Shreela and Vibhu Sharma Endowed Fund for Excellence in Community Nutrition, Health, and Wellness

Melinda Rushing
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Fall 2021 Fellow
WHO WE ARE

The Center for Community Health is a multidisciplinary group of professional physicians, researchers, evaluators and public health and community outreach educators.

We are dedicated to promoting evidence-based health practices at a community level.
Mission

To transform health and wellness in diverse communities by improving health equity.

Reem Zubaidi, Health Policy Manager for Refugee Health Unit
How Are We Tackling Health Inequities?

Lakisha McZeal & Nghi Dang, Community Food Project Specialists for Urban Food Equity Projects
We work with communities to develop and sustain policies, systems, and environments that promote health and wellness where people live, work, learn, play, and worship.

1. Policy & Advocacy
   Build community and youth capacity to champion changes to create healthy and thriving communities.

2. Research
   Lead health disparities research to inform prevention of childhood, adolescent, and adult disease.

3. Healthy Campus
   Spearhead the coordination and integration of UC San Diego wellness programs and policies for students, staff, faculty, and patients.

4. Training and Education
   Train and educate the next generation of culturally competent and diverse clinical and public health professionals.

5. Faith-Based Wellness
   Encourage the health and well-being of faith-based communities in body, mind and spirit.

6. School Wellness
   Create school environments that enhance learning and develop lifelong wellness practices.

7. Youth Leadership Development
   Engage and build the capacity of young people to develop their leadership and social responsibility.

8. Refugee Health Unit
   Provide research, evaluation, training and program development services through cross sector partnerships to improve the health and wellbeing outcomes for San Diego Refugee population.

9. Oral Health
   Train and educate professionals, parents, and children to foster ongoing preventative dental care.

10. Lactation Supportive Environments
    Work in multiple sectors to collaborate with stakeholders in expanding support for breastfeeding in the community.

11. Employee Wellness
    Collaborate with local businesses to build a culture of health and foster a healthier, happier, and more productive workforce.

12. Food Insecurity Nutrition Incentive
    Provide a dollar match to incentivize the purchase of fresh produce, increase food security and support our local food economy through the ¡Más Fresco! More Fresh program.

13. Urban Food Environments
    Work to improve access to healthy affordable foods in urban underserved neighborhoods by supporting food pantries, farmers’ markets, and food retailers.

14. Childhood Obesity Prevention
    Facilitate a multi-sector coalition with the mission of reducing and preventing childhood obesity by advancing policy and environmental changes through collective impact.

ucsdcommunityhealth.org
centerforcommunityhealth@ucsd.edu
Our Impact, 2019
40 Policy, Systems, and Environmental Changes

Impacting nearly 1,000 schools, addressing access to healthy food, physical activity, and food security worksites, faith-based organizations, and retail locations.

Health Happens in the Community

270 Partners
Establishing a network of support for health interventions

330,946 Individuals
Connecting with community residents to promote healthy living

57 Collaboratives
Providing expertise to key regional, state, and national health and wellness coalitions

248 Interns, Volunteers & Students
Engaging our community in experiential learning opportunities
Mission: Protect, promote, and improve the physical, mental, and financial well-being of the refugee population in San Diego County.

Example Projects:
- San Diego Refugee Communities Coalition
- Youth Advisory Council
- Making Connections for Mental Health & Well-Being
Urban Food Equity

Mission: Improve food access by building level food assets. We support small grocery farms, farmers’ markets, food pantries, and members in building an inclusive, equitable, thriving local food landscape.

Example Projects:
- San Diego Urban Growers’ Collaborative
- Live Well Community Market Program
- Nutrition Pantry Program
- Good Food Finder
- Farmers’ Markets for All

Community Garden Build in Southeastern San Diego with Project New Village, 2020
¡Más Fresco! More Fresh Nutrition Incentive Program

Randomized control trial study utilizing innovative point-of-sale technologies in a large-scale retail setting

Key Goals
1. Increase fruit and vegetable purchase and consumption
2. Decrease food insecurity
3. Improve health status
4. Reduce health care use and cost

Key Outcomes
• Enrolled 8,000 CalFresh Households (to date)
• Significant increase in fruit and vegetable purchase and consumption
• Significant reduction in food insecurity
• Program success has led to $13.4 million in UCSD nutrition incentive program funding
Mission: We are a multi-sector coalition to reduce and prevent childhood obesity in San Diego County by advancing policy, systems, and environmental change through collective impact.

Example Projects:
- Californians for Less Soda
- COI Strategic Plan 2020
- COVID-19 Stories of Resilience
- P-EBT Promotion
- ACEs Advocacy to Reduce Health Disparities
- Urban Planning X Public Health
UC San Diego Health

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SCIENTIFIC PRESENTER

Dr. Rafael Pérez-Escamilla

Professor of Public Health
Director, Office of Public Health Practice
Director, Global Health Concentration
Director, Maternal Child Health Promotion Program, Center for Methods on Implementation and Prevention Science (CMIPS)
Yale School of Public Health
Responsive Feeding and Childhood Obesity Prevention
An Equitable Nurturing Care Perspective

Rafael Pérez-Escamilla, PhD
Professor of Public Health
Director, Global Health Concentration, Office of Public Health Practice, Maternal Child Health Promotion Program

Philip R. Nader Lectureship
University of Texas Michael & Susan Dell Center
for Healthy Living
October 7, 2021
Lecture Outline

• The 1st 1000 days, child growth & development
• Maternal and childhood obesity
• Nurturing care framework
• Strengthening ‘nutrition’ with responsive feeding
• Way forward
The First 1000 Days: The Foundation for Growth, Health and Brain Development
The incredible speed in growth in early life illustrates the window of opportunity that the first 1,000 days are and the need to properly meet age-specific food and nutritional requirements.
Growing evidence indicates that the vulnerability to NCDs is largely set during the first 1,000 days. Van der Beek. *Sight and Life* 2018;32(1):46-52.

The experience-expectant, experience-dependent human brain

![Diagram showing synapse formation and pruning over time from 36 weeks gestation to 6 years.](http://america.pink.com)
a unique window of opportunity to nutritionally support growth in the infant and metabolic health of both mother and infant, to reduce NCDs risk
- Flavors passed from mother to fetus through amniotic fluid
- Flavors passed from mother to infant through breast milk
- Breastfed babies accept more easily fruits and vegetables than children who were formula fed
  • However, formula fed infants can end up accepting food low in sugar, salt and bitter tasting if the mothers are advised on repeatedly exposing the infants to them
  • Promoting the consumption of complementary foods low in salt and sugar is likely to have a positive influence on dietary choices, growth and weight outcomes later on in life

Infancy and the toddlerhood periods represent major sensitive periods for the development of food preferences
Familiarization

• Repeatedly offer healthy foods such as vegetables to young children

Associative learning

• Food preferences develop based on the context and psycho-emotional atmosphere in which it’s offered

Observation learning

• Children may also establish food preferences by observing what their caregivers eat
Maternal-child life course obesity cycle

- Maternal cycle
  - Prepregnancy BMI
  - Early childhood obesity risk
  - Gestational weight gain
  - Infancy weight gain rate
  - Post-partum wt retention
  - Suboptimal infant feeding
  - Neonatal predisposition

- Newborn cycle
  - Maternal cycle

More than half of births are to women who begin pregnancy already above a healthy weight (BMI ≥25)

Disparities exist across racial and ethnic groups
Proportion of women meeting pregnancy weight gain recommendations

All women with full-term singleton births

- Above, 48%
- Within, 32%
- Below, 21%

Women beginning pregnancy with Obesity

- Overweight
  - 60%
  - 25%
  - 15%

- Full-term singleton births

CDC National Vital Statistics Reports: Births 2015
In 2018, prevalence was the highest among American Indian or Alaska Native infants (16.1%) and the lowest among Asian or Pacific Islander infants (8.5%).
Among children 12-23 months:
- Fewer than half have eaten a vegetable daily
- 1 in 3 drink a sugar-sweetened beverage daily

By 2-5 years of age, 14% of U.S. children have obesity

Nearly 1 in 5 children under 6 years of age live in food-insecure households
39 million children overweight in lower income countries

Source: UNICEF
https://www.unicef.org/reports/fed-to-fail-child-nutrition
Strongly recommends revamping first food systems

Young children across high-, middle- and low-income countries are consuming ultra-processed foods and drinks on a daily basis

<table>
<thead>
<tr>
<th>Biscuits/cake</th>
<th>Processed bread</th>
<th>Confectionary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Serbia</td>
<td>India</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Ethiopia</td>
<td>Egypt</td>
</tr>
<tr>
<td>Serbia</td>
<td>Australia</td>
<td>Australia</td>
</tr>
<tr>
<td>Mexico</td>
<td>Kyrgyzstan</td>
<td>Nigeria</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Breakfast cereal</th>
<th>Instant noodles</th>
<th>Sugar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Nigeria</td>
<td>Serbia</td>
</tr>
<tr>
<td>Serbia</td>
<td>China</td>
<td>Bangladesh</td>
</tr>
<tr>
<td>China</td>
<td>India</td>
<td>Australia</td>
</tr>
<tr>
<td>Ghana</td>
<td>Mexico</td>
<td>India</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Juice</th>
<th>Sweet drinks</th>
<th>Soft drinks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>Ghana</td>
<td>Nigeria</td>
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<tr>
<td>Sudan</td>
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**Source:** UNICEF [https://www.unicef.org/reports/fed-to-fail-child-nutrition](https://www.unicef.org/reports/fed-to-fail-child-nutrition)

Profound changes in first food systems changes needed
Lack of adequate investments in breastfeeding protection promotion and support globally
Lack of proper food industry marketing regulations globally
The baby food industry’s global influence network of trade associations and other corporate-funded influence organizations, with lines representing membership.

White circles- baby food industry corporations; red- infant nutrition associations; yellow- branding and advertising associations; green- food, beverage and grocery manufacturers associations; brown- general trade associations, e.g., chambers of commerce; blue- dairy industry trade associations; purple- consumer information and industry-funded scientific organizations.
Reframing the early childhood obesity prevention narrative through an equitable nurturing approach

Helen Skouteris\textsuperscript{1,2} | Heidi J. Bergmeier\textsuperscript{1} | Scott D. Berns\textsuperscript{3} | Jeanette Betancourt\textsuperscript{4} | Renée Boynton-Jarrett\textsuperscript{5} | Martha B. Davis\textsuperscript{6} | Kay Gibbons\textsuperscript{7,8} | Rafael Pérez-Escamilla\textsuperscript{9} | Mary Story\textsuperscript{10}

Key messages

- The first 2,000 days, from conception to age 5 years, are crucial for preventing childhood obesity.
- Mother-child dyads function within and are influenced by a broader context of socio-ecological factors involved in promoting the quality of caregiving, including nutrition, across the highly sensitive early stages of child development.
- Childhood obesity prevention must address social and health inequities, including historical and racialized trauma, underpinning links between maternal and early childhood nutrition and the disproportionate prevalence of obesity among disadvantaged populations.
- A holistic life course approach to childhood obesity prevention that includes an equitable developmental perspective is needed.
Nurturing Care

• Comprises all essential elements for a child to grow and develop
  • Health Care
  • Nutrition
  • Responsive Caregiving
  • Protection and Security
  • Opportunities to learn and discover

Requires stable environments where children receive love and stimulation responsive to their developmental stages

Nurturing care should envelop children since beginning of life
ADEQUATE NUTRITION
Components of nurturing care
GOOD HEALTH
OPPORTUNITIES FOR EARLY LEARNING
SECURITY AND SAFETY
RESPONSIVE CAREGIVING
Adequate nutrition during the first 1,000 days:

- Provides the essential building blocks for proper brain development, healthy growth and a strong immune system
- Strongly impacts a child’s ability to grow, learn and thrive
- Strongly impacts national development

The first 1000 days are the foundation of a person’s lifelong health, including social, behavioral and cognitive development and the prevention of obesity and chronic diseases

RCTs in high-income countries have consistently shown that responsive parenting approaches improve feeding behaviors and may reduce the risk of early childhood overweight (Perez-Escamilla, Lott, Segura-Pérez et al. (2017))

Responsive Feeding: Principles and Applications
What is Responsive Feeding?

RF refers to ‘feeding practices that encourage the child to eat autonomously and, in response to physiological and developmental needs, which may encourage self-regulation in eating and support cognitive, emotional, and social development’

(adapted from: Pérez-Escamilla, Segura-Pérez, & Hall Moran, 2019)
Parental Feeding Styles?

Responsive Feeding Framework

Adapted from: Perez-Escamilla et al. (2021)
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8178105/pdf/nzab076.pdf
Responsive feeding recommendations

- Feed infants directly and assist older children when they feed themselves, being sensitive to their hunger and satiety cues.
- Feed slowly and patiently, and encourage children to eat, but do not force them.
- If children refuse many foods, experiment with different food combinations, tastes, textures, and methods of encouragement.
- Minimize distractions during meals if the child loses interest easily.
- Remember that feeding times are periods of learning and love—talk to children during feeding, with eye contact.

The way forward
Next Steps in Obesity Prevention: Altering Early Life Systems To Support Healthy Parents, Infants, and Toddlers

Philip R. Nader, M.D.,¹ Terry T.-K. Huang, Ph.D., M.P.H.,² Sheila Gahagan, M.D., M.P.H.,¹ Shiriki Kumanyika, Ph.D., M.P.H.,³ Ross A. Hammond, Ph.D.,⁴ and Katherine Kaufer Christoffel, M.D., M.P.H.⁵
A community systems framework of early intervention of childhood obesity with feedbacks between individuals and the environment

1. Urban planning, housing, transportation, parks and recreation, food availability, access, financing and marketing, and education

2. Media and information, housing segregation, industry practices, labor, incentives

3. Healthcare, financing, delivery mode

4. Interplay between social and physical environment

5. Social and physical environments enable or constrain family and individual behavior

5. Individuals can also shape their environment

8. Individual empowerment and community mobilization to effect policy change.

7. Healthcare providers’ behaviors and practices, policies, and as advocates for social and environmental changes to promote healthy lifestyles

Nader et al. (2012)
Early Life Systems: Key Behavior Intervention Targets

**Pregnancy**
- Engage in early prenatal, post-natal, and inter-conceptual care
- Achieve healthy gestational weight gain
- Post-partum return towards a healthy weight
- Prepare to breastfeed

**Infancy**
- Initiate and maintain breast feeding
- Appropriate introduction of other beverages and foods
- Support healthy sleep
- Support for appropriate soothing, not always using food
- Support motor development
- Avoid excessive weight gain
- Avoid screen time

**Toddler Years**
- Active play at least one hour per day, limitation of screen time
- Consumption of healthy foods, snacks, and unsweetened beverages in appropriate portion sizes
- Healthy nutrition and activity standards in childcare settings
- Limit screen time

Nader et al. (2012)
“The incorporation of...responsive feeding principles into dietary guidelines has a strong potential to enhance their impact on early childhood development outcomes for infants and young children...”
Responsive feeding: Key for nurturing care

Responsive parenting is a caregiving style expected to foster the development of self-regulation and promote optimal cognitive, social, and emotional development from the beginning of life. Critical dimensions of responsive parenting include feeding, sleeping, soothing, and play/physical activity; all are highly interconnected with each other. Responsive parenting interventions have been shown to have a beneficial impact on child feeding behaviors and weight outcomes. An expert panel convened by Healthy Eating Research, a national program of the Robert Wood Johnson Foundation, developed evidence-based guidelines for feeding infants and toddlers during the first 2 years of life. These responsive feeding guidelines were developed after an evidence-based consensus methodology. The guidelines address the periods of gestation, birth to 6 months, more than 6 months to 1 year, and more than 1 to 2 years. Fundamental principles of the guidelines include hunger and satiety cues, developmental milestones that indicate readiness for introduction of solids, and responsive approaches to repeatedly expose the young child to a variety of healthy foods and age-appropriate textures in the context of a stable and predictable nurturing environment. Nutr Today. 2017;52(5):223–231

Responsive Feeding

Responsive feeding is a term used to describe a feeding style that emphasizes recognizing and responding to the hunger or fullness cues of an infant or young child. Responsive feeding helps young children learn how to self-regulate their intake.

See Table 2-2 for some examples of signs a child may show for hunger and fullness when he or she is a newborn through age 5 months, and signs a child may start to show between age 6 through 23 months.

It is important to listen to the child’s hunger and fullness cues to build healthy eating habits during this critical age. If parents, guardians, or caregivers have questions or concerns, a conversation with a healthcare provider will be helpful.

For more information on signs a child is hungry or full, see: cdc.gov/nutritioninfantandtoddlernutrition/mealtimesigns-your-child-is-hungry-or-full.html. More information on infant development skills, hunger and satiety cues, and typical daily portion sizes is available at wicworks.fns.usda.gov/sites/default/files/media/document/Infant_Nutrition_and_Feeding_Guide.pdf

### Table 2-2

**Signs a Child is Hungry or Full**

<table>
<thead>
<tr>
<th>Birth Through Age 5 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>A child may be hungry if he or she:</td>
</tr>
<tr>
<td>- Puts hands to mouth.</td>
</tr>
<tr>
<td>- Turns head toward breast or bottle.</td>
</tr>
<tr>
<td>- Puckers, smacks, or licks lips.</td>
</tr>
<tr>
<td>- Has clenched hands.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Age 6 Through 23 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>A child may be hungry if he or she:</td>
</tr>
<tr>
<td>- Reaches for or points to food.</td>
</tr>
<tr>
<td>- Opens his or her mouth when offered a spoon or food.</td>
</tr>
<tr>
<td>- Gets excited when he or she sees food.</td>
</tr>
<tr>
<td>- Uses hand motions or makes sounds to let you know he or she is still hungry.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Birth Through Age 5 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>A child may be full if he or she:</td>
</tr>
<tr>
<td>- Closes mouth.</td>
</tr>
<tr>
<td>- Turns head away from breast or bottle.</td>
</tr>
<tr>
<td>- Relaxes hands.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age 6 Through 23 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>A child may be full if he or she:</td>
</tr>
<tr>
<td>- Pushes food away.</td>
</tr>
<tr>
<td>- Closes his or her mouth when food is offered.</td>
</tr>
<tr>
<td>- Turns his or her head away from food.</td>
</tr>
<tr>
<td>- Uses hand motions or makes sounds to let you know he or she is still full.</td>
</tr>
</tbody>
</table>
A Responsive Feeding Intervention Increases Children’s Self-Feeding and Maternal Responsiveness but Not Weight Gain¹,²

Frances E. Aboud,³* Sohana Shafique,⁴ and Sadika Akhter⁵ J. Nutr. 139: 1738–1743, 2009

Original Article

Effectiveness of a community-based responsive feeding programme in rural Bangladesh: a cluster randomized field trial

Maternal and Child Nutrition (2008), 4, pp. 275–286

Frances E. Aboud⁶*, Anna C. Moore¹ and Sadika Akhter²

Strongly recommends responsive feeding and the rest of the nurturing care practices as part of infant and young child feeding

Source:
Guidelines included generally consistent messages about several RF behaviors, such as the importance of encouraging self-feeding and self-regulation in infants/toddlers. However, they did not present the recommendations as part of a cohesive RF interdisciplinary framework.

Moving forward, evidence-based RF recommendations should be routinely incorporated and identified in dietary guidance for IYCF based on a consensus definition of RF. Implementation science research to improve our understanding of how best to disseminate and implement RF-related recommendations across settings (e.g., home and early care and education centers) while taking the social determinants of health into account.

Can a pragmatic responsive feeding scale be developed and applied globally?

Rafael Pérez-Escamilla | Sofia Segura-Pérez

Key messages

- A recent study conducted in rural Cambodia validated an 8-item responsive feeding (RF) scale through repeated direct feeding observations of 6 to 23 months old infants.
- Similar research needs to be conducted in other settings to explore developing a valid pragmatic RF scale for use in community studies and population surveys globally.
- It is important to reach consensus on definition of RF to help move the field forward.

Measuring Responsive Feeding in Sri Lanka: Development of the Responsive Feeding Practices Assessment Tool

Prabhath Pallewaththa, BSc, MBA; Thilini C. Agampodi, MBBS, MSc, MPH, PhD; Suneth B. Agampodi, MBBS, MSc, MPH, MD; Rafael Pérez-Escamilla, MS, PhD; Sisira Siribaddana, MBBS, MD

What is a fair society?

‘...one in which a new entrant would be happy to be born even though he did not know his social position ahead of time.’

John Rawls
1921-2002

www.news.harvard.edu/.../2005/05.19/24-mm.html
Preventing and management of childhood obesity requires equitable nurturing care embedded in the social-ecological model.
Thank you!