

Motivation and Emotion

KEY TERMS

Motivations	Maslow's hierarchy of needs	Management theory
Instincts	Self-actualization	Approach-approach conflict
Drive reduction theory	Lateral hypothalamus	Avoidance-avoidance conflict
Need	Ventromedial hypothalamus	Approach-avoidance conflict
Drive	Set-point theory	James-Lange theory of emotion
Primary drives	Bulimia	Cannon-Bard theory of emotion
Secondary drives	Anorexia	Two-factor theory
Homeostasis	Obesity	General adaptation syndrome (GAS)
Arousal theory	Achievement motivation	
Yerkes-Dodson law	Extrinsic motivators	
Opponent-process theory of motivation	Intrinsic motivators	
Incentives		

OVERVIEW OF MOTIVATION AND EMOTION

In my psychology class, I often ask students at the beginning of the course why they wanted to take psychology. One of the most common replies is "Because I wanted to figure out why people do what they do." Motivation theories address this question directly. Motivations are feelings or ideas that cause us to act toward a goal. Some motivations are obvious and conscious, but some are more subtle. In this chapter, we will review the connections between physiology and motivation, general motivation theories, and specific examples of motivation in hunger and sex. Finally, we will review the psychological research and theories about emotion and stress that are closely related to motivation theory.

THEORIES OF MOTIVATION

If you have pets, you know that different animals are born with instincts, which are automatic behaviors performed in response to specific stimuli. Your cat did not

have to learn how to clean itself, it was born with this instinct. When Darwin's theory of natural selection was published, many psychologists unsuccessfully tried to explain all human behaviors through instincts. Many ethologists, researchers who study animal behavior in a natural environment, examine the role evolution plays in human thought and behavior. They look for the evolutionary advantages of persistent human behaviors. While psychologists debate whether humans are born with any instincts, they agree that our behavior is also motivated by other biological and psychological factors.

Drive Reduction Theory

One early theory about how our physiology motivates us was drive reduction theory, the theory that our behavior is motivated by biological needs. A need is one of our requirements for survival, such as food, water, or shelter. A drive is our impulse to act in a way that satisfies this need. If, for example, you wake up late and skip breakfast, your body has a need for food that is not satisfied. This need creates a drive, hunger, and this drive causes you to get a candy bar from the vending machines in order to satisfy the need. Our body seeks *homeostasis*, a balanced internal state. When we are out of homeostasis, we have a need that creates a drive. Drives can be categorized in two ways: primary drives and secondary drives. *Primary drives* are biological needs, like thirst. *Secondary drives* are learned drives. For instance, we learn that resources like money can get us food and water to satisfy our primary drives. However, *drive reduction theory* cannot explain all our motivations. Sometimes, we are motivated to perform behaviors that do not seem connected with any need or drive, primary or secondary. One of my cousins has always been motivated by speed and excitement. He made sure his first car was as fast as anyone else's, he went into the Air Force for the opportunity to fly the fastest planes in the world, and he liked to drag race motorcycles in amateur races. These activities can be risky and seem to violate biological explanations for motivation. Why does anyone go skydiving or ride a roller coaster? Where do these motivations come from?

Arousal Theory

Some motivations that seem to violate biological theories of motivation can be explained by arousal theory, which states that we seek an optimum level of excitement or arousal. This arousal level can be measured by different physiological tests. Each of us has a different need for excitement or arousal, and we are motivated by activities that will help us achieve this level. People with high optimum levels of arousal might be drawn to high-excitement behaviors, while the rest of us are satisfied with less exciting and less risky activities. In general, most of us perform best with an optimum level of arousal, although this varies with different activities. We might perform well at an easy task with a very high level of arousal, but the same high level of arousal would prevent us from performing well on a difficult task (this concept is similar to *social facilitation*, see Chapter 14). This relationship is called the *Yerkes-Dodson law* after the researchers who first investigated the concept in animals, and is graphed in Figure 8.1.

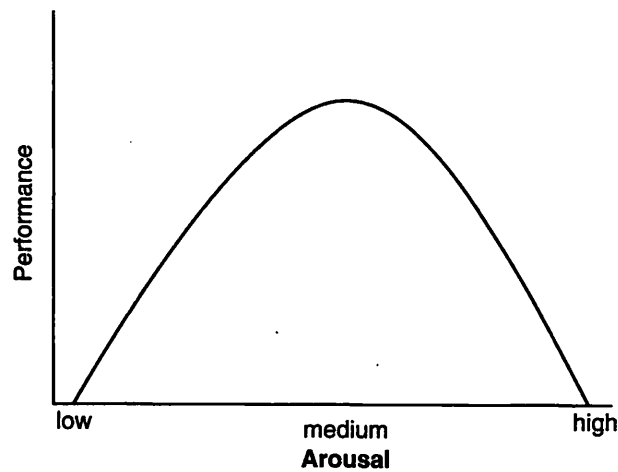


Figure 8.1. The Yerkes-Dodson law.

Another theory of motivation, which is similar in some ways to the arousal theory, is the opponent-process theory of motivation. This theory is often used to explain addictive behaviors. The theory states that people are usually at a normal, or *baseline*, state. We might perform an act that moves us from the baseline state, such as smoking a cigarette. These acts may be initially pleasurable (because nicotine is a stimulant and it makes us feel a good “buzz”), but the theory states that we eventually feel an *opponent process*, meaning a motivation to return to our baseline, neutral state. Smokers may tire of the jittery feeling they get when smoking and try to reduce the number of cigarettes they smoke. But with physically addictive substances, we also experience *withdrawal* (see Chapter 5, States of Consciousness), and the discomfort of the withdrawal state moves us away from our neutral baseline. A smoker might feel uncomfortable without nicotine in her or his system. So this state creates a motivation to return to the baseline state of feeling all right, creating a desire to smoke more cigarettes to return to a state of feeling normal.

Incentive Theory

Sometimes, behavior is not pushed by a need, it is pulled by a desire. *Incentives* are stimuli that we are drawn to due to learning. We learn to associate some stimuli with rewards and others with punishment, and we are motivated to seek the rewards. For example, you may learn that studying with friends is fun but does not produce the desired results around test time, so you are motivated to study alone to get the reward of a good test score.

Maslow's Hierarchy of Needs

Psychologist Abraham Maslow pointed out that not all needs are created equal. He described a hierarchy of needs (see Fig. 8.2) that predicts which needs we will be motivated to satisfy first. Maslow predicted that we will act to satisfy biological needs like survival and safety. Then we will act to satisfy our emotional needs like love and self-esteem. Finally, once the previous goals have been met, we will want to attain our life goals like satisfaction and *self-actualization*, a need to fulfill our

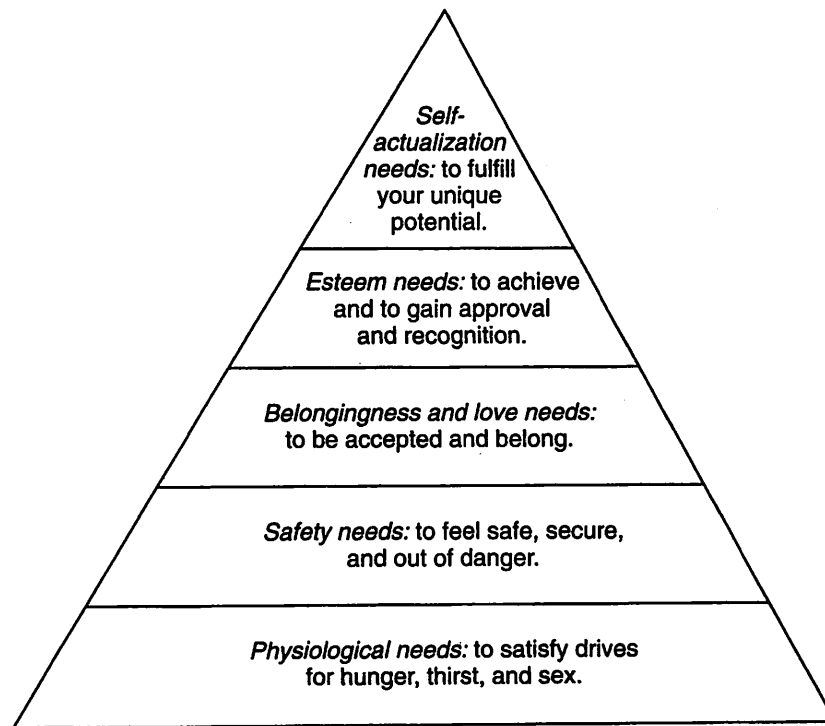


Figure 8.2. Maslow's hierarchy of needs.

unique potential as a person. The more basic needs must be met before moving on to the next level. Maslow's theory makes intuitive sense, but some common human behaviors seem to violate the theory. How would the hierarchy of needs explain a student going without heat or a phone in her or his apartment in order to pay for books for school? The student who stood in front of the tank in Tiananmen Square was definitely motivated to put other needs above survival.

HUNGER MOTIVATION

Some human behaviors appear to be deceptively simple. Why do we become hungry? Our bodies need food! However, we know the relationship is not that simple. Some people eat even when their body has enough food, and some people do not eat when their body needs nourishment. Even a seemingly simple motivation such as hunger involves several biological, psychological, and social factors.

Biological Basis of Hunger

Several biological cues create a feeling of hunger. Researchers inserted balloons into participants' stomachs. By inflating and deflating the balloons, they were able to determine that we report feeling hungry when our stomach is empty and contracts and full when our stomach feels full.

Our brain also plays a role in the feeling of hunger. The hypothalamus (see Fig. 3.3, page 83) monitors and helps to control body chemistry (including the ratio of glucose and insulin) and makes us feel hungry when we need to eat. Electric stimulation of animals' brains indicates that different parts of the hypothalamus act in opposition to controlling hunger. The *lateral* hypothalamus (hunger center) when

stimulated causes the animal to eat. Destruction of this area destroys hunger, and the animal will starve to death unless forced to eat. Another part of the hypothalamus, the *ventromedial* hypothalamus, (satiety center) causes the animal to stop eating when it is stimulated. If this area is destroyed, the animal will eat and gain more and more weight unless it is deprived of food. If the hypothalamus functions normally, these two areas oppose each other and signal impulses to eat and stop eating at appropriate times.

Set-point theory describes how the hypothalamus might decide what impulse to send. This theory states that the hypothalamus wants to maintain a certain optimum body weight. When we drop below that weight, the hypothalamus tells us we should eat and lowers our *metabolic rate*—how quickly our body uses energy. The hypothalamus tells us to stop eating when that set point is reached and raises our metabolic rate to burn any excess food. Not all researchers agree that we have a set point for weight, however. They might point to psychological factors and believe that weight maintenance has more to do with learning and cognition than with the hypothalamus. In addition, the brain monitors the levels of insulin (released by the liver) and glucose, and this balance also influences our perception of hunger.

Psychological Factors in Hunger Motivation

So far, our drive to eat appears to be governed strictly by our physiology. However, some of the reasons we get hungry have little to do with our brain and body chemistry. For example, research indicates that some of us (called *externals*) are more motivated to eat by external food cues, such as attractiveness or availability of food. Others, *internals*, are less affected by the presence and presentation of food and respond more often to internal hunger cues. Everyone responds to both types of cues but to greater or lesser extents. These and other factors in eating might be learned. The *Garcia effect*, in particular, can drastically affect what foods make us hungry. You can probably think of a particular food that brings back unpleasant memories of being sick. If you eat hot dogs and then happen to get nauseous, hot dogs will probably be unappetizing to you even if you know the hot dogs did not cause your sickness. This is caused by the Garcia effect and occurs whenever nausea is paired with either food or drink. (See Chapter 6 for more information about learned taste aversions and other examples of classical conditioning.)

Culture and background affect our food preferences. The foods we are raised with are most likely the foods we find most appetizing, although new preferences are acquired. Where I live in Nebraska, we eat a traditional Czechoslovakian sandwich called a Runza, which is spiced beef and cabbage inside a bread pocket. Some of my friends who now live in other parts of the country have cravings for Runza, but I am willing to bet that it sounds quite unappetizing to some of you reading this. We usually prefer foods our family, region, and culture prefer because those are the foods we learned to like.

Eating Disorders

Research into hunger motivations has at least one very important practical application—eating disorders. Many researchers seek to apply what we know about hunger and eating to treat individuals with harmful eating patterns.

The following lists the three most common eating disorders:

Bulimia	Bulimics eat large amounts of food in a short period of time (binging) and then get rid of the food (purging) by vomiting, excessive exercise, or the use of laxatives. Bulimics are obsessed with food and their weight. The majority of bulimics are women.
Anorexia nervosa	Anorexics starve themselves to below 85 percent of their normal body weight and refuse to eat due to their obsession with weight. The vast majority of anorexics are women.
Obesity	People with diagnosed obesity are severely overweight, often by over 100 pounds, and the excess weight threatens their health. Obese people typically have unhealthy eating habits rather than the food obsessions of the other two disorders. Some people may also be genetically predisposed to obesity.

HINT

The key difference between an anorexic and a bulimic is their weight. People who suffer from both disorders tend to be obsessed with food, and some anorexics even binge and purge. However, while anorexics are at least 15 percent below the typical weight of someone their age and size, bulimics' weight tends to be average or even slightly above.

Many researchers are investigating the causes of eating disorders. Different cultures have drastically different rates of eating disorders, possibly due to the emphasis on body weight emphasized in the culture. Eating disorder rates are highest in the United States, possibly for this reason. Research also identifies a family history of eating disorders as a risk factor, indicating a potential genetic component. Researchers agree that eating disorders are influenced by a complex set of factors, and are not merely a lack of willpower about food.

SEXUAL MOTIVATION

Sexual motivations are vital for the continuation of any species. One of the primary tasks for most living organisms is reproduction. Since humans are one of the most complex living organisms, our sexual motivations are correspondingly complex. Like hunger, sex is motivated by both biological and psychological factors.

Sexual Response Cycle

The famous lab studies done by William Masters and Virginia Johnson documented the sexual response cycle in men and women. Our sexual response progresses through four stages:

Initial excitement	Genital areas become engorged with blood, penis becomes erect, clitoris swells, respiration and heart rate increase.
Plateau phase	Respiration and heart rate continue at an elevated level, genitals secrete fluids in preparation for coitus.

Orgasm	Rhythmic genital contractions that may help conception, respiration, and heart rate increase further, males ejaculate, often accompanied by a pleasurable euphoria.
Resolution phase	Respiration and heart rate return to normal resting states, men experience a refractory period—a time period that must elapse before another orgasm, women do not have a similar refractory period and can repeat the cycle immediately.

Psychological Factors in Sexual Motivation

Unlike many animals, our sexual desire is not motivated strictly by hormones. Many studies demonstrate that sexual motivation is controlled to a great extent by psychological rather than biological sources. Sexual desire can be present even when the capability to have sex is lost. Accident victims who lose the ability to have sex still have sexual desires. Erotic material can inspire sexual feelings and physiological responses in men and women, including elevated levels of hormones. The interaction between our physiology and psychology creates the myriad of sexual desires we see in society and ourselves.

Sexual Orientation

As attention and controversy about sexual-orientation issues increase, so does research about homosexuality. Researchers have been able to dispel some common myths about what it means to be homosexual. Studies show that homosexuality is not related to traumatic childhood experiences, parenting styles, the quality of relationships with parents, masculinity or femininity, or whether we are raised by heterosexual or homosexual parents. Although researchers believe environmental influences probably affect sexual orientation, these factors have not yet been identified.

Researchers have identified possible biological influences, however. Some studies indicate that specific brain structures might differ in size in brains of homosexuals when compared with the same structures in heterosexuals. Twin studies indicate a genetic influence on sexual orientation since a twin is much more likely to be gay if his or her identical twin is gay. Some researchers theorize that hormones in the womb might change brain structure and influence sexual orientation. Since 3 to 10 percent (estimates vary) of the population worldwide is homosexual, research in this area will certainly continue, and the causes of sexual orientations will become more clear.

SOCIAL MOTIVATION

So far, we have described the research regarding the motivations behind some relatively simple human behaviors such as eating and sex. What motivates the more complicated behaviors, such as taking the AP psychology test? Your attitudes and goals, the society you live in, and the people you surround yourself with also affect what you are motivated to do.

Achievement Motivation

Achievement motivation is one theory that tries to explain the motivations behind these more complex behaviors. Achievement motivation examines our desires to master complex tasks and knowledge and to reach personal goals. Humans (and some other animals) seem to be motivated to figure out our world and master skills, sometimes regardless of the benefits of the skills or knowledge.

HINT

Achievement motivation is different than optimum arousal. Achievement motivation involves meeting personal goals and acquiring new knowledge or skills. Optimum arousal indicates the general level of arousal a person is motivated to seek, whether or not the arousal is productive in meeting a goal. The concepts might overlap in a person. (For example, a person with high achievement motivation might also have a high optimum level of arousal.) However, the concepts refer to difference aspects of motivation.

Studies in achievement motivation find that some people have high achievement motivation and consistently feel motivated to challenge themselves more than do other people. They always set the bar a little higher and seek greater challenges. Obviously, this varies not only from person to person but from activity to activity. Not many people are motivated to achieve in every aspect of life (in fact, enough time probably is not available). However, studies that measure achievement motivation do indicate a higher-than-average achievement motivation in some people.

Extrinsic/Intrinsic Motivation

Another way to think about the social factors that influence motivation is by dividing them into extrinsic and intrinsic motivations. *Extrinsic motivators* are rewards that we get for accomplishments from outside ourselves (for example, grades, salary, and so on). *Intrinsic motivators* are rewards we get internally, such as enjoyment or satisfaction. Think about your own motives regarding the AP psychology test. Are you internally or externally motivated or both? Are you taking the test to get the grade and possible college credit (external) or are you internally motivated to gain the knowledge and challenge yourself by taking a difficult test? Knowing what type of motivation an individual responds best to can give managers and other leaders insight into what strategies will be most effective. Psychologists working with people managing work groups (in government, business, or other areas) might test or evaluate group members for intrinsic or extrinsic motivation and try to alter group policies accordingly. Studies show that if we want an advantageous behavior to continue, intrinsic motivation is most effective. Extrinsic motivations are very effective for a short period of time. Inevitably, though, the extrinsic motivations end and so will the desired behavior unless some intrinsic motivation continues to motivate the behavior.

Management Theory

Some research into how managers behave is closely related to extrinsic/intrinsic motivation. Studies of management styles show two basic attitudes that affect how managers do their jobs:

- | | |
|----------|---|
| Theory X | Managers believe that employees will work only if rewarded with benefits or threatened with punishment. |
|----------|---|

Theory Y Managers believe that employees are internally motivated to do good work and policies should encourage this internal motive.

Cross-cultural studies show the benefits of moving from a theory X attitude about employees to a theory Y attitude. Some companies hire consultants from other countries to teach their managers how to promote intrinsic motivation in employees.

When Motives Conflict

Sometimes what you want to do in a situation is clear to you, but at other times you no doubt find yourself conflicted about what choice to make. Psychologists discuss four major types of motivational conflicts. The first, named an *approach-approach conflict*, occurs when you must choose between two desirable outcomes. For instance, imagine that for Spring Break one of your friends invites you to spend the week in Puerto Rico and another asks you to go to San Francisco. Assuming that both choices appeal to you, you have a conflict because you can only do one. Another type of conflict, an *avoidance-avoidance conflict*, occurs when you must choose between two unattractive outcomes. If, one weekend, your parents were to give you a choice between staying home and cleaning out the garage or going on a family trip to visit some distant relatives, you might experience an avoidance-avoidance conflict. An *approach-avoidance conflict* exists when one event or goal has both attractive and unattractive features. If you were lactose-intolerant, an ice-cream cone would present such a conflict; the taste of the ice cream is appealing but its effects on you are not. Finally, people experience *multiple approach-avoidance conflicts*. In these, you must choose between two or more things, each of which has both desirable and undesirable features. You may well face such a conflict in choosing which college to attend. Of the schools at which you have been accepted, University A is the best academically, but you do not like its location. University B is close to your family and boyfriend or girlfriend but you would like to go someplace with better weather. University C has the best psychology department (hopefully one of your favorite subjects!), but you visit the campus and find it less than attractive.

THEORIES ABOUT EMOTION

Our emotional state is closely related to our motivation. In fact, imagining one without the other is difficult. Can you imagine wanting to do a behavior without an accompanying feeling about the action? Emotion influences motivation, and motivation influences emotion. Psychologists investigate emotional states and create theories that try to explain our emotional experiences.

James-Lange Versus Cannon-Bard

One of the earliest theories about emotion was put forth by William James and Carl Lange. They theorized that we feel emotion because of biological changes caused by stress. So when the big bad wolf jumps out of the woods, Little Red Riding Hood's heart races, and this physiological change causes her to feel afraid.

Walter Cannon and Philip Bard doubted this order of events. They demonstrated that similar physiological changes correspond with drastically different emotional states. When Little Red Riding Hood's heart races, how does she know if she feels afraid, in love, embarrassed, or merely joyful? They theorized that the biological change and the cognitive awareness of the emotional state occur simultaneously. Cannon thought the thalamus is responsible for both the biological change and the cognitive awareness of emotions. Cannon believed that when the thalamus receives information about our environment, it sends signals simultaneously to our cortex and to our autonomic nervous system, creating the awareness of emotion and the physiological change at the same time. Recent research shows Cannon overestimated the role of the thalamus in this process. Many other brain structures, such as the amygdala, are also involved.

HINT

The James-Lange theory is mentioned for historical purposes. Current theories about emotion demonstrate that while biological changes are involved in emotions, they are not the sole cause of them.

Two-Factor Theory

Stanley Schachter's *two-factor theory* explains emotional experiences in a more complete way than either the James-Lange or Cannon-Bard theories do. Schachter pointed out that both our physical responses and our cognitive labels (our mental interpretations) combine to cause any particular emotional response. So, to continue the previous example, Little Red Riding Hood's emotional response depends on both her heart racing and her cognitive label of the event as being scary. Schachter showed that people who are already physiologically aroused experience more intense emotions than unaroused people when both groups are exposed to the same stimuli. For example, if your heart rate is already elevated after a quick jog, you will report being more frightened by a sudden surprise than you would if you got a surprise in a resting state. Two-factor theory demonstrates that emotion depends on the interaction between two factors, biology and cognition.

NONVERBAL EXPRESSIONS OF EMOTION

Many psychologists researching emotions find that the ways we express emotion nonverbally (through facial expressions, etc.) are universal. No matter what culture we grew up in, we are likely to use the same facial expressions for basic emotions like happiness, sadness, anger, disgust, surprise, and fear. Researchers establish this by showing pictures of people experiencing these emotions to people from different cultures and asking them to label the emotions. Most people from cultures around the world are able to label these facial expressions very accurately. This area of research (sometimes called *sociobiology*) indicates that the facial expressions we make for basic emotions may be an innate part of our physiological makeup.

STRESS

You may have noticed that many of the examples used to describe emotional theories involved stressful experiences. Stress and emotion are intimately connected concepts. Psychologists study stress not only to further our understanding of moti-

vation and emotion but also to help us with problems caused by stress. The term stress can refer to either certain life events (*stressors*) or how we react to these changes in the environment (*stress reactions*). Studies try to describe our reactions to stress and identify factors that influence how we react to stressors.

Measuring Stress

Psychologists Thomas Holmes and Richard Rahe designed one of the first instruments to measure stress. Their social readjustment rating scale (SRRS) measured stress using life-change units (LCUs). A person taking the SRRS reported changes in her or his life, such as selling a home or changing jobs. Different changes in life were assigned different LCUs; making a career change would be counted as more LCUs than moving to a new apartment. Any major life change increases the score on the SRRS. An event usually considered to be positive, like getting married, counts for as many or more LCUs as a negative event like being fired. A person who scored very high on the SRRS is more likely to have stress-related diseases than a person with a low score. Other researchers have designed more sophisticated measures of stress that take into account individual perceptions of how stressful events are and whether the stresses are pleasant or unpleasant. These more precise measures of stress show an even higher correlation with disease than the original stress measures did.

Seyle's General Adaptation Syndrome

Hans Seyle's *general adaptation syndrome (GAS)* describes the general response animals (including humans) have to a stressful event. Our response pattern to many different physical and emotional stresses is very consistent. Seyle's GAS theory describes the following stages:

Alarm reaction	Heart rate increases, blood is diverted away from other body functions to muscles needed to react. The organism readies itself to meet the challenge through activation of the sympathetic nervous system.
Resistance	The body remains physiologically ready (high heart rate, and so on). Hormones are released to maintain this state of readiness. If the resistance stage lasts too long, the body can deplete its resources.
Exhaustion	The parasympathetic nervous system returns our physiological state to normal. We can be more vulnerable to disease in this stage especially if our resources were depleted by an extended resistance stage.

Seyle's model explains some of the documented problems associated with extended periods of stress. Excessive stress can contribute to both physical diseases, such as some forms of ulcers and heart conditions, and emotional difficulties, such as depression. Our bodies can remain ready for a challenge only so long before our resources are depleted and we are vulnerable to disease due to exhaustion.

Perceived Control

Various studies show that a perceived lack of control over events exacerbates the harmful effects of stress. Rats given control over the duration of electric shocks are less likely to get ulcers than rats without this control even if both groups of rats receive the same amount of shock overall. A patient given control over the flow of morphine will report better pain control than a patient given mandated levels of morphine even though both patients get the same amount of morphine overall. Control over events tends to lessen stress, while a perceived lack of control generally makes the event more stressful.

Practice Questions

Directions: Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the one that is best in each case.

1. How would drive reduction theory explain a person accepting a new job with a higher salary but that requires more work and responsibility?
 - (A) Money is a more powerful incentive for this individual than free time.
 - (B) This person seeks a higher activity level and takes the job in order to satisfy this drive.
 - (C) For this person, money is a higher-level need than free time.
 - (D) The person takes the job to satisfy the secondary drive of increased salary.
 - (E) Humans instinctively seek greater resources and control over their environment.

2. Which aspects of hunger are controlled by the lateral and ventromedial hypothalamus?
 - (A) Contraction and expansion of the stomach, indicating too much or too little food.
 - (B) Body temperature and desire to eat.
 - (C) Desire to eat and physiological processes needed for eating and digestion (such as salivation).
 - (D) The binge and purge cycle in bulimics.
 - (E) The desire to eat and the feeling of satiety, or fullness, that makes us stop eating.