Stealth Forces in Weight Loss

The field of weight loss is like the ancient fable about the blind men and the elephant . Each man investigates a different part of the animal and reports back, only to discover their findings are bafflingly incompatible .

A. The various findings by public-health experts, physicians, psychologists, geneticists, molecular biologists, and nutritionists are about as similar as an elephant's tusk is to its tail. Some say obesity is largely predetermined by our genes and biology; others attribute it to an overabundance of fries, soda, and screen-sucking; still others think we're fat because of viral infection, insulin, or the metabolic conditions we encountered in the womb. "Everyone subscribes to their own little theory," says Robert Berkowitz, medical director of the Center for Weight and Eating Disorders at the University of Pennsylvania School of Medicine. We're programmed to hang onto the fat we have, and some people are predisposed to create and carry more fat than others. Diet and exercise help, but in the end the solution will inevitably be more complicated than pushing away the plate and going for a walk. "It's not as simple as 'You're fat because you're lazy' says Nikhil Dhurandhar, an associate professor at Pennington Biomedical Research Center in Baton Rouge. "Willpower is not a prerogative of thin people. It's distributed equally."

B. Science may still be years away from giving us a miracle formula for fat-loss. Hormone leptin is a crucial player in the brain's weight-management circuitry. Some people produce too little leptin; others become desensitised to it. And when obese people lose weight, their leptin levels plummet along with their metabolism. The body becomes more efficient at using fuel and conserving fat, which makes it tough to keep the weight off. Obese dieters' bodies go into a state of chronic hunger, a feeling Rudolph Leibel, an obesity researcher at Columbia University, compares to thirst. "Some people might be able to tolerate chronic thirst, but the majority couldn't stand it", says Leibel. "Is that a behavioural problem – a lack of willpower? I don't think so."

C. The government has long espoused moderate daily exercise – of the evening-walk or take-the-stairs variety – but that may not do much to budge the needle on the scale. A 150 -pound person burns only 150 calories on a half-hour walk,

LIVEWORKSHEETS

the equivalent of two apples. It's good for the heart, less so for the gut. "Radical changes are necessary," says Deirdre Barrett, a psychologist at Harvard Medical School and author of Waistland. "People don't lose weight by choosing the small fries or taking a little walk every other day." Barrett suggests taking a cue from the members of the Nation Weight Control Registry (NWCR), a self-selected group of more than 5,000 successful weight-losers who have shed diets an average 66 pounds and kept it off 5.5 years. Some registry members lost weight using low-carb diets; some went low-fat; others eliminated refined foods. Some did it on their own; others relied on counselling. That said, not everyone can lose 66 pounds and not everyone needs to. The goal shouldn't be getting thin, but getting healthy. It's enough to whittle your weight down to the low end of your set range, says Jeffrey Friedman, a geneticist at Rockefeller University. Losing even 10 pounds vastly decreases your risk of diabetes, heart disease, and high blood pressure. The point is to not give up just because you don't look like a swimsuit model.

D. The negotiation between your genes and the environment begins on day one. Your optimal weight, written by genes, appears to get edited early on by conditions even before birth, inside the womb. If a woman has high blood-sugar levels while she's pregnant, her children are more likely to be overweight or obese, according to a study of almost 10,000 mother-child pairs. Maternal diabetes may influence a child's obesity risk through a process called metabolic imprinting, says Teresa Hillier, an endocrinologist with Kaiser Permanente's Center for Health Research and the study's lead author. The implication is clear: Weight may be established very early on, and obesity largely passed from mother to child. Numerous studies in both animals and humans have shown that a mother's obesity directly increases her child's risk for weight gain. The best advice for moms-to-be: Get fit before you get pregnant. You'll reduce your risk of complications during pregnancy and increase your chances of having a normal-weight child.

E. It's the $64,000 question: Which diets work? It got people wondering: Isn't there a better way to diet? A study seemed to offer an answer. The paper compared two groups of adults: those who, after eating, secreted high levels of insulin, a hormone that sweeps blood sugar out of the bloodstream and promotes its storage as fat, and those who secreted less. Within each group, half were put on a low-fat diet and half on a low-glycemic-load diet. On average, the low-insulin-secreting group fared the same on both diets, losing nearly 10 pounds in the first six months — but they gained

LIVEWORKSHEETS

about half of it back by the end of the 18 -month study. The high-insulin group didn't do as well on the low-fat plan, losing about 4.5 pounds, and gaining back more than half by the end. But the most successful were the high-insulin-secretors on the low-glycemic-load diet. They lost nearly 13 pounds and kept it off.

F. What if your fat is caused not by diet or genes, but by germs — say, a virus? It sounds like a sci-fi horror movie, but research suggests some dimension of the obesity epidemic may be attributable to infection by common viruses, says Dhurandhar. The idea of "infect-obesity" came to him 20 years ago when he was a young doctor treating obesity in Bombay. He discovered that a local avian virus, SMAM-1 , caused chickens to die, sickened with organ damage but also, strangely, with lots of abdominal fat. In experiments, Dhurandhar found that SMAM-1 -infected chickens became obese on the same diet as uninfected ones, which stayed svelte.

G. He later moved to the U.S. and onto a bona fide human virus, adenovirus 36 (AD-36). In the lab, every species of animal Dhurandhar infected with the virus became obese — chickens got fat, mice got fat, even rhesus monkeys at the zoo that picked up the virus from the environment suddenly gained 15 percent of their body weight upon exposure. In his latest studies, Dhurandhar has isolated a gene that, when blocked from expressing itself, seems to turn off the virus's fattening power. Stem cells extracted from fat cells and then exposed to AD-36 reliably blossom into fat cells — but when stem cells are exposed to an AD-36 virus with the key gene inhibited, the stems cells don't differentiate. The gene appears to be necessary and sufficient to trigger AD-36-related obesity, and the goal is to use the research to create a sort of obesity vaccine.

Question 27 - 31

*Reading Passage has seven sections, A-G. Which section contains the following information? Write the correct letter, A-G, in boxes **27-31** on your answer sheet.*
***NB** You may use any letter more than once.*

27. evaluation on the effect of weight loss on different kind of diets

28. an example of research which includes the relatives of the participants

LIVEWORKSHEETS

29. an example of a group of people who did not regain weight immediately after weight loss

30. long term hunger may appear to be unacceptable to most of the participants during the period of losing weight program

31. a continuous experiment may lead to a practical application besides diet or hereditary resort

Question 32 - 36

*Look at the following researchers and the list of findings below. Match each researcher with the correct finding. Write the correct letter in boxes **32-36** on your answer sheet.*

NB You may use any letter more than once

32. A person's weight is predetermined by the interaction of his/her DNA and the environment

33. Pregnant mothers who are overweight may risk their fetus in gaining weight.

34. The aim of losing weight should be keeping healthy rather than being attractive.

35. Small changes in lifestyle will not help in reducing much weight.

36. Researchers are divided into different groups with their own point of view about weight loss.

List Of Researchers

A Robert Berkowitz

B Rudolph Leibel

C Nikhil Dhurandhar

D Deirdre Barrett

E Jeffery Friedman

F Teresa Hillier

Question 37 - 40

*Complete the summary below. Choose **NO MORE THAN ONE WORD** from the passage for each answer.Write your answers in boxes **37–40** on your answer sheet.*

LIVEWORKSHEETS

In Bombay Clinic, a young doctor who came up with the concept 'infectobesity' believed that the obesity is caused by a kind of virus. For years, he conducted experiments on **37……** Finally, later as he moved to America, he identified a new virus named **38……** which proved to be a significant breakthrough inducing more weight. Although there seems no way to eliminate the virus still now, a kind of **39……** can be separated as to block the effectiveness of the virus. In the future, the doctor future is aiming at developing a new **40……** which might effectively combat against the virus.

LIVEWORKSHEETS