Abstract. Background: Schools often include running in their physical education and health curriculum to increase physical activity and reduce childhood overweight. But having students run around may not be enough to sustain physical activity habits if motivational factors are not well understood. This study examined effortful persistence as a predictor of running. Methods: Participants were 246 5th graders, and data on their demographic information, body mass index (BMI), effortful persistence, and time to complete a 1-mile run were collected across 4 years. Results: Between 5th to 8th grades, effortful persistence predicted time to complete a 1-mile run even when BMI was taken into account at every grade except for 7th grade. Rank-order stability was found in major variables across-time, but no across-time prediction was found for effortful persistence on a 1-mile run. Conclusions: Lack of longitudinal predictions bodes well for interventions aimed at increasing physical activity, because children or youth with high BMIs or low effortful persistence are not destined for future underachievement on physically challenging activities. Given the stability of variables, interventions that target fostering self-regulatory efficacy or effortful persistence may be particularly important for getting children on trajectories toward healthy and sustained levels of physical activity.