Purpose: To examine the effect of prolonged cycling on ratings of perceived exertion (RPE) in boys and men and whether carbohydrate (CHO) ingestion would lower RPE during exercise. Methods: Ten boys (9-10 yr) and 10 men (20-25 yr) cycled for 60 min at ~70% VO$_2$peak on two occasions. In a double-blind, counterbalanced design, a total volume of 24 mL·kg$^{-1}$ body mass of either a 6% CHO-electrolyte (CT) or flavored water (WT) beverage was consumed intermittently before and during exercise in each trial. Oxygen consumption (VO$_2$), ventilation (Ve), respiratory rate (RR), RPE (Borg’s 6-20 scale), and heart rate (HR) were recorded periodically throughout exercise. Plasma glucose (GLU) was determined before and after exercise. Results: Postexercise GLU was not different between age groups but higher (P< 0.001) during CT (5.6 ± 0.2 mmol·L$^{-1}$) compared with WT (4.7 ± 0.1 mmol·L$^{-1}$). CHO ingestion had no effect (P > 0.05) on VO$_2$, Ve, RR, or RPE in either group. RR during exercise was higher (P < 0.01) in boys (39.0 ± 2.2 breaths·min$^{-1}$) than in men (30.9 ± 1.3 breaths·min$^{-1}$). HR was slightly higher (P = 0.047) during CT (160 ± 3 beats·min$^{-1}$) compared with WT (156 ± 4 beats·min$^{-1}$) and increased less over time P < 0.01) in boys compared with men. RPE at 5 min of exercise was similar (P > 0.05) between boys (11.8 ± 0.7) and men (12.0 ± 0.7) but increased faster (P < 0.01) over time in boys. The average exercise RPE was higher (P < 0.01) in boys (15.8 ± 0.5) than in men (14.0 ± 0.4). Conclusions: The higher and faster increase in RPE during exercise in boys, compared with men, may reflect a sensitivity to RR that outweighed any effect of CHO ingestion on RPE.