

Effects of Starvation – University of Minnesota Starvation Study, Dr. Ancel Keys, 1944

Many of the participants' experiences were the same as those experienced by patients with eating disorders. Although all were psychologically healthy before the study, most experienced significant emotional deterioration as a result of semi-starvation and the refeeding process, often quite severe.

Study details:

- 36 young, healthy, psychologically normal men were selected.
- First 3 months participants ate “normally” while their behavior, personalities and eating patterns were studied in great detail.
- Next 6 months, food was restricted to half previous calorie intake.
- Lost 25% of former body weight, on average.
- Next 3 months, they were gradually refeed (subgroup followed for 9 months).

Important implications for eating disorder treatment (including obesity):

1. Many symptoms perhaps thought to have been specific to anorexia nervosa and bulimia nervosa are actually the result of starvation. These symptoms are not limited to food and weight, but rather involve areas of psychological and social functioning.
2. Humans become more oriented toward food when starved; other pursuits important to the survival of the species (such as social and sexual functioning) become subordinate to the primary drive toward food.
3. Results of this 1944 study challenge the popular and contemporary notion that body weight is easily altered by “willpower,” and demonstrate a human’s strong propensity to defend a particular weight range. Why has this information not been well received by professionals?
4. After months of refeeding, participants gained back, on average, their original weight plus about 10%. Then, over the next 6 months, their weight gradually declined until approaching original weight levels by end of follow-up period.

Observations in study:

Dramatic increase in food preoccupations

- Odd eating behaviors (pushing around plate, weird concoctions, food rituals)
- New obsessions in food, cookbooks, menus
- Spent day planning how, what they would eat

Social and sexual changes

- Withdrawn, isolated
- Decreased sense of humor
- Increased self-criticism
- Loss of interest in sex, returned after 8 months

Binge Eating (frequent consumption of unusually large amounts of food)

- Reported feeling “out of control with food”
- Feelings of guilt and shame following a binge
- These behaviors continued for 6 months

Cognitive Changes

- Impaired concentration
- Impaired alertness
- Impaired comprehension
- Impaired judgment

Emotional and personality changes

- Depression, anxiety, mood swings
- Irritability, anger, apathy
- Hygiene neglect
- Psychotic symptoms

Physical changes

- GI discomfort
- Dizziness, headache, cold
- Hair loss
- Visual & auditory disturbances
- Loss of muscle mass
- Decreased BMR metabolic rate by 40%