

# THE CASPEN CONNECTION

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Summer 2015

The CASPEN Connection is the quarterly newsletter of The Chicago Area Society for Parenteral and Enteral Nutrition—A Chapter of the American Society for Parenteral and Enteral Nutrition.

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## FROM THE PRESIDENT'S DESK

Greetings CASPEN Members!

I hope you all are enjoying your summer. I can't believe it's almost August!

We have a lot of exciting educational and networking opportunities planned for the fall including our half day seminar where participants will learn about current advances in nutrition support, as well as the start of our online journal club where you can earn CEUs from the comfort of your own home. Also, do not miss A.S.P.E.N.'s Malnutrition Awareness Week™. Details on these events are included in the newsletter.

As always, we are glad to see such a strong continued membership in CASPEN. We are so happy to be one of the largest chapters of ASPEN. Please continue to get your friends, colleagues and co-workers involved. More growth in CASPEN leads to greater opportunities for all members. Please share the following benefits of becoming a CASPEN member with your colleagues:

- CASPEN membership is only \$20 after joining ASPEN and permits free admission to all CASPEN programs
- Excellent networking opportunities with a variety of nutrition support professionals
- Create lifelong contacts that can help your career and open the door to many professional opportunities
- Quarterly newsletters with updates in nutrition support, member highlight and local research

You may also start considering greater involvement within the organization. Are you social media savvy? Do you love to plan events? If so, join our publication or program committees. It is never too late to get involved! Please email [caspboard@gmail.com](mailto:caspboard@gmail.com) or myself if you are interested in volunteering.

I look forward to seeing you at our next CASPEN program.

Sincerely,

Kelly Kleckner, MS, RD, LDN, CNSC

[kelly.kleckner@gmail.com](mailto:kelly.kleckner@gmail.com)



## SCCM/ASPEN Critical Care Guidelines: An Update to Current Practice Recommendations

Presented by: Beth Taylor, DCN, RDN, LD, CNSC, FCCM

Nutrition Support Specialist; Barnes-Jewish Hospital, St. Louis, MO

Thank you to everyone who attended our spring CASPEN dinner event on Thursday, April 30, 2015  
Park Tavern in Chicago, IL



A special "Thank You" to Beth for doing a wonderful job presenting, and Park Tavern for hosting the event!

Check out additional photos from our event at our microsite:

<http://community.nutritioncare.org/ChicagoChapter/home>



**Were you unable to attend?**  
Email [caspenboard@gmail.com](mailto:caspenboard@gmail.com) for presentation highlights and further information.



**CHICAGO AREA SOCIETY FOR PARENTERAL AND ENTERAL NUTRITION**

A Chapter of the American Society for Parenteral and Enteral Nutrition

# A.S.P.E.N.'s 2015 Malnutrition Awareness Week

*When: September 28-October 2, 2015*

**Purpose:**

- To raise awareness for healthcare professionals in determining people at risk for malnutrition and for the public to recognize the importance of a person’s nutrition status and the interventions/ resources available for optimal nutrition

**Benefits:**

- ASPEN offers a variety of educational programming and resources to help clinicians and the general public understand malnutrition as it is often poorly diagnosed
- Webinars on Monday and Wednesdays offer continuing education credits-free for ASPEN members



AN ASPEN PRIORITY  
**malnutrition awareness**

**Go to website link to access schedule of events and to register:**

<https://www.nutritioncare.org/maw/>

## CASPEN FALL HALF DAY SEMINAR

**When: Saturday October 24, 2015**

8:30 AM Registration

9:00 AM-1:00 PM Presentations

**Where: TBD**

### TOPICS/SPEAKERS

**1. Intravenous Lipid Emulsions**

*Todd W. Canada, PharmD, BCNSP, FASHP, FTSHP*

**2. Parenteral Nutrition Safety**

*Joseph I. Boullata, Pharm D, RPh, BSCNSP, FASPEN*

**3. Enteral Immonutrition**

*Kelly Roehl, MS, RD, LDN, CNSC and Anne Coltman, MS, RD, LDN, CNSC*

**4. Blenderized Tube Feeds**

*Betsy Hjelmgren , MS, RDN, CSP, LDN*

**Check your email for the program flyer with further information on the seminar and registration in the next month!**

*\*\*\*We have applied for 4 CPE for Registered Dietitians, pending CPE for pharmacists \*\**



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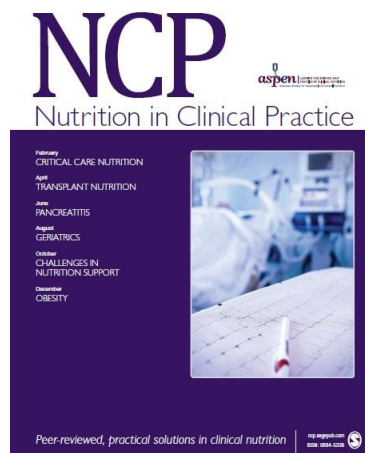
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# NEW EVENT: ONLINE JOURNAL CLUB

## What is Journal Club?

- ◆ CASPEN will begin hosting online journal clubs over the lunch hour as a way to keep our members up-to-date on new research and provide CEUs
- ◆ Articles will be within the last 5 years from JPEN or NCP
- ◆ A group leader will present the article and ask thought-provoking questions to others
- ◆ The discussion will last approximately one hour and you will receive 1 CEU credit for participating
- ◆ Please email [caspenboard@gmail.com](mailto:caspenboard@gmail.com) if you would like to lead a discussion
- ◆ Volunteers will be entered into a drawing to win free CASPEN membership!

More details to come on our CASPENs first Online Journal Club



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# REVIEW OF LITERATURE:

## Clinical Trial of Vitamin D<sub>2</sub> vs D<sub>3</sub> Supplementation in Critically Ill Pediatric Burn Patients

Gottschlich MM, Mayes T, Khoury J, & Kagan RJ. Clinical trial of vitamin D<sub>2</sub> vs D<sub>3</sub> supplementation in critically ill pediatric burn patients. *JPEN J Parenter Enteral Nutr.* 2015; DOI: 10.1177/0148607115587948

### Introduction

Hypovitaminosis D is a problem relatively common in patients post burn. Treating vitamin D deficiency is crucial for pediatric burn patients as it necessary for proper bone formation and maintenance of calcium, phosphorus, and magnesium homeostasis. Vitamin D is also relevant to burn treatment because of its extraskelatal effects on cell growth and division, as well as the immune and endocrine systems. Gaps exist in current vitamin D research; therefore, supplementation guidelines for children with large burns are based on little evidence. It is also unknown if it is more beneficial to provide supplemental ergocalciferol (vitamin D<sub>2</sub>) or cholecalciferol (vitamin D<sub>3</sub>). These gaps in knowledge can hinder health professionals as they aim to prevent and treat hypovitaminosis D in their patients. Therefore, the purpose of this study was to examine the immediate and long-term effectiveness of enteral vitamin D<sub>2</sub>, D<sub>3</sub>, or placebo supplementation in children undergoing treatment for extensive burn injuries.

### Methods

A prospective, double-blinded trial was conducted on pediatric burn patients in Cincinnati, OH. Patients aged 6 months to <19 years who had sustained a burn injury of >30% total body surface area (TBSA) were eligible for the study. Clinical management of patients was conducted per hospital protocols; care was supervised by one physician to ensure uniformity. All participants received the same 1 kcal/mL, low-fat enteral formula containing a high intact protein and enriched with arginine and  $\omega$ -3 fatty acids. Additionally, all patients received a daily liquid MVI containing 800 IU D<sub>3</sub> per liter of tube feeding. Participants were randomized to 1 of 3 study groups to receive additional supplementation (100 IU/kg) of vitamin D<sub>2</sub>, D<sub>3</sub>, or placebo. Randomization was stratified for age, burn size, and inhalation injury. Assay of serum 25 OH-D<sub>2</sub>, 25-OH-D<sub>3</sub>, D1, 25, total D25, and parathyroid hormone (PTH) levels were obtained upon study enrollment, at midpoint of hospital stay, hospital discharge, and at 1-year follow-up. Normal lab values were categorized as follows: vitamin D25, 25-74 ng/mL; D1,25, 10-75 pg/mL; and PTH, 15-65 pg/mL. Bones were assessed using dual-energy x-ray absorptiometry (DXA) at discharge and approximately 1 year post-discharge. Secondary out-

comes, including surgeries, antibiotics, and insulin use, were also monitored for group comparisons. Statistical analysis was conducted using SAS version 9.3 (Statistical Analysis Software; SAS Institute, Cary, NC). A P-value of <.05 was considered statistically significant.

### Results

A total of 50 patients with a mean TBSA burn 55.7%  $\pm$  2.6% and full-thickness injury of 40.8%  $\pm$  3.8% were enrolled in the trial. The age of participants ranged from 0.7-18.4 years. Results of the study found no significant differences in serum vitamin D levels between the groups. For all three groups, total D25 levels increased throughout hospital stay and mean D25 values were within normal range by discharge. At discharge, D25 was significantly greater than at baseline, midpoint, and 1-year follow-up ( $P < .007$ ).

As expected, patients supplemented with D<sub>2</sub> had significantly higher 25-OH-D<sub>2</sub> and lower 25-OH-D<sub>3</sub> when compared with placebo or D<sub>3</sub>-supplemented groups ( $P < .05$ ). The researchers noted no difference in vitamin D metabolites between D<sub>3</sub> supplementation and placebo. They concluded that total D25 (D<sub>2</sub> + D<sub>3</sub> metabolites) responded similarly over time, regardless of the type of supplement administered. D1, 25 levels increased significantly at each assessment: baseline to discharge and 1 year post-discharge ( $P < .0001$ ), midpoint to discharge ( $P = .02$ ), and midpoint to 1 year post-discharge ( $P = .0002$ ). No statistical difference in PTH values or clinical outcomes existed between the groups. While not statistically significant, the researchers did observe an increased need for insulin in the placebo group (median 666 units), when compared to the D<sub>2</sub> (median 26 units) and D<sub>3</sub> (median 163 units) groups. Total number of days in which insulin was required was also greater for the placebo group. Furthermore, supplemental D<sub>3</sub> was found to reduce the number of septic days; however, this was not statistically significant ( $P = .19$ ). Patients with low D25 levels at discharge were also more likely to have keloid scars ( $P = .12$ ).

### Discussion

A vast amount of data suggests that D<sub>3</sub> is more effective than D<sub>2</sub> in raising serum D25, yet the optimal form for supplementation remains under debate. In this study, both D<sub>2</sub>

(Continued on page 7)

and D<sub>3</sub> prevented a decline in D25 levels during acute care. This is likely due to the presence of D<sub>3</sub> in the tube feed, as both the D<sub>2</sub> and placebo groups experienced similar results. An unexpected finding of this study was the increase in D<sub>3</sub> levels for the placebo group at discharge; however, the exact mechanism behind this finding is unknown. D<sub>3</sub> supplementation was found to slow the deterioration of serum D25 levels post discharge. Past research has demonstrated the skin's ability to synthesize vitamin D is impaired post-burn, leading to low serum D25 levels. These findings, in conjunction with findings from the trial, indicate burn patients may benefit from vitamin D supplementation indefinitely. Large clinical trials are needed to confirm the role of vitamin D in patients with post burn scarring. Findings from this study also suggest a relationship between vitamin D supplementation and risk of hyperglycemia and sepsis. This deserves further study, possibly with insulin secretion/receptors, as the trial was unable to determine cause and effect.

#### Conclusion

The authors conclude that providing vitamin D<sub>3</sub> in doses nearly twice the DRI does not correct serum D25 levels by midpoint of hospitalization. They also conclude that additional supplementation of D<sub>2</sub> or D<sub>3</sub> (i.e. beyond tube feeding) does not rapidly restore serum D25 in the acute post burn period, but can improve vitamin D status 1-year post injury. Glucose control may be improved with vitamin D supplements, but more research is needed. Future studies should examine the acute-phase implications of vitamin D supplementation post burn. Additional research is also needed to evaluate the benefit of vitamin D supplements on scar formation and bone density. To evaluate if larger doses of vitamin D are warranted, the authors suggest a future multicenter trial to determine necessary statistical power and trends in outcome measures.

#### Article Reviewed by:

**Brittany Hoffman**



Brittany is a recent graduate of Loyola University Chicago's dietetic internship and combined master's program. She received her MS in dietetics upon completion of her comprehensive exam entitled "The Influence of Maternal Nutrition on Fetal Epigenetics and Future Risk of Metabolic Syndrome." She received her BS at Northern Illinois University. Areas of interest include genetics, pediatrics, cystic fibrosis, and oncology. Brittany hopes to obtain her CNSC and work in nutrition support. Hobbies include reading, biking, and cooking.

**Thanks Brittany for helping to make our CASPEN newsletter a success!! We really appreciate it.**

**We want YOU!** If you are interested in writing a review to be published in the CASPEN newsletter, contact [CASPENBOARD@gmail.com](mailto:CASPENBOARD@gmail.com).

## MUSINGS:

- What is your facilities Vitamin D recommendation for various patient populations?
- Do you prefer supplementing with Vitamin D<sub>2</sub> or D<sub>3</sub>?
- Are you involved with the dosing recommendations for Vitamin D supplementation in your patient population?

# CLINICIAN SPOTLIGHT

## Bridie Schuld, RD, LDN

### **Place of Employment & Title:**

Clinical Dietitian, CV/Thoracic ICU and General Medicine  
Loyola University Medical Center

**Email address:** bridget.schuld@luhs.org

**Place of Residency:** Lincoln Park, Chicago, IL

**Hometown:** Inverness, IL (Northwest Suburb)

### **Education:**

Undergraduate – University of Illinois at Urbana-Champaign  
Internship – Loyola University Chicago

### **Nutrition Support:**

**# years practicing nutrition support:** 1

**# of years an ASPEN/CASPEN member:** 1



### **Please describe any current or past experiences in nutrition support:**

I work with nutrition support on a daily basis in the ICU setting. Primarily, my patients arrive from the OR, intubated with increased needs for recovery/healing. With this patient population, I am always looking to learn more about nutrition support.

### **What do you like best about being a nutrition support dietitian?**

I really enjoy the role I play on the multidisciplinary team. I enjoy rounding with the residents and pharmacist to determine the most optimal route of nutrition support as well as fluid and macronutrient needs. At the same time, I have the opportunity to educate other medical professionals on the benefits of early enteral nutrition support and indications for parenteral nutrition.

### **Tell us about your experience volunteering on the Publication Committee.**

I decided to get involved with a CASPEN committee because I wanted to continue to learn and gain knowledge in this field. Volunteering has been a wonderful experience to meet and network with other nutrition support dietitians in the Chicagoland area.

### **Are there any areas you want CASPEN to focus on for future presentations?**

I would love to learn more about micronutrient dosing for parenteral nutrition from RDs who are currently practicing.

### **Personal:**

#### **What are you most looking forward to in the upcoming year?**

I have a couple trips that I am looking forward to as it has been awhile since I have traveled.

#### **What are your hobbies? How do you fill your free time?**

I enjoy finding new recipes and trying them out. I could spend hours in the kitchen! I also love doing different, new activities whether it is a tour through a part of the city, a day trip to a nearby town/city, or a class of some sort.



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We are always looking for volunteers to help with our committees—email [caspenboard@gmail.com](mailto:caspenboard@gmail.com) if interested!