5 g/l. Thirty-three patients were included. They were aged from 37 to 77 years, with a mean age of 59 (+/- 9.4) years. Twenty-six were women and seven were men. The mean age of the women was 58.9 (+/- 10) years and that of the men was 61 (+/- 6.1) years. Sixteen patients were from urban areas, 14 from semi-rural areas and 3 were of rural origin. The mean duration of diabetes was 9 (+/- 6.5) years. Mean post-prandial blood glucose concentration was 2.2 (+/- 1.0) g/l. Mean body mass index was 25.6 (+/- 5.6). Mean systolic blood pressure was 15.0 (+/- 2.5) cm Hg and mean diastolic blood pressure was 9.0 (+/- 1.3) mm Hg. Blood cholesterol concentration was between 2.5 g/l and 5.6 g/l, and mean HDL cholesterol concentration was 0.7 (+/- 0.4) g/l. Mean blood triglyceride concentration was 1.0 (+/- 0.4) g/l. Body mass index was negatively correlated with high cholesterol levels (r = -0.29).

Hypercholesterolemia was primary, with no associated high triglyceride concentration. Cholesterol levels were also negatively correlated with post-prandial blood glucose concentration (r = -0.1). Thus, treatment should involve the prescription of drugs to reduce blood lipid concentration rather than just the restriction of lipid intake [8]. Primary hypothyroidism, other than cases of endemic goiter, has rarely been described in Africa. We conducted a retrospective study of the patients admitted to our hospital unit between 1985 and 1996. The inclusion criteria were clinical signs of hypothyroidism and low levels of thyroid-stimulating hormone. We investigated socio-demographic, clinical (hypometabolic syndrome, cutaneous mucosal syndrome, muscular syndrome) and etiological (spontaneous thyroid atrophy, thyroidectomy, multinodular goiter) factors. Overall, our study population contained 37 cases, 8 men and 29 women. The mean age of the men was 40.8 +/- 19.2 years and that of the women was 41.5 +/- 14.5 years. Eighteen patients (about 50%) lived in the suburbs, 25% of patients were from urban areas and 25% from rural areas. The associated clinical signs were: 1) hypometabolism: constipation (51% of cases), bradycardia (45%), physical asthenia (40%), sleeping during the day (32%), frilosity (35%); 2) cutaneous mucosal syndrome: hoarseness (48%), alopecia (32%), facial puffiness (27%), macroglossia (24%), hypoacusia (21%), weight gain (18%), dry skin (16%), pallor (2%); 3) muscular syndrome was rare: myalgia (4 cases), muscle weakness (2 cases). Mean total cholesterol concentration was 2.54+/−0.75 g/l; mean total T3 was 1.027 +/-0.84nmol/l; mean total T4 was 16.70+/−16.89nmol/l, mean TSH concentration, measured by radiometry, was 63.74 +/-51.01mIU/l. The etiology was goiter in 13 cases, thyroidectomy (11 cases) and spontaneous thyroid atrophy (13 cases). Thus, primary hypothyroidism does occur in African hospitals, particularly in Senegal. This disease, which has traditionally been reported in public health studies of endemic goiter, also occurs in cosmopolitan African environments [9].

References