

GELTRUDE MINGRONE, M.D. PhD I Graduated at the age of 22 years at the Catholic University, School of Medicine in Rome, Italy, and completed my residencies at the same university. I am Board Certified in Gastroenterology; Diabetology and Metabolic Diseases; and Forensic Medicine.

Beyond practicing medicine, I also had a sincere interest in medical research, particularly in the diabetes field. I have a faculty appointment in the Department of Internal Medicine of the Catholic University in Rome. I have written more than 290 peer-reviewed publications with a global impact factor of 1084.15 and an H Index of 36.



### Environment

- Phone: +39-06-30154395
- Fax: +39-06-3054392
- e-mail: gmingrone@rm.unicatt.it
- Department of Internal Medicine, Catholic University of Rome, Largo Gemelli 8, 00168 Rome, Italy

### Personal

- Geltrude Mingrone
- Born: 07/01/1956 Rossano (CS) Italy
- Married: Castagneto
- Three children, a 28 years old boy and two twins, a boy and a girl, 22 years old.

### Education

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

### 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	Head of the Division of Obesity and Metabolic Disorders
24/12/2013	Passed the National Competition for Full Professor in Internal Medicine
12/02/2014	Passed the National Competition for Full Professor in Endocrinology
01/10/2015 at present	Transcampus Professor of Diabetes and Metabolic Disease <i>joint appointment at:</i> Technical University of Dresden, Germany & King’s College London, UK
15/10/ 2015 at present	Honorary Professor of Diabetes & Metabolic Disease in the Department of Diabetes and Nutritional Sciences, King’s College, London, UK
From April	Visiting Professor at the Steno Diabetes Center in Copenhagen, Denmark graded by the Danish Diabetes

2015 at present	Academy
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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.

**Scientific profile & Links:** Associate Professor at the Department of Internal Medicine, Catholic University of Rome (Italy). I was Executive Director of the European College of Nutrition until 2010. I was Member of the Board of the European Group for the study of Insulin Resistance (EGIR) and of the European Food Safety Authority (EFSA) in the nutrition panel. At the moment I am Member of the Board of the EASD Nutrition Group.

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

I was invited to give lectures at the American Diabetes Association, the International Association for the Study of Obesity, the European Association for the Study of Obesity, the German Diabetes Association, the Expert Meeting at the Steno and many more.

**Expertise:** I worked very actively to study the mechanisms of resolution of type 2 diabetes after bariatric surgery, representing one of the major European expert in this field. Moreover, moving from this interest and thanks to modern facilities allocated in my center, I significantly contributed to the research on the body composition measurements. My research activity is documented by more than 290 scientific papers published in impacted, international journals, such as New England Journal of Medicine, The Lancet, British Medical Journal, J Clin Invest, Nature Endocrinology, Diabetes, Diabetes Care, Diabetologia, Am J Physiol, etc.

I was nominated as an expert during the European research framework FP5 and FP6.

My expertise is mainly centered 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 Obesity and Metabolic Disorders with both in- and out-patients, where glucose disposal, both basally and during euglycemic hyperinsulinemic clamps, is measured using stable isotopes, as well as insulin secretion by C-peptide deconvolution method or other mathematical models. Determination of Fat Mass and Fat-Free Mass using deuterated water, DXA, TC scan and NMR are also performed in my centre. In collaboration with bio-mathematicians, I 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 am also involved from 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. I 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. More recently I showed the complete recovery from type 2 diabetes very early after bariatric surgery, when a significant weight loss did not yet take place, and I highlighted the role played by the small intestine in the resolution of insulin resistance and subsequently of diabetes.

## SELECTED PUBLICATIONS

1. Raffaelli M, Iaconelli A, Nanni G, Guidone C, Callari C, Fernandez Real JM, Bellantone R, **Mingrone G**. Effects of biliopancreatic diversion on diurnal leptin, insulin and free fatty acid levels. *Br J Surg*. 2015;102:682-90.
2. Kamvissi V, Salerno A, Bornstein SR, **Mingrone G**, Rubino F. Incretins or anti-incretins? A new model for the "entero-pancreatic axis". *Horm Metab Res*. 2015;47:84-7.
3. Panunzi S, De Gaetano A, Carnicelli A, **Mingrone G**. Predictors of remission of diabetes mellitus in severely obese individuals undergoing bariatric surgery: do BMI or procedure choice matter? A meta-analysis. *Ann Surg*. 2015;261:459-67.
4. **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.
5. 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; 63:1069-79.

6. 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. *BMJ*. 2013; 347:f5934.
7. **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
8. 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.
9. **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.
10. **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.
11. **Mingrone G**, Greco AV. Endocrinology. Fat busters fail. *Lancet*. 1997;350 Suppl 3:SI14. Review
12. 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(5):1166-73.