Practice Update for Parenteral (IV) Nutrition Filter Use

Allison Blackmer, PharmD, BCPS, BCPPS, FCCP, FASPEN; and Peggi Guenter, PhD, RN, FAAN, FASPEN

In the February 2021 Nutrition in Clinical Practice print issue, the American Society for Parenteral and Enteral Nutrition (ASPEN) published “Update on the Use of Filters for Parenteral and Enteral Nutrition: An ASPEN Position Paper.”1 Parenteral nutrition (PN) therapy must be filtered using an in-line filter in order to decrease the patient’s exposure to particulate matter during PN administration. This recommendation is supported by numerous organizations including, but not limited to, the United States Food and Drug Administration (FDA), ASPEN, and the Infusion Nurses Society (INS), as well as manufacturers of PN products.2-5 Particles that pose the greatest safety risk are those greater than 2 microns in size. The use of intravenous (IV) in-line filters is a key practice aimed at increasing patient safety during PN administration.

The primary recommendation in this ASPEN position paper is to filter PN and intravenous fat emulsions (ILEs) through a 1.2-micron filter.

To provide context to this recommendation, depending on their pore size, filters are designed to prevent particulate matter, microbes, air, or enlarged lipid droplets from reaching the patient’s bloodstream. All of these can cause clinical complications. Filters come in a variety of pore sizes, ranging between 0.22 and 5 microns. The 0.22-micron filters were originally intended to block microorganisms, but they are also used for other applications.

2021 Kyle Noble Scholarship Recipient

The Oley Foundation is pleased to announce that Joshua Gearhart is the recipient of the Oley Foundation’s 2021 Kyle R. Noble Scholarship. Joshua is wise beyond his years. He writes, “It does not matter how we come into this world; it matters how we change it.” He continues, “I am different, and I am grateful. I truly believe that I am stronger because of the many medical hardships I have faced. I have learned to advocate for myself, and my voice has helped others, too. I am on track to change the future.”

Joshua has faced medical issues since he was a baby. As his condition challenged the local medical teams, he and his family went to a children’s hospital out of state, looking for a diagnosis and help. Two years and many tests later, it was determined that Joshua had

Now Is the Time...to make your year-end gift to Oley!

COVID has hit us all hard—especially Oley families who are extra vulnerable to infection. Oley staff has been working tirelessly to bring you education and connection to get you through this difficult time with online meetings, support groups, webinars, concerts, Kidz Klub activities, and this newsletter.

Your financial contribution is crucial to keep Oley programs running strong and to keep them free of charge for consumers and families.

A letter and envelop are on their way, but why wait? It’s super safe and easy to donate online at oley.org. Simply click on the orange “Donate” menu and fill in your credit card or bank account information in our secure web portal.

Have questions, or need help? Call the Oley Foundation office at (518) 262-5079.
Our Mission

...is to enrich the lives of those living with home intravenous nutrition and tube feeding through education, advocacy, and networking.

The Oley Foundation provides its 25,000+ members with critical information on topics such as medical advances, research, and health insurance. The Foundation is also a source of support, helping consumers on home IV nutrition and tube feeding overcome challenges, such as their inability to eat and altered body image. All Oley programs are offered FREE of CHARGE to consumers and their families.

Oley Foundation Programs

- **LifelineLetter**
- **Peer to Peer Support**
- **Conferences and Webinars**
- **Resources to Promote Living Well on Tube Feeding and IV Nutrition**
- **Equipment Supply Exchange**
- **Advocacy and Awareness**

**Resource Spotlight: Virtual Support Groups**

Whether you are feeling festive or feeling lonely, the holidays and the winter months that follow are good times to connect with others through an Oley Foundation virtual support group. Oley virtual support groups offer young adults and adults on home tube feeding and/or IV nutrition and their family members or caregivers a chance to meet others who “get it”—people from all across the US and beyond who aren’t offended if you talk about diarrhea or stomas; who know what it is like to carry a backpack around all the time or to have to be home at a certain time to “hook up” (and will know you don’t mean what Merriam Webster says “hook up” means); who understand you can feel great today, and not so great tomorrow. It’s a place to get questions answered and to discuss problems and victories. For school-aged kids, Kidz Klub offers a chance to do a craft and play a game with other Oley kids. Finally, for kids, young adults, and adults alike, Oley virtual support groups offer a place to form friendships.

Support group schedules are listed on the calendar on the back page of this newsletter, and at oley.org/SupportGroups.

**How to Support Oley**

Donations are tax deductible and are accepted at oley.org/donations or at the street address on left. We appreciate your support!
Send your tips, questions, and thoughts about home tube feeding (home enteral nutrition, or HEN) to metzgel@amc.edu. Information shared in this column represents the experience of the individual and, while medical information is reviewed by an advisor, should not imply endorsement by the Oley Foundation. The Foundation strongly encourages readers to discuss any suggestions with their clinician before making any changes in their care.

**Tube Talk**

**Short Extension Tubing Makes Administering Meds Easier**

These tiny medication extensions are amazing. I found them about six years ago and I loved them for medication administration via my J-tube between feedings. They last longer than the longer tubes and are much easier to clean.

I have a button [low-profile feeding tube] and I would often get frustrated because I would forget where I had left my extension or I would need to clean it first, when meds were due—or, more importantly, needed urgently! (This was before I realized that I could be getting more than one new extension per tube through my home health/DME supplier. For over fourteen years I was using only the one extension that came with each new tube for several months, until the tubes were switched out again.)

When I found all the different extensions that could be ordered online, I was ecstatic. (It’s the little things that make me happy.) The extensions can be pricey ($15 to $20 per extension), so I was happy to find that using the “2-inchers” for meds instead of the longer continuous feeding extensions made a big difference in the longevity of the longer extensions.

Now my needs have changed and I am on continuous feeding. I almost always have an extension in place and I haven’t needed the med extensions. But I have one on hand, because they are really handy to have in your med caddy or to stick in a travel pouch for med administration on the go!

I have ordered the med extensions through different companies online. I look for companies that have decent coupon offerings and frequent sales, as well as lower prices. And if I consolidate supplies, ordering from one place and in bundles, I can get shipping fees waived. This past summer, one of the online companies was selling the 2 inches for $13.99 each, or $68.95/case of five, but they last a long time because they are easier to keep clean with a tube brush or a pipe cleaner.

—Kimberly K.

Editor’s note: The 2-inch extension sets Kimberly writes about are available for both the Applied Medical Technology (AMT) and Avanos low-profile devices.

**Skip a Step with the Bolink® D Cap**

The new Bolink D Cap (from U Deliver Medical) can be connected directly to Tetra Pak tube feeding (enteral) nutrition containers with the DreamCap™ spout. The direct connection eliminates the need to pour formula into a bag or a syringe for bolus or gravity tube feeding.

Key features include:

- A specially designed cap that is compatible with the Tetra DreamCap used by several tube feeding manufacturers, including Nestlé, Kate Farms, and Abbott.
- A vented cap, which allows formula to flow easily.
- A roller clamp on the tubing.

—adapted from U Deliver Medical press release

**GEDSA Reminder**

GEDSA has announced that as of January 1, 2022, feeding tube manufacturers that are part of GEDSA will no longer make ENFit-legacy transition sets and adaptors to be sold separately from other feeding tube devices. See the May/June newsletter, oley.org, stayconnected.org, or individual manufacturer’s websites for more details.
The Oley Foundation Is Shaking Things Up for 2022

We are redesigning the Oley Awards program this coming year. Look for more information on our new and improved awards in the January/February LifelineLetter.

In the meantime, keep thinking about who inspires and/or positively impacts your life.

Apply for HPN Research Prize: $7,500 in Awards!

The Oley Foundation encourages researchers to apply for an HPN Research Prize. Oley will award $2,500 prizes to each of the three clinical research papers best aligned with the foundation's mission of enhancing the lives of HPN patients, and that generate interest among HPN patients and improve their well-being.

A portion of each prize ($1,000) will be used towards travel expenses to bring the primary author of each winning abstract to the Oley Annual Consumer/Clinician Conference to present their research. We are grateful to Nutrishare, Inc., for sponsoring the prizes.

To apply, researchers must submit their abstracts to the Oley Foundation by March 18, 2022. The abstract must have been accepted for poster or oral presentation, or publication by a respected, relevant professional association such as ASPEN, ESPEN, INS, AGA, etc. between July 2020 and March 2022.

For additional details and application go to oley.org/HomePNsubapplication.

Questions? Email the prize coordinator at andreaguidi.oley@gmail.com, or call Andrea at (508) 460-1707 or the Oley office at (518) 262-5079.

Thank you for your submissions!
HPN (Home Parenteral Nutrition) Awareness Week Recap

HPN Awareness Week, which took place October 11–15, 2021, was busy! This is the first year we haven’t done a video featuring Oley members since we started HPN Awareness Week almost ten years ago. Instead, we concentrated our efforts on hosting a series of events and posting to social media. Some of the highlights from the week include:

- hosting a webinar featuring Mallory and David, interviewed by Nancy. If you missed it, watch the video of these three HPN consumers freely discussing their lives (traveling, working, camping, etc.) and how HPN fits in for each of them. “A Conversation with Mallory and David, led by Nancy Pickett,” oley.org/webinars
- celebrating the first-prize winners and runners up of the 4EverBold comic strip contest. For more about the contest and the winners, and to see the comic strips, see pages 6–7. To watch a recording of the celebration, visit oley.org/4EverBold.
- holding a Mini Meeting, where presenters discussed many topics focused on HPN and tube feeding. Visit oley.org/oleyminimeetings to see the full program and access links to the recordings of the presentations.

“Weapons can create opportunities, and make traveling and enjoying life experiences possible.”
— Katie M.

We also asked HPN consumers if they had any tips or tricks for others. Katie (pictured above) suggested, “Create your new normal and be grateful for it. Reach out to successful HPN users, there is a lot to be learned from them.” Oley Ambassadors are a good place to start. Go to oley.org/ambassadorhpn. You can read about these experienced volunteers and find their contacting information. (See page 8 to meet Crystal.)

Our thanks to everyone who participated in the virtual events we held, posted to social media (yours or ours), and contributed photos and shared thoughts.
Drum Roll, Please! Announcing the Winners and Runners-Up

We are excited to introduce you to the first-prize winners and runners-up in the Oley Foundation’s 4EverBold comic strip contest, sponsored by Baxter. This new arts-based award program celebrates the courage, confidence, strength, and resilience of young home parenteral (IV) nutrition (HPN) consumers. It has provided a unique and meaningful engagement opportunity for our younger HPN members, and we think you will agree it has led to some outstanding results!

This comic strip contest was open to HPN consumers ages 7–12, 13–17, and 18–25. Contestants were challenged to draw upon their personal experience to create a comic strip that illustrates who they are and what they do in the bold pursuit of an independent life. We announced the contest at Oley 2021: A Virtual Experience, and accepted comic strips through September. One first-prize winner in each category received a technology package, with a laptop, printer, and gift card for accessories; runners-up each received a laptop.

The first-prize winners and their comic strips are featured on this page, and the runners-up on the next. Visit oley.org/4EverBoldWinners to read more about the artists and to see the comics in detail. They are impressive, funny, and insightful.

We thank everyone who submitted a comic strip; the Oley members who served on a focus group to help shape the program; the Oley members who served on the Voting Committee to select the winners; and Baxter, for supporting the program.

All of the comic strips featured here will be published in a book, which will be given out by the Oley Foundation and Baxter at medical conferences and other venues to help raise awareness about HPN, especially among healthcare professionals. Watch for notecards featuring the art of the first-prize winners, too.

**Olivia** is fourteen years old and lives in Pennsylvania. She has mitochondrial disease and gastroparesis and has been on home parenteral nutrition (HPN) since she was four years old. Olivia says, “Some people may think being on HPN limits what you can do, but for me it has helped me feel healthy enough to do the things I want! Without my nutrition and hydration, I wouldn’t be strong enough to go to school, enjoy Girl Scouts, travel all around the world, and help spread awareness by advocating on Capitol Hill and sharing my story with others. I am independent and confident in just being me.”

**Gabriella** is a smart, funny, artistic, strong, and sassy eleven-year-old. She was born with vanishing gastroschisis and has been on home parenteral nutrition (HPN) her entire life. Gabby has used art from a young age to help her find her independence and voice in a life that doesn’t always let her have the choices that she wants. She loves sharing her art with others in all forms, whether it’s drawing, painting, making slime, modeling clay, crafting, or making thousands of Shrinky Dinks. She loves her family and her dog Maverick, is becoming an excellent softball player, and is excited to be in fifth grade.

**Stephanie** is twenty-two years old and lives in Wyoming. She has been dependent on home parenteral nutrition (HPN) for over four years. She writes, “I have sought out opportunities to care for my central line on my own. Doing so provides me with the ability to be more independent. Additionally, I feel more at ease knowing how to properly care for my central line and accomplishing the tasks on my own.”
Janie is a thirteen-year-old artist who started on home parenteral nutrition (HPN) at four months of age. She has two brothers and lives in Massachusetts with her family. Janie is in the seventh grade and enjoys arts and crafts, archery, hiking, karate, watching videos, and playing games on her iPad.

Sixteen-year-old Matthew is currently on continuous tube feeding. He’s had a g-tube since he was two and a half years old, and a separate j-tube since he was six and a half. He has been on parenteral nutrition three separate times since he was four years old. He has many medical challenges, but he never lets that define who he is. Matthew is a senior in high school.

Vinnie is an eleven-year-old from Pennsylvania. He was on home parenteral nutrition (HPN) for about three years, and now uses enteral nutrition (tube feeding). Vinnie’s need for alternative nutrition is a result of his conditions of prematurity, short bowel syndrome, and intestinal transplant. Vinnie is in sixth grade. He loves to draw, write stories, watch special effects footage from movies, ride his bike, and spend time with family and friends. Vinnie’s parents note that his medical journey has been tough over the years. Without his good attitude, as well as parenteral and enteral nutrition, he would not be able to enjoy or do all the things he loves.

Trinity is a university student enrolled in a French food science and nutrition program. She aspires to be a dietitian, to help others who have health issues similar to hers. Trinity has been on home parenteral nutrition (HPN) for several years. She credits it with giving her quality of life, which has allowed her to enjoy cooking, hiking, and playing guitar.
Wristband Color Matters

We’ve all seen the plastic or silicone wristbands used to raise awareness about a cause or to memorialize an event. Here’s something to think about the next time you consider wearing one:

To improve safety, the American Hospital Association (AHA) has recommended that hospitals use certain color wristbands to indicate certain, specific things (as outlined below).

Supporting this recommendation, this past summer the FDA issued a letter to manufacturers about the wristbands or bracelets they give patients to wear to identify implanted medical devices. The letter suggests manufacturers not use purple for these bracelets.

Following AHA recommendations, many hospitals use wristbands of these colors for these meanings:

- Red = patient allergies
- Yellow = fall risk
- Purple = do-not-resuscitate (DNR) patient preferences

It Pays to Update Your Oley Profile

Thank you to everyone who updated their Oley Foundation profile in response to our pleas. Updated member information is so important! Our congratulations to Abi G., who won the drawing this summer for a $100 gift card.

Need help updating your profile? Call (518) 262-5079.

Ostomy Supply Donations

Kindred Box is a 501(c)(3) charitable organization in the United States dedicated to improving the lives of people with ostomies. Their goal is to raise awareness about the expense of essential medical supplies for uninsured and underinsured Americans living with an ostomy, promote understanding, create solutions, and encourage ostomy supply donations. Visit kindredbox.org for more information about how you can donate ostomy supplies and funds to further their mission.

Kyle R. Noble Memorial Scholarship

In 2007, the Noble family established the Kyle R. Noble Scholarship with the Oley Foundation to further the educational goals of individuals relying on home parenteral and/or enteral nutrition for their primary nutritional needs. Each academic year, a $2,000 scholarship will be awarded by Oley to an applicant who embodies the qualities for which Kyle will be remembered.

Applicant Should Submit:

1. Cover letter with name, address, daytime phone, email address, age, diagnosis, HPN and/or HEN, and years on therapy.
2. A one- to three-page essay wherein the applicant describes how they have overcome obstacles/challenges posed by HPEN and inspired others to live life to the fullest.
3. A letter from an advisor or teacher supporting applicant’s educational pursuits.
4. A letter from a clinician or homecare company reflecting the applicant’s need for HPEN.
5. Applicants must submit their transcripts at the end of the semester of study in order to receive the second half of the scholarship amount.

Deadline is March 18, 2022. Details and application online at oley.org or call the Oley Foundation at (518) 262-5079. See page 1 to read about Joshua Gearhart, the 2021 Kyle R. Noble Memorial Scholarship winner!
Welcome Crystal, Our Newest Ambassador

Would you like to speak with someone who has “been there, done that”? Call an Oley Ambassador. For a complete list of Ambassadors, visit oley.org or call (518) 262-5079. Note: Ambassadors volunteer to provide peer support for HPEN patients and family members. They are not medical professionals and do not offer medical advice. Please do not contact Oley Ambassadors for solicitation, marketing, or research purposes.

Meet our newest Oley Ambassador!

Crystal Killian

Crystal started her diagnoses journey in 2008, while working full time in the sterile biopharmaceutical industry. She was diagnosed with mitochondrial depletion/myopathy, then with dysmotility and pelvic floor dysfunction. She loves to travel both domestically and internationally, and lived in The Netherlands for several years while traveling for work. Crystal had to stop working in 2016, and in 2017 had a port-a-cath placed and started home parenteral (IV) nutrition (HPN).

Crystal is a strong personal advocate, and believes in educating others about living with chronic illness. She is very passionate about making sure people who access/use her port use proper aseptic technique. She is very open in discussing her experiences with living with chronic illness, including the parts some people might consider taboo or embarrassing.

Crystal lives in East Norriton, Pennsylvania. She enjoys several outdoor activities, such as horseback riding, boating, fishing, and swimming, and spending time with her niece and nephews. She believes you should live each day to your fullest, knowing that that can be very different each day.

You can contact Crystal at (765) 532-5715, mckslamb@hotmail.com, or nutritiongroup4all@gmail.com.

Equipment-Supply Exchange

Do you have supplies and formula you no longer need? Or do you have needs that aren’t covered by insurance? Try the Oley Foundation’s Equipment-Supply Exchange.

Items are available free of charge, but the person requesting supplies must pay for, and arrange for, the shipping of the requested items. Shipping can be expensive for heavier items like formula.

Go to oley.org/Equipment_Exchange to request items through Oley’s online store, send information about donated items via an online form, or find out more about the program. If you don’t have access to the internet, call (518) 262-5079.

Please be patient. It may take a few days to return a call or answer a request. Typically there is a two-week turnaround from when your request is made until items are received—when the items are available.
Oley Community Enrichment Programs
—Education, connection and hope through Mini Meetings and Webinars!

Oley’s Community Enrichment Programs offer an opportunity to learn the latest information, and about advocacy and research. They are coordinated for consumers and family members/caregivers but everyone is encouraged to attend and learn!

Webinars
Medical Management of Short Bowel Syndrome
Presented by Sivan Kinberg, MD, MS, MA
Director, Pediatric Intestinal Rehabilitation Center
Columbia University Medical Center
Watch recording at oley.org/webinars#Intestinal Failure

Mini Meetings
Friday, April 8, 2022 | 11:00 a.m.–2:00 p.m. EST
(registration coming soon!)

Friday, September 16, 2022 | 11:00 a.m.–2:00 p.m. EST
(registration coming soon!)

To access information on upcoming and past Mini Meetings and Webinars go to oley.org and click on “Conferences” in the blue main menu bar, then scroll down to “Community Enrichment Programs.”
Feeding Tube Awareness Videos Translated to Chinese

Earlier this year, Oley Foundation member Lingxia Sun, RD, CNSC, approached us with an exciting idea: she wanted to translate some of our Feeding Tube Awareness videos into Chinese. We are pleased to announce that links to these videos can now be found on the Feeding Tube Awareness page of our website (oley.org/FT_Awareness_Week). Thank you to Lingxia for initiating and undertaking this project.

Motivated to Share

Lingxia explains what motivated her to make the translations:

“I believe that nutrition is very important as a part of holistic medical care, and appropriate nutrition delivery is crucial. I have worked as a clinical dietitian in the USA, and now I am back in China. I see that very few children who have clinical indications of tube feeding are actually tube fed. In hospitals in China, many ill children are not adequately fed, and some of them with functional gut are on parenteral (IV) nutrition without any feeding into their gastrointestinal (GI) tract. The awareness of tube feeding is very low in both physicians and parents. I believe tube feeding can help to deliver adequate nutrition for patients who are unable to take oral feeding or take adequate oral feeding, and help them to optimize medical care and recovery. I think the videos from the Oley Foundation will be helpful in raising awareness among Chinese physicians and patients. I hope that with more work to promote nutrition care and tube feeding in China, in the future more Chinese physicians will know nutrition support better, more patients will receive appropriate nutrition support, and the quality of life for patients and their families will be improved.”

—Lingxia Sun, RD, CNSC

Lingxia Sun, RD, CNSC, giving a presentation about tube feeding to doctors in China

A feeding tube doesn’t mean food is off the table

Bring back real foods and nutritional variety with Real Food Blends™

Only 100% real food meals for tube fed children and adults.

TRY IT TODAY

REALFOOD BLENDS™
MEALS FOR PEOPLE WITH FEEDING TUBES
PN Filter Use, from pg. 1

Effective in preventing particulates found in dextrose–amino acid PN solutions (also known as 2-in-1 solutions) from passing into the patient’s bloodstream. Therefore, 0.22-micron filters have been commonly used for these 2-in-1 solutions, to block both microbes and particulates.6-8 (Note that 2-in-1 solutions do not contain ILEs; the 0.22-micron filter should not be used for ILEs because it disrupts the emulsion. Instead, the 1.2-micron filter has always been recommended for ILEs, whether they are infused alone or as a part of a PN solution containing ILEs, also known as a total nutrient admixture, or TNA, and also called a 3-in-1 solution.)9

In 2002, the Centers for Disease Control (CDC) issued guidance for the prevention of catheter-related infections that recommended against the use of filters solely for the purpose of infection control due to a lack of conclusive evidence regarding the ability of the filter to reduce infectious complications of PN.1,10 ASPEN, building on this new CDC recommendation and still recognizing the critical need to block particulates from reaching the patient, has changed its previous guidance (that a 0.22-micron filter be used for 2-in-1 solutions and a 1.2-micron filter be used for ILEs or TNAs), to indicate a 1.2-micron filter is appropriate for all PN admixtures. The 1.2-micron filter effectively traps particles, Candida albicans, and larger lipid droplets, all while maintaining the stability of the TNA.

In summary, the ASPEN position paper recommends that a 1.2-micron in-line filter be used for PN administration, whether the PN is infused as a 2-in-1 with ILEs infused separately, or as a TNA. For 2-in-1 solutions with ILEs infused separately but coadministered via a y-site, the 1.2-micron filter should be placed below the Y-site where the dextrose–amino acid solution and ILE co-infuse (see figure 1). For 2-in-1 solutions with ILEs infused separately via two dedicated IV lines, both the 2-in-1 solution and the ILEs should be filtered through 1.2-micron filters. For TNAs, the filter should be placed as close to the catheter hub as possible (see figure 2).

Excerpted from the ASPEN position paper, the best practices steps outlined for using PN filters are shown in Table 1 and for troubleshooting occluded filters in Table 2 (see tables on next page). As stated in the position paper, filters should be changed every twenty-four hours to mitigate the potential for microbes to release endotoxin.

ASPEN has several helpful resources related to the updated recommendations for filtering PN solutions, found on their Parenteral Nutrition Resources webpage (nutritioncare.org/PNResources). Resources include:

- Update on the Use of Filters for Parenteral Nutrition: An ASPEN Position Paper
- Update on the Use of Filters for Parenteral Nutrition Fact Sheet
- Filtered Food for Thought: An Interview with Two ASPEN Experts

For those administering PN at home, the key take-away from the new ASPEN recommendation is to utilize a 1.2-micron filter when administering PN. The specific set-up and placement of the filter is dependent upon how the PN is infused. If this will be a change for you, talk with your home care provider about how to incorporate it into your home PN regimen. If you are unsure of the filter size that you have, please check the filter and filter packaging and confirm with your home care provider and/or filter manufacturer to ensure you are using the 1.2-micron filter.

Interested in reading more? See the references for this article on page 14.

PN Filter Use tables, pg. 13, references, pg. 14
Table 1. Best Practices for Using Filters for PN Administration

1. Prior to compounding, a pharmacist must verify the stability and compatibility of the PN formulation.

2. Perform visual inspection of the PN container for evidence of particulate matter or admixture instability, including emulsion cracking for TNAs.

3. When administering the dextrose–amino acid component of the PN and the ILE as separate infusions, the first infusion must be completely set up and the pump programmed for that fluid before setting up the second infusion.

4. Avoid co-administration of medications with PN admixtures. When no other option exists, use appropriate flushing techniques before and after the medication is administered.

5. When co-administration of medications with PN cannot be avoided, the medication tubing should be attached at a Y-site above the filter. Medications that must not be filtered should not be administered with PN.

6. Select a 1.2-micron filter for all PN regimens including TNAs, dextrose–amino acid admixtures, and ILE.

7. Observe the manufacturer’s directions for priming the filter before connecting to the patient’s VAD.

8. Follow the manufacturer’s instructions included with the filter or administration set with in-line filter priming. Many filters require holding the filter vertically while priming.

9. To avoid clogging the filter during set up, consider allowing a small volume of ILE through the administration tubing, allowing the ILE to enter the filter. Close the clamp on the ILE administration set. (Optional)

10. Prime the dextrose–amino acid admixture through the administration tubing, completely filling the tubing and filter to the distal end of the tubing. This will dilute the ILE present in the filter to avoid clogging.

11. Connect the filter to the hub of the patient’s VAD. When administering the dextrose–amino acid component of the PN and the ILE as separate infusions, attach the filter below the Y-site where the infusions meet.

12. Release all clamps and initiate the infusion.

13. Schedule filter changes to coincide with the initiation of a new PN admixture and administration set.

VAD = vascular access device

Table 2. Troubleshooting Potentially Occluded Filters

1. Verify that appropriate pressure setting has been used on the infusion pump.

2. Rule out mechanical or thrombotic causes of high pressure infusion pump alarms:
   a. Trace the administration tubing from the pump to IV catheter, checking for kinks
   b. Confirm that all clamps are open
   c. Assess the patency of the vascular access device (VAD) according to organizational policies
   d. Inspect the dressing on the VAD to ensure that the catheter is not kinked or twisted under the dressing material

3. Verify that correct size filter has been used.

4. If correct size filter is in place, assume that particulate matter is the cause.

5. Remember that precipitates can occur hours after compounding:
   a. Remove clogged filter and replace it with a new filter
   b. Be alert for repeated episodes of occlusion
   c. Never allow an unfiltered admixture to continue to infuse.

6. Conduct a pharmaceutical review of the PN formulation to determine the underlying cause of the occlusion and identify actions to prevent further occurrences.

PN Filter Use, from pg. 12

References:

Scholarship Winner, from pg. 1

been born with a rare intestinal condition. His body could not produce digestive enzymes, and he could not eat. “Food was the enemy,” he says. Joshua had a gastrostomy tube (g-tube) placed, and he started tube feeding. “As if a g-tube was not challenging enough for a toddler who just wanted to play pirates and Thomas the Train,” Joshua says, “at age four I was diagnosed with a life-threatening necrotizing pancreatitis infection. This infection caused my body to enter a sepsis coma.” After two weeks he was discharged from the hospital, but with additional gastrointestinal issues. Today, his medical diagnoses include GSID (genetic sucrase-isomaltase enzyme deficiency), leaky gut syndrome, and multiple food allergies.

Joshua had feared his g-tube and pump (which he carries to school daily in a backpack to administer the tube feeds) would draw attention to him “in a negative way.” In elementary school, he found it especially difficult to fit in, and in middle school, he felt his short stature and g-tube made others question his athleticism. He says, “I spent years doubting myself and lacking confidence. My faith, family, and friends helped me overcome my insecurities. Actually, being different made me stronger and more courageous. By the time I walked through the doors of high school, I had learned that my condition did not define me.”

Joshua played ice hockey and flag football in high school, and was the co-sports editor for the school publication. He has interviewed local sports celebrities and, during the pandemic, he created a hockey podcast. Joshua also served as a Link Leader, part of a counseling program his high school has to foster a sense of belonging and community in incoming freshmen. “I am thankful,” he said at the time, “to talk with and encourage other students so I can help them overcome the anxiety they have because of their obstacles.”

Joshua graduated earlier this year and is attending college in Pennsylvania. He plans on studying public relations, with a focus on broadcasting, journalism, and history. We wish you all the best, Joshua, and look forward to hearing about your future endeavors!”
Notable Individual Gifts

Among the contributions we receive, there are always several dedicated to those who have inspired the donor. We share this list of honorees below. We are grateful for the following gifts received from August 25 through October 27, 2021.

Memorials: In memory of Ester Ann Brown Adler; Dorothy Alley; Hadar Birger-Bray; Linda Gulden; Barbara Karlin; Peter Michalski, on what would have been his 16th birthday; David K. Miller; Jonathan Miller; Dr. Doug Seidner; Josh Shapiro; Larry Zbanek

Tributes: In honor of Elizabeth Bond; Hadar Birger-Bray; Aidan Koncious; Jeff Nemeth

Fundraisers: Facebook fundraisers for Bettemarie Bond’s Walkathon and Lauren Magune’s birthday; Instagram fundraiser; Phil Kellerman’s ongoing political memorabilia fundraiser on eBay

Thank you for all gifts and the kind comments we receive throughout the year. Your support overwhelms us and continues to be a source of inspiration.

Oley Corporate Partners

The following companies provide over one-half of the funds needed to support Oley programs. Corporate relationships also strengthen our education and outreach efforts. We are grateful for their strong commitment.

TITANIUM LEVEL PARTNER ($150,000+)

Takeda Pharmaceutical

GOLD MEDALLION PARTNER ($50,000–$69,999)

9 Meters Biopharma

SILVER CIRCLE PARTNERS ($30,000–$49,999)

Coram / CVS specialty infusion services
Nutrishare, Inc.

BRONZE STAR PARTNERS ($20,000–$29,999)

Abbott
Baxter International Inc.
Cardinal Health, Inc.
Fresenius Kabi USA
Kate Farms
Option Care Health
Optum Infusion Pharmacy
Zealand Pharma

BENEFACCTOR LEVEL PARTNERS ($10,000–$19,999)

Avanos
B. Braun Medical Inc.
Cardinal Health, Inc.
Nestlé Health Science
Real Food Blends
VectivBio

PATRON LEVEL PARTNERS ($5,000–$9,999)

Amerita, Inc.
B. Braun Medical Inc.
Applied Medical Technology, Inc.
MOOG Medical
Soleo Health
2021–2022 Oley Calendar

COVID-19 continues to leave us guessing, and to influence when and where gatherings occur. Please check oley.org or other appropriate websites for the most up-to-date information on the events listed below.

**Ongoing:** Applications being accepted for Oley Tim Weaver Camp Scholarship. Note: scholarships will be honored at a later date in the event of a coronavirus complication (i.e., camp closures, COVID-19 illness, self or mandatory quarantines, etc.).

**December 3, 2021:** Oley webinar, Medical Management of Short Bowel Syndrome

**December 3, 2021** (and then the first Monday of every month): Young adult (ages 18–35) support group* (virtual)

**December 9, 2021** (and then the second Thursday of every month): Oley Tube Feeding/TPN Virtual Support Group for Patients and Caregivers* (virtual)

**December 16, 2021** (and then the first Thursday of every month): Philadelphia Suburbs Tube Feeding/HPN Support Group*. Meetings will be virtual until otherwise indicated.

**January 20, 2022:** Oley Kidz Klub* (virtual)

**February 7–11, 2022:** Feeding Tube Awareness Week

**March 18, 2022:** Nominations for Oley awards, applications for Kyle Noble Scholarship, and submissions for HPN Research Prize due

**March 27, 2022:** Oley Kidz Klub* (virtual)

**April 8, 2022:** Oley Mini Meeting

**May 5, 2022:** Oley Kidz Klub* (virtual)

**September 16, 2022:** Oley Mini Meeting

**October 10–14, 2022:** HPN (Home Parenteral Nutrition) Awareness Week

*For more information on support group and Kidz Klub meetings go to oley.org/SupportGroups; for other meetings email harrinc@amc.edu or call (518) 262-5079.

**Additional Meetings of Interest**

**March 12–16, 2022:** National Home Infusion Association (NHIA) conference, Nashville, TN

**March 26–29, 2022:** American Society for Parenteral & Enteral Nutrition (ASPEN) conference, Seattle, WA

**May 21–24, 2022:** Digestive Disease Week (DDW) conference, San Diego, CA

**September 29–October 1, 2022:** Pediatric Intestinal Failure Symposium, Ontario, Canada