Low testosterone and glucose intolerance, insulin resistance, metabolic syndrome and diabetes

Phillips G Proc. Natl Academy Sci. Vol. 74,#4 P 1729-1733, 1977

Phillips G Diabetes Care 27:P 22 85-2286, 2004

This is one of the pioneers who first observed the relationship of sex hormones effecting cardiovascular disease and glucose metabolism

Mckinlay Diabetes Care 2000; 23: 490-4

Population based study.Low testosterone is an independent risk for Diabetes 2

Laaksonen Diabetes Care 2004;27: 1036-41

Lowest testosterone group has 2.3 fold risk for Diabetes and metabolic syndrome

Marin Int J Obes Relat Metab Disorder 1992; 16: 991-997

Kapoor D European J. Of Endocrinology 154, 899-906, 2006

Testosterone replacement improves insulin resistance and hypercholesterolaemia in hypogonadal men with type 2 Diabetes.

Kapoor D. and Jones H. Current Opinion Drug and Aging 2008; 25(5) 357 Androgen deficiency as a predictor of Metabolic Syndrome in aging men

Ding E JAMA March 15, 2006 Vol 295 #11, 1288- 1299

Women have higher risk for diabetes when testosterone is high which the reverse for men

Muller JCEM 2005: 90: 2618-2623

Each unit of increase in total testosterone (5.3nmol/L) reduced risk of metabolic syndrome by 57%

Kupelian JCEM 2006; 98:843-850

Low testosterone is a clue to risk of future metabolic syndrome in thin men with BMI less then 25

Niskanen JCEM 2006; 91:843-850

Weight loss improves tesotsterone levels

Kaukua P Obesity Res 2003; 11:689-694

Weight loss improves testosterone levels

Guy A. J. Sex Med. 2007;4:1046-1055

Testosterone, metabolic syndrome, insulin resistance, organic erectile dysfunction

Pitteloud N. J.Clin.Endo.Met. 2005;90:2636-

Increasing insulin resistance associated with decrease in Leydig cell testosterone secretion in men

Pitteloud N Diabetes Care 28:1636-1642, 2005

Low testosterone levels and impaired mitochondrial function promote insulin resistance in men

Pitteloud N JCEM 2005, 90:2636

Blood glucose levels effect testosterone secretions

Wang C., J. Clin.Endo.Met.2000; 85:2839-2853

Therapeutic trial on hypogonadal men increases lean muscle, decreases fat

Mauras N Veldhuis JD JECM 83: 1886-1892, 1998

Induced hypogonadism in young healthy men with increase in adiposity and decrease in lean muscle, decreased protein anabolism, decreased fat oxidation not related to Growth Hormone and IGF-1. Testosterone has an effect on whole body lipid and protein metabolism

Smith JC JCEM 86:4261-4267, 2001

Induced hypogonadism is associated with changes in body composition and reduced insulin sensitivity

Smith M JCEM 91: 1305-1308, 2006

Decreased insulin sensitivity and increased fat mass during androgen deprivation

Smith M. J. Natl Cancer Inst 2010; 102: 39-46

Androgen deprivation therapy is associated with cardiovascular disease and diabetes

Michaelson M.D. Ca. CancerJ.Clin. 2008: 58:196

Complications of Prostate Cancer Treatments

Keating N.L., J. Clin. Oncology 2006;24: 4448

73,196 men with localized prostate cancer