

GELTRUDE MINGRONE, M.D. PhD CURRICULUM VITAE

I graduated with 110/110 and cum laude at the age of 22 years at the Catholic University, School of Medicine in Rome, Italy, and completed my training at the same university. I am Board Certified with 70/70 and cum laude in Gastroenterology; Diabetology and Metabolic Diseases; and Forensic Medicine.

Beyond practicing internal medicine, I always had a sincere interest in medical research, particularly in the field of type 2 diabetes mellitus and obesity. I hold the position of Associate Professor of Internal Medicine in the Faculty of Medicine of the Catholic University in Rome and I am Chief of the Division of Obesity and Related Disorders at the University Hospital Policlinico A. Gemelli in Rome. I have written more 344 peer-reviewed publications with a global citation index of 50 (Scopus).

Environment

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Personal

- Geltrude Mingrone
 - Born: 07/01/1956 Rossano (CS) Italy
 - Married: Marco Castagneto, Professor of Surgery
 - Three children, a 34 years old boy graduated in Law and working in London and two twins aged 30 years, a boy – graduated in Economics and in Finance, with a PhD in Finance at the Imperial College, Business School, in London and working at UCL – and a girl – graduated in Medicine at the Catholic University of Rome who successfully (70/70 cum laude) completed the Surgery Fellowship at the University “La Sapienza” in Rome.
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Education

- High School diploma with honours in 1972
 - Graduation magna cum laude at the Catholic University of Rome at the age of 22 years (1978)
 - Specialization in Gastroenterology cum laude
 - Specialization in Diabetology and Metabolic Diseases cum laude
 - Specialization in Forensic Medicine cum laude
 - Ph.D., 1992-1994, University of Gent Belgium, degree of “Geaggregeerde voor het Hoger Onderwijs in de Klinische Farmacologie”
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Language Knowledge Level

Italian

mother tongue

English

writing and speaking: proficiency

French

speaking: fluency; writing: basic

Academic Appointments

1978-1980	Assistant Research Scientist, Department of Internal Medicine, Catholic University of Rome, Italy
1981-1983	Researcher at the National Council of Research, Clinical Physiology, in Pisa (Italy)
1984-1989	Assistant Professor, Department of Internal Medicine, Catholic University of Rome, Italy
1990-1999	Assistant Professor, Division of Metabolic Disease, Catholic University of Rome, Italy
2000-present	Associate Professor of Internal Medicine, Department of Internal Medicine, Catholic University of Rome, Italy
2010-present	Chief of the Division of Obesity and Related Disorders, Policlinico A. Gemelli, Rome, Italy
2012 Competition	Qualified as full professor in Internal Medicine in the national (Italian) competition
2012 Competition	Qualified as full professor in Endocrinology in the national (Italian) competition
2018 Competition	Qualified as full professor in Internal Medicine in the national (Italian) competition
2018 Competition	Qualified as full professor in Endocrinology in the national (Italian) competition
September 2015- present	Professor of Diabetes and Nutrition at the King's College of London - Transcampus

Visiting Professor from December 2014 to December 2016 at the Steno Diabetes Center in Copenhagen, Denmark.

PATENTS:

12/21/1993- Patent number: 5272177 Use of sebatic acid and derivatives thereof in enteral and parenteral nutrition and pharmaceutical compositions containing said compounds

01/06/11 - Patent number: 20110002900 - Medium chain dicarboxylic acids, their derivates and metabolic disorders

Executive Director of the EUROPEAN CHAPTER of the AMERICAN COLLEGE OF NUTRITION until 2010
Member of the Board of Directors of the AMERICAN COLLEGE OF NUTRITION.

Former Member of the Board of the EUROPEAN GROUP for the study of INSULIN RESISTANCE (EGIR)

Expert in the Panel on Nutrition of the EUROPEAN FOOD SAFETY AUTHORITY (EFSA) until 2005

Member of the Board of the GROUP OF NUTRITION of the EASD.

Chair of the Study-Group on Metabolic Surgery of the EASD.

Scientific profile & Grants:

Founder and Executive Director of the European College of Nutrition until 2010.

Member of the Board of the European Group for the study of Insulin Resistance (EGIR)

Expert at the European Food Safety Authority (EFSA) in the nutrition panel

Member of the Board of the EASD Nutrition Group

Chair of the EASD Study Group on Metabolic Surgery

Expert for the European Commission to evaluate research projects

Reviewer of Research Projects from Switzerland, France, Austria, Finland, Italy and Israel.

Expert in the selection of Full Professor of Clinical Nutrition at the University of Kuopio, Finland in 2012.

Partner in the 5th Framework Programme EGIR-RISC "Relationship between insulin sensitivity and cardiovascular disease". (RISC) QLG1-CT-2001-01252.

Partner of the Horizon 2020 project “Elucidating Pathways of Steatohepatitis (EPoS)”.
Partner and Workpackage Leader in the IMI project awarded in 2020 “Stratification of Obese Phenotypes to Optimize Future Obesity Therapy”

One of the 5 European author contributors on behalf of EASD to the 2018 ADA-EASD guidelines for the treatment of hyperglycemia in type 2 diabetes.

Selected Lectures Invitations:

American Diabetes Association, Orlando congress June 22-26: Type 2 diabetes treatment guidelines

World Congress on Obesity Kuala Lumpur March 17-20, 2014 “Physiological Changes Following Bariatric Surgery”.

American Diabetes Association, Chicago congress June 22, 2013 “Effects of Bariatric Procedures on Insulin Secretion and Beta Cell Function”.

German Diabetes Association, Leipzig May 10, 2013 “Bariatric Surgery”.

14th Brazilian Meeting on Bariatric and Metabolic Surgery and the 4th Panamerican Congress for the treatment of T2DM October 31 – November 3, 2012 Maceio, Brazil, Evidence based bariatric surgery.

International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO) August 31-September 3 2011 Dusseldorf, The role of malabsorption.

Faculty Member of the International Organizing Committee and Delegate for the 2nd Congress on Interventional Therapies for Type 2 Diabetes New York 2011.

ALFEDIAM (Société Francophone de Diabétologie) December 4th, 2009, Paris : Chirurgie Bariatrique dans le Traitement du Diabète : Quelle Place ?

27th International Symposium on Diabetes and Nutrition Potsdam, Germany, 25th - 28th of June 2009 Diabetes and Nutrition Study Group (DNSG) of the European Association for the Study of Diabetes (EASD) Gastric bypass - which nutritional and neuroendocrine mechanisms lead to rapid cure of T2DM ?

110th Anniversary International Group on Insulin Secretion (IGIS) Symposium entitled "A Decade of Islet Research: Implications for Understanding and Treating Type 2 Diabetes", St Jean Cap Ferrat, France, 26-29 March 2009 Lecture on "Bariatric surgery: un-stressing or boosting the beta-cell?"

Invitation to Astra Zeneca Molndal for study collaboration regarding mechanisms of gastric bypass surgery on insulin sensitivity May 19th, 2008

Faculty Member of the International Organizing Committee and Delegate for the 1st World Congress on Interventional Therapies for Type 2 Diabetes New York 2008;

Faculty Member of the International Organizing Committee and Delegate for the Diabetes Surgery Summit DSS Roma 2007,

Lecture on “Dicarboxylic acids in nutrition” at the Nestlé Research Center in Lausanne, Switzerland May 29th 2006

Lectures on « From obesity to diabetes » at the Federation D’endocrinologie Du Pole Est Maladies Metaboliques – Diabete-Nutrition, Lyon, France May 30-31 2005

Expertise: I am working actively to study the mechanisms of resolution of type 2 diabetes after bariatric surgery. Moreover, moving from my interest and thanks to modern facilities allocated in my Catholic University's centre, I have contributed to the research on the body composition measurements. **My research activity is documented by more than 300 scientific papers published in high impacted, international journals, such as the New England Journal of Medicine, The Lancet, Lancet Diabetes & Endocrinology, J Clin Invest, Diabetes Care, Diabetes, Diabetologia, Am J Physiol, etc.**

European expert during the FP5 and FP6.

My expertise is also centred on the 24h energy expenditure measurement using the Calorimetric Chamber at the Catholic University, a device which measures 24h energy expenditure in free living conditions. Very few Calorimetric Chambers exist all over the world (one of this is located at the Institute of Physiology of the Lausanne's University, chaired by Professor L. Tappy). Furthermore, I am Head of the Division of Diabetes and Obesity with in- and out-patients, where glucose disposal, both basally and during euglycemic hyperinsulinemic clamp, is measured using stable isotopes, as well as insulin secretion through C-peptide deconvolution method or other models. Determination of Fat Mass and Fat-Free Mass using deuterated water, DXA, TC scan and NMR are also performed. Together with expert Bio-engineers, I have implemented new techniques for the clinical practice, such as BIA reconstruction of the lower limb skeletal muscle mass, referring to more sophisticated ones, such as NMR Imaging techniques used as golden standard, demonstrating the sensitivity, accuracy, and repeatability of the BIA technique when a suitable mathematical model of the data is applied.

I have been also involved for many years in the study of the role of nutrients, and particularly of fatty acids, and intestinal hormones in diabetes and insulin resistance. A unique human model of selective lipid malabsorption is represented by morbidly obese subjects, who underwent bilio-pancreatic diversion, one of the major techniques of bariatric surgery. We demonstrated that the decrease of muscle tissue triglycerides is strictly correlated to a reversal of both insulin resistance and diabetes mellitus in morbidly obese subjects and that the complete recovery from type 2 diabetes appears very early after bariatric surgery, when there is not a significant weight loss, suggesting a relevant role of the small intestine in the resolution of insulin resistance and subsequently of diabetes.

SELECTED PUBLICATIONS

The following publications have been chosen among more than 300 to stress my research interests toward the mechanisms of resolution of type 2 diabetes after bariatric surgery and insulin resistance and secretion in general.

1. Rubino F, Puhl RM, Cummings DE, Eckel RH, Ryan DH, Mechanick JI, Nadglowski J, Ramos Salas X, Schauer PR, Twenefour D, Apovian CM, Aronne LJ, Batterham RL, Berthoud HR, Boza C, Busetto L, Dicker D, De Groot M, Eisenberg D, Flint SW, Huang TT, Kaplan LM, Kirwan JP, Korner J, Kyle TK, Laferrère B, le Roux CW, McIver L, **Mingrone G**, Nece P, Reid TJ, Rogers AM, Rosenbaum M, Seeley RJ, Torres AJ, Dixon JB. Joint international consensus statement for ending stigma of obesity. *Nat Med*. 2020 Mar 4. doi: 10.1038/s41591-020-0803-x.
2. Buse JB, Wexler DJ, Tsapas A, Rossing P, **Mingrone G**, Mathieu C, D'Alessio DA, Davies MJ. 2019 Update to: Management of Hyperglycemia in Type 2 Diabetes, 2018. A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). *Diabetes Care*. 2019 Dec 19. pii:dc190066. doi: 10.2337/dci19-0066. [Epub ahead of print] PubMed PMID: 31857443.
3. Buse JB, Wexler DJ, Tsapas A, Rossing P, **Mingrone G**, Mathieu C, D'Alessio DA, Davies MJ. 2019 update to: Management of hyperglycaemia in type 2 diabetes, 2018. A consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). *Diabetologia*. 2020 Feb;63(2):221-228. doi: 10.1007/s00125-019-05039-w. PubMed PMID: 31853556.
4. Harris LA, Kayser BD, Cefalo C, Marini L, Watrous JD, Ding J, Jain M, McDonald JG, Thompson BM, Fabbrini E, Eagon JC, Patterson BW, Mittendorfer B, **Mingrone G**, Klein S. Biliopancreatic Diversion Induces Greater Metabolic Improvement Than Roux-en-Y Gastric Bypass. *Cell Metab*. 2019;30:855-864.e3.
5. Casella-Mariolo J, Castagneto-Gissey L, Angelini G, Zoli A, Marini P, Bornstein SR, Pournaras DJ, Rubino F, le Roux CW, **Mingrone G**, Casella G. Simulation of gastric bypass effects on glucose metabolism and non-alcoholic fatty liver disease with the Sleeveballoon device. *EBioMedicine*. 2019;46:452-462.
6. **Mingrone G**. Treatment of persistent or recurrent type 2 diabetes after metabolic surgery. *Lancet Diabetes Endocrinol*. 2019; 7:504-505.
7. **Mingrone G**, Bornstein S, Le Roux CW. Optimisation of follow-up after metabolic surgery. *Lancet Diabetes Endocrinol*. 2018 Jan 29. pii: S2213-8587(17)30434-5. doi: 10.1016/S2213-8587(17)30434-5.

9. Capristo E, Panunzi S, De Gaetano A, Spuntarelli V, Bellantone R, Giustacchini P, Birkenfeld AL, Amiel S, Bornstein SR, Raffaelli M, **Mingrone G**. Incidence of hypoglycemia after Gastric Bypass versus Sleeve Gastrectomy: a Randomized Trial. *J Clin Endocrinol Metab*. 2018 Mar 23. doi: 10.1210/jc.2017-01695.
10. Salinari S, **Mingrone G**, Bertuzzi A, Previti E, Capristo E, Rubino F. Downregulation of Insulin Sensitivity After Oral Glucose Administration: Evidence for the Anti-Incretin Effect. *Diabetes*. 2017;66:2756-2763.
11. Basso N, Soricelli E, Castagneto-Gissey L, Casella G, Albanese D, Fava F, Donati C, Tuohy K, Angelini G, La Neve F, Severino A, Kamvissi-Lorenz V, Birkenfeld AL, Bornstein S, Manco M, **Mingrone G**. Insulin resistance, microbiota and fat distribution changes by a new model of vertical sleeve gastrectomy in obese rats. *Diabetes*. 2016 Jul 18. pii: db160039.
13. **Mingrone G**, Panunzi S, De Gaetano A, Guidone C, Iaconelli A, Nanni G, Castagneto M, Bornstein S, Rubino F. Bariatric-metabolic surgery versus conventional medical treatment in obese patients with type 2 diabetes: 5 year follow-up of an open-label, single-centre, randomised controlled trial. *Lancet*. 2015;386:964-73.
14. Panunzi S, Carlsson L, De Gaetano A, Peltonen M, Rice T, Sjöström L, **Mingrone G**, Dixon JB. Determinants of Diabetes Remission and Glycemic Control After Bariatric Surgery. *Diabetes Care*. 2016;39:166-74.
15. **Mingrone G**, Castagneto-Gissey L. Type 2 diabetes mellitus in 2013: a central role of the gut in glucose homeostasis. *Nat Rev Endocrinol*. 2014 ;10:73-4.
16. Salinari S, le Roux CW, Bertuzzi A, Rubino F, **Mingrone G**. Duodenal-jejunal bypass and jejunectomy improve insulin sensitivity in goto-kakizaki diabetic rats without changes in incretins or insulin secretion. *Diabetes*. 2014;63:1069-78
17. Gloy VL, Briel M, Bhatt DL, Kashyap SR, Schauer PR, **Mingrone G**, Bucher HC, Nordmann AJ. Bariatric surgery versus non-surgical treatment for obesity: a systematic review and meta-analysis of randomised controlled trials. *British Medical Journal*. 2013;347:f5934-8.
18. **Mingrone G**, Panunzi S, De Gaetano A, Guidone C, Iaconelli A, Leccesi L, Nanni G, Pomp A, Castagneto M, Ghirlanda G, Rubino F. Bariatric surgery versus conventional medical therapy for type 2 diabetes. *N Engl J Med* 2012;366:1577-85
19. Salinari S, Debard C, Bertuzzi A, Durand C, Zimmet P, Vidal H, **Mingrone G**. Jejunal Proteins Secreted by db/db Mice or Insulin-Resistant Humans Impair the Insulin Signaling and Determine Insulin Resistance. *PLoS One* 2013;8:e56258
20. Salinari S, Bertuzzi A, Guidone C, Previti E, Rubino F, **Mingrone G**. Insulin sensitivity and secretion changes after gastric bypass in normotolerant and diabetic obese subjects. *Ann Surg* 2013;257:462-8.
21. Iesari S, le Roux CW, De Gaetano A, Manco M, Nanni G, **Mingrone G**. Twenty-four hour energy expenditure and skeletal muscle gene expression changes after bariatric surgery. *J Clin Endocrinol Metab* 2013 ;98:E321-7.
22. Iaconelli A, Panunzi S, De Gaetano A, Manco M, Guidone C, Leccesi L, Gniuli D, Nanni G, Castagneto M, Ghirlanda G, **Mingrone G**. Effects of bilio-pancreatic diversion on diabetic complications: a 10-year follow-up. *Diabetes Care*. 2011;34:561-7.
23. Rebelos E, Muscelli E, Natali A, Balkau B, **Mingrone G**, Piatti P, Konrad T, Mari A, Ferrannini E; RISC Study Investigators. Body weight, not insulin sensitivity or secretion, may predict spontaneous weight changes in nondiabetic and prediabetic subjects: the RISC study. *Diabetes* 2011; 60:1938-45.
24. Zorzano A, Hernández-Alvarez MI, Palacín M, **Mingrone G**. Alterations in the mitochondrial regulatory pathways constituted by the nuclear co-factors PGC-1alpha or PGC-1beta and mitofusin 2 in skeletal muscle in type 2 diabetes. *Biochim Biophys Acta*. 2010;1797:1028-33.
25. Manco M, Panunzi S, Macfarlane DP, Golay A, Melander O, Konrad T, Petrie JR, **Mingrone G**; Relationship between Insulin Sensitivity and Cardiovascular Risk (RISC) Consortium. One-hour plasma glucose identifies insulin resistance and beta-cell dysfunction in individuals with normal glucose tolerance: cross-sectional data from the Relationship between Insulin Sensitivity and Cardiovascular Risk (RISC) study. *Diabetes Care*. 2010;33:2090-7.
26. **Mingrone G**, Nolfé G, Gissey GC, Iaconelli A, Leccesi L, Guidone C, Nanni G, Holst JJ. Circadian rhythms of GIP and GLP1 in glucose-tolerant and in type 2 diabetic patients after biliopancreatic diversion. *Diabetologia*. 2009;52(5):873-81.
27. Salinari S, Bertuzzi A, Asnaghi S, Guidone C, Manco M, **Mingrone G**. First-phase insulin secretion restoration and differential response to glucose load depending on the route of administration in type 2 diabetic subjects after bariatric surgery. *Diabetes Care*. 2009;32:375-80.
28. Salinari S, Bertuzzi A, Iaconelli A, Manco M, **Mingrone G**. Twenty-four hour insulin secretion and beta cell NEFA oxidation in type 2 diabetic, morbidly obese patients before and after bariatric surgery. *Diabetologia*. 2008;51:1276-84.
29. Bertuzzi A, Salinari S, **Mingrone G**. Insulin granule trafficking in beta-cells: mathematical model of glucose-induced insulin secretion. *Am J Physiol Endocrinol Metab*. 2007;293:E396-409.

30. Guidone C, Manco M, Valera-Mora E, Iaconelli A, Gniuli D, Mari A, Nanni G, Castagneto M, Calvani M, **Mingrone G**. Mechanisms of recovery from type 2 diabetes after malabsorptive bariatric surgery. *Diabetes*. 2006;55:2025-31.
31. **Mingrone G**, Manco M, Calvani M, Castagneto M, Naon D, Zorzano A. Could the low level of expression of the gene encoding skeletal muscle mitofusin-2 account for the metabolic inflexibility of obesity? *Diabetologia*. 2005;48:2108-14.
32. **Mingrone G**, Manco M, Granato L, Calvani M, Scarfone A, Mora EV, Greco AV, Vidal H, Castagneto M, Ferrannini E. Leptin pulsatility in formerly obese women. *FASEB J*. 2005;19:1380-2.
33. **Mingrone G**, Manco M, Calvani M, Castagneto M, Naon D, Zorzano A. Could the low level of expression of the gene encoding skeletal muscle mitofusin-2 account for the metabolic inflexibility of obesity? *Diabetologia*. 2005; 48:2108-14.
34. Calvani M, Scarfone A, Granato L, Mora EV, Nanni G, Castagneto M, Greco AV, Manco M, **Mingrone G**. Restoration of adiponectin pulsatility in severely obese subjects after weight loss. *Diabetes*. 2004; 53:939-47.
35. Greco AV, **Mingrone G**, Mari A, Capristo E, Manco M, Gasbarrini G. Mechanisms of hyperinsulinaemia in Child's disease grade B liver cirrhosis investigated in free living conditions. *Gut*. 2002; 51:870-5.
36. Greco AV, **Mingrone G**, Giancaterini A, Manco M, Morroni M, Cinti S, Granzotto M, Vettor R, Camastra S, Ferrannini E. Insulin resistance in morbid obesity: reversal with intramyocellular fat depletion. *Diabetes*. 2002; 51:144-51.
37. Miquel JF, Covarrubias C, Villaroel L, **Mingrone G**, Greco AV, Puglielli L, Carvallo P, Marshall G, Del Pino G, Nervi F. Genetic epidemiology of cholesterol cholelithiasis among Chilean Hispanics, Amerindians, and Maoris. *Gastroenterology*. 1998;115:937-46.
38. **Mingrone G**, Henriksen FL, Greco AV, Krogh LN, Capristo E, Gastaldelli A, Castagneto M, Ferrannini E, Gasbarrini G, Beck-Nielsen H. Triglyceride-induced diabetes associated with familial lipoprotein lipase deficiency. *Diabetes*. 1999; 48:1258-63.
39. Greco AV, **Mingrone G**, Benedetti G, Capristo E, Tataranni PA, Gasbarrini G. Daily energy and substrate metabolism in patients with cirrhosis. *Hepatology*. 1998;27:346-50.
40. Ferrannini E, Natali A, Bell P, Cavallo-Perin P, Lalic N, Mingrone G. Insulin resistance and hypersecretion in obesity. European Group for the Study of Insulin Resistance (EGIR). *J Clin Invest*. 1997; 100:1166-73.

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