Little information is available on energy metabolism during exercise in girls, particularly the contribution of exogenous carbohydrate (CHOexo). The purpose of this study was to determine substrate utilization during exercise with and without CHOexo intake in healthy girls. Twelve-yr-old preadolescent (YG; n = 12) and 14-yr-old adolescent (OG; n = 10) girls consumed flavored water (WT) or C-enriched 6% CHO (CT) while cycling for 60 min at ~70% maximal aerobic power (Vo2max). Substrate utilization was calculated for the final 15 min of exercise. CHOexo decreased fat oxidation by ~50% in YG but not in OG (P < 0.001) and decreased endogenous CHO oxidation by ~15% in OG but not in YG (P = 0.006). Endogenous CHO oxidation was lower in YG than in OG regardless of trial (P ≤ 0.01), whereas fat oxidation was higher in YG only during WT (P < 0.001). CHOexo oxidation rate was similar between YG and OG (7.1 ± 0.5 and 6.8 ± 0.4 mg·kg^-1·min^-1, respectively, P = 0.67), contributing ~19% to total energy expenditure. Serum estradiol levels in all girls correlated with fat (r = -0.50 to -0.59, P = 0.03 to 0.005) and endogenous CHO oxidation (r = 0.50 to 0.63, P = 0.03 to 0.005) but not with CHOexo oxidation (r = -0.09, P = 0.71). We conclude that CHOexo influences endogenous substrate utilization in an age-dependent manner in healthy girls but that total CHOexo oxidation during exercise is not different between YG and OG. Our results also point to potential sex-related differences in energy substrate utilization even during childhood.