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The Nutritional Melting Pot Understanding the Influence of Food, Culture, and Religion on Nutrition Interventions for Wound Healing

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- 1040 Cultural sensitivity
- 1130 Verbal communication skills, presentations
- 5380 Wound care
- 5440 Enteral and parenteral nutrition support
- 6020 Counseling, therapy, and facilitation skills
- 6070 Interviewing and listening skills

Your educational objectives...

- Articulate the demographic changes that will occur by 2050.
- Comprehend ethnic and religious food preferences and practices, and their implications regarding nutrition and wound healing.
- Recognize disparities in health status and subsequent wound healing among ethnic populations.
- Appreciate cultural attitudes regarding disease, interviewing and communication.

The Nutritional Melting Pot

Instructions



Read the article. Answer the continuing education exam questions.

Refer to the article, *The Nutritional Melting Pot* (Collins N. et al. *Ostomy Wound Management*. 2009(5): 14-21) to complete the continuing education (CE) exam. To view the article, visit www.numedix.com, then click on "Try Us FREE!" Mark your answers last page of this packet.

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Continuing education exam

1. According to U.S. Census Bureau projections, the Hispanic population will:
A. double.
B. triple.
C. quadruple.
2. Generally, Mexican diets have a high fat content.
A. True
B. False
3. Cooking methods vary widely among Asian cultures.
A. True
B. False
4. The traditional Chinese diet contains approximately __ percent carbohydrate.
A. 60
B. 70
C. 80
D. 90
5. _____ uses legumes more commonly than any other Asian population.
A. Chinese
B. Pakistanis and Asian Indians
C. Korean
D. Japanese
6. The African-American diet is largely influenced by practices that originate from:
A. native African cultures.
B. metropolitans areas.
C. southern U.S.
D. None of the above

7. As compared to non-Hispanics, the risk for type 2 diabetes is __-fold greater among Hispanics.
A. 2
B. 3
C. 4
D. 5
8. Since obesity increases the weight upon the pressure points, calorie restriction is appropriate for obese patients with pressure wounds.
A. True
B. False
9. Hinduism regards _____ as representative of life, and therefore is not consumed.
A. dairy products
B. plants
C. eggs
D. All of the above
10. Buddhists forbid the consumption of meat and fish.
A. True
B. False
11. Which group disallows termination of enteral or parenteral feedings?
A. Jewish
B. Islamic
12. In _____ cultures, family needs are more significant than individual needs.
A. Western
B. Non-Western
13. The benefit(s) of offering familiar foods is/are:
A. it creates a homelike environment.
B. it enhances food and nutrition intake.
C. it is less expensive.
D. A and B

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The Nutritional Melting Pot

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13. A B C D

The Nutritional Melting Pot: Understanding the Influence of Food, Culture, and Religion on Nutrition Interventions for Wound Healing

Nancy Collins, PhD, RD, LD/N, FAPWCA; Liz Friedrich, MPH, RD, LDN; and Mary Ellen Posthauer, RD, CD, LD

Ostomy Wound Management presents this extended version of Nutrition 411 to help readers address transcultural nutrition concerns. We are grateful to the authors for their timely insights.

According to US Census Bureau data, as of July 2006 approximately one in three US residents (about 100 million people) was a minority. Hispanics are the largest minority group (44.3 million, 14.8% of the population), followed by black Americans (40.2 million or roughly 13.5% of the population) and Asians (14.9 million).¹ Census statistics project that racial and ethnic diversity will continue to increase into the middle of the century. By 2050, the minority population is forecasted to reach approximately 235.7 million or 54% of the US population.² The Hispanic population is expected to triple, and the Asian population is expected to more than double. The number of American Indians and Alaskan natives also is projected to increase from 4.9 million to 8.6 million (or from 1.6% to 2% of the total population), and the number of native Hawaiians and other Pacific Islanders is expected to more than double, from 1.1 million to 2.6 million.

Tremendous variations in language, culture, religious beliefs, education, food habits, and socioeconomic status exist within each minority group. Patients with different cultural and religious backgrounds often bring their own sets of beliefs and practices that can affect medical treatment, including wound healing. Healthcare professionals cannot assume that each group, neatly categorized by the US Census Bureau, is heterogeneous. However, a basic understanding of religious and cultural norms as they relate to food habits can help registered dietitians (RDs) and other members of the healthcare team. The nutrition care plan goal for patients with wounds is to meet nutrient needs within the context of customary food habits.

This article addresses the food habits of our nation's largest ethnic, racial, and religious groups and discusses how these diets affect nutrient intake as it relates to wound healing. The general nutrient guidelines for wound healing are outlined in

Table 1. Individual treatment plans, including decisions about vitamin and mineral supplementation, must adapt these guidelines to meet the needs and medical conditions of each specific patient.

Hispanic Food Patterns

The US Census Bureau defines the Hispanic/Latino profile as Cubans, Mexicans, Puerto Ricans, and South and Central Americans. The Mexican-American population makes up the majority of the Hispanic population. The typical Mexican diet is rich in complex carbohydrates in the form of corn, corn products, beans, and rice. Enough protein to meet most needs is provided by eggs, fish, beans, and most types of meat and poultry.³ Mexican diets often are high in fat because many of the foods are deep-fried. The nutrients most likely lacking are calcium, iron, vitamin A, folacin, and vitamin C,³ many of which are essential to wound healing.

If nutrient needs are increased because of wounds, a diet with meat, poultry, beans, and low-fat cheese can provide additional protein. Liberal use of tomatoes and fruits, common ingredients in Mexican foods, can increase vitamin C intake. Clinicians also should encourage a diet that includes dark-green leafy and deep-yellow vegetables, even though some of the Hispanic population is not familiar with these foods.

Asian Food Patterns

The US Census Bureau classification of Asians includes persons from a wide variety of countries, including Vietnam, China, India, Pakistan, and Japan. Their corresponding cultures have diverse food habits. However, meal composition and cooking techniques are similar across Asian regions. Preparation includes stir-frying, barbecuing, boiling, and steaming. These quick-cooking techniques may

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Table 1. General guidelines of nutrients needed to promote wound healing*

Nutrient	Estimated Needs for Wound Healing	Role in Wound Healing	Good Food Sources
Calories (energy)	<ul style="list-style-type: none"> •30 kcal/kg of body weight for Stage I or Stage II wounds •30–35 kcal/kg of body weight for Stage III or Stage IV wounds 	<ul style="list-style-type: none"> •Adequate calories protect against use of lean body mass for energy 	<ul style="list-style-type: none"> • All foods contain calories • Calorically dense foods appropriate for small appetites
Protein	<ul style="list-style-type: none"> •1.2–1.5 g/kg of body weight •Some experts recommend up to 2 g/kg; must monitor renal function with higher amounts 	<ul style="list-style-type: none"> •Part of many cellular functions •Positive nitrogen balance helps to build and repair tissue 	Meat, dairy foods, eggs, legumes, nuts, seeds, soy products
Fat	<ul style="list-style-type: none"> •Less than 30% of total calories/day (exact number of grams varies depending on individual body weight and calorie needs) 	<ul style="list-style-type: none"> •Needed to provide essential fatty acids and fat-soluble vitamins 	Meats, dairy foods, eggs, nuts, soy foods, vegetable oils, butter, margarine, fried foods
Fluid	<ul style="list-style-type: none"> •30 mL/kg of body weight if renal and heart function are normal •Needs sometimes lower in patients with renal failure or congestive heart failure •Needs sometimes higher with wounds that are draining, fever, or use of air-fluidized mattresses 	<ul style="list-style-type: none"> •Maintenance of proper hydration status and electrolyte levels in tissues 	Water, juice tea, milk, all other beverages, all foods that are liquid at room temperature count toward meeting fluid goals
Vitamin C	RDA: <ul style="list-style-type: none"> •Adult males—90 mg/day •Adult females—75 mg/day 	<ul style="list-style-type: none"> •Multiple roles in wound healing, including assisting with collagen synthesis in tissues 	Guava, papaya, citrus fruits and juices, red and green bell peppers, broccoli, tomatoes, strawberries
Vitamin A (in the form of carotenoids in plant foods)	RDA: <ul style="list-style-type: none"> •Adult males—900 mcg/day •Adult females—700 mcg/day 	<ul style="list-style-type: none"> •Wound healing stimulation •Healing and growth of cell tissues 	Liver, fish, eggs, fortified milk, sweet potatoes, carrots, kale, mango, turnip greens, spinach, papaya
Vitamin E	RDA: <ul style="list-style-type: none"> •Adult males—15 mg/day •Adult females—15 mg/day 	<ul style="list-style-type: none"> •Maintenance of cell membrane integrity 	Vegetable oils, margarine, salad dressing, nuts, seeds
Iron	RDA: <ul style="list-style-type: none"> •Adult males 19–50 years old—8 mg/day •Adult females 19–50 years old—18 mg/day •Adult males and females more than 50 years old—8 mg/day 	<ul style="list-style-type: none"> •Cofactor in collagen synthesis 	Chicken liver, oysters, clams, beef, fortified cereals, bran, nuts, seeds
Zinc	RDA: <ul style="list-style-type: none"> •Adult males—11/mg/day •Adult females—8 mg/day 	<ul style="list-style-type: none"> •Involvement in cell replication, protein synthesis, and collagen synthesis 	Beef, wheat germ, crab, wheat bran, sunflower seeds

*This table provides general guidelines. It is important to evaluate the patient and adapt these guidelines to meet individual needs and medical conditions. Information adapted from:
 Litchford M. *The Advanced Practitioner's Guide to Nutrition and Wounds*. Greensboro, NC: Case Software and Books; 2006.
 Mahan LK, Escott-Stump S. *Krause's Food and Nutrition Therapy, 12th ed.* St Louis, MO: Saunders/Elsevier; 2008.
 Duфф R. *American Dietetic Association's Complete Food and Nutrition Guide, 2nd ed.* Hoboken, NJ: John Wiley and Sons; 2002.

prevent nutrient loss. Another common element is that dairy products are rarely used.⁴ Most Asian cultures obtain protein from fish, pork, and poultry, which can provide adequate amounts if food intake is sufficient. The major staple in all of the diets in this culture is rice, including products made with rice flour, which provides energy (calories) for wound healing. Vegetables and fruits also make up a large part of the diet for many Asians.

The traditional Chinese diet obtains more than 80% of its calories from grains, legumes, and vegetables and 20% from animal protein, fruits, and fats.⁵ Most Asians are lactose intolerant and obtain calcium from tofu or by consuming small fish with bones. Because this population typically does not drink milk, creamy medical nutritional supplements sometimes are not easily accepted. Most commercial dietary supplements recommended for wound healing are lactose-free. It is important to communicate to the lactose-intolerant individual that these supplements are appropriate and safe for their use.

Asian Indians and Pakistanis, classified as part of the Asian population by the US Census Bureau, use legumes more than other Asian cultures. A vegetarian or vegan diet is common for many from this region. A well-planned vegan diet can meet patients' nutrient needs. However, vegans who do not consume a wide variety of protein sources may lack some essential amino acids, particularly if their protein needs are increased because of wounds. If it is not possible to meet protein needs with the customary diet or meal intake, a protein supplement may be necessary. Selection of protein supplements for vegans sometimes is complicated because many use animal products as their base.

The diet high in rice, vegetables, and fish common to the Chinese, Filipino, Asian Indian, Laotian, and Vietnamese population may result in iron or zinc deficiency, which can affect wound healing. Laboratory tests can confirm suspected iron-deficiency anemia, which can be corrected, if necessary, in an attempt to improve the wound healing process. Zinc supplementation in patients with wounds is controversial. However, when a deficiency is suspected or confirmed, a trial of a low-dose zinc supplement or multivitamin with zinc might enhance wound healing.⁶

African-American Food Patterns

Many African Americans are several generations removed from their original homeland. Evidence suggests that today's typical African-American diet is influenced by the lifestyle of the grandparents or great-grandparents who lived in the southern US.⁷ The traditional African-American diet includes collard greens, legumes, beans, rice, potatoes, and other dark-green and yellow vegetables. This diet is high in vitamin A, iron, and fiber. Legumes, beans, lean meats, fish, and poultry usually provide adequate protein for wound healing.

In this culture, the food often is fried and/or includes the addition of rich sauces and gravies that might increase the fat

and caloric content of meals. Many African Americans are lactose intolerant and, as a result, might not consume much milk or cheese. Like other lactose-intolerant populations, if supplemental protein or calories are needed, a lactose-free supplement or juice-based supplement sometimes is indicated.

Table 2 summarizes the general characteristics of these three main ethnic groups.

Health Issues of Minority Populations That Affect Wound Healing

According to 2007 data from the Behavioral Risk Factor Surveillance System (BRFSS),⁸ the rate of obesity in the US was 25.6% in 2007. Obesity is a major risk factor for diabetes. Some ethnic groups, particularly Mexican-Americans and African Americans, have higher rates of obesity and diabetes than other population groups.^{9,10} Statistics indicate Hispanics are twice as likely to have diabetes than non-Hispanics.¹⁰ African American adults are 1.9 times more likely than non-Hispanic white adults to have diabetes.⁹

Both diabetes and obesity can have a detrimental effect on wound healing. Uncontrolled diabetes can result in cellular malnutrition and ultimately delayed wound healing. When a person is overweight, repositioning and turning to relieve pressure over the bony prominences is more difficult. A consequence of the extra weight is more pressure on the pressure points, possibly contributing to pressure ulcer development and/or making healing more difficult. Treatment of both diabetes and obesity probably is within the cultural norms of a patient. However, severe restriction of calories is not recommended when a patient has a healing wound.

Religious Dietary Practices

Religious beliefs influence a person's value system, traditions, and dietary practices, which, in turn, can affect food selection. A person's level of commitment to their religion may affect whether they adopt the dietary practices of that religion. An understanding of various religious beliefs as they pertain to diet can help practitioners make recommendations for wound healing.

Hinduism. Hinduism, the oldest continuing religion in the world, is common among persons of Indian descent. Hindus respect all life, both human and animal. In this religion, meat and eggs are not consumed because they represent life, nor are chicken and pigs, because these animals are considered scavengers.¹¹ The majority of Hindus are vegetarians, but some eat fish and others may consume dairy foods. Because protein is a key component of wound healing, providing adequate protein sometimes is challenging. Iron-deficiency anemia and zinc deficiency also are possible issues.

Buddhism. Persons from Southeast Asia, including Vietnam, Cambodia, Laos, Tibet, China, Japan, and Thailand, commonly practice Buddhism. Some Buddhists abstain from eating meat and fish, but it is not forbidden.¹² Rice is a staple for most Buddhists and moderate eating (not eating too much

Table 3. Cultural parameters that can affect interaction with patients**American/Western Culture**

Beliefs

- Health is absence of disease
- Important to seek healthcare for treatment and prevention
- Foods need to affect biological functions
- Time is important; lateness is impolite
- First name basis builds rapport when greeting a person
- Eye contact indicates respect and attentiveness
- Gestures have universal meaning
- Direct communication prevents miscommunication
- The individual is the focus of healthcare decision making
- Nuclear family bonds are important

Values

- Independence and freedom
- Youth over elderly
- Individual interests
- Looking toward the future, not just the present

Non-Western Cultures

Beliefs

- Health is harmony, good luck, and reward
- Important to seek medical attention for disease and illness
- Food used to restore balance (hot/cold)
- Respect for authority and elders
- Family is the focus of healthcare decision making
- Oriented to present, not future
- Time is flexible
- Greeting on first name may indicate disrespect
- Eye contact sometimes considered disrespectful
- Gestures may have meaning (eg, Japanese bow)
- Directness may indicate conflict

Values

- Group acceptance
- Family needs are more important than individual needs
- Family networks and nuclear family are important

Adapted from:

US Department of Health and Human Services, Office of Minority Health. *Physician Toolkit: Resources to Implement Cross-Cultural Clinical Practice Guidelines for Medicaid Practitioners*. Rockville, MD: US Department of Health and Human Services; March 2004.

McWilliams M. *Food Around the World: A Cultural Perspective*. Upper Saddle River, NJ: Pearson Prentice Hall; 2007:446-449.

onions, most grains, expensive cuts of meat, oils, and alcohol. “Cold” foods are most vegetables, tropical fruits, dairy products, and inexpensive cuts of meat.

When evaluating individuals from the Chinese or Hispanic culture, the assessment process should include questions

concerning their beliefs in this type of system. If possible, nutrition care should include a diet that includes the yin/yang or hot/cold principles, if this is important to the patient.

Nutrition Care for Wound Healing

All patients with wounds require a complete nutrition screening and assessment. The RD should review the medical record and form a treatment plan. The assessment must incorporate evaluation and review of anthropometric data — ie, height, weight history, and body mass index — as well as biochemical tests, particularly those indicating protein stores, iron stores, and hydration status. A thorough food and nutrition history, which includes questions about cultural and religious eating habits, rounds out the data collection. The practitioner may find it helpful to assess cultural influence on food habits using the mnemonic ABCDE¹⁸:

- A: Attitudes of clients and families within their culture
- B: Beliefs—religious beliefs and traditions
- C: Content—personal history, including economics, emigration, and the role of food in the family
- D: Decision-making style within the family and culture
- E: Environment—interpreters of culture or language

Interview style. When interviewing patients and/or families, it is important to consider differences in communication styles between American/Western and non-Western cultures. For example, eye contact is valued by Caucasian Americans but is considered impolite for many Asian and Native Americans. Greeting on a first name basis denotes disrespect in some cultures. Table 3 describes some of the cultural parameters that can affect interaction with patients of different cultures.

After completing a nutrition assessment, the RD will compare the nutrient needs to the patient’s diet. Depending on nutrient needs and meal intake, additional food, vitamin supplements, or high-calorie, high-protein supplements are sometimes recommended to enhance wound healing. Monitoring and evaluating the wound healing process may result in changes in nutrition interventions over time. Whether a patient is living at home or in an institution, the clinician should make every effort to meet a patient’s needs within the context of his/her cultural and religious beliefs. If supplements are needed, provide products that do not violate a patient’s belief system.

Putting It in Practice

Cultural diversity in America is changing the healthcare and food service landscape. Assisted-living and long-term care facilities are required to provide an environment that is as homelike as possible. For patients in these facilities, clinicians should encourage family members to suggest culturally appropriate foods that the facility can provide. The facility also should encourage family members to provide familiar foods from home, especially if the patient’s meal intake at the facility is poor. Familiar foods serve two benefits

The treating clinician should make every effort to meet a patient's needs within the context of his/her cultural and religious beliefs.

— they make an institutional environment more homelike and also may encourage greater nutrition intake. The care facility and family members can work in tandem to maximize the meal intake of each patient at nutritional risk because of wounds, regardless of culture or religious beliefs. Different groups working together for the betterment of the elderly and sick exemplifies our forefathers' melting pot ideal. ■

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For more information

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