



Frequently Asked PAL Questions

1. Is it going to overstimulate the infant?

The music in the device is a single female voice singing simple lullabies a cappella. The songs were picked and sung by a music therapist making sure that they are developmentally appropriate for the infant. The songs picked were also songs that have been found in research to be developmentally appropriate and not alarming or over stimulating to the infant.

2. Will the music be too loud?

The music can't exceed 65dB, which is within the American Academy of Pediatrics' guidelines. On the "low" setting the music will be about 55dB and on the "medium" setting the music will be about around 60dB.

3. A majority of the current research was done by Dr. Standley, is this research valid?

Dr. Standley, a professor at Florida State University, came up with the idea for the PAL after reading years of research on the benefits of NNS and the positive effects found when using music as reinforcement for varying goals across multiple populations. Additionally, another researcher found that using music contingently helped infants learn pacing while engaging in NNS. Dr. Standley decided to put all of these ideas together in one device. An engineer at Florida State University helped Dr. Standley create a device for research purposes. Until the recent commercialization of the PAL®, Dr. Standley and a few of her colleagues were the only people with access to the PAL device. This is why until recently all of the research includes Dr. Standley.

Based on the outstanding results of the PAL evidenced in Dr. Standley's research, Powers Device Technologies decided to commercialize the product. Now that the PAL® is commercially available other researchers have begun to conduct research studies with the PAL®. See: Vanderbilt study regarding the use of PAL® and mother's voice which was published in the journal, *Pediatrics*, on Feb., 17, 2014.

4. Won't use of the PAL cost the hospital revenue & profit?

Hospitals sometimes make a profit from infants that are classified as Level III or above. Often at the Level III stage the hospital is reimbursed more than their costs for that infant. This is not true when the infant continues to develop and is



classified as a Level II Feeder and Grower. At the Feeder & Grower stage, the infant costs often exceed the reimbursement level that the hospital receives. This is due to the fact that the hospital is no longer reimbursed at the higher rate they received when the infant was at Level III. Level III care requires many procedures that are not required at the Feeder & Grower stage. Once an infant reaches the Feeder & Grower stage, the hospital wants to shorten length of stay and get the infant home as soon as the infant is ready. Most of the infants who qualify for the PAL are Level II feeders and growers.

5. How many sessions can be done with the infant's sensor?

The sensor lasts for 4 hours. If you are using the sensor for NNS and oral feeding then each session is 15 minutes. This means that you would get 16 sessions from the infant's sensor. If you are using the sensor to aid in NAS symptoms then those sessions are typically a little longer at around 25 minutes. This means that you would get almost 10 sessions from the infant's sensor.

6. On average how many sessions will the infant need before he/she is successfully oral feeding?

Tallahassee Memorial Healthcare averaged out the number of sessions they did with the PAL over the past. They found that the infants need an average of two to three sessions. They do sessions once a day, so that meant the infants only took two to three days before they were successfully taking all of their feeds orally.

7. How many infants do you think we will have per month that will qualify for PAL?

This is a very difficult question to answer. It depends on the size of the NICU and the number on average of Level II infants. Most all Level II infants qualify for the PAL, so average number of Level II infants they have per month would probably be the best estimation.

8. Will it teach the baby to clinch rather than suck?

First, many of the infants that qualify for the PAL have not developed much of the clinch or bite movement. Secondly, the device looks at two different things. It looks at both the air pressure and the timing of the suck. The air pressure would be activated by a bite, but the timing of the suck would not set off the machine. Therefore, a bite or clinch would not set off the machine.

9. Well, I already know that they baby can suck, why do I need a machine to tell me that?



Very often an infant appears to be sucking by observation, but the infant is not creating suction. Without efficient suction, the infant will not successfully swallow when oral feeding. The PAL gives you objective data regarding true NNS vs. moving the pacifier in their mouth. In order to trigger the music the infant must suck on the pacifier and push air against the sensor, which only happens when the infant creates suction. The PAL validates what the therapist has observed. The PAL encourages this proper NNS pattern that includes effective sucking with suction.

10. Does the PAL replace the clinical judgment of a therapist?

No, the PAL provides objective data, while encouraging the neurodevelopmental behavior of sucking bursts. The therapist continues to use skilled clinical judgment for the timing of the PAL usage, assessment of efficiency and endurance of the infant, and continued evaluation for the timing to introduce PO feedings. The PAL is a tool, not a therapist.

11. Is the PAL going to promote or teach infants to suck before they are ready?

The PAL does not do anything until the infant sucks and then that suck is positively reinforced by music. Prior to the infant sucking on his own, there is no stimulation given to prompt a suck by the PAL. The PAL reinforces each infant's own abilities and then continues to reinforce the infant's progress.