RENAL NUTRITION FORUM
A Peer Reviewed Publication of the Renal Dietitians Dietetic Practice Group
www.renalnutrition.org
VOLUME 26 NUMBER 3 ■ SUMMER 2007

Renal Dietitians®

A Dietetic Practice Group of American Dietetic Association

# Feature Article:

## Leaching Potassium from Tuberous Root Vegetables

**Jerrilynn D. Burrowes, PhD, RD, CDN**
*Assistant Professor, Department of Nutrition*
*School of Health Professions and Nursing*
*C.W. Post Campus of Long Island University*
*Phone: 516-299-3503*
*E-mail: jerrilynn.burrowes@liu.edu*

### Introduction

Chronic kidney disease (CKD) affects more than 20 million people in the United States (one in nine adults), and millions more are at risk for developing CKD (1). The exact number of people with Stage 1 to 4 CKD is unknown. However, in 2004, almost half a million people in the U.S. were treated for Stage 5 CKD (formerly referred to as end stage renal disease [ESRD]). Moreover, it is projected that by the year 2010 the number of newly diagnosed people with Stage 5 CKD will double (2).

Depending on the stage of kidney disease (3 to 5), patients are usually prescribed a potassium-restricted diet to prevent complications associated with hyperkalemia. Potassium is found in many foods including meats, fruits and vegetables. The potassium content of many tuberous root vegetables such as potatoes, sweet batata and white yam (Ñame) may vary considerably depending on the mineral content of the soil where it is grown. Tuberous root vegetables are the main staple in the diet of many people from such places as the Caribbean, the Dominican Republic and South America. In 2004, 32% of the Stage 5 CKD population in the United States was black (the exact percentage of those from the Caribbean is unknown) and another 14% was Hispanic (2). These numbers are expected to rise as people continue to migrate to the United States from these areas of the world. Therefore, an understanding of the cultural habits and ethnic food preferences of people from countries other than the United States is critical if adherence to medical and nutrition therapies is expected. When people migrate to other countries, culturally based food habits are usually the last traditions to change because they preserve ethnic identity (3). Dietitians must understand the cultural beliefs and eating habits of their patients and try to incorporate these foods into the prescribed nutrition plan and renal exchange system.

The white potato is an example of a tuberous root vegetable which has been studied and shown to lose a significant amount of potassium through leaching (4-6). The potassium content of many tuberous root vegetables has been unknown until recently. Burrowes and Ramer (7) analyzed the potassium content of 13 tuberous root vegetables and determined the amount of potassium that can be extracted through various soaking and cooking procedures. The purpose of this article is four-fold: to summarize the methods used in the study by Burrowes and Ramer (7) for leaching potassium from several raw tuberous root vegetables, to report the potassium content of the raw tubers studied, to show the amount of potassium that can be removed from the vegetables after cooking, and to present a "how to" patient education handout on removing potassium from tuberous root vegetables.

➤➤

## In This Issue:

# From the Editor's Desk

Renal Nutrition Forum is published quarterly (summer, fall, winter, spring) as a publication of the Renal Dietitians Dietetic Practice Group of the American Dietetic Association.



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:
September 1, 2007
December 1, 2007
March 1, 2008
June 1, 2008

Please forward information to:
Catherine M. Goeddeke-Merickel, MS. RD, LD
9386 Magnolia Way North
Maple Grove, MN 55369
cmgmerickel@comcast.net

Subscription cost is $35.00 for individuals who are ineligible for ADA membership and $50.00 for institutions. A check or money order should be made payable to ADA/DPG #21 and send to:
Caroline Chinn, MS, RD
RPG Treasurer
P.O. Box 9256
Rancho Santa Fe, CA 92067
caroline.chinn@davita.com

***Remember to update your profile electronically in the 'members only' section of ADA's website. You will need your registration number and web password. Keeping ADA informed of your name and contact information will help avoid delayed issues of your Renal Nutrition Forum.***

Be an original, is the key concept in a terrific book that I am reading. It is entitled "The Other 90%: How to Unlock Your Vast Untapped Potential for Leadership and Life" by Robert K. Cooper. The four cornerstones of the other 90% include:

1. Trust-building and sustaining exceptional relationships
2. Energy-increasing your "calm" effectiveness under pressure
3. Nerve-exceeding expectations daily
4. Farsightedness-creating the future

A common message in the book is to be an original, if everyone else is doing it, don't! Have you ever heard of Charles Lindbergh referred to as the "Lone Eagle"? Yes, we are talking about the same Charles Lindbergh that piloted The Spirit of the St Louis and was the first person to fly solo across the Atlantic. What you probably didn't know was that he worked as a researcher at the Rockefeller Institute. He is credited with inventing the blood centrifuge and contributing to the development of the artificial heart and lung. He had a deep desire to help others in areas that needed it most. Another original was Amelia Earhart. She lived to the beat of her own drummer in everything she did in life!

*"Be the change you wish to see in the world." Gandhi*

The author suggests using a technique of asking yourself and others including colleagues or family two simple questions to determine an individual's natural resistance for growth or change. The author credits his grandfather as being a significant influence and guide in his life. In fact his grandpa used to ask him these questions even as a small boy. The benefit of asking others is that you find out what is important to others but often not revealed otherwise.

- What's the most exceptional thing you've done this week?
- What's the most exceptional thing that you will do next week?

Do you know that we are always looking for new faces and members to become more involved in the elected and appointed positions of the Renal Dietitians DPG? Are you a leader, looking for a challenge, networking opportunities, the chance to attend FNCE and obtain CPE credits? The Renal Dietitians DPG may be the place for you. I invite you to contact any of the Board members listed on Page 27 of this issue for more information about the position that might interest you.

I would like to introduce a new feature this issue-"*The Website Extras*" section. This section will highlight important information and resources that may only be available exclusively on the website. Check it out for a preview of new content, resources or important announcements. Let us know what else you would like to see in this section. Please feel free to contact me at cmgmerickel@comcast.net with your ideas and suggestions.

As the Editor of the Renal Nutrition Forum I have had the pleasure of working with a great group of individuals that comprise the Editorial Board, Sharon Griff-Managing Editor, Lesley Wujastyk-Assistant Editor and Marianne Hutton-Advertising Editor. Thank you for a great year and your hard work! I would like to welcome the new members of the Editorial Board: Aimee Zajc-Editor, Lynn Munson-Assistant Editor, Tiffanie

Jacobson-Advertising Editor and I will be transitioning to the Managing Editor position. I look forward to working with our new Editorial Board members and continuing to achieve new goals and reach new heights together!

I would like to extend my sincere appreciation to all then 2006-2007 Renal Nutrition Forum authors. The Renal Nutrition Forum would not be what it is without your willingness to contribute, offer your expertise and research findings. Everyone has worked diligently to meet publishing deadlines and incorporate suggested reviewer changes with an open mind and positive attitude. The Feature and Advanced Practice article authors have provided high quality clinical articles that have allowed me the opportunity to apply and receive approval for 6 CPE articles and be able to offer 7.5 hrs of CPE credit this year! I feel fortunate to have had the opportunity to work with these dedicated and terrific authors. I have enjoyed working with all of you and appreciate your hard work and commitment to provide cutting edge information! Please see page 7 for a complete list of RNF authors for this year.

In addition, I am grateful and deeply appreciative for the hard work and dedication of the Forum Clinical Peer Review Panel Members, Sarah Carter, Maria Karalis, Lynn Munson, Susan Salmi and Mary Sundell. Thank you for helping to ensure that all the manuscripts submitted are up to date, clinically relevant and informative. It continues to be a pleasure to work with a great group of committed, highly skilled and professional individuals. I want to thank you for your commitment, hard work and lending your time & expertise to help us strive for excellence with our peer-reviewed publication. Please refer to page 7 for the complete list of RNF Clinical Peer-Review Panel Members for this year.

*"We must not be afraid of dreaming the seemingly impossible if we want the seemingly impossible to become a reality" Anonymous*

As mentioned, in the previous issue the CPE inserts will now be available exclusively online via the RPG Web site: www.renalnutrition.org. For only the second time there are two CPE articles included in this issue and approved for 1.0 (pending-approval) hrs each for a total of 2 CPE credits. Please take advantage of this member benefit. Did you know that there have been 6 CPE articles offered for a total of 7.5 hrs of CPE credits this membership year?

The Feature article by Jerrilynn D. Burrowes provides very valuable and useful insight about methods that clinicians can use to improve adherence to prescribed nutrition plans for specific ethic groups. It is imperative that as clinicians we are able to provide appropriate education and intervention for different ethic groups based on their traditional meal patterns. This is the first CPE article approved for 1.0 hrs.

The Advances in Practice article by Mary Sundell provides a closer look at the possible limitations of using various tools for assessment of protein and calorie intakes. It is beneficial to understand the potential limitation of tools used to assess the actual vs. prescribed intake using dietary recall methods. This is the second CPE article approved for 1.0 hrs.

In a continuing effort to demystify the area of research and empower more dietitians to become involved in research, a great reprint about Institutional Review Board is included. The Researcher-IRB Partnership article will provide valuable insight about the IRB process from Richard Mattes, the Chair of a University IRB Board.

Maria Karalis provides a terrific Career Development article about presentations that will benefit everyone in any stage of their respective career. She provides specific and detailed information to enhance presentations that improve your public speaking as well as boost your career opportunities.

Jane Byrnes has graciously allowed us to reprint her excellent article, Rules of the Write: Make Words Short and Simple for All Clients. This article provides valuable tips about increasing the health literacy of our patients and clients.

Thank you to the outgoing Membership Chair, Connie B. Cranford who has worked tirelessly to coordinate the Member Spotlight section with the Area Coordinators. I appreciate the efforts of Patti Barba, Karen Basinger, Connie Cranford, MaryJo Dahms, and Pat Williams who were instrumental in finding members in their respective regions to highlight and assist them in writing a brief article about their professional and patient contributions. Please take a few minutes to read the featured Member Spotlight in this issue and access the others via the website.

The next time you are faced with a challenge or change, take a risk and be an original. Dream big, stay focused and follow your dreams and whatever you do you will make a difference! It doesn't matter if it is great or small, all that matters is that you made a difference and helped someone else. ◆

## Methods

For a more complete description of the methods used for this study, including details of the cooking procedure and the chemical analysis of the samples, refer to the article by Burrowes and Ramer (7). Fresh tubers were obtained from a local area ethnic market in Queens, New York and in Elmont (Nassau County, Long Island), New York. The common and scientific names and a brief description of the vegetables are presented in Table 1. The names of the tubers are used interchangeably, depending on where they are grown and the ethnic group that consumes them. Pictures of the intact and cross-sections of the vegetables analyzed are presented in the article by Burrowes and Ramer (7).

Raw samples of each tuber were prepared for processing. The samples were thinly sliced (approximately 3mm). Raw samples underwent five experimental conditions: (1) 0-hour soak, followed by normal cooking; (2) 2-hour soak, followed by normal cooking; (3) 4-hour soak, followed by normal cooking; (4) 8-hour soak, followed by normal cooking; and (5) 0-hour soak, followed by double cooking. (Normal cooked samples were placed in deionized water in a 2:1 ratio. Cooking time varied from 5 to 10 minutes, depending on the density of the tuber. Cooking ceased when the samples were soft, yet retained integrity. Double cooked samples were placed in deionized water at room temperature in a 2:1 ratio. The water was brought to a boil and then drained off, and fresh room temperature deionized water was added. The water was brought to a boil again and the sample was cooked until it was soft (yet retained integrity).

Triplicate samples of each tuber were analyzed. Data are presented as means (± standard deviation [SD]). Student's *t* test was used to compare differences between groups. Differences were considered statistically significant at $P < 0.05$.

## Results

The mean potassium content (± SD) of the raw tubers is listed in Table 2. The potassium content of raw cocomalanga was the highest (739 mg/100g), followed by sweet batata (613 mg/100g) and red yautia (610 mg/100g). Raw dasheen and yellow yam (□ame) had the lowest amount of potassium (170 mg/100g and 282 mg/100g, respectively). All of the raw tubers, with the exception of dasheen, are considered high potassium vegetables (greater than 200 mg potassium per 100 g sample).

Compared to the raw samples, the 0-hour soak normal cooking reduced the potassium content of the tubers significantly (*P* value < 0.05), with the exception of eddo. The 2-, 4- and 8-hour soak times, followed by normal cooking, did not leach significantly more potassium from most of the tubers. The double cooking procedure was more effective in leaching significantly more potassium than the normal cooking procedure, except for dasheen and yellow yam (see Table 2). Dasheen, black yam, white yam, yellow yam and yampi were the only tubers that had a potassium content less than 200 mg/100 g portion after the double cooking procedure.

## Discussion

Burrowes and Ramer (7) were the first to analyze and report the potassium content of the 13 tuberous root vegetables listed in this paper after leaching. The potassium content of the raw tubers was determined after they underwent the five experimental conditions previously stated. Although most of these vegetables are high in potassium (more than 200 mg potassium per 100 g portion [equivalent to approximately 3.5 oz or less than ½ cup]), they are the staple in the diet of many people from the Caribbean and South America, and those of Hispanic descent. Burrowes and Ramer (7) showed that the potassium content of these vegetables can be reduced significantly by the double cooking method, and that soaking the vegetables prior to cooking is not beneficial in leaching additional potassium. Today, patients are usually advised to soak the vegetables overnight before cooking, a practice that this study found inefficient for leaching significant amounts of potassium (compared to the double cook method).

Tubers with a potassium content greater than 200 mg per ½ cup are considered high potassium, between 151 mg and 200 mg per ½ cup is moderate potassium, and

➤➤

## Table 1: Description of tuberous root vegetables studied

| Common and Scientific Name of the Tuberous Root Vegetables Studied | Description |
|---|---|
| Batata (fresh)<br>*Dioscorea batata* | A type of sweet potato with smooth red or deep purple skin. |
| Batata (sweet)<br>*Ipomoea batata L.* | A type of sweet potato with pink skin and white flesh. |
| Cocomalanga<br>*Colocosia esculenta* | A tuberous vegetable with dark brown skin and starchy grayish flesh. |
| Dasheen<br>*Colocasia esculenta (L)* | Starchy underground vegetables with brown hairy skin and white to grayish flesh. |
| Eddo<br>*Colocasia e. antiquorum* | A small vegetable with fuzzy brown skin and distinct rings. Flesh is off-white and sometimes contains purple flecks. |
| Yam (Ñame) (black or Negro)<br>*Dioscorea rotundata* | A large vegetable with smooth, light brown skin and white flesh, when cooked. |
| Yam (Ñame) (white)<br>*Dioscorea alata* | A large vegetable with rough brown skin and starchy white flesh. |
| Yam (Ñame) (yellow)<br>*Dioscorea cayenensis* | A large vegetable with smooth, dark brown skin. Flesh is firm and pale yellow when cooked. |
| Yampi (Yampee)<br>*Dioscorea trifida L.* | A small spherical-shaped tuber with thin, smooth skin with elongated cracks. |
| Malanga<br>*Xanthosoma spp.* | A large tuber with rough, fuzzy brown skin and patches of yellowish or pinkish flesh beneath. |
| Yautia (red)<br>*Xanthosoma violaceum* | A tuberous vegetable with cream-colored, yellow or pinkish flesh, dark brown skin. |
| Yautia (white)<br>*Xanthosoma sagittifolia* | A white fleshed tuber with dark brown/tan bands on skin. |
| Yuca (Cassava)<br>*Manihot esculenta* | A shrubby tuber with rough dark brown skin and mild white flesh. |

Adapted from: Burrowes JD and Ramer NJ. Removal of potassium from tuberous root vegetables by leaching. *J RenalNutr.* 2006; 16:304-311.

## Table 2: Potassium content of raw and unsoaked, double cooked tuberous root vegetables

| Tuberous Root Vegetables | Mean Potassium Content (± SD)/100 g | |
|---|---|---|
| | Raw | Unsoaked, Double Cooked |
| Batata (fresh) | 459.4 ± 21.5 | 203.7 ± 34.4 |
| Batata (sweet) | 613.2 ± 24.5 | 243.0 ± 48.4 |
| Cocomalanga | 739.1 ± 32.7 | 419.5 ± 17.0 |
| Dasheen | 169.5 ± 15.5 | 54.6 ± 22.6 |
| Eddo | 565.0 ± 69.8 | 339.8 ± 21.5 |
| Yam (Ñame) (black) | 339.9 ± 25.0 | 190.3 ± 10.3 |
| Yam (Ñame) (white) | 482.4 ± 10.9 | 176.1 ± 12.7 |
| Yam (Ñame) (yellow) | 282.3 ± 4.7 | 172.1 ± 8.8 |
| Yampi | 343.6 ± 27.5 | 150.5 ±9.1 |
| Malanga | 502.3 ± 37.5 | 316.9 ± 54.3 |
| Yautia (red) | 609.8 ± 29.6 | 328.9 ± 4.2 |
| Yautia (white) | 497.9 ± 8.0 | 248.1 ± 8.6 |
| Yuca (Cassava) | 525.0 ± 5.4 | 235.4 ± 7.5 |

*P* value for difference between means (raw vs. double cooked) was significant at $P < 0.05$ for all vegetables.
Adapted from: Burrowes JD and Ramer NJ. Removal of potassium from tuberous root vegetables by leaching. *J RenalNutr*. 2006;16:304-311.

less than 151 mg per ½ cup is low potassium (8). Most of the tubers in this study had a high potassium content. Even after double cooking (8 out of 13); only one tuber, Dasheen, was low in potassium.

### Summary

Although double cooking was effective in leaching significant amounts of potassium from the tuberous root vegetables examined, many vegetables retained a high potassium content. Therefore, patients on potassium-restricted diets need to be educated about limiting the amount of these vegetables in their diet. Table 3 is a "how to" patient education handout that can be used by renal dietitians who counsel and educate patients who consume these foods as a staple in their diet. This handout is included as a separate insert in this issue and also available online.

### References


1. National Kidney Foundation Kidney Disease Outcomes Quality Initiative (K/DOQI). K/DOQI clinical practice guidelines for chronic kidney disease: Evaluation, classification and stratification. *Am J Kidney Dis*. 2002;39(2 Suppl 1):S1-S266.
2. United States Renal Data System. USRDS 2006 Annual Data Report: Atlas of end state renal disease in the United States. Incidence and prevalence. 2006. Available at www/usrds.org. Accessed April, 2007.
3. Burrowes JD, Cockram DB. Achieving patient adherence to diet therapy, in Kopple JD, Massry SG (eds). *Nutritional Management of Renal Disease*, 2nd ed. Baltimore, MD:Williams & Wilkins; 2004, pp 629-639.
4. Tsaltas TT. Dietetic management of uremic patients. Extraction of potassium from foods for uremia patients. *Am J Clin Nutr.* 1969;22:490-493.
5. Louis CJ, Dolan EM. Removal of potassium in potatoes by leaching. *J Am Diet Assoc.* 1970;57:42-43.
6. Bower JA. Cooking for restricted potassium diets in dietary treatment of renal patients. *J Hum Nutr Diet.* 1989;2:31-38.
7. Burrowes JD, Ramer NJ. Removal of potassium from tuberous root vegetables by leaching. *J RenalNutr*. 2006;16:304-311.
8. National Kidney Foundation. Potassium and your CKD diet. Available at http://www.kidney.org/atoz/atozItem.cfm?id=103. Accessed April, 2007. ◆


# Website Extras
## www.renalnutrition.org

- Obtain this issue's CPE answer sheets/self mailers online. All CPE inserts will now be exclusively online.
- Have you ever attended an ADA House of Delegates Meeting? If not access the RPG website for a terrific article written by Lesley Wujastyk. She details her exciting experience as a first time attendee and offers tips for other opportunities to become more involved in our profession! Don't miss it!
- Remember to access additional Member Spotlights that provide highlights of members from around the country that are making a positive impact in their clinical practice or making a difference for patients!
- Tune in for the RPG events that will take place at the upcoming FNCE meeting in Sept. 2007.
- We value your opinion. Please let us know what you think! cmgmerickel@comcast.net

## *Congratulations!*

Congratulations to Wai Yin Ho, RD, LD, the 2006-2007 RPG Post –baccalaureate Academic Scholarship Recipient. Wai Yin authored the feature article in the last issue of the Renal Nutrition Forum and is currently a Graduate student in the Clinical Nutrition Program at the University of Medicine and Dentistry in New Jersey. She is presently employed as a Renal Dietitian with Davita in Georgia.

## *Thank You!*

I would like to extend a special thank you and debt of gratitude to all of the authors who have contributed original manuscripts and articles for the 2006-2007 membership year. Thank you to Roxanne G. Poole (Abdullah Hamad, Lynn Thomas, Peggy Strawhorn) Alison L. Steiber, Tiffany Sellers (Melinda Bell, Elizabeth M. Speer), Philippa Norton Feiertag, Lesley Wujastyk, Susan Dupraw, Wai Yin Ho, Stephanie McIntyre, Lois Hill, Jerrilynn D. Burrowes, Mary Sundell, Maria Karalis.

Another group of hard working renal dietitians that strives to ensure that all submitted manuscripts and articles provide up to date and clinically relevant information are the Clinical Peer-Review Panel Members.
Thank you to Sarah Carter, Maria Karalis, Lynn Munson, Susan Salmi and Mary Sundell.

# Actual intake vs. prescribed diet in a hemodialysis population: Comparison using a two-day dietary recall

**By Mary Sundell, RD, LD, CCRP**
*Vanderbilt University Medical Center,*
*Division of Nephrology and Hypertension*
*Phone: 615-322-4698*
*Email: mary.b.sundell@vanderbilt.edu*

The National Kidney Foundation Dialysis Outcomes Quality Improvement Guidelines (K/DOQI) recommend that a thorough dietary interview be conducted with patients every six months (1). Renal dietitians recognize the importance of obtaining nutrition and dietary intake information from dialysis patients on a regular basis. Dietary intake information is typically obtained by conducting a 24-hour dietary recall or by the patient food record and documented for a specified length of time as described in K/DOQI. The use of food frequency questionnaires (FFQs) in this population has also been studied (2). Each method has inherent strengths and weaknesses. For example, with 24-hour recalls in the hemodialysis (HD) population, renal dietitians should obtain recalls from both dialysis and non-dialysis days. Studies have clearly shown a difference in intake between these two days (3). Typically, patients eat less on HD days for a variety of reasons. Appetite may be worse on these days and meals may be missed. Post-dialysis fatigue has also been found to interfere with dietary intake. There may also be unit specific eating restrictions during the HD session. A recent study looking at the usefulness of dietary recall in this population concluded that a seven day dietary record is necessary to reliably evaluate quantitative and qualitative aspects of food intake. This recommendation was attributed to the day to day variability in both the type and amount of food ingested, particularly from dialysis to nondialysis days (4).

This paper compares dietary recall findings obtained by two 24-hour dietary recalls to the prescribed diet for 55 CHD patients. This data was collected during the baseline period of a study related to oral nutritional supplementation in the chronic hemodialysis patient.

## METHODS

### Subjects

Patients undergoing chronic hemodialysis (CHD) at five outpatient dialysis units in Nashville, Tennessee and

**Table 1: Patient Characteristics (n=55)**

| | |
|---|---|
| **Age (y)** | 45.98 ± 12.99 |
| **Weight (kg)** | 82.40 ± 19.54 |
| **Height (cm)** | 166.73 ± 14.28 |

| | |
|---|---|
| **Female %** | 40 |
| **Male %** | 60 |

| **Race %** | |
|---|---|
| Black | 69 |
| White | 24 |
| Asian | 2 |
| Hispanic | 5 |

| **Diabetes by Race** | | | | |
|---|---|---|---|---|
| | Black | White | Asian | Hispanic |
| No | 28 | 11 | 1 | 3 |
| Yes | 10 | 2 | 0 | 0 |

| **Diabetes by Gender** | | |
|---|---|---|
| | Female | Male |
| No | 17 | 26 |
| Yes | 5 | 7 |

surrounding suburban areas were recruited to participate in a study related to oral nutritional supplementation. In order to participate in the study, subjects had to be ages 18 or older, receiving hemodialysis for at least 3 months with a minimum Kt/V of 1.2,have no active infections, inflammatory process, and no hospitalizations within the last month. Females of child-bearing potential were tested to ensure non-pregnancy status. The Institutional Review Board of Vanderbilt University Medical Center (VUMC) approved the study protocol, and written informed consent was obtained from all study patients.

## Study Design

The study population consisted of 55 CHD patients. Study participants were asked to come to the General Clinical Research Center (GCRC) at VUMC on a non-dialysis day to perform study-related tests. Within 7 days of the body composition tests, baseline dietary intake was collected and fasting blood was drawn for laboratory testing.

## Study Measurements

### Dietary Prescription

Each subject's existing dietary prescription was obtained from his or her respective dialysis facility for comparison to the actual intake reported. Dietary prescriptions had been previously developed by each subject's respective renal dietitian. Since HD diet prescriptions do not differentiate between hemodialysis day (HDD) and non hemodialysis day (NHDD) prescriptions, the average intake of the HDD and NHDD intakes was used for analysis purposes. The dietary variables included energy, protein, sodium, phosphorus and potassium. Although fluid restriction was part of the diet prescription, there was not an emphasis on collecting non-caloric fluid consumption data. Therefore, total fluid consumption data was not included for analysis.

### Dietary Intake

Participants were interviewed by a trained registered dietitian for two 24-hour diet recalls (one from a HDD; one from a NHDD) which were obtained separately the day after each 24-hour period. All dietary intake data was collected and analyzed using the Nutrition Data System for Research (NDS-R) software version 5.0, developed by the Nutrition Coordinating Center, University of Minnesota, Minneapolis, MN (5). To ensure as much accuracy as possible, the multiple-pass system was used when obtaining the 24-hour diet recalls (6). This multiple pass is intended to provide the participant with signals and opportunities to report their intake. The three passes in this study included a quick list, a detailed description, and a final review of intake to allow participants the opportunity to report their diet recalls as accurately as possible.

## Statistical Analysis

Data are presented as mean with standard deviations (SD) of the group. When examining differences between

### Table 2: Prescribed vs. Actual Diet Intake

| | Diet Prescription | Actual Diet Intake |
|---|---|---|
| **Total Energy** | | |
| (kcal/day) | 2383.3 ± 307.2 | 1564 ± 498.8 |
| **Protein*** | | |
| ***(gm/day)*** | ***89.3 ± 14.3*** | ***60.2 ± 16.5*** |
| % | 15 | 16 |
| **Carbohydrate** | | |
| (gm/day) | 328.0 ± 59.3 | 189.6 ± 77.8 |
| % | 55 | 47 |
| **Fat*** | | |
| (gm/day) | 79.4 ± 13.2 | 64.7 ± 24.4 |
| ***%*** | ***30*** | ***37*** |
| **Sodium** (mg/day) | 2963.6 ± 188.9 | 2870.8 ± 1080.9 |
| **Phosphorus** (mg/day) | 1121.0 ± 180.9 | 829.8 ± 266.9 |
| **Potassium** (mg/day) | 2824.4 ± 302.4 | 1537.9 ± 516.0 |

* Protein (gm/day) and Fat (%) were found to be statistically significant with a two-tailed p value of less than 0.05.

actual versus prescribed diets, a student's t-test for parametric distribution or Mann-Whitney U test for nonparametric distribution were used to determine differences between the means. Statistical significance was established when a two-tailed *p* value was less than 0.05. The software SPSS (SPSS Inc, Chicago, IL) version 14 was used for all analyses.

## RESULTS

### Subject Characteristics

Of the 55 subjects in the study, 60% of them were male, 69% were Black, 24% were White, 2% were Asian and 5% were Hispanic. Weights and heights were measured during the baseline study visit at the GCRC with a mean weight of 82.4 kg and a mean height of 166.7 cm. Other subject characteristics including diabetes status by race and gender can be found in Table 1.

### Nutritional Intake vs. Diet Prescription

Table 2 shows comparisons between the diet prescription and actual dietary intake in terms of daily energy (kcals/day). These results are 2383 kcals/day versus 1564 (19.5 kcal/kg/day) respectively. The prescribed protein intake of 89.3 gm/day versus an actual protein intake of 60.2 gm/day (0.73 gm/kg/day) is also shown. Other macronutrients (in grams of carbohydrate and fat) and the micronutrients (in milligrams of sodium, phosphorus and potassium) are also summarized in this table.

## DISCUSSION

As seen in Table 2, actual reported dietary intake was less than prescribed for all parameters evaluated: energy, protein, carbohydrate, fat, sodium, phosphorus and potassium. However, actual percent of fat intake (37%) was higher than the dietary prescription of calories from fat (30%), which was statistically significant. This high fat percentage may be in part due to the convenience-type foods the participants chose, especially on HDD. While the actual food choices of the diets are not the focus of this paper, it was observed that many dietary recalls included meals from fast food restaurants and convenience stores.

The data related to actual grams of protein consumed (60.2 gm/day) vs. prescribed (89.3 gm/day) was also statistically significant. Again, the type and quality of the foods chosen may be a factor and this deserves further evaluation on its own. Despite having all recalls done by one trained individual and the use of the multiple pass system to capture more complete recalls, it is likely under-reporting may have occurred. It is well understood that dietary intake is underreported, not just in the dialysis population but in the general population as well where underreporting estimates range from 10 – 45% (7).

Previous studies have shown that calorie and protein intake is low for CHD patients, especially on the HDD (2, 3, 4, 8, 10). A review of these findings is summarized in Table 3. Each of these studies investigated a unique question, and their methods of collecting dietary information varied as summarized. However, the results of this dietary intake data is similar in that all subjects fell short of their prescribed calorie consumption goals and only two subject groups met their prescribed protein intake. Guidelines recommend 30 to 35 kcal/kg/day and 1.2 gm protein/kg/day for the CHD population (1). As shown in Table 3, energy consumption ranged from 20.7 to 29.8 kcal/kg/day and protein consumption ranged from 0.88 to 1.20 gm protein/kg/day. Our own study results included energy consumption of only 19.5 kcal/kg/day and protein intake of 0.73 gm/kg/day. Many reasons have been proposed regarding low energy and protein intake in CHD patients. These include:

1. Restrictions imposed by the diet
2. Co-morbid conditions that also may impact appetite and/or food choices
3. Time and energy expended to attend thrice weekly dialysis sessions
4. Eating limitations imposed by some facilities during the actual dialysis procedure
5. Lack of physical and/or financial support regarding shopping and food preparation
6. Lack of appetite especially on the HDD
7. Dietary monotony (10)

## CONCLUSION

Despite advances made in dialysis therapies and

➤➤

## Table 3: Calorie and Protein Intake Summary of Hemodialysis Patients

| Author & Reference No. | Population | Diet Evaluation Tool | Calorie Consumption (kcal/kg/day) | Protein Consumption gm/kg/day) | Specific Findings/Comments |
|---|---|---|---|---|---|
| Kalantar-Zedah (2) | 30 adult HD pts at one dialysis unit; 30 matched controls | FFQ-Block version 98 | 26.4 ± 15.3 | 0.88 ± 0.57 | • HD pt. diets were low in calcium, fiber, potassium and two carotenoid vitamins<br>• Vitamin B6 was high due to MVI used |
| Burrowes (3) | 1901 HD pts in 72 HD units associated with 15 clinical centers | Two-day diet records kept; HDD vs. NHDD | 23.2 ± 9.5 NHDD<br>22.2 ± 9.6 HDD | 0.96 ± 0.43 NHDD<br>0.90 ± 0.41 HDD | • Appetite better on NHDD vs. HDD<br>• Only 48% ate 3-5 meals on HDD vs. 64% on NHDD<br>• Help with shopping allowed greater energy & protein intake both days |
| Chauveau (4) | 99 HD pts at two HD units and one HD self care unit | 7-day dietary record | 29.8 ± 7.5 | 1.18 ± 0.28 | • HD intake lower than the general French population<br>• Intake lower in the older group<br>• Differences in type & amount of food found, especially HDD vs. NHDD<br>• A 7-day food record is recommended to reliably evaluate food intake |
| Morais (8) | 44 HD pts | Dietary recall | 20.7 ± 6.7 | 1.20 ± 0.6 | • Total energy intake was low but protein intake was acceptable |
| Zimmerer (10) | 48 HD pts at eight free-standing dialysis unit | FFQ-Block National Cancer Institute Questionnaire plus 10 additional foods | 24.8 ± 12.7 | 1.02 ± 0.53 | • The most varied diets had a greater energy and protein intake: (33 cals/kg/day & 1.35 gm/kg/day)<br>• Monotonous diets had a lower intake of:<br>• (21 cal/kg/day & 0.83 gm/kg/day) |

collaborative efforts from of the nephrology care team, the oral intakes of hemodialysis patients are rarely met. Obtaining dietary intake information continues to be an important tool for the renal dietitian to use in order to assist in the evaluation of their patients' nutrition status. However, our study findings as well as the other studies summarized in Table 3 indicate that a one or two day recall may not provide enough information for an accurate evaluation. Recent studies have shown that it may be necessary to obtain dietary information for a five to seven day period (4,11). The additional length of time may be necessary to obtain a more reliable account of day to day variability. In addition, it may be a more accurate reflection of usual food intake. Further detailed studies are indicated in the area of dietary recalls, dietary records and food frequency questionnaires (FFQ) to determine the best method and the necessary reporting length to obtain the most accurate and reliable dietary intake information in the CHD population. It is imperative to obtain reliable information in order to have a positive impact on improving patient caloric and protein intakes.

### References:


1. National Kidney Foundation. K/DOQI Clinical Practice Guidelines for Chronic Kidney Disease. *Am J Kidney Dis* 2000;35(6 suppl 2):S1-S140
2. Kalantar-Zadeh K, Kopple J, Deepak S, Block D, Block, G. Food intake characteristics of hemodialysis patients as obtained by food frequency questionnaire. *J Ren Nutr*. 2002;12:17-31
3. Burrowes JD, Larive B, Cockram DB, Dwyer J, Kusek JW, McLeroy S, Poole D, Rocco MV. Effects of dietary intake, appetite, and eating habits on dialysis and non-dialysis treatment days in hemodialysis patients: cross-sectional results form the HEMO study. *J Ren Nutr*. 2003;13:191-98
4. Chauveau P, Grigaut E, Kolko A, Wolff P, Combe C, Aparicio M. Evaluation of nutritional status in patients with kidney disease: usefulness of dietary recall. *J Ren Nutr*. 2007;17:88-92
5. Schakel SF. Maintaining a nutrient database in a changing marketplace: Keeping pace with changing food products-A research perspective. *J Food Comp and Anal*. 2001;14:315-322
6. Jonnalagadda SS, Mitchell DC, Smiciklas-Wright H, Meaker KB, Van Heel N, Karmally W, Ershow AG, Kris-Etherton PM. Accuracy of energy intake data estimated by a multiple-pass, 24-hour dietary recall technique. *J Am Diet Assoc*. 2000 Mar;100(3):303-8
7. Fuchs-Goldstein D. Assessment of nutritional status in renal diseases. In: Klahr S, Mitch WE eds. *Handbook of Nutrition and the Kidney*. 4th ed. Philadelphia, PA: Lippincott Williams & Wilkins, 2002:42-92
8. Morais AAC, Silva MAT, Faintuch J, Vidigal EJ, Costra RA, Lyrio DC, Trindad CR, Pitanga KK. Correlation of nutritional status and food intake in hemodialysis patients. *Clinics*. 2005;60:185-92
9. Livingstone MB, Black AE. Markers of the validity of reported energy intake. *J Nutr.* 2003 Mar;133 Suppl 3:895S-920S
10. Zimmerer JL, Leon JB, Covinsky KE, Desai U, Sehgal, AR. Diet monotony as a correlate of poor nutritional intake among hemodialysis patients. *J Ren Nutr*. 2003;13:72-77
11. Palaniappan U, Cue RI, Payette H, Gray-Donald K. Implications of day-to-day variability on measurements of usual food and nutrient intakes. *J Nutr*. 2003; 133: 232-235
12. Jonnalagadda, SS, Mitchell, DC, Smiciklas-Wright, H, Meaker KB, Van Heel N, Karmally W, Ershow AG, Kris-Etherton PM. Accuracy of energy intake data estimated by a multiple-pass, 24-hour dietary recall technique. *J Am Diet Assoc*. 2000 Mar;100 (3):303-8◆

# Moving Towards an Improved Researcher - IRB Partnership

**By Dr. Richard Mattes, PhD, RD**
*Reprinted with permission from the Research DPG's publication,* The Digest.
*Email: mattes@purdue.edu*

Which is the committee everyone most loves to hate? For those engaged in human subjects research, the Institutional Review Board (IRB) often tops the list. This is the committee charged with ensuring researcher compliance with federal, state and institutional regulations that guide the ethical conduct of research involving human beings. It is my contention that much of this animosity is misguided and misplaced, resulting in unnecessary aggravation and delays in research. This view reflects experiences over my 25 years as a clinical researcher and serving about half that time on IRBs. Currently I am the chair of the Purdue University IRB, but I write now not in that capacity, only as one who has some familiarity with both sides. My goal in this column is to offer perspectives on a number of common issues that will hopefully facilitate an improved rapport between dietetics researchers and the IRB's with which they work.

It is probably worthwhile to briefly review the purpose and function of IRBs. Most, but not all, branches of the federal government that provide funding for research that involves human beings have adopted a set of regulations that must be met before federal funds can be used for such work. When institutions engaged in federally supported research request funding, it is provided on the stipulation that a mechanism be in place to ensure compliance with the applicable regulations. The establishment of an IRB (or contract with a commercial IRB) is the mechanism for such assurance. In the case of an institutional IRB, it is supported (space, staff, member training) by the institution. However, there are standard operating procedures that assure the independence of the decision-making process. The institution may have a strong interest in certain areas of research (i.e., there is abundant funding waiting to be directed to them), but if the design is not compatible with federal regulations and the IRB denies the application, the decision cannot be reversed by any institutional entity. By the same token, if a protocol is deemed acceptable from an ethical perspective, the institution can still reject the study. For example, universities may have policies governing the use of alcohol or tobacco on campus and, despite an appropriate research design, simply will not allow a project that requires students to use such products on campus. Thus, protocol approvals are a two step process and while each entity may deny a protocol, often the IRB is incorrectly viewed as the obstacle since they were the application recipient.

One of the fundamental issues IRBs must evaluate is whether a research protocol actually entails human subjects research (HSR). It is possible to use humans to gather information without them being research participants. Such a scenario would not require IRB review. An operational definition of HSR is the systematic collection of information about people with the intent to create generalizable knowledge. Course and program evaluations do not constitute HSR because they do not yield generalizable knowledge. Thus, they do not require IRB review. It is important to note that the word "risk" is not in the definition of HSR. Often researchers believe their protocol should be exempt from review because their procedures involve little or no risk. However, risk only determines how a protocol is reviewed, not whether it is or is not HSR. If it is HSR, by federal regulations (not by IRB perversity), it must be reviewed. Incidentally, all research has risk. If you knew with certainty the outcome of your activity, you would not do it. With uncertainty there is risk. It may be no more than what one would experience in every day activities, but there is risk. So, one should never say on an application that there is no risk associated with participation. This will result in a returned application.

As noted above, the IRB is often viewed as an obstacle to research progress. This stems from the fact that IRB approval is often one of, if not the final approval needed for the release of funds to support the research. Thus, it is very visible and definitive. However, some honest appraisal should temper this view. If one considers the length of time required to generate a novel, scientifically

meritorious research question, write a grant to get the funding to pursue the work, wait for a funding agency decision, work out the logistics of a study and the length of time it actually took the IRB to review the protocol, most often the last step will be far shorter than any of the others. So, it may be unfair to blame the IRB for delays in work. It might be added that it is not necessary to wait until all other steps are complete before submitting to the IRB. You can submit early, based on a reasonable expectation of design, and get approval. Then, if revisions based on evolution of the project are necessary, approval of revisions can be requested and this typically takes much less time than the initial review.

The fact that your colleague can conduct a certain research activity does not mean that you can or should. By design, IRB's are partly comprised by members that are not scientists or physicians. The goal is to have a broader perspective on the proposed activities and to have some consideration of local custom and ethics. These can vary from one site to another so, the decisions by the different IRBs may appropriately vary. As an extreme example, it may pose little concern in the United States to query female students on campus about the number of live pregnancies they have had. It would a very different level of risk if this same activity were conducted in China where policies on birth control differ and a breach of confidentially would have very different implications. Thus, the IRBs in each setting could reach different conclusions about the cost/benefit ratio of the proposed work and make different decisions. It is perfectly reasonable to inform an IRB about discrepancies and request re-evaluation in light of additional information, but recognition that uniformity is not a goal of IRB's should relieve some confusion about the process.

Speaking of providing supplemental information to IRB's, it is best to consider members of the IRB as educable, but not necessarily knowledgeable. To facilitate decision making and logistics, IRB's are generally comprised of a limited number of members. On a college campus, they do not have representation from all possible disciplines, yet they may be asked to make judgments on applications from researchers in areas that are not represented on the committee. It is the IRB's responsibility to evaluate the science of a protocol to the extent that they can assess risks and benefits and can determine the work is scientifically meritorious. However, because of the diversity of research they review, they may not be sufficiently familiar with a particular area to know what procedures are routine. Incorporating information targeted at the level of the committee's knowledge should improve processing time by reducing instances where they ask for more information. Further, should you receive follow-up questions that seem naïve or inappropriate, recognize them as a need for education rather than an active attempt to stifle your work. Ultimately, the IRB's purpose is to protect the rights and welfare of study participants; would you want to make decisions about procedures that you did not understand that could be administered to your family or friends? Why would they? Incidentally, by protecting study participants, the IRB ultimately is protecting researchers (you) and institutions from litigation and ensures a continued relationship of trust between potential participants and researches thereby preserving the research enterprise.

Finally, if you are really angry, I recommend you ask to serve on your IRB. If you think you don't have the time, consider that most IRB's are comprised of other researchers like yourself that have devoted their time to further your work. If asked to serve, it is my near universal experience that within a few meetings, the most discontented researcher realizes that the other committee members are actually doing their very best to facilitate research while fulfilling their obligation to ensure researchers comply with federal regulations. Over the span of my participation on IRB's at different institutions and exposure to continual turnover of members, I have never witnessed a malicious attempt by a member to undermine a line of work or researcher. Even if such a person was a member, they represent only one vote where a simple majority rules and others on the committee would likely recognize this bias.

In the end, it will serve your purpose best to build a constructive rapport with your IRB rather than an adversarial relationship. Review of HSR is not negotiable, but the tenor of negotiations is largely under your control. Good luck and may approvals be with you. ◆

# Presentations with Pizzazz!

**By Maria Karalis, MBA, RD, LDN**
*Regional Scientific Manager, Abbott Renal Care*
*Email: mariakaralis@yahoo.com.*

Does the thought of public speaking make you run the other way? A recent survey asked people to name their number one fear and 41% stated that they were afraid of public speaking. For many individuals public speaking creates more fear than death! Although you might think you could never do what those clever and inspirational speakers do, you can teach yourself enough about public speaking to untie the tethers that hold you back.

Public speaking is a learned skill. It is developed like other skills, such as playing the piano or painting. Repetition, practice and knowledge are some of the key essentials in becoming a good public speaker. However, the fear of public speaking prevents us from accepting potential learning opportunities to practice. Rather than fleeing, try to confront the challenge to use and practice your presentation skills. Volunteer to speak at local community groups, churches, patient support groups, local NKF educational events or even senior management meetings. Each time you speak in front of others, you have a valuable opportunity to exhibit your professionalism, demonstrate your leadership potential, and potentially even get promoted.

## Three Most Overlooked Steps

Part of being successful at public speaking is adequate preparation. The three most overlooked steps of speakers include:

1. not knowing your audience
2. not having a prepared opening
3. not having a powerful closing

Remember to ask questions about your audience before presenting. This way you will be able to tailor the content appropriately.

Grab attention with the opening and give participants a reason to listen to you. Most participants will decide in the first eight seconds whether you are worth listening to or not! Your persona, platform manner, posture, voice, gestures, attitude, enthusiasm and energy level all directly influence the participant's decision to listen to you. Open with a thoughtful question, a relevant anecdote, an appropriate quotation or a challenging statement. Transition smoothly into the meat of your subject, providing information in a clear, concise and understandable format. Try to avoid the statement: "It's nice to be here today" – this is too boring and will not capture your audience's attention.

Part of your opening should also include a brief personal biography that will help increase your credibility as a speaker, i.e. why you are speaking on this particular subject. Prepare an introduction for the emcee to introduce you. Give your pertinent biographical information to ensure the introduction gives a good lead-in to the content and tone of your talk. The introduction should give at least four pieces of information: what is the topic, why this subject, who is speaking, and why this speaker.

End your talk with a powerful closing: a summary and conclusion, an appeal for action, or a relevant question, story or quote. Closing with a short story or quote can help to build a memorable image. Some speakers concentrate so much on the beginning of the presentation that they forget the end is every bit as important and the last thing that you leave your audience with. Make sure to practice the ending just as much as you do the beginning.

## The Meat of Your Presentation

The discussion component of your talk should be highly interactive – this part holds the highest risk of boring your audience. In the '70's, the Navy conducted studies to find out how long people can listen. Their conclusion: 18 minutes! After that the audience's attention drops off. Additionally, research has found that when knowledge is shared by telling alone, message retention after three days is only 10%, but increases to 65% when both telling and showing are used. Make sure to focus on engaging with your audience to increase retention. Create opportunities to solicit feedback – solicit questions from the audience, use several visual aid techniques, videos, quizzes, etc. All of these tools will help the audience remember your

message longer and remember YOU longer, which is better for future opportunities.

## Practice

The delivery is more important than content. According to UCLA researchers, in terms of the impact of communication, how you look accounts for 55%, how you sound 38% and what you actually say only 7%. Practicing your presentation will build your confidence and confidence is your most important asset. If you feel confident, this will allow you to engage with your audience and make a lasting impression. Practice often - even if you have delivered a specific presentation previously. There is no substitute for hearing your own voice say the words out loud. Do it often: in the shower, in front of the mirror, in the car stopped at a red light.

## Mouth Warm-Ups

Similar to stretching or warming up your muscles before a 5-mile run, warming up your mouth muscles should be a routine part of preparing for your presentation. Mouth warm ups take only a few minutes and will improve your muscular coordination, concentration and alertness, allowing you to clearly communicate your message. Try these "warm ups" before your next presentation:

- Kiss and Smile
  Say "oo" as in toot, then "ee" as in deed in quick succession ten times.
- Honor Your Other Vowels
  Practice "lay-lee-lie-lo-loo" in succession ten times, breathing properly and lowering your pitch to its core. Practice until your vowels are crystal clear.

## Managing Anxiety

Normal fear or anxiety may decrease with experience but it never entirely goes away. As Walter Cronkite said, "It's natural to have butterflies. The secret is to get them to fly in formation." Here are some proven tips to manage anxiety:

- Get to know some of the audience members – it's easier to speak to people you know even if you just met them.
- Arrive early, walk around and get to know the room. Practice using the microphone if you can.
- Relax – When you get to the location, after checking the room, find a quiet place to gather your thoughts and relax. The less outside stimuli, the easier it is for you to focus on your message. If it's not possible to isolate yourself for a few minutes, regroup mentally wherever you are, even in a crowd, and gather your energy. While you wait to give your presentation, do these simple exercises. Clench your fists and hold for 3-5 seconds, then release. Notice how releasing your hands relaxes your shoulders and jaw. Repeat this three times. Before the introduction, breathe deeply, inhaling slowly and exhaling completely. Do this three times.
- Focus your attention away from your anxieties and on the target messages you need to deliver to your audience. Concentrate on the message. Remember how important it is for this audience to hear what you have to say. Replace every negative thought with a positive one.

Take on the challenge of public speaking and you will find that the benefits outweigh the risks and your perceived anxiety. Please refer to the list of suggested resources below to help you improve or enhance your public speaking skills. Consider obtaining the support of you employer to provide financial resources to attend a local public speaking workshop. This will not only be a personal benefit but will benefit the company too.

## Suggested Resources:

- Make Presentations with Confidence by Vivian Buchan
- I Can See You Naked by Ron Hoff
- How to Prepare, Stage and Deliver Winning Presentations by Thomas Leech
- Communicate with Confidence by Dianna Booher
- The Art of Talking So That People will Listen by Paul Swets
- Messages: The Communication Skills Book by Matthew McKay
- Toastmasters: www.toastmasters.org ◆

# Make Words Short and Simple for All Clients

**By Jane Byrnes, MS, RD, LD**
*Consultant dietitian in the Wichita, KS area*
*Email: janebb@sbcglobal.net*
*Reprinted with permission from the author.*

It's much more time-consuming for professionals to talk and write briefly than thoroughly. But nutrition professionals should keep on trying because even well-educated clients may not read well, are not willing to read carefully or do not posses health literacy. Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to promote and maintain health and make appropriate health decisions.(1,2)

## Some Surprises

According to the 2003 National Assessment of Adult Literacy (NAAL) report released in December 2005,(3) two percent of college graduates and one per cent of adults with graduate studies or degrees have **below basic prose literacy**. NAAL scores are based on searching, comprehending and using information from Prose (continuous texts) or Documents (non-continuous texts in various formats), and Quantitative literacy (identifying and performing computations singly or sequentially using numbers embedded in printed materials). The following percentages do not include the three percent who tested Non-literate due to language or cognitive disabilities.

- An example of below basic reading skills is searching one simple form to find out what he or she is allowed to drink before a medical test. Fourteen percent of American adults have below basic reading skills.
- Basic skills include using a TV guide to find out what programs are on at a specific time. Twenty nine percent test in the Basic range.
- Intermediate skills include consulting reference materials to figure which foods contain a particular nutrient. Forty –four percent of American adults fit this category.. The cumulative total is 87 %.
- Proficient skills include interpreting a table about blood pressure, age and physical activity. Only 13% of American adults are considered to be proficient readers! That percentage went down from the previous NAAL survey in 1992.

## Health Literacy

It is important that clinicians provide credible information to consumers about nutrition, dietary supplements and complementary nutrition in a culturally appropriate and readable format. According to the National Institutes of Health, "36 % of adults are using some form of Complementary and Alternative Medicine (CAM). When megavitamin therapy and prayer specifically for health reasons are included the number rises to 62 %." These are very motivated individuals, since the cost was $36 billion to $47 billion in 1997. The CAM users paid more out-of-pocket in 1997 for CAM than for all hospitalizations in 1997 and about half of what it paid for all out-of-pocket physician services.(4) If those who use CAM therapies are part of the estimated 50% of adults in America who have trouble interpreting medical information, they are at risk for taking supplements incorrectly and fail to grasp the healthcare providers instructions and expectations. Such practice can lead to the ineffectiveness of the supplement or practice or even worse, more serious health consequences.

The emerging area of health literacy finds that Document and Quantitative literacy skills must merge to use health-related materials and forms. The Surgeon General of the United States, Richard H Carmona, defines health literacy as multidimensional-- "the ability of an individual to access, understand and use health-related information and services to make appropriate health decision."(5)

"Experts in academia have been taking a close look at health literacy in America and have concluded that this is one area where even relatively well-educated people will have trouble finding their way. Several recent studies have underscored a disturbing confusion among patients when

it comes to figuring out medical information. And for tens of millions of Americans who aren't well educated, the task of sorting through the information may well be far beyond their capability."(6)

Often many colorful, glossy-papered handouts from drug or food companies are often designed to catch the eye of the health professional not the actual client. They are rarely tested on end-users. The handouts may be visually appealing but are likely to confuse or overwhelm clients.

Marketers on the Internet excel at enticing readers with medical and dietary semi-truths, non-peer reviewed research, and unsubstantiated claims. Even proficient readers are duped by writers and graphic artists who know how to grab attention, especially if they are desperate for the hope of a cure. Successful consumer-oriented materials are the result of focus groups and reaction panels. Sales pamphlets in health food stores, on media advertisements and explanations on the internet have been very effective in convincing consumers of all reading levels. Nutrition professionals may also learn to write as simply and attractively and to test their materials with end-users to achieve greater credibility and useage.

In summary, **simple, clear handouts will benefit all clients**-- those who are unable to read well, those who do not have health literacy and those who are distracted because of stress, illness, multitasking or impatience.

## Make no assumptions

1. Define exactly what the client should know and do next week. Outline that need-to-know information and focus on it. The International Food Information Council (IFIC) has a helpful format called ASOAP (Audience, Subject, Objective, Angle and Publication).(7)
2. Realize that the public does not think of food and nutrition as nutrition professionals do. According to IFIC, health professionals think of food and nutrition as synonymous—but consumers separate food and nutrition: *Food* is exciting and enjoyable, *nutrition* is "what gets in the way of good food."(8) Furthermore the public often believes that *nutrition* comes from pills and supplements.
3. Communicate *with* your audience not *to* them. Use a friendly tone with simple words that will empower and personalize clients not just educate. Focus groups (9) with healthy Americans about the 2005 Dietary Guidelines found that "respondents want to be able to apply them to their individual lifestyles—and not in ways that …automatically assume that they engage in a negative behavior." Consumers are confused by conflicting health messages and unclear about terms such as "trans fat," "nutrient dense," "energy needs," and "good fat."

**Examples of words that should be shorter**

| Original | Suggested |
|---|---|
| Adequate | Enough |
| Participate | Do or Join |
| Consume | Eat |

## Techniques for general readership (10-12)

- Words: Use common, short words as possible. Avoid or explain jargon, technical words and long words. Avoid contractions, abbreviations, acronyms and unfamiliar spellings of words.
- Sentences: Use 8-10 words per sentence. Avoid sentences that begin with "Because of…" or "According to…" Start new sentences instead of connecting clauses with "and" or "but." Keep the active tense such as "Use" instead of "should be used."
- Paragraphs: Keep paragraphs to 1-3 sentences single-spaced. Short paragraphs need not be indented.
- Punctuation: Limit quotation marks, exclamation points, semi-colons, colons, dashes and apostrophes.
- Headings: Break up blocks of information with descriptive 1- to 3-word headings.
- Width: Best readability is about 40 characters per line, so sometimes two columns are easier to read than one wide page. Margins on the right should be ragged or unjustified.
- Size and style of typeface: use 12-point type or larger. Avoid all caps, and limit italics, bold face and underlin-

➤➤

ing except in headings.
- Spacing: Include white space around margins, illustrations and boxes. Double space between paragraphs and before and after headings.

## Focus on content

- Be specific: Give relevant, actionable, culturally appropriate examples to hook new information onto that which the reader already has.
- Be brief: Focus on need-to-know information, or split the information into a series, such as Getting Started and Ready for More. Lists should be short.
- Be positive. Say "eat" rather than "do not eat."
- Graphics should be simple and clearly illustrate the points of the text. Use boxes to highlight information.
- Summarize: repeat important concepts at the end.

## Check readability level

In MS WORD for windows, authors can click on the following sequence:Tools, Language, Spelling, and Grammar. For preexisting materials, a quick manual check can be the Fog test, described at http://www.readability.info/info.shtml. (13)

Although NAAL scores are not related to grade level achieved, many scorings of readability do give grade level scores. **For general audiences, aim for fifth grade.** For more literate or more motivated audiences, eighth grade is adequate. Many readability systems scores average the number of syllables per word and the words per sentence.

## Test piece with the intended audience

After screening the handout with peer professionals, the most important (and often neglected) test is with end-users. The gold standard is focus groups. However, time and money can be saved by finding a classroom or club of people with demographics similar to the end-users, or by asking clients one at a time.

Use a mock-up of the handout including the first draft's words, headings, illustrations and layout. Ask for clients' help in improving the piece. Phrase questions to elicit honest replies, not answers meant to please you. Observe clients casually but carefully as they reply, and assess body language and facial expressions. Follow up politely about any unclear comments. Be patient and value clients' input. Some questions include:

- Tell me in your own words what this is about.
- What does this picture tell you to do?
- Do you find anything on this page you can do?
- What does this list tell you to do? (When he/she picks something out) Will you do that?
- What does (unusual word) mean to you?
- Is there anything on this page that makes you uncomfortable?
- Would your friends learn from this page?

Collect five or more of these feedback sessions. Incorporate responses by rewriting, reformatting and/or simplifying the illustration. Ironically, some revisions may require more words and pictures and some revisions, fewer. If necessary, restest the piece with a new audience when possible.

Translations: Find a translator who also uses the street or colloquial language, not only the formal or classroom version. Have the first translation reviewed by at least one more speaker of that language, asking the same questions as above.

*"I recently wrote a letter to the editor in a newspaper. The published letter was illustrated with a blood pressure cuff, which sent an entirely different message than my topic- children and wellness."*

## Take Home Message

The tastiest broccoli is not nutritious if it's discarded. The finest nutrition information doesn't count if it is cumbersome or intimidating to read. Write materials clearly to your clients. Create focused, user-friendly, easy-to-read handouts, and test them with clients. Handouts should

**Review: The article, Rules of the Write, is intended for nutrition professionals who have extensive nutrition knowledge. The following is a quick assessment comparing how it, as a consumer oriented article might be evaluated.**

| | For Professionals | For Consumers |
|---|---|---|
| Title: | Attracts Attention | Confusing or Distracting |
| Tested with audience: | No | Should Be |
| Readability: | | |
| Sentences/Paragraph: | 2.5 | 1 to 3 |
| Words/Sentence: | 12.7 | 8 to 10 |
| Characters/Word: | 5.3 | 4-5 |
| Passive Sentences: | 7% | 0 |
| Flesch Reading Ease: | 35.1 | 70 or higher |
| Flesch Kincaid Grade Level: | 11.5 | 5 for most, 8 for motivated |

inform consumers and motivate accurately, but also clearly and quickly.

## References:


1. Health Literacy: A prescription to end confusion. Executive Summary. Available at http://www.nap.edu/catalog. Accessed April, 2007.
2. Kerka S. Health literacy beyond basic skills. ERIC Digest. 2003;245. Available from http://ericacve.org/digests.asp. Accessed April, 2007.
3. National Assessment of Adult Literacy, US Department of Education, Institute of Education Sciences. Available at nces.ed.gov/naal/. Accessed April, 2007.
4. Use of complementary and alternative medicine in the United States. Available at http://nccam.nih.gov/news/camsurvey/fs1.htm. Accessed April, 2007.
5. Carmona RJ. Improving Americans' health literacy. J Am Diet Assoc. 2005. 105;9:1345.
6. Carroll J. Consumers don't know what they don't know, All the state-of-the-art health care literacy tools go for naught when faced with such ignorance. Managed Care Magazine. 2005. Available at www.managedcaremag.com/archives/0512/0512.providerquality.html. Accessed April, 2007.
7. International Food & Information Council. Four basic steps to crafting "ICIC" communications. Available at www.ific.org/tools/skills2.cfm. Accessed 5/31/2006.
8. IFIC. Food vs. Nutrition. Available at www.ific.org/tools/tips/. Accessed April, 2007.
9. Consumer Communications Research Findings & Application. US Department of Health & Human Services and US Department of Agriculture. 4-1-05. Available at http://www.health.gov/dietaryguidelines/dga2005/toolkit/communications.htm. Accessed April, 2007.
10. Gaston N, Daniels P. Guidelines: Writing for Adults with Limited Reading Skills, Food and Nutrition Service, US Department of Agriculture, Alexandria VA, 1992. USDA (FNS) 332-640/70349.
11. Kalista-Richards MA, Lockett P, How to Develop Nutrition Educational Materials: A Training Course. Presented at Am Diet Assoc 2002 Food & Nutrtion Conference & Exhibition, 10-19-02, Philadelphia PA.
12. Shield JE and Mullen MC. Study guide, Developing Health Education Materials for Special Audiences: Low Literate Adults. J Am Diet Assoc, Chicago IL, 1992.
13. Readability.info: readability scores for Web pages and MS Word files in a flash. Available at www.readability.info. Accessed April, 2007. ◆

# Member Spotlight

*Emma is being highlighted to showcase a new section on the RPG website that recognizes our members for their important contributions to our profession and patients. The RPG members currently highlighted on the website include Bonnie Martin, RD, LDN from Massachusetts, Sarah Levin, RD, LD from Washington, DC and Mary Wolffe, RD, CSR, LD from Minnesota. Susan Dupraw, MPH, RD is also highlighted as the RPG practice team manager.*

## Emma Montgomery

My name is Emma Montgomery, and I have been a nephrology dietitian in Birmingham, Alabama, for 22 years. That's not bad for someone who vowed as an intern, "I will never do dialysis," after fainting when the program required us to watch a patient being "hooked up"!

Now years later I can honestly say that being a nephrology dietitian has been the best career decision. The flexible hours are a great benefit, along with the spirit of camaraderie among the staff which makes for a wonderful place to work.

Originally from Tennessee, I graduated from David Lipscomb University and completed an internship at Vanderbilt Hospital. My career path led to clinical hospital work in Nashville, then Chicago and finally at a hospital in West Lafayette, Indiana. I didn't feel like I was really at home, however, until I arrived in Birmingham and became the first "renal" dietitian for Southern Nephrology Associates.

Although I am still working for the same two nephrologists, we have gone through several major transitions, first with the new owners of Fresenius Medical Care and now with National Renal Institutes. Whether we were privately owned or part of the largest dialysis company in the country or the newest one, I have always felt appreciated. In addition, I was encouraged to become involved in local, state, and national organizations that would benefit me professionally and the patients too. My employer has always provided me with compensation for membership dues, reference books and funded attendance to clinical conferences without hesitation. What a gift. What a responsibility.

Important resources for me abound from peers, websites and invaluable publications. As I write this, I have a stack of Renal Nutrition Forums in front of me that I have loaned out to my colleagues and patients too. Working with similar concerns on a daily basis and facing many of the same obstacles in our patient population, it seems that when I would be the most discouraged, the Renal Nutrition Forum always arrived just when I needed a some encouragement and new clinical perspectives or ideas.

The "buzz words" from the corporate world and even the ESRD Networks is all about outcomes, goals and percentages. Our unit could easily boast the best outcomes one month and the "not-so-best" the next month. Awards are given, acknowledgements are made, but in the end, it always comes down to sitting beside the patients, day after day, looking for that one thing that could make a difference. It is validating to know that there are other amazing dietitians all climbing the same clinical Mt. Everest of our world and who are willing to share their knowledge and experience. I believe I am privileged to have one of the most challenging and rewarding careers imaginable as a nephrology dietitian. And oh yes, hurray for smelling salts and the Renal Dietitians Practice Group! ◆

For more exciting highlights about our members please visit the redesigned RPG Web site via **www.renalnutrition.org** and access the "About Us" section and select "Member Spotlight"
The Renal Dietitians Practice Group encourages and welcomes member spotlight submissions to highlight more of our members that are making a difference for our profession and patients too!

*For patients wanting to save money*

Available through

# NEPHRO-TECH, INC.

# Calphron®

**667 mg calcium acetate**

*** Well tolerated**

*** Easy to swallow**

*** Cost effective**

## $15.00/200 tablets (mail order price only)

(Ask about our best price guarantee and call for special case pricing)

**Also available RenaPlex- our renal multivitamin**
**$9.00/100 tablets**

All orders are a minimum of 2 bottles; please add $4.95 for shipping and handling per order (not bottle).

**Please call 800-879-4755 for more information.**

**We accept MasterCard, Visa, Discover, personal check, cashier's check or money order.**

**www.nephrotech.com**

# Renal Dietitians Chair Message

## The Renal Dietitians Dietetic Practice Group Needs YOU....

**Lois Hill, MS, RD, CSR**

*You can dream, design, and build the most wonderful place in the world…but it requires people to make the dream a reality*. This Walt Disney quote lends itself to the Renal Dietitians Dietetic Practice Group (RPG). As members and member volunteers, we are the most valuable resource to our organization.

**Wanted:** Renal Dietitians to Help Our Profession Grow
The Renal Dietitians Dietetic Practice Group depends on volunteers...to run for office, to serve on national committees, and to work on key projects. Volunteers are also needed to contribute to the Forum.
**Rewards:** Networking, personal and professional growth in renal nutrition.
**For More Information:** www.renalnutrition.org

As I begin my term as Chair of the RPG, I look forward to promoting the mission of the practice group which is leading the future of dietetics by promoting and supporting membership in nephrology nutrition. RPG strategic goals include promoting the renal dietitian beyond basic clinical practice, including research, marketing and management. Another strategic goal addresses promoting and enhancing the continuity of care for renal patients by bridging the renal nutrition knowledge gap with generalist dietitians. With this goal in mind, RPG is co-sponsoring a session at the 2007 Food & Nutrition Conference & Expo in Philadelphia, on September 30 with the Medical Nutrition Therapy Practice Group. The session will address "The Nutritional and Inflammatory Evaluation in Dialysis Patients Study: What You Need to Know". Hope to see you there.

I look forward to ongoing partnership with the National Kidney Foundation Council on Renal Nutrition (CRN). Both the CRN and RPG have had collaborative partnership in the past with production of many beneficial joint projects. I also look forward to making our dreams and goals a reality. ◆

# Marketing Yourself for Success

**Maria Karalis, MBA, RD, LDN**

After working as a Renal Dietitian for nine years, I worked in several different non-traditional areas, including management, training and development, clinical support and marketing. Today, I am a Regional Scientific Manager for Abbott Renal Care and I owe my success to my willingness to work outside my comfort zone. When interviewing for nontraditional jobs, I often said, "Yes, I can do that!"

How we market ourselves determines how successful we will be. At the last NKF Clinical Nephrology Meeting in April, I had the opportunity to present on a panel entitled, *The Road Less Traveled: Promoting the Renal Dietitian in the 21st Century*. I'd like to focus this Chair message on that topic and share with you my ideas on how to market yourself and how to become a master in the visibility game. I believe that being a master in the visibility game is how you get ahead.

Expanding your role as a Renal Dietitian or moving into a nontraditional position creates exciting opportunities for dietitians. 75% of the jobs that exist today did not exist 10 years ago. Our education and work experience is diversified and it provides us with a variety of skills to build on: project management, familiarity with computer technology, business organization, operations, marketing or selling, writing, data evaluation, personnel management, problem solving, decision making, negotiation and behavior modification.

These are my critical success factors that helped me get to where I am today:

**Marketing Tips**

1. **Self-Reflection** - spend real time, six months or even a year, figuring out your career trajectory. It's the best investment you'll ever make. Take a hard, objective look at yourself: assembling a knowledge and skills inventory allows you to find your particular niche, something you do better than others in your same field.
2. **Have a vision.** Even if you are in charge of yourself, it's important to have a vision. A goal for your area of work and an awareness of how the steps you take can make that goal achievable. Your vision should be as specific as possible. Think of the "big picture". Where do you want to be 3 to 5 years from now? How about in 10 years? Name your destination and then spell out the directions for getting there.
3. **Define your brand.** Branding yourself means what makes you unique among all registered dietitians. What are you best known for? This is also known as your "genius work" or a combination of skills, abilities, work style and so many other things that are unique to you. Define your brand and then practice saying these words out loud so that when the time is right you can recite them fluently and with confidence.
4. **Have an elevator story.** To increase your visibility develop an elevator story. This is something you can say that summarizes your value and achievements in the 30-60 seconds it takes for an elevator to move between floors. This is a brief statement to the question, "what do you do?"
5. **Willing to Work Outside Your Comfort Zone.** Fear to forge into a new and unfamiliar area - don't let the job requirements stop you from applying. Always accept additional responsibilities that can build and diversify your curriculum vitae. Believe in yourself and if you don't have the self-confidence, then "fake it 'til you make it". You won't have the confidence until you challenge yourself.
6. **Don't Wait To Be Noticed.** Promote yourself – toot your own horn. Modesty doesn't create opportunity. Some of us are not really good at "selling" ourselves and we are often overlooked – not because of lack of capability but because of modesty or the mistaken belief that our accomplishments will eventually be noticed. The one that gets noticed is the one that makes sure that his or her boss knows how good their work is. If there's a vacancy or assignment you want, ask for it. When you are ready to make a career move, talk about it out loud. Let people know you are ready for the next challenge. The more people you talk to about it, the more likely you are to hear about opportunities as they arise.

➤➤

7. **People Skills.** Good communication skills are vital in advancing yourself, more important than the degrees behind you name. The ADA compensation survey reinforces that those with a master's degree earn only $5,000 more than those with a four-year degree. In a Today's Dietitian article by Joanne Lichten on "How to Make More Dough in Dietetics" the author describes how a dietitian's people skills allowed her to advance at a much faster pace than others with more experience. She landed a promotion two grades higher than her manager!
8. **Volunteerism.** Volunteering for your professional organizations builds leadership skills that carry over directly into the workforce. Everyone should take advantage of these types of roles because they give you a chance to try out your leadership abilities and to develop new ones. Volunteer positions help you prep for that "real management" role and they are important resume builders, which can help you, land that management position.
9. **Dress for Success.** Fashion enables you to "brand" yourself and regardless of industry, what you wear is how you want others to see you. According to Yahoo! HotJobs research, 75% of recruiters believe that how you dress for work affects your job, salary, and possible promotions. Additionally, 72% of recruiters reported that it's important that employees dress like their bosses. Your sense of style represents who you are, and when individuality matters, your clothes need to make a positive impact.
10. **Be a Strategic Thinker.** This means having the end in mind – that's why it's so important to have a vision. The author in the Today's Dietitian article mentioned earlier, describes Delia Hammock, Nutrition Director of Good Housekeeping Institute. Delia exercised strategic thinking in her search for the perfect job. Delia states, "I found the job that I wanted and then applied three times (over approximately 10 years) before I got it. Each time I tried to figure out why I wasn't chosen and make it a point to get expertise in that area".

## References:

1. Joanne Lichten, PhD, RD. How to Make More Dough in Dietetics – A Top 10 List. Today's Dietitian October 2006 Vol 8 No 10.

2. Lois P. Frankel, PhD. Nice Girls Don't Get the Corner Office 101 Unconscious Mistakes Women Make That Sabotage their Careers. ◆

# FNCE 2007

## September 29-October 2, 2007

Philadelphia, PA

Schedule of RPG Meetings af FNCE:

**RPG Board Meeting,**
***Saturday 9/29 8:30am-2pm***
**RPG Jointly Sponsored Session,**
***Sunday 9/30 1:30pm-3pm (details to the right)***
**RPG Membership Breakfast,**
***Monday 10/1 6:30am-7:45am***
**DPG Showcase,**
***Monday, 10/1 10:30am-1pm***

The Renal Dietitians (RPG) and the Medical Nutrition Practice Group (MNPG) will be sponsoring the following FNCE presentation:

**The Nutritional and Inflammatory Evaluation in Dialysis Patients (NIED Study): What You Need to Know**

Presented by Kamyar Kalantar-Zadeh, MD, PhD, MPH and Sara Coleman, RD, CSR, CDE

***This presentation is scheduled for Sunday, Sept. 30 from 1:30 to 3PM***

# 2007-2008 RPG Board Members

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

**OFFICERS:**
**Chair**
Lois Hill, MS, RD, CSR, LD
ljbhill@aol.com

**Chair-Elect**
Pamela S. Kent, MS, RD, CSR, LD
pamela.kent@genzyme.com

**Immediate Past Chair**
OPEN

**Secretary**
Jane Louis, RD, CSR, LD
louisjl@att.net

**Treasurer**
Caroline Chinn, MS, RD
P.O. Box 9256
Rancho Santa Fe, CA 92067
caroline.chinn@davita.com

**RNF EDITORIAL/MEDIA STAFF:**
**Renal Nutrition Forum Managing Editor**
Cathy M. Goeddeke-Merickel, MS, RD, LD
cmgmerickel@comcast.net

**Website Editor**
Cathy M. Goeddeke-Merickel, MS, RD, LD
cmgmerickel@comcast.net

**RNF Editor**
Aimee Zajc, RD, LD, CNSD
aimee.zajc@fmc-na.com

**Assistant Editor**
Lynn Munson, RD, LD
NutritionTailor@comcast.net

**Advertising Editor**
Tiffanie Jacobson, RD, LD
tiffanie.jacobson@fmc-na.com

**NOMINATING COMMITTEE:**
**Nominating Chair:**
Paula Frost, RD, CSR, LD
paula.frost@davita.com

**Nominating Member:**
Joanne Cooke, MS, RD, CSR
bonjour_joanne@yahoo.com

**Nominating Member:**
Mary Kay Hensley, MS, RD, CSR
marykayhensleyrd@netscape.net

**MEMBERSHIP CHAIR:**
Jamie Bailey, MS, RD, LD
jamielnoah@gmail.com

**AREA COORDINATORS/COMMITTEE CHAIRS:**
**Area I/ CQI-Outcomes Chair**
Chhaya Patel, MA, RD, CSR
chhaya.patel@davita.com

**Area II/ Awards and Scholarships**
Sarah Kruger, MS, RD
kruger_sarah@yahoo.com

**Area III/ Education Chair**
Victoria Biles, RD, CSR, LD
vbiles@nationalrenal.com

**Area IV/ Lending Librarian (Western U.S.)**
Jennie House, RD, CSR, LD
Covers Areas 1, 2, 4
jennie.house@fmc-na.com

**Area V/Lending Librarian (Eastern U.S.)**
Sandra Oliverio, MS, RD, CSR, CD
Covers Areas 3, 5, 6 & 7
sandrard@hsonline.net

**Area VI/ Legislative/Reimbursement Chair**
Karen Basinger, MS, RD, LD
kbase1@comcast.net

**Area VII/ Historian Chair**
Patricia D. Barba, MS, RD, LDN
patricia.barba@davita.com

**ADA CONTACTS:**
**ADA Manager, Practice Team**
Susan DuPraw, MPH, RD
800/877-1600 ext. 4814
sdupraw@eatright.org

**Professional Issues Delegate**
OPEN

# RNF Guidelines For Authors

**Article Length:** Article length is determined by the Editor for each specific issue. The feature article and 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 citiation examples:***
***Article in periodical:***
Knowler 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 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 (all in italics) below the title of the article. Also include the primary author's complete contact information including affiliation, phone, fax and email address.
**Submissions:** All submissions for publication should be submitted to the editor as an email attachment (either an MS word file or text file). A new feature on the RPG Web site will be to post the lead articles from the Renal Nutrition Forum on the Members Only Section of the RPG website (password protected). Thus, please include a brief abstract (for the website) along with your article submission.




Catherine M. Goeddeke-Merickel, MS, RD, LD
Editor, *Renal Nutrition Forum*
9386 Magnolia Way North
Maple Grove, MN 55369

PRSRT. STD.
U.S. POSTAGE
PAID
Cincinnati, OH
Permit No. 4630

Renal Dietitians®
A Dietetic Practice Group of
American Dietetic Association

Visit the Renal Dietitians "Members Only Section"
for valuable patient and professional resources @ **www.renalnutrition.org**