

# Behind the scenes of snow globe toxicity.

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## Objective

To report on enquiries to the UK National Poisons Information Service (NPIS) regarding snow globes and to raise awareness of potential toxicity from ingestion of their contents.

## Method

Records of enquiries received by the NPIS between the 1<sup>st</sup> January 2008 and 31<sup>st</sup> December 2014 were interrogated retrospectively for any reference to the terms snow globe or snow scene.

## Results

A total of 57 enquiries involving 50 cases were received during the specified period. All exposures were accidental as a result of the item breaking or leaking. Children under 5-years accounted for 47 of the 50 cases; 70% of these involved males. Forty-six percent of cases were received in December and January which is unsurprising as snow globes are commonly used as Christmas decorations. The remaining cases were spread throughout the year.

Forty two (84%) patients were asymptomatic. Where skin contact was reported (n=7), pruritus and an erythematous rash occurred in three cases. Following ingestion (n=47) features included coughing and mouth ulcers. In two cases, both involving children ingesting less than 20 mL, abnormal anion (AG) and osmolar gaps (OG) were reported. Case 1: AG 23.6 mmol/L, OG 10.8 mmol/L at 20 hours post ingestion; case 2: AG 21.6 mmol/L, OG 27 mmol/L at 6 hours post ingestion. In both cases no clinical symptoms were reported and no antidote treatment for toxic alcohol poisoning was given. Unfortunately, further blood gas analysis and toxic alcohol concentrations were not available for either patient.



## Discussion

Snow globes have previously contained fine fragments of bone/porcelain in distilled water. More recently however, contents have changed to calcium carbonate in distilled water with added glycerol to slow the fall of the fragments. Manufacturers have also started adding ethylene glycol, reportedly up to 20%<sup>1</sup> of the volume of water to reduce the risk of freezing during transit or storage.

## Conclusion

At time of writing no serious cases of toxic alcohol poisoning have been identified in these data or in published literature, but the abnormal blood results in these children warrant greater consideration as to the risks of poisoning via ingestion, particularly in young children.

## References

1. Patterson C, Bell-Davis P, Rawls H, Schreiber MC, Schauben JL. Ethylene Glycol Content of Snow Globes. Clin Toxicol 2007; 45: 635. Picture: <https://www.flickr.com/photos/stevewilhelm/5289892170>