



THOMSON REUTERS™

# PENTETATE CALCIUM TRISODIUM

## MICROMEDEX® DRUGPOINTS SUMMARY

DrugPoints Summaries provide information on dosage, pharmacokinetics, cautions, interactions, clinical applications, adverse effects, comparative efficacy, and drug of choice information.

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# Pentetate Calcium Trisodium

DrugPoint® Summary

## DOSING & INDICATIONS

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### Adult Dosing

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- Radiation injury, Internal contamination with plutonium, americium, or curium (known or suspected): initial, 1 gm IV as a single dose
- Radiation injury, Internal contamination with plutonium, americium, or curium (known or suspected): maintenance (only if Zn-DTPA is not available), 1 gm IV once daily

### Pediatric Dosing

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[View Detailed information in DRUGDEX](#)

- Radiation injury, Internal contamination with plutonium, americium, or curium (known or suspected): less than 12 years, initial, 14 mg/kg IV as single dose; MAXIMUM dose of 1 gm
- Radiation injury, Internal contamination with plutonium, americium, or curium (known or suspected): less than 12 years, maintenance (only if Zn-DTPA is not available), 14 mg/kg IV once daily; MAXIMUM dose of 1 gm/day

### FDA-Labeled Indications

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- Radiation injury, Internal contamination with plutonium, americium, or curium (known or suspected)

## CONTRAINDICATIONS/WARNINGS

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### Contraindications

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- Specific contraindications have not been determined [2]

### Precautions

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- Associated with depletion of endogenous trace metals such as zinc, magnesium, manganese (use only a single initial dose to minimize extent of depletion) [2]
- Asthma (may cause exacerbation when administered by nebulized inhalation) [2]
- Do not use for internal contamination with uranium or neptunium [3]
- Pre-existing kidney disease or depressed myelopoietic function [3]
- Radioactive safety precautions required to minimize contamination of others [2]
- Severe hemochromatosis [2]

### Pregnancy Category

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[View Detailed information in DRUGDEX](#)

- [C\[2\]](#)(FDA)

### Breast Feeding

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[View Detailed information in DRUGDEX](#)

- [Thomson: Infant risk cannot be ruled out.](#)

### ADVERSE EFFECTS

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#### Common

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- **Cardiovascular:** Chest pain
- **Dermatologic:** Dermatitis
- **Gastrointestinal:** Diarrhea, Metallic taste, Nausea
- **Neurologic:** Headache, Lightheadedness
- **Other:** Immune hypersensitivity reaction

#### Serious

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- **Endocrine metabolic:** Trace element deficiency, depletion of zinc, magnesium, manganese, and metalloproteinase (during prolonged treatment)

### IV COMPATIBILITY (SINGLE)

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#### Solution

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#### Common Solutions

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### Common Solutions

D5W (D5W-Dextrose 5%)		Compatible
D10W (Dextrose 10%)		Not Tested
D5LR (Dextrose 5% in lactated Ringers)		Not Tested
D5NS (Dextrose 5% in sodium chloride 0.9%)		Not Tested
D5W - 1/2 NS (Dextrose 5% in sodium chloride 0.45%)		Not Tested
NS (Normal saline- Sodium chloride 0.9%)		Compatible
1/2 NS (Sodium chloride 0.45%)		Not Tested

### Other Solutions

Lactated Ringer's Injection		Compatible
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### Pentetate calcium trisodium

Trade Names: None listed.

Other Names: Ca-DTPA

pH range: pH 7.3 to 8.3

### Y-Site

**"Not Tested"**

### Admixture

**"Not Tested"**

### Syringe

**"Not Tested"**

## TPN/TNA

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### TPN (2-in-1)

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**There are no TPN Results.**

### TNA (3-in-1)

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**There are no TNA Results.**

## Definitions

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**Compatible** IV compatibility is compatible.



**Incompatible** IV compatibility is incompatible.



**Caution: Variable** Caution: IV compatibility is variable.



**Uncertain** IV compatibility is uncertain.



**Not Tested** IV compatibility is not tested.

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## NAME INFO

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### Class

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[View Detailed information in DRUGDEX](#)

- Heavy Metal Chelator

### Regulatory Status

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- RX

### Generic Availability

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- No

## MECHANISM OF ACTION/PHARMACOKINETICS

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## Mechanism of Action

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- Pentetate calcium trisodium, also known as trisodium calcium diethylenetriaminepenta-acetate (Ca-DTPA), is a chelating agent that exchanges calcium for a metal of greater binding capacity forming a stable chelate [4].

## Pharmacokinetics

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### Absorption

- Oral: poorly absorbed [4]
- Bioavailability: (inhalation), 20% [4]

### Distribution

- rapidly distributed [4]

### Metabolism

- Minimal [4]

### Excretion

- Fecal: less than 3% [4]
- Renal (glomerular filtration): more than 99% within 24 h [4]
- Dialyzable: yes (in renally impaired patients) [4]

### Elimination Half Life

- 94.4 min [4]
- impaired renal function: increased [4]

## ADMINISTRATION/MONITORING

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### Administration

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#### General Information

- should drink plenty of fluids and frequently void to promote the elimination of the radiocontaminants [1]
- IV route recommended if route of contamination is not known or if multiple routes of contamination are likely [1]

#### Inhalation

- dilute to a 1 to 1 ratio with sterile water or NS for nebulization [1]

- avoid swallowing any expectorant after nebulization [\[1\]](#)

### **Intravenous**

- (infusion) dilute in 100 to 250 mL D5W, LR or NS [\[1\]](#)
- either give by slow IV push over 3-4 min or IV infusion [\[1\]](#)

## **Monitoring**

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### [View Detailed information in DRUGDEX](#)

- symptomatic improvement
- a quantitative baseline estimate of total internalized transuranium elements and measures of elimination of radioactivity by whole-body counting, by bioassay, or fecal/urine sample [\[1\]](#)
- weekly measure of the radioactivity in blood, urine, and fecal samples during treatment [\[1\]](#)
- baseline blood and urine samples (CBC with differential, BUN, serum chemistries and electrolytes, urinalysis, and blood and urine radioassays) [\[1\]](#)
- periodic CBC, serum electrolytes and essential metals (eg; zinc, magnesium, manganese) [\[1\]](#)

## **HOW SUPPLIED**

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### **Pentetate Calcium Trisodium**

- Intravenous Solution: 200 MG/ML

## **CLINICAL TEACHING**

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- Instruct patient in proper radioactive safety precautions including handling/disposal of body fluids, in order to minimize contamination of others.
- This drug may cause light-headedness, chest pain, dermatitis, diarrhea, metallic taste, nausea, or headache.
- Patient should drink plenty of fluids (as prescribed by healthcare professional) and frequently void to promote the elimination of the radio-contaminants.
- Instruct patient to contact healthcare professional if no urine is produced in 12 or more hours.
- Advise patient to remain in a supine position after drug administration to help prevent dizziness.

[Pentetate Calcium Trisodium \(Intravenous route, Solution\)](#)

[Pentetate Calcium Trisodium \(Inhalation, oral/nebulization route, Solution\)](#)

## **REFERENCES**

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1. Product Information: pentetate calcium trisodium IV injection, inhalation solution, pentetate calcium trisodium IV injection, inhalation solution. Akorn, Inc, Buffalo Grove, IL, 2005.

2. Product Information: Pentetate Calcium Trisodium Injection, Pentetate calcium trisodium injection. Hameln Pharmaceuticals, Hameln, Germany, 2004.

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3. Anon: Ca-DTPA (trisodium calcium diethylenetriaminepentaacetate) Informational Material Package Insert, Oak Ridge Associated Universities, Oak Ridge, TN, 2002.

4. Product Information: pentetate calcium trisodium intravenous solution, inhalational solution, pentetate calcium trisodium intravenous solution, inhalational solution. Akorn, Inc, Buffalo Grove, IL, 2004.