

Adolescent and Transition Medicine

RESEARCH AND TRAINING DETAILS



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Faculty	15
Joint Appointment Faculty	2
Research Students	7
Support Personnel	13
Direct Annual Grant Support	\$1,125,691
Direct Annual Industry Support	\$78,886
Peer Reviewed Publications	30

CLINICAL ACTIVITIES AND TRAINING

Clinical Staff	9
Staff Physicians	1
Clinical Fellows	6
Inpatient Encounters	1,366
Outpatient Encounters	16,175

Research Highlights

Jessica Kahn, MD, MPH

Dr. Kahn conducts interdisciplinary research focused on prevention of diseases related to human papillomavirus (HPV) in young women and men. She is currently examining the epidemiology and risk factors for genital HPV infection in adolescent girls and boys; the epidemiology of oral HPV in HIV-infected youth; the efficacy of HPV vaccines in HIV-infected youth; the impact of HPV vaccination on the epidemiology of HPV in the community; predictors of HPV vaccine recommendations by clinicians and uptake by parents and adolescents; and risk perceptions and behaviors after HPV vaccination. This work is funded by an R01 from NIH (NIAID) for which she serves as principal investigator and a U01 from NIH (NICHD) which supports the Adolescent Medicine Trials Network for HIV/AIDS Interventions, for which she serves as a member of the Therapeutic Leadership group and a chair or co-chair of several protocols. She recently co-edited a supplement in the *Journal of Adolescent Health* presenting the results of public health demonstration projects to improve adolescent vaccination across the U.S.; she chaired the grant program, which was funded by the Society for Adolescent Health and Medicine through a grant from Merck.

Ellen Lipstein, MD, MPH

Dr. Lipstein conducts research focusing on improving the care and health of children and adolescents with chronic conditions by improving the treatment decision-making process. This year she and her team published the first longitudinal, qualitative examination of how decisions are made in pediatric chronic conditions. To further understanding of decision making in this setting, they also fielded a survey examining rheumatologists' and gastroenterologists' perspectives about sharing treatment decisions with parents and adolescent patients. This is the largest survey, to date, focused on pediatric providers' perspectives of shared decision making.

Tanya Mullins, MD, MS

Dr. Mullins conducts research focusing on outcomes of human papillomavirus (HPV) vaccination in adolescents and the use of new biomedical HIV prevention methods among adolescents, such as pre-exposure prophylaxis (PrEP). Dr. Mullins recently published a study demonstrating that higher knowledge about HPV vaccines among mothers and girls was linked with more accurate HPV vaccine-related risk perceptions among girls who received the vaccine. She recently presented data demonstrating that HPV vaccine-related risk perceptions are not associated with subsequent risky sexual behaviors among vaccinated adolescent girls. With support from the NIH-funded Adolescent Trials Network for HIV/AIDS Interventions, Dr. Mullins and her team interviewed clinicians who provide care to adolescents with HIV and found substantial variability in clinician practices with regard to the characteristics of appropriate candidates for PrEP and the use of PrEP in HIV serodiscordant couples. Because of her work in this area, she was an invited participant for the UNICEF-sponsored conference "Consultation on Clinical and Operational Considerations for the Implementation of Pre-Exposure Prophylaxis (PrEP) in Sexually Active Older Adolescents."

Lea Widdice, MD

Dr. Widdice conducts research focusing on optimal testing for sexually transmitted infections (STI) in adolescents and young adults. She is currently collaborating with community organizations to demonstrate acceptability and feasibility of providing STI screening and treatment in the community. Lack of access to private space for patients to collect samples can be a barrier to testing because current diagnostic tests for the most common bacterial STIs require genital or urine samples for testing. However, her research has shown that people attending community events report collecting genital samples in a privacy shelter to be acceptable. Her team has also demonstrated that STI screening can be provided without access to healthcare facilities, including clinics or bathrooms. In a retrospective review of emergency room records, she demonstrated that the adoption of a rapid test for trichomoniasis was associated with a decrease in overuse of antibiotics among women tested for sexually transmitted infections in the emergency room. These findings suggest that the adoption

of a rapid test for gonorrhea could decrease the overuse of antibiotics for these infections which is important because of the world-wide increase in antibiotic-resistant gonorrhea.

Significant Publications

Lipstein EA, Britto MT. The Evolution of Pediatric Chronic Disease Treatment Decisions: A Qualitative, Longitudinal View of Parents' Decision-Making Process. *Med Decis Making*. 2015 Apr 21. Epub ahead of print.

This was a qualitative research study that examined the evolution of parents' treatment decisions. In this study, decision making was an iterative process occurring in three distinct patterns. Understanding these patterns and the varying elements of parents' decision processes is an essential step toward developing interventions that are appropriate to the setting and that capitalize on the skills families may develop as they gain experience with a chronic condition

Hesse EA, **Widdice LE, Patterson-Rose SA**, St Cyr S, Dize L, Gaydos CA. Feasibility and acceptability of point-of-care testing for sexually transmissible infections among men and women in mobile van settings. *Sex Health*. 2014;12(1):71-73.

This study reported on the feasibility and acceptability of providing point of care testing for sexually transmitted infections in a community setting. When provided with different options for testing, the majority of participants chose point-of-care or near-patient testing.

Kahn JA, Rudy BJ, Xu J, Secord EA, Kapogiannis BG, Thornton S, Gillison ML. Behavioral, immunologic, and virologic correlates of oral human papillomavirus infection in HIV-infected youth. *Sex Transm Dis*. 2015 May;42(5):246-52.

Little is known about the epidemiology, natural history, or risk factors for oral HPV in HIV-infected youth, and it is unknown whether HPV vaccination is effective in preventing oral infection with types targeted by the vaccines. In this first study of the prevalence and risk factors for oral HPV infection among HIV-infected youth, prevalence rates of oral HPV were high (19.5%). No men fully vaccinated for HPV were infected with vaccine type HPV.

Mullins TL, Lally M, Zimet G, **Kahn JA**, Adolescent Medicine Trials Network for HIV/AIDS Interventions. Clinician attitudes toward CDC interim pre-exposure prophylaxis (PrEP) guidance and operationalizing PrEP for adolescents. *AIDS Patient Care STDS*. 2015 Apr;29(4):193-203.

This study was the first to examine HIV clinicians' attitudes and behaviors regarding prescribing pre-exposure prophylaxis to prevent HIV infection. Clinician reported steps for initiating, monitoring, and discontinuing PrEP were largely consistent with written guidance. The study findings suggest that variation in practice could be reduced through interventions to educate clinicians about the content and rationale for guideline recommendations.

Patterson-Rose S, Mullins TL, Hesse EA, **Lehmann C, Widdice LE**. Syphilis among adolescents and young adults in Cincinnati, Ohio: testing, infection and characteristics of youth with syphilis infection. *Sex Health*. 2015 12(2):179-180.

Little is known about the epidemiology of syphilis among adolescents and young adults. This study examined, among more than 17,000 youth, trends in rates of syphilis testing and infection; characteristics of infected adolescents; and agreement about syphilis staging and treatment between provider and chart reviewer. Rates of syphilis testing increased but rates of syphilis infection did not increase significantly over the 5-year period. A majority of infected men reported only opposite-sex sexual contact. High agreement between providers and chart reviewers was found. These findings underscore the need for complete assessment of risk factors and use of local epidemiology in screening practices.

Division Publications

1. Adolescent Sleep Working G, Committee on A, Council on School H, Au R, Carskadon M, Millman R, Wolfson A, Braverman P, Adelman W, Breuner C, Levine D, Marcell A, Murray P, O'Brien R, Devore C, Allison M, Ancona R, Barnett F, Gunther R, Holmes B, Lamont J, Minier M, Okamoto J, Wheeler L, Young T. **School start times for adolescents**. *Pediatrics*. 2014; 134:642-9.
2. Ammerman S, Ryan S, Adelman WP, Committee on Substance Abuse tCoA. **The impact of marijuana policies on youth: clinical, research, and legal update**. *Pediatrics*. 2015; 135:e769-85.
3. Beal SJ, Nye A, Marraccini A, Biro FM. **Evaluation of readiness to transfer to adult healthcare: What about the well adolescent?**. *Healthcare*. 2014; 2:225-231.
4. Belzer ME, Kolmodin MacDonell K, Clark LF, Huang J, Olson J, Kahana SY, Naar S, Sarr M, Thornton S. **Acceptability and Feasibility of a Cell Phone Support Intervention for Youth Living with HIV with Nonadherence to Antiretroviral Therapy**. *AIDS Patient Care STDS*. 2015; 29:338-45.
5. Biro FM. **Normal Puberty**. In: EJ Bieber, JS Sanfilippo, IR Horowitz, M Shafi, eds. *Clinical Gynecology*. Cambridge, UK: Cambridge University Press; 2014:493-505.
6. Biro FM, Pinney SM, Huang B, Baker ER, Walt Chandler D, Dorn LD. **Hormone changes in peripubertal girls**. *J Clin Endocrinol Metab*. 2014; 99:3829-35.
7. Cattran AM, Kalkwarf HJ, Pinney SM, Huang B, Biro FM. **Bone Density and Timing of Puberty in a Longitudinal Study of Girls**. *J Pediatr Adolesc Gynecol*. 2015; 28:170-2.
8. Committee on A, Society for Adolescent H, Medicine. **Screening for nonviral sexually transmitted infections in adolescents and young adults**. *Pediatrics*. 2014; 134:e302-11.
9. Deierlein AL, Galvez MP, Yen IH, Pinney SM, Biro FM, Kushi LH, Teitelbaum S, Wolff MS. **Local food environments are associated with girls' energy, sugar-sweetened beverage and snack-food intakes**. *Public Health Nutr*. 2014; 17:2194-200.
10. Drolet M, Benard E, Boily MC, Ali H, Baandrup L, Bauer H, Beddows S, Brisson J, Brotherton JM, Cummings T, Donovan B, Fairley CK, Flagg EW, Johnson AM, Kahn JA, Kavanagh K, Kjaer SK, Kliwer EV, Lemieux-Mellouki P, Markowitz L, Mboup A, Meshier D, Niccolai L, Oliphant J, Pollock KG, Soldan K, Sonnenberg P, Tabrizi SN, Tanton C, Brisson M. **Population-level impact and herd effects following human papillomavirus vaccination programmes: a systematic review and meta-analysis**. *Lancet Infect Dis*. 2015; 15:565-80.
11. Feemster KA, Middleton M, Fiks AG, Winters S, Kinsman SB, Kahn JA. **Does intention to recommend HPV vaccines impact HPV vaccination rates?**. *Hum Vaccin Immunother*. 2014; 10:2519-26.
12. Hesse EA, Widdice LE, Patterson-Rose SA, St Cyr S, Dize L, Gaydos CA. **Feasibility and acceptability of point-of-care testing for sexually transmissible infections among men and women in mobile van settings**. *Sex Health*. 2014; 12:71-73.
13. Hong CC, Pajak A, Teitelbaum SL, Vangeepuram N, Galvez M, Pinney SM, Windham G, Kushi LH, Biro FM, Wolff MS, Breast C, Environment Research P. **Younger pubertal age is associated with allergy and other atopic conditions in girls**. *Pediatr Allergy Immunol*. 2014; 25:773-80.
14. Kahn JA, Rickert VI. **Innovative clinical and public health strategies to promote adolescent vaccination**. *J Adolesc Health*. 2015; 56:S1-2.

15. Kahn JA, Rudy BJ, Xu J, Secord EA, Kapogiannis BG, Thornton S, Gillison ML. **Behavioral, immunologic, and virologic correlates of oral human papillomavirus infection in HIV-infected youth.** *Sex Transm Dis.* 2015; 42:246-52.
16. Kale A, Deardorff J, Lahiff M, Laurent C, Greenspan LC, Hiatt RA, Windham G, Galvez MP, Biro FM, Pinney SM, Teitelbaum SL, Wolff MS, Barlow J, Mirabedi A, Lasater M, Kushi LH. **Breastfeeding versus formula-feeding and girls' pubertal development.** *Matern Child Health J.* 2015; 19:519-27.
17. Lally M, Goldsworthy R, Sarr M, Kahn J, Brown L, Peralta L, Zimet G. **Evaluation of an intervention among adolescents to reduce preventive misconception in HIV vaccine clinical trials.** *J Adolesc Health.* 2014; 55:254-9.
18. Lipstein EA, Brinkman WB, Fiks AG, Hendrix KS, Kryworuchko J, Miller VA, Prosser LA, Ungar WJ, Fox D. **An emerging field of research: challenges in pediatric decision making.** *Med Decis Making.* 2015; 35:403-8.
19. Lipstein EA, Britto MT. **Evolution of Pediatric Chronic Disease Treatment Decisions: A Qualitative, Longitudinal View of Parents' Decision-Making Process.** *Med Decis Making.* 2015; .
20. Lipstein EA, Dodds CM, Britto MT. **Real life clinic visits do not match the ideals of shared decision making.** *J Pediatr.* 2014; 165:178-183 e1.
21. Malo TL, Giuliano AR, Kahn JA, Zimet GD, Lee JH, Zhao X, Vadaparampil ST. **Physicians' human papillomavirus vaccine recommendations in the context of permissive guidelines for male patients: a national study.** *Cancer Epidemiol Biomarkers Prev.* 2014; 23:2126-35.
22. Mervish N, McGovern KJ, Teitelbaum SL, Pinney SM, Windham GC, Biro FM, Kushi LH, Silva MJ, Ye X, Calafat AM, Wolff MS, Bcerp. **Dietary predictors of urinary environmental biomarkers in young girls, BCERP, 2004-7.** *Environ Res.* 2014; 133:12-9.
23. Mullins TL, Lally M, Zimet G, Kahn JA, Adolescent Medicine Trials Network for HIVAI. **Clinician attitudes toward CDC interim pre-exposure prophylaxis (PrEP) guidance and operationalizing PrEP for adolescents.** *AIDS Patient Care STDS.* 2015; 29:193-203.
24. Ott MA, Sucato GS, Committee on A. **Contraception for adolescents.** *Pediatrics.* 2014; 134:e1257-81.
25. Owens J, Adolescent Sleep Working G, Committee on A. **Insufficient sleep in adolescents and young adults: an update on causes and consequences.** *Pediatrics.* 2014; 134:e921-32.
26. Patterson-Rose S, Mullins TL, Hesse EA, Lehmann C, Widdice LE. **Syphilis among adolescents and young adults in Cincinnati, Ohio: testing, infection and characteristics of youth with syphilis infection.** *Sex Health.* 2015; 12:179-180.
27. Reed JL, Huppert JS, Gillespie GL, Taylor RG, Holland CK, Alessandrini EA, Kahn JA. **Adolescent patient preferences surrounding partner notification and treatment for sexually transmitted infections.** *Acad Emerg Med.* 2015; 22:61-6.
28. Reed JL, Huppert JS, Taylor RG, Gillespie GL, Byczkowski TL, Kahn JA, Alessandrini EA. **Improving sexually transmitted infection results notification via mobile phone technology.** *J Adolesc Health.* 2014; 55:690-7.
29. Wang J, Betancourt A, Jenkins S, Biro F, Pinney SM, Chen D, Russo J, Lamartiniere CA. **Altered Blood Proteome in Girls with High Urine Concentrations of Bisphenol A, Genistein, Mono-Ethyl Hexylphthalate and Mono-Benzyl Phthalate.** *MOJ Proteomics & Bioinformatics.* 2015; 2:1-15.
30. Wolff MS, Teitelbaum SL, McGovern K, Windham GC, Pinney SM, Galvez M, Calafat AM, Kushi LH, Biro FM, Breast C,

Faculty, Staff, and Trainees

Faculty Members

Jessica Kahn, MD, MPH, Professor

Leadership Assistant Chair, Academic Affairs and Faculty Development; Interim Director, Division of Adolescent and Transition Medicine (10/1/14 - Present)

Research Interests Prevention of diseases associated with human papillomavirus (HPV); HPV and other adolescent vaccines; HIV in adolescents.

Maria Britto, MD, MPH, Professor

Leadership Director, Center for Innovation in Chronic Disease Care; Interim Director, Division of Adolescent and Transition Medicine (8/01/13-10/1/14); Faculty Lead, EPIC-Quality Integration Initiative; Co-Leader, Advanced Improvement Methods Course

Research Interests Chronic disease; health care quality; health care preferences; clinical informatics.

Frank Biro, MD, Professor

Leadership Interim Director of Research

Research Interests Environmental influences on body composition and pubertal timing; impact of peripubertal changes on risk factors for breast cancer; childhood and adolescent precedents of adult disorders.

Paula Braverman, MD, FAAP, Professor

Leadership Director of Community Programs; Interim Medical Director

Research Interests Teen pregnancy and STI prevention; obesity prevention programming for teens.

Lee Ann Conard, DO, MPH, RPh, Assistant Professor

Leadership Medical Director, Transgender Clinic; Director of Resident Education

Jamilah Hackworth, MEd, MEd, Assistant Professor

Leadership Associate Director, Academic Affairs and Career Development

Research Interests Faculty development/socialization, mentorship, and underrepresented minority faculty development.

Corinne Lehmann, MD, MEd, Professor

Leadership Director, Medical Student Education for the Dept of Pediatrics (Clerkship Director); Director, Medical Students Scholar Program in Pediatrics; Medical Director, Family Care Clinic (for pediatric and adolescent HIV patients)

Research Interests Pediatric, adolescent and adult medical education; HIV/STI; vaccines; underserved populations.

Ellen Lipstein, MD, MPH, Assistant Professor

Research Interests Medical decision-making and chronic disease.

Laurie Mitan, MD, Associate Professor

Leadership Director, Eating Disorders Program

Research Interests Eating disorders.

Tanya Mullins, MD, MS, Assistant Professor

Research Interests Prevention of sexually transmitted infections and HIV in adolescents.

Abigail Nye, MD, Assistant Professor

Leadership Director, Transition Medicine Team

Research Interests Transition Medicine; caring for patients with complex medical problems as they approach and move into adulthood.

Sherine Patterson-Rose, MD, MPH, Assistant Professor

Research Interests Adolescent reproductive health; reproductive health disparities; community interventions.

Darcey Thornton, MD, Assistant Professor

Research Interests Transition medicine: caring for adolescents and young adults with special health care needs and chronic illnesses.

Lea Widdice, MD, Assistant Professor

Leadership Director, Adolescent Medicine Physician Fellowship Program

Research Interests Epidemiology of HPV; HPV vaccine immunogenicity and optimizing vaccine delivery systems.

Jason Woodward, MD, MS, Assistant Professor

Research Interests Transition of care in adolescents with special health care needs; health care services for young adults with developmental disabilities.

Joint Appointment Faculty Members

Carol Brown Engel, MD, Assistant Professor (Psychiatry and Behavioral Neuroscience)

Abigail Matthews, PhD, Assistant Professor (Behavioral Medicine and Clinical Psychology)

Research Interests Illness perception in family-based treatment of eating disorders.

Clinical Staff Members

- **Erin Dawson, MS, RD, LD**
- **Ann Marie Dougherty, MS, RD, LD**
- **Laurie Dunham, MD, RD, LD**
- **James Ebert, MD**
- **Susannah Grimes, MSN, PNP**, APRN Leader
- **Robin Holmes, RN**
- **Allison Mack, MSN, CNP**
- **Anne Marraccini, RN, BSN**, Program Manager, Transition Medicine Team
- **Susan Meierjohan, RN, CNP**
- **Joy Melvin, RN, BSN, MSN**, Care Manager, Eating Disorders Team
- **Shannon Myatt, MSN, CPNP**
- **Jill Nelson, RN**
- **Sarah O'Cull, RN**
- **Jennifer Prather, RN**
- **Annette Rader, RN**
- **Rhonda Ruholt, RN**

- **Cindy Samuel, RN**, Clinical Coordinator
- **Anna Liisa Vockell, CNP**
- **Debbie Voet, RN**
- **Louise Watts, MSN, CPNP**
- **Giselle Schneider Weller, MD**
- **David Weybright, BSN, MSN, NEA-BC**, Clinical Director
- **Anita Wilson, RN**, Care Manager, Eating Disorders Team
- **Janet Wimberg, MSW**

Trainees

- **Shelly Ben Harush Negari, MD**, 3rd yr, Mt Scopus Hadassah Hospital, Jerusalem
- **Emmanuel Chandler, MD**, 2nd yr, Medical University of South Carolina
- **Lindsay Ewan, MD**, 3rd yr, Texas Children's Hospital, Baylor College of Medicine
- **Oriaku Kas-Osoka, MD**, 3rd yr, Children's Hospital & Research Ctr, Oakland, CA
- **Shauna Lawlis, MD**, 2nd yr, Texas Children's Hospital, Baylor College of Medicine
- **Maria Rahmandar, MD**, 2nd yr, Texas Children's Hospital, Baylor College of Medicine

Grants, Contracts, and Industry Agreements

Grant and Contract Awards

Annual Direct

Braverman, P

Continuity of Care in Juvenile Justice

American Academy of Pediatrics

4/1/2015-9/30/2015

\$10,000

Provider to Develop Education Curriculum and a Train the Trainer Program on Comprehensive Sexual Health and Teen Pregnancy Prevention

Ohio Department of Health

10/5/2011-9/30/2015

\$11,809

Obesity Prevention Program

Hamilton County Public Health

7/1/2014-6/30/2015

\$85,000

Britto, M

Center of Excellence on Quality of Care Measures for Children with Complex Needs

Agcy for Healthcare Research and Quality(Children's Hosp & Reg Med Ct-Seattle)

U18 HS020506	3/1/2011-2/29/2016	\$8,644
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Adolescent Controlled Text Messaging to Improve Asthma Medication Adherence in Primary Care

National Institutes of Health

R21 HL119826	8/1/2013-7/31/2015	\$147,000
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Kahn, J**Epidemiologic Impact of HPV Vaccination**

National Institutes of Health

R01 AI104709	1/18/2013-12/31/2017	\$488,589
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ATN Coordinating Center

National Institutes of Health(University of Alabama-Birmingham)

U01 HD040533	5/28/2011-2/29/2016	\$26,879
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Lipstein, E**Shared Decision Making In Pediatric Chronic Conditions: Biologics in IBD and JIA**

National Institutes of Health

K23 HD073149	8/15/2012-7/31/2017	\$120,797
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Mullins, T**Physician Attitudes toward New Biomedical HIV Prevention Interventions in Youth**

National Institutes of Health

K23 HD072807	9/19/2013-8/31/2018	\$120,979
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Widdice, E**Center for Point-of-care Technologies Research for Sexually Transmitted Diseases**

National Institutes of Health(The Johns Hopkins University)

U54 EB007958	7/1/2012-6/30/2017	\$105,994
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Current Year Direct**\$1,125,691****Industry Contracts**

Braverman, P

Management & Training Corporation

\$61,243

Widdice, E

Gen-Probe Incorporated

\$17,643

Current Year Direct Receipts**\$78,886**

Total**\$1,204,577**

Prepubertal Hormone Levels Differ Sharply Between Overweight, Normal-Weight Girls



Frank Biro, MD

PUBLISHED ONLINE JULY 16, 2014

Journal of Clinical Endocrinology and Metabolism

Using new methods to determine hormone levels in prepubertal girls, a Cincinnati Children’s research team has demonstrated that significant changes in hormone levels can be detected prior to clinically evident changes in puberty — a finding that could help explain why breast cancer risks vary among obese and non-obese women later in life.

This longitudinal study examined relationships between adrenal and sex hormones in 252 peripubertal girls in Cincinnati who were recruited between 2004 and 2010. Participants entered the study between ages 6 and 7 and were followed from 30 months before to six months after the appearance of breast development. Detailed findings were published online July 16, 2014, in the *Journal of Clinical Endocrinology and Metabolism*.

“We noted radical differences between overweight and normal weight girls, and our data suggest that heavy girls are producing some of their circulating estrogens from their adipose tissue, rather than from their ovaries,” says Frank Biro, MD, first author of the study. “That finding is consistent with differing rates of breast cancer among postmenopausal women when comparing obese and non-obese.”

Gathering data on estradiol, estrone, androstenedione, and T serum concentrations required using high-performance liquid chromatography (HPLC) with tandem mass spectrometry, a newer and highly sensitive analytic approach. Dehydroepiandrosterone sulfate (DHEA-S) and SHBG were measured through established methods.

The research team reports that the average age of breast development in the study group was 8.78 years. Testing revealed that hormone concentrations of DHEA-S increased 30 to 18 months prior to breast development; androstenedione and estrone levels increased 12 and 18 months before onset of breast development; estradiol and T-serum concentrations increased while SHBG levels decreased six to 12 months before breast development.

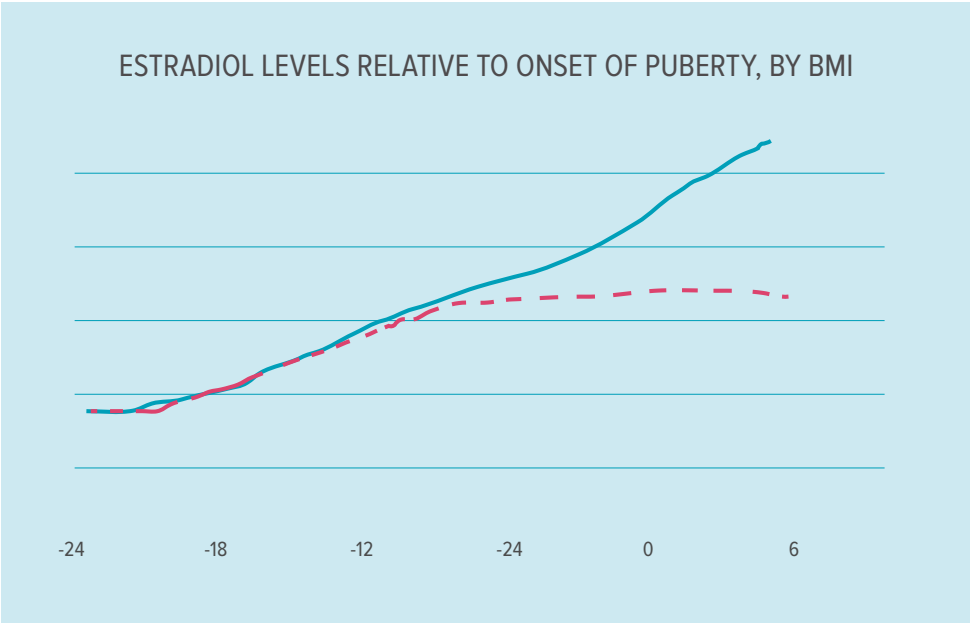
Heavier peripubertal girls had lower estradiol levels at puberty. These findings suggest a mechanism, especially in heavier girls, for pubertal changes without activating the hypothalamic-pituitary-ovarian axis.

RESEARCH AND TRAINING DETAILS

Faculty	15
Joint Appointment Faculty	2
Research Students	7
Support Personnel	13
Direct Annual Grant Support	\$1.1M
Direct Annual Industry Support	\$78,886
Peer Reviewed Publications	30

Biro FM, Pinney SM, Huang B, Baker ER, Walt Chandler D, Dorn LD. Hormone changes in peripubertal girls. *The Journal of Clinical Endocrinology and Metabolism*. 2014;99(10):3829-3835.

“Our data suggest that heavy girls are producing some of their circulating estrogens from their adipose tissue, rather than from their ovaries.”



Months relative to onset of puberty

Serum hormone concentration of estradiol by BMI group relative to onset of puberty. This figure demonstrates that estradiol concentrations are significantly greater at onset of puberty (as defined by onset of breast development), as well as six months after onset, in girls with below-median BMI.