

Announcement

IFAS Imaging Guidelines as part of the Clinical Management of Paediatric (Under 16) Strangulation

In July 2025 IFAS convened an intercollegiate working group to develop guidelines for the clinical management of Paediatric (under 16) strangulation.

The draft guidance that was developed is currently being circulated to the various organisations/ Royal Colleges for comment and hopefully endorsement.

We are aware that in the absence of any existing paediatric guidelines, many clinicians have been using guidelines previously published by IFAS in Feb 2024 which are aimed at adolescents and adults ([Guidelines for clinical management of non-fatal strangulation in acute and emergency care services - Institute for Addressing Strangulation](#)). This, together with the growing evidence base regarding paediatric imaging post NFS, there is concern that children and young people are being imaged unnecessarily.

With this in mind and taking into account that the process of receiving feedback etc. on the draft guidelines may take several months, IFAS, in agreement with the Working Group members has decided to publish the imaging element of the draft guidelines, alongside the evidence base relied on. We appreciate that these:

- are only some elements of the guidelines
- only cover the imaging aspect and not the overall assessment of the patient
- are draft and not yet endorsed by the various organisations / Royal Colleges

However, we hope that they are useful to clinicians when managing these patients whilst awaiting the full guidance which we aim to publish soon.

Professor Cath White
Medical Director IFAS
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Box B (Paed): Red Flags Indications for Imaging related to the strangulation
(determine if the CYP **currently** has any of the following)

Airway	Possible airway compromise such as stridor / objective signs of airway obstruction
Breathing	- Dyspnoea - Objective signs of breathing compromise such as pallor, cyanosis, altered respiratory rate, increased work of breathing, reduced oxygenation, altered heart rate, altered BP¹ - Subcutaneous emphysema
Circulation	*Assess for haemodynamic stability and refer to trauma guidelines ^{2,3}
(C-Spine)	Clinical suspicion of cervical spine injury See NICE guidance ⁴
Disability	- Paediatric Glasgow Coma Scale⁵ (GCS) less than 13 - New onset neurological signs - Seizure - Stroke
Exposure	Subcutaneous emphysema
- In the available evidence base literature there were no specific circulation markers related to NFS to indicate imaging is required. - Clinical suspicion of head injury see NICE guidance⁶	

Box C (Paed): Imaging – should be done within 1 hour of request with urgent report as per trauma guidelines^{7,8}

Clinical Signs	Recommended Imaging
Stridor/ Airway Obstruction	CT Neck with Contrast*
Dyspnoea/ Subcutaneous Emphysema	Chest X-Ray PA or AP as appropriate – ideally erect
Clinical suspicion of C-Spine Injury	CT Cervical Spine- as per NICE guidance ⁹
GCS <13 or new onset neurological signs - Seizure - Stroke	Volumetric Unenhanced CT Head

* CT neck angiogram is not recommended in children in this context. CT neck with contrast (images acquired around 30 seconds after contrast injection) is typically preferred.

- Consider C-Spine X rays as per NICE guidance⁹ if CT C-spine criteria not met.
- Skeletal survey decisions to be made as part of safeguarding assessments, as per relevant guidance¹⁰.
- ENT assessment should be considered in addition to imaging¹¹.

Evidence base for imaging recommendations

A review of the literature was undertaken when considering the evidence base for these guidelines. The publications (see below) demonstrated that vascular injuries were rarely being detected with CT angiograms. Hypoxic-ischaemic encephalopathy and pulmonary injury such as pneumothorax were more common and associated with increased mortality.

In addition, UK data was informally collected from 30 hospitals over a period of 3 months during the development of these guidelines. Of the 106 consecutive CYP (17 years and under) presenting with history of NFS, mostly in the last 4 years, having undergone CT neck angiography, **none** were found to have a cervical vascular injury or cervical bony fracture. In this cohort, 66/106 had CT head imaging and 10/66 had imaging features of hypoxic/anoxic brain injury (all 10 of them had low GCS in the range of 3-5 and had cardiac arrest at the time of strangulation). 2/10 patients with brain injury died a few days later secondary to the hypoxic brain damage from the strangulation event” – Kapadia et al (under review).

Publication	Numbers included	Age range	Findings
Gorski JK, Smith CM, Ramgopal S. Injury patterns and mortality associated with near-hanging in children. <i>Am J Emerg Med.</i> 2024 Jan;75:83-86. doi: 10.1016/j.ajem.2023.10.039. Epub 2023 Oct 26. PMID: 37924732.	1929	<17 years	38.7% underwent neck angiography - BCVI noted in 0.9%
Swendiman RA, Scaife JH, Barnes KL, Bell TM, Roach CM, Iyer RR, Brockmeyer DL, Russell KW. Hanging and Strangulation Injuries: An Institutional Review From a Level 1 Pediatric Trauma Center. <i>J Pediatr Surg.</i> 2023 Oct;58(10):1995-1999. doi: 10.1016/j.jpedsurg.2023.02.056. Epub 2023 Feb 28. PMID: 37002058.	128	<19 years	53/54 CTAs normal. In one the finding deemed not clinically significant.
Kline-Fath, B.M., Seman, J.M., Zhang, B. et al. Pediatric hanging and strangulation: is vascular injury a true risk?. <i>Pediatr Radiol</i> 51 , 1889–1894 (2021). https://doi.org/10.1007/s00247-021-05056-1	66	1-18	No cervical arterial injury detected.

¹ Assessment of severity of respiratory conditions. The Royal Children’s Hospital Melbourne [Clinical Practice Guidelines : Assessment of severity of respiratory conditions](#) Last accessed 11.2.2026

² Djakow J, Turner N, Skellett S. European Resuscitation Council Guidelines 2025 Paediatric Life Support Resuscitation, 215

³ American College of Surgeons. Advanced Trauma Life Support (ATLS) Student Course Manual.11th ed. Chicago (IL) American College of Surgeons 2025.

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- ⁴ <https://www.nice.org.uk/guidance/ng232/chapter/Recommendations#investigating-injuries-to-the-cervical-spine>
- ⁵ Reilly, P.L., Simpson, D.A., Sprod, R. *et al.* Assessing the conscious level in infants and young children: a paediatric version of the Glasgow Coma Scale. *Child's Nerv Syst* **4**, 30–33 (1988). <https://doi.org/10.1007/BF00274080>
- ⁶ Head injury: assessment and early management. Nice guideline NG232 Published 18 May 2023
<https://www.nice.org.uk/guidance/ng232>
- ⁷ Major paediatric trauma radiology guidance. RCR. October 2024. [rcr-major-paediatric-trauma-radiology-2024_.pdf](#)
- ⁸ [Stroke in childhood - clinical guideline for diagnosis, management and rehabilitation | RCPCH](#) 2017.
- ⁹ Head injury: assessment and early management. Nice guideline NG232 Published 18 May 2023
<https://www.nice.org.uk/guidance/ng232>
- ¹⁰ The radiological investigation of suspected physical abuse in children. Revised first edition (December 2018) The Royal College of Radiologists [The radiological investigation of suspected physical abuse in children](#)
- ¹¹ Hackett AM, Kitsko DJ. Evaluation and management of pediatric near-hanging injury. *Int J Pediatr Otorhinolaryngol.* 2013 Nov;77(11):1899-901. doi: 10.1016/j.ijporl.2013.09.003. Epub 2013 Sep 13. PMID: 24094721.