What are the benefits of methylphenidate as a treatment for children and adolescents with attention-deficit/hyperactivity disorder?

Manfred Gerlach; Tobias Banaschewski; David Coghill; Luis A. Rohde; Marcel Romanos
On behalf of the World Federation of ADHD and EUNETHYDIS.

ADHD Attention Deficit and Hyperactivity Disorders, 2017
DOI: 10.1007/s12402-017-0220-2

Psychostimulant medications, such as methylphenidate and amphetamine, are commonly prescribed for attention-deficit/hyperactivity disorder (ADHD) and have been a first-line medication for this disorder for over 60 years. However, a recent Cochrane review has raised doubts about the benefit of methylphenidate in the treatment of childhood ADHD (Størseth et al. 2015). Although the authors demonstrated that methylphenidate was associated with improved teacher-rated ADHD symptoms (standardized mean difference [SMD], −0.77 [95% CI −0.90 to −0.64] in 19 parallel group trials and first phase of crossover trials which included a total of 1698 subjects, the authors concluded that the true magnitude and relevance of this effect is uncertain because of the “very low quality” of most of the included studies. They assessed that 96.8% of all 185 trials included in the broader review were at high risk of bias trials according to their interpretation of the evidence. This assumption contrasts with previously published systematic reviews and meta-analyses, including the comprehensive review of the National Institute for Health and Care Excellence (for example, Faraone and Buitelaar 2010; King et al. 2006; National Institute of Health and Clinical Excellence 2008; van der Oord et al. 2008), which all judged study quality more favourably. Interestingly, in the Cochrane review, 13 out of the 19 studies were graded as having a high risk of bias due to a vested interest bias. This domain of bias was introduced by the authors on top of and in addition to the standard Cochrane bias domains. It describes a trial as of high risk of bias when the trial was either funded by parties that might have had a conflict of interest (such as a manufacturer of methylphenidate) or where there were potential conflicts of interest among authors, for example, because they had been received remuneration from companies producing or selling ADHD medications.

[...]