

Treatment of Cutaneous Warts in Children (Ordered by Overall Effectiveness and Evidence)

Clinical context: Most pediatric cutaneous warts (especially common and plantar warts) resolve spontaneously, with approximately 50% clearing within 1 year and up to 65–80% within 2–4 years. Treatment is generally indicated for pain, functional impairment, cosmetic concerns, autoinoculation, or parental/patient preference.

Rank	Treatment	Typical Clearance Rate	Strength of Evidence	Key Evidence Summary	Advantages	Limitations
1	Salicylic acid (15–40%)	50–75%	High	Multiple RCTs and Cochrane reviews demonstrate superiority over placebo; best-supported first-line therapy	Safe, inexpensive, home treatment	Requires daily treatment for 6–12 weeks
2	Cryotherapy (liquid nitrogen)	50–70%	Moderate–High	Similar efficacy to salicylic acid in many studies; no consistent superiority	Faster treatment course	Painful; blistering; difficult in young children
3	Salicylic acid + Cryotherapy	60–80%	Moderate	Some studies suggest additive benefit, particularly for recalcitrant warts	Increased clearance	More treatment burden
4	Cantharidin (± podophyllotoxin/salicylic acid)	60–90%	Moderate	Widely used in pediatric dermatology; good observational outcomes	Generally painless during application	Limited high-quality RCT data
5	Intralesional Candida antigen immunotherapy	50–80%	Moderate	Increasing evidence from pediatric studies; effective for multiple/recalcitrant warts	May clear distant untreated warts	Requires injections; office procedure
6	Contact immunotherapy (DPCP, SADBE)	50–80%	Moderate	Good efficacy in recalcitrant disease from cohort studies and specialist centers	Useful for extensive disease	Requires expertise; dermatitis common
7	Topical Retinoids (e.g., tretinoin)	40–80%	Moderate	Particularly effective for flat warts; several pediatric studies support use	Well tolerated	Slower response
8	5-Fluorouracil (topical)	40–70%	Moderate	Several RCTs show efficacy, especially under occlusion	Useful second-line option	Irritation, erosions
9	Laser therapy (Pulsed Dye Laser)	50–80%	Low–Moderate	Variable results across studies	Useful for resistant lesions	Costly, specialist treatment
10	Curettage/electrosurgery	65–85% immediate clearance	Low–Moderate	Effective lesion removal but recurrence data variable	Rapid clearance	Pain, scarring risk, often unsuitable for children
11	Intralesional Bleomycin	60–90%	Low–Moderate	Effective in adults; limited pediatric data	Useful for recalcitrant warts	Painful; specialist use
12	Photodynamic Therapy	50–70%	Low–Moderate	Some benefit in resistant warts	Option when others fail	Limited availability
13	Topical Zinc	Variable (30–70%)	Low	Inconsistent trial results	Safe	Uncertain efficacy

Rank	Treatment	Typical Clearance Rate	Strength of Evidence	Key Evidence Summary	Advantages	Limitations
14	Oral Zinc	Variable (20–80%)	Low	Conflicting evidence; possible benefit if zinc deficient	Easy administration	Weak evidence
15	Cimetidine	Similar to placebo	Low	Most controlled studies fail to show meaningful benefit	Well tolerated	Not routinely recommended
16	Duct tape occlusion	Inconsistent	Low	Subsequent trials failed to confirm early positive study	Low cost	Uncertain efficacy
17	Homeopathic/alternative therapies	No proven benefit	Very Low	No convincing evidence beyond placebo	Minimal risk	Not recommended

Practical Evidence-Based Approach in Children

Clinical Situation	Preferred Treatment
New, asymptomatic wart	Observation/reassurance
Symptomatic common wart	Salicylic acid first-line
Older child wanting quicker treatment	Cryotherapy
Multiple warts	Salicylic acid ± immunotherapy if refractory
Flat facial warts	Topical tretinoin
Recalcitrant warts (>6–12 months)	Candida immunotherapy, cantharidin, contact immunotherapy
Extensive/refractory disease	Pediatric dermatology referral

Key Take-Home Points

1. **Salicylic acid remains the best-supported first-line treatment** for pediatric warts based on overall evidence quality.
2. **Cryotherapy is not clearly more effective than salicylic acid** but may achieve clearance sooner in selected children.
3. **Cantharidin and immunotherapy (especially Candida antigen)** are increasingly favored for recalcitrant pediatric warts despite fewer high-quality RCTs.
4. **Cimetidine, duct tape, and alternative therapies are not supported by current evidence.**
5. Because spontaneous resolution is common, **watchful waiting is a reasonable option for many children**, especially when lesions are asymptomatic.