

Povidone-iodine

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Synonym(s): Polyvinylpyrrolidone-iodine, PVP iodine

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Introduction

Name

- Povidone-iodine.

Class of drug

- Antiseptic.
- Iodophor formulation releasing free iodine.

Description

Chemical name

- 1-ethenyl-2-pyrrolidinone homopolymer compound + iodine.
- 1-vinyl-2-pyrrolidinone polymers, iodine complex.

Molecular formula

- C₆H₉I₂NO.

Molecular weight

- 364.95.

Physical properties

- Solution.

Uses

Action

- Antibacterial (microbicidal) activity as surface antiseptic, including for mycobacteria.
- Some antifungal, antiprotozoal and antiviral effect.

Indications

- Wound disinfection [Wound: preparation](#) .
- Surgical preparation.
- Navel sterilization, although this is not now recommended as chlorhexidine [Chlorhexidine](#) is far more effective.



Administration

Routes of administration

- Topical.

Dosage

Basic dose

- 1% solution undiluted for wound disinfection and surgical preparation.
- Proper dilution to 1% iodine is necessary for maximal -cidal effect.
- More concentrated solutions are less effective because they prevent release of free iodine.

Variation to normal dose

- 1% solution further diluted for irrigation of mucosal surfaces.

Timing of administration

- Requires contact time of 2 min at least for any effect. Rapid rinsing or removal is therefore counterproductive.
- Much longer contact times required for fungi and bacterial spores.

Pharmacokinetics

Normal

Topical absorption

- Iodine can be absorbed through the skin and especially mucous membranes.
- Toxicity arising in either patient or nurse/veterinarian are extremely low unless repeated and sustained contact is achieved.

Physiological variations

Pregnancy

- Iodine-releasing antiseptics should probably not be used on pregnant mares as free iodine can be absorbed from the skin and there is a potential danger to the developing foal - this risk should be avoided. However, a single application will have little or no effect.

Precautions

Contra-indications

- When color is lost (reduced activity).
- As a general disinfectant for surfaces and stables, etc - iodophores formulated as antiseptics, eg surgical scrubs, have low iodine concentration.
- Do not use concurrently with other disinfectants, detergents or antiseptics.
- Strong solutions are ineffective.

Use with care

- Strong solutions (and incidentally Tincture 7.5%) are potentially toxic to skin and can cause necrosis, especially in foals. There is no merit in strong solutions.

Adverse Reactions

Effects of overdose

- Overstrength solutions don't work and may be toxic locally and systemically.

Other reported reactions

- Occasional idiosyncratic (hypersensitivity) encountered in patients and handlers.

Further Reading

Publications

Refereed Papers

- Recent references from [PubMed](#) and [VetMedResource](#).

Other Sources Of Information

- Derived from **The Veterinary Formulary** (1998) 4th edn. Ed: Bishop Y. British Veterinary Association and Royal Pharmaceutical Society.

