

## **Concept 2**

### **Relate: The Concept of Cellular Regulation**

Linking the concept of cellular regulation with the concept of infection:

#### **Question 1**

How does impaired cellular regulation influence a client's susceptibility to infection?

#### **Answer 1**

Cellular regulation is essential to the immune response, during which numerous substances are released and white blood cell (WBC) production increased. Infection is one condition that triggers the immune response. Impaired cellular regulation may alter the immune response and increase the individual's susceptibility to infection.

#### **Question 2**

What can the nurse do to help reduce the likelihood of infection in clients with disorders related to impaired cellular regulation?

#### **Answer 2**

The nurse can educate the client about methods of infection control, including using effective hand washing protocols, staying current with vaccinations, maintaining proper nutrition through healthy eating, and avoiding individuals who may be active sources of infection transmission.

Linking the concept of cellular regulation with the concept of stress and coping:

#### **Question 3**

What is the relationship between poor coping abilities and disorders of cellular regulation?

#### **Answer 3**

Physical and emotional stress can lead to oxidative stress (OS), which causes an increased production of free radicals. Free radicals are believed to increase an individual's risk for development of disease and illness.

#### **Question 4**

Which personality types are most often correlated with a risk for ineffective coping?

#### **Answer 4**

Rather than being an inherent personality trait, effective coping is a learned process. As such, individuals with any personality type are capable of enhancing their coping skills.

#### **Question 5**

Is there a relationship between personality and cellular regulation? Explain your answer.

**Answer 5**

Physical and emotional stress can lead to oxidative stress, the process of which is regulated by the body's cells. Effective coping—which is a learned process, as opposed to an inherent personality trait—may reduce the negative impact of stress, thus limiting the degree to which oxidative stress occurs. Because coping is a learned process, personality type is not necessarily a risk factor for impaired cellular regulation.

Linking the concept of cellular regulation with the concept of safety:

**Question 6**

Identify three safety concerns specific to the client with a disorder related to impaired cellular regulation.

**Answer 6**

Safety concerns for a client with a disorder related to impaired cellular regulation may include protecting the client from injuries related to impaired oxygenation, especially if the client's red blood cells (RBCs) or hemoglobin (Hgb) are affected. If the client's platelets are affected, safety concerns include protection from injury related to increased bleeding tendencies. Preventing infection is a concern, especially for clients with impaired white blood cell (WBC) production or function.

**Question 7**

Based on QSEN competencies, how can the nurse promote safety for the client with a disorder of cellular regulation?

**Answer 7**

Numerous applications of QSEN competencies are relevant to caring for a client with a disorder of cellular regulation. For example, safety may be enhanced by effectively communicating with team members about the client's current assessment data and response to treatment; using evidence-based practice as a basis for nursing care; and effectively following established protocols in the workplace.