The Australian Society for Medical Research NSW Scientific Meeting

Instructions for Abstract Submission

The selection of contributions for scientific sessions will depend on the quality of the abstract submitted. Authors may be the presenting author on one communication only.

SIZE AND PRESENTATION:

- Format: A4 portrait with top, left and right hand margin at 2.5 cm
- Font: Arial 11pt with justified paragraph and single line spacing
- Title: Bold Sentence case (maximum 20 words)
- Authors: List all authors, with Presenting Author underlined
- Affiliations: In the order of "Department, Institute, City, State and Country"

CONTENT:

- Maximum 300 words excluding title, author names and affiliations
- Use the following headings: **Rationale**, **Objective**, **Methods & Results**, and **Conclusions**
- Limit the use of abbreviations, and define them at first mention in the abstract
- Do not cite references in the abstract

TO BE CONSIDERED FOR AWARDS:

- Provide a lay description of the study (maximum 50 words) under the heading **Lay Description**. This description is not part of the abstract word limit
- Agree to media participation
- Be ASMR members or have applied for membership

WHEN YOU SUBMIT:

- Save the file as a Microsoft Word document (PDF files not accepted)
- Use the filename "Lastname_Initials", e.g. Smith_AB
- Upload the file according to the instructions on the website

Example

Effects of dietary fat profile on gut permeability and microbiota and their relationships with metabolic changes in mice

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Rationale: Dietary fat profile modifies metabolic outcomes including adiposity, insulin action, and inflammatory profile. There is evidence for causal relationships between diet, gut dysfunction, and deleterious metabolic sequelae.

Objective: To distinguish the effects of dietary fat profile on gut parameters and their relationships with metabolic changes and to determine the capacity of n-3 fatty acids to modify gut variables in the context of diet-induced metabolic dysfunctions.

Methods & Results: Mice received control or high-fat diets emphasizing saturated (HFD-sat), n-6 (HFD-n6), or n-3 (HFD-n3) fatty acids for 8 weeks. In another cohort, mice that were maintained on HFD-sat received n-3-rich fish oil or resolvin D1 supplementation. HFD-sat and HFD-n6 induced similar weight gain, but only HFD-sat increased index of insulin resistance (HOMA-IR), colonic permeability, and mesenteric fat inflammation. Hydrogen sulfide-producing bacteria were one of the major groups driving the diet-specific changes in gut microbiome, with the overall microbial profile being associated with changes in body weight, HOMA-IR, and gut permeability. In mice maintained on HFD-sat, fish oil and resolvin D1 restored barrier function and reduced inflammation in the colon but were unable to normalize HOMA-IR.

Conclusions: Different dietary fat profiles led to distinct intestinal and metabolic outcomes that are independent of obesity. Interventions targeting inflammation successfully restored gut health but did not reverse systemic aspects of diet-induced metabolic dysfunction, implicating separation between gut dysfunctions and disease-initiating and/or –maintaining processes.

Lay description: We determined the effects of different types of dietary fat (saturated, n-6 and n-3 polyunsaturated) on the gut and their relationships with health outcomes. In mice fed with a high saturated fat diet, n-3 fatty acids from fish oil improved gut parameters but were unable to reverse insulin resistance.