

HEADSMART

be **brain tumour** aware

**Brain tumours kill more children
and young people than leukaemia**

**It takes longer for them to be diagnosed
in the UK than in many other countries**

**Earlier diagnosis can improve the outcome -
saving lives and reducing long-term disability**

**This leaflet is designed to give you the information
you need to be brain tumour aware and feel more
confident in diagnosing brain tumours in children.**

www.headsmart.org.uk

Introducing HeadSmart

HeadSmart is a national campaign which aims to raise public awareness of childhood brain tumour signs and symptoms, in order to reduce the time to diagnosis, which can mean better outcomes for patients.



A major part of its role is to help healthcare professionals, particularly GPs, paediatricians, emergency medicine doctors, health visitors and school nurses, recognise the signs and symptoms that may be indicative of brain tumours in children and young people and to act on them appropriately.

Be brain tumour aware

Childhood brain tumours are relatively rare and have a very varied presentation. The symptoms and signs that precede diagnosis are diverse, fluctuate in severity and differ according to the tumour location and the developmental stage of the child. Many of the initial symptoms and signs of brain tumours are non-specific and mimic other more common and less serious disorders.

Added to this, GPs will typically see only one, maybe two, childhood brain cancers in their whole career.

HeadSmart has produced a number of resources and educational tools to help overcome these issues and enable health professionals to feel more confident in their ability to diagnose these brain tumours.



HEADSMART
be brain tumour aware

Tools for healthcare professionals

Diagnosis of Brain Tumours in children guideline

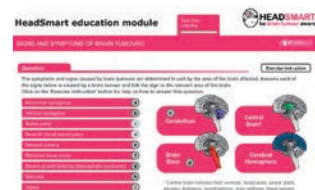
- ❖ An NHS Evidence accredited, RCPCH endorsed, best practice guideline to assist clinicians in the assessment of children and young people presenting with signs and symptoms that may be due to a brain tumour.

This is also available in **Quick Reference Guide** format and a **Guideline Summary** is available at the back of this leaflet.



Other resources, based on the accredited guideline, include:

- ❖ **Website** with information for parents and young people, plus additional information for healthcare professionals including when to reassure, when to review and when to refer for a scan www.headsmart.org.uk
- ❖ **Online Interactive Education Module** designed to help health professionals improve their knowledge of brain tumour presentation in children and young people and of the links between brain structure and function. www.headsmart.org.uk/edu/launch.html



"Interesting, informative and definitely needed. I would like to forward this to all the paediatricians and GPs I know."
(Consultant Paediatrician specialising in Paediatric Oncology)

- ❖ **Posters** for display in GP practices and other healthcare settings
- ❖ **Detailed symptoms leaflet** - explaining the HeadSmart campaign to health professionals
- ❖ **Wallet-sized symptoms card** - for parents to take away
- ❖ **Symptoms card holders** - to display symptoms cards in waiting rooms etc.



All these resources are available via the
HeadSmart website www.headsmart.org.uk

Recognising the signs of a brain tumour

Diagnosing a brain tumour is not easy and the initial symptoms may mimic those of less serious illnesses. Symptoms of brain tumours vary according to tumour location and the age of the child or young person. The symptoms of a brain tumour can vary in children of different ages, but common signs across all age groups include:

- ⌘ Headaches
- ⌘ Vomiting
- ⌘ Poor balance
- ⌘ Difficulty walking
- ⌘ Abnormal eye movements
- ⌘ Deteriorating vision
- ⌘ Fits or seizures

If a child is aged 5 or under, signs of a brain tumour might include:

- ⌘ Persistent / recurrent vomiting
- ⌘ Balance / co-ordination / walking problems
- ⌘ Abnormal eye movements
- ⌘ Behaviour change, particularly lethargy
- ⌘ Fits or seizures (not with a fever)
- ⌘ Abnormal head position such as wry neck, head tilt or stiff neck

Any child presenting with persistent symptoms i.e. for more than 2 weeks (or, in the case of headaches, for more than 4 weeks) requires consideration as to whether the symptoms could be due to a brain tumour.

If a child is aged between 5 and 11 years old, signs of a brain tumour might include:

- ⚡ Persistent / recurrent headache
- ⚡ Persistent / recurrent vomiting
- ⚡ Balance / co-ordination / walking problems
- ⚡ Abnormal eye movements
- ⚡ Blurred or double vision
- ⚡ Behaviour change
- ⚡ Fits or seizures
- ⚡ Abnormal head position such as wry neck, head tilt or stiff neck

Among the 12-18 age group, signs of a brain tumour might include:

- ⚡ Persistent / recurrent headache
- ⚡ Persistent / recurrent vomiting
- ⚡ Balance / co-ordination / walking problems
- ⚡ Abnormal eye movements
- ⚡ Blurred or double vision
- ⚡ Behaviour change
- ⚡ Fits or seizures
- ⚡ Delayed or arrested puberty, slow growth

Symptoms frequently fluctuate - resolution then recurrence does NOT exclude a brain tumour - nor does a normal neurological examination.

Guideline summary

Headaches

Consider a brain tumour in any child presenting with a new, persistent* headache
Brain tumour headaches occur at any time
Children aged younger than 4 years may not be able to complain of a headache - observe behaviour

CNS imaging required for:

- Persistent* headaches that wake a child from sleep
- Persistent* headaches that occur on waking
- Persistent* headaches at any time in a child younger than 4 years
- Confusion or disorientation and a headache

Common headache pitfalls

Failure to re-assess a child with a migraine or tension headache when the headache character changes

**Persistent = continuous or recurrent headache present for more than 4 weeks*

Nausea and vomiting

Consider a brain tumour in any child presenting with persistent* nausea and / or vomiting
A child with persistent* nausea and / or vomiting requires specialist assessment within 2 weeks

CNS imaging required for:

- Persistent* vomiting on awakening (NB: exclude pregnancy where appropriate)

Common vomiting pitfalls

Failing to consider a CNS cause for persistent nausea and vomiting

**Persistent = nausea and / or vomiting present for more than 2 weeks*

Visual symptoms and signs

Consider a brain tumour in any child presenting with a persisting* visual abnormality
Visual assessment requires assessment of:

- Acuity
- Eye movements
- Pupil responses
- Optic disc appearance
- Visual fields (≥ 5 years)

Pre-school and uncooperative children should be assessed by hospital eye service within 2 weeks of referral

CNS imaging required for:

- Papilloedema
- Optic atrophy
- New onset nystagmus
- Reduction in acuity not due to refractive error
- Visual field reduction
- Proptosis
- New onset paralytic (non-comitant) squint

Common visual pitfalls

Failure to fully assess vision in a young or uncooperative child (REFER IF NECESSARY)

Failure of communication between community optometry and primary and secondary care

**Persistent = visual abnormality present for more than 2 weeks*

Diagnosis of Brain A Guideline for Hea

Referral from primary care:

- High risk of tumour -
same day referral to secondary care
- Lower* risk -
specialist assessment within 2 weeks

Consider a brain tumour in

Headache

Nausea and / or vomiting

Visual symptoms and signs

- reduced visual acuity and / or fields
- abnormal eye movements
- abnormal fundoscopy

Diabetes insipidus

Seizures

(see www.nice.org.uk/CG137)



Assess these children using:

History: Associated symptoms
Any predisposing factors

Assessment of:
Visual system
Motor system
Height and weight
Head circumference
(<2 years)
Pubertal status

Tumours in Children: Ithcare Professionals

Guideline Summary taken from the
'Diagnosis of Brain Tumours in Children -
Quick Reference Guide, Version 3, March 2011'

Guideline Summary also available in larger poster format

Both available from the HeadSmart website
www.headsmart.org.uk

Imaging

High risk of tumour -
urgent *CNS imaging*
Lower* risk -
CNS imaging within 4 weeks

*Lower risk =
CNS tumour in differential diagnosis,
low index of suspicion

any children presenting with:

Motor symptoms and signs

abnormal gait
abnormal co-ordination
focal motor weakness

Growth and developmental abnormalities

growth failure (weight / height)
delayed, arrested or
precocious puberty

Behavioural change

Altered consciousness

(see www.nottingham.ac.uk/paediatric-guideline)

Motor symptoms and signs

Consider a brain tumour in any child presenting with a persisting* motor abnormality
Motor assessment requires observation of:

Sitting and crawling in infants
Walking and running
Handling of small objects
Handwriting in school age children

Brain tumours may cause a deterioration or change in motor skills - this can be subtle
e.g. change in hand preference

CNS imaging required for:

Regression in motor skills
Focal motor weakness
Abnormal gait and / or co-ordination (unless local cause)
Bells palsy with no improvement within 4 weeks
Swallowing difficulties (unless local cause)

Common motor pitfalls

Attributing the abnormal balance or gait caused by a cerebellar lesion to middle ear disease
Failure to identify swallowing difficulties and aspiration as the cause of recurrent chest infections

*Persistent = motor abnormality present for more than 2 weeks

Growth and development

Consider a brain tumour in any child presenting with any combination of growth failure, delayed / arrested puberty and polyuria / polydipsia

Early assessment is required for a child presenting with:

Precocious puberty
Delayed or arrested puberty
Growth failure

Common growth and development pitfalls

Failure to consider a CNS cause in children with vomiting and weight loss
Failure to consider diabetes insipidus in children with polyuria and polydipsia

Behaviour

Lethargy is the most common behavioural abnormality that occurs with brain tumours

Assessment pitfalls

The **initial symptoms** of a brain tumour frequently mimic those that occur with common childhood conditions.

Symptoms frequently fluctuate - resolution and then recurrence does not exclude a brain tumour.

A normal **neurological** examination does not exclude a brain tumour.

Language difficulties:

use interpreting service if necessary

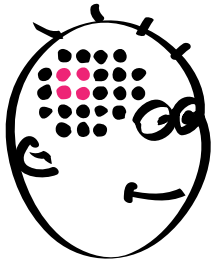
Common predisposing factors

Personal or family history of a brain tumour,
leukaemia, sarcoma or early onset breast cancer
Prior therapeutic CNS radiation
Neurofibromatosis (www.nfauk.org)
Tuberous sclerosis (www.tuberous-sclerosis.org)
Other familial genetic syndromes



This guideline was developed by The Children's Brain Tumour Research Centre, University of Nottingham.

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The HeadSmart Campaign is run by a partnership between the Children's Brain Tumour Research Centre (CBTRC) at The University of Nottingham, The Brain Tumour Charity and the Royal College of Paediatrics and Child Health (RCPCH).

The campaign is funded and promoted by The Brain Tumour Charity. It is supported by the Royal College of GPs, the Association of Paediatric Emergency Medicine and the Children's Cancer and Leukaemia Group (CCLG).

If you would like to talk to someone about brain tumours, or have been affected by the HeadSmart campaign, please contact the Support & Info Line at The Brain Tumour Charity on:

Freephone 0808 800 0004
free from landlines and most mobiles
or email info@headsmart.org.uk

CBTRC Charitable Status Inland Revenue Number: X15294

The Brain Tumour Charity Registered Charity no:
1150054 (England and Wales) SC042096 (Scotland)

RCPCH Registered Charity no: 1057744

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www.headsmart.org.uk

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