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Houston EMA/HSDA Ryan White Part A Service Definition  Medical Nutritional Therapy  (Last Review/Approval Date: 6/3/16)				
HRSA Service Category Title: RWGA Only	Medical Nutritional Therapy			
Local Service Category Title:	Medical Nutritional Therapy and Nutritional Supplements			
Budget Type: RWGA Only	Hybrid			
Budget Requirements or Restrictions:  RWGA Only	<b>Supplements:</b> An individual client may not exceed \$1,000.00 in supplements annually without <b>prior</b> approval by RWGA.			
·	Nutritional Therapy: An individual nutritional education/counseling session lasting a minimum of 45 minutes. Provision of professional (licensed registered dietician) education/counseling concerning the therapeutic importance of foods and nutritional supplements that are beneficial to the wellness and improved health conditions of clients. Medically, it is expected that symptomatic or mildly symptomatic clients will be seen once every 12 weeks while clients with higher acuity will be seen once every 6 weeks.			
HRSA Service Category Definition: RWGA Only	Medical nutrition therapy is provided by a licensed registered dietitian outside of a primary care visit and may include the provision of nutritional supplements.			
Local Service Category Definition:	Supplements: Up to a 90-day supply at any given time, per client, of approved nutritional supplements that are listed on the Houston EMA/HSDA Nutritional Supplement Formulary. Nutritional counseling must be provided for each disbursement of nutritional supplements.  Nutritional Therapy: An individual nutritional education/counseling session lasting a minimum of 45 minutes. Provision of professional (licensed registered dietician) education/counseling concerning the therapeutic importance of foods and nutritional supplements that are beneficial to the wellness and improved health conditions of clients. Medically, it is expected that symptomatic or mildly symptomatic clients will be seen once every 12 weeks while clients with higher acuity will be seen once every 6 weeks. Services must be provided under written order from a state licensed medical provider (MD, DO or PA) with prescribing privileges and must be based on a written nutrition plan developed by a licensed registered dietician.			
Target Population (age, gender, geographic, race, ethnicity, etc.):	HIV/AIDS infected persons living within the Houston Eligible Metropolitan Area (EMA) or HIV Service Delivery Area (HSDA).			
Services to be Provided:	Supplements: The provision of nutritional supplements to eligible clients with a written referral from a licensed physician or PA that specifies frequency, duration and amount and includes a written nutritional plan prepared by a licensed, registered dietician.  Nutritional Supplement Disbursement Counseling is a component of			

Medical Nutritional Therapy. Nutritional Supplement Disbursement Counseling is a component of the disbursement transaction and is defined as the provision of information by a licensed registered dietitian about the rapeutic nutritional and/or supplemental foods that are beneficial to the wellness and increased health condition of clients provided in conjunction with the disbursement of supplements. Services may be provided either through educational or counseling sessions. Also included in this service are follow up sessions with clients' Primary Care provider regarding the effectiveness of the supplements. The number of sessions for each client shall be determined by a written assessment conducted by the Licensed Dietitian but may not exceed twelve (12) sessions per client per contract year. **Medical Nutritional Therapy:** Service must be provided under written order of a state licensed medical provider (MD, DO, PA) with prescribing privileges and must include a written plan developed by state licensed registered dietician. Client must receive a full range of medical nutritional therapy services including, but not limited to, diet history and recall; estimation of nutrition intake; assessment of weight change; calculation of nutritional requirements related to specific medication regimes and disease status, meal preparation and selection suggestions; calorie counts; evaluation of clinically appropriate laboratory results; assessment of medication-nutrient interactions; and bio-impedance assessment. If patient evaluation indicates the need for interventions such as nutritional supplements, appetite stimulants, or treatment of underlying pathogens, the dietician must share such findings with the patient's primary medical provider (MD, DO or PE) and provide recommendations. Clients needing additional nutritional resources will be referred to case management services as appropriate and/or local food banks. Provider must furnish information on this service category to at least the health care providers funded by Ryan White Parts A, B, C and D and TDSHS State Services. **Supplements:** One (1) unit of service = a single visit wherein an Service Unit Definition(s): eligible client receives allowable nutritional supplements (up to a 90 **RWGA Only** day supply) and nutritional counseling by a licensed dietician as clinically indicated. A visit wherein the client receives counseling but no supplements is <u>not</u> a billable <u>disbursement transaction</u>. **Medical Nutritional Therapy:** An individual nutritional counseling session lasting a minimum of 45 minutes. Refer to the RWPC's approved *Financial Eligibility for Houston* Financial Eligibility: EMA/HSDA Services. Nutritional Supplements: HIV-infected and documentation that the Client Eligibility: client is actively enrolled in primary medical care.

	Medical Nutritional Therapy: HIV-infected resident and
	documentation that the client is actively enrolled in primary medical
	care.
Agency Requirements:	None.
Staff Requirements:	The nutritional counseling services under this category must be
	provided by a licensed registered dietician. Dieticians must have a
	minimum of two (2) years experience providing nutritional assessment
	and counseling to PLWHA.
Special Requirements:	Must comply with Houston EMA/HSDA Part A/B Standards of Care,
RWGA Only	HHS treatment guidelines and applicable HRSA/HAB HIV Clinical
	Performance Measures.
	Must comply with the Houston EMA/HSDA approved Medical
	Nutritional Therapy Formulary.

# FY 2020 RWPC "How to Best Meet the Need" Decision Process

Step in Process: C	ouncil		Date: <b>06/13/19</b>
Recommendations:	Approved: Y: No: Approved With Changes:	If approved with changes list changes below:	
1.			
2.			
3.			
Step in Process: St	eering Committee		Date: <b>06/06/19</b>
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Recommendations:	Approved: Y: No: Approved With Changes:		ed with changes list
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#### FY 2017 PERFORMANCE MEASURES

#### RYAN WHITE GRANT ADMINISTRATION

#### HARRIS COUNTY PUBLIC HEALTH (HCPH)

# Medical Nutritional Supplements All Providers

HIV Performance Measures	FY 2016	FY 2017	Change
75% of clients for whom there is lab data in the CPCDMS will be virally suppressed (<200)	378 (77.8%)	384 (80.7%)	2.9%
90% of clients diagnosed with wasting syndrome or suboptimal body mass will improve or maintain body mass index (BMI) in the measurement year	9 (75.0%)	6 (60.0%)	-15.0%

HCPH is the local public health agency for the Harris County, Texas jurisdiction. It provides a wide variety of public health activities and services aimed at improving the health and well-being of the Harris County community.

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# Can Nutritional Supplements Help Fight HIV?

When Supplements Help and When They Harm

Proper nutrition is as important to the long-term health and well-being of a person living with <u>HIV</u> as it is to anyone else. But oftentimes, dietary needs require adjustments as the body responds to different medications or the disease itself.

Vitamins and minerals can often be depleted during severe or prolonged bouts of <u>diarrhea</u>, the condition of which can be induced by certain infections or medications. Changes in body fats, also associated with <u>treatment</u> or HIV infection, can demand marked changes to one's diet.

Far more concerning, however, is the impact of malnutrition on people with HIV. Vitamin A and B12 deficiency, for example, has been associated with faster disease progression in both resource-rich and resource-poor settings. Low serum levels of micronutrients, commonly seen in malnourished individuals, demand greater vitamin intake—often in the way of nutritional supplements.

Without question, nutritional supplements have their place in the treatment of malnutrition or a diagnosed deficiency, whether it be caused by an HIV-related condition or poor nutrition itself. This is particularly true in late-stage disease when weight loss and HIV wasting are frequently seen.

But, what about everyone else? Do people with HIV inherently need nutritional supplements? Do these products complement therapy in a way that either reduces the incidence of infection, delays disease progression, or reconstitutes a person's key immune functions? Or are we just hoping they will?

#### The Supplements Industry

According to the U.S. Centers for Disease Control and Prevention (CDC), nearly half of all Americans consume <u>dietary supplements</u>, including vitamins, minerals, and herbals. This expansive range of products is regulated by the U.S. Food and Drug Administration (FDA), which defines dietary supplements simply as products "intended to add further nutritional value to (supplement) the diet."

In accordance with this definition, multivitamins and other nutritional supplements are regulated as a category of food, rather than as a pharmaceutical product. They neither have to go through stringent, pre-market safety and effectiveness testing nor does the FDA have the authority to require such testing.

Instead, the FDA relies primarily on post-market surveillance—monitoring consumer complaints and requiring manufacturers to maintain a roster of adverse events. However, these adverse event reports (AERs) are only sent in instances of serious to life-threatening side effects. Mild to moderate events, such as headache or gastrointestinal distress, are not reported unless the manufacturer voluntarily chooses to do so.

This is in stark contrast to the pharmaceutical industry, which spends an average of \$1.3 billion dollars *per drug* in research and development costs in order to obtain FDA approval. In 2011, sales of dietary supplements hit \$30 billion in the U.S., more than twice the size of the global HIV drugs market.

#### Can Supplements "Boost" Immunity?

Good nutrition by means of a balanced diet can help ensure proper immune function *in conjunction* with the timely and informed use of <u>antiretroviral medications</u>. The role of vitamins and other nutritional supplements, by contrast, remains debatable.

Confusion is rife in the consumer marketplace, often fueled by manufacturer claims about products which are thinly supported by research. And while the FDA tries to regulate these claims, a 2012 assessment by the Department of Health and Human Services reported that as much as 20 percent of the supplements reviewed made wholly prohibited claims, often times around the issue of "immune support." It's not so much that these claims are patently false. It's simply that the evidence referred to is generally inconclusive or anecdotal at best.

A number of manufacturers, for instance, regularly point to a 2004 study by the Harvard School of Public Health, which looked at the effect of multivitamins on disease progression in 1,097 HIV-positive pregnant women in Tanzania. At the end of the trial, 31 percent who

had taken the supplements had either died or acquired an <u>AIDS-defining illness</u> versus 25 percent in the placebo group. Based on this evidence, the researchers concluded that the daily use of a multivitamin (specifically B, C, and E) not only delayed HIV progression, but provided "an effective, low-cost means of delaying the initiation of antiretroviral therapy in HIV-infected women."

Upon publication of the research, a number of manufacturers pointed to the study as "scientific proof" of their product's immune-boosting properties. What most failed to do, however, is contextualize the study, ignoring the numerous co-factors that contributed to the results—not least of which are the high levels of poverty, hunger, and malnutrition that exist within an indigent African population.

Ultimately, nothing in the study suggested that multivitamins, in and of themselves, would demonstrate the same benefits—or afford the same conclusions—in the resource-rich settings like the U.S. or Europe. Results from follow-up studies have been largely inconsistent, including a 2012 study which showed that high-dose multivitamins might actually increase the risk of death in severely malnourished individuals. Others clinical studies have shown benefits only in those with advanced disease (CD4 counts under 200 cell/mL), while others still have shown no benefit at all.

What most studies have supported is the *safety* of multivitamins in recommended daily doses, particularly for people with HIV who are either undernourished or in advanced stages of disease.

#### When Supplements Do More Harm Than Good

Far less is known about the benefits of individual vitamins, minerals, and other trace elements. A number of studies in recent years have focused on the role of <u>selenium</u>, a nonmetal mineral with known antioxidant properties. Research seems to suggest that the loss of selenium in early HIV infection parallels the loss of CD4 cells at a time when malabsorption and malnutrition are generally not seen to be factors.

As compelling as this relationship might seem, research has not yet been able to support any true benefit of selenium supplementation, either in the avoidance of HIV-related illness or the reconstitution of CD4. Similar results have been seen with magnesium and zinc supplements, whereby increases in plasma levels have had no correlative association to either disease progression or outcome.

The prolific use of supplements by some HIV-positive people is underpinned by the belief that "natural" products provide natural immune support that can readily complement HIV therapy. This is often not the case. In fact, a number of supplements can have a profoundly negative impact on people with HIV, either by interfering with the metabolism of their drugs or by causing toxicities that mitigate any possible benefit of supplementation.

Among the potential concerns:

- Megadose vitamin A: High doses of vitamin A (above 25,000 IUs daily) can increase the risk of liver toxicities, internal bleeding, spontaneous fractures, and weight loss. The World Health Organization (WHO) does not recommend the use of vitamin A supplements in pregnant, HIV-positive women, with research showing that a daily 5,000 IU dose might actually increase the risk of mother-to-child transmission.
- Megadose vitamin C: While some research has suggested that high doses of vitamin C may play a significant role in cellular immunity, the evidence is highly contradictory. What we do know is that high doses of vitamin C can cause gastrointestinal distress and diarrhea (the latter of which can impact absorption of certain HIV medications). Vitamin C doses above 1000 mg per day are also known to reduce Crixivan (indinavir) levels in some.
- Vitamin B6 (pyridoxine): Excessive intake of vitamin B6 (above 2,000 mg per day) can cause reversible nerve damage, exacerbating peripheral neuropathy in HIV-positive patients already affected by the condition.
- Vitamin E: High doses of vitamin E (above 1,500 IUs) can interfere with blood clotting, while prolonged, excessive use can result in diarrhea, muscular weakness, and nausea.
- <u>St. John's Wort (hypericin)</u>: An herbal preparation popularly used to treat mild depression, St. John's Wort is known to reduce the
  levels of all protease inhibitor (PI) and non-nucleoside reverse transcriptase inhibitor (NNRTI)-class drugs, putting the patient at risk
  of drug resistance and treatment failure.
- Garlic: Garlic pills and supplements have been shown to reduce serum levels of certain HIV drugs, particularly <a href="Invirase">Invirase</a> (saquinavir) which can be reduced by half when taken concurrently with garlic supplements. By contrast, fresh or cooked garlic is not seen to affect serum drug levels.
- Grapefruit juice: An eight-ounce glass of fresh grapefruit juice taken with Crixivan can reduce serum drug levels by 26 percent, while a similar size glass of juice can increase Invirase levels by up to 100 percent (increasing potential side effects). While grapefruit juice should not necessarily be omitted from one's diet, it should not be taken either two hours before or two hours after a drug dose.

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The importance of proper nutrition and a healthy, balanced diet cannot be overstressed. Nutritional counseling may help those with HIV better understand their dietary needs in order to better:

- Achieve and maintain a healthy body weight
- Maintain healthy lipids levels, including cholesterols and triglycerides
- Foresee dietary complications that may result from some antiretroviral medications
- · Address dietary complications that may arise from HIV-related symptoms
- Implement food measures to avoid possible food-borne opportunistic infections

The role of exercise cannot be ignored, with benefits to both physical and mental health (including a reduction in the risk of <u>HIV-associated neurocognitive impairment</u>).

In terms of supplementation, a daily multivitamin can help ensure that micronutrient needs are met, particularly in those unable to achieve nutritional goals. However, taking vitamins in excess of their recommended daily allowance is not advised. There is also no data to support the use of herbal supplements in either treating HIV infection or increasing the efficacy of antiretroviral drugs by reducing the HIV viral load.

Please advise your doctor about any supplements you may be taking when discussing the management and treatment of your HIV.

#### Sources:

Fawzi, W.; Msamanga, G.; Spiegelman, D.; et al. <u>A randomized trial of multivitamin supplements and HIV disease progression and mortality.</u> *New England Journal of Medicine*. 351(1):23-32.

Isanaka, S.; Mugusi, F.; Hawkins, C; et al. Effect of high-dose vs standard-dose multivitamin supplementation at the initiation of HAART on HIV disease progression and mortality in Tanzania: a randomized controlled trial. Journal of the American Medical Association. October 17, 2012; 308(15):1535-1544. DOI: 10.1001/jama.2012.13083.

# **Nutrition and HIV**

Submitted on Mar 18, 2019



## **Nutrition and HIV**

Good nutrition is very important for long-term health and well-being. Studies have found that people living with HIV who regularly eat healthy food in the right amounts can better tolerate HIV drugs, maintain a healthy weight, and feel better overall. Experts often use the term "nutritional status" to describe whether someone is getting the right amount of nutrients from their diet. Diet here means whatever you eat and drink, not a specific set of food restrictions for losing weight.

Nutrients are things like fats, protein, carbohydrates, vitamins, minerals, and other important chemicals. You need proper levels of different nutrients in order to build and repair cells, keep hormones regulated, fight infection, and maintain energy levels. For the most part, we cannot make nutrients. We get what we need from food and, when that is not possible, from dietary supplements [2].

Good nutrition depends on many things, including:

- What type of food you eat and how much of it
- How your body breaks down and soaks up nutrients
- How different parts of your body use these nutrients

HIV-related changes in any of these factors can affect your nutritional status. Over time, this can lead to a variety of problems, including:

- Weight loss
- Muscle wasting (loss of muscle)
- · High levels of fats and sugars in the blood
- Not enough vitamins and minerals

Many of these problems can be avoided or managed by eating the right foods.

## **How Is Nutrition Measured?**

Nutritional status can be determined in many ways, including:

- Weight and other measurements of body fat and muscle mass
- Hemoglobin or hematocrit counts, which measure iron in the blood (hemoglobin helps

- your red blood cells carry oxygen, which gives you energy)
- Other <u>blood tests</u> [3] to check levels of important fats (<u>cholesterol and triglycerides</u> [4]), proteins (such as albumin), vitamins (B-12, vitamin D), and minerals (sodium, potassium)
- Hemoglobin A1c levels to diagnose pre-diabetes or to monitor diabetes [5]

## **Diet and HIV**

A healthy diet is a key part of any HIV treatment plan. A diet is simply any food and drink that you consume regularly. Your diet should give you the nutrients you need to:

- Fight weight and muscle loss
- Keep energy levels high
- Help you get what you need from medications you take
- Minimize the negative effects of HIV drugs

What kind of diet is best for you to follow depends on your weight and your nutritional status (cholesterol, blood sugar, vitamin levels, etc.). A nutritionist or registered dietician can help you figure out what type of diet makes the most sense for you. AIDS service organizations and health care clinics sometimes have nutritionists on staff.

## Women Living with HIV and Nutrition

Nutritional guidelines such as the US Recommended Dietary Allowance (RDA) are set by the government to let people know how much of each nutrient they need each day to maintain good health. However, the RDA does not take into account that having HIV increases these needs. One study showed that people living with HIV needed between six and 25 times the RDA of some nutrients.

Due to dieting (restrictive eating), eating unhealthy foods, lack of time, and other pressures, some women in the US do not eat what they need to meet even the basic RDA requirements for many nutrients. This puts women, especially women living with HIV, at particular risk for not getting enough nutrients to maintain their health.

However, this does not mean that women living with HIV are necessarily underweight. In fact, in some resource-rich countries like the US, more women living with HIV are overweight or obese than women in the general population. Weight gain is a common <u>side effect</u> [6] of some HIV drugs. Although HIV drugs greatly reduce AIDS-related illnesses and help people live longer, healthier lives, recent research shows that weight gain associated with HIV drugs can increase a woman's risk of diabetes. Since being obese can increase the chances of getting conditions already common for many people living with HIV (e.g., <u>heart disease</u> [7], <u>cancer</u> [8], high blood pressure, high cholesterol), it is important to maintain a healthy weight.

## **Ways to Improve Nutritional Status**

## Maintain a Healthy Weight

With a chronic infection like HIV, your body may burn more energy (calories). If you are using more than you are bringing in, you may lose weight. It is also possible to eat more calories

than you are using, and thus gain weight. Either way, if you are not eating healthy foods, you can hurt your health.

Some people living with HIV need to eat more calories each day to prevent weight loss. Hunger is not always a reliable guide, because you can feel nauseous or turned off by food, even when you need it. If this is the case, speak to your health care provider about ways to manage your nausea [9] or stimulate your appetite.

### **Eat More Complex Carbohydrates**

Carbohydrates are a good source of energy but can be a problem if you have diabetes. They are found in foods like:

- Bread
- Pasta
- Rice
- Cereal
- Potatoes

Carbohydrates come in different forms. Simple carbohydrates are more easily digested but can cause your blood sugar to rise sharply. Simple carbohydrates include sugar (as found in sweets, soft drinks), white rice, and white flour. They also occur naturally in fruits and milk. It is recommended that people with diabetes limit the amount of simple carbohydrates in their diet.

Complex carbohydrates (also called starches) take longer for your body to digest, and often contain more fiber and other nutrients than simple carbohydrates. Complex carbohydrates include whole grains, beans (legumes), starchy vegetables like corn and potatoes, and brown rice. Because they take longer to digest, complex carbohydrates do not cause blood sugar to rise as sharply as simple carbohydrates and are therefore recommended for people with diabetes.

## **Eat More Protein to Fight Muscle Loss**

Protein (along with <u>physical activity</u> [10]) helps your body build and maintain muscles. During times of infection, protein stored in muscles can get burned to provide energy for the body. This can lead to loss of muscle, also called muscle wasting.

It is important to try to eat at least three servings of protein every day. A good estimate of a 'serving' is the amount of food the size of your fist. Foods high in protein include:

- Lean meats, including beef, chicken, and pork
- Fish
- Cottage cheese and yogurt
- Eggs
- Beans, chickpeas, soybeans, and nuts

Some animal sources of protein can be high in saturated fats and should be used in moderation—especially if you have elevated cholesterol or are at risk for heart disease.

### Fiber, Water, Fruits, and Vegetables for Gut Health

Your body needs a healthy gut to get the nutrients it needs from foods, supplements, and medications. Foods high in fiber can help keep your bowel movements regular and support gut health. These include:

- Oats
- · Whole grain bread
- Lentils
- Chickpeas
- Beans
- Fruits and vegetables
- Prunes and apricots

Water (8-10 8-oz cups a day, or about two liters), juices, fresh fruits, and vegetables can help you digest and eliminate waste through urine (pee) and feces (poop). Drinking more water can help you reduce the side effects of medications.

Animal fat, especially dairy, can make diarrhea worse. If diarrhea is a problem, you may need to cut back on animal fat, fried foods, and sugary foods. It is important to know that juices often contain large amounts of sugar. Sometimes the sugar is natural (from the fruit), and sometimes sugar has been added to the juice (e.g., cane sugar, corn syrup). Either way, juices tend to have more sugar and less fiber than fresh fruit. As a result, juices can make diarrhea worse. It is important for people who have diabetes or pre-diabetes to limit the amount of juice they drink.

#### Include Foods to Reduce Inflammation

Because the immune system of a person living with HIV is always struggling to get rid of the virus, it is always activated, or "turned on." An activated immune system produces inflammation. Ongoing inflammation appears to be related to many conditions, including heart disease and cancer.

The good news is that several foods can help to reduce inflammation. These include:

- Green leafy vegetables like chard, collards, kale, and spinach
- Bok choy (Chinese cabbage)
- Broccoli
- Beets
- Celery
- Certain fish, like mackerel, salmon, sardines, and tuna
- Certain fruits, like blueberries, cherries, pineapple, and strawberries
- · Certain nuts, like almonds and walnuts
- · Certain oils, like olive oil and coconut oil
- Certain seeds, like chia seeds and flax seeds
- Certain spices, like turmeric and ginger
- Tomatoes

### **Supplements**

People living with HIV need more vitamins to build and repair tissue. It may not always be possible to get all the <u>micronutrients</u> [2] (vitamins and minerals) from foods you eat. Not getting enough micronutrients can cause problems such as anemia [11].

While supplements are not a replacement for a well-balanced diet, they can help you get the additional micronutrients you need. Many people living with HIV take a general multivitamin, and some take additional supplements for specific micronutrients (such as calcium pills for women who do not get enough from their diet). Because several studies have shown that taking a general multivitamin can have health benefits for people living with HIV, many health care providers regularly recommend that their patients living with HIV take multivitamins.

Speak to your health care provider and see a registered dietician for a nutritional evaluation. They can help you determine what combination of dietary changes and supplementation can correct any micronutrient shortages you have.

### **Practice Food Safety**

It is very important to protect yourself against infections that can be carried by food or water:

- Wash your hands before preparing or eating food
- Wash all fruits and vegetables carefully
- Do not eat raw or undercooked eggs or meat
- Use bottled or filtered water if the public water supply is not totally safe

## **Taking Care of Yourself**

It is not always easy to stick to a well-balanced and healthy diet. However, the benefits of good nutrition are clear. Well-nourished people have a healthier <u>immune system</u> [12] and are better prepared to fight off infections. In addition, many people living with HIV use food and supplements to manage a variety of complications and side effects [6].

Your diet and supplements are key parts of your overall strategy to fight HIV and stay healthy. Although there are no US nutritional guidelines with specific recommendations for people living with HIV, a well-balanced and varied diet that includes all vitamins and minerals seems to be the best way to go. Work with your health care provider and a dietician or nutritionist to develop the best plan for you.