### Anticoagulants

**Affected Areas**
Hematologic (with secondary system engagement)

**Immediate Symptoms**

- **Mild to moderate:**
  - Prolonged INR or average prothombin time above 1.5
  - Epistaxis
  - Petechia
  - Lethargy
  - Weakness
  - Pallor

- **Severe:**
  - Hematuria
  - Refractory epistaxis
  - Ecchymosis
  - Hemoptysis
  - Melena
  - Hematemesis

(Immediate Symptoms continued...)

**Life threatening**

- Severe organ hemorrhage
- Shock

*Onset of symptoms may not appear immediately after dosage

**Ongoing Symptoms**

Overexposure is initially asymptomatic and may remain that way even as prothrombin times increase.

Anticoagulants exert their effect after a latent period of 12 to 24 hours, and their effect lasts for two to five days.

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### Examples

**Chemical Warfare Agents**
None currently listed

**Toxic Industrial Chemicals/Toxic Industrial Materials**
- Coumadin
- Superwarfarins
  - Brodifacoum
  - Bromodialone
  - Diphacinone

**Common Treatment Protocols**

- Prolonged clinical and analytical follow-up
- Close monitoring using prothrombin time (PT) and plasma thromboplastin time (PTT)
- Fresh frozen plasma or whole blood, along with Factor VII therapy, for acute bleeding
- Close clinical observation for occult bleeding or life-threatening hemorrhage
- Vitamin K1 if large ingestion is suspected

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### Sensitive Populations

No particularly sensitive populations

### Concerns About This Syndrome

Effects with minimal presentation immediately after exposure decreases the likelihood of mass casualty response.

The anticoagulants inhibit vitamin K epoxide reductase, thus blocking the resuse of vitamin K and rapidly depleting the liver of its active vitamin K stores.

For non-vitamin K dependent treatment of toxicity is more difficult than traditional anticoagulants, but involve the administration of blood products including FFP (fresh frozen plasma).

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Not meant to be a complete care guideline. Please refer to the CHEMM website for more information: [https://chemm.hhs.gov/mmghome.htm](https://chemm.hhs.gov/mmghome.htm)