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Abstract

Epidemiological studies and meta-analyses report a strong relationship between chronic pain and abnormalities in glucose metabolism, but the exact relationship between chronic pain and insulin resistance in type-2-diabetes (T2D) remains unknown. In order to explore the relationship between chronic pain and insulin resistance induced by chronic constriction sciatic nerve injury (CCI) in Zucker diabetic fatty (ZDF) and Zucker lean (ZL) littermates, we compared the recovery of glucose metabolism and insulin resistance in ZDF and ZL mice after CCI. The results showed that CCI increased the levels of glucose and insulin in ZDF mice, and the levels of glucose and insulin were significantly lower in ZDF mice after CCI compared with ZDF mice before CCI. In ZL mice, CCI did not affect the levels of glucose and insulin. These results suggest that CCI may improve insulin resistance and glucose metabolism in ZDF mice, but not in ZL mice. The underlying mechanism is still unclear.