

PROJECT TITLE

A feasibility and acceptability study of elevated protein dietary intake for children diagnosed with Autism Spectrum Disorder (ASD) while on psychotropic medication

TEAM MEMBERS

Co-Principal Investigators – Lorry Chen (RD), Evdokia Anagnostou (MD)
Co-Investigators – Cathy Petta RN, Jessica Brian (Psychologist), Susan Cosgrove (Family Leader), Joseph Telch (MD)
Research Assistant – Austina Mui (RD)

BACKGROUND

- Approximately 30-60% of children with ASD are prescribed at least one psychotropic medication and 10% prescribed more than three medications simultaneously¹
- Weight gain is one of the known adverse effects of atypical antipsychotic medications¹⁻⁴
- To date, no established treatments or preventative measures have been developed to combat psychotropic-induced weight gain (PIWG)¹
- Based on clinical experience in Holland Bloorview's Nutrition Clinic, controlled energy intake combined with elevated protein intake (CEEP) may be an effective and practical strategy for limiting weight gain
- Potential beneficial outcomes associated with elevated protein intake include⁵
 - a) Increased satiety (feeling full)
 - b) Increased thermogenesis (food groups that burn more calories than they consume during digestion, boosting our metabolism as they process the food)
 - c) Maintenance or growth of fat-free mass (muscle)

OBJECTIVE

To evaluate the feasibility (study designs, methods, processes) and acceptability (client/family satisfaction, perceived effectiveness) of CEEP in children and youth with ASD taking prescribed atypical antipsychotic medication

STUDY DESIGN

- Non-randomized pilot study
- 10 week intervention with CEEP
- Initial / baseline visit
 - Anthropometric measurements
 - RD works collaboratively with participant and parent/guardian to increase protein intake to 20-30% of total daily caloric intake and ensure controlled energy
- Telephone follow-up
 - Weeks 2, 5, 8 and 10
 - RD monitors tolerance, assesses progress and provides support in following CEEP
- Post-intervention visit
 - Anthropometric measurements
 - RA interviews participant and parent/guardian

Controlled energy with elevated protein intake may be an effective and practical strategy to limit weight gain associated with atypical antipsychotic medication use in children with Autism Spectrum Disorder



STUDY SAMPLE

- *Inclusion criteria:*
 - ASD diagnosis
 - Taking 1 or more atypical antipsychotic medication
 - Active client in Psychopharmacology Clinic
 - Accepts all food (*SOS Feeding Approach: Picky vs. Problem Eaters, Kay Toomey 2017*)
- *Exclusion criteria:*
 - Contradiction to elevated protein intake
 - Significant food aversions
 - Food allergies

OUTCOME MEASURES

- Pre (baseline) and post-intervention 3-days food intake record
 - Estimate caloric and macronutrient (protein, carbohydrate, fat) intake
 - Evaluate participant success in consistently implementing elevated protein dietary changes
- Pre (baseline) and post-intervention anthropometric measurements
 - Assess the effect of CEEP on nutritional status
- Post-intervention interview (semi-structured) with participants and parents/guardians
 - Gain perspective on successful strategies and barriers to consistently implement dietary changes
 - Identify themes in the feasibility (study designs, methods) and acceptability (client/family satisfaction, perceived effectiveness) of implementing dietary changes

ANALYSIS & RESULTS

- As of June 2019:
 - 8 consented, 6 eligible based on study protocol
 - 4 enrolled into study
 - 3 completed 10-week dietary intervention and post-intervention interview
- Qualitative and quantitative analyses in progress

a) Quantitative analysis

- ESHA Nutrition Software to assess 3-days food record – average caloric and macronutrient intake
- Height and weight to calculate BMI – plot on BMI for age and gender specific CDC (2000) growth charts to assess nutritional status
- Skinfolds (triceps, subscapular) – compare against gender- and age-specific standards
- Study feasibility – recruitment rates, retention rates, completion rates

b) Qualitative analysis

- Transcribe audio-recordings verbatim with anonymization of personal data
- Use thematic and constant comparative analysis – identify themes, patterns and relationships among ideas and concepts
- Assess comments for frequency, specificity, emotion, extensiveness, and major themes in feasibility - study design/process, resources available, accessibility and acceptability of implementing proposed dietary changes