Raynaud's Phenomenon

Understanding Cold-Triggered Colour Changes and Circulation in the Hands and Feet

1 What Is Raynaud's Phenomenon?

Raynaud's phenomenon is an exaggerated vasospastic response to cold or emotional stress — blood vessels in the fingers and toes over-constrict, causing episodes of colour change: white (ischaemia) → blue/purple (deoxygenation) → red (reperfusion). Primary Raynaud's (Raynaud's disease) has no underlying cause and is common, affecting up to 10% of women. Secondary Raynaud's is caused by an underlying connective tissue disease (scleroderma, lupus, RA) and is more severe, with potential for tissue damage.

Symptom	What It Feels Like
Colour change: white → blue → red	Classic triphasic response; may not always show all three phases
Numbness and tingling	Reduced blood flow causes loss of sensation during the white/blue phase
Pain on rewarming	As blood returns (red phase), intense burning or throbbing pain
Cold sensitivity	Attacks triggered by even mild cold exposure, not just extreme temperatures
Emotional trigger	Stress and anxiety can trigger attacks independently of cold
Toes and fingers most affected	Extremities have the greatest surface area:volume ratio and least insulation

2 Why Does It Happen?

Factor	How It Contributes
Exaggerated sympathetic nervous system response	Over-activation of alpha-2 adrenergic receptors causes excessive vessel constriction — explains why stress triggers attacks alongside cold
Oestrogen influence	Higher prevalence in women; onset often around puberty or menopause — hormonal influence on vascular tone
Connective tissue disease (scleroderma, lupus)	Structural changes in blood vessel walls increase susceptibility — secondary Raynaud's; tends to be more severe
Vibration exposure	Occupational use of vibrating tools (hand-arm vibration syndrome) — occupational history is important

Beta-blockers / migraine medications	Reduce vasodilation; can worsen Raynaud's — discuss with prescribing doctor; do not stop without advice
Smoking	Nicotine is a potent vasoconstrictor — smoking cessation significantly improves Raynaud's

3 Treatment Options

Treatment	How It Helps	What to Know
Lifestyle measures (cold avoidance, layering)	Prevent triggering vessel spasm	Gloves, warm socks, heated insoles, avoiding cold aisles; whole body warmth important — not just hands/feet
Smoking cessation	Nicotine directly constricts blood vessels	Single most important modifiable lifestyle factor
Calcium channel blockers (nifedipine)	Relax blood vessel walls; most effective medication	First-line medication; taken preventively in winter; side effects include headache/flushing
Topical nitrates (GTN cream)	Local vasodilation	Applied to digits at onset of attack; useful for targeted use
Alpha-blockers (prazosin)	Block vasoconstrictive nerve signals	Second-line if calcium channel blockers not tolerated
Prostanoids (IV infusion)	Strong vasodilation; reserved for severe cases	Specialist referral; inpatient or day-case treatment
Heated gloves / socks / insoles	Maintain peripheral warmth during cold exposure	Practical daily management; battery-heated options increasingly effective
Chemical hand warmers / heat packs	Abort or reduce attacks	Keep in pockets; use at first sign of colour change

4 Recovery / Management Timeline

Phase	Timeframe	Goals
During an attack	Immediately	Rewarm promptly — move to warm environment, place hands/feet in warm (not hot) water; avoid direct heat (burns risk due to reduced sensation)
Winter season	Proactive prevention	Medication, layering, heated accessories — track attack frequency to assess treatment effectiveness
Reviewing secondary causes	Annually (or sooner if suspected)	ANA blood test; nailfold capillaroscopy if secondary Raynaud's suspected

Long-term	Ongoing	Primary Raynaud's rarely causes permanent damage; secondary Raynaud's requires specialist monitoring and may cause digital ulcers

5 Red Flags — When to Seek Urgent Help

Symptom / Sign	Action
Fingertip/toe ulcers or non-healing sores	Secondary Raynaud's with tissue damage — urgent specialist referral
Asymmetric attacks (one hand only)	May indicate thoracic outlet syndrome or localised vascular problem — investigation needed
New onset over age 40 without obvious trigger	Higher suspicion of secondary Raynaud's — blood tests to check for connective tissue disease
Joint pain, skin changes, or dry eyes/mouth alongside Raynaud's	Features of connective tissue disease (scleroderma, lupus, Sjogren's) — rheumatology referral

6 Key Takeaways

KEY TAKEAWAY 1

Primary Raynaud's is common, manageable, and rarely causes permanent damage. The key is prevention — keeping the whole body warm (not just hands and feet), avoiding triggers, and having medication available for severe episodes.

KEY TAKEAWAY 2

Whole-body warmth matters as much as local warmth — wearing a warm vest and hat reduces sympathetic nervous system activation and prevents attacks more effectively than gloves alone. The blood vessels in your extremities respond to core temperature.

KEY TAKEAWAY 3

If you develop fingertip or toe ulcers, or have joint pain, dry eyes, or skin changes alongside your Raynaud's, seek medical review — secondary Raynaud's caused by an underlying connective tissue disease requires specialist monitoring and more aggressive treatment.