

# Abstract

**Introduction:** This thesis investigates the effect of isolated epigallocatechin-3-gallate on weight reduction in the adult population. An overview of Czech and foreign literature was provided on topics of obesity, the possibility of using green tea in its treatment and the positive effects of green tea on human health, followed by a systematic review and meta-analysis.

**Methodology:** Using a three-phase systematic search strategy, published studies were searched in the Scopus database using predefined keywords. The aim of the search was to find randomized placebo-controlled studies lasting at least 8 weeks, which examined the effect of isolated EGCG in the absence of other active substances on the change of body parameters. The extracted data from the primary studies were then evaluated using meta-analysis and forest plot. As a result, a standardized mean difference with a 95 % confidence interval was calculated using a random effect model.

**Results:** Six<sup>1</sup> studies met the inclusion criteria, one<sup>2</sup> of which was excluded due to insufficient evaluation in the critical appraisal of methodological quality. The remaining 5 studies provided a total sample of 325 participants who were diagnosed with a change in BMI induced by EGCG consumption. The result was a standardized average difference of -0.01, 95 % CI: -0.73 to 0.7. The value  $p = 0.975$ , which means a statistically insignificant difference.

**Conclusion:** Administration of isolated catechin epigallocatechin-3-gallate has no significant effect on weight reduction in the adult population.

**Keywords:** green tea, catechins, egcg, epigallocatechin-3-gallate, body fat or fatness or adipose tissue or obesity

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<sup>1</sup> Brown a kol., 2009; Hill a kol., 2007; Hosseini a kol., 2018; Ayuso a kol., 2013; Xicota, a kol., 2020; Nicoletti a kol., 2019

<sup>2</sup> Nicoletti a kol., 2019