



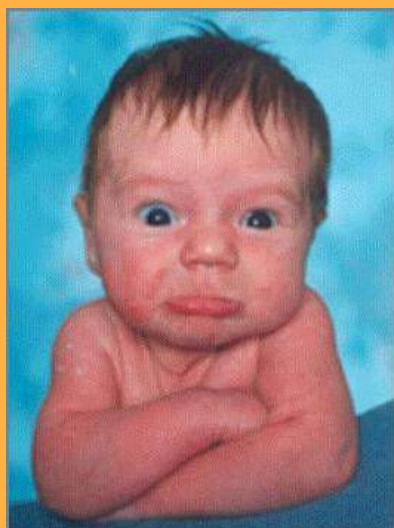
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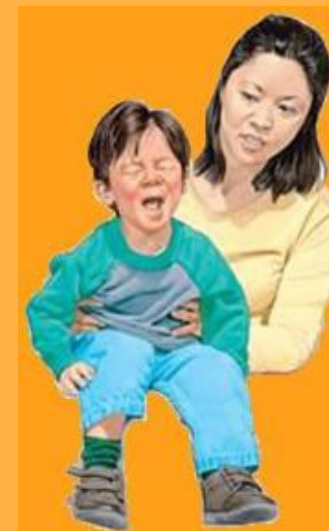


# Iron Supplementation for Breath-holding Attacks in Children: A Cochrane Systematic Review



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## Breath-holding attacks (*or spells*)

- Reproducible paroxysmal events
- Precipitated by noxious stimulus
- 15% tonic-clonic movements (EEG silent)
- Only occur when awake (unlike apnoeas)

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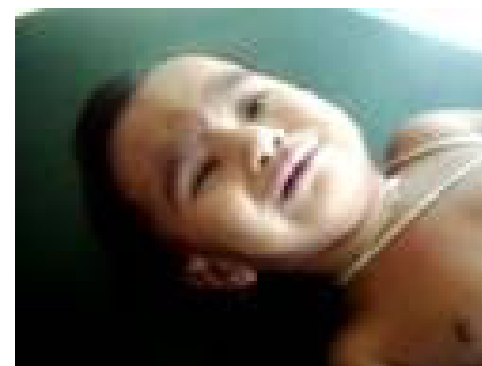
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## Types

- Cyanotic: Pallid: Mixed  
5 : 3 : 2
- Pathophysiologically indistinct
- No differences prognostically
- Both types in one family  
and individual



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## Prevalence

- 5% children
- Males = females
- Most 6 months – 6 years
- 2/3 multiple BHA per day
- 1/3 family history
- Spontaneously cease by 8 yrs age
- Higher rates of syncope as adolescents

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## Why treat?

- ↓ Carer stress
- ↓ Childhood morbidity
- ↓ Health care presentations
- ↓ Use of resources
- ↓ Cost



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## Why Iron?

- Deficiency → Poor behaviour
- ↑ Neurotransmitter synthesis & function
- ↑ Myelination
- Anaemia treatment  $\approx$  BHA cessation
- Inexpensive
- Safe
- Generally well tolerated orally

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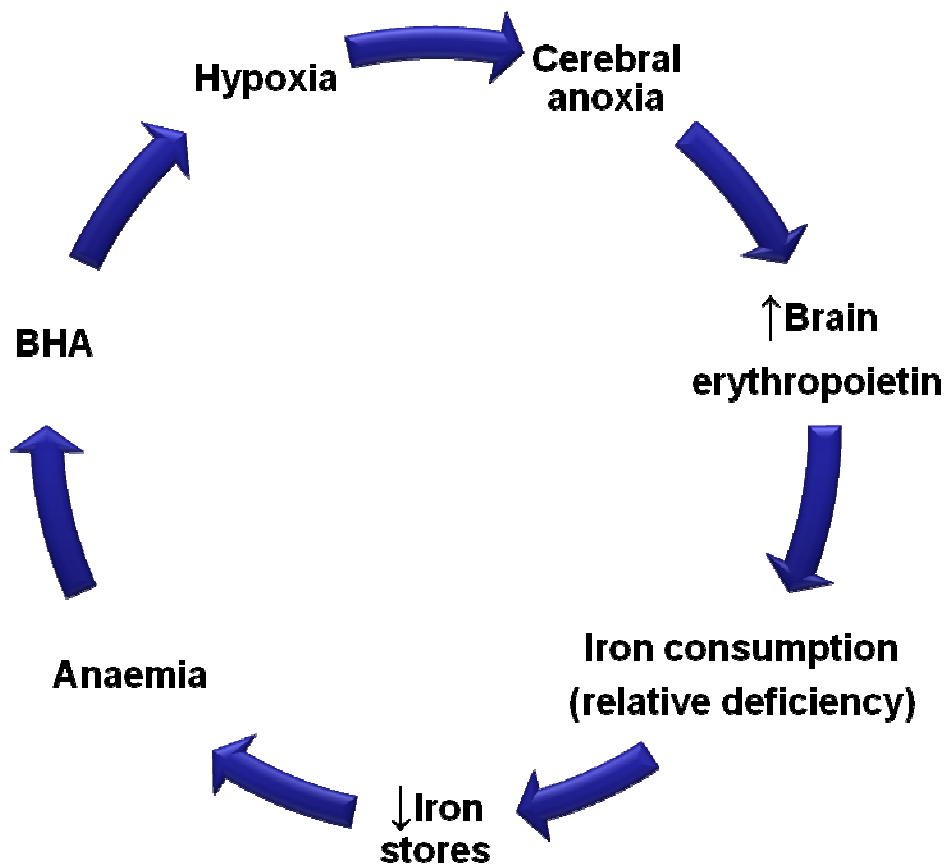




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## Systematic Review

- Children 0-18 yrs, RCT/quasi-RCT
- Secondary outcomes, subgroup analysis

## Search strategy

- Databases (CENTRAL, MEDLINE, EMBASE, PsycINFO, etc)
- Conference presentations/clinical experts
- Pharmaceutical companies

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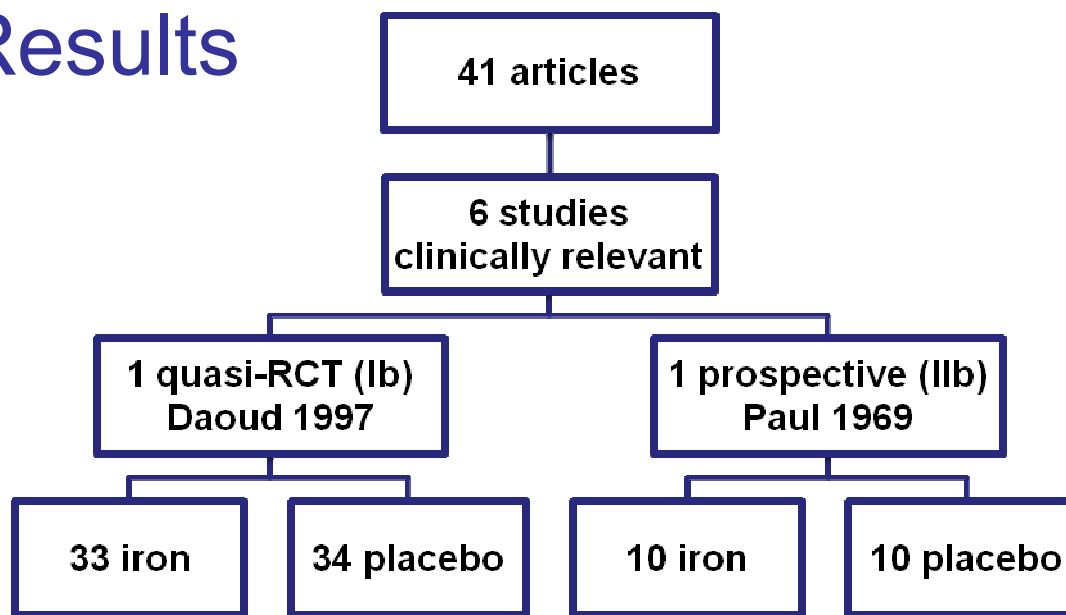
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## Search Results



- 5 mg/kg/day elemental iron for 3 months
- Outcome: complete or partial ( $\geq 50\%$ ) BHA remission

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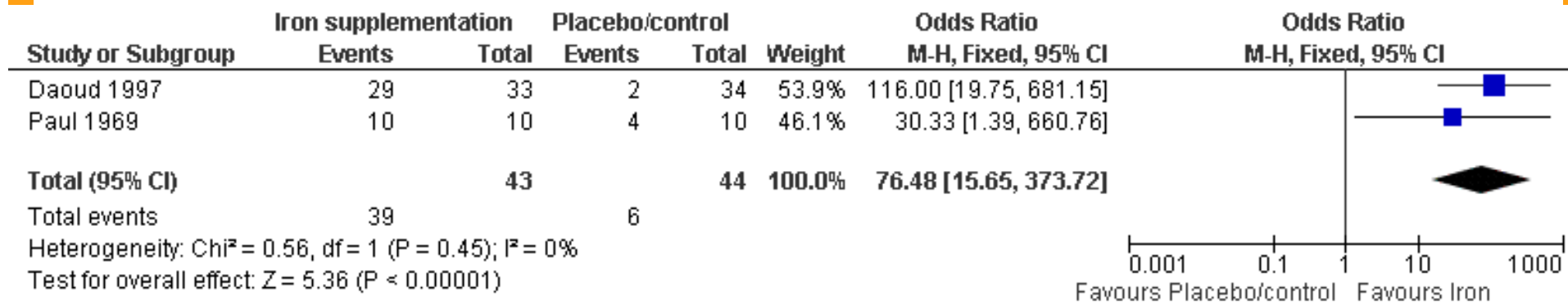
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## Complete or partial remission of BHA

- 39/43 (91%) iron vs 6/44 (14%) control group

**OR 76.48 (95% CI from 15.65 to 373.72)**



**(P value < 0.00001)**

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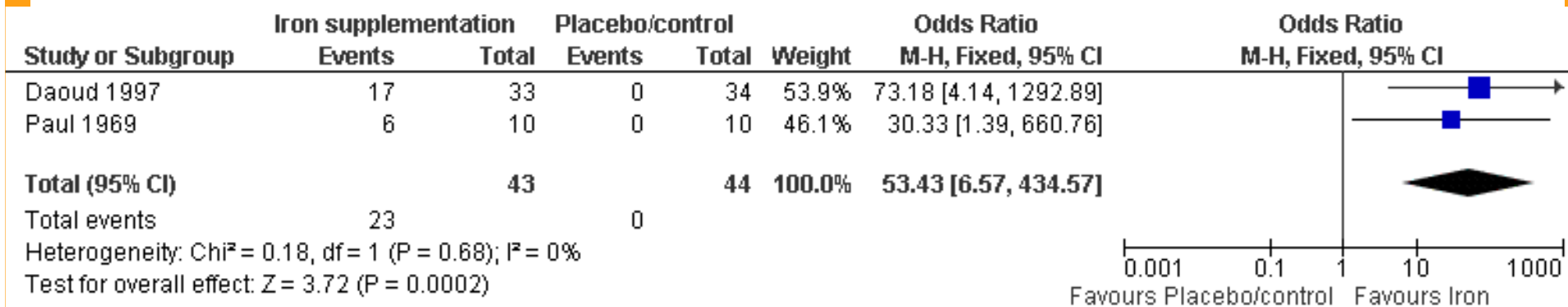
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## Complete resolution of BHA

- 23/43 (53%) iron vs 0/44 (0%) control group

**OR 53.43 (95% CI from 6.57 to 434.57)**



**(P value = 0.0002)**

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## Limitations

- Anaemic population
- Consanguinity
- Not blinded
- Co-interventions

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## The Future

- Double-blinded RCTs
- Non-anaemic children
- Developed countries
- Non-tertiary settings
- Longer follow-up

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## Key Message

- Elemental iron 5mg/kg/day for 3 months

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<http://www.chw.edu.au/parents/factsheets/breathj.htm>

(under Emotional & Behavioural Problems)

fact sheet



# Questions ?



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