

Kids' attention disorder attracts concern

It's a major public health problem, disrupting the lives of as many as 2 million children between ages 5 and 14. It's hard on parents and schools. Yet, no one knows why it occurs, how best to diagnose it, or what are the long-term effects of the stimulant drugs often used to treat it.

That's much of what can be concluded about attention-deficit hyperactivity disorder (ADHD) from available evidence, according to a panel convened by the National Institutes of Health.

After hearing 2 days of presentations on ADHD from 31 investigators and clinicians, the 13 panel members released a consensus statement last week.

"There is no consistency in treatment, diagnosis, or follow-up for children with ADHD," says panel chair David J. Kupfer, a psychiatrist at the University of Pittsburgh. "It's clear that we don't have sufficient evidence to define a diagnostic threshold for starting stimulant treatment or to develop strategies for ADHD prevention."

As set out in the current diagnostic manual of psychiatric disorders, ADHD consists of an inability to sustain attention or concentration, constant fidgeting and moving about as if "driven by a motor," and a general tendency to act impulsively. These symptoms often contribute

to peer rejection, family problems, and academic failure.

By adolescence, children diagnosed with ADHD exhibit high rates of alcohol and illicit-drug abuse, criminal behavior, and accidents of all sorts.

No diagnostic test exists for ADHD, the panel noted. As with most psychiatric conditions, ADHD represents a collection of symptoms that occur together consistently but prove difficult to pin on specific causes.

One line of research presented to the NIH panel suggests that ADHD arises from genetically influenced brain disturbances. Other speakers argued that a number of different causal pathways probably lead to ADHD symptoms. For example, some healthy children may develop short attention spans and impulsive styles by adapting to certain home and neighborhood surroundings, leading to an ADHD diagnosis.

In some cases, children who simply act more boisterously than their peers may be inappropriately tagged with ADHD, panel members acknowledged.

Particular controversy surrounds the use of stimulants, such as methyl phenidate, or Ritalin, to treat ADHD. Studies find that these medications often improve core ADHD symptoms over several months,

Kupfer says. Stimulants, however, do not erase behavior problems and typically do not produce marked gains in academic performance or social skills, he holds.

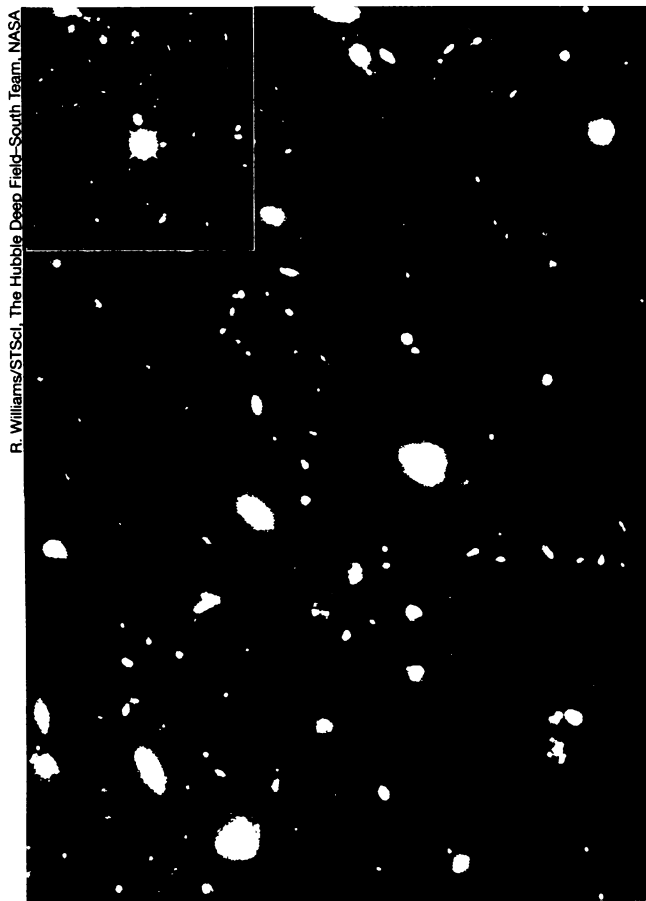
It's not known whether years of stimulant use benefit children with ADHD or, perhaps, cause nervous-system damage.

Several behavior-modification programs, including some that provide parent training, show promise and deserve more intensive study, the panel says. Researchers also need to examine treatments that combine stimulants and behavioral modification, it concludes.

No convincing evidence supports the effectiveness of any other ADHD interventions, according to the panel. These include special diets, vitamin regimens, and biofeedback.

ADHD symptoms vary from mild to severe, remarks psychologist Stephen P. Hinshaw of the University of California, Berkeley. He spoke about ADHD to the federal panel. Diagnosis of the condition by a physician or mental-health clinician requires a careful evaluation of reports by parents, teachers, and others who regularly observe a child, he asserts, but many health-care providers do not order such assessments.

"There's clearly not a single cause of all cases of well-diagnosed ADHD," Hinshaw contends. "In 20 years, we may know whether there are two, or five, or even more causal pathways." —B. Bower



R. Williams/STScI, The Hubble Deep Field-South Team, NASA

Hubble's deep southern stare

Staring down a corridor 12 billion light-years long, the Hubble Space Telescope has revealed thousands of previously unseen galaxies that will help scientists decipher the early universe. The colorful spiral and elliptical galaxies pictured here are only a few of those captured during the 10 days in October that the orbiter peered at a pinpoint of space in the southern constellation Tucana.

Hubble's first penetrating look—at a northern spot in the Big Dipper in 1995 (SN: 1/20/96, p. 36)—revolutionized deep-space studies. The new view offers a point of comparison, but both surveys cover such tiny areas that "it would take a million years to fill in the whole sky" in this way, says Robert E. Williams of the Space Telescope Science Institute in Baltimore.

For Hubble Deep Field-South, Williams' team of 50 scientists used a trio of cameras, two installed by astronauts since the northern field was imaged, to extend the view into both ultraviolet and near-infrared light. The field includes a quasar, an intense beacon of light about 10 billion light-years away. The image of the quasar (inset, upper left) depicts the deepest view of the universe ever taken in visible light.

Astronomers at the Anglo-Australian Observatory in Epping, Australia, helped the Hubble team choose the quasar for observation. With their ground-based telescope, the Australian team has been using the quasar as an "intergalactic searchlight" to detect otherwise invisible clouds of gas lying between Earth and the quasar, says observatory director Brian Boyle. Hubble's long look detected clouds and structural details of related galaxies that the Australian telescope can't see. These gas clouds take a distinctive bite out of the quasar's light signature, indicating their composition and distance from Earth. Matching galaxies to the clouds from which they arose tells researchers about galaxy evolution.

Both groups released their data this week. Williams expects combined analyses to be presented in January. —S. Simpson