

Name: Maddalena Trombetta  
Date of birth: 01/09/1972  
Place of birth: Verona, Italy

#### EDUCATION:

1997: Degree in Medicine, University of Verona, Italy  
2002: Postgraduate in Endocrinology and Metabolism Diseases, University of Verona  
2006: Ph.D. in Chronic-Degenerative Diseases, University of Verona  
2006-2008: Post-doctoral researcher at Department of Medicine, University of Verona  
2009: Research Scientist at Department of Medicine, University of Verona  
2015: Coordinator of the Veneto Regional Reference Centre for “High Diabetes and Metabolism Technologies”  
2018: Functional professional Assignment “Technologies in diabetes”

#### ACQUAINTED SCIENTIFIC SKILLS:

- Knowledge of the basis technique for clinical studies on the metabolism, such as hyperinsulinemic euglycemic clamp, Intravenous Glucose Tolerance Test (IVGTT), using radioactive and non-radioactive glucose tracer, indirect calorimetry and arm perfusion technique.
- Knowledge of the ecographic technique for measuring the arterial distensibility and compliance of the human conductance arteries using an echo-tracking device in B-M mode (Wall Track System)
- Knowledge of SAAM 1.2 software program for analysing the minimal model of C-peptide secretion, measured using Oral Glucose Tolerance Test (OGTT), Intravenous Glucose Tolerance Test (IVGTT) and hyperglycemic clamp (HGC).
- Extensive knowledge of SAP (sensor augmented pump) therapy in type 1 diabetes

#### PROJECTS

She participated to the following financed projects and some of these are still in progress:

2003-2008: University of Pisa, Italian Society of Diabetology, Eli Lilly and Company. Title: "GENFIEV: Evaluation of Genetic, Biochemical and Clinical Determinants of Type 2 Diabetes Progression in Subjects at High Risk. "

2003: European Foundation for the Study of Diabetes, MIUR and University of Verona. Title: "The Verona Newly Diagnosed Type 2 Diabetes Study (VNDS). Construction of a Biobank of Diabetes Related Genotypes and Phenotypes"

2009: University of Verona. Title: “Comparison of Aerobic and Resistance Training Effects on Glycemic Control in Type 2 Diabetes (RAED2)”

2013: European Foundation for the Study of Diabetes and University of Verona. Title: "Meal Glucose Regulation in Type 1 Diabetes on Insulin Pump Therapy: Towards a Better Understanding of the Glucose-Insulin System".

2014: University of Padua and University of Verona. Title: “Impact of Locus of Control and Fear of Hypoglycaemia on clinical efficacy and treatment satisfaction in type 1 diabetes patient on Insulin Pump Therapy”

2017: University of Verona. Title: “Transition from pediatric to adult diabetes care system for young adults with type 1 diabetes: a register of metabolic and psychological features”

2018: University of Verona. Title: “Accuracy of CGM during exercise in type 1 diabetes”

#### PUBLICATIONS:

She is author of 48 scientific publications on international journals.

1. S. Bonetti, C. Zusi, E. Rinaldi, M.L. Boselli, C. Patuzzo, E. Trabetti, G. Malerba, C. Bianchi, G. Lombardi, G. Zaza, S. Del Prato, G. Gambaro, E. Bonora, R. C. Bonadonna, M.

- Trombetta. Common Variants Associated to Type 2 Diabetes in the Italian Population. *Open Journal of Endocrine and Metabolic Diseases* Vol.11 No.1.
2. Rinaldi E, Zenti MG, Trombetta M, Ceradini G, Altomari A, Boselli ML, Santi L, Battistoni M, Bonadonna RC, Bonora E. Changes induced by metabolic surgery on the main components of glucose/insulin system in patients with diabetes and obesity. *Acta Diabetol.* 2020 Nov 24. online ahead of print
  3. E. Bonora, M. Trombetta, M. Dauriz, D. Travia, V. Cacciatori, C. Brangani, C. Negri, F. Perrone, I. Pichiri, V. Stoico, G. Zoppini, E. Rinaldi, G. Da Prato, M.L. Boselli, L. Santi, F. Moschetta, M. Zardini, and R. C. Bonadonna. Chronic complications in patients with newly diagnosed type 2 diabetes: prevalence and related metabolic and clinical features: the Verona Newly Diagnosed Type 2 Diabetes Study (VNDS) 9. *BMJ Open Diabetes Res Care*, 2020; 8 (1): e001549
  4. Echocardiographic parameters according to insulin dose in young patients affected by type 1 diabetes. G. Zoppini, C. Bergamini, M. Trombetta, A. Mantovani, G. Targher, A. Toffalini, C. Bittante and E. Bonora *PLoS One.* 2020; 15(12): e0244483.
  5. Glucose tolerance stages in Cystic Fibrosis are identified by a unique pattern of defects of Beta-cell function. C. Piona, S. Volpi, C. Zusi, E. Mozzillo, A. Tosco, A. Franzese, V. Rita, M.L. Boselli, M. Trombetta, M. Cipolli, R.C. Bonadonna, C. Maffei *J Clin Endocrinol Metab* 2020 Dec 17 online ahead of print
  6. Pasquini S, Da Prato G, Tonolo G, Bonora E, Trombetta M. Continuous intraperitoneal insulin infusion: an alternative route for insulin delivery in type 1 diabetes. *Acta Diabetol.* 2020 Jan;57(1):101-104
  7. Indelicato L, Calvo V, Dauriz M, Negri A, Negri C, Trombetta M, Bonora E. Depressive symptoms and glycaemic control in adults with type 1 diabetes: an exploratory study on the role of family functioning. *Acta Diabetol.* 2020 Jan;57(1):23-30.
  8. Dwivedi OP, Lehtovirta M, Hastoy B, Chandra V, Krentz NAJ, Kleiner S, Jain D, Richard AM, Abaitua F, Beer NL, Grotz A, Prasad RB, Hansson O, Ahlqvist E, Krus U, Artner I, Suoranta A, Gomez D, Baras A, Champon B, Payne AJ, Moralli D, Thomsen SK, Kramer P, Spiliotis I, Ramracheya R, Chabosseu P, Theodoulou A, Cheung R, van de Bunt M, Flannick J, Trombetta M, Bonora E, Wolheim CB, Sarelin L, Bonadonna RC, Rorsman P, Davies B, Brosnan J, McCarthy MI, Otonkoski T, Lagerstedt JO, Rutter GA, Gromada J, Gloyn AL, Tuomi T, Groop L. Loss of ZnT8 function protects against diabetes by enhanced insulin secretion. *Nat Genet.* 2019 Nov;51(11):1596-1606.
  9. Zoppini G, Trombetta M, Sabbagh L, Dauriz M, Mantovani A, Bergamini C. Impaired Aortic Valve Growth in Type 1 Diabetes Mellitus. *Can J Cardiol.* 2019 Jul;35(7): 941.e5-941.e6
  10. Grancini V, Trombetta M, Lunati ME, Boselli ML, Gatti S, Donato MF, Palmieri E, Resi V, Pugliese G, Bonadonna RC, Orsi E Central role of the  $\beta$ -cell in driving regression of diabetes after liver transplantation in cirrhotic patients. *J Hepatol.* 2019 May;70(5):954-962.
  11. Zoppini G, Bergamini C, Trombetta M, Sabbagh L, Dauriz M, Mantovani A, Targher G, Fossà I, Rinaldi E, Bonora E- Increased aortic stiffness index in patients with type 1 diabetes without cardiovascular disease compared to controls. *J Endocrinol Invest.* 2019 Mar 16
  12. Zusi C, Trombetta M, Bonetti S, Dauriz M, Boselli ML, Trabetti E, Malerba G, Penno G, Zoppini G, Bonora E, Solini A, Bonadonna RC A renal genetic risk score (GRS) is associated with kidney dysfunction in people with type 2 diabetes. *Diabetes Res Clin Pract.* 2018 Oct; 144:137-143.
  13. Mantovani A, Teobaldi I, Stoico V, Perrone F, Zannoni M, Cima L, Bruti M, Mingolla L, Trombetta M, Bonora E- Cutaneous squamous carcinoma in a patient with diabetic foot: an unusual evolution of a frequent complication. *Endocrinol Diabetes Metab Case Rep.* 2018 Jul 31;2018
  14. Zoppini G, Bergamini C, Bonapace S, Trombetta M, Mantovani A, Toffalini A, Lanzoni L, Bertolini L, Zenari L, Bonora E, Targher G, Rossi A. Left ventricular chamber dilation and filling pressure may help to categorise patients with type 2 diabetes. *BMJ Open Diabetes Res Care.* 2018 Jun 14;6(1):

15. Dauriz M, Bacchi E, Boselli L, Santi L, Negri C, Trombetta M, Bonadonna RC, Bonora E, Moghetti P. Association of free-living physical activity measures with metabolic phenotypes in type 2 diabetes at the time of diagnosis. The Verona Newly Diagnosed Type 2 Diabetes Study (VNDS). *Nutr Metab Cardiovasc Dis*. 2018 Jan 9. PubMed PMID: 29477578.
16. Lepore G, Bonfanti R, Bozzetto L, Di Blasi V, Girelli A, Grassi G, Iafusco D, Laviola L, Rabbone I, Schiaffini R, Bruttomesso D; Italian Study Group on the Diffusion of CSII. Metabolic control and complications in Italian people with diabetes treated with continuous subcutaneous insulin infusion. *Nutr Metab Cardiovasc Dis*. 2018 Apr;28(4):335-342 PubMed PMID: 29428572.
17. Cacciatori V, Zoppini G, Bellavere F, Rigolon R, Thomaseth K, Pichiri I, Trombetta M, Dauriz M, De Santi F, Targher G, Santi L, Bonora E. Long-Acting GLP-1 Receptor Agonist Exenatide Influence on the Autonomic Cardiac Sympatho-Vagal Balance. *J Endocr Soc*. 2017 Nov 6;2(1):53-62.
18. Zoppini G, Bergamini C, Bonapace S, Rossi A, Trombetta M, Mantovani A, Toffalini A, Lanzoni L, Bertolini L, Zenari L, Bonora E, Targher G. Association between subclinical left ventricular systolic dysfunction and glycemic control in asymptomatic type 2 diabetic patients with preserved left ventricular function. *J Diabetes Complications*. 2017 Jun;31(6):1035-1040.
19. Indelicato L, Mariano V, Galasso S, Boscari F, Cipponeri E, Negri C, Frigo A, Avogaro A, Bonora E, Trombetta M, Bruttomesso D. Influence of health locus of control and fear of hypoglycaemia on glycaemic control and treatment satisfaction in people with Type 1 diabetes on insulin pump therapy. *Diabet Med*. 2017 May;34(5):691-697.
20. Zoppini G, Bonapace S, Bergamini C, Rossi A, Trombetta M, Lanzoni L, Bertolini L, Zenari L, Bonora E, Targher G. Evidence of left atrial remodeling and left ventricular diastolic dysfunction in type 2 diabetes mellitus with preserved systolic function. *Nutr Metab Cardiovasc Dis*. 2016 Nov;26(11).
21. Mantovani A, Trombetta M, Imbriaco C, Rigolon R, Mingolla L, Zamboni F, Dal Molin F, Cioccoloni D, Sanga V, Bruti M, Brocco E, Conti M, Ravenna G, Perrone F, Stoico V, Bonora E. Diabetic foot complicated by vertebral osteomyelitis and epidural abscess. *Endocrinol Diabetes Metab Case Rep*. 2016; 2016:150132.
22. Trombetta M, Dauriz M, Bonetti S, Travia D, Boselli L, Santi L, Bonora E, Bonadonna RC. Is common genetic variation at IRS1, ENPP1 and TRIB3 loci associated with cardiometabolic phenotypes in type 2 diabetes? An exploratory analysis of the Verona Newly Diagnosed Type 2 Diabetes Study (VNDS) 5. *Nutr Metab Cardiovasc Dis*. 2016 Mar;26(3):232-8.
23. Dauriz M, Trombetta M, Boselli L, Santi L, Brangani C, Pichiri I, Bonora E, Bonadonna RC. Interleukin-6 as a potential positive modulator of human beta-cell function: an exploratory analysis-the Verona Newly Diagnosed Type 2 Diabetes Study (VNDS) 6. *Acta Diabetol*. 2016 Jun;53(3):393-402.
24. Grancini V, Trombetta M, Lunati ME, Zimbalatti D, Boselli ML, Gatti S, Donato MF, Resi V, D'Ambrosio R, Aghemo A, Pugliese G, Bonadonna RC, Orsi E. Contribution of  $\beta$ -cell dysfunction and insulin resistance to cirrhosis-associated diabetes: Role of severity of liver disease. *J Hepatol*. 2015 Dec; 63(6):1484-90.
25. Zoppini G, Cacciatori V, Raimondo D, Gemma M, Trombetta M, Dauriz M, Brangani Pichiri I, Negri C, Stoico V, Bergamini C, Targher G, Santi L, Thomaseth K, Bellavere F, Bonadonna RC, Bonora E. Prevalence of Cardiovascular Autonomic Neuropathy in a Cohort of Patients With Newly Diagnosed Type 2 Diabetes: The Verona Newly Diagnosed Type 2 Diabetes Study (VNDS). *Diabetes Care*. 2015 Aug;38(8):1487-93.
26. Zoppini G, Galletti A, Targher G, Brangani C, Pichiri I, Trombetta M, Negri C, De Santi F, Stoico V, Cacciatori V, Bonora E. Lower levels of 25-hydroxyvitamin D3 are associated with a higher prevalence of microvascular complications in patients with type 2 diabetes. *BMJ Open Diabetes Res Care*. 2015 Apr 24;3(1).
27. Bruttomesso D, Laviola L, Lepore G, Bonfanti R, Bozzetto L, Corsi A, Di Blasi V, Girelli A, Grassi G, Iafusco D, Rabbone I, Schiaffini R; Italian Study Group on Diffusion of CSII.

Continuous subcutaneous insulin infusion in Italy: third national survey. *Diabetes Technol Ther.* 2015 Feb;17(2):96-104.

28. Targher G, Mantovani A, Pichiri I, Mingolla L, Cavalieri V, Mantovani W, Pancheri S, Trombetta M, Zoppini G, Chonchol M, Byrne CD, Bonora E. Nonalcoholic fatty liver disease is independently associated with an increased incidence of chronic kidney disease in patients with type 1 diabetes. *Diabetes Care.* 2014 Jun;37(6):1729-36.

29. Bianchi C, Miccoli R, Trombetta M, Giorgino F, Frontoni S, Faloia E, Marchesini G, Dolci MA, Cavalot F, Cavallo G, Leonetti F, Bonadonna RC, Del Prato S; GENFIEV Investigators. Elevated 1-hour postload plasma glucose levels identify subjects with normal glucose tolerance but impaired  $\beta$ -cell function, insulin resistance, and worse cardiovascular risk profile: the GENFIEV study. *J Clin Endocrinol Metab.* 2013 May;98(5):2100-5.

30. Trombetta M, Bonetti S, Boselli ML, Miccoli R, Trabetti E, Malerba G, Pignatti PF, Bonora E, Del Prato S, Bonadonna RC. PPARG2 Pro12Ala and ADAMTS9 rs4607103 as "insulin resistance loci" and "insulin secretion loci" in Italian individuals. The GENFIEV study and the Verona Newly Diagnosed Type 2 Diabetes Study (VNDS) 4. *Acta Diabetol.* 2013 Jun;50(3):401-8.

31. Trombetta M, Boselli L, Cretti A, Cali A, Vettore M, Caruso B, Dorizzi R, Avogaro A, Muggeo M, Bonora E, Bonadonna RC. Type 2 diabetes mellitus: a disease of the governance of the glucose-insulin system: an experimental metabolic control analysis study. *Nutr Metab Cardiovasc Dis.* 2013 Jan;23(1).

32. Bianchi C, Miccoli R, Bonadonna RC, Giorgino F, Frontoni S, Faloia E, Marchesini G, Dolci MA, Cavalot F, Cavallo GM, Leonetti F, Del Prato S; GENFIEV Investigators. Pathogenetic mechanisms and cardiovascular risk: differences between HbA(1c) and oral glucose tolerance test for the diagnosis of glucose tolerance. *Diabetes Care.* 2012 Dec;35(12):2607-12.

33. Trombetta M, Bonetti S, Boselli M, Turrini F, Malerba G, Trabetti E, Pignatti P, Bonora E, Bonadonna RC. CACNA1E variants affect beta cell function in patients with newly diagnosed type 2 diabetes. the Verona newly diagnosed type 2 diabetes study (VNDS) 3. *PLoS One.* 2012;7(3):e32755.

34. Bacchi E, Negri C, Zanolin ME, Milanese C, Faccioli N, Trombetta M, Zoppini G, Cevese A, Bonadonna RC, Schena F, Bonora E, Lanza M, Moghetti P. Metabolic effects of aerobic training and resistance training in type 2 diabetic subjects: a randomized controlled trial (the RAED2 study). *Diabetes Care.* 2012 Apr;35(4):676-82.

35. Targher G, Pichiri I, Zoppini G, Trombetta M, Bonora E. Increased prevalence of chronic kidney disease in patients with Type 1 diabetes and nonalcoholic fatty liver. *Diabet Med.* 2012 Feb;29(2):220-6.

36. Targher G, Pichiri I, Zoppini G, Trombetta M, Bonora E. Increased prevalence of cardiovascular disease in Type 1 diabetic patients with nonalcoholic fatty liver disease. *J Endocrinol Invest.* 2012 May;35(5):535-40.

37. Bonetti S, Trombetta M, Boselli ML, Turrini F, Malerba G, Trabetti E, Pignatti PF, Bonora E, Bonadonna RC. Variants of GCKR affect both  $\beta$ -cell and kidney function in patients with newly diagnosed type 2 diabetes: the Verona newly diagnosed type 2 diabetes study 2. *Diabetes Care.* 2011 May; 34(5):1205-10.

38. Bianchi C, Miccoli R, Bonadonna RC, Giorgino F, Frontoni S, Faloia E, Marchesini G, Dolci MA, Alviggi L, Gnasso A, Consoli A, Cavalot F, Cavallo MG, Leonetti F, Giaccari A, Del Prato S; GENFIEV Investigators. Metabolic syndrome in subjects at high risk for type 2 diabetes: the genetic, physiopathology and evolution of type 2 diabetes (GENFIEV) study. *Nutr Metab Cardiovasc Dis.* 2011 Sep;21(9):699-705.

39. Bonetti S, Trombetta M, Malerba G, Boselli L, Trabetti E, Muggeo M, Stoico V, Negri C, Pignatti PF, Bonora E, Bonadonna RC. Variants and haplotypes of TCF7L2 are associated with  $\beta$ -cell function in patients with newly diagnosed type 2 diabetes: the Verona Newly Diagnosed Type 2 Diabetes Study (VNDS) 1. *J Clin Endocrinol Metab.* 2011 Feb;96(2): E389-93.

40. Zoppini G, Targher G, Trombetta M, Lippi G, Muggeo M. Relationship of serum gamma-glutamyltransferase to atherogenic dyslipidemia and glycemic control in type 2 diabetes. *Obesity (Silver Spring)*. 2009 Feb;17(2).
41. Mazzucco S, Bifari F, Trombetta M, Guidi GC, Mazzi M, Anzola GP, Rizzuto N, Bonadonna R. Evaluating endothelial function of the common carotid artery: an in vivo human model. *Nutr Metab Cardiovasc Dis*. 2009 Mar;19(3):205-10.
42. Zoppini G, Targher G, Trombetta M, Lippi G, Muggeo M. Relationship between soluble CD40 ligand and gamma-glutamyltransferase concentrations in non-drinking, young Type 1 diabetic individuals. *Diabet Med*. 2008 Nov;25(11).
43. Zoppini G, Verlato G, Targher G, Bonora E, Trombetta M, Muggeo M. Variability of body weight, pulse pressure and glycaemia strongly predict total mortality in elderly type 2 diabetic patients. The Verona Diabetes Study. *Diabetes Metab Res Rev*. 2008 Nov-Dec;24(8):624-8.
44. Maffei C, Manfredi R, Trombetta M, Sordelli S, Storti M, Benuzzi T, Bonadonna RC. Insulin sensitivity is correlated with subcutaneous but not visceral body fat in overweight and obese prepubertal children. *J Clin Endocrinol Metab*. 2008 Jun;93(6):2122-8.
45. Cali' AM, Bonadonna RC, Trombetta M, Weiss R, Caprio S. Metabolic abnormalities underlying the different prediabetic phenotypes in obese adolescents. *J Clin Endocrinol Metab*. 2008 May;93(5).
46. Trombetta M, Spiazzi G, Zoppini G, Muggeo M. Review article: type 2 diabetes and chronic liver disease in the Verona diabetes study. *Aliment Pharmacol Ther*. 2005 Nov;22 Suppl 2:24-7.
47. Lehtovirta M, Kaprio J, Groop L, Trombetta M, Bonadonna RC. Heritability of model-derived parameters of beta cell secretion during intravenous and oral glucose tolerance tests: a study of twins. *Diabetologia*. 2005 Aug; 48(8):1604-13.
48. Weiss R, Caprio S, Trombetta M, Taksali SE, Tamborlane WV, Bonadonna R. Beta-cell function across the spectrum of glucose tolerance in obese youth. *Diabetes*. 2005 Jun;54(6):1735-