Abstract

Title: Can an increased intake of omega-3 fatty acids have an effect on testosterone levels in women with PCOS?

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Background
Polycystic ovary syndrome affects women of fertile age and consists of elevated testosterone levels and increased insulin resistance along with effects on ovulation and fertility. The elevated level of testosterone often leads to problem with acne and hirsutism, and it is also common with overweight and metabolic syndrome. The nutrition treatment has mainly consisted of energy restriction, together with exercise and drugs to reduce insulin resistance and consequently reduce androgen levels. However, an in-depth knowledge about how the components of our diet can affect further, is lacking.

Omega-3-fatty acids can affect insulin resistance and testosterone levels within other groups but today knowledge is lacking if these findings can be transferred to women with PCOS. If omega-3 has a positive effect on testosterone levels, this could be a start of a more customized diet with better effects for the women with PCOS.

Objective
The objective of this thesis is to evaluate if there is scientific evidence in the literature whether the intake of vegetable- or marinebased omega-3-fatty acids in the diet can affect testosterone levels in women diagnosed with PCOS.

Search strategy
A literature search was conducted in the databases PubMed, Scopus and Cochrane. Search terms that were used was ”pcos”, ”polycystic ovary syndrome”, ”omega-3”, ”polyunsaturated fatty acids” and “polyunsaturated fats”.

Selection criteria
Human studies on women with the diagnosis PCOS. The intervention should change only the composition of fat in the diet.

Data collection and analysis
As a base for this review, four articles were chosen. The articles were examined using templates from SBU and evidence was evaluated using GRADE.
Main results
A higher intake of vegetable or marine omega-3-fatty acids did not give a significant effect on testosterone levels in women with PCOS.

Conclusions
From this review it cannot be asserted that an increased intake of omega-3-fatty acids can affect the levels of testosterone by altering levels of total testosterone or SHBG in women with PCOS, or that different kinds of omega-3-fatty acids give different results on testosterone levels.

There is a trend that points towards a decrease of testosterone levels in the form of both bioavailable- and total testosterone but more scientific evidence is required to be able to draw conclusions regarding the effect.