ABSTRACT. Although numerous scientifically supported treatments are available for childhood psychiatric disorders, many of the most popular interventions for these conditions are based on weak or nonexistent data. This article offers basic guidelines for distinguishing scientifically supported from unsupported treatments for 3 important childhood psychiatric disorders: autistic disorder, attention-deficit/hyperactivity disorder, and conduct disorder. A key challenge for the future will be to place the treatment of childhood psychiatric disorders on firmer scientific footing. Pediatrics 2005;115:761–764; evidence-based mental health, childhood psychopathology, autistic disorder, attention-deficit/hyperactivity disorder, conduct disorder.

ABBREVIATIONS. EST, empirically supported treatment; SQT, scientifically questionable treatment; ADHD, attention-deficit/hyperactivity disorder; FC, facilitated communication; SMI, sensory-motor integration; EEG, electroencephalogram; PMT, parent-management training; FFT, functional family therapy.

There are >500 brands of psychotherapy, many of which are targeted primarily to children with psychiatric disorders.1 Although some of these interventions have proven efficacious in controlled trials, most have never been tested. Still others have been found to be ineffective. Moreover, the treatment of childhood psychopathology has been susceptible to a bewildering array of therapeutic fads, several of which are potentially hazardous either psychologically or physically to children and their families. In this article, I offer guidance for distinguishing scientifically unsupported from scientifically supported interventions for childhood psychiatric disorders and draw readers’ attention to popular somatic and psychosocial treatments that are unsubstantiated or ineffective.

GENERAL CONSIDERATIONS

Largely in reaction to the proliferation of treatments that are devoid of scientific support, the fields of psychology and psychiatry have increasingly embraced standards for evidence-based mental health practice.2 For example, Division 12 (The Society for Clinical Psychology) of the American Psychological Association recently generated criteria for, and a list of, empirically supported treatments (ESTs) for childhood psychiatric problems including anxiety disorders, oppositional behavior, enuresis, and enopresis.3 These ESTs were identified on the basis of randomized, controlled trials or systematic within-subject designs. Although the movement toward ESTs has been criticized by some authors as premature, given the preliminary state of the research evidence,4,5 there is a general consensus that this movement represents a laudable effort to place the field of mental health practice on firmer scientific footing. In addition, 2 journals dedicated to distinguishing scientifically supported from unsupported psychiatric and psychological techniques, Evidence-Based Mental Health and the Scientific Review of Mental Health Practice, were launched in the past few years. The latter journal is published under the aegis of the Council for Scientific Medicine and Mental Health, a newly formed interdisciplinary group of psychologists, psychiatrists, social workers, and other health professionals dedicated to distinguishing scientific from nonscientific interventions for mental and medical disorders.

Although scientifically questionable treatments (SQTs) have flourished for a variety of childhood disorders, they have been especially prevalent for 3 conditions: autistic disorder (autism), attention-deficit/hyperactivity disorder (ADHD), and conduct disorder. SQTs are operationalized here as interventions that have been promoted as efficacious in the absence of adequate supporting evidence. Autism, ADHD, and conduct disorder are all chronic and treatment-resistant, perhaps rendering clients and treatment providers especially vulnerable to the alluring promise of rapid and dramatic cures. Hence, in the body of this article I focus on these 3 conditions.

TREATMENTS FOR AUTISM

Popular SQTs for autism include both somatic and psychosocial interventions. In the late 1990s, secretin, a polypeptide hormone often synthesized from the duodenum of pigs, was promoted widely as an efficacious treatment for autism. Nevertheless, several controlled trials demonstrated no beneficial effects of secretin on the core features of autism.5,6 Other popular somatic treatments have included (1) elimination diets, in which casein (in wheat products) or gluten (in milk products) are removed from daily food intake; (2) vitamin B6 (typically administered with magnesium); (3) dimethylglycine, an antioxid-
dant; and (4) famotidine (Pepcid). Controlled trials of these 4 treatments have been negative, inconclusive, or so methodologically flawed as to preclude meaningful conclusions.8–10 Still other somatic treatments, including antifyeast diets, have not been subjected to controlled trials.9 Several of these popular treatments are not free of adverse side effects; for example, vitamin B6 toxicity has been linked to peptic ulcer disease.11

Psychosocial SQTs for autism include facilitated communication (FC) and sensory-motor integration (SMI). FC is premised on the notion that autistic children suffer not from an intellectual and affective impairment but from an exclusively motor impairment termed developmental apraxia, which impedes their ability to speak properly.12 Hence, with the aid of a facilitator who guides their hand movements, these children can ostensibly type out complete sentences on a computer keyboard or letter pad. Nevertheless, controlled studies demonstrate overwhelmingly that FC is ineffective and that the resultant communications are a product of inadvertent facilitator control over the child’s hand movements.13,14 Although this “ideomotor effect” has been well documented by researchers for decades, the proponents of FC never considered it as an alternative explanation for FC’s seemingly remarkable effects.15 In addition to gratuitously raising the hopes of the parents of autistic children, FC has resulted in numerous uncorroborated allegations of sexual and physical abuse against these parents.16 SMI is premised on the notion that autism is attributable to dysfunctions in brain areas responsible for sensory (eg, visual, tactile, vestibular, and kinesthetic) input and motor output. Common SMI treatments include spinning children in chairs, engaging them in balance activities, and brushing their body parts.17 Although widely used, SMI treatments have not been shown to be efficacious in carefully controlled studies.18

Efficacious pharmacologic treatments for autism include dopamine antagonists such as haloperidol (Haldol), atypical antipsychotics such as risperidone (Risperdal), and selective serotonin reuptake inhibitors such as fluoxetine (Prozac). Although these medications do not cure the core features of autism, they seem useful in curtailing certain problematic behaviors including temper outbursts, hyperactivity, and repetitive actions.19

The most efficacious psychosocial treatment for autism is applied behavior analysis, which focuses on positively reinforcing and shaping selected target behaviors such as appropriate interpersonal interactions and use of correct language. In controlled within-subject studies, applied behavior analysis has demonstrated positive effects on autistic children’s social and intellectual behaviors, although almost all of these children are left with serious deficits in adaptive functioning.8,9

TREATMENTS FOR ADHD
ADHD treatment has similarly been a fertile breeding ground for SQTs. On the somatic front, 2 dietary approaches have been particularly popular: sugar elimination and the Feingold diet, the latter of which is based on the assumption that salicylates contained in artificial food colorings and flavorings cause or contribute to ADHD. Nevertheless, there is scant evidence that the removal of sugar from the diets of ADHD children is efficacious.20 Nor is there much methodologically sound support for the efficacy of the Feingold diet, although a small subgroup of ADHD children may respond positively to this intervention.21,22 Amino acid supplements and megavitamin therapy have also been found to exert weak or nonexistent effects on ADHD, and several other proposed biological treatments including saccharides, mineral supplements, and naturopathic remedies (eg, pycnogenol) have not been tested adequately in controlled studies.20 In addition, although prescriptions of atypical antipsychotics for ADHD have increased in at least some parts of the United States, there is no compelling evidence for their efficacy for this condition.23

A popular somatic treatment of late is electroencephalogram (EEG) biofeedback, known also as neurofeedback or neurotherapy, which attempts to treat ADHD by increasing the ratio of high-frequency β-EEG activity to low-frequency θ-EEG activity.24 Nevertheless, much of the research support for neurofeedback derives from inadequately controlled studies that are susceptible to methodologic artifacts, including regression to the mean, the influence of concurrent treatments, and placebo effects. Future studies should compare neurofeedback to “bogus feedback” conditions (those that provide feedback on EEG frequency bands different from those hypothesized by neurofeedback proponents) to ascertain whether the apparent effects of neurofeedback are attributable to hypothesized changes in the high-frequency β and low-frequency θ bands.25

In the psychosocial domain, widely used SQTs for ADHD include play therapy and cognitive-training programs. Play therapy is based on the notion that the use of dolls, toys, and other props allows children to explore underlying psychological conflicts that they cannot articulate verbally. Nevertheless, there are no controlled studies supporting the efficacy of play therapy for ADHD.20 Cognitive-training programs attempt to treat ADHD children’s self-control problems by imparting self-instructional skills that foster their ability to “stop, look, and listen.” Nevertheless, these programs in isolation have yielded few or no positive effects on ADHD symptoms.26

Stimulants, such as methylphenidate (Ritalin), and antidepressants, such as desipramine (Norpramin), have shown efficacy in ameliorating core ADHD symptoms.27 Also demonstrating efficacy for ADHD in controlled studies are behavioral treatment programs and school-based behavioral interventions, which focus on positively reinforcing certain target behaviors such as sustaining attention and remaining seated at appropriate times.28 Nevertheless, controversy persists regarding whether such behavioral interventions offer significant efficacy above that afforded by stimulant medication alone.29

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indicates that Scared Straight interventions may sig-
parents to modify patterns of interaction with their
their children's coercive behaviors (eg, threats of ag-
disordered children inadvertently reinforce
premised largely on the notion that parents of con-
behavioral interventions including parent-manage-
pharmacologic treatment for conduct disorder, typi-
cal antipsychotics, such as haloperidol, atypical an-
tipsychotics, such as Risperdal, and mood stabilizers,
and administered widely. Moreover, there have been
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the treatment of childhood psychopathology on
firmer scientific footing by combating the spread of
SQTs and facilitating the transport of scientifically
supported interventions to the clinical community.
To accomplish the latter goal, considerably more
communication and collaboration between researchers
and clinicians will be necessary.

CONCLUSIONS
Although numerous efficacious and promising in-
terventions exist for childhood psychiatric disorders,
many SQTs (some potentially harmful) are promoted
and administered widely. Moreover, there have been
fewer publications on the empirical evaluation and
dissemination of efficacious treatments for childhood
psychiatric disorders than adult psychiatric disor-
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THE GENIE ISSUE

“In response to ethical qualms about proceeding with development of the H-bomb in 1945, Edward Teller said, ‘If the development is possible, it is out of our power to prevent it.”


Submitted by Student
Scientifically Unsupported and Supported Interventions for Childhood Psychopathology: A Summary
Scott O. Lilienfeld

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