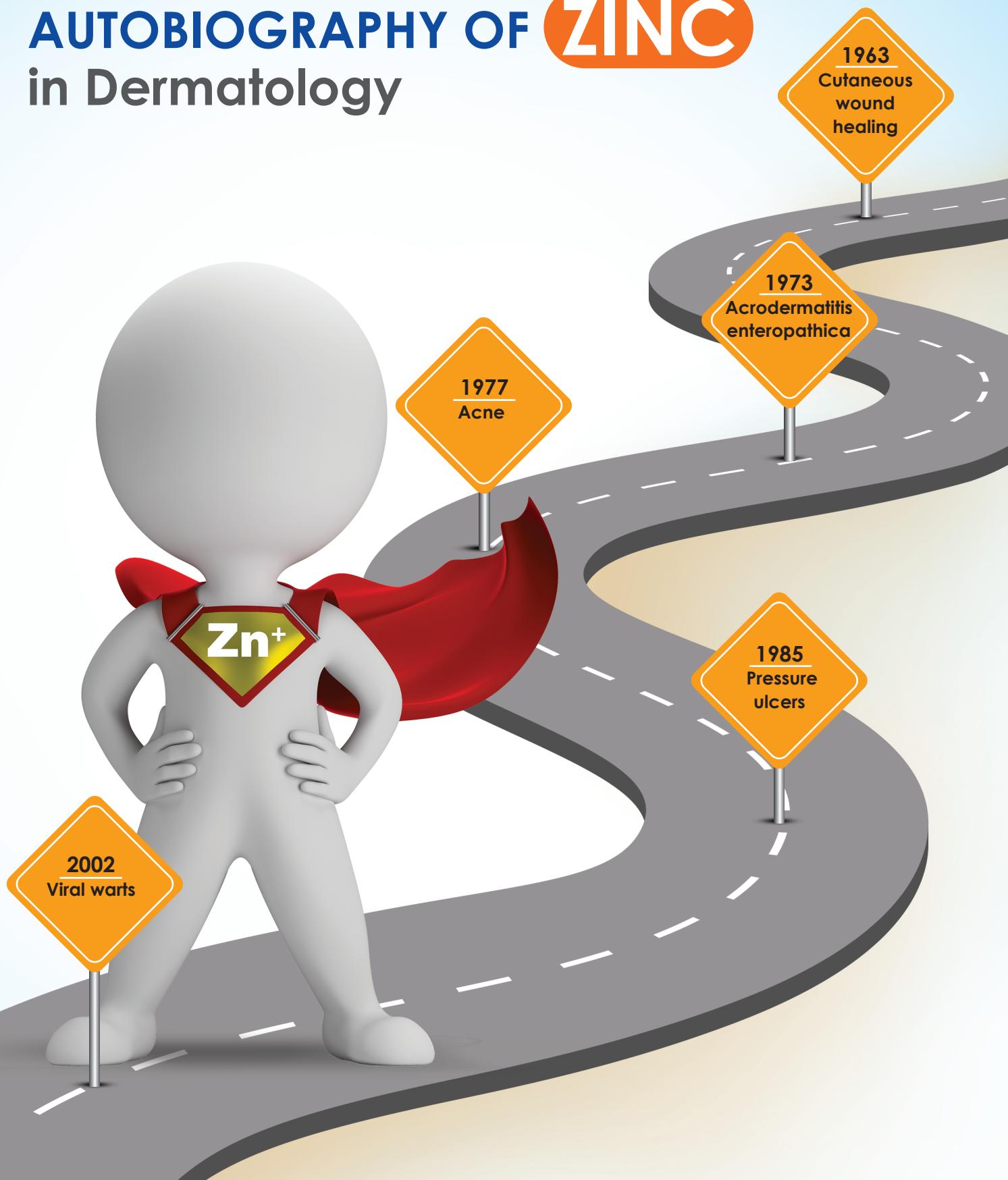


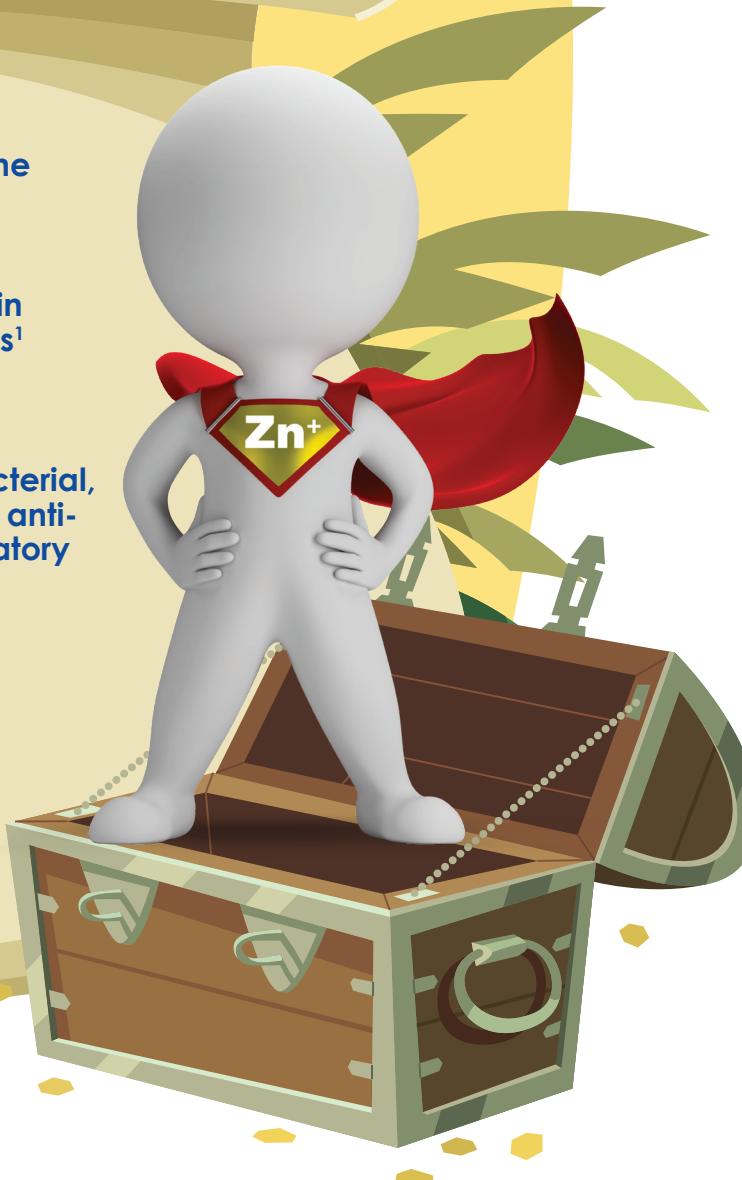
AUTOBIOGRAPHY OF **ZINC** in Dermatology





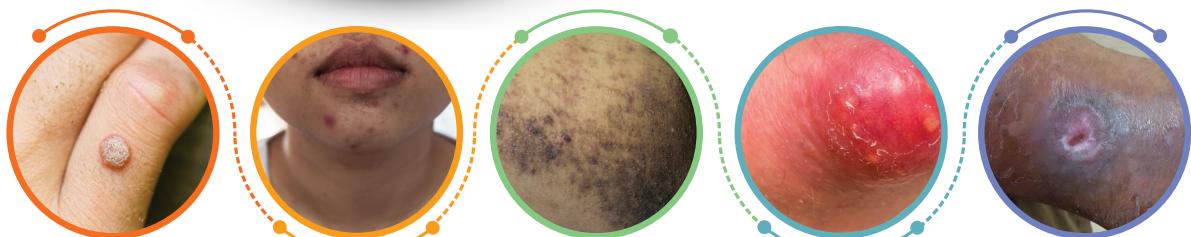
Hi, I am Zinc

- A crucial trace element for the survival of living organisms^{1,2}
- I am essential as a cofactor in over 300 enzymatic reactions¹
- I possess many beneficial properties including anti-bacterial, anti-viral, anti-inflammatory, anti-oxidant, and immunomodulatory property.^{2,3}



My role in dermatology^{3,4}

My use has expanded manifold over the years, both as topical and as systemic therapy, for various dermatological conditions including warts, acne, rosacea, melasma, ulcers, and neoplasia.^{3,4}



Infections
(leishmaniasis,
warts)

Inflammatory
dermatoses
(acne vulgaris,
rosacea)

Pigmentary
disorders
(melasma)

Neoplasia
(basal cell
carcinoma)

Cutaneous
wounds and
ulcers

Let me walk you through my evolutionary journey in dermatology...

1963

Studies in 1963 established, for the first time, that I am essential for human health⁵

1963

In 1963, Prasad and colleagues reported for the first time that my deficiency is associated with impaired cutaneous wound healing^{6,7}

1973

In 1973, the association between my deficiency and acrodermatitis enteropathica was established⁸



My role in treatment of warts

I (zinc) can be used as an effective topical, oral, or intralesional supplement for treating warts without significant adverse effects^{9,10}

ORAL USE

2002

Oral zinc sulphate for recalcitrant viral warts¹¹

- Zinc sulphate (10 mg/kg/day): A highly effective therapeutic option for recalcitrant viral warts
 - » Complete clearance rate of warts after 2 months = 87%

2009

Oral zinc sulphate for recalcitrant multiple viral warts¹²

- Treatment response rate
 - » 59.3% after 1 month of treatment
 - » 78.1% after 2 months of treatment

2011

Oral zinc sulphate for viral warts¹³

- An effective and well-tolerated treatment option for viral warts, without considerable side-effects
- Complete resolution rate of warts after 2 months = 50%

2016

Oral zinc sulphate for recalcitrant warts¹⁴

- Significant increase in serum zinc level after treatment with oral zinc sulphate (from 85.95 µg/dl to 115.61 µg/dl)
- Increase in zinc level was associated with more clinical improvement in warts



TOPICAL USE

2007

Topical zinc oxide for treatment of warts¹⁵

- An effective and safe therapeutic option for warts
- Complete cure rate
 - » 50% with zinc oxide
 - » 42% with salicylic acid-lactic acid
- Failure to treatment response
 - » 18.7% with zinc oxide
 - » 26% with salicylic acid-lactic acid

2007

Topical 10% zinc sulphate for viral warts¹⁶

- Effective and safe option for treatment of plane warts
- Full response in patients with plane warts
 - » 85.7% for 10% zinc sulphate
 - » 42.8% for 5% zinc sulphate
 - » 10% for distilled water

2019

Topical 15% zinc oxide ointment for common warts¹⁷

After 4 weeks: Significant reduction in the size of common hand warts



My role in treatment of acne

My (zinc) usefulness in acne vulgaris was first recognized in the 1970s when Fitzherbert (1977) observed the improvement of acne after I was administered to zinc deficient patients with acrodermatitis enteropathica¹⁸

1977



Effects of oral zinc therapy in acne¹⁹

- After 4 weeks: Significant decrease in number of papules, pustules, and infiltrates
- After 12 weeks: Decrease in mean acne score from 100% to 15%

1989



Oral zinc gluconate for inflammatory acne²⁰

- Significantly better results with low-dose oral zinc (0.2 gm/day) than placebo
- Marked improvement in 37.5% patients with zinc versus 8.8% patients with placebo

2005



Effect of zinc gluconate on *P. acnes* resistant to erythromycin in patients with inflammatory acne²¹

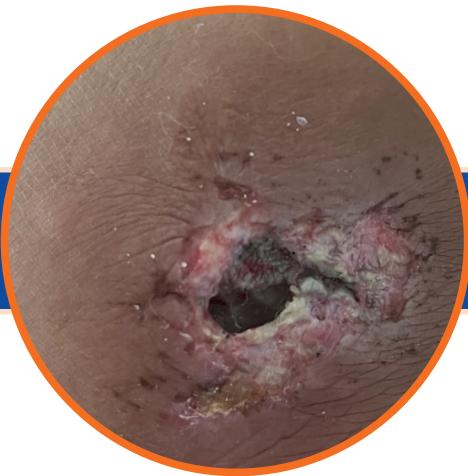
- Reduction in the number of inflammatory lesions after 2-month therapy
- Reduced resistance of *P. acnes* strains to erythromycin with addition of zinc salts

2021



Oral zinc versus lymecycline in the treatment of acne²²

- Significantly greater improvements in Acne-specific Quality of Life with zinc sulphate versus lymecycline therapy



My role in management of cutaneous wounds and ulcers

Owing to my (zinc) excellent wound healing and antimicrobial properties, I have long been used to treat ulcers and wounds, both as oral and/or topical formulation^{2,3}

1990

Zinc chloride paste for debridement of chronic leg ulcers²⁵

- Thorough debridement and formation of good granulation tissue within a few days



1967

Zinc sulphate for accelerated healing of wounds^{6,23}

- Almost 34 days earlier healing of wound with zinc vs. control
- Almost 3 times faster healing of wounds with zinc vs. control

1985

Topical zinc for pressure ulcers²⁴

- Effective necrosis removal within 8 weeks
 - » In 50% patients treated with zinc oxide
 - » In 43% patients treated with streptokinase-streptodornase

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* SMSRC (Jul-Oct 22) Oral Zinc Prescription in Warts by Dermats

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