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Register now for the 24th Annual NORCH Symposium

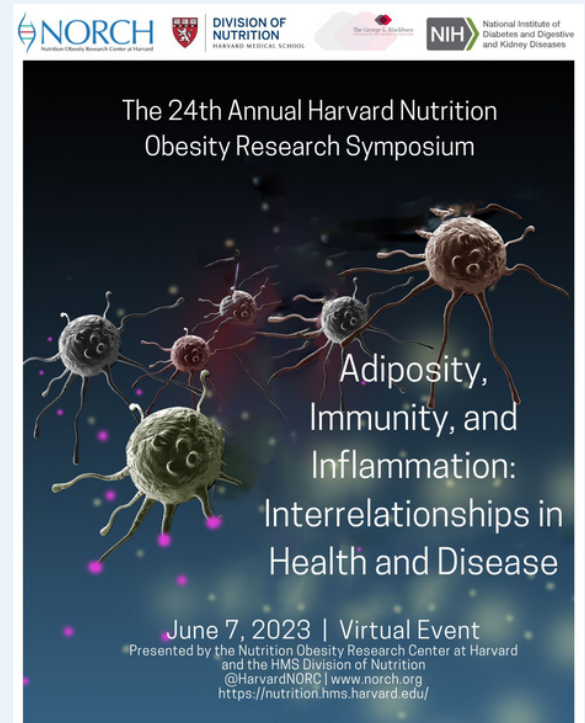
Adiposity, Immunity, and Inflammation: Interrelationships in Health and Disease

Wednesday, June 7, 2023; 8:30am-4:30pm EST, Virtual
This event is free and open to the public.

The [24th Annual Harvard Nutrition and Obesity Symposium](#) will explore the latest research on a wide range of topics in inflammation and immunometabolism, including pathways from obesity to asthma, adipokines as immunoregulators, and the immunological landscape of adipose tissue. We have an excellent lineup of speakers, including Dr. Gökhan Hotamisligil "Organelle Dysfunction and Meta-inflammation in Obesity," Dr. Joseph Hill "Conspiracy of Co-morbidities: Meta-Inflammation and HFpEF," and Dr. Lydia Lynch giving the George L. Blackburn Keynote Lecture, "Diets, Lipids, and Immunity."

The full list of speakers is available to view on the [event webpage](#).

[Click here to download the official event flyer.](#)

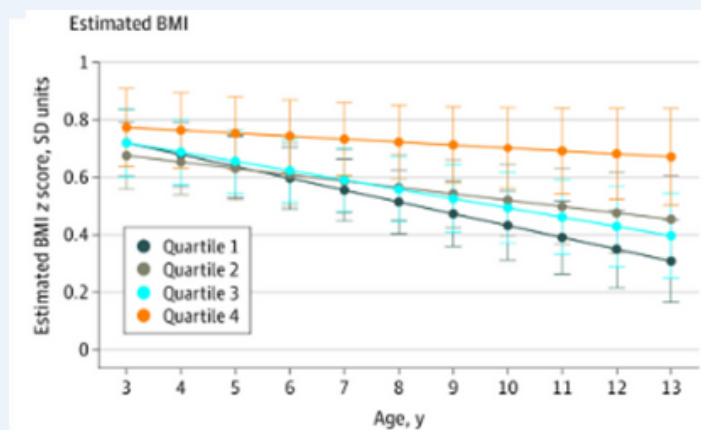


[Click here to register now!](#)

New Publications from NORCH Members

Prenatal Stress and Proinflammatory Diet Affect Childhood Adiposity

Maternal proinflammatory diet during pregnancy is associated with higher childhood BMI and risk for childhood obesity. Psychosocial stress during pregnancy has been shown to exacerbate the effects of poor nutrition on some outcomes, such as asthma and neurodevelopment, but the degree to which psychosocial stress modifies the effect of a proinflammatory diet on childhood adiposity is unknown. In this study, NORCH members Drs. Monthé-Drèze, Oken, Sen, and colleagues investigated the effects of diet quality and prenatal stressors on BMI and adiposity trajectories in a cohort of 1060 mother-child dyads studied in Project Viva. Children of mothers who consumed the most proinflammatory diet (highest quartile of Dietary Inflammatory Index [DII], compared with those whose mothers consumed the lowest quartile) had a slower decline in BMI z-scores during childhood (Figure) as well as more rapid gains in adiposity measured by DXA during mid-childhood. In children born to mothers with elevated scores on the Edinburgh Postpartum Depression Scale (EPDS), the associations between proinflammatory diet and childhood adiposity were stronger than among offspring of mothers with lower EPDS scores. Additionally, associations between maternal DII and child adiposity accrual were strongest among those living in neighborhoods with a higher proportion of those with limited English proficiency and a higher percentage of racial and ethnic minority populations. These data suggest that maternal stressors increase susceptibility to the effects of a proinflammatory diet to increase adiposity in children.



Featured: Monthé-Drèze C, Aris IM, Rifas-Shiman SL, Shivappa N, Hebert JR, Oken E, Sen S. The Role of Prenatal Psychosocial Stress in the Associations of a Proinflammatory Diet in Pregnancy With Child Adiposity and Growth Trajectories. *JAMA Netw Open*. 2023 Jan 3;6(1):e2251367. doi: 10.1001/jamanetworkopen.2022.51367.PMID: 36662527

Recent Publication Highlights from NORCH Investigators

Agrawal S, Klarqvist M, Diamant N, **Stanley TL**, Ellinor PT, Mehta NN, Philippakis A, Ng K, Claussnitzer M, **Grinspoon S**, Batra P, Khara AV. BMI-adjusted adipose tissue volumes exhibit depot-specific and divergent associations with cardiometabolic diseases. *Nat Communications*. 2023 Jan 17;14(1):266. PMID: 36650173

Su CW, Chen CY, Mao T, Chen N, Steudel N, Jiao L, Lan J, **Fasano A**, **Walker WA**, **Shi HN**. Maternal helminth infection protects offspring from high-fat-diet-induced obesity through altered microbiota and SCFAs. *Cell Mol Immunol*. 2023 Feb 14. doi: 10.1038/s41423-023-00979-1. Online ahead of print. PMID: 36788341

Cromer SJ, Lakhani CM, Mercader JM, Majarian TD, Schroeder P, Cole JB, **Florez JC**, Patel CJ, Manning AK, Burnett-Bowie SM, **Merino J**, **Udler MS**. Association and Interaction of Genetics and Area-Level Socioeconomic Factors on the Prevalence of Type 2 Diabetes and Obesity. *Diabetes Care*. 2023 Feb 14;dc221954. doi: 10.2337/dc22-1954. Online ahead of print. PMID: 36787958

Mi MY, Whitlock M, Shi X, Farrell LA, Bhambhani VM, Quadir J, Blatnik M, Wald KP, Tierney B, Kim A, Loudon P, Chen ZZ, Correa A, Gao Y, Carson AP, Bertoni AG, Roth Flach RJ, **Gerszten RE**. Mixed meal tolerance testing highlights in diabetes altered branched-chain ketoacid metabolism and pathways associated with all-cause mortality. *Am J Clin Nutr*. 2023 Jan 7:S0002-9165(23)00002-3. doi: 10.1016/j.ajcnut.2023.01.001. Online ahead of print. PMID: 36811472

Plessow F, Galbiati F, **Eddy KT**, **Misra M**, **Miller KK**, Klibanski A, Aulinas A, **Lawson EA**. Low oxytocin levels are broadly associated with more pronounced psychopathology in anorexia nervosa with primarily restricting but not binge/purge eating behavior. *Front Endocrinol (Lausanne)*. 2023 Jan 31;13:1049541. doi: 10.3389/fendo.2022.1049541. eCollection 2022. PMID: 36798485

Cronjé HT, Mi MY, Austin TR, Biggs ML, Siscovick DS, Lemaitre RN, Psaty BM, Tracy RP, Djoussé L, Kizer JR, Ix JH, Rao P, Robbins JM, Barber JL, Sarzynski MA, **Clish CB**, Bouchard C, Mukamal KJ, **Gerszten RE**, Jensen MK. Plasma proteomic risk markers of incident type 2 diabetes reflect physiologically distinct components of glucose-insulin homeostasis. *Diabetes*. 2023 Feb 7;db220628. doi: 10.2337/db22-0628. Online ahead of print. PMID: 36749929

Mittenbühler MJ, Jedrychowski MP, Van Vranken JG, Sprenger HG, Wilensky S, Dumesic PA, Sun Y, Tartaglia A, Bogoslavski D, A M, Xiao H, Blackmore KA, Reddy A, Gygi SP, Chouchani ET, **Spiegelman BM**. Isolation of extracellular fluids reveals novel secreted bioactive proteins from muscle and fat tissues. *Cell Metab*. 2023 Jan 14:S1550-4131(22)00577-0. doi: 10.1016/j.cmet.2022.12.014. Online ahead of print. PMID: 36681077

Our work as a Center is measured in part by the contributions we make to published science. Please cite the NIH Grant **P30 DK040561** in all publications that result from the use of NORCH services or resources.



Featuring: Carmen T. Monthe-Dreze, MD

Dr. Monthe-Dreze is an Instructor of Pediatrics at HMS; Neonatologist, Department of Pediatric Newborn Medicine, Brigham and Women's Hospital

Tell us a little bit about your background:

I was born and raised in French Cameroon (West Africa) and immigrated to the US at 15 years old. I learned English and transitioned to a mainstream High School a year later. I was such an introvert, barely speaking in class as I was self-conscious of my French Accent (oh, teenagers!), but this did not stop my AP American History teacher from pushing me to join the Debate Team! Since then, I haven't stopped talking! I mention this story to say that my journey is the sum of having incredible people in my life who not only believed in me and my dreams, but who also sacrificed immensely along the way. Fast forward over

two decades, a period marked by undergrad studies at Swarthmore College, research at Weill Cornell Medicine, and medical training at the Albert Einstein College of Medicine; and the Harvard Combined Programs in General Pediatrics and Neonatal-Perinatal Medicine, I am a Neonatologist working in the BWH NICU and the NWH Special Care Nursery and a researcher in the Developmental Origins of Health and Disease (DOHaD) field.

What are your current research interests?

My research interests focus on the impact of maternal pre-pregnancy obesity and dietary quality in pregnancy on child growth and neurodevelopment. Specifically, through the conduct of longitudinal cohort studies, I investigate how alterations in newborn brain development (including brain hedonic pathways), early infant self-regulation, and inflammatory mechanisms may underpin these associations with an overarching goal to inform novel clinical trials specifically for pregnant women with obesity aimed at improving childhood health.

What do you think is the biggest gap in our knowledge about obesity or nutrition?

Of course, I may be biased in thinking this, but there is a significant knowledge gap in our understanding of modifiable mechanisms via which maternal obesity impacts child obesity and neurodevelopmental outcomes. Although experimental models and human studies have provided high-quality evidence that prenatal perturbations (e.g., diabetes, obesity, inadequate nutrition, infections, stress) contribute to an increased risk of developing child- and adult-onset health problems (e.g., diabetes, obesity, socio-emotional and behavioral difficulties), lifestyle interventions trials in pregnancy in women with obesity have not been as effective as we had hoped. Given the rising prevalence of maternal obesity, studies that could directly inform novel clinical trials in this high-risk population are urgently needed. Studies that address questions around the timing and duration of interventions that take a more ecological approach by evaluating exposures, moderators, and modifiable mediators simultaneously and that focus specifically on early outcome measures or biomarkers known to index longer-term outcomes will most likely transform prenatal care and interrupt this vicious intergenerational cycle of adverse health outcomes. Changing the lives of

If you could change one thing about the way we conduct or communicate research, what would it be?

Developing evidence to improve clinical practice is important, and disseminating it to be used by clinicians to improve outcomes for individual patients is critical. However, even more primordial is making the information available in a digestible format to the lay population to increase self-empowerment through good decision-making and spark discussions with care providers. Social Media is a big black box when it comes to communicating medical information and research due to the crisis of misinformation and distrust that exist within it. But I believe it is a tool that can be used effectively, with the proper guardrails, to communicate research findings effectively to the layperson audience.

How do you spend your time outside of work?

During the winter, you'll find me cuddling up near the fireplace with my girls, watching movies with a cup of authentic Belgian hot chocolate (thanks to my husband!) in hand. You remember I am from a tropical climate right? Otherwise, you will find me outside tending to my garden during the spring, summer, and fall! I love gardening. It is truly my happy place. One saying that holds true in the garden and in life: you reap what you sow (except for when you compete with groundhogs, chipmunks, and pests!).

Local Events

Longwood Nutrition Seminar

Division of Nutrition at Harvard Medical School

Tuesday, Mar 7, 2023, 12-1pm, Virtual

Caroline M. Apovian, MD, Brigham & Women's Hospital

Tuesday, Apr 4, 2023, 12-1pm, Virtual

"Plant-Based Eating to Support Cardio-Metabolic Health" Andrea J. Glenn, RD, PhD, Harvard T.H. Chan School of Public Health

[Click here](#) for more information. This series occurs on a monthly basis.

Monday Nutrition Seminar Series

Department of Nutrition, Harvard T.H. Chan School of Public Health

Monday, Mar 20, 2023, 1pm, Virtual

Dr. Stephen Devries, Adjunct Associate Professor of Nutrition, HSPH

This series occurs on a weekly basis. [Click here](#) for more information.

National Events

UNC Nutrition Seminar

UNC Nutrition Obesity Research Center

Friday, Mar 17, 2023, 2-3pm EST

"Relationship Between the Perception of WIC Breastfeeding Recommendation and Participants' Breastfeeding Outcomes" Qi (Harry) Zhang, PhD, *Professor and Director, PhD Program in Health Services Research School of Community and Environment Health, Old Dominion University*

Friday, Apr 14, 2023, 2-3pm EST

"Using DNA Sequencing to Assess Global Diets" Lawrence David, *Associate Professor, Molecular Genetics & Microbiology, Interim Director, Duke Microbiome Center, Duke University*

[Register](#) for Zoom details or [click here](#) for more information. All are welcome to attend.

Other Opportunities

Request for Information (RFI): Re-envisioning U.S. Postdoctoral Research Training and Career Progression within the Biomedical Research Enterprise

Response Date: April 14, 2023

This RFI will assist NIH in hearing the voices of postdoctoral trainees along with others impacted by this unique and skilled training position, and in exploring ways to address some of the fundamental challenges faced by the postdoctoral trainee community. This notice seeks input and possible solutions to address current challenges affecting the postdoctoral trainee community directly from trainees (e.g., graduate students, postdocs), as well as early-stage investigators, biomedical faculty, training directors, postdoctoral and graduate student office leaders, biotech/biopharma industry scientists, and research education program advocates.

For more information on the submission guidelines and to submit your response, please [click here](#).

Contact Us

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Cite the grant! P30 DK040561

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