BIOGRAPHICAL SKETCH

NAME: **Dana Dabelea, MD, PhD**

eRA COMMONS USER NAME (credential, e.g., agency login): **Dabelea.Dana**

POSITION TITLE: **University Distinguished** **Professor**

EDUCATION/TRAINING

| INSTITUTION AND LOCATION | DEGREE  (if applicable) | Completion Date | FIELD OF STUDY |
| --- | --- | --- | --- |
| University of Medicine Timisoara, Romania | M.D. | 1984-1990 | Medicine |
| University of Medicine Timisoara, Romania | Residency | 1991-1994 | Internal Medicine |
| University of Medicine Timisoara, Romania | Ph.D. | 1992-1997 | Clinical Sciences |
| University of Medicine Timisoara, Romania | Residency | 1994-1997 | Diabetes & Metabolic Diseases |
| NIDDK, Phoenix, AZ | Fellowship | 1997-1999 | Diabetes Epidemiology |

# A. Personal Statement

My main research interest is understanding how early life risk factors, such as nutritional intake during pregnancy, obesity during intrauterine life, environmental exposures and infant growth and feeding patterns, influence the development of childhood outcomes such as obesity, insulin resistance, metabolic syndrome and diabetes (developmental origins of health and disease). My experience includes perinatal and childhood epidemiological studies with community-based and clinic-based sampling, longitudinal follow-up, and extensive sample collection and storage. I have conducted landmark studies on childhood type 2 diabetes, insulin resistance, and perinatal determinants on future risk among the Pima Indians of Arizona and among the Navajo Nation youth. At this time, I am Principal Investigator (PI) on the multi-center “SEARCH for Diabetes in Youth Study”, a multi-ethnic registry study of childhood diabetes conducting population-based ascertainment of diabetes in youth, which also has a longitudinal component. I also serve as Co-Chair of the SEARCH steering committee at national level. I am also PI of “Exploring Perinatal Outcomes among Children study” (EPOCH Study), which is exploring the long-term effects of exposure to diabetes *in utero* in children of different ethnicities. Between 2009 and 2014 I served as Principal Investigator for the Colorado Site of the National Children’s study, and also served on their Publication and Presentations Committee until 2015. In 2009, I have started a pre-birth cohort study, “Healthy Start”, which explores a timely public health problem by testing the hypothesis that maternal obesity programs neonatal growth, fatness and metabolism, and by identifying specific mediators of these effects that can be targeted by future interventions. This study has enrolled over 1400 mother-offspring dyads in Colorado and all children are now being followed up to ages 4-7 and 8-10 years. I am MPI on the Tribal Turning Point clinical trial, a randomized controlled trial which is testing a lifestyle intervention to reduce risk factors for type 2 diabetes in American Indian youth. These studies provide an exceptionally rich resource for training and mentoring students, junior faculty, residents and fellows in clinical diabetes research, lifecourse research, perinatal and pediatric epidemiology.

**Ongoing and completed grants to highlight:**

R01DK133235

Dabelea

07/01/2022 – 06/30/2027

*Metabolic Health during Puberty: the Healthy Start Study*

UG3/UH3OD023248

Dabelea

09/21/2016 – 08/31/2023

*The Early Life Exposome and Childhood Health – The Healthy Start 3 Cohort Study*

U18DP006139

Dabelea

09/30/2015 – 09/29/2020

*The SEARCH for Diabetes in Youth Registry Study, Colorado Center*

UC4 DK108173; sub-award WFUHS114580

Dabelea

09/25/2015 – 06/30/2020

*SEARCH for Diabetes in Youth Cohort Study*

R01DK100340

Dabelea/Kechris/Yang

07/01/2014 – 06/30/2019

*Epigenetic Markers of in utero Exposure to Gestational Diabetes*

R01DK076648

Dabelea

12/01/2009 – 07/31/2022

*Exploring the Fuel-Mediated Programming of Neonatal Growth (Healthy Start)*

UH3OD023248-05S1 NIH OD

Dabelea (PI)

09/01/2020 – 08/31/2021

*Examining the impact of societal changes during the COVID-19 pandemic on obesity-related behaviors*

R01HL148183

Olds, Dabelea, Daniels

06/22/2020 – 05/31/2024

*Influence of Prenatal and Early Childhood Home-Visiting by Nurses on Development of Chronic Disease: 29-year Follow-Up of a Randomized Clinical Trial*

# B. Positions, Scientific Appointments, and Honors

**Positions and Scientific Appointments**

2021 Distinguished Professor, University of Colorado Denver

2015- Director, Center for Lifecourse Epidemiology of Adiposity and Diabetes (LEAD)

2012-present Associate Dean, Faculty Affairs, Colorado School of Public Health

2011-present Professor with Tenure, Departments of Epidemiology and Pediatrics, Colorado School of Public Health & School of Medicine

2008 Tenure Award, University of Colorado Denver

2006-2011 Director Graduate Programs in Epidemiology, CSPH, University of Colorado Denver

2006-2011 Associate Professor, Dept. Epidemiology, Colorado School of Public Health (CSPH) and Department of Pediatrics, University of Colorado Denver

2001-2006 Assistant Professor, Dept. Preventive Medicine & Biometrics, University of Colorado Denver

1997-1999 Postdoctoral Fellow, Diabetes Epidemiology, National Institutes of Health, Phoenix, AZ

* 1. Assistant Professor, Department of Diabetes, University of Medicine, Timisoara, Romania

1991-1994 Instructor, Department of Diabetes, University of Medicine, Timisoara, Romania

**Honors**

2017 Elizabeth Gee Memorial Award, CU Denver

2017 Kelly West Award in Diabetes Epidemiology, American Diabetes Association

2014 Graduate School Mentoring Award

2014 Michaela Modan Award from the American Diabetes Association

2013: Conrad Riley Endowed Professor, CSPH, CU Denver

2011 Delta-Omega public health honor society member

2010 Excellence in Faculty Mentoring, Graduate Programs, CSPH

2010 Excellence in Faculty Research, CSPH

2001 Romanian Diabetes Association Scientific Award

2000 Romanian Society of Atherosclerosis and Lipidology Award

1999 NIH Fellows Award for Research Excellence-Epidemiology/Biostatistics 1999 competition

# C. Contribution to Science (selected from >350 publications)

1. **Lifecourse development of adiposity and diabetes:** As noted in my personal statement, this is a major area in which I am concentrating research and training efforts. In my studies, I am trying to implement **a lifecourse approach** and develop theoretical disease models and pathways that can be tested, explore critical or sensitive developmental periods, and discover early life biological markers of disease. Building on my work with the Pima Indian study, I have established two large cohorts of youth to explore some of these topics, which are available for trainees to utilize. The first is the **Healthy Start Study**, a large pre-birth cohort of 1400 mother-child dyads followed from the first trimester of pregnancy to age 4-6 years postnatally (at this time), with detailed demographic, anthropometric, metabolic and psycho-social and behavioral information on both mothers and children. The second (**EPOCH**) is a cohort of 600 youth identified from HMO data with *in utero* exposure to gestational diabetes (GDM) compared with offspring without maternal GDM. Both these cohorts are large prospective studies including state-of-the-art measures of nutrition during pregnancy, maternal and infant exposure to endocrine disrupting chemicals, with outcomes such as infant body composition, growth trajectories, genetic and epigenetic alterations, childhood adiposity, ectopic fat deposition, and cardio-metabolic outcomes. These studies have identified patterns of exposures during pregnancy and early life that contribute to obesity and related outcomes.
   1. Dabelea D, Hanson RL, Lindsay RS, Pettitt DJ, Imperatore G, Gabir MM, Roumain J, Bennett PH, Knowler WC: Intrauterine Exposure to Diabetes Conveys Risks for Type 2 Diabetes and Obesity: A Study of Discordant Sib-ships. Diabetes 2000;40:2208-11. PMID: 11118027
   2. Dabelea D, Crume T. Maternal environment and the transgenerational cycle of obesity and diabetes. Diabetes. 2011 Jul;60(7):1849-55; PMC3121421
   3. Starling AP, Brinton JT, Glueck DH, Shapiro AL, Harrod CS, Lynch AM, Siega-Riz AM, Dabelea D. Associations of maternal BMI and gestational weight gain with neonatal adiposity in the Healthy Start study. Am J Clin Nutr. Feb;101(2):302-9, 2015 PMID: 25646327
   4. Harrod CS, Chasan-Taber L, Reynolds RM, Fingerlin TE, Glueck DH, Brinton JT, Dabelea D. Physical activity in pregnancy and neonatal body composition: the Healthy Start study. Obstet Gynecol. 2014 Aug;124 :257-64. doi: 10.1097/AOG. PMID:25004346
2. **Developmental Overnutrition:** An important pathway to obesity is the **developmental overnutrition pathway**, which reflects the long term effects of early life metabolic programming and creates the conditions for the later pathophysiological effects of an obesogenic environment. Both Healthy Start and EPOCH (described above) focus on testing various aspects of this pathway. EPOCH findings provided novel evidence that fetal overnutrition resulting from exposure to maternal GDM is operating among contemporary US children, and that breastfeeding is protective**.** The study is now exploring the hypothesis that the long-term consequences of fetal overnutrition are amplified by transition through puberty, another developmental period, associated with rapid growth, alterations in fat patterning, and increased cardiometabolic risk. Healthy Start complements EPOCH by extending the research questions to other prenatal exposures*,* and by focusing on a much younger age group, for which data are sparser. Both these cohorts have NIH-funded ancillary studies to study some of the mechanisms (e.g., epigenetic changes) responsible for these effects. All of these studies attempt to understand, at different points in the lifecourse, the role of developmental overnutrition on adiposity and diabetes risk.
   1. Crume TL, Ogden LG, Mayer-Davis EJ, Hamman RF, Norris JM, Bischoff KJ, McDuffie R, Dabelea D; The impact of neonatal breast-feeding on growth trajectories of youth exposed and unexposed to diabetes in utero: the EPOCH Study. Int J Obes (Lond) 36(4): 529-534, 2012 PMC3323752.
   2. West NA, Kechris K, Dabelea D**.** Exposure to Maternal Diabetes in Utero and DNA Methylation Patterns in the Offspring. Immunometabolism. 2013 Mar;1:1-9. PMID: 23741625
   3. Shapiro AL, Schmiege SJ, Brinton JT, Glueck D, Crume TL, Friedman JE, Dabelea D: Testing the fuel-mediated hypothesis: maternal insulin resistance and glucose mediate the association between maternal and neonatal adiposity, the Healthy Start study. Diabetologia, DOI 10.1007/s00125-015-3505-z: 2015
   4. Crume TL, Shapiro AL, Brinton JT, Glueck DH, Martinez M, Kohn M, Harrod C, Friedman JE, Dabelea D. Maternal Fuels and Metabolic Measures during Pregnancy and Neonatal Body Composition: The Healthy Start Study. J Clin Endocrinol Metab. 2015 Jan 9:jc20142949. PMID: 25574704
3. **Burden of diabetes in youth:** One of my early epidemiologic observations was that type 2 diabetes prevalence was increasing among Pima Indian youth, a harbinger of increasing type 2 diabetes in all race/ethnic groups in the US. This observation, together with clinic based reports of rapidly rising rates of type 2 diabetes, especially in minority youth, led the CDC and NIDDK to fund the SEARCH study starting in 2000. Over the past 15 years, this study has developed prevalence and incidence data on the major race/ethnic groups and shown that not only is type 1 diabetes increasing in agreement with findings from other countries around the world, but that type 2 is also increasing (reference 3a below). SEARCH, of which I am the national co-chair, provides current data to the CDC for its factsheets on diabetes in youth, and the data have led to the development of two clinical trials aimed at prevention of complications in type 1 and prevention of type 2 diabetes in American Indian youth.
4. Dabelea D, Hanson RL, Bennett PH, Roumain J, Knowler WC, Pettitt DJ: Increasing prevalence of type II diabetes in American Indian children. Diabetologia 41(8) 904-10, 1998.
5. Dabelea D, Mayer-Davis EJ, Saydah S, Imperatore G, Linder B, Divers J, Bell R, Badaru A, Talton JW, Crume T, Liese AD, Merchant AT, Lawrence JM, Reynolds K, Dolan L, Liu LL, Hamman RF, for the SEARCH for Diabetes in Youth Study: Prevalence of type 1 and type 2 diabetes among children and adolescents from 2001 to 2009. JAMA 311(17):1778-86, 2014 PMID:24794371
6. Dabelea D, Pihoker C, D’Agostino R, Jr., Talton J, Fujimoto W, Klingensmith G, Lawrence J, Linder B, Marcovina S, Mayer-Davis EJ, Imperatore G , Dolan L. Etiological Approach to Characterization of Diabetes Type: The SEARCH for Diabetes in Youth Study, Diabetes Care 34(7): 1628-1633, 2011 PMCID: PMC3120176.
7. Vehik K, Hamman RF, Lezotte D, Klingensmith G, Bloch C, Rewers M, Dabelea D**.** Increasing Incidence of Type 1 Diabetes in 0-17 Year-Old Colorado Youth. Diabetes Care 2007 30: 503-509
8. **Clinical course of diabetes in youth and evolution of complications:** As the national co-chair of the SEARCH for Diabetes in Youth Study, I led the establishment of a cohort follow-up of youth with onset from 2002-08, of both type 1 and type 2 diabetes with onset < 20 years of age followed from the first year of onset. In addition, I led an NIH-funded ancillary study (SEARCH-CVD) to explore the CVD risk factors and subclinical outcomes (cardiac autonomic neuropathy, arterial stiffness) prior to adding these and others measures to the main SEARCH cohort study. To date, we have begun to identify the prevalence of microvascular (albuminuria, retinopathy, neuropathy) and macrovascular subclinical outcomes. The findings indicate that youth with type 2 diabetes have worse complications than youth with type 1 of similar duration. This work is crucial to understanding current therapy and inequality in outcomes across race/ethnic groups and is the largest study of its type in the US today.
   1. Dabelea D, Rewers A, Stafford JM, Standiford DA, Lawrence JM, Saydah S, Imperatore G, D'Agostino RB, Jr., Mayer-Davis EJ, Pihoker C: Trends in the Prevalence of Ketoacidosis at Diabetes Diagnosis: The SEARCH for Diabetes in Youth Study. Pediatrics 133:e938-e945, 2014 PMID: 24685959
   2. Dabelea D, Talton JW, D'Agostino R, Wadwa RP, Urbina EM, Dolan LM, Daniels SR, Marcovina SM, Hamman RF: Cardiovascular Risk Factors Are Associated With Increased Arterial Stiffness in Youth With Type 1 Diabetes: The SEARCH CVD study. Diabetes Care 36:3938-3943, 2013 PMC3836140
   3. Dabelea D, Mayer-Davis EJ, Andrews JS, Dolan LM, Pihoker C, Hamman RF, Greenbaum C, Marcovina S, Fujimoto W, Linder B, Imperatore G, D'Agostino R Jr. Clinical evolution of beta cell function in youth with diabetes: the SEARCH for Diabetes in Youth study. Diabetologia 55(12): 3359-68, 2012. PMID: 22990715
   4. Hamman RF, Bell RA, Dabelea D, D'Agostino RB Jr, Dolan L, Imperatore G, Lawrence JM, Linder B, Marcovina SM, Mayer-Davis EJ, Pihoker C, Rodriguez BL, Saydah S; SEARCH for Diabetes in Youth Study Group. The SEARCH for Diabetes in Youth study: rationale, findings, and future directions. Diabetes Care. 2014 Dec;37(12):3336-44. doi: 10.2337/dc14-0574. PMID: 25414389
9. **Prevention of diabetes in youth and adults:** The goal of much of my work is to identify approaches to prevention at the individual through community levels. I am the site PI for the Diabetes Prevention Program/Outcomes Study (DPPOS), which is the follow-up to the landmark clinical trial that showed that both lifestyle and metformin interventions could substantially reduce the risk of type 2 diabetes in adults. Based on these findings and my extensive work with the Navajo Nation in the SEARCH study, we received NIH funding to conduct a collaborative pilot program of diabetes prevention in eastern Band Cherokee and Navajo youth, who, like other American Indian youth, have the highest risk of diabetes among any race/ethnic group. This work has l led to a full NIH-funded clinical trial, Tribal Turning Point (TTP), which will deliver a lifestyle modification curriculum to multiple southwest tribes with the hope of reducing diabetes risk in youth, and potentially in their offspring.
   1. Dabelea D, Ma Y, Knowler WC, Marcovina S, Saudek CD, Arakaki R, White NH, Kahn SE, Orchard TJ, Goldberg R, Hamman RF: Diabetes Autoantibodies (DAA) and Prevention of Diabetes: The Diabetes Prevention Program (DPP). Diabetic Med 31:502-510, 2014 PMC4138247
   2. Ratner RE, Christophi CA, Metzger BE, Dabelea D, Bennett PH, Pi-Sunyer X, Fowler S, Kahn SE, the Diabetes Prevention Program Research Group: Prevention of Diabetes in Women with a History of Gestational Diabetes: Effects of Metformin and Lifestyle Interventions. Journal of Clinical Endocrinology Metabolism 93:4774-4779, 2008 PMC2626441
   3. Dabelea D, DeGroat J, Sorrelman C, Glass M, Percy CA, Avery C, Hu D, D'Agostino RB Jr, Beyer J, Imperatore G, Testaverde L, Klingensmith G, Hamman RF; SEARCH for Diabetes in Youth Study Group. Diabetes in Navajo youth: prevalence, incidence, and clinical characteristics: the SEARCH for Diabetes in Youth Study Diabetes Care. 2009 Mar;32 Suppl 2:S141-7
   4. Sauder KA, Dabelea D, Bailey-Callahan R, Kanott Lambert S, Powell J, James R, Percy C, Jenks BF, Testaverde L, Thomas JM, Barber R, Smiley J, Hockett CW, Zhong VW, Letourneau L, Moore K, Delamater AM, Mayer-Davis E. Targeting risk factors for type 2 diabetes in American Indian youth: the Tribal Turning Point pilot study. Pediatr Obes. 2018 May;13(5):321-329. doi: 10.1111/ijpo.12223. Epub 2017 Jun 21. PubMed PMID: 28635082; PubMed Central PMCID: PMC5740022

**URL to full list of published work:**

<http://www.ncbi.nlm.nih.gov/sites/myncbi/1FQ2vh8Ei6qA9/bibliography/47643743/public/?sort=date&direction=ascending>