

Cutaneous contact allergy to a glucose monitor

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A 52-year-old woman with type 2 diabetes presented with a history of an itchy rash on her left arm, directly corresponding to where she wore a 24-hour interstitial glucose monitor, the FreeStyle Libre (Figure 1). The rash had occurred 2 months after the patient had started using the device, and it resolved without medical treatment. When she restarted the FreeStyle Libre on her right arm, it caused a similar reaction, prompting her to discontinue its use. Our differential diagnosis included irritant and allergic contact dermatitis.

Patch testing with the North American Contact Dermatitis Group screening series and metal and (meth)acrylate series showed a sole vesicular positive reaction to isobornyl acrylate at 7 days, confirming a diagnosis of allergic contact dermatitis. Isobornyl acrylate has been isolated by gas chromatography–mass spectrometry as the responsible allergen in the FreeStyle Libre device.¹ This acrylic monomer was identified in the plastic shell around the needle of the sensor set, with subsequent migration into the skin adhesive. Causative allergens associated with other brands of glucose monitors include ethyl cyanoacrylate, known for its use in fast-acting “super glues,” and colophony, widely used in adhesives.²

Interstitial glucose monitors have become increasingly popular, as there is no need for pinpricking to monitor glucose levels. The incidence of allergic contact dermatitis related to the FreeStyle Libre device has been estimated at 0.7%.² A small subgroup of patients has managed the skin allergy by inserting protective pads, and others have switched to an alternative device.^{3,4} Physicians may wish to consider patch testing for patients who experience skin reactions to their glucose monitor.

References

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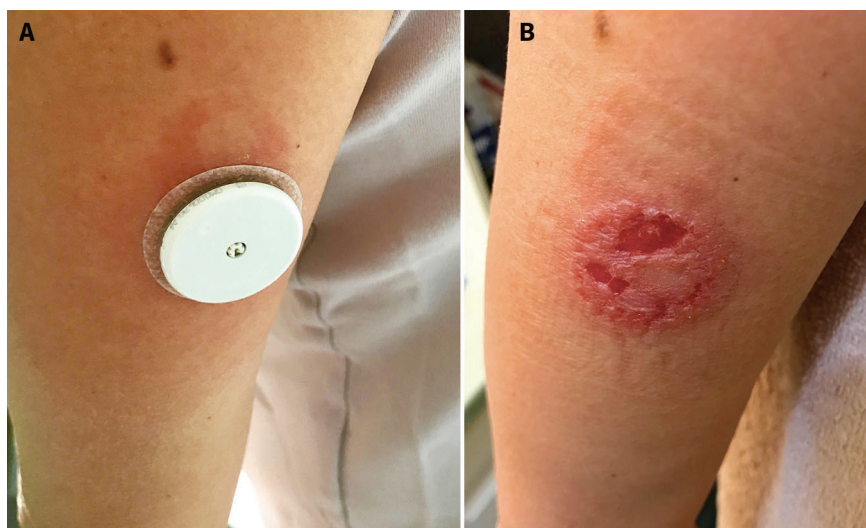


Figure 1: FreeStyle Libre device with underlying skin reaction in a 52-year-old woman with type 2 diabetes (A). Classic circular dermatitis plaque corresponding to the shape of the device (B).

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