

The Effect of a Very-Low-Calorie Diet (VLCD) vs. a Moderate Energy Deficit Diet in Obese Women with Polycystic Ovary Syndrome (PCOS)-A Randomised Controlled Trial.

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Rivista: Nutrients

DOI: 10.3390/nu15183872

PMID: 37764656

ABSTRACT

We performed an open-label, randomised controlled trial to compare the effects of a very-low-calorie diet (VLCD) vs. moderate energy deficit approach on body weight, body composition, free androgen index (FAI), and metabolic markers in obese women with polycystic ovary syndrome (PCOS). Forty eligible patients were randomly assigned to a VLCD (n = 21) or a conventional energy deficit approach (n = 19) over the same period. After eight weeks, both groups experienced significant weight loss; however, this was greater in the VLCD arm (-10.9% vs. -3.9%, $p < 0.0001$). There was also a trend towards a reduction in FAI in the VLCD group compared to the energy deficit group (-32.3% vs. -7.7%, $p = 0.07$). In the VLCD arm, two women (18%) had a biochemical remission of PCOS ($FAI < 4$); this was not the case for any of the participants in the energy deficit arm. There was a significant within-group increase in the sex-hormone-binding globulin ($p = 0.002$) and reductions in fasting blood glucose ($p = 0.010$) and waist to hip ratio ($p = 0.04$) in the VLCD arm, but not in the energy deficit arm. The VLCD resulted in significantly greater weight reduction and was accompanied by more pronounced improvements in hyperandrogenaemia, body composition, and several metabolic parameters in obese women with PCOS as compared to the energy deficit approach.