

### INSULINO-RESISTENZA UNA EPIDEMIA SILENTE

MASSIMO SPATTINI<sup>1</sup>, VALERIA GALFANO<sup>2</sup>

1. Studio Medico Massimo Spattini | Italia

2. Studio Medico Valeria Galfano | Italia

### RIFERIMENTI BIBLIOGRAFICI

1. [Saeedi P, Petersohn I, Salpea P, Malanda B, Karuranga S, Unwin N, Colagiuri S, Guariguata L, Motala AA, Ogurtsova K, Shaw JE, Bright D, Williams R; IDF Diabetes Atlas Committee. Global and regional diabetes prevalence estimates for 2019 and projections for 2030 and 2045: Results from the International Diabetes Federation Diabetes Atlas, 9th edition. Diabetes Res Clin Pract. 2019 Nov;157: 107843. doi: 10.1016/j.diabres.2019.107843. Epub 2019 Sep 10. PMID: 31518657](#)
2. [Ogurtsova K, Guariguata L, Barengo NC, Ruiz PL, Sacre JW, Karuranga S, Sun H, Boyko EJ, Magliano DJ. IDF diabetes Atlas: Global estimates of undiagnosed diabetes in adults for 2021. Diabetes Res Clin Pract. 2022 Jan; 183:109118. doi: 10.1016/j.diabres.2021.109118. Epub 2021 Dec 6. PMID: 34883189](#)
3. [American Diabetes Association. Diagnosis and classification of diabetes mellitus. Diabetes Care. 2011 Jan;34 Suppl 1\(Suppl 1\): S62-9. doi: 10.2337/dc11-S062. PMID: 21193628; PMCID: PMC3006051](#)
4. [Freeman AM, Pennings N. Insulin Resistance. 2021 Jul 10. In: StatPearls \[Internet\]. Treasure Island \(FL\): StatPearls Publishing; 2022 Jan-. PMID: 29939616](#)
5. [Ziaee A, Esmailzadehha N, Oveisi S, Ghorbani A, Ghanei L. The threshold value of homeostasis model assessment for insulin resistance in Qazvin Metabolic Diseases Study \(QMDS\): assessment of metabolic syndrome. J Res Health Sci. 2015 Spring;15\(2\):94-100. PMID: 26175291](#)
6. [Qu HQ, Li Q, Rentfro AR, Fisher-Hoch SP, McCormick JB. The definition of insulin resistance using HOMA-IR for Americans of Mexican descent using machine learning. PLoS One. 2011;6\(6\): e21041. doi: 10.1371/journal.pone.0021041. Epub 2011 Jun 14. PMID: 21695082; PMCID: PMC3114864](#)
7. [Bermudez V, Salazar J, Martínez MS, Chávez-Castillo M, Olivar LC, Calvo MJ, Palmar J, Bautista J, Ramos E, Cabrera M, Pachano F, Rojas J. Prevalence and Associated Factors of Insulin Resistance in Adults from Maracaibo City, Venezuela. Adv Prev Med. 2016; 2016:9405105. doi: 10.1155/2016/9405105. Epub 2016 Aug 4. PMID: 27579182; PMCID: PMC4989131](#)
8. [Samuel VT, Shulman GI. The pathogenesis of insulin resistance: integrating signaling pathways and substrate flux. J Clin Invest. 2016 Jan;126\(1\):12-22. doi: 10.1172/JCI77812. Epub 2016 Jan 4. PMID: 26727229; PMCID: PMC4701542](#)
9. [Moggetti P, Tosi F. Insulin resistance and PCOS: chicken or egg? J Endocrinol Invest. 2021 Feb;44\(2\):233-244. doi: 10.1007/s40618-020-01351-0. Epub 2020 Jul 9. PMID: 32648001](#)

10. [Harsch IA, Hahn EG, Konturek PC. Insulin resistance and other metabolic aspects of the obstructive sleep apnea syndrome. Med Sci Monit. 2005 Mar;11\(3\):RA70-5. PMID: 15735578](#)
11. [Chiefari E, Mirabelli M, La Vignera S, Tanyolaç S, Foti DP, Aversa A, Brunetti A. Insulin Resistance and Cancer: In Search for a Causal Link. Int J Mol Sci. 2021 Oct 15;22\(20\):11137. doi: 10.3390/ijms222011137. PMID: 34681797; PMCID: PMC8540232](#)
12. [Biobaku F, Ghanim H, Batra M, Dandona P. Macronutrient-Mediated Inflammation and Oxidative Stress: Relevance to Insulin Resistance, Obesity, and Atherogenesis. J Clin Endocrinol Metab. 2019 Dec 1;104\(12\):6118-6128. doi: 10.1210/jc.2018-01833. PMID: 31219543](#)
13. [Bray GA, Lovejoy JC, Smith SR, DeLany JP, Lefevre M, Hwang D, Ryan DH, York DA. The influence of different fats and fatty acids on obesity, insulin resistance and inflammation. J Nutr. 2002 Sep;132\(9\):2488-91. doi: 10.1093/jn/132.9.2488. PMID: 12221198](#)
14. [Wolever TM. Dietary carbohydrates and insulin action in humans. Br J Nutr. 2000 Mar;83 Suppl 1: S97-102. doi: 10.1017/s0007114500001021. PMID: 10889799](#)
15. [Schrieks IC, Heil AL, Hendriks HF, Mukamal KJ, Beulens JW. The effect of alcohol consumption on insulin sensitivity and glycemic status: a systematic review and meta-analysis of intervention studies. Diabetes Care. 2015 Apr;38\(4\):723-32. doi: 10.2337/dc14-1556. PMID: 25805864](#)
16. [Pinckard K, Baskin KK, Stanford KI. Effects of Exercise to Improve Cardiovascular Health. Front Cardiovasc Med. 2019 Jun 4; 6:69. doi: 10.3389/fcvm.2019.00069. PMID: 31214598; PMCID: PMC6557987](#)
17. [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. doi: 10.2337/dc11-1655. Epub 2012 Feb 16. PMID: 22344613; PMCID: PMC3308269](#)
18. [Colberg SR, Sigal RJ, Fernhall B, Regensteiner JG, Blissmer BJ, Rubin RR, Chasan-Taber L, Albright AL, Braun B; American College of Sports Medicine; American Diabetes Association. Exercise and type 2 diabetes: the American College of Sports Medicine and the American Diabetes Association: joint position statement. Diabetes Care. 2010 Dec;33\(12\): e147-67. doi: 10.2337/dc10-9990. PMID: 21115758; PMCID: PMC2992225](#)