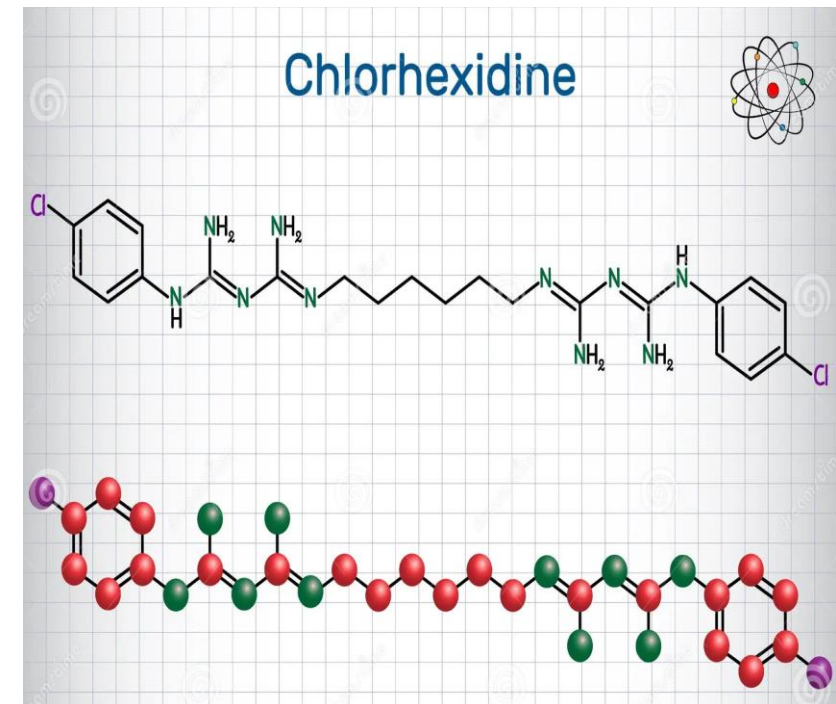


CHLORHEXIDINE: MECHANISM OF ACTION, CLINICAL USES IN ORAL MUCOSAL INFECTIONS, AND ADVERSE EFFECTS

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- **What are Oral Mucosal Infections?**

- Bacterial infections affecting the mucosal lining of the mouth, including the gums, tongue, and inner cheeks.
- Common oral infections: gingivitis, periodontitis, mucositis, and oral ulcers.



Overview of Chlorhexidine

- **What is Chlorhexidine?**

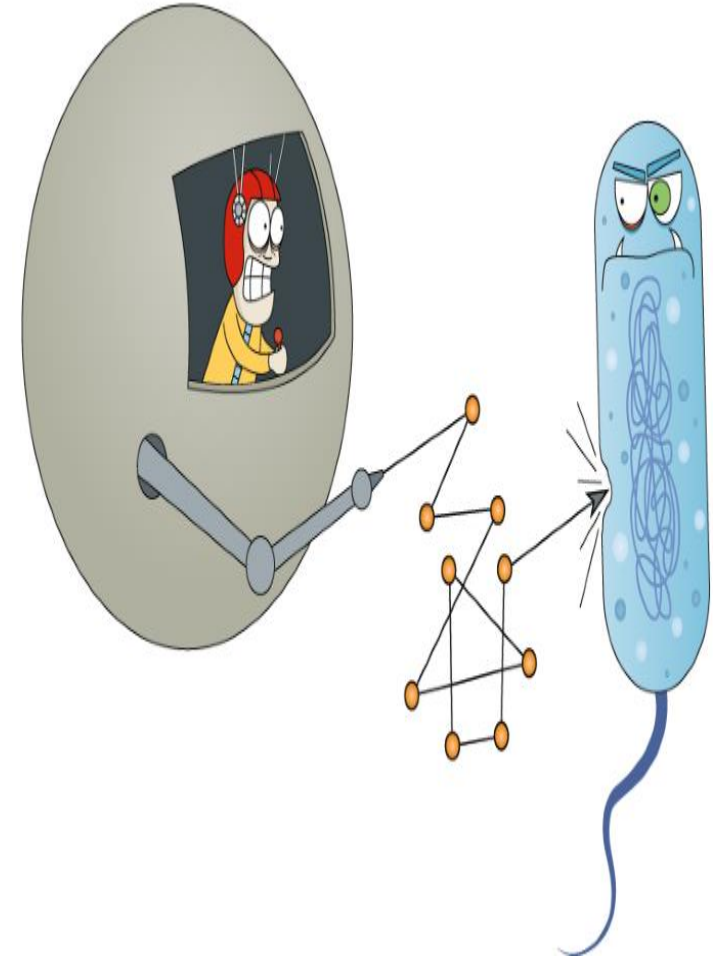
- A broad-spectrum antiseptic used to control bacterial infections.
- Available in multiple formulations: mouthwash, gel, spray, and topical solutions.

- **Mechanism of Action**

- Disrupts bacterial cell membranes, leading to cell death.
- Bactericidal action against gram-positive and gram-negative bacteria.
- Adheres to oral tissues, providing sustained antimicrobial effects (substantivity).
- Accordingly, it has been widely used in dentistry

Mechanism of action (MOA) for chlorhexidine.

- **Stage 1: Positively charged chlorhexidine is attracted to the negative charge on the bacterial cell wall.**
- **Stage 2: Chlorhexidine forms specific and strong adsorption to phosphate-containing molecules that are on the surface of the bacterial cell.**
- **Stage 3 (bacteriostatic): Penetration through the bacterial cell wall occurs, damaging it and compromising its integrity. The result is an outflow of low-molecular-weight cytoplasmic components, such as potassium ions, and inhibition in the activity of some of the enzymes associated with the cytoplasmic membrane.**
- **Stage 4 (bactericidal): Cytoplasmic coagulation and precipitation occur by forming complexes with phosphorylated compounds, such as adenosine triphosphate (ATP) and nucleic acids.**





CHX solution strength

- **Gluconate 0.12–0.2% solution is usually used**

Indications and dose

Oral hygiene and plaque inhibition

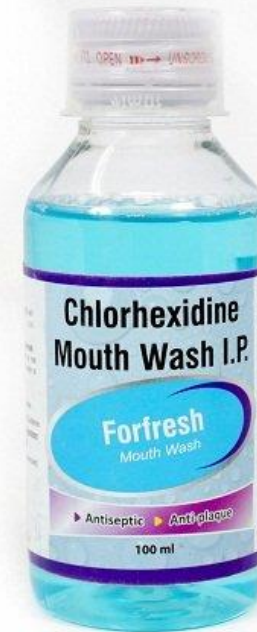
Oral candidiasis

Gingivitis

Management of aphthous ulcers

By oromucosal administration using mouthwash

- **Child**
 - Rinse or gargle 10 mL twice daily, rinse or gargle for about 1 minute.
- **Adult**
 - Rinse or gargle 10 mL twice
 - rinse or gargle for about 1 r
 - By oromucosal administration using oromucosal spray
- **Child**
 - Apply up to 12 sprays twice as required, to be applied on tooth, gingival, or ulcer surfaces.
- **Adult**
 - Apply up to 12 sprays twice daily as required, to be applied on tooth, gingival, or ulcer surfaces.



Oral hygiene and plaque inhibition

Gingivitis

By oromucosal administration using dental gel

Child

Apply 1–2 times a day, to be brushed on the teeth.

Adult

Apply 1–2 times a day, to be brushed on the teeth.

Oral candidiasis Management of aphthous ulcers

By oromucosal administration using dental gel

Child

Apply 1–2 times a day, to affected areas.

Adult

Apply 1–2 times a day, to affected areas

Denture stomatitis

- Mouthwash
- **Adult**
- Cleanse and soak dentures in mouthwash solution for 15 minutes twice daily



DENTURE
STOMATITIS

Side- effects

Common or very common

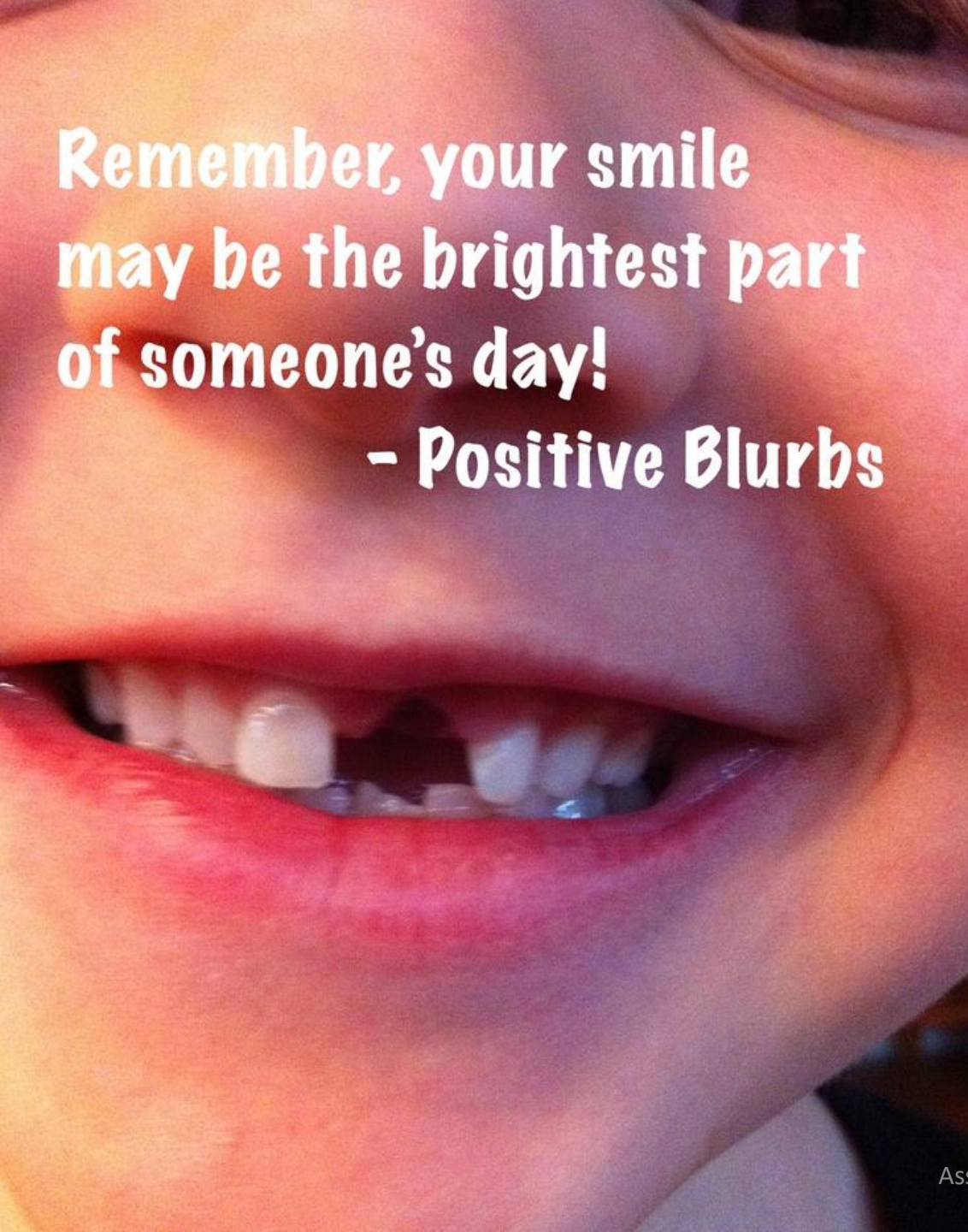
With oromucosal use

Dry mouth; hypersensitivity; oral disorders; taste altered; tongue discolouration; tooth discolouration

Patient and carer advice

With oral (topical) use:

Chlorhexidine gluconate may be incompatible with some ingredients in toothpaste; rinse the mouth thoroughly with water between using toothpaste and chlorhexidine-containing product



Remember, your smile
may be the brightest part
of someone's day!

- Positive Blurbs

**So keep your
smile bright**

References

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