

## Extravasation risk factors

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### **Patient-related risk factors**

- veins: small, fragile, hard/sclerosed (e.g. due to prescribed or prolonged therapies), limited availability (e.g. due to restricted use of arms due to lymph node resections, lymphoedema)
- comorbidities (e.g. coagulopathies, increased vascular permeability, impaired circulation or skin diseases)
- altered communication (e.g. non-English speaking patients, communication difficulties, young children)
- impaired cognitive function (e.g. confusion, dementia)
- increased body mass index BMI (e.g. BMI > 25) – increased depth of veins from skin surface.

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### **Drug/solution-related risk factors**

- properties of drug/solution (e.g. concentration, volume, pH, osmolarity, cytotoxicity, vasoconstriction, absorption refraction, vesicant potential).

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### **Administration-related risk factors**

- inappropriate cannulation (e.g. large cannula in small vein, small or fragile veins, repeated use of same vein, area of movement – wrist, cubital fossa, multiple cannulations)
  - pressure administration (e.g. infusion pump)
  - prolonged infusion administration time
  - interruptions pre-, during and post-administration
  - untrained and not competent clinicians
  - inadequate dressing and securement of vascular access device
  - inappropriate non-coring needle – too short (risk of subcutaneous administration) or too long (risk of dislodgement)
  - lack of patency – any alteration to easy aspiration and easy injection ability of vascular access device
  - untrained or inexperienced staff in vascular access and management of intravenous anti-cancer drugs
  - interruption or distractions during drug administration.
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