

Assessment of red blood cell glutathione status in insulin resistance

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The aim of this study was to assess red blood cell glutathione from insulin-sensitive and insulin-resistant individuals before and after an oral glucose dose. Fifteen healthy, young (24 ± 5 years), nonobese ($23 \pm 2 \text{ kg}\cdot\text{m}^{-2}$), insulinsensitive (ISI composite = 6.0 ± 1.2) individuals and 14 healthy, young (22 ± 2 years), nonobese ($24 \pm 2 \text{ kg}\cdot\text{m}^{-2}$), insulinresistant (ISI composite = 2.7 ± 1.1) individuals received a 75 g oral glucose dose. Blood samples were drawn before and for 2 h after glucose ingestion for red blood cell glutathione and serum glucose and insulin concentrations. Glycemia before and after glucose ingestion was similar between groups ($p = 0.17$), which suggest that hyperinsulinemia compensated impaired insulin sensitivity. Red blood cell total ($p = 0.81$), reduced ($p = 0.79$), and oxidized ($p = 0.88$) glutathione concentrations were similar between groups under fasting and postprandial conditions. However, in response to glucose, increases in total and reduced glutathione conc