Young and Sad: Understanding Childhood Mood Disorders

Childhood is defined by the joy of discovery and delight in the everyday. At least, it’s supposed to be. A depressed toddler or a manic preteen runs counter to the very notion of childhood. Indeed, as recently as 40 years ago, psychiatrists believed children were not cognitively capable of being clinically depressed.

Today, we know better. Children can and do suffer from mood disorders. Infants as young as one month can show abnormalities in brain functioning that would indicate depression in older children and adults, while children as young as six years have been diagnosed with clinical depression. Young teens can suffer from bipolar disorder.

While researchers and clinicians have amassed a vast body of knowledge about depression and mood disorders in adults and seniors, very little is known about these conditions in children and adolescents. “This area lags far behind,” says Peter Ash, chief of child and adolescent psychiatry in the Emory Department of Psychiatry and Behavioral Sciences. “There is little research on the most efficacious treatments for children, and there is a shortage of practicing child psychiatrists and treatment facilities.”

To fill this void, Emory has created the Childhood and Adolescent Mood Disorders Program. The brainchild of psychiatry department chair Charles Nemeroff, the center is one of four programs under the umbrella of the newly established multidisciplinary Comprehensive Neurosciences Center (CNC). The other programs target Alzheimer’s disease, Parkinson’s disease, and stroke.

Like those programs, the Childhood and Adolescent Mood Disorders Program draws on Emory’s wide areas of expertise—including neuroscience, brain imaging, and genetics—to marry biomedical research and clinical care. “Our ultimate goal is to develop a world-class specialty program in childhood and adolescent mood disorders that would include components in research, training, and treatment,” says Ash. “Our department already has a worldwide reputation in adult mood disorders, and we know the need for similar research and treatment for children is great.”

Indeed, the need has never been greater. Suicide is the third leading cause of death for American children and adolescents. About 8.5% of girls make more attempts at suicide, but boys are the victims of completed suicide.

Completed suicides have increased by 300% over the last 30 years. As many as 8 percent of adolescents attempt suicide today. Completed suicides have increased by 300% over the last 30 years. As many as 8 percent of adolescents attempt suicide today.

The Facts

- Up to 2.3% of children and up to 8.3% of adolescents in the United States suffer from clinical depression. This makes depression much less common than asthma or allergies, but many times more common than, say, childhood diabetes or cancer.

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By Martha Nolan McKenzie

For more information on the Childhood and Adolescent Mood Disorders Center, call 404-727-3973.
Craighead leads new center

When Charles Nemeroff went searching for someone to head Emory’s new Childhood and Adolescent Mood Disorders Program, he knew just where to look: Colorado.

Nemeroff, chair of Emory’s Department of Psychiatry and Behavioral Sciences, set out to woo Edward Craighead, chair of the psychiatry department at the University of Colorado, and Linda Craighead, director of clinical training at Colorado. The Craigheads worked with Nemeroff when he was chief of biological psychiatry at Duke Hospital.

“Ever since I accepted the chair position here at Emory, I have tried to convince Edward and Linda to jump to join us,” says Nemeroff. “Their stature in the field, their passion for research, teaching, and clinical service of these underserved patient populations render them invaluable additions to our faculty.”

For his part, Craighead was driven to accept the Emory post by three factors. “First, I found the opportunity to help build a national program for child and adolescent mood disorders too important to pass up,” he says. “Second, I’d like the chance to work on a new initiative at Emory that will look at the neurobiological mechanisms of change in cognitive behavioral therapy, which is much of my background. And third, Emory offered a great opportunity for my wife. They really recruited us as a couple.”

Linda Craighead wrote The Appetite Awareness Workbook and is an internationally recognized expert in eating disorders. She will serve as a professor in the psychology department and a psychologist in the student mental health center. Her clinical work and research will be conducted within the Department of Psychiatry and Behavioral Sciences, where she will establish a center for eating disorders.

With a PhD in psychology from the University of Illinois at Urbana-Champaign, Edward Craighead brings an extensive clinical and administrative background to his new post in the Childhood and Adolescent Mood Disorders Center at Emory. Before joining UC Boulder, he taught, treated patients, and conducted research at Duke in the departments of psychiatry and psychology. For the past several years, Craighead has co-directed a clinical research program in Reykjavik, Iceland, designed to prevent initial episodes of depression among adolescent schoolchildren. Additional school-based schools by school psychologists, the program has cut the rate of first episodes of depression by more than half among 14- to 16-year-old Icelandic youth. He also has served as co-director of the Sutherland Center, a treatment center for bipolar disorder at the University of Colorado.

Edward Craighead will have a joint appointment in psychology, help train clinical psychology doctoral students, and teach Emory undergraduates.

Also joining the new program is Margaret Shugart, a child, adolescent, and adult psychiatrist from East Tennessee State University. Until her recent appointment at Emory, Shugart led the Children and Adolescent Psychiatry Treatment Guidelines Committee, and she has a rich background in childhood mood disorders research. Shugart was lured to the new Emory program by the opportunity to work with Nemeroff. “I know when we were at Duke, and he is a brilliant researcher,” she says. “And he is so committed to advancing knowledge and treatment of childhood mood disorders. Everyone knows there is a huge need in this area, but he was able to actually fund donors and start this new program. That’s real commitment.”

Young and sad continued

The Facts continued

Depression in children is recurrent. About 30% will again meet the criteria for major depression within a year from recovering. By two years, half of the children who recovered will have had a recurrence of their depression. About 75% of children will have a recurrence of their depression within four years of their first episode. Each recurrence of depression increases the likelihood that it will re-occur again.

As many as 80% of adolescents attempt suicide today. Completed suicides have increased by 20% per year over the last 20 years. Girls make more attempts at suicide, but boys complete more attempts due to suicide. New research is needed to find better ways to help suicidally at-risk adolescents.

A significant number of children diagnosed in the United States with attention-deficit disorder with hyperactivity (ADHD) may have early-onset bipolar disorder instead.

Bipolar disorder appears to affect children and adolescents more severely than adults. Children and adolescents may have more frequent episodes of mania or depression than adults and may experience more attempts at suicide, but boys complete more attempts due to suicide. New research is needed to find better ways to help suicidally at-risk adolescents.

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The scope of what we are doing makes this program unique,” says Asch. “There are some programs that do drugs research. There are programs that work with bipolar disorder. But they all tend to be centered around one key investigator, and one person can’t do everything.

We are bringing together a diverse group of experts in child and adolescent psychiatry to cover all its domains and build a state-of-the-art program. But all high school students have attempted suicide in the past year, according to the most recent study of the Centers for Disease Control and Prevention. Rates of mood disorders seem to be increasing.

Ten to 20 years ago there had been about a 17% probability of suffering from clinical depression during your lifetime,” says Ed Craighead, director of the Childhood and Adolescent Mood Disorders Center. “Now you have a 17% probability of suffering from the disease you are 18 years old. We’re also seeing rates of bipolar disorder in adolescents approaching those in adults.”

The numbers are staggering, and concerning, especially considering that it wasn’t until the 1970s that psychiatrists recognized bipolar illness in children. Before that time, children were considered capable of becoming clinically depressed. In the 1960s and 1970s, psychiatrists were taught that children’s cognitive thinking was not mature enough to make depression possible,” says Asch. “I remember hearing a nationally recognized expert in the 1970s who said bipolar disorder could not appear before the age of 14. Now it’s sometimes diagnosed as early as age 7 and suspected even before that.”

Despite greater understanding of the prevalence of bipolar and other mood disorders in children, treatment for kids lags far behind that for adults. According to a 2001 report from the Surgeon General’s Conference on Children’s Mental Health, fewer than 20% of American children and adolescents receive treatment for mood disorders, including mood disorders, receive treatment. Part of the problem lies in diagnostic difficulty. “Kids don’t always know they are sad in the way adults do,” says Emory psychologist Nadine Kavoussi. “They present in different ways. Symptoms such as moodiness and anger may be mistaken for typical adolescent behavior.”

When a child or teen is diagnosed, finding appropriate treatment becomes the next hurdle. “If a pediatrician or general practitioner believes a child has a mood disorder, there often isn’t a place to send him to get a full evaluation and treatment recommendation,” says Craighead.

“There is also very limited research—just a handful of studies, really—on the types of treatments that are most beneficial for this cohort. We know that adolescents have a lower response rate with SSRIs (selective serotonin reuptake inhibitors) than adults. But the side effects of SSRIs can cause suicide thinking. So treatment for adolescents may need to be approached differently, and we need to find other kinds of interventions.”

The Emory Childhood and Adolescent Mood Disorders Center will address these shortcomings. Initially, the center is offering treatment only on an outpatient basis, but it plans to open an inpatient short-stay unit within 18 months. The center will serve as a training ground for future child psychiatrists. And it will conduct research using neuroimaging, brain imaging, and genetics to create novel prevention and treatment approaches for children and adolescent mood disorders.

“Emory has a national reputation as a top clinical and research center for adult and late-life mood disorders,” he continues. “So my wife and I thought the need and timing seemed right to create a center for excellence for child and adolescent mood disorders at Emory. We are particularly pleased that Ed Craighead will be directing this new initiative.”

Fuqua is president and CEO of Atlanta-based Fuqua Capital Corporation, a private equity firm. Among his board affiliations, he chairs the Emory Department of Psychiatry Advisory Board. Fuqua and his family live in Atlanta.

Emory’s new Childhood and Adolescent Mood Disorders Center would be just the dream it is not for the general pediatrician. It is a place to send him to get a full evaluation and treatment recommendation,” says Craighead.

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"Cocaine use is a public health epidemic in this country," says Clinton Kilts, vice chair for research at the Department of Psychiatry and Behavioral Sciences at Emory University School of Medicine. "Up to 10% of people who try cocaine will become addicted to it, and it is associated with a culture of violence and aggression." Kilts has been at the forefront of addiction research, using sophisticated imaging technologies to understand the neural mechanisms at work in cocaine addiction, treatment, and relapse. His contributions to the field recently were recognized when he was named the Dr. Paul Janssen Chair of Neuropharmacology.

"The Paul Janssen Chair is a wonderful tribute to a man who has been one of the most productive and esteemed pharmacological researchers in the world for more than 20 years," says Charles Nemeroff, department chair. "Dr. Kilts has already completed work of national importance in his field using functional brain imaging to study the brain at work. This is exciting, unchartered territory, at the intersection of mind and brain, where motivation, emotion, and external pharmacological researchers in the world for more than 20 years," says Charles Nemeroff, department chair. "Dr. Kilts has already completed work of national importance in his field using functional brain imaging to study the brain at work. This is exciting, unchartered territory, at the intersection of mind and brain, where motivation, emotion, and addiction arise. The more we know about the actual physical working of the brain, the closer we are to developing new and more effective interventions for disease."

The endowed chair, named after pioneering Belgian pharmacologist Paul Janssen, will provide Kilts with unencumbered financial support for his research, most of which focuses on addiction. "All along, we have felt we would be better served to study the causes of addiction rather than the consequences," says Kilts. "Specifically, we are using fMRI and PET scans to explore the brain correlates of the hallmark signs of addiction—the pathological motivation to use the drug and the inability to stop. It's essentially the problem of too much gas and too little brakes."

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When celebrated author John Katzenbach took the lectern to address grand rounds of Emory’s Department of Psychiatry and Behavioral Sciences, he admitted a slight hesitance. “When Charlie [Nemeroff] asked me to come to grand rounds, I naively assumed he was going to give me a white jacket and let me walk around and diagnose people,” Katzenbach said. “So I apologized if my talk is a little disjointed, but there was some confusion on my part.”

The confusion may well have been shared. Whoever heard of inviting a best-selling novelist to address the faculty and students of a university psychiatry department? It made perfect sense to department chair Nemeroff, who met Katzenbach when the author was accepting an award from the National Alliance for the Mentally Ill. “I have read many of his novels and find his writings extraordinarily psychodynamic,” Nemeroff says. “It is remarkable how accurate he is about the subject matter that we deal with every day.”

Indeed, Katzenbach is a natural fit for the central theme in Katzenbach’s work: The Madman’s Tale, the narrator is a schizophrenic—who scribbles a tale of murder on his apartment walls. In The Analyst, a psychoanalyst is forced into the role of detective. And in Brain Storms, narrated by Francis Petrel, a 41-year-old schizophrenic who spent time in a mental institution, the author used his brother-in-law’s description of life in the institution to create the hauntingly realistic setting for The Madman’s Tale. And though he didn’t fashion Francis Petrel in the image of Ray, he did try to capture Ray’s voice. “Ray told me once that what frightened him the most about being crazy was that things were forever unraveling around him, and he felt helpless to prevent them from unraveling,” Katzenbach said.

The author also relies on experience he gained from years as a criminal court reporter, during which he covered grisly murders, interviewed psychiatric killers, and walked the corridors of jails and mental hospitals. In the end, most of Katzenbach’s characters and their psychodramatic mental states spring from his imagination: “In all novels, you have to be very cautious about research,” he said. “You want to be accurate, but you don’t want to over-research it so it becomes clinical.”

Self-deprecation aside, Katzenbach has an uncanny ability to get inside mental illness and the criminal mind. Consider the opening of The Madman’s Tale, narrated by Francis Petrel, a 41-year-old schizophrenic recollecting a series of murders that happened 20 years earlier in a mental institution where he was a patient. “I am no longer here to save you; I am a lost soul. My suggestions is what they will do is what you should do first and what should go last and what should go in the middle. They would inform me when to add and when to omit extraneous information, what was important and what was not.”

Katzenbach ended his talk with an observation: “In your own professional lives, when you look across the room at a patient, there is a mystery there. Everyone is, in a sense, a story that needs to be told. It’s all the stuff of fiction, and it’s all the stuff of reality. And that’s what makes life interesting.”

Meet your faculty:
Sad rats and manic mice

Jay Weiss hopes for accidents. “We depend on accidents in order to discover anything,” says Weiss, clinical and experimental psychologist, and recipient of the MacArthur Fellowship (often called the ‘genius grant’). “If we didn’t get accidental insights...”

“A lie often speaks as loudly as the truth,” she says. Indeed, Weiss then lowered his sights and set about breeding rats for high and low activity in a university institution where he was a patient: “I was interested in the possession of three real serial killers when they were the stuff of fiction, and it’s all the stuff of reality. And that’s what makes life interesting.”

So how does a self-described “reasonable guy” portray mental illness so accurately? For starters, Katzenbach draws from family members. His mother, a Freudian psychoanalyst, ignited his fascination with human behavior. “Analysis live in a world of defined by the family tree,” Katzenbach writes on his website. “A lie often speaks as loudly as the truth.” Katzenbach’s late-brother-in-law, Ray, was a schizophrenic who spent time in a mental institution. The author used his brother-in-law’s description of life in the institution to create the hauntingly realistic setting for The Madman’s Tale. And though he didn’t fashion Francis Petrel in the image of Ray, he did try to capture Ray’s voice. “Ray told me once that what frightened him...”

“On the fourth or fifth day after the stress, these rats blasted into a hyperactive hyperactivity, literally running laps around their cages,” Weiss says. “Basically, they had a manic episode. There are no good animal models for bipolar disorder, and we think this might be an animal model for mania.”

Weiss got equally unexpected results when he stressed 10-month-old hyperactive rats—much older than rats he usually test—and found they sank into sustained depression afterward. “The big problem with animals models of depression is the animals must be continually stressed to sustain the depressed state,” he says. “But in humans, the hallmark of depression is people stay there without anything happening in their environment. With these older hyperactive rats, we found a group we could expose to a single stress session and they would stay depressed for weeks.”

The implications may well be far-reaching. Researchers can study the brains of these rats to determine the physiological neural defect that produces the disorders. They can test new drug therapies. But if you’ve got viable animal models, you can test a host of drugs that you may not have ever considered to be useful,” Weiss says. “That’s how antidepressants were discovered. That’s how Thalidomide was discovered. It all comes back to accidents.”

Marianne Celano has dedicated her career to working with low-income populations. She also has asthma, a condition she developed after moving to Atlanta 17 years ago. It seemed only natural to the Emory psychoanalyst to combine the two.

“I had to take multiple medications, which was challenging, and I thought it was extremely difficult for families living in poverty, who face so many daily challenges than I did,” she says. Indeed, Celano began to study low-income children (ages 6 to 12) with persistent asthma, focusing on family factors that influence self-management. She discovered that asthma medication adherence is poor among low-income patients. For example, the mean daily adherence to Flornox (an anti-inflammation medication delivered by inhaler) over a 14-day period was only 56% at the first data collection visit and 65% one year later. “So these kids are on average one-half of what is prescribed,” Celano says. Daily adherence to Singular, which one-third of one-half of children with persistent asthma take, was higher, at 78%. Singular is a pill taken only once a day, which is easier than using an inhaler.

Caregivers of children with poor adherence to Singular were more likely to show signs of depression. More important, parental warmth toward the child (based on observational ratings) resulted in higher Flornox adherence. “So the warmer the parent, the more the child takes Flornox,” she says. “Their kids, since anti-inflammatory agents such as Flornox are critical in asthma control.”

Celano and the American Lung Association are now targeting low-income, African-American children in Atlanta who have poor asthma control and a caregiving under stress. “Patients are working long hours and many suffer from depression. Caregiver depression and stress complicate pediatric asthma management, so Celano’s challenge is to help families cope with stress so they can better manage the condition. “Our goal is to provide individualized, culturally acceptable interventions to low-income families of children with severe persistent asthma,” she says. “Hopefully, these interventions will improve asthma self-management, lower asthma morbidity, and help the family and child feel more confident in managing asthma.”
Young and sad: Understanding childhood mood disorders  cover story
Little is known about depression and mood disorders in children. Emory’s new Childhood and Adolescent Mood Disorders Center means to change that.

Your brain on drugs  page four
Using fMRIs and PET scans, an Emory researcher maps the neurobiology of cocaine addiction, treatment, and relapse in an effort to stop addition before it starts.

Inside the criminal mind with John Katzenbach  page six
Psychiatrists and psychoanalysts make for good characters because really good detectives lurk within them, says the author of psychological thrillers The Madman’s Tale and The Analyst.

Sad rats, manic mice  page seven
MacArthur Fellow Jay Weiss develops what could be the first viable animal models for bipolar disorder and depression.

Helping poor children breathe easier  page seven
A study looks at the role parental psychological health plays in asthma medication adherence in inner-city children.

“Ray told me once that what frightened him the most about being crazy was things were forever unraveling around him, and he felt helpless to prevent them from unraveling.”

As many as 8 percent of adolescents attempt suicide today. Completed suicides have increased by 300% over the last 30 years. (Girls make more attempts at suicide, but boys complete suicide four to five times as often as girls.) It is suspected that a significant number of children diagnosed in the United States with attention-deficit disorder with hyperactivity (ADHD) have early-onset bipolar disorder instead. Up to 2.5% of children and up to 8.3% of adolescents in the United States suffer from clinical depression. This makes depression much less common than asthma or allergies, but many times more common than, say, childhood diabetes or cancer. Depression in children is recurrent. About 35% will again meet the criteria for major depression within a year from recovering. By two years, half of the children who recovered will have had a recurrence of their depression. About 75% of children will have a recurrence of their depression within four years of their first episode. Each time depression recurs, it makes it that much more likely that it will recur again.

Bipolar disorder appears to affect children and adolescents more severely than adults. Children and adolescents may have longer symptomatic stages and more frequent cycling.