

# Shaping Parental Choices During Renourishment of a Child With Restrictive Eating Using an Interactive Grocery Store

## Statement of Problem

Anorexia nervosa is a serious brain-based illness with typical onset in adolescence. A hallmark of the illness is weight below what is normal for that person's sex, height and developmental trajectory. Research indicates that early and rapid weight gain in treatment for anorexia is key for increased possibility of remission, making the renourishment stage crucial to this process.

There is currently only one evidence-based treatment for anorexia in adolescents: Family Based Treatment (FBT). The first phase of FBT focuses on parents leading the renourishment process at home to promote weight gain in the adolescent. Adolescents recovering from anorexia are hypermetabolic (i.e., their metabolism speeds up) and need enough nutrition to repair and restore their body. On average, adolescents need at least 3,600 calories a day—some adolescents need closer to or even over 5,000 calories a day. Parents have reported feeling overwhelmed by grocery shopping to meet the nutritional needs for their child because it is unlike anything they have ever done before. There is no current electronic aid to support parents in shifting their approach to grocery shopping.

## Description

Open Science Open Grocery (OSOG) is a free and accessible mock online grocery store that can be modified to enhance nutritional education that is currently provided to parents during their child's hospital stay. From the participants' point of view, OSOG looks like any other online grocery store—it contains over 10,000 products from American grocery stores including produce, meats, frozen items and non-perishables. Each item has a price, description and nutritional information, all of which are visible to participants. On the research side, we are able to assess a user's cart activity, interaction with nutritional labels, total shopping time and the macronutrient content of food "purchased." In this feasibility and acceptability study, our team will modify OSOG to be used in the context of eating disorder treatment to help facilitate a rapid shift in parents' decision making around food, which we hope will lead to rapid weight gain in their child.

We asked Parent Research Partners (PRPs) who have all had a child recover from anorexia to review OSOG with a study coordinator to share their impressions. Based on feedback from PRPs, we are adding multiple features to the OSOG app, including caloric density scale for each product, pop-ups to suggest calorically dense pairings to products, and new food additions that have been found to be helpful during renourishment.

In the pilot phase of this study, we recruited parents who currently have a child with anorexia who is hospitalized at CHOP and on the Nutritional Rehabilitation Pathway. All parents were given the modified OSOG after nutritional teaching in the hospital. We followed parents for 4 weeks and collected psychosocial and behavioral measures as well as the child's height and weight to determine rate of weight gain.

## Next Steps

By exploring the use of OSOG as an online shopping tool for parents during renourishment, we hope to support parents during the early phases of treatment and determine how best to implement the modified OSOG into our nutritional teachings in the hospital to ease the transition from inpatient to outpatient care. Data from this project will inform a number of mHealth supports for families early in the treatment of anorexia nervosa.

*This project page was last updated in February 2022.*

## **Suggested Citation**

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## **PolicyLab Leads**

### **Alix Timko PhD**

#### **Faculty Member**

Dr. C. Alix Timko is a faculty member at PolicyLab at Children's Hospital of Philadelphia (CHOP) and a clinician-scientist in the Eating Disorder Assessment and Treatment Program at CHOP. She also serves as the faculty lead for PolicyLab's Adolescent Health and Well-being Portfolio. Dr. Timko is an expert in the area of eating behavior in children and adolescents, the use of acceptance-based behavioral therapy in treating eating disorders and in the presentation of disordered eating in boys.

Dr. Timko is a former National Institutes of Mental Health-funded Scholar in the "Building Interdisciplinary Research Careers in Women's Health" (BIRCWH) program. The goal of this K12 program is to extend her expertise into the area of neuroscience, specifically in behavioral neuroendocrinology and the use of neuroimaging to study sex as a variable in eating disorders. She is focusing on neurocognition, reward circuitry and the roles they play in the development and progression of anorexia nervosa. She is also interested in the role of neuroinflammation in eating disorders. Ultimately, she is striving to understand how malnutrition during this sensitive period impacts brain development, and to identify biomarkers that predict risk or resilience for a protracted course of illness. This research will inform the development of novel, more effective interventions for this population.

Clinically, Dr. Timko is interested in investigating how best to use Cognitive Remediation Therapy (CRT) with adolescents. Her work has focused on whether or not this adjunctive outpatient treatment for anorexia can be initiated in the acute medical inpatient setting, whether or not it is best delivered to adolescents or to their parents, and what aspects of CRT are most impactful for change. Dr. Timko also conducts research on the use of Acceptation and Commitment Therapy (ACT) in the treatment of eating disorders in youth. Her work has used an ACT-informed family treatment and using ACT after standard treatment to help reduce

risk of relapse. Through these studies, Dr. Timko will improve both the acute treatment and long-term prognosis of adolescents who suffer with anorexia.

Dr. Timko received her PhD from Drexel University.



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## Team

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## Funders of Project

Children's Hospital of Philadelphia, Foerderer Award

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