Materials and methods Search strategy Guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) were considered in the current review. Data were searched in PubMed/MEDLINE, Scopus, Web of Science, and Cochrane library from inception up to 27 August 2022 for all relevant published articles. The search was applied using the following MESH and non-MESH terms: ("green tea" OR "green tea extract" OR "catechin" OR "catechins" OR "Camellia sinensis" OR "Thea sinensis") AND (Intervention OR "Intervention Study" OR "Intervention Studies" OR "controlled trial" OR randomized OR randomized OR random OR randomly OR placebo OR "clinical trial" OR Trial OR "randomized controlled trial" OR "randomized clinical trial" OR RCT OR blinded OR "double blind" OR "double blinded" OR trial OR "clinical trial" OR trials OR "Pragmatic Clinical Trial" OR "Cross-Over Studies" OR "Cross-Over" OR "Cross-Over Study" OR parallel OR "parallel study" OR "parallel trial") (Supplementary File 1). No restriction was considered on time and language of publications. Reference lists of the related papers were also manually checked to prevent missing any pertinent papers. In addition, duplicate citations were removed after including all searched articles in the Endnote software. Inclusion criteria and exclusion criteria The inclusion criteria for the present review are listed as follows: (a) randomized clinical trials (RCT) (either parallel or cross-over design), (b) investigations on adult population (age18y), (c) studies that administered any types of green tea supplement, (d) clinical trials with at least one week's of the follow-up period, and (e) articles that provided sufficient information on the baseline and final levels of cardiovascular risk factors or represented required information for calculation of those effect sizes. In the case of more than one published article for one dataset, we included the most complete one. If there were clinical studies with an extra intervention group, we considered them as two separate investigations. The following criteria were also considered to exclude studies: (a) experimental, (b) those studies with a cohort, cross-sectional, and case-control design, (c) review articles, (d) ecological investigations, (e) clinical trials with no random allocation and no control group, and (f) investigations carried out on children and adolescents. Data extraction Data extraction including author's name, publication year and the country where the study was performed, participants' health condition, age, sex, body mass index (BMI), study design (parallel/cross-over), number of contributors in each study group, dose, and duration of prune administration, post-intervention mean and standard deviation (SD) of cardiovascular risk factors in both prune and control groups, post-intervention mean (SD) changes in cardiovascular risk factors in both study groups, and confounders adjusted in the analysis was completed by two researchers independently. If standard errors (SEs) or interquartile ranges were reported, we converted them to SDs. In addition, a chief researcher settled any controversies. Quality assessment We systematically evaluated the bias in the included trials by using the Cochrane Collaboration's tool risk of bias criteria (26). Two independent investigators assessed the quality details of the studies in seven domains including random sequence generation, allocation concealment, reporting bias, performance bias, detection bias, attrition bias, and other sources of bias based on the Cochrane Handbook for Systematic Reviews. To assess each domain, the terms "Low", "High", or "Unclear" was applied (Table 2). Statistical analysis The overall effect sizes were computed as mean differences and SDs of glycemic markers and CRP between prune and control groups. All data were inserted as means ± SD. It should be noted that in studies where findings have been reported as

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SEs and interquartile ranges, means ± SD was calculated by statistical computations. The effect sizes were indicated as standardized mean difference (SMD) and 95% confidence interval (CI). The random-effects model considering between- study variations was chosen to acquire the overall effect sizes. Heterogeneity between studies was evaluated by I-square (I2 ) index and I250% was assumed as considerable between- study heterogeneity (27). Subgroup analysis was performed to find any probable sources of heterogeneity based on the predefined variables including duration of supplementation (≥ 12 vs. 12 weeks), the dose of GTE (≥ 1,000 vs. 1,000 mg/d), sex (male, female, and both), baseline TG (≥ 150 vs. 150 mg/dl), TC (≥ 200 vs.200 mg/dl), LDL (≥ 100 vs. 100 mg/dl), HDL (≥ 50 vs.50 mg/dl), FBS (≥ 100 vs. 100 mg/dl), and HbA1c (≥ 6.5 vs.6.5%), past medical history of type 2 diabetes mellitus (T2DM; Non- T2DM patients and T2DM patients), and baseline values of BMI (normal, overweight, and obese), DBP (≥ 80 vs.80 mmHg) and SBP (≥ 130 vs. 130 mmHg). Fractional polynomial modeling was applied to detect the non-linear effects of green tea dosage (g/d) on each variab

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