

Background The measurement of physical fitness has a history that dates back nearly 200 years. Recently, there has been an increase in international research and surveillance on physical fitness creating a need for setting international priorities that could help guide future efforts. **Objective** This study aimed to produce a list of the top 10 international priorities for research and surveillance on physical fitness among children and adolescents. **Methods** Using a twin-panel Delphi method, two independent panels consisting of 46 international experts were identified (panel 1 = 28, panel 2 = 18). The panel participants were asked to list up to five priorities for research or surveillance (round 1), and then rated the items from their own panel on a 5-point Likert scale of importance (round 2). In round 3, experts were asked to rate the priorities identified by the other panel. **Results** There was strong between-panel agreement (panel 1: $r_s = 0.76$, $p < 0.01$; panel 2: $r_s = 0.77$, $p < 0.01$) in the priorities identified. The list of the final top 10 priorities included (i) “conduct longitudinal studies to assess changes in fitness and associations with health”. This was followed by (ii) “use fitness surveillance to inform decision making”, and (iii) “implement regular and consistent international/national fitness surveys using common measures”. **Conclusions** The priorities identified in this study provide guidance for future international collaborations and research efforts on the physical fitness of children and adolescents over the next decade and beyond.