The Effects of Light on The Neonate

Louise Bowen, NNP-BC, MSN, CMTE, CNA-BC

Bright lights in the NICU have been identified as a source of excessive stimulation in the neonate resulting in physiological instability.\(^1,2\) Neonates, irrespective of gestational age, demonstrate changes in heart rate, oxygen saturation, blood pressure, and body movements in response to excessive stimulation.\(^3\) The premature neonate, however, is more susceptible to the effects of increased stimulation than term neonates. Between 25 to 40 weeks gestation, there is a period of rapid brain growth\(^4\) as well as changes in the respiratory and gastrointestinal systems as a result of environmental stimulation.\(^5,2\) Excessive environmental stimulation such as bright lights may place the premature neonate at increased risk of insult or injury to their continuing development.\(^6,7\)

While in the hospital, the neonate is exposed to a variety of ambient and environmental light sources. Exposing the neonate to bright lights has been shown to increase heart and respiratory rates\(^8\) and decrease oxygen saturations.\(^9\) The effects of lighting on the neonate’s physiological stability have been studied for over five decades, yet questions continue to be raised about light level exposure and the degree of influence on the neonate’s development.

**Light in the Environment**

During the 1980s, light levels in NICUs ranged from 24 to 150 footcandles (fc).\(^10\) More recent studies have shown a decrease in light levels but ranges varied between different NICUs. Light levels ranged from 40 to 100 fc during the day, reducing in units with cyclic lighting to 5 to 10 fc at night. As expected, light levels were highest in areas of increased patient acuity.\(^11,12\)

The American Academy of Pediatrics recommends that ambient lighting at each neonate's bedside should range between 1 to 60 ftcs with the ability to adjust lighting. \(^5\)

Preterm and critically ill neonates are exposed to other types of light sources including phototherapy lights (300-10,000 fc)\(^13\), heat lamps (1000 ftc)\(^14\), and natural light from windows (1024 ftc).\(^15\) During phototherapy, correctly placed eye shields reduced light from reaching the neonate’s eyes by more than 90%.\(^16\) However, one study found that more than 50 percent of the eye shields were in the incorrect position exposing the infant’s eyes to the phototherapy lights.\(^17\)

Several studies have been conducted that compared the use of cycled versus continuous lighting in NICUs.\(^22,23\) Cycled lighting involves changing the light intensity during a 24 hour period of greater than 60 fc.\(^18,19\) Other studies have focused on the effects of phototherapy lights and the incidence of patient ductus arteriosus (PDA).\(^20\)

One study found that the lower-birth-weight infants who had their chest shielded during phototherapy had less incidence of developing a PDA or developed it later and required less extensive treatment resulting in a shorter length of stay.

Premature and critically ill neonates have routine eye examinations for ROP during their hospitalization. Exposure to the light from an ophthalmoscope set at maximum power for two minutes during the eye examination produces the same amount of light as 2000 fc for three hours.\(^21\) Pupillary dilatation for the exam may also increase sensitivity to light for as long as 18 hours.\(^11\)

Several studies have been conducted that compared the use of cycled versus continuous lighting in NICUs.\(^22,23\) Cycled lighting involves changing the light intensity during a 24 hour period.
Letter from the President

It is hard to believe that my 2-year term as president is drawing to an end. I am very excited to be turning the reins over to Ruth Bartelson who has been involved with FANNP for many years and will continue to meet the mission of FANNP. I am so blessed to be part of such an outstanding organization that just celebrated their 20th Anniversary. I am constantly amazed and energized when talking with FANNP members on projects they are working on, committees they are joining to bring NNPs to the national table and the networking opportunities with the National Association of Neonatal Nurse Practitioners. We have so much to be proud of! As we look to the New Year I would like to share a comment from Tara Woods, an NNP Student at UAB that sums up the role we play in the lives of our patients. She sent this to her fellow classmates in regards to Prematurity Day, “I am very aware of what a blessing a healthy baby is — I just want to tell you all I am very thankful for what you all do! As a mother, it was the RNs and NNPs that provided me the support and daily encouragement to get thru the single most trying time of my life to date. It is what inspired me to do what I am doing now! So as your days get tough and you wonder why you are doing what you are doing — just remember there are so many children out there that you helped give a chance at life! You made a difference and though you may not remember them; they do remember you — I promise they do and they will forever! My girls don’t remember their birth but they know their story and they see the pictures. They know those people helped God save them! I worked Sunday night and I called to tell my girls goodnight and I told them that I had to go to a delivery for a 24-weeker (and yes they know how small that is). Taylor said “momma go help that baby live— that mommy is going to be so sad!” It just melted my heart! I am very grateful to modern technology and medicine that allowed my girls to survive with a perfectly normal quality of life. But it was those at the bedside that did the real work! Just remember you are all special and what you do lasts forever!!!” Have a safe and happy holiday and thank you for making a difference in the lives of our little patients.

Jacqui Hoffman, MSN, ARNP, NNP-BC
FANNP Conference Wrap-up

20th Annual Neonatal Nurse Practitioner Symposium: Clinical Update and Review

Marylee Kraus, MSN, NNP-BC, ARNP

Another great conference took place in October at the Sheraton Sand Key! We had a wonderful turn out with great speakers and many opportunities for networking and just plain having fun! The Welcome reception and the Mardi Gras Party were well attended. We had several new events, one being the simulation of a live “birth” and “resuscitation” with a helpful discussion afterwards. The Roundtable proved to foster popular discussions on Role Transition and Mentoring Gen X and Y.

The exhibitors were plentiful with lots of good information and ideas. I think in our cozier environment, it is easier to talk directly with them on a more personal level. Their presence allows our conference to be one of the best values around!

We started what I hope proves to be another tradition of making an effort of going green, by having the conference materials online. We had already done online registration, and hopefully soon may have online evaluations and CEU certificates. Please feel free to offer suggestions and ideas for us to consider for future conferences.

Thank you!

The FANNP would like to thank the following companies for their generous support of its 20th National NNP Symposium:

**Flamingo Sponsors**
- Abbott Nutritional
- Children’s Medical Center, Dallas
- Children’s Hospital of Philadelphia

**Blue Heron Sponsors**
- Linkous & Associates
- Pediatrix Medical Group

**Egret Sponsors**
- ENSEARCH Management Consultants
- Nationwide Children’s Hospital
- All Children’s Hospital

Announcing the 2009 Kim Nolan Spirit Award Recipient

The 2009 Recipient of the Kim Nolan Spirit Award is **Gail Harris**. Gail Harris (Nimphius) was the founding member of FANNP in 1989. Gail was integral in securing funding and pulling together a group of NNPs from across the state in Orlando for the formative meeting. Gail was the association’s first president and held many roles in FANNP until she relocated to Charlotte, North Carolina.

During her career in Florida, Gail was a NNP at Bethesda Hospital in Boynton Beach. Gail is currently the NNP Coordinator at Levine Children’s Hospital in Charlotte.

To nominate someone for the Kim Nolan Spirit Award for 2010, go to the website FANNP.org and download an application, or write to Paula Timoney, c/o FANNP, PO Box 14572, St. Petersburg, FL 33733-4572.

**Congratulations Gail!**
levels in the premature neonate have been associated with severe intraventricular hemorrhage, morbidity, and death.\textsuperscript{33} One study examining stress response in term babies showed lower cortisol levels prior to a procedure followed by a significant increase following the procedure.\textsuperscript{34} As the response to stress triggers cortisol production, sustaining these increases can be detrimental and can lead to long-term adverse effects extending into adulthood.\textsuperscript{31} Certain adult diseases, such as cardiovascular, renal, type II diabetes, insulin resistance syndrome, and depression, have been correlated to fetal and neonatal cortisol exposure.\textsuperscript{31, 35, 36}

**Practice Considerations**

Although there are recommendations for lighting levels and the use of cyclic lighting in NICUs there is no standard established. Developmental care protocols include a variety of interventions to manage the NICU environment. Light reduction is one of the components included in most developmental care protocols.\textsuperscript{15} Previous studies highlight important issues for clinical practice and the need for further research. Neonatal health care professionals should be aware of the effects of ambient and environmental lighting on neonates. Each neonate should be assessed and cared for individually since reactions to environmental stimuli may vary.\textsuperscript{37} The following are considerations for NICU light management:

- Be aware of the impact of overhead lighting as well as light exposure from windows.
- Provide periods of dimmer lighting within a 24 hour period.
- Position the neonate to not look directly into a light source.
- Remember that premature infants tend to keep their eyes open more than term babies.
- Be aware of how phototherapy lights can possibly increase light exposure to infants in surrounding beds.
- Light sensitivity may be present in infants that have received medication to dilate the eyes in preparation for an ophthalmic examination. Consider placing a bili-mask or eye covering over the eyes for 4 hours to protect from direct light.

- Shielding the incubator with a blanket or cover to minimize light exposure is a common practice. The type of fabric, surface area covered, and level of ambient light impacts the amount of light reduction. Covers that are lighter in color, porous, and small in size will provide less light reduction than darker, tightly woven fabrics that are larger in size to cover more surface area.\textsuperscript{37}

- Do not make rapid, abrupt changes in lighting intensity.

**References**


Bring it On Answers (questions on page 12):

1. Answer is C; Tobacco use during pregnancy causes intrauterine growth retardation which initially presents with decreased glycogen stores in the liver, which is most evident with abdominal circumference measurements.

2. Answer is B; Beckwith-Wiedemann syndrome is a condition that generally includes macroglossia, omphalocele, and hyperplastic visceromegaly. Hypoglycemia is common, seen in more than 50% of cases. There is islet cell hyperplasia, hyperinsulinism, and low FFAs. Plasma growth hormone levels, however, are normal.

3. Answer is A; Prune Belly Syndrome refers to a triad of anomalies consisting of a deficiency of abdominal musculature, cryptorchidism, and urinary tract abnormalities. Gastrointestinal anomalies occur in 30% and cardiac anomalies in 20% of the infants with Prune Belly Syndrome.
The handbook on identifying newborn infection was designed to give the NNP and nursing staff a quick and easy reference to understand how bacterial, viral, fungal and protozoal infections are identified and treated. The “Handbook on Identifying Newborn Infection” will be partially presented in the FANNP newsletter as a four part series consisting of:

Part 1
1. Handbook on Identifying Newborn Infection – Quick Reference
2. Types of Microorganisms
3. Types of Gram Stains
4. Bacterial Gram Stains by Shape

Part 2 (Featured in this edition of the newsletter)
Common Newborn Infections
1. Bacteria Infections – Signs & Symptoms
2. Viral Infections – Signs & Symptoms
3. Fungal Infections – Signs & Symptoms
4. Protozoal Infections – Signs & Symptoms

Part 3
1. Antifungal and Anti-Parasitic Pharmacological Treatment:
   A. Antibiotic
   B. Antiviral
   C. Antifungal
   D. Antiparasitic

Part 4
1. Appendix
2. References

BACTERIA BY SHAPE OF GRAM STAIN

<table>
<thead>
<tr>
<th>GRAM POSITIVE COCCI</th>
<th>GRAM NEGATIVE COCCI</th>
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<tbody>
<tr>
<td>Staphlococcus- Gram Positive Bacteria</td>
<td>Streptococcus- Gram Negative Bacteria</td>
</tr>
<tr>
<td>Staphylococcus- Clusters</td>
<td>Gram negative coccobacilli:</td>
</tr>
<tr>
<td>Staph Aureus- Clusters (Coagulase positive)</td>
<td>Haemophilus influenzae</td>
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<tr>
<td>Staph Epidermidis (Coagulase negative)</td>
<td>Neisseria</td>
</tr>
<tr>
<td>Streptococcus- Pairs &amp; Chains</td>
<td>N. Gonorrhoeae- Diplococcus</td>
</tr>
<tr>
<td>Group A</td>
<td></td>
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<tr>
<td>Group B-</td>
<td></td>
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<tr>
<td>Group D- Enterococcus</td>
<td></td>
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<tr>
<td>Streptococcus Pneumoniae</td>
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<table>
<thead>
<tr>
<th>GRAM POSITIVE RODS</th>
<th>GRAM NEGATIVE RODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listeria Monocytogenes – Bacillus</td>
<td>Enterobacteriaceae Family- Rods</td>
</tr>
<tr>
<td>Anaerobe</td>
<td>Escherichia Coli</td>
</tr>
<tr>
<td>Clostridium - Bacillus - Rods</td>
<td>Klebsiella</td>
</tr>
<tr>
<td>C. Difficile</td>
<td>Proteus</td>
</tr>
<tr>
<td>Listeria</td>
<td>Salmonella</td>
</tr>
<tr>
<td>Diptheria</td>
<td>Pseudomonas</td>
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<tr>
<td></td>
<td>Anaerobe</td>
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<tr>
<td></td>
<td>Bacteroides Fragilis- Rods</td>
</tr>
<tr>
<td></td>
<td>Penicillin resistant organsims</td>
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### BACTERIA- GRAM STAIN, AEROBIC/ANEROBIC, SIGNS & SYMPTOMS

**HANDBOOK ON IDENTIFYING NEWBORN INFECTION**

<table>
<thead>
<tr>
<th>BACTERIA</th>
<th>GRAM STAIN</th>
<th>AEROBIC/ANEROBIC</th>
<th>SIGNS &amp; SYMPTOMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alph-Hemolytic</td>
<td>Gram Positive Rod</td>
<td>Anerobe</td>
<td>Gastroenteral</td>
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<tr>
<td></td>
<td>Staphilococcus</td>
<td></td>
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</tr>
<tr>
<td>Bacteroides Fragiilis</td>
<td>Gram Negative Rods</td>
<td>Anerobe</td>
<td>Necrotizing Entercolitis</td>
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<tr>
<td></td>
<td>Streptococcus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.Difficile</td>
<td>Gram Positive Rod</td>
<td>Anerobe</td>
<td>Watery diarrhea, abdominal pain, vomit</td>
</tr>
<tr>
<td></td>
<td>Staphilococcus</td>
<td></td>
<td>low-grade temperature</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>Gram Negative Rod</td>
<td>Aerobic</td>
<td>Conjunctivitis</td>
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<td></td>
<td>Streptococcus</td>
<td></td>
<td>Intestinal Pneumonia</td>
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<td></td>
<td></td>
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<td>Otitis media</td>
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<td></td>
<td></td>
<td></td>
<td>Gastroenteritis</td>
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<tr>
<td>Enterobacteriaceae</td>
<td>Gram Negative Rod</td>
<td>Aerobic</td>
<td>Respiratory Distress</td>
</tr>
<tr>
<td>Klebsiella</td>
<td>Streptococcus</td>
<td></td>
<td>Cardiovascular Collapse</td>
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<tr>
<td>Proteus</td>
<td></td>
<td></td>
<td>Metabolic Acidosis</td>
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<tr>
<td>Morganella</td>
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<td>Meningitis</td>
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<td>Multi-organ Failure</td>
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<tr>
<td>Gonorrhea</td>
<td>Gram Negative Coci</td>
<td>Anaerobic</td>
<td>Conjunctivitis/Purulent</td>
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<tr>
<td></td>
<td>Streptococcus</td>
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**HANDBOOK ON IDENTIFYING NEWBORN INFECTION**

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<tr>
<th>BACTERIA</th>
<th>GRAM STAIN</th>
<th>AEROBIC</th>
<th>SIGNS &amp; SYMPTOMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Beta</td>
<td>Gram Positive Cocci</td>
<td>Aerobic</td>
<td>May be early-onset or late-onset</td>
</tr>
<tr>
<td>Streptococcus</td>
<td>Staphilococcus</td>
<td></td>
<td>Found in: Blood, CSF, Urine</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Pneumonia- Tachycardia, grunting, apnea, tachypnea, cyanosis.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Meningitis- Lethargy or irritability, poor feeding, low or high temperature, seizures, rash, apnea or tachypnea, jaundice, vomiting, or diarrhea.</td>
</tr>
<tr>
<td>Haemophilus influenzae</td>
<td>Gram Negative Rods</td>
<td>Aerobic</td>
<td>Meningitis- Lethargy or irritability, poor feeding, low or high temperature, seizures, rash, apnea or tachypnea, jaundice, vomiting or diarrhea.</td>
</tr>
<tr>
<td></td>
<td>Streptococcus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listeria</td>
<td>Gram Negative Rod</td>
<td>Anaerobic</td>
<td>Meconium stained fluid in preterm infant</td>
</tr>
<tr>
<td></td>
<td>Streptococcus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRSA</td>
<td>Gram Positive Cocci</td>
<td>Anerobic</td>
<td>Skin and soft tissue infections, sepsis, pneumonia, osteomyelitis.</td>
</tr>
<tr>
<td></td>
<td>Staphilococcus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudomonas</td>
<td>Gram Negative Rod</td>
<td>Anaerobic</td>
<td>Occur at sites of skin damage</td>
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<tr>
<td></td>
<td>Streptococcus</td>
<td></td>
<td>Bacteria attach &amp; colonize</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fever, shock, oliguria, leukocytosis, leucopenia, DIC,</td>
</tr>
</tbody>
</table>
### BACTERIA – GRAM STAIN, AEROBIC/ANEROBIC, SIGNS & SYMPTOMS

**HANDBOOK ON IDENTIFYING NEWBORN INFECTION**

<table>
<thead>
<tr>
<th>Bacteria/Species</th>
<th>Gram Stain</th>
<th>Signs &amp; Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staphylococcus Aureus</td>
<td>Gram Positive Cocci-(Coagulase Positive) Staphylococcus</td>
<td>Catheter related bacteremia-inflamed tissue, malaise, scalded skin-superficial fragile, tender blister that burst lethargy, fever osteomyelitis, bone tenderness</td>
</tr>
<tr>
<td>Staphylococcus Epideremidis</td>
<td>Gram Positive Cocci-(Coagulase Negative) Staphylococcus</td>
<td>Associated with medical devices Nosocomial agent lethargy or irritability, poor feeding, low or high temperature</td>
</tr>
<tr>
<td>Streptococcus Viridans</td>
<td>Gram Positive Cocci Chains Staphylococcus</td>
<td>Respiratory, carditis, fever, systemic, often found in mouth and nasal flora. Associated with preterm birth where the amniotic fluid is positive for Strep Viridans</td>
</tr>
<tr>
<td>Syphilis</td>
<td>Gram Negative Spirochetes Streptococcus</td>
<td>Most asymptomatic at birth Symptomatic-macular rash, rhinitis, hepatosplenomegaly, jaundice, edema, chorioretinitis</td>
</tr>
</tbody>
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**CPR Abstract**

**Paula Timoney, MN, ARNP, NNP-BC**

Paula Timoney, ARNP and co-workers received an $80,000 grant from the All Children’s Foundation Institutional Grant Program to provide “Family and Friends CPR Anytime” kits for parents and families of high-risk children discharged from All Children’s.

The American Academy of Pediatrics (AAP) recommends teaching cardiopulmonary resuscitation (CPR) to parents and families of high-risk patients to improve patient outcomes. All Children's Hospital staff currently provides teaching to a limited group of parents in a variety of methods. The patient groups whose parents / caregivers are currently required to have CPR training prior to discharge are those in the Neonatal Intensive Care (NICU) or those patients who are technology dependant. This number reflects approximately 650 patients or 30% of ICU admissions.

In an effort to standardize teaching methods, a Task Force identified the American Heart Association “Family and Friends CPR Anytime” Personal Learning Program as an effective tool. The tool includes a personal, inflatable CPR manikin, a skills DVD, and a CPR booklet designed for parents to share with family members and friends who care for the patient at home. The success of the kit is attributable, in part, to its “multiplier effect,” which results in 2.5 people learning how to perform CPR for each kit used in training. The tool is available in English and Spanish.

**Goal:** To increase CPR training from 30% to 98% of parents / caregivers of patients identified as high-risk. Based on national and AAP standards, the Task Force determined the following patients to be considered high risk:

- preterm infants
- infants who require technological support
- patients with cardiac problems
- near-drown patients

**Objectives:**

1. Standardize the CPR teaching methodology to parents / caregivers of high-risk patients prior to discharge from ACH.
2. Provide the American Heart Association “Family and Friends CPR Anytime” Personal Learning Program kit to each family taught CPR.
3. Develop a tool to evaluate the effectiveness of teaching parent CPR.

**Methods:**

Three two-hour CPR classes will be offered to parents / caregivers weekly. Patient care assistants, registered nurses and respiratory therapists will facilitate the classes. If a parent / caregiver is unable to attend a structured class, a registered nurse or respiratory therapist will instruct him/her individually prior to patient discharge. The teaching will consist of watching a DVD with demonstration on a manikin provided in the AHA “Family and Friends CPR Anytime” Kit. Participants must be able to demonstrate their skill on the manikin to evaluate teaching effectiveness. The parent / caregiver will complete an evaluation at the conclusion of the class. Parents/caregivers will not be “certified” in CPR.

**Outcomes Measures:**

1. Parent/caregiver satisfaction
2. Staff satisfaction
3. Multiplier effect

As a leader in pediatric health care in the state of Florida, All Children's Hospital mission is to provide leadership in child health through treatment, education, advocacy, and research. Providing families and friends with effective basic skills in CPR will meet All Children's vision of creating healthy tomorrows...for all children.
Near-Infrared Spectroscopy
Use in Neonatology

Terri Marin, MSN, NNP-BC

Near-infrared spectroscopy (NIRS) is being increasingly utilized in the field of Neonatology, mainly during and following cardiothoracic surgery1–3, however its value is beneficial in many situations. NIRS allows real time monitoring of tissue perfusion in different regions of the body4. Because of this unique capability, preferential shunting of blood during periods of hemodynamic instability is directly observable providing valuable information regarding tissue oxygenation. Studies have shown that relying on pulse oximetry alone to report these regional oxygenation differences is insufficient5. Therefore, NIRS technology has enormous potential for advancing the science of neonatology.

NIRS utilizes infrared waveforms much like pulse oximetry, however the difference in the measurement obtained is determined by penetration depth of the wavelengths6 (See figure 1). NIRS is a non-invasive device that detects regional tissue perfusion when applied to various regions (forehead, abdomen) of neonates. While pulse oximetry readings provide arterial oxygen readings (amount of oxygen in the blood leaving the heart), NIRS provides a quantified measurement of the oxygen delivered and amount utilized at the tissue level in different regions of the body by analyzing the difference between oxyhemoglobin and deoxyhemoglobin using surface and deep penetrating electrodes5,7. These real time measurements (rSO2) of capillary beds reflect actual oxygen extraction6. When an infant experiences hypotension or hypoxia, even in mild forms, blood is preferentially shunted to vital organs (blood, heart, and lungs) and away from others, mainly intestines and kidneys. While cerebral perfusion may be maintained, the mesenteric and/or renal vasculature may be compromised. Measuring only arterial oxygenation, pulse oximetry does not reflect specific regional oxygenation7. Studies using NIRS have shown that when cerebral perfusion is stable and lower metabolic needs (lower oxygen extraction) 80 or 5-20 points higher than cerebral readings representing lower metabolic needs (lower oxygen extraction)4. Normal CSOR readings > 0.75 indicate adequate regional perfusion, i.e., balanced oxygen extraction maintaining adequate tissue perfusion. Interpreted clinically, this indicates absence of ischemia. However, if CSOR ratios fall to < 0.75, then an unbalanced scenario presents indicating the potential for ischemia to occur, especially in the mesenteric vasculature9.

NIRS monitoring can improve our understanding of certain disease processes unique to premature neonates. Because necrotizing enterocolitis (NEC) development is associated with decreased tissue perfusion and ischemia, NIRS monitoring during events associated with NEC provides valuable insight into splanchnic circulation pathophysiology4,9 (See Figure 2). Research in this area is ongoing, and may prove beneficial in understanding the mechanisms and predictors involved in the development of NEC4. Cerebral perfusion studies using NIRS has proven useful in confirming fluctuating cerebral pressure-passivity in hemodynamically unstable premature infants and suggest that continuous non-invasive cerebral monitoring can aid in predicting perfusion-related cerebral injury12. Additionally, cerebral perfusion monitoring with NIRS is currently being employed in cardiothoracic surgery, increasing awareness of potential ischemic episodes perioperatively1–3. NIRS has also adequately detected renal perfusion insufficiency in mechanically ventilated patients experiencing desaturation episodes while maintaining adequate cerebral perfusion13. Support for the routine use of NIRS in the preterm population is evident and growing, providing ample validation for its implications and feasibility.

Valuable information related to specific regional perfusion states is possible and practical with NIRS monitoring. Due to the non-invasive method and vital information gained, its application in neonatology is desirable and forthcoming. Further research confirming NIRS validity, reliability and relativity are needed for acceptance as a routine monitoring device for the preterm population. It should be emphasized that its use in conjunction with other methods of hemodynamic monitoring (arterial MAP, pCO2, O2
Spectroscopy

continued from page 9

saturations) provides optimal diagnostic capabilities and the best approach for comprehensive evaluation of clinical indices associated with sick premature infants.

References


4. NIRS as a physiologic real-time monitor in neonates: The potential and the evidence for the evaluation of NEC and cerebral blood flow monitoring 2008.


FANNP Awards Fourteen Collegiate Scholarships for 2009

Fourteen educational scholarships were awarded at the 20th Annual FANNP Business Meeting held at the Sheraton Sand Key Resort in Clearwater Beach, Florida.

Please join the FANNP Board of Directors in congratulating the 2009 FANNP Scholarship recipients:

Jessica Alio, Gainesville, FL
Genieveve J. Cline, Indian Rocks Shores, FL
April Felton, Estero, FL
Lorna Forchin, Cape Coral, FL
Jane Guidry, Memphis, TN
Jacqui Hoffman, Largo, FL
Megan Kroeze, Brick, NJ
Teresa Layland, Ankeny, IA
Terri Marin, Peachtree City, GA
Diane McNerney, Palm Harbor, FL
Racheal Mejia, Lakeland, FL
Dinorah Rodriguez-Warren, Orlando, FL
Jeff Siebert, Cape Coral, FL
Meghan Teel, Memphis, TN

Several of the scholarship winners are just beginning their careers as Neonatal Nurse Practitioners and others are advancing their education to contribute to neonatology as educators, researchers and practice managers. All of the recipients showed dedication and excellence in neonatal care. They will share their knowledge with all of the FANNP membership by submitting articles to the newsletter.

FANNP is proud to announce over $54,000 has been awarded in scholarships during the past twelve years to 64 deserving candidates pursuing advanced degrees.

FANNP members from across the country including Florida, Alabama, Hawaii, North Carolina, Mississippi, Maryland, California, Tennessee, South Carolina, Iowa, Indiana, Virginia, New Jersey, Georgia and Arizona have been scholarship recipients.

FANNP remains committed to promoting education for NNPs and is proud to be able to award scholarships to nurses and NNPs continuing their educational pursuits in the field of neonatal health care. Each year on December 31st, at least 10% of the available monies in the FANNP general operating budget are put in a scholarship fund.

Scholarships of $500 – $1000 per qualified applicant are awarded at the FANNP Annual Business meeting scheduled in conjunction with the FANNP National Neonatal Nurse Practitioner Symposium: Clinical Update and Review in October.
Legislative Update

Winter, 2009

Leslie Parker, NNP-BC, PhD(c)

Nursing students, currently licensed nurses and those considering a career in nursing need to be aware of the newly passed Medicaid Fraud bill. This bill contains provisions concerning licensure of healthcare providers convicted of certain felonies. Those convicted of a felony concerning medical fraud, non-medical fraud or controlled substances, will not be issued a license or have their license renewed for 15 years after their probation has ended. This law will seriously impact many individuals with a history of involvement in minor felonies preventing them from obtaining and renewing their Florida nursing license.

On a national level, anyone with a working television is fully aware of potential national health care reform. On November 7, the House of Representatives passed H.R. 3962, the Affordable Health Care for America Act by a vote of 220-215. This bill will cost an estimated $829 billion over 10 years. While this is an important step forward for those in favor of health care reform, turning the bill into law remains uncertain.

If the Senate passes its version of the health care legislation, the House and Senate bills would have to be reconciled into one document and voted on again.

Changes in our current health care system are a reality. In order for nurses to have an impact, a collective force is necessary. With our large numbers and our dedication to patient care, nurses can positively affect the health care provided to ourselves, our families and our patients. This is best accomplished by becoming involved in your local and national organizations. Please consider becoming politically active in either your state nursing organization or the ANA.

2009 FANNP Election Results

Carol Botwinski reports this is an election year and new officers are as follows: Ruth Bartelson will be President, Pam Laferriere will be President-Elect, Kim Irvine will remain as Secretary, Sheryl Montrowl will continue as Treasurer, and Members-At-Large will be Gen Cline, Diane McNerney, Diane Fuchs, and Mary Kraus.

Are you eligible for a scholarship?

FANNP members who attend an educational program leading to a degree related to the health care field between September 15, 2009 and September 15, 2010 are eligible for a 2010 scholarship. Contact scholarships@fannp.org with any questions or to receive a 2010 scholarship application.

FANNP Scholarship Eligibility Criteria:

• Scholarship applicants must be FANNP members.
• All members, student members and associate members are eligible.
• Priority for scholarship award will be given to members, followed by student members and then associate members.
• Priority for scholarship award will be based on length of membership and service to FANNP.
• Scholarship applicants must be a licensed RN, ARNP, NNP or equivalent.
• Preference will be given to currently licensed certificate NNPs working towards a NNP degree.
• Scholarship applicants must attend an educational program leading to a degree related to the health care field during the application period.
• The application period for the 2010 scholarship is September 15, 2009 to September 15, 2010. (i.e. To be eligible for a 2010 scholarship you must have attended classes sometime between September 15, 2009 and September 15, 2010.)
• An applicant may receive a maximum of two scholarship awards for each degree sought.
• Preference will be given to those working towards a degree in neonatal health care.

If awarded a scholarship, recipients agree to write a short article for the FANNP newsletter within the next year.

The Completed scholarship application must be Postmarked by September 15, 2010.

FANNP wishes you a happy and joy-filled holiday season
Questions:

1. A pregnant woman is smoking 2 packs per day of tobacco. Which fetal ultrasound measurement will help detect the most likely abnormality in this fetus?
   a. Biparietal diameter.
   b. Femur length.
   c. Abdominal circumference.

2. Beckwith-Wiedemann syndrome is a condition most often associated with:
   a. Hypoinsulinism.
   b. Hypoglycemia.
   c. Islet cell hypoplasia.

3. A neonate with Prune Belly Syndrome is most likely to have a triad of which three defects:
   a. Deficiency of the abdominal musculature, cryptorchidism, and urinary tract abnormality.
   b. Omphalocele, macroglossia, and hypoglycemia.
   c. Extrophy of the bladder, omphalocele, and ectopic heart.

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