



**GAVeCeLT** **GAVePed 2025**

12-13 Maggio  
MILANO

## Scelta e Impianto della cannula periferica lunga in età pediatrica

Michela Bevilacqua

Infermiere Specialist Accessi Vascolari

ISTITUTO GIANNINA GASLINI IRCCS, GENOVA

> J Vasc Access. 2025 Feb 12;11297298251316956. doi: 10.1177/11297298251316956.  
Online ahead of print.

## Midline catheter insertion as a strategic component of intravenous infusion: A single-centre retrospective analysis

Grzegorz Cichowlas <sup>1 2</sup>, Izabela Fornal <sup>3</sup>, Maciej Latos <sup>2 4</sup>, Dariusz Kosson <sup>2 4</sup>

**Material and methods:** The study material consists of medical records of patients with midline catheters at Czerniakowski Hospital in Warsaw over the period from 5th October 2021 to 19th May 2023. An analysis of 341 infusion observation charts was performed, excluding illegible and incomplete data. In this article, all of the catheters we used were inserted under ultrasound guidance.

**Conclusions:** Midline catheters are an effective solution for patients with difficult vascular access, increase the possibility of intravenous therapy. Moreover, they improve patient comfort and reduce the number of multiple cannulations. Developing vascular access teams can better control infusion management and care.

### Limitations

Additionally, we acknowledge a limitation regarding the classification of devices used in this study. Some devices initially categorised as MCs would now be classified as LPCs based on current nomenclature. This discrepancy reflects the evolving definitions during the early implementation phase. Future research should adhere to the latest, standardised terminology to enhance the comparability and reproducibility of findings.

## Long peripheral catheters and midline catheters: Insights from a survey of vascular access specialists

Kirby R Qin <sup>1 2</sup>, Mauro Pittiruti <sup>3</sup>, Ramesh M Nataraja <sup>1 4 5</sup>, Maurizio Pacilli <sup>1 4 5</sup>

**Methods:** A 15-question electronic survey was sent to members of the Association of Vascular Access (AVA) regarding the nomenclature and use of PIVCs, LPCs and MCs.

Table 1. List of survey questions.

| No. | Question                                                                                                                       |
|-----|--------------------------------------------------------------------------------------------------------------------------------|
| 1   | Where do you work? (city, country)                                                                                             |
|     | What is your role?                                                                                                             |
| 2   | Academic; Medical technician; Nurse; Physician; Respiratory therapist; Vascular access specialist; Non-medical; Other          |
|     | What setting do you work in?                                                                                                   |
| 3   | Emergency; Family/community medicine; Home/outpatient medicine; Intensive care unit; Medical unit; Vascular access team; Other |
|     | Do you primarily work with adult or paediatric patients?                                                                       |
| 4   | Adult; Paediatric; Mixed                                                                                                       |
|     | Are you familiar with the following terms?                                                                                     |
|     | Peripheral intravenous catheter – Yes; No                                                                                      |
| 5   | Long peripheral catheter – Yes; No                                                                                             |
|     | Midline catheter – Yes; No                                                                                                     |
| 6   | Are peripheral intravenous catheters, long peripheral catheters and midline catheters all peripheral devices? - Yes; No        |
|     | Which of the following factors are differences between midline catheters and long peripheral catheters? (pick one or multiple) |

- 7 Cost; Gauge; Insertion location; Insertion technique; Length; Material; Tip location; No differences; Not sure; Other
- Which of the following terms have you seen (to describe a 6–15 cm peripheral intravenous device terminating distal to the axilla)? (pick one or multiple)
- 8 Extended dwell catheter; Midline catheter; Mini-midline; Long catheter; Long line; Long peripheral catheter; Peripheral intravenous catheter; Seldinger catheter; Short long line; Short midline; Ultrasound-guided peripheral intravenous catheter; Other
- What is your most preferred name (to describe a 6–15 cm peripheral intravenous device terminating distal to the axilla)?
- 9 Extended dwell catheter; Midline catheter; Mini-midline; Long catheter; Long line; Long peripheral catheter; Peripheral intravenous catheter; Seldinger catheter; Short long line; Short midline; Ultrasound-guided peripheral intravenous catheter; Other
- Do you agree with our definition of peripheral intravenous devices?
- Peripheral intravenous catheters: 2–6 cm in length, terminating distal to the axilla;*
- 10 *Long peripheral catheters: 6–15 cm in length, terminating distal to the axilla; and,*  
*Midline catheters: 15–25 cm in length, terminating in the axilla. - Yes; No*
- If not, what is the correct definition? (optional)
- Are midline catheters available at your institution? - Yes; No
- 11 If yes, what are the indications? (optional)
- Are long peripheral catheters available at your institution? - Yes; No
- 12 If yes, what are the indications? (optional)
- 13 Does your institution have guidelines for the use of long peripheral catheters? - Yes; No
- What lengths of long peripheral catheters are available at your institution? (pick one or multiple)
- 14 6 cm; 7 cm; 8 cm; 9 cm; 10 cm; 11 cm; 12 cm; 13 cm; 14 cm; 15 cm; Other
- 15 Is ultrasound-guidance required to place a long peripheral catheter? - Yes; No

| Indication                                                                                                                                  | Long peripheral catheter/6–15 cm catheter ( <i>N</i> = 92), <i>N</i> (%) | Midline catheter/15–25 cm catheter ( <i>N</i> = 102), <i>N</i> (%) |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------|
| Difficult venous access                                                                                                                     | <u>52 (56.5)</u>                                                         | 34 (33.7)                                                          |
| Deep vein/ultrasound-guided access                                                                                                          | 36 (39.1)                                                                | 4 (3.9)                                                            |
| Medium-term IV therapy (1–4 weeks)                                                                                                          | 22 (23.9)                                                                | <u>64 (62.7)</u>                                                   |
| Blood draws                                                                                                                                 | 5 (5.4)                                                                  | 8 (7.8)                                                            |
| Avoiding the need for central access                                                                                                        | 4 (4.3)                                                                  | 9 (8.8)                                                            |
| Participants responded in free-form text. Participants could list multiple indications. Answers were collated and summarised in this table. |                                                                          |                                                                    |

**Table 2.** Nomenclature of 6–15 cm peripheral intravenous devices.

| Which of the following names have you seen?       | N (%)      | Which is your most preferred name?                | N (%)     |
|---------------------------------------------------|------------|---------------------------------------------------|-----------|
| Midline catheter                                  | 213 (93.4) | Midline catheter                                  | 77 (33.8) |
| Extended dwell catheter                           | 199 (87.2) | Long peripheral catheter                          | 69 (30.3) |
| Long peripheral catheter                          | 152 (66.7) | Extended dwell catheter                           | 49 (21.5) |
| Ultrasound-guided peripheral intravenous catheter | 127 (55.7) | Ultrasound-guided peripheral intravenous catheter | 24 (10.5) |
| Peripheral intravenous catheter                   | 116 (50.9) | Mini-midline                                      | 4 (1.8)   |
| Long catheter                                     | 113 (49.6) | Short midline                                     | 2 (0.9)   |
| Mini-midline                                      | 42 (18.4)  | Peripheral intravenous catheter                   | 2 (0.9)   |
| Short midline                                     | 36 (15.8)  | Long line                                         | 1 (0.4)   |
| Long line                                         | 27 (11.8)  | Long catheter                                     | 0         |
| Seldinger catheter                                | 14 (6.1)   | Short long line                                   | 0         |
| Short long line                                   | 14 (6.1)   | Seldinger catheter                                | 0         |

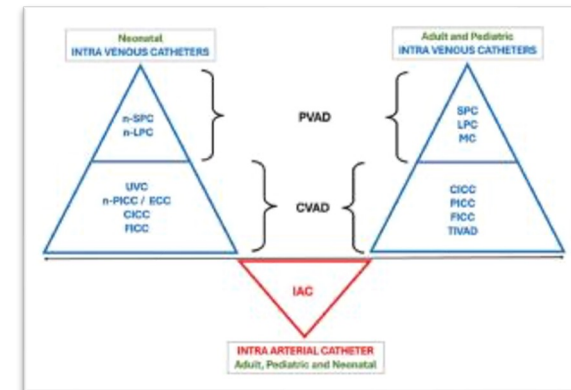


## Necessità di una terminologia standardizzata

## The NAVIGATE project: A GloVANet-WoCoVA position statement on the nomenclature for vascular access devices

Matheus Roland van Rens<sup>1</sup>, Robin van der Lee<sup>1</sup>, Timothy R Spencer<sup>2</sup>, Ton van Boxtel<sup>3</sup>, Giovanni Barone<sup>4</sup>, Alessandro Crocoli<sup>5</sup>, Fulvio Pinelli<sup>6</sup>, Mauro Pittiruti<sup>7</sup>;

WoCoVA Foundation (World Conference on Vascular Access) and of the Global Vascular Access Network (GloVANet)



PVAD

Adult and Pediatric  
INTRA VENOUS CATHETERS

SPC  
LPC  
MC

PVAD—peripheral venous access devices

SPC

Short peripheral catheter

- catheters with a length of <6 cm.
- usually inserted in the forearm

LPC

Long peripheral catheter (a.k.a. mini-midline or short midline)

- catheters with a length from 6 to 15 cm
- inserted in the forearm or arm
- tip located in the veins of the forearm or upper arm

MC

Midline catheter (a.k.a. midclavicular catheter)

- catheters longer than 15 cm
- inserted in deep veins of the upper arm
- tip located in the axillary vein or subclavian vein

Editorial > J Vasc Access. 2024 Oct 24:11297298241291248.  
doi: 10.1177/11297298241291248. Online ahead of print.

## The NAVIGATE project: A GloVANet-WoCoVA position statement on the nomenclature for vascular access devices

Matheus Roland van Rens <sup>1</sup>, Robin van der Lee <sup>1</sup>, Timothy R Spencer <sup>2</sup>, Ton van Bortel <sup>3</sup>, Giovanni Barone <sup>4</sup>, Alessandro Crocoli <sup>5</sup>, Fulvio Pinelli <sup>6</sup>, Mauro Pittiruti <sup>7</sup>; WoCoVA Foundation (World Conference on Vascular Access) and of the Global Vascular Access Network (GloVANet)

| LPC                                 |                                                                               |
|-------------------------------------|-------------------------------------------------------------------------------|
| Design                              |                                                                               |
| Length                              | 6–15 cm                                                                       |
| Technique of insertion              |                                                                               |
| Veins chosen for cannulation        | Superficial and deep veins of forearm and arm                                 |
| Technique of venipuncture           | Direct venipuncture, or ultrasound guided venipuncture                        |
| Technique of catheter insertion     | Catheter over needle, or catheter over guidewire (simple Seldinger technique) |
| Tunneling, if required              | No                                                                            |
| Position of the tip                 | Veins of the upper limb                                                       |
| Subcutaneous anchorage, if required | No                                                                            |
| Performance                         |                                                                               |
| Blood sampling                      | No                                                                            |
| Expected duration                   | 1–3 weeks                                                                     |
| Complications                       |                                                                               |
| Risk of dislodgment                 | High                                                                          |
| Local thrombophlebitis              | Frequent                                                                      |
| Risk of malfunction                 | High                                                                          |

Review > J Infus Nurs. 2005 May-Jun;28(3 Suppl):S22-32; quiz S33-6.  
doi: 10.1097/00129804-200505001-00005.

## Cost containment and infusion services

Kathy Kokotis <sup>1</sup>

# Proactive Vascular Planning



> [Pediatr Emerg Care](#). 2008 Mar;24(3):143-7. doi: 10.1097/PEC.0b013e3181666f32.

## Derivation of the DIVA score: a clinical prediction rule for the identification of children with difficult intravenous access

Kenneth Yen <sup>1</sup>, Anne Riegert, Marc H Gorelick

Patients with a **DIVA** score of **4** or greater had more than 50% likelihood of failed first IV attempt

Modified from Rikers et al; doi: 10.1111/j.1553-2712.2011.01205.x



> [J Vasc Access](#). 2021 Nov 17:11297298211059648. doi: 10.1177/11297298211059648. Online ahead of print.

## Defining difficult intravenous access (DIVA): A systematic review

Amit Bahl <sup>1</sup>, Steven Johnson <sup>1</sup>, Kimberly Alsbrooks <sup>2</sup>, Alicia Mares <sup>2</sup>, Smeet Gala <sup>2</sup>, Klaus Hoerauf <sup>2</sup> <sup>3</sup>

**Conclusions:** Considering the themes identified, an evidence-driven definition of DIVA is proposed: "when a clinician has two or more failed attempts at PIV access using traditional techniques, physical examination findings are suggestive of DIVA (e.g. no visible or palpable veins) or the patient has a stated or documented history of DIVA."

Review > J Vasc Access. 2024 Jun 10:11297298241256999.

doi: 10.1177/11297298241256999. Online ahead of print.

## The pediatric DAV-expert algorithm: A GAVeCeLT/GAVePed consensus for the choice of the most appropriate venous access device in children

Mauro Pittiruti<sup>1</sup>, Alessandro Crocoli<sup>2</sup>, Clelia Zanaboni<sup>3</sup>, Maria Giuseppina Annetta<sup>4</sup>, Michela Bevilacqua<sup>5</sup>, [Daniele G Biasucci](#)<sup>6</sup>, Davide Celentano<sup>7</sup>, Simone Cesaro<sup>8</sup>, Antonio Chiaretti<sup>9</sup>, Nicola Disma<sup>10</sup>, Aldo Mancino<sup>11</sup>, Cristina Martucci<sup>2</sup>, Lidia Muscheri<sup>11</sup>, Alessio Pini Prato<sup>12</sup>, Alessandro Raffaele<sup>13</sup>, Simone Reali<sup>2</sup>, Francesca Rossetti<sup>14</sup>, Giancarlo Scoppettuolo<sup>15</sup>, Luca Sidro<sup>16</sup>, Geremia Zito Marinosci<sup>16</sup>, Gilda Pepe<sup>1</sup>

Review > J Vasc Access. 2023 Jan;24(1):165-182. doi: 10.1177/11297298211023274.

Epub 2021 Jun 4.

## European recommendations on the proper indication and use of peripheral venous access devices (the ERPIUP consensus): A WoCoVA project

Mauro Pittiruti<sup>1</sup>, Ton Van Bortel<sup>2</sup>, Giancarlo Scoppettuolo<sup>1</sup>, Peter Carr<sup>3</sup>, Evangelos Konstantinou<sup>4</sup>, Gloria Ortiz Miluy<sup>5</sup>, Massimo Lamperti<sup>6</sup>, Godelieve Alice Goossens<sup>7</sup>, Liz Simcock<sup>8</sup>, Christian Dupont<sup>9</sup>, Sheila Inwood<sup>10</sup>, Sergio Bertoglio<sup>11</sup>, Jackie Nicholson<sup>12</sup>, Fulvio Pinelli<sup>13</sup>, Gilda Pepe<sup>1</sup>



Meta-Analysis > Int J Nurs Stud. 2020 Feb;102:103488. doi: 10.1016/j.ijnurstu.2019.103488.

Epub 2019 Nov 26.

## Incidence of peripheral intravenous catheter failure and complications in paediatric patients: Systematic review and meta analysis

Ferika Indarwati<sup>1</sup>, Saira Mathew<sup>2</sup>, Judy Munday<sup>3</sup>, Samantha Keogh<sup>4</sup>

> J Infus Nurs. 2017 Jan/Feb;40(1):26-40. doi: 10.1097/NAN.0000000000000202.

## Development of an Evidence-Based List of Noncytotoxic Vesicant Medications and Solutions

Lisa A Gorski<sup>1</sup>, Marc Stranz, Lynda S Cook, James M Joseph, Kathy Kokotis, Pam Sabatino-Holmes, Lori Van Gosen; Infusion Nurses Society Vesicant Task Force

> J Infus Nurs. 2024 Sep-Oct;47(5):290-323. doi: 10.1097/NAN.0000000000000568.  
Epub 2024 Aug 27.

## Development of an Evidence-Based List of Non-Antineoplastic Vesicants: 2024 Update

Lisa A Gorski<sup>1</sup>, Jennie Ong, Ruth Van Gerpen, Barb Nickel, Kathy Kokotis, Lynn Hadaway



### Definitions: Vesicants, Irritants, Extravasation, Infiltration

In 2017, the VTF acknowledged the confusion, misunderstanding, and inconsistency among definitions of vesicant, irritant, and extravasation versus infiltration. This remains an issue today. In accordance with the 2024 *Standards*, the definitions are unchanged.<sup>7</sup>

- **Vesicant:** An agent capable of causing tissue damage when it escapes from the intended vascular pathway into surrounding tissue.
- **Irritant:** An agent capable of producing discomfort (eg, burning, stinging) or pain as a result of irritation in the internal lumen of the vein with or without immediate external signs of vein inflammation.
- **Infiltration:** Inadvertent administration of a nonvesicant solution or medication into surrounding tissue, rated by a standard tool or definition.
- **Extravasation:** Inadvertent infiltration of vesicant solution or medication into surrounding tissue, rated by a standard tool or definition.

**Paziente maschio 11 Anni**

**Trauma addominale ( lacerazione epatica e contusione pancreatica )**

- DEA POSIZIONATA SPC 22G BLIND
- 1° GIORNO DI RICOVERO

Terapia

- NP periferica 70ml/h
- TERAPIE ESTEMPORANEE AD ORARI
- Consulenza vascolare per accesso venoso stabile
  - Spiegazione Procedura al paziente (collaborante)
  - Valutazione RaPeVA
  - Crema anestetica per 1 h
  - Posizionamento ecoguidato a letto paziente
- Gestione
  - Stabilizzazione con colla in cianoacrilato
  - Prolunga con NFC
  - Medicazione integrata
  - Frequenti lavaggi con Soluzione Fisiologica e tecnica start and stop
- Rimosso per fine terapia dopo 25 gg
  - Nessuna complicanza
  - Funzionante in infusione e prelievo



# Venipuntura Ecoguidata o Blind?

> [Pediatr Emerg Care](#). 2008 Mar;24(3):143-7. doi: 10.1097/PEC.0b013e3181666f32.

**Derivation of the DIVA score: a clinical prediction rule for the identification of children with difficult intravenous access**

Kenneth Yen <sup>1</sup>, Anne Riegert, Marc H Gorelick

**TABLE 3.** Point Values for Each Variable of the 4-Variable DIVA Score

| Predictor Variable             | Scores                  |                            |                         |
|--------------------------------|-------------------------|----------------------------|-------------------------|
| Vein visible after tourniquet  | Visible, 0              |                            | Not visible, 2          |
| Vein palpable after tourniquet | Palpable, 0             |                            | Not palpable, 2         |
| Age category                   | ≥3 years old (older), 0 | 1-2 years old (toddler), 1 | <1 year old (infant), 3 |
| History of prematurity         | Not premature, 0        |                            | Premature, 3            |

The sum of point values of the variables is the DIVA score (range, 0-10).

**Paziente NON DIVA ( score < 4 )**



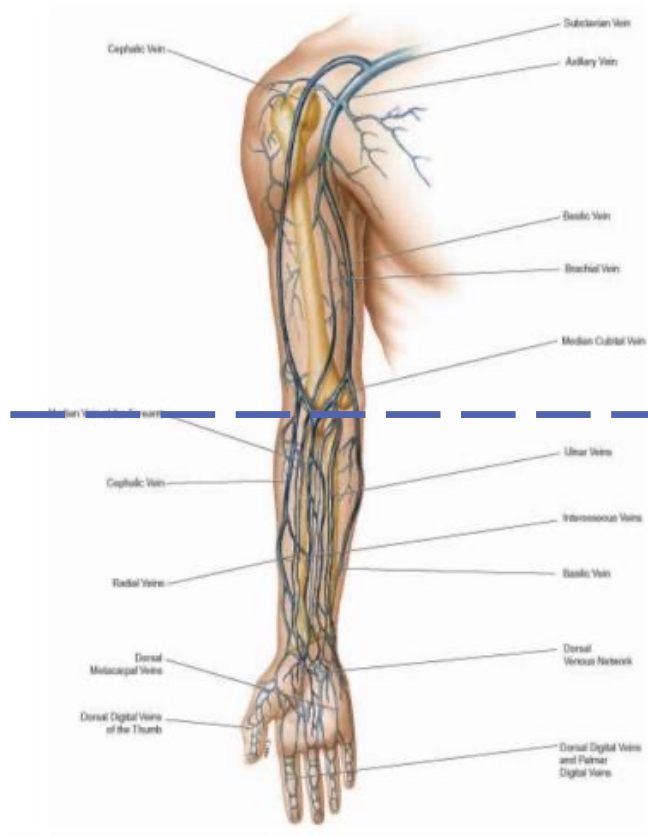
**Blind**

**Paziente DIVA ( score > 4 )**

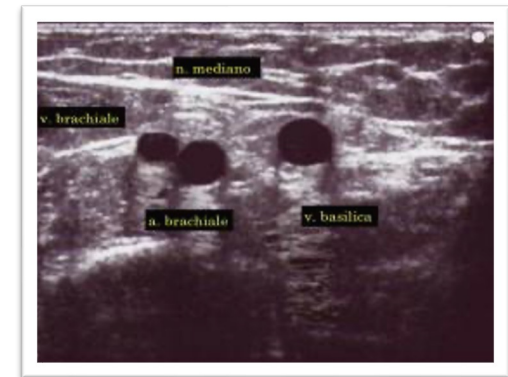


**ECO**

# Puntura eco-guidata per il paziente DIVA



**L'ecografia per le vene profonde  
del braccio**



**L'ecografia per le vene superficiali  
e profonde dell'avambraccio**



**Quale scegliere**



## Come scegliere il presidio

- Disponibilità di lunghezze e calibri differenti
- Stabilità dopo l'impianto ( preferibilmente con ali )
- Possibilmente con prolunga integrata
- Materiale biocompatibile ( PUR –PEBA )
- Tecnica d'impianto
  - Seldinger diretto
  - All in one



Editorial > J Vasc Access. 2023 May;24(3):353-357. doi: 10.1177/11297298211034023.  
Epub 2021 Jul 19.

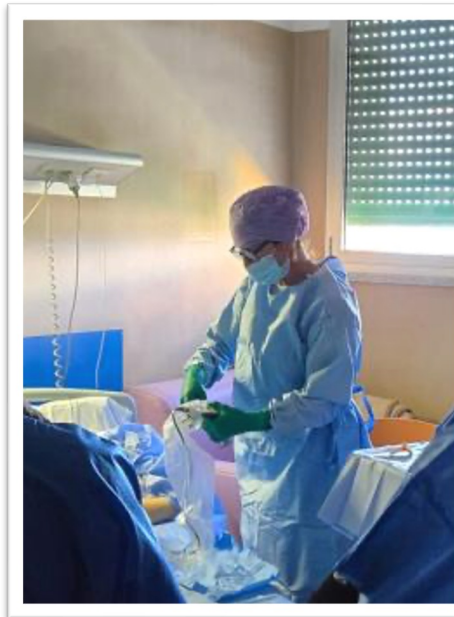
### **The integrated short peripheral cannula: A new peripheral venous access device?**

Fulvio Pinelli <sup>1</sup>, Mauro Pittiruti <sup>2</sup>

# Posizionamento anche a letto del paziente

## Criteri di inclusione

- Terapia della durata superiore a 7gg
- Paziente DIVA
- Terapie conformi con la via periferica
- Paziente collaborante
- Accessibilità delle vene del braccio con valutazione ecografica (RaPeVA)



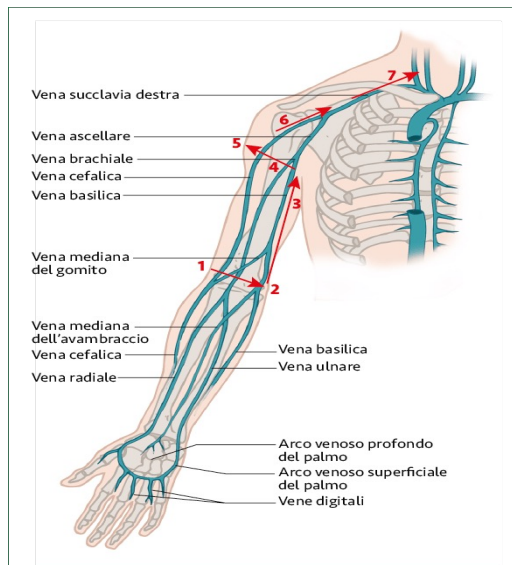
## Setting

- Spiegazione della procedura paziente e genitori
- Applicazione di crema anestetica locale per 1 h
- Durante la procedura utilizzo di tecniche di distrazione scelte dal paziente ( video, musica, televisione)

# Scelta della vena

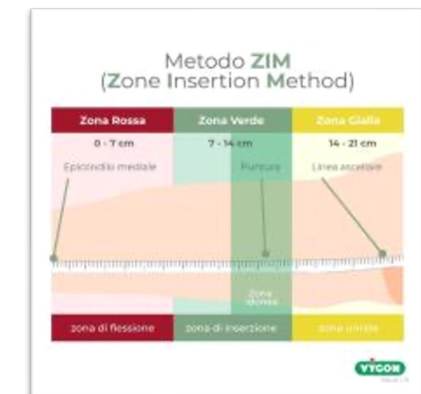
## RaPeVA

### Rapid Peripheral Vein Assessment

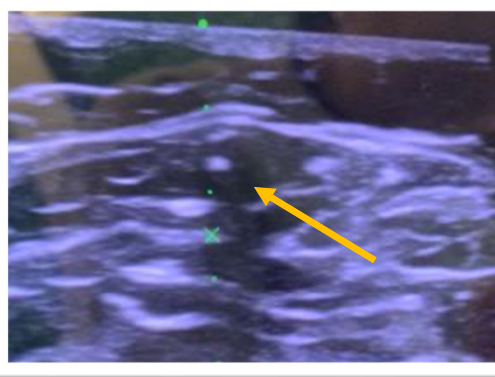
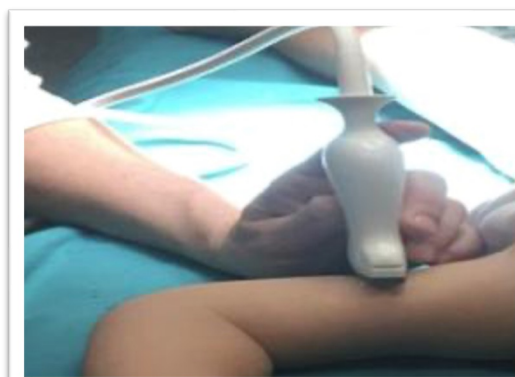


1. Cefalica al gomito
2. Arteria e vene brachiali al gomito
3. Basilica nel solco bicipite-omeroale
4. Fascio nervo vascolare (vasi brachiali + nervo mediano) a metà braccio
5. Cefalica a metà braccio
6. Ascellare e vena cefalica in sede sotto-claveare
7. Succlavia, giugulare interna e anonima in sede sopra-claveare

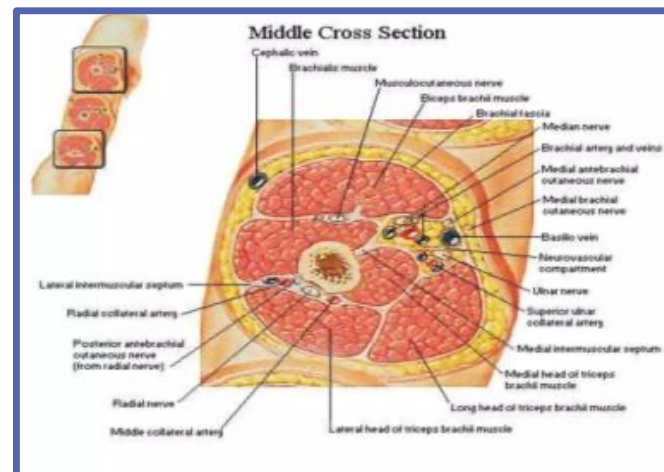
1. Vena basilica
2. Vene brachiali
3. Vena cefalica



## Rapporto sonda-vena e sonda-ago



| Vena      | Visualizzazione | Puntura      |
|-----------|-----------------|--------------|
| Basilica  | Asse corto      | Out of plane |
| Brachiale | Asse corto      | Out of plane |
| Cefalica  | Asse corto      | Out of plane |



## Tecnica Ecoguidata Seldinger Diretto



## 36. VASCULAR ACCESS DEVICE SECUREMENT

### KEY DEFINITIONS

**Adhesive securement device (ASD):** an adhesive-backed device that adheres to the skin with a mechanism to hold the vascular access device (VAD) in place; a separate dressing is placed over the ASD. Both the dressing and ASD must be removed and replaced at specific intervals during the VAD dwell time.

**Integrated securement device (ISD):** a device that combines a dressing with securement functions; includes transparent, semipermeable window, and a bordered fabric collar with built-in securement technology.

**Subcutaneous anchor securement system (SASS):** a securement device that anchors the VAD in place via flexible feet/posts that are placed just beneath the skin; these act to stabilize the catheter right at the point of insertion. A separate dressing is placed over the SASS. The SASS does not need to be changed at regular intervals when the dressing is changed; it can remain in place if there are no associated complications.

**Tissue adhesive (TA):** a medical-grade cyanoacrylate glue that can seal the insertion site and temporarily bond the catheter to the skin at the point of insertion and under the catheter hub. Depending on the chemical makeup, TA may be reapplied at each dressing change. Various formulations of TA for wound closure are commercially available, including first generation *N*-Butyl-2-cyanoacrylate (quick drying, rigid/brittle), second generation 2-octyl-cyanoacrylate (longer dry time, more flexible) and *N*-Butyl-2octyl cyanoacrylate formation (increased tensile strength and flexibility) with an additional indication for vascular access securement. Each TA formulation has varied properties and the clinical decision to use should be based on research outcomes relative to the chosen product.

### 36. VASCULAR ACCESS DEVICE SECUREMENT

Infusion Therapy  
Standards of Practice

#### KEY DEFINITIONS

**Integrated securement device (ISD):** a device that combines a dressing with securement functions; includes transparent, semipermeable window, and a bordered fabric collar with built-in securement technology.

#### KEY DEFINITIONS

**Tissue adhesive (TA):** a medical-grade cyanoacrylate glue that can seal the insertion site and temporarily bond the catheter to the skin at the point of insertion and under the catheter hub. Depending on the chemical makeup, TA may be reapplied at each dressing change. Various formulations of TA for wound closure are commercially available, including first generation *N*-Butyl-2-cyanoacrylate (quick drying, rigid/brittle), second generation 2-octyl-cyanoacrylate (longer dry time, more flexible) and *N*-Butyl-2-octyl cyanoacrylate formation (increased tensile strength and flexibility) with an additional indication for vascular access securement. Each TA formulation has varied properties and the clinical decision to use should be based on research outcomes relative to the chosen product.

Randomized Controlled Trial > JAMA Pediatr. 2024 May 1;178(5):437-445.

doi: 10.1001/jamapediatrics.2024.0167.

## Novel Peripheral Intravenous Catheter Securement for Children and Catheter Failure Reduction: A Randomized Clinical Trial

Brooke Charters<sup>1 2 3</sup>, Kelly Foster<sup>3</sup>, Benjamin Lawton<sup>1</sup>, Leonard Lee<sup>4 5</sup>, Joshua Byrnes<sup>6</sup>, Gabor Mihala<sup>6 7</sup>, Corey Cassidy<sup>8 9</sup>, Jessica Schults<sup>4 5 10</sup>, Tricia M Kleidon<sup>4 5 7</sup>, Ruth McCaffery<sup>8</sup>, Kristy Van<sup>1</sup>, Vanessa Funk<sup>1 11</sup>, Amanda Ullman<sup>4 5 7</sup>

**Conclusions and relevance:** In this study, PIVCs secured with integrated securement dressings and tissue adhesive, in comparison with standard care, bordered polyurethane dressings, were associated with significantly reduced PIVC failure, for children admitted to hospital via the emergency department. Further research should focus on implementation in inpatient units where prolonged dwell and reliable intravenous access is most needed.

> J Vasc Access. 2021 Oct 8;24(5):11297298211050485. doi: 10.1177/11297298211050485. Online ahead of print.

## Comparing test methods for moisture-vapor transmission rate (MVTR) for vascular access transparent semipermeable dressings

Paul Bainbridge<sup>1</sup>, Paul Browning<sup>2</sup>, Stéphanie F Bernatchez<sup>3</sup>, Casey Blaser<sup>3</sup>, Guido Hitschmann<sup>1</sup>

| Dressing       | MVTR liquid<br>(inverted method) | MVTR vapor<br>(upright method) |
|----------------|----------------------------------|--------------------------------|
| A              | 4089                             | 1682                           |
| B              | 845                              | 773                            |
| C              | 1225                             | 1079                           |
| D              | 1047                             | 976                            |
| E              | 1031                             | 936                            |
| F <sup>b</sup> | 30,530                           | 2838                           |
| G              | 5164                             | 1644                           |



# Take Home Message

- Adottare una terminologia standardizzata per una scelta scrupolosa
- Indicazioni precise al presidio
  - Paziente DIVA o NON DIVA
  - Durata terapia superiore a 5-7gg
  - Infusioni per via periferica
- Scelta accurata del materiale
  - PEBA
  - PUR
- Tecnica di venipuntura
  - Ecoguidata (DIVA)
  - Blind (no DIVA)
- Tecnica d'inserimento
  - Seldinger diretto
  - All in one



Grazie per  
l'attenzione!!

