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Título	Combined Association of Plasma Metabolites with Body Mass Index and Physical Activity Level
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Resumo	Metabolomic analysis of the changes in plasma metabolites in obesity along with physical activity interaction may contribute to disease diagnosis and treatment. We sought to make a comprehensive assessment of the plasma metabolite profile of subjects with a lean (n = 20, BMI = 22.3) or overweight/obese (n = 29, BMI = 29) body mass index (BMI) and low (n = 33, IPAQ = 842) or high (n = 16, IPAQ = 6935) index of physical activity questionnaire (IPAQ), using an untargeted metabolomic approach. Two-way analysis of variance was applied to the data obtained from liquid chromatography–mass spectrometry analyses and resulted in 64 metabolites, mainly responsible for the data variance among the different groups. Finally, a complex network approach reveals the most relevant metabolites. The majority of the relevant metabolites are oxidized species of phospholipids. Most species of phosphatidylcholine and a species of phosphatidylglycerol were found to be decreased in obese subjects, while most species of phosphatidylethanolamine, phosphatidylserine, and phosphatidylinositol were increased. Only a single species each of prostaglandin, phosphatidylglycerol, and phosphatidylinositol were modulated by IPAQ, but interaction effects between BMI and IPAQ were found for most of the metabolites in the combination of obese BMI with low IPAQ.
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