Curriculum vitae of Harry Dorchy

(June 2009)

Name: DORCHY
First name: HARRY
Date of birth: August 13, 1944
Nationality: Belgian

Education/titles:
*MD 1969. Free University of Brussels.
*Specialist in Pediatrics 1975. Free University of Brussels.
*PhD 1981. Free University of Brussels. Thesis: "Contribution à l'étude du diabète de l'enfant et de l'adolescent".
*Doctor Honoris Causa 1999. Faculty of Medicine of Timisoara (with Stuart Brink/1999, Zvi Laron/2000, Gian Franco Botazzo and Jorn Nerup/2005).

Professional positions:
*Professor of Pediatrics and Diabetology. Free University of Brussels
*Head, Diabetology Clinic, University Children's Hospital Queen Fabiola, Brussels.
· Most important in Belgium: - number of patients 974 (442 <18 years of age in 2008).
- number of publications
- treatment quality: lowest levels of HbA1c.
· Lowest levels of HbA1c in the international comparisons of the Hvidøre Study Group on Childhood Diabetes (last study: 2005)

Medicosocial activities:
*Director of vacation camps for diabetic children (1974-1984).
*ISGD/ISPAD annual meeting 1976 in Han-sur-Lesse, Belgium: Helmuth Loeb & Harry Dorchy
*Editorial board: "Acta Pædiatrica Belgica" (1977-1981); "European Journal of Pediatrics (1988-1992); "Archives de Pédiatrie" (Paris, 1994-2004); "Revue Médicale de Bruxelles" (1996-2008); other medico-social journals in Belgium and France.
*Coeditor of the "Bulletin" of the ISGD/ISPAD (1977-1985).
*Treasurer of ISGD/ISPAD (1980-1986).
*Treasurer of the Belgian Society of Pediatrics (1983-1991)
*Steering Committee of: associations for diabetic children "Les Jeunes et le

Diabète" in Brussels (from 1986) and "L'Aide aux Jeunes Diabétiques" in Paris (from 1989); "Belgian Diabetes Registry" (from 1995; head: D. Pipeleers); "Belgian Diabetes Association" (from 1997).
*Coeditor of "Diabetes in the Young", publication of ISPAD (1992-1994).
*Referee for 14 international journals with peer review in the field of diabetes.
*ISPAD international education in Romania with Stu Brink and with chairmanship of Viorel Serban (1996-2006): establishment and growth of pediatric diabetes subspecialty; board certification for pediatric diabetologists; annual pediatric diabetes scientific meeting in Buzias
*Communications in international meetings: 245; and in Belgian meetings: 169 (June 2009).

Books on pediatric diabetology:
*Coeditor, with C. Ernould (Liège) of a book to teach self-management of diabetes to diabetic children and their families, with an interuniversity collaboration: "Le diabète des Jeunes. Comment l'intégrer dans la vie quotidienne", Rotary, Brussels, 1987, 120 pages.
*Coeditor, with P. Czernichow (Paris) of the first French textbook on pediatric diabetes, with the collaboration of international experts mainly members of ISGD/ISPAD: "Diabétologie Pédiatrique", Doin, Paris, 1989, 700 pages.

Publications:
*Total: 489 (first author: 335)
*Original papers: 127
*Chapters in books, reviews and medico-social papers: 183
*Letters to the editor: 66
*Abstracts in scientific journals: 113

Clinical research interests:
Since the 1970s, clinical research interests include:

***Screening for subclinical complications.** The studies are summarized in "Dorchy H : Screening for subclinical complications in type 1 diabetic patients : experience acquired in Brussels. Pediatr Endocrinol Rev 2004; 1: 380-403" whose abstract is:

"Clinical studies conducted since the 1970s by the pediatric diabetology group of the Free University of Brussels have demonstrated that screening for subclinical retinopathy, neuropathy, and nephropathy should be started at puberty and at least 3 years after the

diabetes diagnosis with the goal of detecting early abnormalities responsible for subclinical disorders that can be reversed by improved metabolic control, thus preventing the occurrence of irreversible potentially incapacitating lesions. A 1974 retinal fluorescein angiography study showed that the development of microaneurysms, which are irreversible lesions, could be preceded by fluorescein leakage due to disruption of the blood-retinal barrier. Risk factors for early retinopathy include: duration of diabetes, age at diagnosis (with younger children having longer times to retinopathy), puberty and sex (with onset one year earlier in girls than in boys), long-term bad metabolic control over several years, high cholesterol levels and excessive body mass index (BMI). On the other hand, rapid improvement of diabetic control may worsen diabetic retinopathy (1985). Minimal EEG abnormalities were found in relationship with frequent and severe hypoglycemic comas and/or convulsions, and retinopathy (1979). Desynchronization of action potentials in distal nerve fibers preceded conduction velocity slowing (1981). A single high glycated hemoglobin value was associated with peroneal motor nerve conduction slowing (1985), which was not observed in the femoral nerve (1987). Sympathetic skin response (1996) and statistical analysis of heart rate variability (2001) could have some interest for the diagnosis of early diabetic autonomic neuropathy. Early microproteinuria is of mixed origin, being both glomerular (microalbumin) and tubular (ß2-microglobulin). Exercise testing to exhaustion did not provide additional information than the basal excretion (1976). Microtransferrinuria (1984) and urinary acid glycosaminoglycans output (2001) could also be predictive markers of glomerular dysfunction. Physical training reduced exercise-related proteinuria by half (1988). High levels of serum lipoprotein (a) were not associated with the presence of subclinical complications (1996). On the other hand, ultra sensitive C-reactive protein could be an interesting indicator for the risk of developing early complications (2002). Poor metabolic control was associated with higher levels of triglycerides, total cholesterol, LDL cholesterol, and apolipoprotein B (1990). Decreased gluthatione peroxidase, gluthatione reductase, and of vitamin C levels, denoting moderate oxidative stress, were found (1996), although there was no evidence of increased LDL cholesterol peroxidation (1998). Erythrocytes exhibited increased glycolytic activity, and neutrophils decreased migration, in relationship with metabolic control (1992). The degree of metabolic control influenced serum triiodothyronine levels (1985), magnesium concentrations (1999). Insulin therapy could activate the complement pathway if intermediate and long-acting insulin preparations without protamine sulphate are used (1992), and provoke higher BMI in adolescents on 4 insulin injections (1988). Helicobacter pylori infection and eradication are not related to HbA1c (2007)

Evolution to a normal and flexible diet. The studies are summarized in "Dorchy H : Dietary management for children and adolescents with diabetes mellitus: personal experience and recommendations. J Pediatr Endocrinol Metab 2003; 16: 131-48".

This is a short summarise of our studies conducted since the 70s:

"In the seventies, clinical studies by Henri Lestradet in France and by our group in Belgium, have demonstrated that diabetic children, receiving an adequate and flexible dose of insulin according to self monitoring of urine glucose at that time, benefited from a normal "spontaneously balanced and adapted diet". The best glycemic control was not obtained by totally free or rigid diets, but by appropriate daily adjustments of insulin and adequate distribution of normal food intake. Diabetic children have no fixed energy requirements because they grow and have variable physical activities. Energy intake may fluctuate from day to day without mandatory changes in the need for insulin or in the degree of glycosuria. To impose a weighed and measured diet is undesirable both for diabetic control and for psychological reasons. Moreover, the notion of "measuring" leads to rejection of the entire therapeutic regimen and to emotional problems. A restricted diet that controls only carbohydrate intake and thus favors fat intake is potentially dangerous for the vascular system. On the other hand, even in the seventies we had observed a too high fat consumption in Belgian diabetic children (42.2% of the total caloric intake) and we had to concentrate our efforts on emphasizing fat rather than carbohydrate restriction. We had also noted a positive correlation between the blood levels of HbA1c and those of total cholesterol and of triglycerides, which we confirmed later adding the LDL-cholesterol and apolipoprotein B. There was no relationship between HbA1c and HDL-cholesterol or its subfractions. This means that lipid abnormalities are not necessarily related to a diet high in saturated fat. In the twice-daily injection regimen, the allocation of carbohydrates throughout the day is essential.".

Physical activities. The studies are summarized in:

"Dorchy H, Poortmans JR: Sport and the diabetic child. Sports Med 1989; 7: 248-62" and in "Dorchy H, Poortmans J : Juvenile diabetes and sports. In : Bar-Or O and the International Olympic Committee, eds. The child and adolescent athlete. Oxford, Blackwell Science, 1996: 455-79" . In the 70s, we have measured the influence of physical activiy

equivalent to 50% $VO_{2\ max}$ on the coefficient of glucose disappearance rate (K) in diabetic adolescents: 1, receiving 300mU/kg of insulin intravenously (1976); 2, following usual dose intramuscularly, during exercise (1977); 3, with their usual dose of insulin, 30 min after exercise (1977); 4, insulin-deprived (1977). For the beneficial effects of exercise on the assimilation of glucose, the presence of insulin is necessary, playing at least a "permissive" role. Their is a prolongation of muscular avidity for glucose after cessation of muscular effort. Physical work capacity is correlated with the level of HbA1c (1986). Physical training induces a reduction in postexercise excretion of albumin and $ß_2$-microglobulin (1988).

Glycemic control and insulin treatment. Everybody agrees that he principal aims of therapeutic management of the child, adolescent and adult with type 1 diabetes are to allow good quality of life and to avoid long-term complications by maintaining blood glucose concentrations close to the normal range and an HbA1c level under 7%. Since 1994 (Dorchy H: What glycemic control can be achieved in young diabetics wiyhout residual secretion of endogenous insulin? What is the frequency of severe hypoglycaemia and subclinical complications? Arch Pediatr 1994; 1: 970-81; Dorchy H, Roggemans MP, Willems D : Glycated hemoglobin and related factors in diabetic children and adolescents under 18 years of age: a Belgian experience. Diabetes Care 1997; 20: 2-6) we have shown that the number of daily insulin injections, 2 or ≥4, by itself does not necessarily give better results, but the 4-injection regime allows greater freedom, taking into account that the proper insulin adjustment is difficult before adolescence. Successful glycaemic control in young patients depends mainly on the quality and intensity of diabetes education (Dorchy H : Dorchy's recipes explaining the "intriguing efficacity of Belgian conventional therapy". Diabetes Care 1994; 17: 458 -60; Dorchy H : Insulin regimens and insulin adjustments in diabetic children, adolescents and young adults : personal experience. Diabetes Metab 2000; 26: 500-7 ; Dorchy H : Rational use of insulin analogues in the treatment of type 1 diabetic

children and adolescents : personal experience. Arch Pediatr 2006 ; 13 : 1275-82). Any dogmatism must be avoided.

The mean HbA1c levels of our diabetic children and adolescents are among the . lowest in the review of literature and in the international comparisons by the *Hvidøre Study Group on Childhood Diabetes* in 1995 and 1998 (Diabetes Care 1997; 20: 714-20 ; Diabet Med 1998; 15: 752-9 ; Diabetes Care 2001; 24: 1342:7; . Eur J Pediatr 2003; 162: 22-9) and in 2007 (Diabetes Care 2007 ; 30 : 2245-50).

Well-being was inversely related to glycated hemoglobin levels (1997). The maternel perception of family cohesiveness and maternel alexithymia predict glycemic control (2008).

Specific types of diabetes. We studied rare forms of diabetes: Mauriac syndrome and retinopathy (Dorchy H, Van Vliet G, Toussaint D, Ketelbant-Balasse P, Loeb H: Mauriac syndrome: 3 cases with retinal angiofluorescein study. Diabete Metab 1979; 3: 195-200) ; congenital agenesis of ß-cells (Blum D, Dorchy H, Mouraux T, et al : Congenital absence of insulin cells in a neonate with diabetes mellitus and mutase-deficient methylmalonic acidaemia. Diabetologia 1993 ; 36 : 352-7) which was associated with isodisomy of chromosome 6 (Abramowicz MJ, Andrien M, Dupont E, Dorchy H, et al : Isodisomy of chromosome 6 in a newborn with methylmalonic acidemia and agenesis of pancreatic beta cells causing diabetes mellitus. J Clin Invest 1994 ; 94 : 418-21) ; hemolytic-uremic syndrome (Goffin L, Lolin K, Janssen F, Schurmans T, Dorchy H : Insulin-dependent diabetes mellitus as a long term complication of haemolytic-uraemic syndrome. Diabetes Metab 2006 ; 32 : 276-8) ; etc

Genetics and immunology. Participation in studies conducted by the Belgian Diabetes Registry: genetic and immunological markers in European Caucasians and Mograbin Caucasians (Pediatr Adolesc Endocrinol; 1993; 23: 71-5); influence of age among autoantibodies and HLA DQ (J Clin Endocrinol Metab 1994; 78: 1172-8); association of GAD65- and IA-2 autoantibodies with genetic risk markers

(Diabetes Care 1997; 20: 1547-52); increased prevalence of abnormal immunoglobulins at clinical onset (Pancreas 1998; 16: 50-9); islet cell antibody to identify type 1 diabetic patients with rapid decrease in C-peptide (Diabetes Care 2000; 23: 1072-8); Male-to-female excess in diabetes diagnosed in early childhood related to increased body mass index (Diabetologia 2001; 44: 40-7); sex- and season-dependent differences in C-peptide levels at diagnosis (Diabetologia 2006; 49: 1158-62); sex- and season-dependent differences in C-peptide levels at diagnosis of immune-mediated type 1 diabetes (Diabetologia 2006 ; 49 : 1158-62).