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In This Issue

Vitamin A Deficiency in a Hemodialysis Patient – A Case Review

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This article has been approved for 2.0 CPE units. The online CPEU quiz and certificate of completion can be accessed in the Members Only section of the RPG web site via the *My CPEU* link. In addition, this CPE offering is available to current RPG members only and the expiration date is June 30, 2012.

Introduction

This article reviews the function of vitamin A and examines a case review of vitamin A deficiency in a hemodialysis patient, as well as his treatment and outcomes.

Background (1)

Vitamin A is a fat soluble vitamin and plays an essential role in vision, cellular differentiation, growth, immunity, bone development, and has antioxidant properties, among others. It is a collective term for several related, biologically active molecules called retinoids (preformed vitamin A)—retinol, retinal, retinyl esters, and retinoic acid—that comprise the active forms of vitamin A.

- Retinol is necessary for reproduction and is found in animal tissues as retinyl esters with long-chain fatty acids. Animal sources of vitamin A are found primarily in liver, eggs, and milk (see Table 1). Since animal or supplement sources of vitamin A are preformed, toxicity is more likely to occur (2).
- Retinal is an aldehyde derived from the oxidation of retinol. It is necessary for low-light or color vision.
- Retinoic acid is derived from the oxidation of retinal. It is necessary for cell maturation, differentiation and reproduction. It cannot be reduced in the body and therefore cannot give rise to either retinal or retinol (see Diagram 1).

Carotenoids, called provitamin A carotenoids, are plant-based precursors of vitamin A. Of the provitamin A carotenoids, beta-carotene is most efficiently made into retinol and thereby possesses the most provitamin A activity. Metabolism of provitamin A carotenoids into active vitamin A is highly regulated, so toxicity is unlikely from plant sources (2). One exception, is the overconsumption of beta carotene from supplements which acts as a pro-oxidant.

The recommended daily allowance (RDA) for vitamin A is provided as retinol activity equivalents A (RAE). One RAE = 1 mcg retinol = 3.3 International Units (IU) (2). The RDA's are divided into gender and age groups and are listed as micrograms of RAE's to account for the differing biological activities of provitamin A carotenoids and retinols (see Table 2) (3). Tolerable Upper Intake Levels (ULs) were established to prevent toxicity.

R P G

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Articles about successful programs, research interventions, evaluations and treatment strategies, educational materials, meeting announcements and information about educational programs are welcome and should be emailed to the editor by the next deadline.

Future Deadlines:
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From the Editor's Desk

Megan Sliwa, RD, LDN
Editor

When I was on the plane back from the National Kidney Foundation (NKF) Spring Clinical Meetings in Las Vegas, I was asked why I was in Vegas. After letting the person know the meeting that I was attending and introducing myself as a registered dietitian, the person with whom I was speaking went on to reveal that their brother was recently put on hemodialysis. In the discussion that followed, he shared that his brother attributed a good part of the treatment success to the counseling he received at the in-center dialysis clinic. As I look back on that conversation and the NKF Meeting, I am inspired by the energy of the attendees, their commitment to the research and the passion for increasing the quality of life for patients diagnosed with Chronic Kidney Disease (CKD). The role of the renal dietitian has such power to share their expertise, teach fellow clinicians as well as improve the health of their patients.

It is this commitment and dedication, along with their interest in sharing their knowledge and best practices that drives the contributions to the Renal Nutrition Forum. I encourage you to have a look at the Feature Article by Rachael R. Majorowicz, RD, LD, for an in-depth case study that reviews the function of vitamin A. This article also reports on the treatment course of a patient with a deficiency and provides 2.0 CPEU hours. Additionally, the Advances in Practice article by Amy Braglia Tarpey, MS, RD, CSR, CNSC, examines medical nutrition therapy for the CKD patient, its long-term benefits to the patient and overall reduction in health care costs, provides 1.5 CPEU hours. Another interesting article included in this issue is a reprint entitled Understanding Functional Foods Through the Eyes of the Consumers from the On the Cutting Edge Newsletter. It discusses effective communication as a critical element in realizing the benefits of functional foods.

With the demands of work and life, I know volunteer time is precious. Many thanks to all those that made this issue possible for your expertise and guidance; this would not have the quality it does without your contributions. This issue of the Forum will be my last as Editor as I transition into the role of Managing Editor and Sara Erickson, RD, CSR, LDN, CNSC will begin her term as Editor with the Summer 2011 issue. And… a big thank you to Stacey Phillips, RD, outgoing Managing Editor, for her three-year commitment and dedication to the Renal Nutrition Forum Editorial Board! I wish her luck in her new role on the Executive Committee as the incoming Treasurer.

My goal is for you to enjoy and learn from this issue of the Forum. The editorial team welcomes your comments and suggestions for future issues as well. And if you've recently attended an interesting seminar or read a compelling article, it is likely that fellow members of the RPG would agree… consider sharing it as an original article submission to the RNF Editorial staff. ◆

Happy Spring!

Erratum
from Winter 2011 Forum:

Please accept our apologies, in the print version of the Renal Nutrition Forum, Vol. 30, No. 1 on page 1, the CPEU expiration date for the Feature Article entitled 'Maintenance Hemodialysis Patient is Improved with Intradialytic Parenteral Nutrition (IDPN): A Case Study' is listed incorrectly as 'April 15, 2011' and should read 'April 15, 2012'. Please note that the pdf version of the issue and the article on www.renalnutrition.org have been corrected.

Vitamin A Metabolism (1)

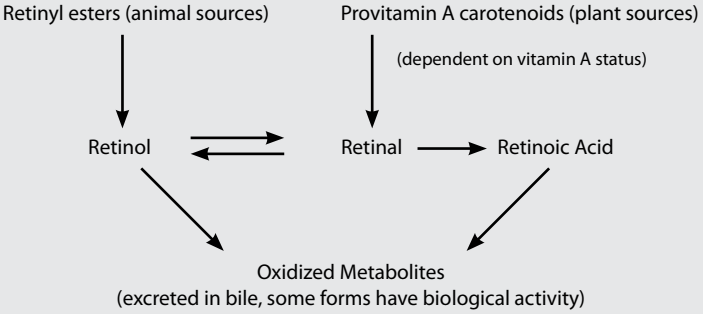
After some digestion in the stomach, retinol is esterified and packaged with chylomicrons in the small intestine, while some carotenoids are metabolized to retinoids and then esterified. Retinoic acid, on the other hand, enters the portal vein and tightly binds to albumin. Pancreatic and intestinal hydrolases act on the retinyl esters, freeing carotenoids and retinols to remain solubilized in micelle solutions. These are absorbed in the duodenum and jejunum, incorporated into chylomicrons, and transported to extrahepatic tissues. Those not taken up into tissues are then transported to the liver for storage or further metabolism. Roughly 50-85% of the total body retinol is stored in the liver (2).

Table 1
Food Sources of Vitamin A (3)

Animal Sources	Vitamin A (IU)*
Liver, beef, cooked (3 oz)	27,185
Milk, fortified skim (1 cup)	500
Cheese, cheddar (1 oz)	284
Milk, whole (1 cup)	249
Egg, fried (1 large)	362
Plant Sources	**Vitamin A (IU)**
Carrots, boiled (1/2 cup)	13,418
Spinach, frozen, boiled (1/2 cup)	11,458
Kale, frozen, boiled (1/2 cup)	9,558
Carrots, 1 raw (7 ½ inches)	8,666
Cantaloupe (1 cup)	5,411
Spinach, raw (1 cup)	2,813
Apricots, raw (1 cup)	3,178
Peach, 1 medium	319

*IU = International Units.

Diagram 1
Vitamin A Conversions



Note: conversion from retinol to retinal is reversible whereas the pathway from retinal to retinoic acid is not.

Table 2
RDAs and ULs for Vitamin A* (3)

Age (years)	Children (mcg RAE)	Males (mcg RAE)	Females (mcg RAE)	ULs
1-3	300 (1,000 IU)	n/a	n/a	600 (2,000 IU)
4-8	400 (1,320 IU)	n/a	n/a	900 (3,000 IU)
9-13	600 (2,000 IU)	n/a	n/a	1,700 (5,610 IU)
14-18	n/a	900 (3,000 IU)	700 (2,310 IU)	2,800 (9,240 IU)
19+	n/a	900 (3,000 IU)	700 (2,310 IU)	3,000 (10,000 IU)

* RDA's for pregnancy and lactation and Adequate Intakes for infants are found at http://ods.od.nih.gov/factsheets/vitamina

Within cells, retinol binds to cellular retinol-binding protein (RBP), which may function to regulate cellular levels of free retinol and to direct the vitamin to specific metabolic enzymes. Within the blood, retinol transport requires RBP, transthyretin (TTR, formerly known as prealbumin), and thyroxine. These carrier proteins circulate retinol to the tissues, with a half-life ≤ 15 hours. Once retinol has been deposited, the carrier proteins are filtered in the glomeruli and absorbed in the proximal tubules, making the kidneys indispensable to the process.

Vitamin A Deficiency

Vitamin A deficiency is uncommon in developed countries. Those at risk include preschool children eating inadequate fruit or vegetable intake, the urban poor, the elderly, or those with liver failure. Additionally, individuals with fat malabsorption, such as Crohn's disease, chronic diarrhea, celiac disease, and other disorders, have a higher risk of vitamin A deficiency.

A diagnosis of vitamin A deficiency is generally made by clinical findings but can be supported by serum retinol levels < 20 mcg/L or the ratio of retinol:RBP < 0.8 (2). Serum retinol levels may underestimate vitamin A stores in the setting of severe protein-calorie malnutrition since dietary protein, energy, and zinc are necessary for synthesis of RBP (2). Additionally, serum retinol

levels may be low if infection is present due to decreases in the negative acute phase proteins, such as RBP (2). Notably, vitamin A deficiency decreases the mobilization of iron from stores, leading to microcytic anemia.

Vitamin A Toxicity (1)

In comparison, vitamin A toxicity, or hypervitaminosis A, can result from acute or chronic supplementation. Acute symptoms in adults, possibly resulting from even one large dose of >660,000 IU, can include: nausea, vomiting, headache, blurred vision, and dizziness. Chronic toxicity may result from sustained intake of as little as 3-4 times the RDA. Symptoms include: bone or muscle pain, anorexia, dry/itchy skin, or hair loss. Excess vitamin A can also interfere with vitamin K absorption. Unfortunately, serum levels of retinol are not helpful in diagnosing vitamin A toxicity because most vitamin A is stored in the liver (2).

Vitamin A in Chronic Kidney Disease

In the chronic kidney disease (CKD) population, serum levels of vitamin A and RBP typically run higher than the general population (4) and can remain elevated for two years post-transplant (5,6). Additionally, patients with bilateral nephrectomies may have serum retinol levels elevated above that of hemodialysis (HD) patients (7). Elevated values may result from reduced ability of the kidneys to filter or absorb carrier proteins, as well as impaired conversion of retinol to retinoic acid (4). Additionally, Chen et al. reported elevated vitamin A levels associated with elevated creatinine, cautioning against vitamin A supplementation in the general population, but especially those with chronic renal insufficiency (8).

Vitamin A deficiency is uncommon in the CKD population since dialysis does not interfere with vitamin A status (5,9). Therefore, supplementation of vitamin A is not recommended in CKD (5,6) unless malabsorption is present (5). Notably, although HD does not decrease vitamin A levels, carotenoids have been shown to decline with dialysis (7). Symptoms of vitamin A deficiency in patients with CKD include scalded-appearing skin, hyperkeratosed hair follicles, Bitot's spots in the sclera of eyes, and dry eyes. Each can be monitored with use of the subjective global assessment (SGA) (10). Certainly, any acute changes in vision would be suspicious as well.

A recent study has shown, though, that low levels of vitamin A are an independent predictor of cardiovascular mortality in HD patients (11). Although this study could not identify if the increase in mortality was a result of reduced nutritional intake or vitamin A's role in immunity, there was speculation that the reduced ratio of retinol:RBP may affect the bioavailability of retinol within cells (11).

Conversely, Kalantar & Kopple reported elevated calcium and alkaline phosphatase levels in patients with CKD with intake of only 7,500-15,000 IU/day of vitamin A (7). Therefore, they recommend limiting food and supplemental sources of vitamin A to the RDA for patients with CKD (7). Vitamin A toxicity may also manifest as dark margins along the gums or may be associated with anemia (5,6,7,10).

Vitamin A toxicity could change cell membranes and transportation of ions, such as calcium, disrupting the normal intracellular groupings (12). Conversely, despite the elevated serum vitamin A values in HD patients, Aguilera et al. speculated that physiological or intracellular signs of hypovitaminosis A exist possibly due to a change in vitamin A receptors or the vitamin:carrier complex, leading to lower bioavailability and reduced retinol intracellularly (13). Thereby, the risk of vitamin A toxicity may be greatly reduced in the HD population. Additionally, they pondered whether more accurate vitamin A results could be obtained by checking vitamin:carrier-complex levels, rather than serum vitamin A levels (13).

Case Review—Patient M

Patient M is a 60 year old male who has been on in-center hemodialysis since 54 years of age in November 2004. His CKD is due to chronic interstitial nephritis. He also has a medical history of coronary artery disease, hypertension, debilitating gout, Crohn's disease resulting in colectomy in 1979 and small bowel resections with an ileostomy in 1990. Until the initiation of dialysis, he worked full-time as a chef.

Beginning in January 2005, he reported seeing black spots when standing too quickly or when getting up at night to go to the bathroom. At that time, it was attributed to dehydration and low blood pressure, resulting in an increase in his dialysis dry weight. By early February, he experienced "loss of vision in twilight hours" and difficulty distinguishing objects in low light. His vitamin A levels were checked and were normal at 398 mcg/L (see Table 3), so he was referred to Neurology and Ophthalmology.

By mid-March, his vision continued to deteriorate despite follow-up with a second ophthalmologist and a consult in neuro-ophthalmology with no conclusive diagnosis. Numerous medications were discontinued or substituted and he purchased new glasses, without improvement. Within the next two weeks, he could no longer drive at night. He was also having difficulty at work and, without improvement, would need to consider disability.

A recheck of the patient's vitamin A on April 1st, 2005 was low at 272 mcg/L and was associated with his night-blindness,

Table 3 - Laboratory Results & Vitamin A Supplementation

Date	Vitamin A Free Retinol (mcg/L)	Vitamin A* Free Retinol (mcg/L)	Vitamin A Supplement (IU/day)	Calcium (mg/dL)	Alkaline Phosphatase (U/L)
Reference/Range	**360-1200**	**325-780**	**n/a**	**8.9-10.1**	**45-115**
11/29/2004	n/a	n/a	0	10.5	60
2/10/2005	398	n/a	0	11.3	n/a
4/1/2005	272	n/a	0	n/a	n/a
4/18/2005	2160	n/a	100,000	10	n/a
4/27/2005	2061	n/a	50,000	n/a	n/a
5/11/2005	n/a	n/a	50,000	10.4	98
9/12/2005	646	n/a	Unknown	10.7	n/a
11/9/2005	n/a	n/a	Unknown	10.6	168
5/10/2006	n/a	n/a	As Needed	9.8	82
3/21/2007	75	n/a	0	10.3	110-137
4/3/2007	647	n/a	25,000 + 2 ADEK	10.2	117
11/28/2007	n/a	n/a	0	10.1	148
2/11/2008	n/a	672	0	10.8	n/a
5/21/2008	n/a	n/a	0	10.3	194
11/11/2008	n/a	n/a	0	10	284
3/18/2009	n/a	281	0	9.8	n/a
5/20/2009	n/a	747	10,000	8.9	137
6/17/2009	n/a	737	10,000	9.4	n/a
11/11/2009	n/a	n/a	10,000	8.3	84
5/19/2010	n/a	n/a	10,000	9.8	87
11/17/2010	n/a	n/a	10,000	8.2	154

*Change in assay by the laboratory

despite the previous value being within normal limits. Medication records indicate that he was prescribed 50,000 IU of vitamin A twice daily (100,000 IU/day) for one week. He was maintained on 50,000 IU/day for another month. His vision problems improved immediately and serum levels rose to over 2,000 mcg/L.

The patient reported resolution of his vision problems until mid-July when he started seeing black spots, so he independently increased his dose of vitamin A to two tablets daily (100,000 IU per day) for at least a week. Unfortunately, at this time his medical condition and well-being became complicated with headaches of such intensity that they kept him up at night and worsened when he leaned forward or in the heat of the kitchen at work. He also continued to have hydration issues due to his high output ostomy.

Throughout the remainder of 2005 and into 2006, he experienced intense headaches, anorexia with unintentional weight loss, hand weakness, and foot pain. By June 2006, he had lost 3.5 kg in 6 months (see Table 4). Thereafter, the patient reported a fairly good appetite with larger and more balanced meals. He continued vitamin A supplementation on an as-needed basis and

Table 4 - Weight Changes

Date	Weight (kg)
11/29/2004	54.5
12/14/2004	55.5
1/25/2005	57
6/6/2005	58.5
8/3/2005	57.5
4/12/2006	54
10/24/2006	48.8
12/4/2006	52.5
4/2/2007	42
8/15/2007	39.5
10/17/2007	44
11/19/2007	46
1/2/2008	43
6/4/2008	49
11/5/2008	55
4/22/2009	56
10/21/2009	58.5
1/20/2010	58.5

his renal multivitamin was increased to twice daily due to his malabsorption and large fluid losses from the high output ostomy. A brief SGA by the dietitian revealed splinter hemorrhages beneath his fingernails, which the patient observed for the past two weeks, a scalloped tongue with red edges (causing no oral side effects), and a red/irritated, itchy scalp. The hemorrhages were thought to be related to vitamin C deficiency and improved with the increase to 2 renal multivitamins daily. His care team associated hyperphosphatemia with the itchy skin condition.

However, by the end of the month, the patient again reported poor appetite and weight loss, which persisted despite a liberalized diet and initiation of 1 Nepro with CarbSteady (Abbott Nutrition, Columbus, OH) nutritional supplement daily. His health continued to decline, his dry weight decreased to 48.8 kg (~10% weight loss in 4 months), and he continued to have debilitating headaches.

His medical course continued to be complicated and anorexia persisted. He had to give up his employment due to his worsening condition, weakness, and pain. His serum vitamin A was very low at 75 mcg/L in March 2007, during which time he had stopped taking vitamin A supplements. He was prescribed 25,000 IU vitamin A plus two ADEK multivitamin tablets daily for one week. After which, he should continue 10,000 IU of vitamin A plus the 2 ADEK tablets daily until assessed in Endocrinology the next month. Following this appointment, the vitamin A and ADEK were discontinued with improved serum vitamin A of 647 mcg/L.

His appetite remained poor with a liberalized diet and weight loss persisted even with intake of 2-3 Nepro Carb Steady (Abbott Nutrition, Columbus, OH) nutritional supplements daily. Due to this, hypoalbuminemia of 2.8 g/dL, and history of bowel resection, he initiated intradialytic parenteral nutrition (IDPN) on April 11, 2007. By this time, his HD dry weight decreased to 42 kg (~20% decrease in 4 months). He had grown quite deconditioned and was admitted to nursing home care for physical therapy. His severe pain now encompassed his back, hips, knees, and ankles and was associated with uremic osteodystrophy, gout, or compressive myelopathy. During this time, he also missed a call for kidney transplant. His nephrologist determined he was not likely a good candidate due to his malnourished state and, as a result, was temporarily inactivated from the transplant list.

In the nursing home, he was advanced to a general diet with increased phosphate binders for his chronic hyperphosphatemia. By November 2007, IDPN therapy continued plus 1 Nepro daily. His appetite improved. His dialysis dry weight increased 4.5 kg in two months, albumin improved to 3.2 g/dL, and he demonstrated improved strength. He hoped to return to his home around the New Year, if strong enough.

In early 2008, he had concerns with poor vision, which his nephrologist suspected was due to worsening cataracts, but a vitamin A level was drawn to rule out deficiency. At 672 mcg/L, his vitamin A status was considered adequate and he continued without vitamin A supplementation.

His condition continued to improve through 2008. He remained in the nursing home for much of the year, gained strength and his weight improved to 55 kg by November 2008. He was able to return to his home in early 2009, with a greatly improved appetite and IDPN was discontinued.

During his February 2009 annual dietitian assessment, it was noted that his vitamin A had not been rechecked in a year. This turned out to be low (281 mcg/L) and the nephrologist prescribed 10,000 IU of vitamin A daily. His albumin also had improved to 3.7 g/dL and he exercised thrice weekly with the dialysis bike. A diet recall indicated that his protein intake was insufficient to meet his needs, so he continued intake of 1 Nepro daily.

By February 2010, his dry weight increased to 58.5 kg for the first time since prior to initiating HD. He regularly achieved adequate protein intake and used Nepro only on an as-needed basis. He remained happily independent at home and again pursued reactivation on the kidney transplant list.

Summary

This case review clearly demonstrates that a HD patient with signs of malabsorption may become symptomatic for hypovitaminosis A with normal serum levels. No changes in calcium or alkaline phosphatase were observed during vitamin A supplementation. This was noted despite numerous other medication changes were also made over time.

Although vitamin A toxicity was never diagnosed or recognized, it should be noted that the case review patient's health status began to decline around the time vitamin A supplementation was initiated, or at least when he began self-dosing for improvement of his night blindness. Unfortunately, there is no way to know how much vitamin A he was taking or for what duration. Additionally, there is no longer a record of the content of the ADEK vitamins. Thus the cumulative vitamin A dose during that period is also unknown.

Fortunately, improvement in vitamin A toxicity symptoms can be achieved by simply discontinuing supplementation, which may have been the case for the patient during his 2007-2008 nursing home stay. During this time, medication records reveal that no vitamin A supplementation was prescribed and it was unlikely that the patient was self-dosing in this controlled setting.

There are no clear guidelines regarding safe vitamin A repletion in this population, or the ideal method of supplementation (e.g. water-miscible or other), and this certainly warrants further research. Unfortunately, vitamin A toxicity may be a challenging diagnosis. This may be due to baseline elevated serum retinol values observed in patients with CKD and the non-specific signs and symptoms of vitamin A toxicity. It may be reasonable to consider a large, initial repletion dose of vitamin A. This would then be followed by a lower maintenance dose or staggered maintenance doses. Patients should be discouraged from self-dosing to prevent unwanted side-effects. With close monitoring by a clinician of vitamin A or retinol:RBP levels, and clinical symptoms, patients may be able to safely replete vitamin A stores.

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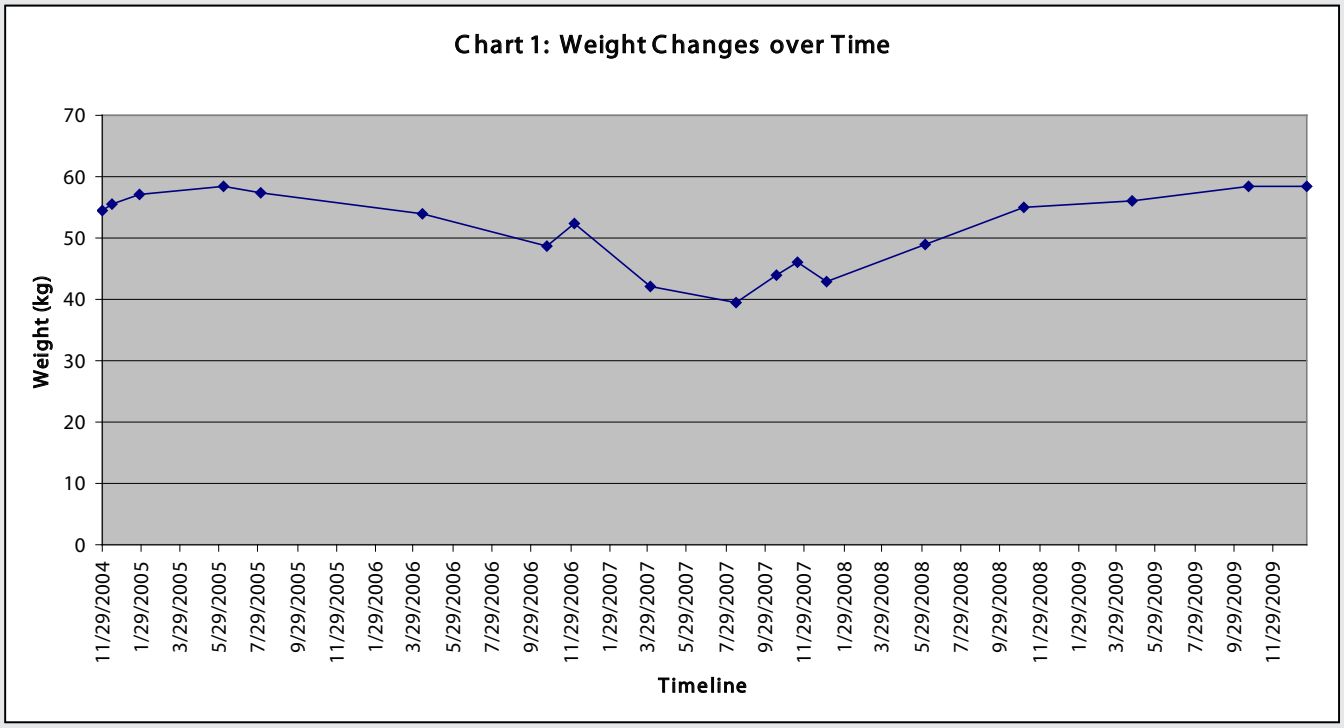
Chart 1
Weight Changes Over Time



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Thank You...

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Chronic Kidney Disease Medical Nutrition Therapy: Guidelines for Effective Management

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This article has been approved for 1.5 CPE units. The online CPEU quiz and certificate of completion can be accessed in the Members Only section of the RPG web site via the My CPEU link. In addition, this CPE offering is available to current RPG members only and the expiration date is June 30, 2012.

Abstract

Medical nutrition therapy (MNT) is a crucial but often overlooked component of treatment for Chronic Kidney Disease (CKD). A low protein diet has been demonstrated to delay progression of CKD, while bone mineral metabolism management improves outcomes when initiated at earlier stages of CKD management. Clients benefit from nutrition intervention to reduce sodium intake for blood pressure control and some may require education to manage serum potassium levels. The CKD dietitian, like the dialysis dietitian, has multiple roles including educator, coach, and cheerleader. Effective management of CKD with MNT may have long-term benefits, including reduction in healthcare costs and improvement in client/patient quality of life (1).

Medicare and Insurance Coverage

Medicare covers three hours of MNT with a registered dietitian in the first year of CKD, and two hours each year after the first year. Patients must be referred by a physician, with a glomerular filtration rate (GFR) between 13-50 mL/min/1.73 m^2 indicating CKD Stages 3-4 (2). Registered dietitians must have a National Provider Identifier (NPI) number to provide nutrition therapy to Medicare patients. Other types of insurance may allow for more frequent visits if required or requested by the patient. Patients may self-pay for nutrition therapy if they are not Medicare-eligible and do not have another type of insurance coverage.

Assessment

MNT goals for CKD are based on a thorough nutrition assessment, which should be completed initially and annually thereafter. Anthropometrics including height, weight, body mass index or BMI, and recent weight changes should be reviewed at each visit. If adequate time is available, skin-fold measurements may be useful to evaluate changes in body composition over time. Appetite may be poor due to uremia, requiring modifications in meal size and density or necessitating supplement use. Gastrointestinal symptoms that may interfere with appetite or ability to consume adequate energy and protein should be reviewed, including nausea/vomiting, diarrhea, constipation, and gas or bloating. Recommended energy intake for CKD patients is 30-35 kcal/kg for patients over 60 years of age, and 35 kcal/kg for those less than 60 (3). Energy intake should promote weight maintenance, and may require adjustment if weight gain or loss occurs. Three-day food records or twenty-four hour recalls are useful for assessing initial dietary patterns and subsequent adherence to diet recommendations.

Protein

Protein restriction has long been a controversial topic with CKD. Two smaller randomized controlled trials of diabetic patients with nephropathy concluded that protein restrictions of 0.6-0.8 g/kg/d had no beneficial effect on slowing the decline of GFR (4,5). An even smaller study of nine diabetic patients awaiting kidney/pancreas transplant compared a vegetarian low-protein (0.6 g/kg/d) diet supplemented with alpha-ketoanalogs reduced proteinuria, stabilized albumin levels, and slowed decline of GFR (6). However, a larger long-term follow-up of the Modification of Diet in Renal Disease (MDRD) study compared low-protein (0.58 g/kg/day) and keto acid/amino acid-supplemented very low-protein (0.28 g/kg/day) diets. The very low-protein diet had no effect on decline of GFR, and actually increased risk of death (7). However, an earlier meta-analysis of ten studies in both nondiabetic and diabetic patients with renal disease concluded that the low protein diet is beneficial in slowing progression of CKD (8). Consequently, the National Kidney Foundation's (NKF) Kidney Disease Outcomes Quality Initiative (K/DOQI) recommends a protein intake of 0.6-0.8 g/kg/d, with 50% from high biological value sources (9). Plant protein sources may slow decline of GFR and induce favorable effects on lipid profile and blood pressure, so inclusion of legumes, nuts, and soy protein is also recommended (10).

Phosphorus, Calcium, and Bone Mineral Metabolism Management Goals

Accumulating evidence suggests that bone mineral metabolism management in earlier CKD stages helps to reduce incidence and severity of renal osteodystrophy in stage 5 CKD. Recommended phosphorus intake is 800-1000 mg/day, or 10-12 mg/g of protein consumed (11). Before serum phosphorus levels

start to rise, parathyroid hormone (PTH) often increases above the recommended levels of 35-70 pmol/L for stage 3 or 70-110 pmol/L for Stage 4. Dietary phosphate restriction is generally sufficient to maintain PTH levels in the normal range during stage 3 CKD, but phosphate binders may be required in stage 4. The serum phosphorus target level is ≤ 4.6 mg/dL for stages 3-4, rising to ≤ 5.5 mg/dL in stage 5 (11).

New research suggests that the source of phosphorus, vegetable versus animal, may also be important. Moe and colleagues found that intake of phosphorus was correlated with fractional urinary excretion of phosphorus in patients on a vegetarian diet, but not for those on a diet including meat (12). This suggests that more phosphorus is absorbed from meat phosphate sources and also may not be excreted as efficiently as that from vegetable sources. As such, the focus of the low phosphorus diet should be on reducing intake of meat, dairy, and eggs rather than whole grains, legumes, and nuts. Vegetable phosphorus sources may require restriction in late stage 4 or stage 5 CKD, or phosphate binders may be introduced instead to allow a more liberal diet (11). Additionally, patients should be encouraged to reduce or eliminate sources of inorganic phosphate, such as soda, processed foods, and phosphate-injected meats.

Dietary calcium should be restricted to 2,000 mg/day total from diet and supplements (11). The target range for serum calcium is 8.4-9.5 mg/dL, with the goal for calcium-phosphorus product being < 55. As calcium most often appears in the same foods that contain phosphorus, further dietary restrictions are not usually required. Some patients may exhibit hypocalcemia, which should be treated with calcium carbonate and active Vitamin D if PTH is elevated or if the patient develops clinical symptoms (11).

Serum 25-hydroxy vitamin D should be evaluated on the initial assessment and annually. If vitamin D levels fall below 30 ng/mL, therapy with vitamin D_2 in the form of ergocalciferol or cholecalciferol, should be initiated. The recommended dose is dependent on the level of deficiency; an algorithm for dosing can be found in the K/DOQI clinical practice guidelines for bone metabolism and disease in CKD (11).

Potassium

For many CKD patients, potassium restriction remains unnecessary until stage 5 of the disease. However, patients who are accustomed to consuming greater quantities of fruits and vegetables may need to decrease their intake. The goal range for serum potassium is 3.5-5.0 mEq/L (3). Medications commonly taken in CKD may either raise or lower potassium levels. Angiotension Converting Enzyme (ACE) Inhibitor and Angiotensin II receptor blocker (ARB) drug classes are frequently used to control blood pressure and may cause serum potassium to become elevated. Potassium-sparing diuretics including spironolactone and torsemide may cause serum potassium to become elevated. Potassium wasting diuretics such as furosemide, hydrochlorothiazide, metolazone, and triamterene may lower serum potassium by causing an increase in excretion. In some cases, patients may require additional potassium supplementation.

Sodium, Fluid, and Blood Pressure

While fluid is not restricted in CKD stages 1-4, sodium intake should not exceed 2.3 grams daily (9). Reduction in sodium consumption may help to decrease blood pressure to ≤ 120/80 as recommended by the K/DOQI guidelines and slow CKD progression. These changes can be achieved through reduction of the intake of canned, processed, and restaurant food items. Assisting patients in learning to cook at home, thus controlling the sodium in their food, may also be beneficial. A reasonable fluid intake should be achieved in order to avoid the need for increasing doses of diuretics. Kopple and Massry recommend 2000 ± 500 mL daily for those with impaired kidney function not yet in stage 5 CKD (13).

Vitamins and Minerals

There is no consensus available for vitamin and mineral supplementation in CKD stages 1-4. The dietary recommended intakes may be met with diet alone, or can be supplemented with a B-complex plus vitamin C product or renal vitamin (3). Regular multivitamins containing fat-soluble vitamins are generally not recommended in CKD in order to avoid accumulation (13). Although not common, if iron or zinc deficiencies are suspected, laboratory work should be evaluated prior to starting supplementation.

Alkaline Diet

Recently, there has been interest in the effect of metabolic acidosis on the progression of CKD. While studies demonstrated reduction in progression to stage 5 CKD with use of sodium bicarbonate tablets plus vitamin C, there are few studies with the high alkaline diet published (14). It may be inferred by some that a diet high in fruits, vegetables, nuts, and legumes and low in animal protein, which promotes serum alkalinity, could be beneficial in delaying advancement to stage 5 CKD. However, Leal and colleagues concluded that metabolic acidosis was related to the stage of CKD, not alkalinity of diet in their 2009 study (15). A high alkaline diet should be undertaken with caution as its emphasis on plant foods may promote hyperkalemia.

Diabetic Goals

When counseling patients with Diabetic Kidney Disease, care should be taken to create and implement a dietary plan that the patient agrees upon and is able to follow. Insulin and oral hypoglycemic medications may need to be adjusted on an ongoing basis as CKD progresses. As GFR declines, less insulin is typically needed to maintain blood glucose in the desired range due to decreased degradation by the kidney (3). K/DOQI recommends a target glycosylated hemoglobin (HbA1C) to be maintained at < 7.0% (16). A high fiber diet including whole grains, legumes, and nuts should be encouraged, with care to monitor potassium and phosphorus levels and adjust accordingly. Omega-3 fatty acids from food sources such as cold-water fish may also be beneficial for prevention of diabetes-related cardiovascular disease. For those who do not eat fish, an omega-3 supplement may be used. Various studies have shown non-significant improvements in GFR, blood pressure, HbA1C, and total and low density lipoprotein cholesterol with use of 2.0 grams of eicosapentanoic acid (EPA) and 2.6 grams docosahexanoic acid (DHA) daily. It is incumbent on the dietitian to evaluate omega-3 fatty acid supplements for EPA and DHA content as well as safety prior to recommending a particular brand to a patient.

Malnutrition

Prevention of malnutrition is the most important goal in MNT for CKD (17). Uremic symptoms, comorbid conditions, taste acuity changes and gastrointestinal side effects related to medications, and alterations in gastric motility may induce malnutrition in this population. Unplanned weight loss may be countered with liberalization and increase in the caloric density of the diet or use of nutritional supplements. A decline in serum albumin necessitates an assessment of protein intake and possible inflammatory factors if not accompanied by weight loss. In situations of acute illness, protein restriction may need to be suspended to provide adequate nitrogen for recovery. The dietitian and physician should work together to develop a nutrition plan to promote anabolism while minimizing impact on GFR as much as possible.

Resources for the CKD Dietitian

Patient Education Materials and Tools

National Kidney Disease Education Program (NKDEP)

http://www.nkdep.nih.gov/professionals/ckd-nutrition.htm

American Association of Kidney Patients

http://www.aakp.org/aakp-library/dsp_kidneyCats.cfm?cat=7

Clinical Guidelines

National Kidney Foundation Kidney Disease Outcome Quality Initiative (NKF K/DOQI)

http://www.kidney.org/professionals/kdoqi/guidelines_commentaries.cfm#guidelines

Medicare Medical Nutrition Therapy Benefit Overview for Providers

https://www.cms.gov/MedicalNutritionTherapy/

Conclusion

Although dietary modifications in CKD may be challenging to implement, MNT may help to slow the decline in GFR. Thus prolonging the time to initiation of dialysis, or preventing it altogether. CKD patients may be highly motivated to avoid the challenges of initiating dialysis by improving their nutrition. This will also help increase their odds of becoming a viable renal transplant candidate. CKD dietitians have a unique opportunity to create nutrition plans that are individually tailored to help preserve patients' quality of life and improve outcomes!

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Looking for Renal-Focused Sessions at ADA's Food & Nutrition Conference & Expo?

The Skinny on Bariatric Surgery: Illuminating the Evidence from Early Stage CKD through Transplant will be offered on Monday, Sept. 26, 3:30 – 5 p.m. (Ballroom 20A, San Diego Convention Center) and is planned by the Renal Dietitians DPG. (DPG Spotlight Session)

Description of Session:
In recent years, patients with kidney disease have increasingly sought bariatric surgery to improve transplant candidacy or health outcomes. This session will review current bariatric surgery procedures, those associated with renal complications, and those preferred for patients with chronic kidney disease (CKD). Additionally, this session will review the current, cutting-edge literature regarding bariatric surgery and renal implications as well as MNT.

Objective 1 - Discuss current bariatric operations in the management of medically complicated obesity, which procedures can be associated with renal complications and which procedures are preferred in patients with CKD.
Objective 2 - Explore the most current evidence-based literature to determine if correction, reduction or elimination of morbid obesity in CKD would result in better outcomes.
Objective 3 - Integrate available evidence into CKD MNT concerning the use of bariatric surgery as a potential complementary medical/surgical therapy.

CPE Level: 3; **CPE Hours:** 1.5
Learning Need Codes: 5370, 5340, 4040

Improving Care: MNT in Primary Care Settings for CKD is offered Monday, Sept. 26, 1:30 – 3 p.m. (Ballroom 6C&F, San Diego Convention Center)

Description of Session
Chronic kidney disease (CKD) is poorly managed in the primary care setting, in part because clinicians, including RDs, feel inadequately educated. Generalist RDs can play a significant role in early diagnosis, treatment and education in primary care settings. Appropriate care can assist patients at risk, including those with diabetes and hypertension, to slow CKD progression and treat complications. An RD will describe her practice experience and the new CKD certificate training program and clinical tools.

Objective 1 - Describe the burden of CKD in the U.S.
Objective 2 - Identify how RDs in primary care settings can provide appropriate care to CKD patients.
Objective 3 - Utilize the new CKD certificate training program and clinical tools to provide care to pre-dialysis CKD patients.

CPE Level: 2; **CPE Hours:** 1.5
Learning Need Codes: 5340, 3020, 3005

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Abbott Nutrition

Understanding Functional Foods Through the Eyes of Consumers

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Reprinted with permission from the Diabetes Care and Education Dietetic Practice Group of the American Dietetic Association: On the Cutting Edge, Winter 2010, Vol. 31, No. 6, Rinhardt Kapsak W, Rahavi E, Eimers C. Understanding Functional Foods Through the Eyes of the Consumers.

Abstract

Foods that can provide health benefits, such as reducing the risk of heart disease or maintaining blood glucose levels, remain a hot food and nutrition topic. The media continue to chronicle trends in food and health, and consumers remain enthusiastic about the benefits these foods offer. The International Food Information Council's (IFIC) 2009 Functional Foods/Foods for Health Survey shows that many consumers are aware of the link between nutrition and health and are looking for actionable advice. Therefore, effective communication is a critical element in realizing the public health benefits that functional foods offer, without presenting them as "magic bullets."

Introduction

New evidence and its related understanding by both health professionals and researchers about the role of diet in the overall health status of Americans have developed over the past decades. Such evidence has resulted in a heightened public interest in learning about foods that can provide benefits beyond basic nutrition or "functional foods." In fact, 84% of consumers have cited interest in learning more about foods that can provide benefits (1).

Functional foods include a wide variety of foods and food components believed to improve overall health and well-being, reduce the risk of specific diseases, or minimize the effects of other health concerns. Such functional foods can include the inherently healthful components in fruits and vegetables; whole grains and fiber in certain cereals and breads and calcium in milk; fortified foods and beverages, such as vitamin D–fortified milk; and, in its broadest definition, dietary supplements also. This definition of functional foods is similar to the one used by the American Dietetic Association (2).

Since 1998, the IFIC has conducted consumer insight surveys related to functional foods every 2 to 3 years. These surveys provide insights into consumer interests and perceptions about foods and beverages and their roles in promoting health and wellness. In 2009, IFIC commissioned its sixth consumer insight survey studying Americans' attitudes and awareness toward functional foods. Over a 10-day period, 1,005 U.S. adults were randomly invited to participate in a 20-minute Web-based survey. Respondents were invited based on gender, education, age and ethnicity to include a representative sample of the American population; the final data set was weighted by level of education.

Consumer Perceptions of Functional Foods

The results of IFIC's 2009 Functional Foods/Foods for Health Survey indicate that most consumers are aware of functional foods. For the past 5 years, about nine of 10 Americans have been able to name, on an unaided basis, a specific food or food component and its associated health benefit. The top functional foods named by consumers include fruits and vegetables; fish/fish oil/seafood; dairy (including milk and yogurt); meat and poultry; herbs and spices; fiber; tea and green tea; nuts; whole grains and other grains; water; cereal; oats/oat bran/oatmeal; and vitamins/supplements.

When asked about health benefits associated with the aforementioned food or food components, most Americans reported improvements in or lowering of risk of cardiovascular disease, digestive health, risk of vitamin deficiencies, general health, bone health, risk of cancer, eye health, immune health, and weight maintenance.

Consumer acceptance of functional foods is positive. Most Americans (89%) agree that certain foods have additional benefits and may reduce the risk of disease. Consumers most likely to agree with the notion that some foods have benefits beyond basic nutrition are those who report having an "excellent" health status, use dietary supplements, have a college education, and those who are single.

Understanding Functional Foods

When asked whether they agree or disagree that foods and beverages can provide a wide array of specific health benefits (for example, heart health), between 68% and 85% of Americans either "somewhat" or "strongly believe" in the stated benefit. Americans believe the top benefits of foods and beverages include:

- improved heart health (85%)
- healthy growth and development of children (83%)
- improved physical energy or stamina (82%)
- overall health and wellness (82%)
- improved bone health (82%)

Americans' consumption of functional foods parallels their awareness of food and health associations. When prompted about a certain food or food component and a corresponding health benefit, consumers report they are already consuming specific foods related to some of their top health concerns, including cardiovascular disease, cancer and weight or foods associated with certain diet and health relationships such as calcium and bone health or fiber and digestive health. Between 25% and 60% of Americans say they are already consuming specific foods and beverages for specific health benefits while 35% to 50% say they are likely to begin consuming foods for the indicated benefit.

Additional findings from the 2009 Food & Health Survey: Consumer Attitudes Toward Food, Nutrition, and Health (3) by the IFIC Foundation show that the top three food components that consumers age 18 years and older look for when choosing foods and beverages included fiber, whole grains and protein. However, when choosing food and beverages for their children, calcium, vitamin C and whole grains were thought to be the most important components (3).

Functional Components Pertinent To Diabetes

Several food components may confer benefits in minimizing the effects of diabetes-related conditions. While not all-inclusive, the Table provides a starting point for the scientifically backed benefits of certain functional components relevant to diabetes, along with examples of food sources that contain these beneficial components (4).

Remaining a Trusted Source for Foods That Can Provide Benefits

As consumers live longer and grow more interested in reducing their risk of chronic disease, the demand for information about foods that can provide health benefits increases. Though 70% of Americans rank mass media as their top source of health and nutrition information, only 27% of these consumers consider the media to be believable. Further, when consumers are asked who would influence them to try a specific food or food component, the vast majority of them cite health professionals in general (84%), and dietitians specifically (71%) as sources that would influence them to either a "moderate" or "great" extent (1).

While the media can often sensationalize information about diet and health, presenting new products as "magic bullets," health professionals are the conduit between science and consumers, deciphering health messages for them using science-based information and practical advice. Accordingly, health professionals play an integral role in helping consumers incorporate healthful foods and food components into their diet. However, new evidence will continue to emerge in this area, so it is important for health professionals to monitor the science as well as consumer knowledge and acceptance of these foods, and lend expertise to nutrition communications that guide consumers toward better health.

Summary

Most Americans are interested in foods and beverages that can provide a host of benefits from improving overall health and wellness to improving heart, bone and digestive health to reducing cancer risk and maintaining healthful weight. Many Americans report consuming foods for a specified health benefit, and even more are interested in doing so (3). Consumers are primed for actionable advice about foods that provide benefits and ways in which to incorporate these foods into their diet. While some food

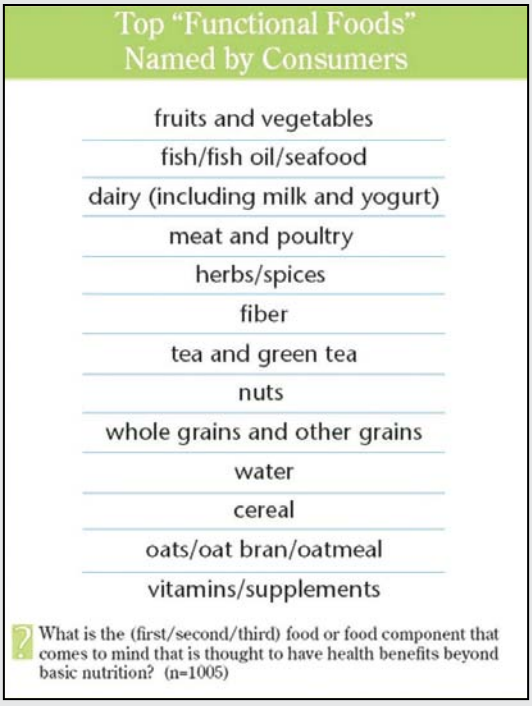

Table. Examples of Functional Components Pertinent to Diabetes*

Class/Components	Source	Potential Benefit
	DIETARY (FUNCTIONAL AND TOTAL) FIBER	
Beta glucan**	Oat bran, oatmeal, oat flour, barley, rye	May reduce risk of CHD; may contribute to maintenance of healthy blood glucose levels
Soluble fiber**	Psyllium seed husk, peas, beans, apples, citrus fruit	May reduce risk of CHD and some types of cancer; may contribute to maintenance of healthy blood glucose levels
Whole grains**	Cereal grains, whole wheat bread, oatmeal, brown rice	May reduce risk of CHD and some types of cancer; may contribute to maintenance of healthy blood glucose levels
	FATTY ACIDS	
MUFAs**	Tree nuts, olive oil, canola oil	May reduce risk of CHD
PUFAs: ALA (omega-3 fatty acid)	Walnuts, flax	May contribute to maintenance of heart health; may contribute to maintenance of mental and visual function
PUFAs: DHA/EPA (omega-3 fatty acid)**	Salmon, tuna, marine, and other fish oils	May reduce risk of CHD; may contribute to maintenance of mental and visual function
Conjugated linoleic acid	Beef and lamb; some cheese	May contribute to maintenance of desirable body composition and healthy immune function
	FLAVONOIDS	
Flavanols: Catechins, epicatechins, epigallocatechin, procyanidins	Tea, cocoa, chocolate, apples, grapes	May contribute to maintenance of heart health
Proanthocyanidins	Cranberries, cocoa, apples, strawberries, grapes, wine, peanuts, cinnamon	May contribute to maintenance of urinary tract health and heart health
	MINERALS	
Potassium**	Potatoes, low-fat dairy products, whole grain breads and cereals, citrus juices, beans, bananas	May reduce the risk of high blood pressure and stroke, in combination with a low-sodium diet
	PHENOLIC ACIDS	
Caffeic acid, ferulic acid	Apples, pears, citrus fruits, some vegetables, coffee	May bolster cellular antioxidant defenses; may contribute to maintenance of healthy vision and heart health
	PLANT STANOLS/STEROLS	
Free stanols/sterols**	Corn, soy, wheat, wood oils, fortified foods and beverages	May reduce risk of CHD
Stanol/sterol esters**	Fortified table spreads, stanol ester dietary supplements	May reduce risk of CHD
	PHYTOESTROGENS	
Lignans	Flax, rye, some vegetables	May contribute to maintenance of heart health and healthy immune function
Soy protein**	Soybeans and soy-based foods	May reduce risk of CHD
	VITAMIN	
Vitamin E	Sunflower seeds, almonds, hazelnuts, turnip greens	Neutralizes free radicals, which may damage cells; may contribute to healthy immune function and maintenance of heart health

ALA = α-linolenic acid; CHD = coronary heart disease; DHA = docosahexaenoic acid; EPA = eicosapentaenoic acid; MUFA = monounsaturated fatty acids; PUFA = polyunsaturated fatty acids

* Examples are not an all-inclusive list.

** FDA approved health claim established for component.

and health relationships may not be on the top of consumers' minds at this time, continued exposure to particular foods and beverages with beneficial components can heighten awareness and result in increased consumption over time.

Functional foods are an important part of an overall healthful lifestyle that includes a balanced diet and physical activity. Consumers should strive to incorporate a wide variety of foods, including many of the examples listed here, into their diet (Figure). These examples are not "magic bullets." The best advice at this time is to include a variety of foods, as exemplified in the U.S. Department of Agriculture's food plan, which would provide many potentially beneficial components into consumers' diets.

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Looking for new patient education material?

Renal Dietitians (RPG) is pleased to announce the availability of a new Renal Nutrition Forum (RNF) 2011 Patient Education Electronic Supplement in a user friendly format of 5 individual patient handouts available on **www.renalnutrition.org**.

Visit the Patient Education Tools section to access these materials. There is a snack handout designed specifically for the CKD pediatric population on dialysis and is available in both Spanish and English. To promote better understanding of CKD while having fun, there is a phosphorus word search puzzle. Finally, there are bright and eye-pleasing graphic handouts which are targeted for the low literacy CKD patients. These handouts focus on both high and low potassium foods.

The RNF Editorial Board wishes to thank those RPG members who submitted these handouts for publication. Please note these handouts are available to members for reproduction and educational purposes only.

ADA Career Center

Let ADA Help You Find that Career Opportunity
Everyone wants to stay on top of their career options, particularly during challenging economic times. Dietetic practitioners need access to the most comprehensive job listings, latest career data, and the best employment tools to ensure they are well equipped during times of potential change.

ADA is here to help you. Our Career Center has a broad spectrum of resources that you can use to prepare yourself for a new opportunity, polish up your skills for your current position or help you grow professionally. Review our extensive career resources:

Peer Connection and Networking - Don't underestimate the value of participating in your state affiliate, ADA national dietetic practice and member interest groups (DPGs or MIGS). According to the 2010 Journal Reader Survey, dietetic practitioners rely on state and district career Web sites to access local job opportunities.

Center for Career Opportunities - Participate in a one-day exhibit held on the last day of FNCE where you can meet face-to-face with employers who may be hiring immediately or in the near future.

ADACareerLink - At ADA's national online job service, you can post your resume, target your search by specialty or geographic location, respond directly to employer job listings and get e-mail alerts about new job openings. For a fee, you can recruit professionals for your own organization.

Go to www.eatright.org/careercenter/content.aspx?id=2310. Be sure you have your Member ID number and password.

Career Toolbox - Gearing up for your first job, promotion, or change in practice can be a daunting task. Get started with ADA's Career Toolbox. Go to www.eatright.org/members/content.aspx?id=2297

Here are some highlights:

- ADA Interactive Salary Tool and Compensation and Benefits Survey of the Dietetics Profession 2009 which gives you a rough idea of what dietetic practitioners earn based on qualifications, education and supervisory experience
- Career Video - a great resource for those in the early stages of their dietetic careers
- Mentoring and career guidance - take a sneak peak at our comprehensive eMentoring system available June 1, 2011. It will provide optimal matches between mentor and mentee based on such parameters as geographic location, years of experience and practice area
- Resume templates - an easy way to update your resume professionally
- Volunteer opportunities - build your leadership skills while networking with influential RDs

Market Yourself - Me, Inc. - Go to www.eatright.org/meinc to use our online branding toolkit to improve your brand.

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RPG Fifty-Year Members ***(joined ADA in 1961)***

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RPG Fifty-Year Plus Members ***(joined ADA before 1961)***

Muriel E. Bradburn
Janice L. Byrd
Marilyn J. Goska
Annie B. Jelks
Maureen R. Kachinski
Barbara H. Ketay
Julia J. Kula
Marilyn W. Lawson
M. Arline Smith
Emma S. Weigley
Despina A. Zerdes

Calendar of Events

August 2011

NATCO 26th Annual Meeting
Hyatt Regency; San Francisco, CA
August 13-16, 2011
www.natcol.org/

September 2011

ADA Food & Nutrition Conference and Expo
San Diego, CA
September 24-27, 2011
www.eatright.org/fnce/

November 2011

American Society Of Nephrology Kidney Week 2011
Pennsylvania Convention Center; Philadelphia, PA
November 8-13, 2011
www.asn-online.org/education_and_meetings/

2011 Organ Donation Congress
11th Congress Of The International Society For Organ Donation And Procurement
Buenos Aires, Argentina
November 27-30, 2011
www.tts.org/

February 2012

Annual Dialysis Conference
San Antonio, TX
February 26-28, 2012
http://som.missouri.edu/dialysis

CRRT 2012 Conference (Continuous Renal Replacement Therapies)
Hilton Bayfront; San Diego, CA
February 14-17, 2012
www.crrtonline.com/

2012 Canadian Society Of Transplantation Annual Scientific Conference
Fairmont Château Frontenac Québec, Québec
February 23-25, 2012
www.cst-transplant.ca/annualconference.cfm

April 2012

2012 American Society Pediatric Nephrology Annual Meeting
Boston, MA
April 28-May 1, 2012
www.aspneph.com/

May 2012

National Kidney Foundation 2012 Spring Clinical Meetings
Gaylord National; Washington, DC
May 9-13, 2012
www.kidney.org/news/meetings/clinical/index.cfm

June 2012

American Transplant Congress 2012
Boston, MA
June 2-5, 2012
www.atcmeeting.org/2012/

First World Renal Nutrition Week
XVI International Congress of Nutrition & Metabolism in Renal Disease
Honolulu, HI
June 26-30, 2012
www.renalnutrition.com

July 2012

24th International Congress of The Transplantation Society
Berlin, Germany
July 15-19, 2012
http://transplantation2012.org/

October 2012

ADA Food & Nutrition Conference And Expo
Philadelphia, PA
October 6-8, 2012
www.eatright.org/fnce/

ASN Kidney Week 2012
San Diego Convention Center; San Diego, CA
October 30-Nov 4, 2012
www.asn-online.org

Renal Dietitians Chair Message

Kathleen M. Madigan, MS, RD, LDN, CSR, MBA

RPG Chair

As I prepare to transition from my role as Chair for the Renal Dietitians Dietetic Practice Group (RPG) to Immediate Past Chair, I would like to thank everyone involved in RPG for helping to make us such a strong, unified and cohesive group. In the words of Helen Keller, "Alone we can do little; together we can do so much." I believe these words have even more significance for RPG now more than ever before.

We are finding strength in one another as we face head on all the changes in practice we must deal with in light of bundling. And, being the strong, proactive group that I know we are, we are already preparing for what changes 2014 will have in store for us. We are a group not afraid to change routines when faced with obstacles and challenges.

This year, we have experienced an increase in membership. We are continuously improving and updating our web site, www.renalnutrition.org, offering opportunities for CPEUs through the *Renal Nutrition Forum,* webinars, and also providing networking opportunities at the Food & Nutrition Conference & Expo (FNCE) on an annual basis. I encourage all RPG members to continue utilizing and taking advantage of the many available benefits RPG has to offer. My challenge to each of you is to bring even more renal dietitians into RPG, so they can also reap the many benefits of our group. The stronger we are in number enables us to do so much more.

CONGRATULATIONS TO THE NEWLY ELECTED MEMBERS OF THE RPG EXECUTIVE COMMITTEE FOR THE 2011-2012 YEAR

Sarah Kruger, MS, RD: Chair-Elect

Stacey Phillips, RD: Treasurer

Elizabeth Neumann, RD, LD: Nominating Committee Member

Betty Parry Fisher, MS, RD: Nominating Committee Member

Pam Kent, MS, RD, CSR, LD: House of Delegates Member (appointed position)

OSA Winner!

Congratulations to the 2010 Outstanding Service Award Winner!

Phillipa Feiertag-Norton, MEd, RD

We would like to congratulate the 2010 Outstanding Service Award (OSA) Winner Phillipa Feiertag-Norton, MEd, RD. She is currently employed as a Clinical Information Systems Analyst at Clinical Computing in Cincinnati, Ohio. Her dedication to the field of nephrology nutrition has been demonstrated with numerous research and clinical presentations and positions held on the RPG Editorial Board.

Over the past many years, Phillipa has been a regular contributor to the Renal Nutrition Forum (RNF), offering well researched and cutting-edge clinical articles that have helped keep RPG members at the forefront of medical nutrition therapy practice and nephrology. In fact the Advances in Practice Clinical Article section was created for her regular clinical article submissions. The Advances in Practice is available in every volume of the peer-reviewed RNF publication. Additionally, Phillipa has presented clinical research findings at the National Kidney Foundation Clinical Meetings and the ADA's Food & Nutrition Conference & Expo.

RPG offers one OSA per year to a renal or nephrology dietitian who is a member of RPG and has demonstrated the qualities of leadership and initiative, promoted the dietitian's role with chronic kidney disease, and has also shown dedication to patient care. Phillipa's contributions have been valuable and beneficial to our profession and patients. Her hard work and efforts are greatly appreciated!

Visit RPG's web site: www.renalnutrition.org for CPEU offerings and valuable professional and patient resources

Web Site Extras

Did U Know? The Webinar Section Under Materials for Purchase tab: Offers a series of 4 webinars for purchase with approved CPEUs for each webinar. The topics covered include modules that provide an overview of topics found on the Certification Specialty Exam in Renal (CSR).

ARE YOU MAXIMIZING YOUR MEMBER BENEFITS?
HAVE YOU COMPLETED A CPEU QUIZ ONLINE AND USED THE ONLINE CPEU RECORDING AVAILABLE TO MEMBERS? CPEUS ARE OFFERED 4 TIMES A YEAR VIA APPROVED CLINICAL ARTICLES IN THE RENAL NUTRITION FORUM.

Access the MyCPEU link via
www.renalnutrition.org/members_only/my_cpeu.asp

Access the Calendar/Meetings section for a comprehensive list of CPEU opportunities and upcoming nephrology related conferences
www.renalnutrition.org/calendar/index.php

Access the NEW RNF 2011 Patient Education E-Supplement
www.renalnutrition.org/members_only/insert.php

Access to Award/Meeting stipend info
www.renalnutrition.org/members_only/awards.php

Access to current & archived Renal Nutrition Forum issues
www.renalnutrition.org/members_only/feature.php
www.renalnutrition.org/members_only/resources.php

For more information about the Certification Specialty Exam in Renal (CSR)
www.renalnutrition.org/faq/index.php

Evidence Analysis Library (EAL) information and tips for using this valuable resource
www.renalnutrition.org/members_only/resources.php

Have you completed one of the Online Website Polls offered every quarter? If not please do…..we value your input! www.renalnutrition.org/

Member input & suggestions are a vital part of improving the member resources offered by RPG, such as the web site. Please submit your ideas and suggestions to Cathy M. Goeddeke-Merickel, Web Site Coordinator via cmgmerickel@gmail.com

"Reach high, for stars lie hidden in your soul. Dream deep, for every dream precedes the goal." ***-Pamela Vaull Starr***

2010-2011 RPG Executive Committee

Mission: Renal dietitians dietetic practice group is leading the future of dietetics by promoting and supporting its members working in nephrology nutrition.
Vision: RPG members are a valued source of expertise in nephrology nutrition.

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Nominating Member
Open

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RNF Guidelines for Authors

Article length: Article length is determined by the Editor for each specific issue. The feature article (including abstract) is approximately 3000 words (not including tables/graphs). Other articles are usually 1000-1500 words; member highlights and reports are approximately 400-500 words.

Text format: Times New Roman font, 12 point, double space.

Tables/Illustrations: Tables should be self-explanatory. All diagrams, charts and figures should be camera-ready. Each should be accompanied by a title and brief caption that clearly explains the table, chart, diagram, figure, illustration, etc.

References: References should be cited in the text in consecutive order parenthetically. At the end of the text, each reference should be listed in order of citation. The format should be the same as the *Journal of the American Dietetic Association.*

Reference citation examples:
Article in periodical:
Knower WC, Barrett-Connor E, Fowler SE, et al. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Eng J Med*. 2002;346:393–403.
Book:
Institute of Medicine. *Dietary Reference Intakes: Applications for Dietary Assessment*. Washington, D.C.: National Academy Press; 2001.
Chapter in a book:
Walsh J. Which insulin to use and how to start. In: *Using Insulin*. San Diego, Calif.: Torry Pines Press; 2003.
Web site:
Medscape drug info. Available at www.medscape.com/druginfo. Accessed Feb. 3, 2004.
Author information: List author with first name, middle initial (if any), last name, professional suffix and affiliation below the title of the article. Also include the primary author's complete contact information including affiliation, phone, fax and email address.

All submissions for publication should be submitted to the editor as an email attachment (MS Word file). The feature articles from the Renal Nutrition Forum will be posted on the Members Only Section of the RPG website (password protected). Thus, please include a brief abstract along with feature article submissions.