



# Syncopal seizure semiology in children



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## Introduction

Reflex Asystolic Syncope, often called "Reflex Anoxic Seizures" or "White Breath Holding Spells", is a common but under reported neurally mediated syncope presenting in infants and toddlers. The child collapses, pale, stiff and typically asystolic, generally in response to a sudden pain or surprise. Ictal recordings show asystole commonly from 6 to 30 seconds<sup>1,2,3</sup>.

Following the analysis of an initial questionnaire of the STARS information and family support group, a new collaborative study was set up with help from a child neurologist and a child and adolescent psychiatrist.

## Objectives

To gain a clearer understanding of the ictal semiology of syncopal seizures in children with reflex asystolic syncope (RAS), also known as "Reflex Anoxic Seizures" or "White Breath Holding Spells"

## Methods

The STARS membership was approached and asked to complete and return a short self-report questionnaire.

The data was anonymised and analysed using the SPSS 10 statistical package.

## Results

### Respondents:

292/650 (45%) questionnaires returned  
239/292 respondents under 17 years of age  
90/239 (37%) were male  
Mean age 7.9 years (range 0.25-16.8 years)

## Diagnosis was made by:

Paediatric Cardiologist	3%
Paediatric Neurologist	12%
General Paediatrician	65%
General Practitioner	8%
Non-medical	12%

## Previous Diagnoses

72% had a different diagnosis initially.

Breath holding	50%
Epilepsy	27%
Temper Tantrums	20%
Allergy	5%

## Usual triggers reported

Pain	85%
Surprise	65%
Fear	27%
Tiredness	30%

## Acknowledgements

We would like to thank all the families who helped by completing and returning questionnaires and all the STARS volunteers who made the survey possible.

[www.stars.org.uk](http://www.stars.org.uk)

## Seizure description

cries out before	75%
usual seizure 30 sec - 2 min	83%
body stiffening	77%
body limp	73%
limbs jerking or waving	55%
limbs extended hands in	47%
limbs extended arms out	25%
white or grey complexion	93%
blue lips	85%
incontinent of urine	57%
ictal injury ever	29%
usual post-ictal sleep 1 hr +	65%
usual post-ictal sleep 2 hr +	43%

## Conclusions

RAS are frequently misdiagnosed and typically have features commonly presumed to suggest an epileptic basis.

Tonic, tonic-clonic and hypotonic seizures may be due to syncope in children and are not necessarily epileptic.

The recognition that not all "genuine seizures" are epileptic will help avoid misdiagnosis.

## References

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