Perspectives on Nutrition:  
Connecting Food, Health and the Future

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UNDERSTAND VARIABILITY IN RESPONSES TO DIET AND FOOD

1) Genome- Environmental Interactions Across Age Span.

2) Besides Nutrients and Calories, need to Understand Role of Intestinal Bacteria (Microbiome) in Affecting Host’s Metabolic Response.
MICROBIOME

NUTRITION IN AGE RELATED DEMENTIAS
1) Role in Prevention
2) Role in Delaying Disease Progression
3) Role in Improving Response to Therapy
4) Clues: EFAs, Vitamin D, B Vitamins.
   - Flavonoids- How Do These Affect
   - Neural Biochemistry, Brain
   - Inflammation, Brain Function?
Microscopic illustrations of Alzheimer's tissue with plaques and tangles

www.alz.org/braintour

ALZHEIMER’S DISEASE

• 5.4 MILLION Americans
• 6th leading cause of death
• Payment’s for care= $200 billion/year
• Also consider hidden costs of unpaid care, other dementia types.
INVEST IN NUTRITIONAL BIOINFOMATICS

• Incorporate nutritional (dietary, biochemical) data into “omic” databases for longitudinal follow-ups.
• Build sample repositories (blood, urine etc.) so that in depth “after the fact” studies can be carried out (e.g. metabolomic).

50 YEAR OLD FEMALE WITH CHEST PAIN

• PE. BMI= 29 (borderline obese)
• Family history of obesity and heart attacks
• Diet: High fat and empty calories.
• Blood tests: mild elevation in cholesterol, inc BP, decreased HDL.
• Microbiome analysis: inc. firmacutes
• Genome analysis: Apo C will respond to low fat diet with increase in HDL; gene casette: salt sensitive.
• RX: designer prebiotic, low fat and salt diet, lower dose medical therapy.