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ORGANIZATION OF HEALTHY AND SAFE NUTRITION IN INFLUENZA AND ACUTE RESPIRATORY VIRAL INFECTIONS

M.Ashuraliyeva, H.Ashuraliyev
Fergana Medical Institut of Public Health
Clinical residient

Abstract Influenza and acute respiratory viral infections (ARVI) are widespread infectious diseases that significantly affect global public health. Alongside medical treatment and preventive measures, adequate nutrition plays a critical role in supporting immune function, reducing disease severity, and accelerating recovery. This article reviews scientific evidence regarding healthy and safe dietary organization during influenza and ARVI, including macronutrient balance, micronutrient sufficiency, hydration, food safety, and nutritional strategies for vulnerable populations. The findings emphasize that rational nutrition is an essential complementary component of comprehensive prevention and management of respiratory viral infections.

Keywords: Influenza, ARVI, nutrition, immune support, vitamins, food safety, prevention

Introduction

Acute respiratory viral infections encompass a broad group of viral diseases affecting the respiratory tract, including influenza, respiratory syncytial virus infection, adenovirus infection, rhinovirus infection, and others. These infections are associated with fever, inflammation, metabolic stress, decreased appetite, and increased nutrient requirements.[1,2,3,4,5]

Scientific evidence indicates that nutritional status strongly influences immune competence and resistance to infectious diseases. Balanced intake of macronutrients, vitamins, and minerals contributes to proper functioning of innate and adaptive immunity. Therefore, organization of healthy and safe nutrition during influenza and ARVI is an important public health priority.[6,7,8,9]

Materials and Methods This study represents a narrative review of contemporary scientific literature, international clinical nutrition guidelines, and public health recommendations related to dietary management during respiratory viral infections. Sources include peer-reviewed journals, World Health Organization guidance, and clinical nutrition research.[10,11,12,13]

Physiological Role of Nutrition in Viral Respiratory Infections

Energy and Protein Requirements

During infection, metabolic rate and protein catabolism increase. Adequate caloric intake and sufficient high-quality protein are required to:

Support immune cell synthesis

Promote tissue repair

Prevent muscle loss and weakness

Recommended foods include lean meat, fish, eggs, dairy products, legumes, and nuts.

Role of Vitamins

Vitamins are essential for immune regulation and antioxidant protection:

Vitamin C supports immune cell activity and may reduce symptom duration.

Vitamin D modulates immune responses and is associated with reduced respiratory infection risk.

Vitamin A maintains mucosal integrity of the respiratory tract.

B-group vitamins participate in energy metabolism and immune function.[14,15,16,17]

Essential Minerals

Key minerals involved in antiviral immunity include:

Zinc – supports antiviral defense and wound healing.

Selenium – contributes to antioxidant protection.

Iron – necessary for oxygen transport and immune enzyme systems.[18,19,20,21]

Hydration and Fluid Balance Fever and rapid breathing increase fluid loss. Adequate hydration is necessary to:

Maintain mucosal moisture

Support detoxification and circulation

Prevent dehydration complications

Recommended fluids include clean water, warm herbal teas, soups, and oral rehydration solutions when needed.[22,23,24,25,26]

Safe Food Practices During Illness Food safety is particularly important during infectious disease due to weakened immunity. Preventive measures include:

Proper washing of fruits and vegetables

Adequate thermal processing of animal products

Safe storage temperatures

Avoidance of expired or contaminated foods

These practices reduce the risk of secondary gastrointestinal infections and foodborne illness.[27,28,29,30]

Nutritional Strategies for Vulnerable Groups

Children

Children require easily digestible, nutrient-dense meals rich in protein, vitamins, and fluids. Appetite reduction should be managed with small, frequent meals.[31,32]

Elderly Individuals

Older adults often have reduced appetite and micronutrient deficiencies. Soft, high-protein foods and vitamin-rich diets are recommended.

Pregnant Women

Adequate intake of protein, iron, folate, and vitamins is essential to protect maternal and fetal health during infection.

Patients with Chronic Diseases

Dietary management should consider comorbidities such as diabetes, cardiovascular disease, or renal disorders while maintaining immune-supportive nutrition.

Preventive Nutritional Approaches

Balanced daily nutrition contributes to lowering susceptibility to respiratory infections. Preventive recommendations include:

Regular consumption of fruits, vegetables, and whole grains

Adequate protein intake

Limiting excessive sugar, salt, and ultra-processed foods

Maintaining healthy body weight

Ensuring sufficient vitamin D through diet or sunlight exposure

Discussion

Nutrition does not replace antiviral therapy or vaccination but serves as an essential supportive factor in prevention, immune resilience, and recovery. Evidence suggests that micronutrient sufficiency and balanced dietary patterns are associated with improved resistance to respiratory infections and reduced complication risk.

Integration of nutritional counseling into primary healthcare and public health programs may significantly enhance outcomes during seasonal influenza and ARVI outbreaks.[33,34,35]

Conclusion Healthy and safe nutrition is a fundamental component of comprehensive management and prevention of influenza and acute respiratory viral infections. Adequate intake of energy, protein, vitamins, minerals, and fluids—combined with strict food safety practices—supports immune defense, reduces disease severity, and accelerates recovery. Public health strategies should incorporate nutritional education alongside vaccination and infection control measures.

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