

## A User's Guide



# MODULE 1. What is NACS?

APRIL 2016 VERSION 2



### In this module

What does NACS stand for?

What is the origin of NACS?

Why is NACS important in health care and treatment?

What is the evidence for NACS?

Why is NACS important throughout the lifecycle?

What are the components of NACS?

How does NACS tie in with global health and nutrition initiatives?

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## What does NACS stand for?

NACS stands for **n**utrition **a**ssessment, **c**ounseling, and **s**upport. It is a client-centered programmatic approach for integrating a set of priority nutrition interventions into health care services and strengthening health systems. NACS covers prevention, detection, and treatment of malnutrition and maintenance of improved nutritional status to prevent relapse.

**NACS = Client-centered nutrition assessment, counseling, and support along the continuum of care, with referrals and effective coordination for optimal quality and impact**

## What is the origin of NACS?

Food by Prescription was a model established in 2006 in Kenya to address malnutrition in people living with HIV (PLHIV) and later scaled up as a national program. The model included nutrition assessment, counseling, and prescription of supplementary food, based on strict anthropometric eligibility criteria. The program resulted in overall net weight gain among pre-antiretroviral therapy (ART) and ART clients, although more ART than pre-ART clients graduated from the services and fewer were lost to follow-up.<sup>1</sup> The Kenya experience—and other findings that specialized food products, in combination with counseling provided to PLHIV who were assessed as malnourished, improved weight gain—signaled the possible benefits of improved nutrition in HIV care and treatment. National HIV programs in more than a dozen countries supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) adopted or adapted the model as a standard of care.

The provision of specialized food products became the main focus of Food by Prescription programming, with limited attention to counseling clients on how to prevent malnutrition or maintain improved nutritional status after treatment. Recognizing the need for a range of interventions to prevent malnutrition and treat it successfully, PEPFAR began promoting the term “NACS” in 2009.

<sup>1</sup> Food and Nutrition Technical Assistance II Project (FANTA-2). 2009. *Review of Kenya's Food by Prescription Program*. Washington, DC: FHI 360.



**NACS  
glossary**

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## Why is nutrition important in health care and treatment?

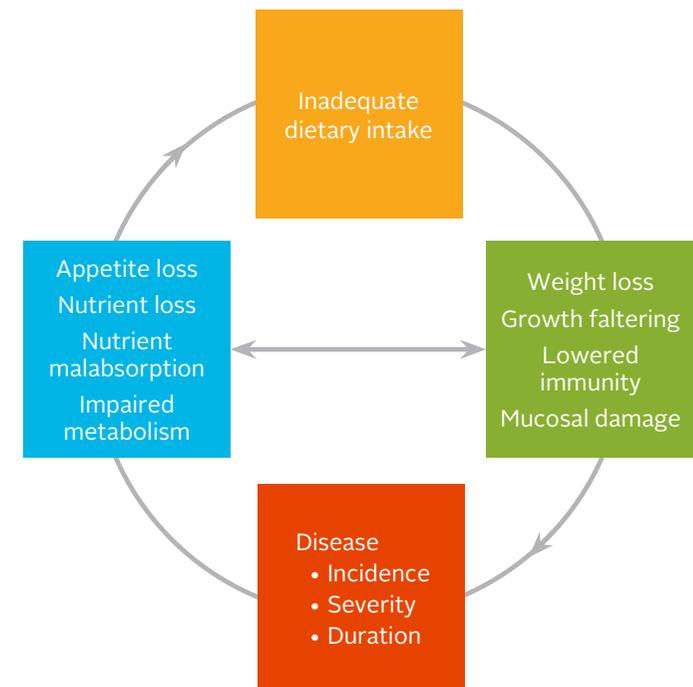
An adequate, well-balanced diet is a cornerstone of good health. Poor nutrition can lower immunity, impair physical and mental development, and reduce productivity. Good nutrition reduces maternal and neonatal mortality, promotes optimal child growth and development, enhances the body's ability to fight infections, helps achieve and maintain optimal body weight, makes medications more effective, prolongs good health, and improves quality of life.

Poor nutrition is an underlying factor in many illnesses, and improved nutrition is an aid to treating them. There is an established cyclical relationship between poor nutrition and increased susceptibility to diseases (figure 1). Malnutrition weakens the immune system, which worsens the effects of infection, which then increases the likelihood of malnutrition. Infections can reduce appetite, decrease the body's absorption of nutrients, and make the body use nutrients faster than usual to repair the immune system.

Malnutrition contributes to mortality through its impact on disease mechanisms. Because a severely malnourished person does not consume enough nutrients, the body meets energy needs by mobilizing tissue reserves of fat and protein from muscle, skin, and the gut. To conserve energy, the body reduces physical activity and growth, turnover of protein, functional organ reserves, the number of cell membranes, and inflammatory and immune responses. This process:

1. Reduces the liver's ability to make glucose and excrete excess dietary protein and toxins
2. Reduces the kidney's ability to excrete excess fluid and sodium
3. Reduces the size, strength, and output of the heart
4. Slows down the body's sodium/potassium chemical pump, causing sodium to leak into the cells and potassium to leak out of the cells and be lost in the urine
5. Reduces the gut's acid and enzyme production, flattening the villi and reducing their motility

**FIGURE 1.**  
Cycle of malnutrition and infection



6. Affects safe storage of iron liberated from red blood cells, promoting the growth of pathogens and harmful free radicals
7. Reduces muscle mass, leading to loss of intracellular nutrients and glucose stores
8. Reduces the immune system's ability to respond to infection<sup>2</sup>

Inadequate intake of protein and energy results in proportional loss of skeletal and myocardial muscle. As myocardial mass decreases, the ability to generate cardiac output decreases.

Good nutrition is especially important for people with special health and nutritional needs, such as pregnant and lactating women, children under 5 years of age, adolescents, and people with chronic diseases such as HIV, tuberculosis (TB), and diabetes.

HIV can cause or aggravate malnutrition through reduced food intake, increased energy needs, and poor nutrient absorption. In turn, malnutrition can hasten the progression of HIV and worsen its impact by weakening the immune system and reducing the effectiveness of treatment. Maternal malnutrition can also increase the risk of mother-to-child transmission of HIV. Stunted growth, failure to thrive, and frequent childhood illnesses are common in HIV-positive children.

Asymptomatic HIV-positive children need 10 percent more energy than HIV-negative children of the same age, sex, and activity levels. Asymptomatic HIV-positive adults also need 10 percent more energy. Symptomatic HIV-positive adults and children need 20–30 percent more energy than HIV-

negative people of the same age, sex, and physical activity level. HIV-positive children who are losing weight need 50–100 percent more energy.<sup>3</sup>

TB is the leading bacterial cause of death in humans and the second leading cause of death due to infectious disease, after HIV. People with active TB often have decreased appetite, weight loss, and micronutrient deficiencies, which increase the risk of progression from TB infection to active TB.

As people are staying on ART for longer periods, new nutrition challenges are emerging, including high blood pressure, dyslipidemia, insulin resistance, heart disease, and osteoporosis. Non-communicable diseases (NCDs), including cardiovascular diseases, diabetes, cancer, and chronic respiratory diseases, were responsible for 65 percent of deaths and 79 percent of illness worldwide in 2010.<sup>4</sup> Many of these diseases have clear links with nutrition and lifestyle choices. Diabetes, for example, is part of the growing epidemic of NCDs that impose a double burden of malnutrition (undernutrition and overweight/obesity). Good nutrition is important for people with diabetes to maintain optimal blood glucose, lipid and lipoprotein, and blood pressure levels and to prevent and treat chronic complications such as obesity, dyslipidemia, cardiovascular disease, and hypertension.

NACS can identify nutrition problems early and provide counseling and resources to help ensure adequate food intake, improve nutritional status, boost immune response, and improve response to treatment of illness. People whose malnutrition is not treated early have longer hospital stays, slower recovery from infection and complications, and higher morbidity and mortality.



**Article on systems and capacity to address NCDs in low- and middle-income countries**



<sup>2</sup> Tomkins, A. and Watson, F. 1989. *Malnutrition and Infection—A Review*. Nutrition Policy Discussion Paper No. 5. Geneva: United Nations Administrative Committee on Coordination—Subcommittee on Nutrition.

<sup>3</sup> World Health Organization (WHO). 2003. *Nutrient Requirements for People Living with HIV/AIDS. Report of a Technical Consultation*. Geneva: WHO.

<sup>4</sup> World Cancer Research Fund International and the NCD Alliance. 2014. *The Link between Food, Nutrition, Diet and Non-Communicable Diseases*. London: World Cancer Research Fund International.

## What is the evidence for NACS?

NACS encompasses a variety of nutrition interventions across the continuum of care. There is both qualitative and quantitative evidence of the effectiveness of nutrition interventions in treating and preventing maternal malnutrition. These interventions include micronutrient supplementation, which has been shown to reduce the incidence of anemia, preeclampsia, hypertension, and maternal mortality.<sup>5</sup> (Severe anemia is linked to postpartum hemorrhage, and short maternal stature can lead to obstructed labor).<sup>6</sup> In children under 5 years of age, optimal infant feeding can prevent poor nutrition during the first 2 years of life and confer long-term benefits later in life.<sup>7</sup> In the 2013 *Lancet Maternal and Child Nutrition Series*, Bhutta et al. identified 10 evidence-based nutrition-specific interventions across the life cycle that could reduce deaths in children under 5 by 15 percent if they were implemented at 90 percent coverage.

Other evidence for the effectiveness of nutrition-specific interventions has come from community-based management of malnutrition (CMAM). CMAM includes community screening and referral of cases of malnutrition, clinical assessment and diagnosis of malnutrition, treatment

of children under 5 with severe acute malnutrition (SAM) using therapeutic foods and routine medications, and referral of children with moderate acute malnutrition (MAM) for supplementary feeding. Between 2001 and 2005, 21 CMAM programs in Ethiopia, Malawi, and Sudan produced a 79 percent recovery rate, 11 percent default rate, 4 percent mortality rate, 3 percent transfer rate, and only 2 percent non-recovery rate.<sup>8</sup> NACS can include both CMAM interventions for children under 5 and nutrition interventions for older children, adolescents, and adults.

Policies and frameworks have been advanced for the integration of nutrition program responses into care and treatment of PLHIV.<sup>9</sup> Studies in both resource-constrained and non-resource-constrained settings have shown that acute malnutrition, manifested by thinness and sudden recent weight loss, significantly increases the risk of mortality among PLHIV regardless of treatment status.<sup>10</sup> A 2010 study showed that weight gain was positively associated with clinical outcomes among HIV patients.<sup>11</sup> The 2013 World Health Organization (WHO) *Consolidated Guidelines on the Use of Antiretroviral Drugs for Treating and Preventing HIV Infection* recommend nutrition



**10 evidence-based nutrition interventions**

<sup>5</sup> Villar, J. et al. 2004. "Nutritional Interventions during Pregnancy for the Prevention or Treatment of Maternal Morbidity and Preterm Delivery: An Overview of Randomized Controlled Trials." *American Journal of Nutrition*. Vol. 133(5 Suppl 2), pp. 1606S–1625S.

<sup>6</sup> Khan, K.S. et al. 2006. "WHO Analysis of Causes of Maternal Death: A Systematic Review." *Lancet*. Vol. 367(9516), pp. 1066–74.

<sup>7</sup> WHO. 2010. "Sixty-Third World Health Assembly Resolutions, Geneva, 17–21 May 2010." Geneva: WHO.

<sup>8</sup> Collins, S. et al. 2006. "Key Issues in the Success of Community-Based Management of Severe Malnutrition." Technical Background Paper for an Informal Consultation Held in Geneva, November 21–23, 2005.

<sup>9</sup> Aberman, N.L. et al. 2014. "Food Security and Nutrition Interventions in Response to the AIDS Epidemic: Assessing Global Action and Evidence." *AIDS and Behavior*. Vol. 18 Suppl 5, pp. S554–65.

<sup>10</sup> Wheeler, D.A. et al. 1998. "Weight Loss as a Predictor of Survival and Disease Progression in HIV Infection." *Journal of Acquired Immune Deficiency Syndromes*. Vol. 18, pp. 80–85; Tang, A.M. et al. 2002. "Weight Loss and Survival in HIV-Positive Patients in the Era of Highly Active Antiretroviral Therapy." *Journal of Acquired Immune Deficiency Syndromes*. Vol. 31, pp. 230–36. Paton, N. et al. 2006. "The Impact of Malnutrition on Survival and the CD4 Count Response in HIV-Positive Patients Starting Antiretroviral Therapy." *HIV Medicine*. Vol. 7, pp. 323–30. Van der Sande, M. et al. 2004. "Body Mass Index at Time of HIV Diagnosis: A Strong and Independent Predictor of Survival." *Journal of Acquired Immune Deficiency Syndromes*. Vol. 37, pp. 1288–94.

<sup>11</sup> Koethe, J.R. et al. 2010. "Association between Weight Gain and Clinical Outcomes among Malnourished Adults Initiating Antiretroviral Therapy in Lusaka, Zambia." *Journal of Acquired Immune Deficiency Syndromes*. Vol. 53(4), pp. 507–13.

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assessment, care, and support as essential components of HIV care to maximize adherence to ART and achieve optimal health outcomes in food-insecure settings. The guidelines state that “ART in conjunction with nutritional support could accelerate recovery.”

Several studies have investigated the clinical benefits of nutritional supplementation in PLHIV. Kundu et al. (2012) found that food supplementation significantly improved clinic adherence among HIV-positive children, which in turn could decrease disease-related morbidities, setting the stage for improved treatment and care.<sup>12</sup> Cantrell et al. (2011) found that food supplementation was associated with better ART adherence among patients starting ART (95 percent versus 48 percent in the control group).<sup>13</sup> A 2012 analysis (by Tirivayi et al.) of a clinic-level food assistance program found a similar positive effect on compliance with medication refill visits (a validated surrogate measure of ART adherence) but no effect on weight or CD4+ count.<sup>14</sup> A study of macronutrient supplementation trials among HIV-positive adults on ART between 1990 and 2010

found improved CD4 count in 11.1 percent of trials and decreased viral load in 33.3 percent of trials, although it was not possible to determine the impact of nutrition interventions on HIV disease progression or highly active antiretroviral therapy (HAART) response.<sup>15</sup> Evidence from a review of Kenya’s Food by Prescription Program, a study comparing two specialized food products in Malawi, and similar interventions in Zambia and Uganda showed the benefits of food supplementation on outcomes such as weight gain, hemoglobin, nutritional recovery, and ART adherence.<sup>16</sup> However, a 2012 Cochrane Systematic Review of 14 randomized controlled trials that evaluated the effectiveness of macronutrient interventions compared with no nutritional supplements or placebo at different stages of HIV infection was unable to draw firm conclusions about the effects of macronutrient supplementation on morbidity and mortality in PLHIV.<sup>17</sup> More studies are being conducted in low-income countries, where macronutrient supplementation might prove to be beneficial both pre-ART and in conjunction with ART.

<sup>12</sup> Kundu, C.K. et al. 2012. “Food Supplementation as an Incentive to Improve Pre-antiretroviral Therapy Clinic Adherence in HIV-Positive Children—Experience from Eastern India.” *Journal of Tropical Pediatrics*. Vol. 58(1), pp. 31–7.

<sup>13</sup> Cantrell, R.A. et al. 2011. “A Pilot Study of Food Supplementation to Improve Adherence to Antiretroviral Therapy among Food-Insecure Adults in Lusaka, Zambia.” *Journal of Acquired Immune Deficiency Syndrome*. Vol. 49, pp. 190–95.

<sup>14</sup> Tirivayi, N. et al. 2012. “Clinic-Based Food Assistance is Associated with Increased Medication Adherence among HIV-Infected Adults on Long-Term Antiretroviral Therapy in Zambia.” *AIDS & Clinical Research*. Vol. 3(7).

<sup>15</sup> Chandrasekhar, A. and Gupta, A. 2011. “Nutrition and Disease Progression pre-Highly Active Antiretroviral Therapy (HAART) and post-HAART: Can Good Nutrition Delay Time to HAART and Affect Response to HAART?” *American Journal of Clinical Nutrition*. Vol. 94(6), pp. 1703S–15S.

<sup>16</sup> Cantrell, R.A. et al. 2011. “A Pilot Study of Food Supplementation to Improve Adherence to Antiretroviral Therapy among Food-Insecure Adults in Lusaka, Zambia.” *Journal of Acquired Immune Deficiency Syndrome*. Vol. 49: 190; Ndekha, M.J. et al. 2009. “Supplementary Feeding with Either Ready-to-Use Fortified Spread of Corn-Soy Blend in Wasted Adults Starting Antiretroviral Therapy in Malawi: A Randomized, Investigator Blinded, Controlled Trial.” *British Medical Journal*. Vol. 338: b1867; Rawat, R. et al. 2010. “The Impact of Food Assistance on Weight Gain and Disease Progression among HIV-Infected Individuals Accessing AIDS Care and Treatment Services in Uganda.” *BMC Public Health*. Vol. 10: 316.

<sup>17</sup> Grobler, L. et al. 2013. “Nutritional Interventions for Reducing Morbidity and Mortality in People with HIV.” *Cochrane Database of Systematic Reviews*. 2:CD004536.



For HIV-positive women, optimal nutrition during pregnancy increases weight gain and improves maternal nutrition which, in turn, improves birth outcomes. For HIV-positive children, optimal feeding practices and improved dietary intake are critical to regaining weight lost during opportunistic infections. A 2010 study in Tanzania found that HIV-positive children on ART had higher rates of undernutrition than their HIV-negative counterparts and that their households had lower economic status, lower levels of education, and a high prevalence of food insecurity. HIV-positive children on ART were more likely than HIV-negative children to be orphaned and fed less frequently and to have lower body weight at birth. The study concluded that interventions are needed to improve nutritional status (in addition to increasing coverage of ART) because HIV is associated with increased child underweight and wasting, even among children on ART.<sup>18</sup> A clinic-based observational study in India followed HIV-positive children 2–12 years of age, both with and without food supplements, for 2 years to evaluate the importance of food supplements as an incentive in improving ART adherence and its impact on health. Results showed significant improvement in clinical adherence and an

increase in mean clinic visits and mean CD4 count in the children who received food supplements.<sup>19</sup>

Active TB affects protein metabolism and nutritional status through multiple mechanisms.<sup>20</sup> Malnutrition enhances the development of active TB, and active TB makes malnutrition worse.<sup>21</sup> Like other infectious diseases, active TB is likely to increase energy requirements, although current evidence does not allow an accurate estimate of the increase. Malnutrition reduces the expression of mycobactericidal substances and may compromise cell-mediated immunity, leading to active TB. Active TB is associated with wasting, which is affected by poor appetite, increased energy expenditure because of the infection, altered protein metabolism, and micronutrient deficiencies. TB treatment improves nutritional status, but this improvement is limited to gains in fat mass. Alteration of protein metabolism may continue during treatment. A typical diet may be inadequate to offset these nutritional deficiencies.<sup>22</sup> The combination of HIV/TB co-infection and malnutrition has been called “triple trouble” because it further increases the energy expenditure, nutrient malabsorption, micronutrient deficiency, and breakdown of lipids and proteins.<sup>23</sup>

<sup>18</sup> Sunguya, B.F. et al. 2011. “Undernutrition among HIV-Positive Children in Dar es Salaam, Tanzania: Antiretroviral Therapy Alone is not Enough.” *BMC Public Health*. Vol. 11: 869.

<sup>19</sup> Kundu, C.K. et al. 2012. “Food Supplementation as an Incentive to Improve Pre-Antiretroviral Therapy Clinic Adherence in HIV-Positive Children: Experience from Eastern India.” *Journal of Tropical Pediatrics*. Vol. 58, pp. 31–37.

<sup>20</sup> Papatkakis, P. and Piwoz, E. 2008. “Nutrition and Tuberculosis: A Review of the Literature and Considerations for TB Control Programs.” Washington, DC: FHI 360/Africa’s Health in 2010.

<sup>21</sup> Chaparro, C. and Diene, S. 2009. “‘Triple Trouble’: Malnutrition, TB, and HIV.” CORE Group SOTA, October 6.

<sup>22</sup> Van Lettow, M. et al. 2004. “Malnutrition and the Severity of Lung Disease in Adults with Pulmonary Tuberculosis in Malawi.” *International Journal of Tubercular Lung Disease*. Vol. 8(2), pp. 211–17; Macallan, D.C. 1999. “Malnutrition in Tuberculosis.” *Diagnostic Microbiology and Infectious Disease*. Vol. 34(2), pp. 153–57.

<sup>23</sup> Van Lettow et al. 2004



## Why is nutrition important throughout the life cycle?



An article on the link between maternal nutrition and risk of NCDs in adulthood

Undernutrition affects all stages of human development.

**Pregnancy** Pregnancy is the most nutritionally demanding time of a woman's life. Extra nutrients and calories are needed to support the growth of the fetus and maintain the mother's health. Low pre-pregnancy weight, short stature, and inadequate weight gain or inadequate protein intake during pregnancy increase the risk of complications during pregnancy and delivery and of low birth weight infants. Deficiencies in folate, calcium, zinc, iodine, and iron can increase the risk of morbidity and mortality in both mothers and their infants.<sup>24</sup> The negative effects of maternal undernutrition on fetal brain development may be permanent and irreversible.

**Birth** Birth weight of less than 2,500 g is associated with morbidity and mortality, inhibited growth and cognitive development, and chronic diseases later in life. The mortality risks associated with being small for gestational age extend beyond the neonatal period.<sup>25</sup> New mothers need counseling on infant and young child feeding to ensure optimal growth and development.

**Infancy** During the period of rapid growth in the first year of life, infants are vulnerable to nutrient deficiencies and need careful nutrition support to continue the growth and development that began at conception. Infants need exclusive breastfeeding (or exclusive replacement feeding if it can be provided safely) for the first 6 months of life, adequate complementary foods beginning at the age of 6 months, growth monitoring to catch growth faltering before treatment is needed, and treatment if they become acutely malnourished. Routine deworming and micronutrient supplementation also contribute to healthy weight gain.



Photo credit: Hari Fitri Putjuk, Courtesy of Photoshare



Photo credit: Wendy Hammond, FHI 360/FANTA



Photo credit: Jessica Scranton, FHI 360

<sup>24</sup> Brown, L.S. 2011. "Nutrition Requirements during Pregnancy." In Charlin, J. and Edelstein, S. eds. 2011. *Essentials of Life Cycle Nutrition*. Sudbury, MA: Jones and Bartlett Publishers.

<sup>25</sup> Katz, J. et al. "Mortality Risk in Preterm and Small-for-Gestational Age Infants in Low-Income and Middle-Income Countries: A Pooled Country Analysis." *Lancet*. Vol. 382(9890), pp. 3–9.

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**Childhood** Undernutrition (fetal growth restriction, stunting, wasting, vitamin A and zinc deficiencies, and sub-optimal breastfeeding) underlie 45 percent of deaths among children under 5.<sup>26</sup> Many of these deaths are preventable through effective nutrition interventions.<sup>27</sup> Much of the linear growth deficits that contribute to stunting in children under 5 are accumulated during the first 1,000 days of life (beginning with the mother's pregnancy to the child's second birthday) and can have permanent effects on later growth and development.<sup>28</sup> Chronic undernutrition in early childhood affects cognitive and physical development, putting children at a disadvantage for the rest of their lives. Stunting reduces school attainment and income and increases the risk of obesity and NCDs in adulthood. Children under 5 with SAM are at high risk of death and require treatment with specialized food products along with medical care. Interventions to prevent undernutrition in children include promotion of optimal child feeding, monthly growth monitoring for the first 2 years of life, food and water safety and hygiene, routine deworming, and micronutrient supplementation.

While much attention has focused on the first 2 years of life as a window of opportunity to prevent stunting, interventions outside this period can also be effective. Data have shown that older children and adolescents can substantially catch up in height even without any interventions.

**Adolescence** Adolescents have the highest prevalence of nutritional deficiencies. They are vulnerable to malnutrition because they are growing faster than at any time after the first year of life. During adolescence, a growth spurt increases the need for calories, protein, calcium, and iron, and the need for iron increases during menstruation. Changes in lifestyle can affect future eating habits and food choices. Pregnant adolescents who are underweight or stunted are likely to have complications during pregnancy and delivery, as well as low birth weight infants, perpetuating the intergenerational cycle of undernutrition.

**Adulthood** Good nutrition continues to promote health and reduce the risk of disease in adults. Obesity in adults, especially abdominal obesity, is one of the main risk factors for coronary heart disease, stroke, and diabetes. A healthy diet and exercise can reduce the incidence of cardiovascular disease, type 2 diabetes, high blood pressure, osteoporosis, and some types of cancer, as well as complement medical treatment for those conditions.

**Older age** Older people are vulnerable to malnutrition because disability can affect food preparation and consumption. Most chronic diseases, including cardiovascular disease, cancer, and type 2 diabetes, appear in later life. Few nutrition services are available, however, for this age group. Older people are likely to gain from modifying risk factors by eating a healthy diet while maintaining weight and continuing to exercise.



**Issue of Maternal and Child Nutrition focused on promoting healthy growth and preventing childhood stunting**



**An article on height recovery during adolescence**

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<sup>26</sup> Black, R.E. et al. 2013. "Maternal and Child Undernutrition and Overweight in Low-Income and Middle-Income Countries." *Lancet*. Vol. 382, pp. 427–451.

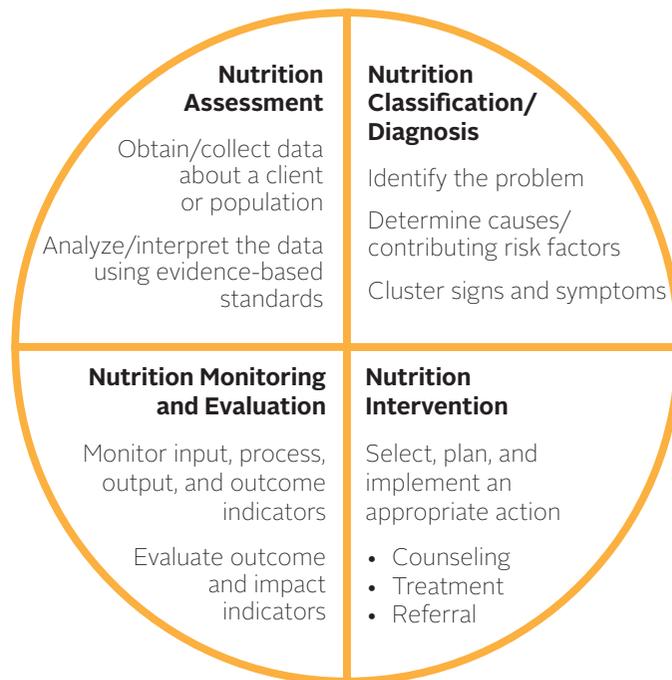
<sup>27</sup> Bhutta. 2013. "Evidence-Based Interventions for Improvement of Maternal and Child Nutrition: What Can Be Done and at What Cost?" *Lancet*. Vol. 382, pp. 452–77.

<sup>28</sup> The 2008 *Lancet Maternal and Child Nutrition Series* identified the need to focus on the first 1,000 days, during which good nutrition and healthy growth have lasting benefits throughout life.

## What are the components of NACS?

The components of NACS are similar to the steps in the Nutrition Care Process adopted in 2003 by the U.S. Academy of Nutrition and Dietetics. The process includes four interrelated steps (figure 2). Information collected during nutrition assessment guides diagnosis of nutritional status, which guides selection of nutrition interventions. The results are monitored to determine the client's progress toward planned goals.

**FIGURE 2.**  
The Nutrition Care Process



**Nutrition assessment** involves collecting information about a client's medical history, dietary patterns, anthropometric measurements, clinical and biochemical characteristics, and social and economic situation. Good nutrition starts with good assessment. The results enable health care providers to classify clients' nutritional status and choose appropriate interventions. Nutrition care plans specify nutrition goals and food and nutrition interventions and medical treatment to meet those goals. Clients may be referred for further medical assessment or other support services if needed.

**Nutrition counseling** is an interactive process between a client and a trained counselor to interpret the results of nutrition assessment. Counseling helps identify client preferences, barriers to behavior change, and ways to address those barriers. With this information, the client and counselor can jointly plan a feasible course of action to support healthy practices. Group education on nutrition topics can be provided in health facility waiting rooms, support group meetings, and during community nutrition events.

**Nutrition support** can include specialized food products to treat malnutrition, micronutrient supplements to prevent or treat micronutrient deficiencies, point-of-use water purification products, and referral to economic strengthening and livelihood support. In many countries, only a small percentage of people seek health care in health facilities. The rest consult family members, traditional healers, or private medicine sellers when they are ill.

Health facilities can provide nutrition support, but to make nutrition services available to the maximum number of people, community resources can be mobilized to screen and treat people for malnutrition; follow up and track NACS clients; and provide household food support, home-based care, peer counseling, and other support. An important part of NACS is linking health

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## None of the components of NACS—assessment, counseling, or support—is sufficient on its own to prevent malnutrition.

*Rx: Combine nutrition assessment, counseling, and support for best results.*

facilities and community-based organizations to ensure that clients at risk of malnutrition and malnourished clients receive the treatment and support they need.

Ideally, every client who visits a health care facility should receive an individual nutrition assessment to determine his or her nutritional status. Health care providers need to know clients' nutritional status to be able to counsel them on how to maintain healthy weight, manage common conditions, and avoid infections, as well as to refer them for needed medical care or social support.

Many health care facilities provide some type of nutrition assessment, such as weighing children and pregnant women or monitoring child growth. But sometimes the use of this information ends with recording or reporting. Assessment is all but useless for individual clients unless the results are used to classify their nutritional status and counsel them on how to improve their diets to address under- or over-nutrition.

Nutrition counseling, in turn, is of little value unless clients have access to adequate food to improve their diets. Clients may also need water purification products to make drinking water safe, supplements to help them recover from micronutrient deficiencies, and economic strengthening assistance to improve household food consumption.

## How does NACS tie in with global health and nutrition initiatives?

**PEPFAR** was launched in 2003 to expand access to HIV prevention, care, and treatment in low-resource settings. In its second phase (2009–2013), PEPFAR supported improving health outcomes, increasing program sustainability and integration, and strengthening health systems.

**Feed the Future** aims to strengthen the links between agricultural and nutrition outcomes. FTF focuses on country-led planning in agricultural development and food security.

The **Scaling Up Nutrition (SUN) Movement** was launched in 2010 by multiple international stakeholders. SUN encourages nutrition-focused development policies to achieve the Millennium Development Goals (MDGs). The SUN Road Map focuses on achieving nine nutrition-related indicators.

The **WHO Healthy Growth Project** aims to create awareness of the link between complementary feeding and healthy growth and to shift national focus from underweight to stunting.

The **1,000 Days** is a U.S.-based advocacy platform to build awareness and encourage investment in the 1,000-day window of opportunity for children, from the time of pregnancy through 2 years of age.



## Resources

[Feed the Future](#): the U.S. Government's Global Hunger and Food Security Initiative

Food and Nutrition Technical Assistance Project (FANTA). 2009. [Review of Kenya's Food by Prescription Program](#).

[Food Security and Food Policy Information Portal for Africa](#)

[Global Nutrition for Growth Compact](#)

Horton, S. et al. 2010. [Scaling up Nutrition: What Will It Cost?](#)

[The President's Emergency Plan for AIDS Relief \(PEPFAR\)](#)

PEPFAR. 2006. [Report on Food and Nutrition for People Living with HIV/AIDS](#).

[Scaling Up Nutrition](#)

[United Nations System Standing Committee on Nutrition \(UNSCN\)](#): the focal point for harmonizing UN policies and activities on nutrition

[U.S. Agency for International Development \(USAID\) Office of HIV/AIDS](#)

World Food Programme (WFP). 2011. *HIV and AIDS, Tuberculosis and Nutrition Assessment, Education, Counselling and Support*. Rome: WFP.

World Health Organization (WHO): [e-Library of Evidence for Nutrition Actions](#)

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