Current Thinking/Assumptions

- Obesity associated with Cardiovascular Disease (CVD) in many ‘Westernised’ human populations

Critique Assumptions/Explore

- Central Obesity (Metabolic/Degenerative Disease in ‘Westernised’ Humans (Peripheral Fat → Locomotor/ Psychological Issues)

Possible Mechanism

- **Accept More Energy (En) Food Consumed = En In**
  - **Accept Less En Expended in Physical Activity (PA) = En Out**
  - **Accept Fat Gain → MetS, T2DM, CVD & Kidney Liver, Brain Disease & Cancer**
  - **Question More En Food Consumed or other reason? Why? Read / critique**

- **Question Less En Expended in PA/other reason. What? Read/think /critique**

Identify

- **Accept**
  1) Large amount of energy from high En fatty or sugary food.
  2) ‘Bad food choice’ Poor portion control’ of ‘junk (high En) food.
  3) ‘Big Food’ ‘unable’ to be influenced.

- **Accept Humans expending much less En in PA**
  2) ‘Non-specialised’ mammal metabolism all similar
  3) Fat causes CVD via raised blood cholesterol, glucose, ?inflammation.

Investigate/Review

- **Plan**
  1) More studies: energy restriction & PA/diet education funded by processed some from public health money → variable results
  2) More meta-analysis of above → equivocal & no improvement in obesity.

- **Plan**
  1) More pharmaceutical/supplement studies of BP, blood lipids, glucose funded by drug industry → variable results
  2) More meta-analysis of above → no real improvement in fatty liver, T2DM, CV, neuro-degenerative or cancer.

Explore Literature, Critique & Develop Theory

- **Review Science Basics/Initial Conditions**
  1) Human brain/body En ratio is very high, and is unique therefore must have co-adaptations →
  2a) Increase En efficiency/conservation &/or
  2b) Increase energy intake BUT ... ‘Quantum leap’ hypothesis generation = ‘Could unique brain evolution → human specific energy metabolic solutions?’

- **Explore Literature, Critique & Develop Theory**
  1) Review ANY relevant, science literature – human evolution ... new basic & comparative physiology
  2) Humans: Large, developed cortico-limbic-striatal reward & motivation system for acquiring more energy; omnivory; social & technology ‘advances’
  3) Humans:- antioxidant/antitoxicant/repair NRF2 system employs plant micro-nutrients for efficient immune system/ detoxification/longevity; develop/grow slowly; under muscled/overfat physiology.

- **Plan – Hypothesis, Studies & Policy**
  **Hypothesis:** That uncontrolled overeating of energy dense food, (driven by the cortico-limbic-striatal reward system) in situations of plenty, can be managed in humans by non-judgemental addiction techniques, **PLUS** concurrent education, enablement & regulation to increase high micronutrient whole food consumption allowing easier PA, central fat loss & tissue repair → slim, fit & healthy longevity.

  **Studies:** 1) Mathematically model energy human metabolism in obesity with terms determined/added for adequate micronutrient supply

  2) Trial of refined food addiction management by stress management & possibly medication plus concurrent enablement of whole food consumption in obese individuals for resolution of oxidative/xenobiotic stress related central obesity & MetS.

  **Policy Changes:** Control product quality of, & stop indirect subsidies to, ‘Big Food’, support hi-micronutrient/low-additive food production.