



AMERICAN
PSYCHOLOGICAL
ASSOCIATION

Date: April 2017

From: Society of Pediatric Psychology, American Psychological Association Division 54

To: Pediatrician Colleagues and Other Pediatric Medical Providers

Re: Summary of Research Findings Relevant to Pediatric Care

Following is a summary of published research findings in the Society of Pediatric Psychology peer reviewed journals (and several other journals featuring the work of pediatric psychologists/trainees). We believe this information may be helpful to your own practice, with citations provided for further information. Please contact me with feedback or questions. Sharon.Berry@ChildrensMN.org

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Past President, Society of Pediatric Psychology**

Trial of Amitriptyline, Topiramate, and Placebo for Pediatric Migraine.

Powers, S.W., Coffey, C.S., Chamberlin, L.A., Ecklund, D.J., Klingner, E.A., Yankey, J.W., Korbee, L.L., Porter, L.L., Hershey, A.D., CHAMP Investigators. (2017) *New England Journal of Medicine*, 2017 Jan 12; 376(2):115-124. Published online first, Oct 27, 2016 at NEJM.org.

This NIH-funded, multi-center, double-blind Phase 3 clinical trial (The Childhood and Adolescent Migraine Prevention trial [CHAMP Study]) examined the two most commonly prescribed prevention medications for pediatric migraine (amitriptyline and topiramate). The goal was to provide evidence for primary care providers and specialists about which may be the optimal first-line medication (with information about safety, dose, duration of care, and impact on headache days and disability). The trial was stopped early due to futility. Amitriptyline at a dose of 1 mg/kg/day and topiramate at a dose of 2 mg/kg/day were not found to be any more efficacious than placebo. In the primary analysis, the relative reduction of 50% or more in the number of headache days over a 28 day period was observed in 52% of the participants who received amitriptyline, 55% of those who received topiramate, and 61% of those who received placebo.

No differences were observed in any of the trial sensitivity analyses, on the analysis of absolute reduction in number of headache days, or the analysis in change in headache related disability. Both medications produced adverse events that were greater than placebo. Serious adverse events occurred in each medication group. Of note, relative to the very few other trials of prevention medications in youth with migraine, this study included a more real-world sample of children and adolescents. Prior trials often limited headache days to no more than 12 per month;



the CHAMP Study included baseline headache days from 4 to 28 per 28 day period (M of 11.4 +/- 6.1) and the sample characteristics are quite representative of the types of patients that are seen in practice. The authors concluded that there was a lack of a favorable risk to benefit profile to suggest use of these two therapies for prevention of migraine in pediatric and adolescent patients.

The Childhood and Adolescent Migraine Prevention (CHAMP) Study: “What do we do now?” Invited Guest Editorial.

Powers SW, Hershey AD, Coffey CS, CHAMP Study Group (2017) *Headache* Feb; 57:180-183).

An earlier trial (Powers, S.W., Kashikar-Zuck, S.M., Allen, J.R., LeCates, S.L., Slater, S.K., Zafar, M., Kabbouche, M.A., O'Brien, H.L., Shenk, C.E., Rausch, J.R., Hershey, A.D. (2013) Cognitive behavioral therapy plus amitriptyline for chronic migraine in children and adolescents: a randomized clinical trial. *JAMA*, 2013 Dec 25; 310(24):2622-30) focused on chronic migraine (15 or more headache days per month) and found that combining cognitive behavioral therapy with amitriptyline was superior to this medication plus education, and a recent Cochrane review (Eccleston C, Palermo TM, Williams A, et al. Psychological therapies for the management of chronic and recurrent pain in children and adolescents. *The Cochrane Library* 2014) provided strong evidence for cognitive behavioral therapy for pediatric headache. As a result of these recent pediatric migraine studies, our group at Cincinnati Children’s Hospital is seeing a notable increase in referrals of youth with migraine for evidence-based cognitive behavioral therapy as a first line intervention for patients. It is likely that pediatricians, family practice physicians, neurologists, and adolescent medicine specialists – among other providers – will be seeking colleagues who can help youth and families by providing proven non-pharmacological therapy versus writing a prevention medicine prescription. Multidisciplinary care remains the standard for these patients, with recent evidence pointing toward the importance of early intervention with cognitive behavioral therapy.

Pediatric psychology and epilepsy: A state of the field and call to action.

Weyand, C., Wagner, J., & Brooks, B. (2016). *Clinical Practice in Pediatric Psychology*, 4(1), 90-97. Doi: <http://dx.doi.org/10.1037/cpp0000129>

Weyand and colleagues provide an overview of pediatric epilepsy, the current national efforts to improve wellbeing in youth with epilepsy (YWE), and the unique and necessary roles pediatric psychologists can contribute to the epilepsy health care team. To summarize, epilepsy affects 1% of the pediatric population (Russ, Larson, & Halfon, 2012). Thirty percent to 50% of youth with epilepsy (YWE) have comorbid psychiatric and/or neurodevelopmental diagnoses, and they are at much higher risk for suicide when compared to same aged peers (Baca, Vickry, Caplan, Vassar, & Berg, 2011; Wagner, Smith, Wilson, & Selassie, 2015). Research suggests that psychiatric comorbidities have more influence on health related quality of life than seizure



control (Baca et al., 2011). In 2012, the Institute of Medicine of the National Academies (IOM) published 13 recommendations for improving the life of individuals with epilepsy, which included consistent mental health screening (Recommendation 3), improved coordination between medical and mental health professionals (Recommendation 8), and development of evidenced based interventions that enhance epilepsy self and family management (Recommendation 9). Despite the high prevalence of mental health and neurodevelopmental comorbidities and the IOM's recommendations, the mental health needs of YWE remain largely unaddressed (only 30% receive the care they need).

Unfortunately, there are few pediatric psychologists who have the epilepsy training necessary to join epilepsy teams. Weyand et al 2016 encourage those pediatric psychologists with expertise in epilepsy who are currently embedded within epilepsy teams to develop training opportunities to increase interest in epilepsy in future generations of pediatric psychologists. Pediatric psychologists in general are well trained in adherence promotion, mental health assessment, and understand the complex interaction between physical and emotional health. They are, therefore, uniquely qualified to assess and treat the mental health needs of YWE. With training in epilepsy, pediatric psychologists can begin to educate their medical colleagues about the psychosocial and mental health needs of YWE, provide services to YWE, and develop research programs. By responding to these recommendations, pediatric psychologists and medical professionals can join together to begin addressing the significant mental health care needs of YWE.

Brain–gut interactions and maintenance factors in pediatric gastroenterological disorders: Recommendations for clinical care.

Reed-Knight, Bonney; Maddux, Michele H.; Deacy, Amanda D.; Lamparyk, Katherine; Stone, Amanda L.; Mackner, Laura (2017): *Clinical Practice in Pediatric Psychology*, Vol 5(1), Mar 2017, 93-105.

Pediatric gastroenterological (GI) disorders are frequently encountered by the practicing pediatrician and can be challenging to treat due to the range of presenting symptoms and potentially high impact on patient's functioning. In this article, the authors aim to (a) describe the brain–gut axis as a means to increase understanding of how biological mechanisms implicated in a range of pediatric GI disorders interact with psychological and contextual factors to maintain GI symptoms and (b) provide practical ways for pediatricians and other healthcare providers to incorporate a discussion of the brain–gut axis into patient education for pediatric GI disorders. Biological mechanisms of the brain–gut axis including alterations in pain processing, the stress response system, and gut microbiome activity are reviewed. Psychosocial factors that contribute to or maintain disturbances in the brain–gut axis are discussed with implications for clinical assessment and intervention. The authors assert that a mutual understanding by patients, families, and providers alike of the relevant brain–gut interactions and the biopsychosocial model, in general, will serve as a foundation for successful delivery of and adherence to medical and psychological interventions. Important clinical conclusions include:



- Pediatric GI disorders are best conceptualized and treated from a biopsychosocial perspective, and discussion of the brain-gut axis can be a helpful tool for introducing these principles to patients and families.
- Early discussion of the brain-gut axis may reduce resistance to integrated behavioral or psychological treatment for pediatric gastroenterological disorders.
- Sample visual aids and descriptive scripts are available within this review to guide discussions of the brain-gut axis with patients and families for a range of pediatric GI disorders.

Screening for mental health problems: Addressing the base rate fallacy for a sustainable screening program in integrated primary care.

Lavigne, J. V., Feldman, M., & Meyers, K. M. (2016). *Journal of Pediatric Psychology*. November/December, 41 (10), 1081-1090. DOI: <https://doi.org/10.1093/jpepsy/jsw048>.

One of the advantages of collaborative care models in primary care pediatrics that includes the provision of mental health services is the opportunity to identify child and adolescent mental health problems relatively early. Developing an effective, sustainable screening program, however, has its challenges. All existing screening measures are imperfect, and screening with existing measures inevitably leads to identify by true and false positives. While the number of children and adolescents with mental health problems is high enough to be a public health problem (as high as 20%), base rates of that magnitude, or lower, result in relatively low positive predictive values for screening measures. As a result, time and effort devoted to second-stage evaluations of screen-high patients may largely be devoted to evaluating patients without disorder. This can be a particular problem in moderate-to-large volume practices. For this reason, sequential screening in primary care settings may be needed to be able to sustain screening programs. This approach has both advantages and disadvantages depending upon the type of problem to be screened for and the availability of resources for follow-up evaluations.

Systematic review: Classification accuracy of behavioral screening measures for use in integrated primary care settings.

Lavigne, J. V., Meyers, K. M., & Feldman, M. (2016). *Journal of Pediatric Psychology*. November/December, 41(10), 1091-1109. On line in advance of publication. DOI: <https://doi.org/10.1093/jpepsy/jsw049>.

Screening for pediatric mental health programs in primary care has the capacity to make an important contribution to public health. Such programs are dependent upon implementing the use of appropriate screening measures. This report reviews five commonly-recommended measures for identifying a broad range of child and adolescent mental health problems. These five measures are: the Child Behavior Checklist (CBCL), Pediatric Symptom Checklist (PSC), Strengths and Difficulties Questionnaire (SDQ), Brief Infant-Toddler Social Emotional



Assessment (BITSEA) and the Ages and Stages Questionnaire: Social-Emotional scale (ASQ:SE). For three measures (CBCL, PSC, and SDQ) studied extensively, achieving relatively high SE and SP values ($\geq .70$) simultaneously occurred in only 30% - 55% of studies reviewed. There are relatively few studies of the ASQ:SE and BITSEA, or of relatively new measures. Overall, sensitivity and specificity of these measures is concerning, raising the possibility of screening programs devoting precious staff time to second stage evaluations of false positive cases. For this reason, sequential screening procedures may be useful in developing sustainable screening programs in pediatric primary care.

Adolescent disclosure to parents and daily management of type 1 diabetes.

Berg, C. A., Queen, T. L., Butner, J. E., Turner, S. L., & Lansing, A. H., Main, A., Anderson, J., Thoma, B., Winnick, J., & Wiebe, D. J. (2017). *Journal of Pediatric Psychology*, 42, 75-84.

Late adolescents with type 1 diabetes are becoming more independent from their parents in terms of their daily management of type 1 diabetes. However, an extensive literature demonstrates that diabetes management is enhanced when parents are more knowledgeable about their adolescents' diabetes and collaborate with their adolescent when problems arise. The present study examined the daily processes whereby parents may gain that knowledge through parents soliciting information and adolescents disclosing so that parents may provide the assistance that is needed to maintain good adherence and blood glucose control. 236 late adolescents (Mean age=17.76) completed a 14-day diary where they reported daily disclosure to, and solicitation from, their parents, how knowledgeable and helpful parents were, and their daily cognitive failures and adherence; blood glucose was gathered from meters.

Results indicate that greater parental knowledge and helpfulness occurred on days when parents solicited information and adolescents disclosed information to their parents. On days when adolescents disclosed to mothers (but not to fathers) better diabetes management occurred (fewer cognitive failures and better adherence). Adolescents disclosing to their mothers especially may be an important way that parents remain knowledgeable about diabetes management and provide the assistance that serves to support diabetes management. The results point to the importance of maintaining good connections between parents and late adolescents so that adolescents can get the assistance they need for good diabetes management. Thus, even at a time when healthcare providers are preparing adolescents for independent management apart from parents, providers should encourage open communication between parents and adolescents so that adolescents can access the assistance should they need it.



Associations between teasing, quality of life, and physical activity among preadolescent children.

Jensen, C. D., Cushing, C. C., & Elledge, A. R. (2014). *Journal of Pediatric Psychology, 39 (1)*, 65-73. doi: 10.1093/jpepsy/jst086

Physical activity engagement is an important for promoting children's health and wellbeing. Children's engagement in physical activity is influenced by social contextual factors including teasing from peers during physical activity. We assessed associations between teasing, physical activity, and quality of life in pre-adolescent children. We found that normal weight children who where teased during physical activity engaged in less physical activity one year later. Children who reported teasing during physical activity also reported reductions in quality of life one year later. Important clinical implications of this study include:

- Peer victimization may lead to reduced engagement in physical activity. *Primary care providers should consider assessing peer victimization in children because of potential negative effects on physical activity (among other psychological consequences).*
- Children who are teased during physical activity report significant decreases in quality of life one year later. *We encourage primary care providers to assess quality of life and consider peer victimization as an important determinant of children's subjective quality of life.*
- *Parents and school personnel should be notified if primary care providers identify children who are being teased by peers to allow systemic interventions to reduce teasing.*