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THE PROTECTIVE ROLE OF MEDICAL ACUPUNCTURE AGAINST INSULIN RESISTANCE

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INTRODUCTION

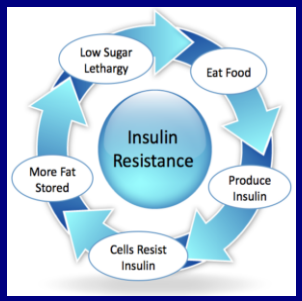
Medical acupuncture is a treatment modality with well-documented effects on a variety of symptoms, diseases and syndromes. Over the last years a large number of experimental and clinical studies, as well as meta-analyses, have shown that medical acupuncture can balance various metabolic disorders, such as hyperglycemia, hyperlipidemia, hyperphagia and disorders in insulin targeting pathways, which all contribute to insulin resistance development.

BACKGROUND

Insulin resistance is associated with obesity, diabetes type 2, hypertension, polycystic ovary syndrome and metabolic syndrome, as well as increases the risk of cardiovascular disease. Both experimental animal studies and clinical studies on women with polycystic ovary syndrome have shown that acupuncture and, its most potent form, electroacupuncture, can significantly reduce insulin resistance.









RESULTS

The beneficial effects of medical acupuncture on insulin resistance are mediated by an increased expression of insulin signaling molecules, like IRS1 (Insulin receptor substrate 1), IRS2, Akt2/PKB (Protein Kinase B) & GLUT4 (Glucose transporter type 4) or by a decreased expression of others, like PI3K-p85α (Phosphatidylinositol-3-kinase – p85α subunit).

CONCLUSION

Medical acupuncture is an effective and safe adjuvant treatment of insulin resistance in patients with metabolic syndrome or other disorders, such as diabetes, obesity and polycystic ovary syndrome.