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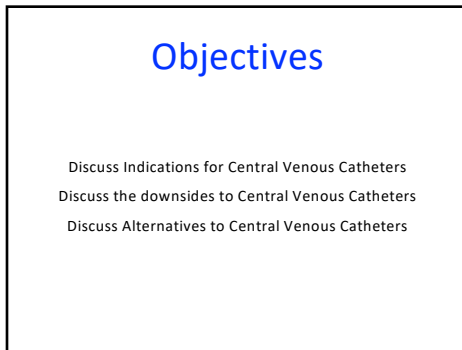
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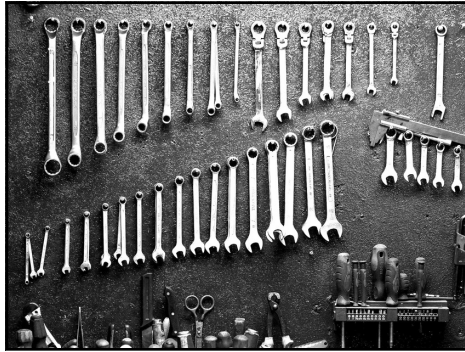
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Why Central Lines?

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Emergency venous access  
Volume resuscitation  
Vasopressor Therapy

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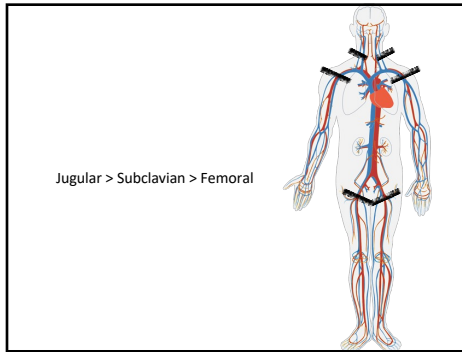
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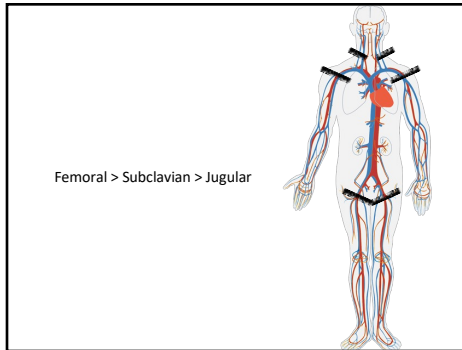
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Before Placing a CVC

When am I placing this line?

Why am I placing this line?

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### Flow Rates in IV/IO Access

Gauge	Approximate Flow Rate to Gravity (mL/min)	Time to Infuse L (min)
14G	250	4
16G	150	7
Cordis	130	8
18G	100	10
15G Humeral IO	80	13
16G Distal Port Triple Lumen	70	15
16G Tibial IO	70	15
20G	60	17
22G	35	24
18G Prox Port Triple Lumen	30	34

REBEL REVIEWS PMID: 20581377; 20157465

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Better Alternatives

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Intraosseous Lines

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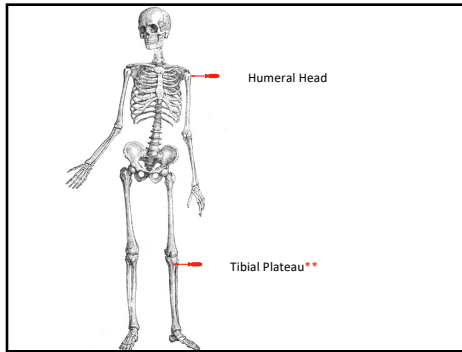
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### Flow Rates in IV/IO Access

Gauge	Approximate Flow Rate to Gravity (mL/min)	Time to Infuse L (min)
14G	250	4
16G	150	7
Cordis	130	8
18G	100	10
15G Humeral IO	80	13
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15G Tibial IO	70	15
20G	60	17
22G	35	29
18G Prox Port Triple Lumen	30	34

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Large Bore P.I.V.

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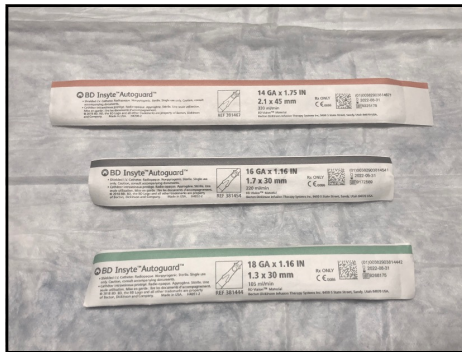
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### Flow Rates in IV/IO Access

Gauge	Approximate Flow Rate to Gravity (mL/min)	Time to Infuse L (min)
14G	250	4
16G	150	7
Cordis	130	8
18G	100	10
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16G Tibial IO	70	15
20G	60	17
22G	35	29
18G Prox Port Triple Lumen	30	34


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Midline Catheters

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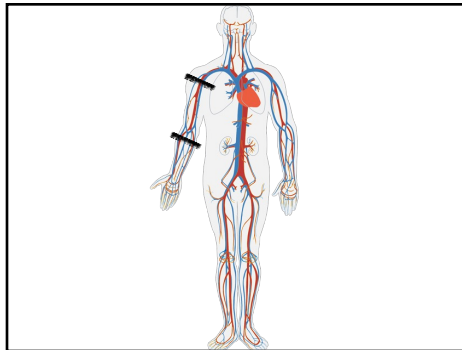
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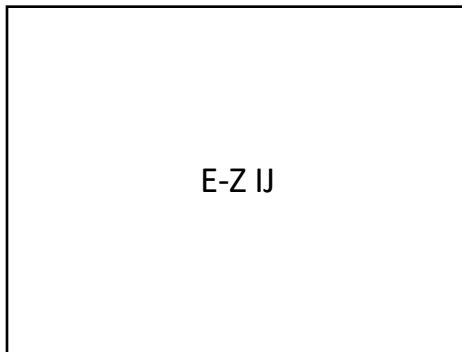
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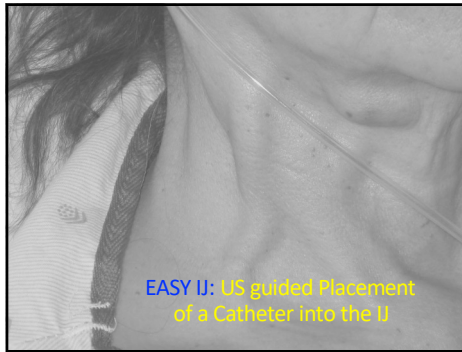
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EASY IJ: US guided Placement of a Catheter into the IJ

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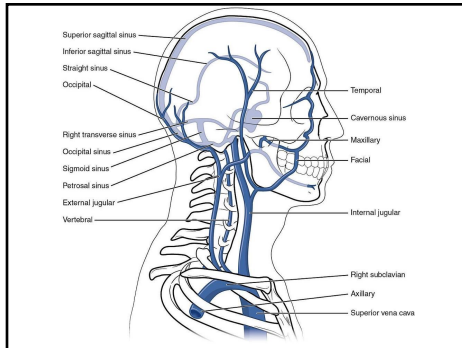
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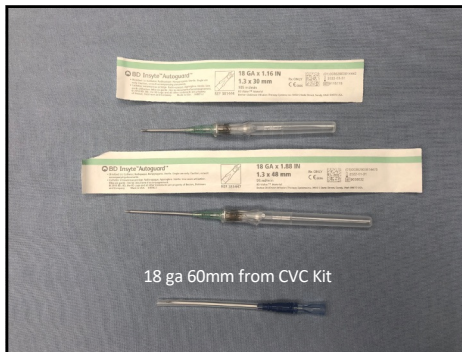
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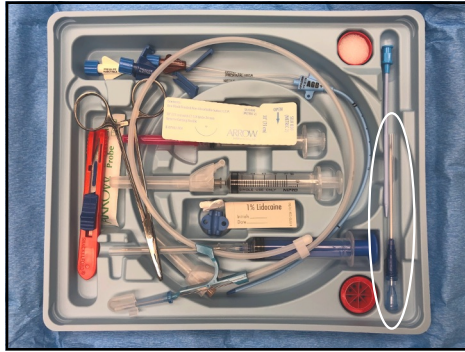
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**Indications:**

- Unable to get peripheral access
- Want a "bridge" to a CVC

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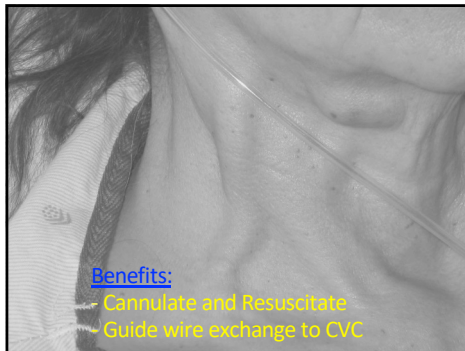
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**Benefits:**

- Cannulate and Resuscitate
- Guide wire exchange to CVC

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### Flow Rates in IV/IO Access

Gauge	Approximate Flow Rate to Gravity (mL/min)	Time to Infuse L (min)
18G	250	4
16G	150	7
Cardis	130	8
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15G Tibial IO	70	15
20G	60	17
22G	35	29
18G Prox Port Triple Lumen	30	34

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Why Central Lines?

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Consider Other Options

When am I placing this line?

Why am I placing this line?

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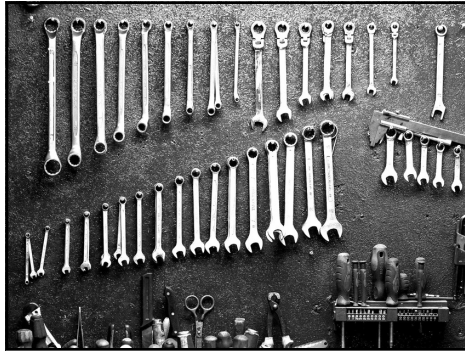
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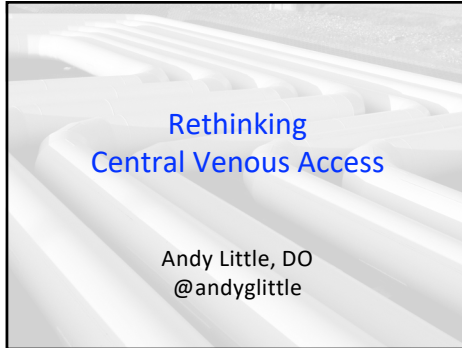
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