

THE EFFECTS OF STARVATION ON HUMAN HEALTH

Dr. Smita Krishnarao Kadwe M.Sc., Ph.D.

V.N.NaikSr. College, Nashik.

ABSTRACT

People become hungry when their blood-glucose levels drop significantly below their setpoint and that they become satisfied after eating, when their blood-glucose levels return to that set point. Most of the research has focused either on chronic starvation at one end or on missing a single meal at the other end. Skipping breakfast affects certain aspects of cognition, such as problem-solving abilities. When food intake ceases, the body enters the starvation. Initially, the body's glycogen stores are used up in about 24 hours. The level of insulin in circulation is low and the level of glucagon is very high. The main means of energy production is lipolysis.

Keywords: blood-glucose levels, starvation, energy production, human health

INTRODUCTION

So many things disturb people's ability to focus on a work for eg. noisy environments, distractions, headaches, , and even some psychological disorders. To some extent, people can control the environmental factors. However, what about internal factors, such as an empty stomach. People cannot increase their ability to focus on the work simply by eating regularly.

Glucostatic theory is very important to understand that how food intake affects the any person. The brain regulates food intake in order to maintain a blood-glucose set point. People become hungry when their blood-glucose levels drop significantly below their setpoint and that they become satisfied after eating, when their blood-glucose levels return to that set point. Because glucose is the brain's primary fuel. Long-term food deprivation means more than two days was associated with depression, irritability, reduced heart rate, and inability to concentrate. Fasting for several days also produced muscular weakness, irritability, and depression. So that we have to focus mainly on how nutrition affects cognition.

Most of the research has focused either on chronic starvation at one end or on missing a single meal at the other end. Skipping breakfast affects certain aspects of cognition, such as problem-solving abilities. Food deprivation ranging from missing a single meal to 24 hours without eating, does not significantly affect cognition. According to some researchers, most of the results so far indicate that cognitive function is not affected significantly by short-term fasting. Specifically, person deprived of food for 24 hours were expected to perform worse on a concentration test than those deprived for 12 hours,

MATERIALS AND METHODS

Starvation is a severe deficiency in caloric energy intake needed to maintain human life. It is the most extreme form of malnutrition. In humans, prolonged starvation can cause permanent organ damage and eventually, death. The basic cause of starvation is an imbalance between energy intake and energy expenditure. In other words, the body expends more energy than it takes in. Although the length of time varies with an individual's percentage of

body fat and general health, one medical study estimates that in adults complete starvation leads to death within 8 to 12 weeks. There are isolated cases of individuals living up to 25 weeks without food. Starvation begins when an individual has lost about 30% of their normal body weight. Once the loss reaches 40% death is almost inevitable.

Biochemistry:

When food intake ceases, the body enters the starvation. Initially, the body's glycogen stores are used up in about 24 hours. The level of insulin in circulation is low and the level of glucagon is very high. The main means of energy production is lipolysis. Gluconeogenesis converts glycerol into glucose and the Cori cycle converts lactate into usable glucose. Two systems of energy enter the gluconeogenesis proteolysis provides alanine and lactate produced from pyruvate, while acetyl CoA produces dissolved nutrients (ketone bodies), which can be detected in urine and are used by the brain as a source of energy.

In terms of insulin resistance, starvation conditions make more glucose available to the brain.

Causes of Starvation:

The causes of starvation may include the following:

Stomach conditions that reduce your absorption of nutrients.

Eating disorders where you restrict calories or make yourself throw up after eating

Lack of food.

Stroke that hampers your ability to chew and swallow food.

Fasting.

Coma.

You can also suffer from starvation if you are not eating the right kinds of food. Eating empty calories most of the day for days in a row such as just snacking on chips, cookies, or candy,

eating fast foods meal after meal, eating too many processed foods and not enough fresh foods may as well cause starvation symptoms to occur.

DISCUSSION

The following are some of the symptoms of starvation:

Changes in Behavior or Mental Status:

The beginning stages of starvation impact your mental status and behaviors. These symptoms show up as irritable mood, fatigue, trouble concentrating, and preoccupation with food thoughts. People with those symptoms tend to be easily distracted and have no energy.

Physical Signs:

As starvation progresses, the physical symptoms set in. The timing of these symptoms depends on age, size, and how healthy you are. It usually takes days to weeks, and includes weakness, fast heart rate, shallow breaths that are slowed, thirst, and constipation. There may also be diarrhea in some cases. The eyes begin to sink in and glassed over. The muscles begin to become smaller. One prominent sign in children is the belly begins to swell. Skin will loosen and turn pale in color.

Weakened Immune System:

Symptoms of starvation may also appear in other areas such as weakened immune system, slow wound healing, and poor response to infection. You may notice rashes on the skin or wounds that don't heal. This is because your body is directing any nutrients available to just keeping organs functioning.

Other symptoms

Other effects of starvation may include:

Gallstones

Irregular or absent periods in women.

The Effects of Starvation on Behavior:

One of the most important benefit in the understanding of eating disorders is the recognition that severe and prolonged dietary restriction can lead to serious physical and psychological complications. Many of the symptoms once thought to be primary features of anorexia nervosa are actually symptoms of starvation. What we know about the biology of weight regulation, what is the impact of weight suppression on the individual? This question is particularly relevant for health professionals who treat eating disorders.

Perhaps the most powerful illustration of the effects of restrictive dieting and weight loss on behavior is an experimental study conducted over 50 years ago and published in 1950 and published in 1950 by Ancel Keys and his colleagues at the University of Minnesota.

Although the individual responses to weight loss varied considerably, the person experienced dramatic physical, psychological, and social changes. In most cases, these changes persisted during the rehabilitation or renourishment phase.

Effect of starvation on brain:

Prolonged semi-starvation produced significant increases in depression, hysteria and different stomach related problems. Most persons experienced periods of severe emotional distress and depression and grew increasingly irritable

Some individuals engaged in self-mutilation (self-harm) some person showed signs of social withdrawal and isolation. Person reported a decline in concentration, comprehension and judgment capabilities

We predicted that the longer people had been deprived of food, the lower they would score on the concentration task,

However, concentration was found to be unaffected by food deprivation where short-term food deprivation did not affect some aspects.

CONCLUSION

The people who work in the field of mental health, many of these symptoms will always found, they are symptoms of anxiety and mood disorders as well as symptoms of eating disorders. It really should not be a surprise to this peoples that the brain's functioning is highly compromised when the body is being starved of food and nutrients. Sometimes eating a diet of highly processed foods, low in nutrients has similar effects. For the individual, prevention consists of they eat plenty of food, varied enough to provide a nutritionally complete diet. Many people, students, working mothers, and those interested in fasting, have to deal with short-term food deprivation, and will contribute to knowledge of the disadvantages, and possible advantages, of skipping meals.

REFERENCES

1. Crumpton, E., Wine, D. B., & Drenick, E. J. (1966). Starvation: Stressor satisfaction? *Journal of the American Medical Association*, 196, 394–396.
2. Green, M. W., Elliman, N. A., & Rogers, P. J. (1995). Lack of effect of short-term fasting on cognitive function. *Journal of Psychiatric Research*, 29, 245–253.
3. Green, M. W., Elliman, N. A., & Rogers, P. J. (1997). The study effects of food deprivation and incentive motivation on blood glucose levels and cognitive function. *Psychopharmacology*, 134, 88–94.
4. Keys, A., Brozek, J., Henschel, A., Mickelsen, O., & Taylor, H. L. (1950). *The biology of human starvation* (Vol. 2). Minneapolis: University of Minnesota Press.
5. Kollar, E. J., Slater, G. R., Palmer, J. O., Docter, R. F., & Mandell, A. J. (1964). Measurement of stress in fasting man. *Archives of General Psychology*, 11, 113–125.
6. *Health and performance* (pp. 1–23). San Diego: Academic Press. Smith, A. P., Kendrick, A. M., & Maben, A. L. (1992). Effects of breakfast and caffeine on performance and mood in the late morning and after lunch. *Neuropsychobiology*, 26, 198–204.