



AMPLATZER PICCOLO™ OCCLUDER

**CLOSING TODAY'S PDAs  
OPENING TOMORROW'S  
BIG POSSIBILITIES**

**PROVEN PDA CLOSURE FOR  
PATIENTS 700 GRAMS AND UP**

**INDICATION:** The Amplatzer Piccolo™ Occluder is a percutaneous, transcatheter occlusion device intended for the nonsurgical closure of a patent ductus arteriosus (PDA).

See Important Safety Information referenced within.





# PATENT DUCTUS ARTERIOSUS (PDA)

## A SIGNIFICANT CHALLENGE

Constriction of the ductus arteriosus is a critical step in postnatal circulatory transition. If the ductus remains open, Patent Ductus Arteriosus (PDA) occurs, resulting in left-to-right shunting that can create significant challenges, especially in premature infants. Challenges include:

- Pulmonary over-circulation in lungs that are already under duress<sup>1</sup>
- Systemic hypoperfusion<sup>1</sup>

## A COMMON OCCURRENCE

- A PDA is present in approximately 1 in 2,000 newborns<sup>1</sup>
- The incidence of PDA in preterm babies is considerably higher (20-60%)<sup>2</sup>
- For low birth weight infants (< 1,200g), PDA incidence is > 80%<sup>2</sup>



THE INCIDENCE OF PRETERM PDA<sup>2</sup>



>50% PDAS REMAIN OPEN AT 3 WEEKS FOR INFANTS <1,000g<sup>10</sup>

# SURGICAL LIGATION LIMITATIONS

While surgical ligation has been performed extensively with high closure rates, studies indicate significant procedural complications. Data shows 32% of premature infants required inotropes following PDA ligation.<sup>3</sup> Other risks associated with PDA ligation include:

- Bleeding, infection<sup>4</sup>
- Neurodevelopmental delay<sup>4</sup>
- Recurrent laryngeal nerve injury (vocal cord paralysis)<sup>5,6</sup>
- Injury to lymphatic vessels (chylothorax)<sup>6,7</sup>
- Post ligation cardiac syndrome (hemodynamic compromise post procedure)<sup>8</sup>

*“Use of surgical ligation, however, was significantly associated with the development of chronic lung disease and was independent of immature gestation, other patent ducts arteriosus related variables, or other perinatal and neonatal risk factors known to be associated with chronic lung disease.”*

—CHORNE N, ET AL. PEDIATRICS. 2007; 199;1185.<sup>9</sup>





## AMPLATZER PICCOLO™ OCCLUDER

# A NEW LEVEL OF VERSATILITY AND PROVEN SAFETY FOR THE YOUNGEST INFANTS AND UP

As the only PDA closure solution indicated for premature infants ≥700g + ≥3 days old and proven to deliver safe and effective closure, Amplatzer Piccolo™ Occluder offers new opportunities to care for a wider range of patients than ever before.

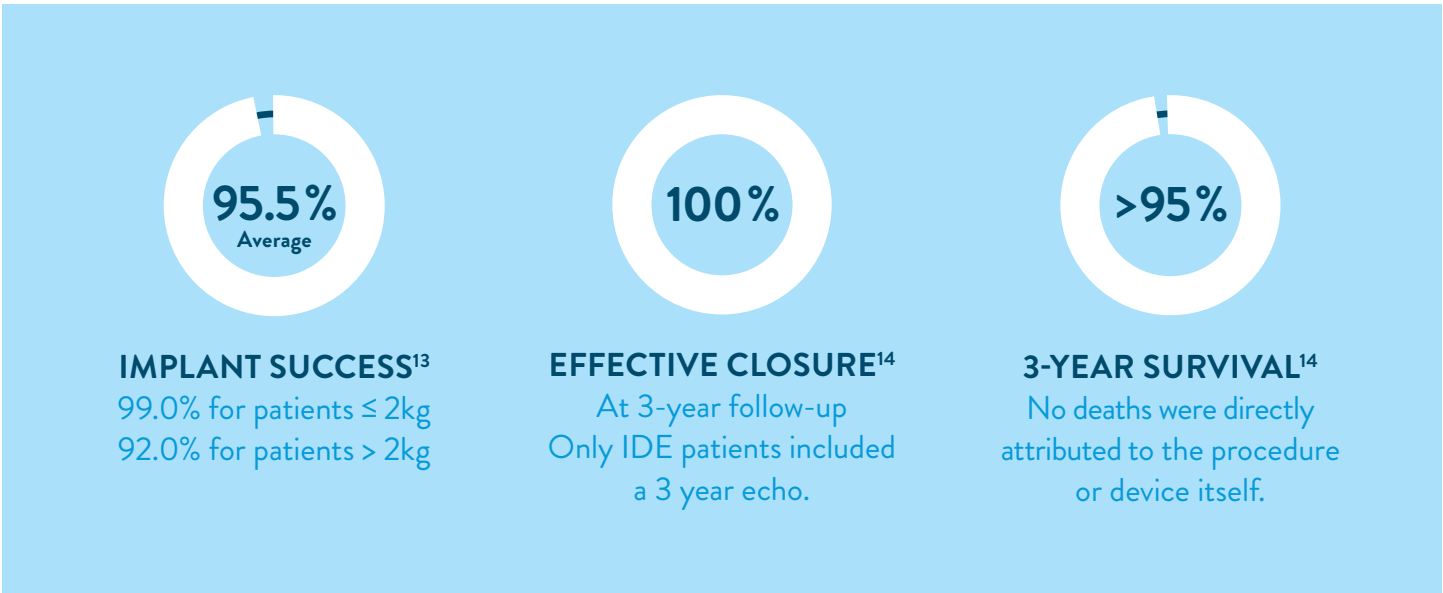
### BUILT ON THE EXTENSIVE AMPLATZER™ LEGACY OF SAFETY AND EFFICACY

- Pioneered transcatheter occlusion
- Over 1.25 million devices implanted worldwide<sup>11</sup>
- More than 20 years of clinical experience

## CLINICALLY PROVEN OUTCOMES

The safety and efficacy of the Amplatzer Piccolo™ Occluder in patients weighing ≥ 700 grams was studied in a 50 patient pivotal trial and 150 additional patients under a continued access protocol. When combined, the studies enrolled a total of 200 patients. At the time of the procedure, 100 patients weighed ≤ 2 kg and the other 100 patients weighed >2 kg.

### AMPLATZER PICCOLO™ 3-YEAR FOLLOW-UP DATA



TOTAL NUMBER OF PATIENTS: 200	≤ 2 kg (N=100)	> 2 kg (N=100)	Total (N=200)
DEMOGRAPHICS			
<b>Age, Months</b>			
Mean ± SD	1.25 ± 0.60	26.58 ± 44.32	3.92 ± 33.74
Range	(0.30 - 3.15)	(0.49 - 216.80)	(0.30 - 216.80)
<b>Weight (kg)</b>			
Mean ± SD	1.25 ± 0.35	11.25 ± 13.52	6.25 ± 10.77
Range	(0.70 - 2.00)	(2.02 - 68.50)	(0.70 - 68.50)
PDA CHARACTERISTICS (by angiography)			
<b>Minimal PDA Diameter (mm)</b>			
Mean ± SD	2.8 ± 0.7	2.4 ± 0.7	2.6 ± 0.7
Range	(1.4 - 4.0)	(1.0 - 4.0)	(1.0 - 4.0)
<b>PDA Length (mm)</b>			
Mean ± SD	10.6 ± 2.2	10.1 ± 3.4	10.4 ± 2.9
Range	(5.3 - 19.2)	(4.1 - 20.0)	(4.1 - 20.0)
PROCEDURE CHARACTERISTICS			
<b>Implant Success (%)</b>	99.0% (99/100)	92% (92/100)	95.5% (191/200)
<b>Fluoroscopy Time (min)</b>			
Mean ± SD	10.5 ± 12.4	10.1 ± 7.0	10.3 ± 10.0
Range	(3 - 103)	(3 - 43)	(3 - 103)
<b>Anterograde Implant</b>	100.0% (99/99)	73.9% (68/92)	87.4% (167/191)
<b>Femoral Arterial Access</b>	2.0% (2/100)	48.0% (48/100)	25.0% (50/200)
<b>In NICU at time of baseline assessment</b>	100.0% (100/100)	32.0% (32/100)	66.0% (132/200)
OUTCOMES			
Major complications rate through 180 days (%)**	4.2% (4/96)	0% (0/98)	2.1% (4/194)
Effective closure at 6 months (%)	100% (89/89)	98.8% (83/84)	99.4% (172/173)

<sup>\*</sup>Assessed by echocardiography and defined as the presence of either a grade 0 (none) or grade 1 (trivial) shunt.  
<sup>\*\*</sup>Major complications were defined as “device or procedure-related adverse events resulting in death, life-threatening adverse event, persistent or significant disability and/or surgical intervention.



# ONLY YOU CAN REDUCE RISKS WITH A TRANSCATHETER PDA CLOSURE REFERRAL



## NEONATOLOGIST CONSIDERS

- Is the PDA hemodynamically significant based on echocardiographic and clinical assessment?
- Is medical therapy contraindicated or has it already failed?



## MULTI-DISCIPLINARY TEAM DETERMINES

- Is transcatheter PDA closure clinically appropriate?



## PDA CLOSURE

# MAKE CLOSURE THE PRIORITY

By referring to an interventional cardiologist, you can help reduce the risk for a wide range of patients.



For more information about the Amplatzer Piccolo™ Occluder, contact your Abbott sales representative or visit [PICCOLODEVICE.COM](https://www.piccolodevice.com) or SCAN THE QR CODE.



# AMPLATZER PICCOLO™ OCCLUDER

## IMPORTANT SAFETY INFORMATION

**R<sub>x</sub>**  
**ONLY**

### INDICATIONS AND USAGE

The Amplatzer Piccolo™ Occluder is a percutaneous, transcatheter occlusion device intended for the nonsurgical closure of a patent ductus arteriosus (PDA).

- Hematoma
- Hypertension
- Hypotension
- Infection
- Myocardial infarction
- Palpitations
- Partial obstruction of aorta
- Partial obstruction of pulmonary artery
- Pericardial effusion
- Pericarditis
- Peripheral embolism
- Pleural effusion
- Pulmonary embolism
- Re-intervention for device removal
- Respiratory distress
- Stroke
- Thrombus
- Transient ischemic attack
- Valvular regurgitation
- Vascular access site injury
- Vascular occlusion
- Vessel perforation

### CONTRAINDICATIONS

- Weight < 700 grams at time of the procedure;
- Age < 3 days at time of procedure;
- Coarctation of the aorta;
- Left pulmonary artery stenosis;
- Cardiac output that is dependent on right to left shunt through the PDA due to pulmonary hypertension;
- Intracardiac thrombus that may interfere with the implant procedure;
- Active infection requiring treatment at the time of implant;
- Patients with a PDA length smaller than 3 mm;
- Patients with a PDA diameter that is greater than 4 mm at the narrowest portion.

### POTENTIAL ADVERSE EVENTS

Potential adverse events that may occur during or after a procedure using this device may include, but are not limited to:

- Air embolus
- Allergic reaction
- Anemia
- Anesthesia reactions
- Apnea
- Arrhythmia
- Bleeding
- Cardiac perforation
- Cardiac tamponade
- Chest pain
- Device embolization
- Device erosion
- Death
- Endocarditis
- Fever
- Headache/migraine
- Hemolysis

### REFERENCES

1. Schneider DJ, Moore JW. Patent ductus arteriosus. *Circ.* 2006;114(17), 1873-18. 2. Dice DE. and Bhatia J. Patent Ductus Arteriosus: An Overview. *J Pediatr Pharmacol Ther.* 2007;12(3), 138-146. 3. Moin F, Kennedy KA, Maya FR. Risk factors predicting vasopressor use after patent ductus arteriosus ligation. *Am J Perinatol.* 2003;20:313-20. 4. J.C. Madan, D. Kendrick, J.I. Hagadorn, I.D. Frantz 3rd, Patent ductus arteriosus therapy: impact on neonatal and 18-month outcome. *Pediatrics.* 123 (2) (2009) 674-681. 5. Rodríguez Ogando A, Planelles Asensio I, de la Blanca ARS, et al. Surgical ligation versus percutaneous closure of patent ductus arteriosus in very low-weight preterm infants: Which are the real benefits of the percutaneous approach? *Pediatr Cardiol.* 2017. 6. Noori S (2012) Pros and cons of patent ductus arteriosus ligation: hemodynamic changes and other morbidities after patent ductus arteriosus ligation. *Sem Perinatol.* 36(2):139-145. 7. Pamukcu O, Tuncay A, Narin N, et al. Patent ductus arteriosus closure in preterms less than 2kg: Surgery versus transcatheter. *Int J Cardiol.* 2018; 250:110-115. 8. A.F. El-Khuffash, A. Jain, P.J. McNamara, Ligation of the patent ductus arteriosus in preterm infants: understanding the physiology. *J. Pediatr.* 162 (6) (2013) 1100-1106. 9. Chorne N, Leonard C, Picuch R, Clyman RI. Patent ductus arteriosus and its treatment as risk factors for neonatal and neurodevelopmental morbidity. *Pediatrics.* 2007;119(6):1165-1174. doi:10.1542/peds.2006-3124. 10. Semberova J, et al. Spontaneous Closure of Patent Ductus Arteriosus in Infants <= 1500g. *Pediatrics.* 2017;149 (2). 11. Data on file at Abbott. 12. Sathanandam SK, Gutfinger D, O'Brien L, et al. Amplatzer Piccolo Occluder clinical trial for percutaneous closure of the patent ductus arteriosus in patients ≥700 grams. *Catheter Cardiovasc Interv.* 2020;1-11. 13. Sathanandam SK, Gutfinger D, O'Brien L, et al. Amplatzer Piccolo Occluder clinical trial for percutaneous closure of the patent ductus arteriosus in patients 700 grams. *Catheter Cardiovasc Interv.* 2020;1-11. 14. Zahn, E. The Amplatzer Piccolo™ (ADOIIAS) U.S. Clinical Trial 3-Year Follow-up Report. Presented at: CSI Frankfurt; June 22-25, 2022.

**CAUTION:** This product is intended for use by or under the direction of a physician. Prior to use, reference the Instructions for Use, inside the product carton (when available) or at [eifu.abbottvascular.com](http://eifu.abbottvascular.com) or at [medical.abbott/manuals](http://medical.abbott/manuals) for more detailed information on Indications, Contraindications, Warnings, Precautions and Adverse Events.

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