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Diagnostic Issues in Eating Disorders and Obesity	1
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Johannes Hebebrand

A thorough understanding of weight related issues is required for the assessment of patients with obesity and eating disorders. Body weight adjusted for height is used for the diagnosis of both anorexia nervosa (AN) and obesity. For AN, the DSM IV A criterion refers to 85 % of expected weight as a guideline, for overweight and obesity BMI cut-offs are commonly used. Because the BMI distribution changes during childhood and adolescence, the 85th and 95th BMI centiles are used in the USA to classify children as at risk of overweight and obesity, respectively. 85 % of expected weight is approximately equivalent to the 10th BMI centile.

Eating Disorders of Infancy and Childhood: Definition, Symptomatology, Epidemiology, and Comorbidity	17
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Dasha Nicholls and Rachel Bryant-Waugh

This article describes a range of problem feeding and eating presentations seen in infants and children. In diagnostic terms some fall under the category of “feeding disorder,” whereas others are childhood presentations of the eating disorders “anorexia nervosa,” “bulimia nervosa,” and atypical forms of these. Several other commonly occurring presentations that are difficult to fit into existing diagnostic categories are additionally described here, including “selective eating,” “food avoidance emotional disorder,” “food phobias,” “functional dysphagia,” and “food refusal.”

Adolescent Eating Disorders: Definitions, Symptomatology, Epidemiology and Comorbidity 31

Beate Herpertz-Dahlmann

Eating disorders have morbidity and mortality rates that are among the highest of any mental disorders and are associated with significant functional impairment. This article provides an up-to-date review on recent developments and expanding knowledge in adolescent anorexia nervosa, bulimia nervosa, and related disorders. It covers diagnoses and assessment, recognition of typical symptoms, medical and psychiatric comorbidities, and current trends in epidemiology.

Psychological and Psychiatric Aspects of Pediatric Obesity 49

Johannes Hebebrand and Beate Herpertz-Dahlmann

A thorough dealing with psychological and psychiatric aspects of obesity requires careful consideration of causal implications. It is nowadays readily comprehensible that obesity can entail psychiatric symptoms, because stigmatization of obese children and adolescents, including teasing and bullying, is a common event. Sources include peers, teachers, parents, and health care providers. It would indeed seem peculiar if this ongoing and intense stigmatization did not affect mental well-being at a very early stage of life.

Section II: Etiologic and Neurobiologic Findings

Environmental and Genetic Risk Factors for Eating Disorders: What the Clinician Needs to Know 67

Suzanne E. Mazzeo and Cynthia M. Bulik

Patients and families often are aware of research on genetic factors influencing eating disorders. Accurate interpretations of research on environmental and genetic risk factors can be empowering to patients and families; however, misinterpretations could prove detrimental. Clinicians who are not versed in genetic research may believe they are ill prepared to discuss the nuances of genetic research with patients and families. In this article the authors discuss what is known about genetic and environmental risk factors with an emphasis on gene–environment interplay to improve clinicians' comfort level in discussing these complex issues with their patients.

Environmental and Genetic Risk Factors in Obesity 83

Johannes Hebebrand and Anke Hinney

Because of its high prevalence and the associated medical and psychosocial risks, research into the causes of childhood obesity has experienced a tremendous upswing. Formal genetic data based on twin, adoption, and family studies lead to the conclusion that at least 50% of the interindividual variance of the body mass index (BMI; defined as weight in kilograms divided by height in meters squared) is due to genetic factors. As a result of the recent advent of genome-wide association studies, the first

polygenes involved in body weight regulation have been detected. Each of the predisposing alleles explain a few hundred grams of body weight. More polygenes will be detected in the near future, thus for the first time allowing in-depth analyses of gene–gene and gene–environment interactions. They also will enable developmental studies to assess the effect of such alleles throughout childhood and adulthood. The recent increase in obesity prevalence rates illustrates the extreme relevance of environmental factors for body weight. Similar to polygenes, the effect sizes of most such environmental factors are likely to be small, thus rendering their detection difficult. In addition, the validation of the true causality of such factors is not a straightforward task. Important factors are socioeconomic status and television consumption. The authors conclude by briefly assessing implications for treatment and prevention of childhood obesity.

Neuroimaging in Eating Disorders and Obesity: Implications for Research

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Frederique Van den Eynde and Janet Treasure

Medicine and psychiatry have benefited from developments in investigational techniques. Neuroimaging is one such domain that has technically progressed enormously in recent years, resulting in, for example, higher temporal and spatial resolution. Neuroimaging techniques have been widely used in a range of psychiatric disorders, providing new insights into neural brain circuits and neuroreceptor functions *in vivo*. These imaging techniques allow researchers to study not only the configuration of brain structures but also aspects of normal and anomalous human behavior more accurately.

Leptin-Mediated Neuroendocrine Alterations in Anorexia Nervosa: Somatic and Behavioral Implications

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Timo D. Müller, Manuel Föcker, Kristian Holtkamp, Beate Herpertz-Dahlmann, and Johannes Hebebrand

Hypoleptinemia is a key endocrinological feature of anorexia nervosa (AN). Several symptoms in acute AN are related to the low circulating leptin levels including amenorrhea and semi-starvation-induced hyperactivity. The drop in leptin levels results from the loss of fat mass; once leptin levels fall below specific thresholds the hypothalamic-pituitary-gonadal and -thyroid axes are down-regulated; in contrast, the hypothalamic-pituitary-adrenal axis is up-regulated. Hypoleptinemia is the major signal underlying both somatic and behavioral adaptations to starvation. Because the mechanisms involved in this adaptation are similar in rodents and humans, rodent models can be used to investigate the relevant central pathways which underly the respective starvation-induced symptoms. During therapeutically induced weight gain, leptin levels can intermittently increase above normal concentrations. This hyperleptinemia could predispose to renewed weight loss.

Section III: Treatment Modalities

Overview of Treatment Modalities in Adolescent Anorexia Nervosa

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Beate Herpertz-Dahlmann and Harriet Salbach-Andrae

The aim of this article is to scrutinize and compare the benefits of distinct treatment settings for anorexia nervosa (AN) and to review the different treatment modalities that have proven helpful in the management of young patients with AN. Evidence-based findings on the effect of different treatment methods for AN are limited. Besides different treatment settings, a multimodal treatment approach comprising nutritional rehabilitation, nutritional counseling, individual psychotherapy and family-based interventions emphasizing a group psychoeducation program for parents is presented.

Cognitive Behavioral Approaches in Adolescent Anorexia and Bulimia Nervosa

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Ulrike Schmidt

This article starts with what is known about cognitive behavior therapy (CBT) in adults with eating disorders and with some developmental considerations about CBT in children and adolescents. It then considers how CBT might be adapted for adolescents with eating disorders and reviews the current knowledge base on CBT in adolescents. The article finishes with some thoughts on future developments in this area.

Family Interventions in Adolescent Anorexia Nervosa

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Daniel le Grange and Ivan Eisler

Although our understanding of the mechanisms of change in eating disorder treatment remain limited, the empiric evidence for the effectiveness of family therapy for adolescent Anorexia Nervosa is gaining strength. A history of family involvement in psychiatric care, current approaches to family intervention in eating disorders and evidence for their efficacy are reviewed.

Pharmacotherapy for Eating Disorders and Obesity

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Pauline S. Powers and Heidi Bruty

Anorexia nervosa and bulimia nervosa are significant mental health problems in the adolescent population; however, there are no medications approved by the FDA for the treatment of adolescents with either of these disorders. Many medications are used off label for both the symptoms of eating disorders and their co-morbid conditions, particularly SSRIs and atypical anti-psychotics. The dosing, side effect profile, and long term effects of these medications in children and adolescents is unclear. Binge eating disorder, night eating syndrome, and sleep-related eating disorder often are associated with over-weight in adolescents. There are various pharmacological approaches to the treatment of obesity in the adolescent population some of which have FDA approval. In the article the authors discuss pharmacological approaches to guide

the treatment of eating disorders and obesity in the pediatric population, including risks of treatment, monitoring of potential side effects, and recent outcomes in the literature.

Evidence-Based Behavioral Treatment of Obesity in Children and Adolescents 189

Laura Stewart, John J. Reilly, and Adrienne R. Hughes

Obesity is the most common childhood disease and is widely acknowledged as having become a global epidemic. Well-recognized health consequences of childhood obesity exist, both during childhood and adulthood, affecting health and psychological and economic welfare. The importance of finding effective strategies for the management of childhood obesity has international significance with the publication of various expert reports and evidence-based guidelines in recent years.

Preventing Eating Disorders 199

Heather Shaw, Eric Stice, and Carolyn Black Becker

This article reviews eating disorder (ED) prevention programs, highlighting features that define successful programs and particularly promising interventions, and how they might be further refined. The field of ED prevention has advanced considerably both theoretically and methodologically compared with the earlier ED prevention programs, which were largely psychoeducational and met with limited success. Recent meta-analytic findings show that more than half (51%) of ED prevention interventions reduced ED risk factors and more than a quarter (29%) reduced current or future eating pathology (EP). A couple of brief programs have been shown to reduce the risk for future onset of EP and obesity. Selected interactive, multisession programs offered to participants older than 15 years, delivered by professional interventionists and including body acceptance or dissonance-induction content, produced larger effects. Understanding and applying these results can help inform the design of more effective prevention programs in the future.

Obesity Prevention in Children and Adolescents 209

Boyd Swinburn

Childhood and adolescent obesity has been increasing in most middle- and high-income countries, and, as with adult obesity, this has been driven by increasingly obesogenic environments, especially the food environment. This constitutes a “market failure,” signaling the need for government interventions with policies, programs, and social marketing. Population prevention strategies are critical, and children and adolescents should be the priority populations. Food marketing to children is a central policy issue for governments to address, and comprehensive regulations are needed to provide substantive protection for children. Community-based intervention programs show some real promise in reducing childhood obesity, but the 2 big challenges ahead are to ensure that there is substantial ongoing funding so that the community capacity to promote healthy weights can be scaled up to a national level and to ensure that policies are in place to support these efforts. The social and cultural shifts that support healthy eating and physical activity occur differentially, and special efforts are needed

to reduce the socioeconomic gradients associated with childhood obesity. A positive public health approach encompassing environmental, regulatory, sociocultural, and educational strategies offer the best chance of reducing obesity without increasing disordered eating patterns.

Outcome of Eating Disorders

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Hans-Christoph Steinhausen

Both Anorexia Nervosa (AN) and Bulimia Nervosa (BN) are marked by a serious course and outcome in many of the afflicted individuals. In AN, there are an almost 18-fold increase in mortality including a high suicide rate, chronic courses in approximately 20 per cent of the cases, and more than half of the patients showing either a complete or a partial eating disorder in combination with another psychiatric disorder or another psychiatric disorder without an eating disorder. Mitigating factors of the outcome include onset of the disorder during adolescence and longer duration of follow-up. Vomiting, bulimia and purgative abuse, chronicity, and obsessive-compulsive features represent unfavourable prognostic factors in various studies. The longer-term outcome of BN is only slightly better result as compared to AN; however, the rate of mortality is low. Diagnostic cross-over from bulimia nervosa to other eating disorders is a rather rare phenomenon, whereas the high rates of partial eating disorders may explain a large proportion of chronic courses. Social adjustment and the quality of personal relationship normalize in the majority of the affected patients. At present, the study of prognostic factors in bulimia nervosa does not allow any definite conclusions.

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