

have a physical nature of infectious diseases, to burn regularly or develop a mental disorder in adulthood more than those not exposed to bullying, 11 times more likely to develop anxiety disorder but especially obsessive-compulsive disorder.

Some experts think that bullying results in a kind of “toxic stress” that affects children’s physiological responses, possibly explaining why some victims of bullying go on to develop health problems.

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#### EW0074

### Growth and sexual maturation in a 2-year, open-label clinical study of lisdexamfetamine dimesylate in children and adolescents with ADHD

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*Introduction* Individuals with attention-deficit/hyperactivity disorder (ADHD) may require long-term medication.

*Objectives* To measure growth and sexual maturation of children and adolescents with ADHD receiving lisdexamfetamine dimesylate (LDX) in a 2-year trial (SPD489-404).

*Aims* To investigate the impact of long-term LDX treatment on growth and maturation.

*Methods* Participants (6–17 years) received dose-optimized, open-label LDX (30–70 mg/day) for 104 weeks. Weight, height and BMI z-scores were derived using the Centers for Disease Control and Prevention norms [1]. Sexual maturation was assessed using the Tanner scale (participant-rated as closest to their stage of development based on standardized drawings).

*Results* Of 314 enrolled participants, 191 (60.8%) completed the study. Mean z-scores at baseline and last on-treatment assessment (LOTA) were 0.53 (standard deviation, 0.963) and 0.02 (1.032) for weight, 0.61 (1.124) and 0.37 (1.131) for height, and 0.32 (0.935) and –0.27 (1.052) for BMI. In general, z-scores shifted lower over the first 36 weeks and then stabilized. At LOTA, most participants remained at their baseline Tanner stage or shifted higher, based on development of hair (males, 95.5%; females, 92.1%) or genitalia/breasts (males, 94.7%; females, 98.4%).

*Conclusions* Consistent with previous studies of stimulants used to treat ADHD [2], z-scores for weight, height and BMI decreased, mostly in the first year, then stabilized. No clinically concerning trends of LDX treatment on sexual maturation or the onset of puberty were observed.

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#### EW0075

### The effect of cognition enhancement program using toy-robot for children

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*Objectives* The purpose of this study was to verify the effect of Cognition Enhancement Program (CEP) using toy-robot for children aged 5–10 years. We thought that CEP using toy-robot might be a more kids-friendly method for improving cognitive ability than traditional programs. The enhancement of cognitive functions such as attention, response inhibition, memory, and working memory after the cognition training were the focus of the study.

*Methods* One hundred and twenty children aged 5 to 10 were randomly assigned to 3 groups: (1) experimental group receiving CEP training using toy-robot, (2) control group receiving previously developed internet-based cognitive training, (3) waiting list. The children of experiment and control groups received individual 8 training sessions. The effect of the program was measured with Smart Toyweb’s cognitive assessment tools we had developed (smart device based assessment) as well as traditional neuropsychological tests throughout 3 times (pre-training, post-training, and 1-month follow-up).

*Results* The training is in progress since it started in October 2016. We observed some of children on the CEP training tend to show improvement of cognitive function. The final assessment is planned for February 2017.

*Conclusions* The CEP using toy-robot could be very promising and useful in that it is a non-invasive and non-pharmacological treatment for children with attention or memory problem in home and clinical settings.

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#### EW0076

### Treated versus untreated mental health problems in adolescents: A six-year comparison of emotional and behavioral problem trajectories

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*Introduction* Multidisciplinary guidelines in adolescent mental health care are based on RCTs, while treatment efficacy can be different from effectiveness seen in ‘the real world’. Studies in the real world conducted so far suggest that treatment has a negligible effect on follow-up symptomatology. However, these studies did not incorporate the pre-treatment trajectory of symptoms nor investigated a dose-response relationship.

*Objectives* To test whether future treatment users and non-users differed in emotional and behavioural problem scores, whether specialist mental health treatment (SMHT) was effective in reduc-