



Institute For
Addressing
Strangulation

Non-Fatal Strangulation

EFJCA Conference Milan
5th September 2024

**Prof Catherine White,
Medical Director**



Ending
domestic
abuse



Faculty of Forensic & Legal Medicine
Registered Charity No 1119599



What is strangulation?

What is strangulation?

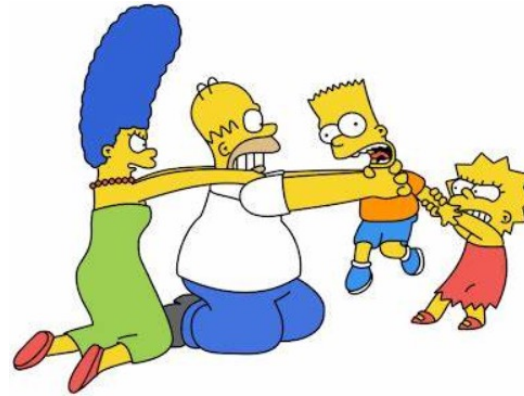
Obstruction of blood vessels and/ or airflow in the neck resulting in asphyxia.

Non-fatal strangulation

- [Section 75A\(1\)\(a\) SCA 2015](#) is the offence of non-fatal strangulation.
- The legislation does not provide a definition of 'strangulation' or 'strangles'. The word should be given its ordinary meaning which is the obstruction or compression of blood vessels and/or airways by external pressure to the neck impeding normal breathing or circulation of the blood. This offence applies where strangulation is non-fatal and does not result in death of the victim.
- Applying any form of pressure to the neck whether gently or with some force could obstruct or compress the airways or blood flow. Strangulation does not require a particular level of pressure or force within its ordinary meaning, and it does not require any injury.



Context of strangulation





NFS an important risk factor for homicide of women

Nancy Glass

J Emerg Med 2008 35(3)

A History of NFS:

X 6 times risk of becoming a victim of
attempted homicide

X 7 times risk of becoming a completed
homicide

JFLM 79 (2021) 102128

Journal of Forensic and Legal Medicine 79 (2021) 102128



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journal homepage: <http://www.elsevier.com/locate/yjflm>



Research Paper

'I thought he was going to kill me': Analysis of 204 case files of adults reporting non-fatal strangulation as part of a sexual assault over a 3 year period

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<https://authors.elsevier.com/a/1ccS3,dssAKy-7>



Strangulation in the Context of Sexual Violence

	1 in 11 for all adults
	1 in 5 where alleged perpetrator is a partner or ex-partner
	1 in 15 where alleged perpetrator is not a partner or ex-partner



Language

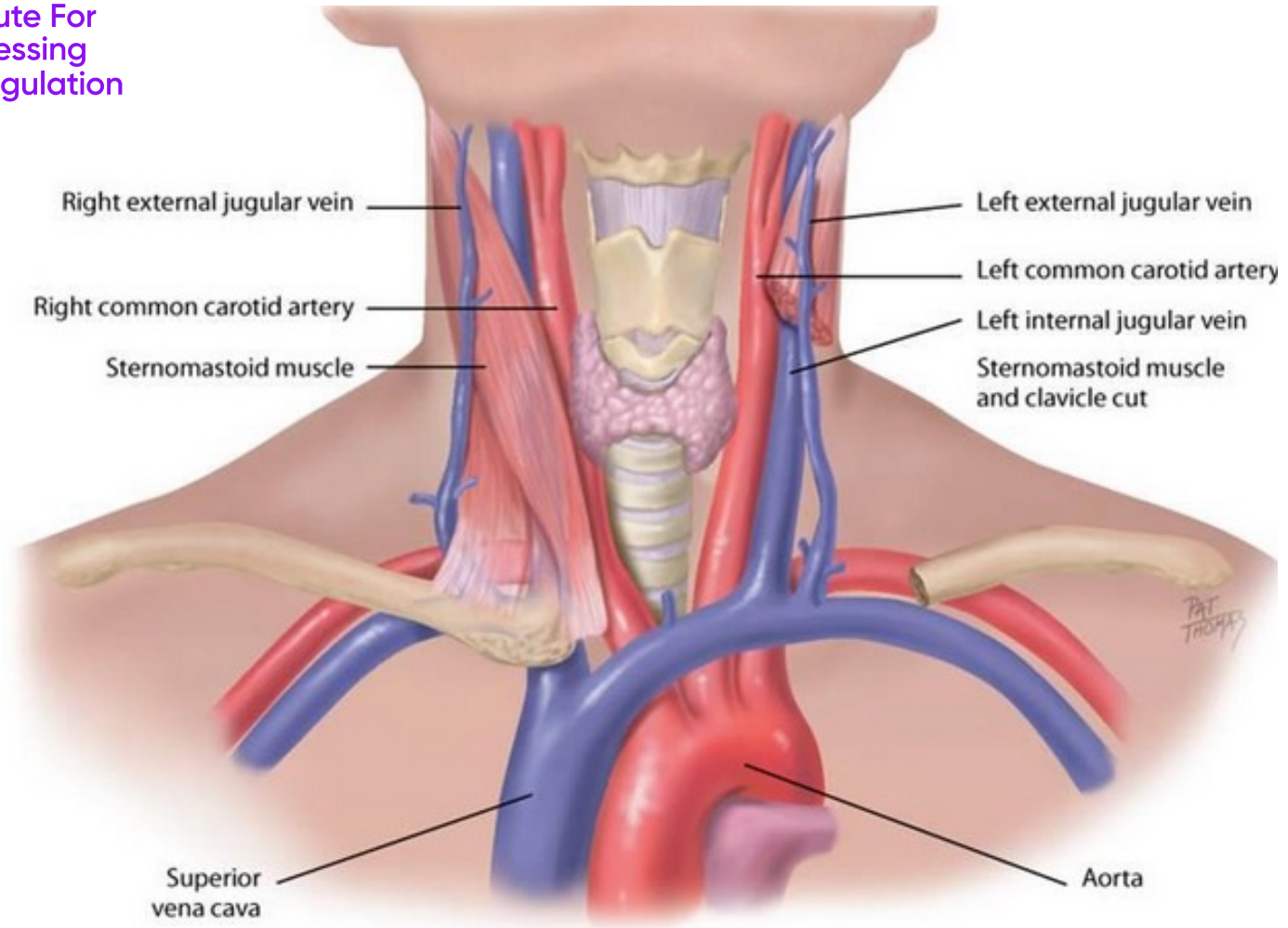
He grabbed me

He pinned me
against the wall

Breath play

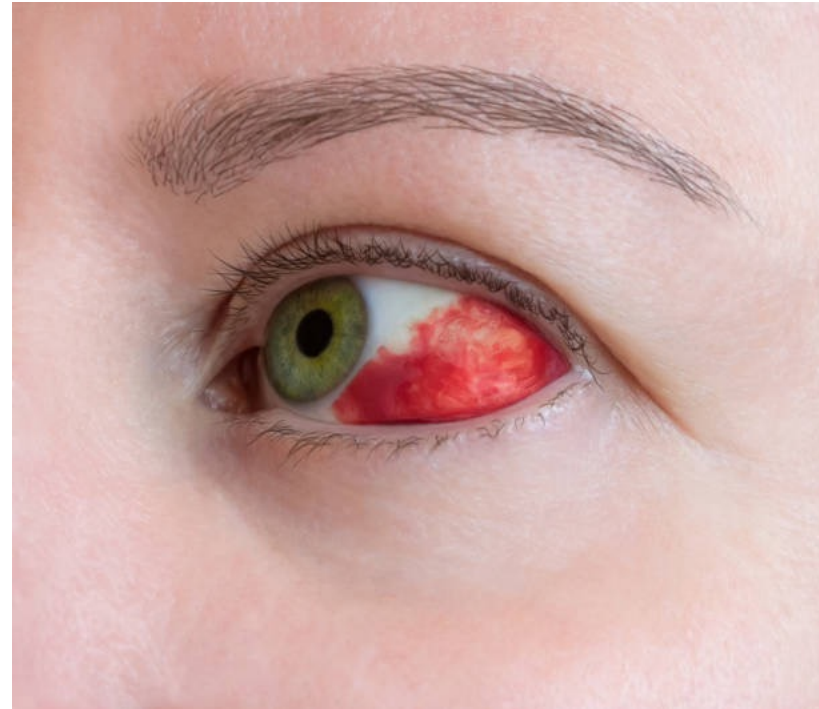
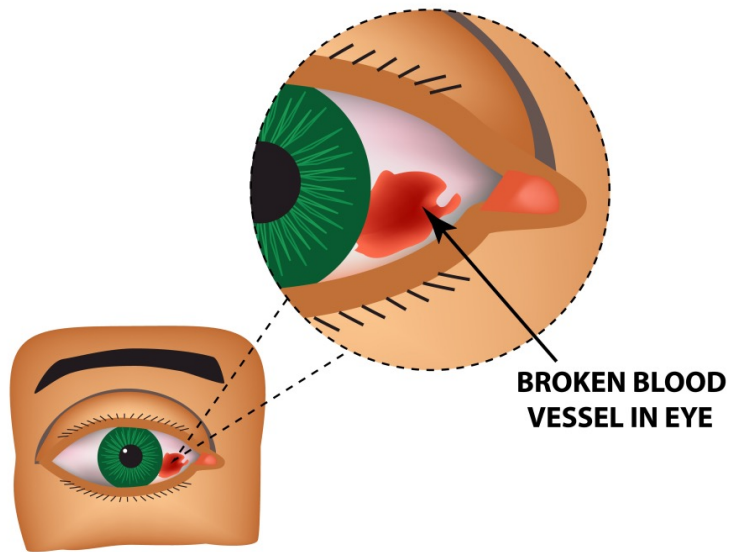


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Subconjunctival haemorrhage

SUBCONJUNCTIVAL HEMORRHAGE



Petechial haemorrhage





Pressure on the neck in adults

Jugular vein	4psi,
Carotid artery	11psi,
Trachea	34 psi.
Opening a can of coke	20psi
Adult male hand shake	80-100psi

We don't know the pressures required in children but most likely less.



Prof Catherine White



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No oxygen = no memory



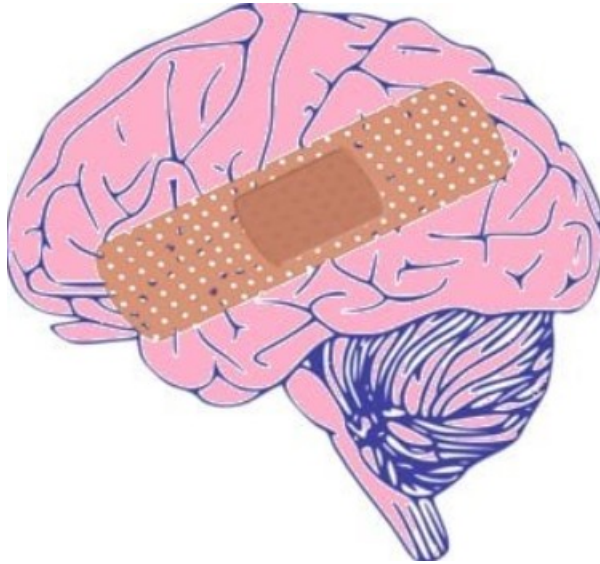
Internal injuries

- Brain
- Neck structures
 - Haemorrhage into muscles
 - Vocal cords
 - Nerves
 - Thyroid
 - Hyoid
- Blood vessels
 - Carotid artery dissection





Acquired Brain Injury



Advice regarding seeking brain injury assessment should be provided if there is history of prolonged and/or repeated strangulations and/or deficits suggestive of hypoxic brain injury that persist in the months following the incident
(Australian ED Guidance)



The Timeline



6.8 seconds

LOC

15 seconds

Bladder incontinence

30 seconds

Bowel incontinence

“I thought I was going to die”

36.6%

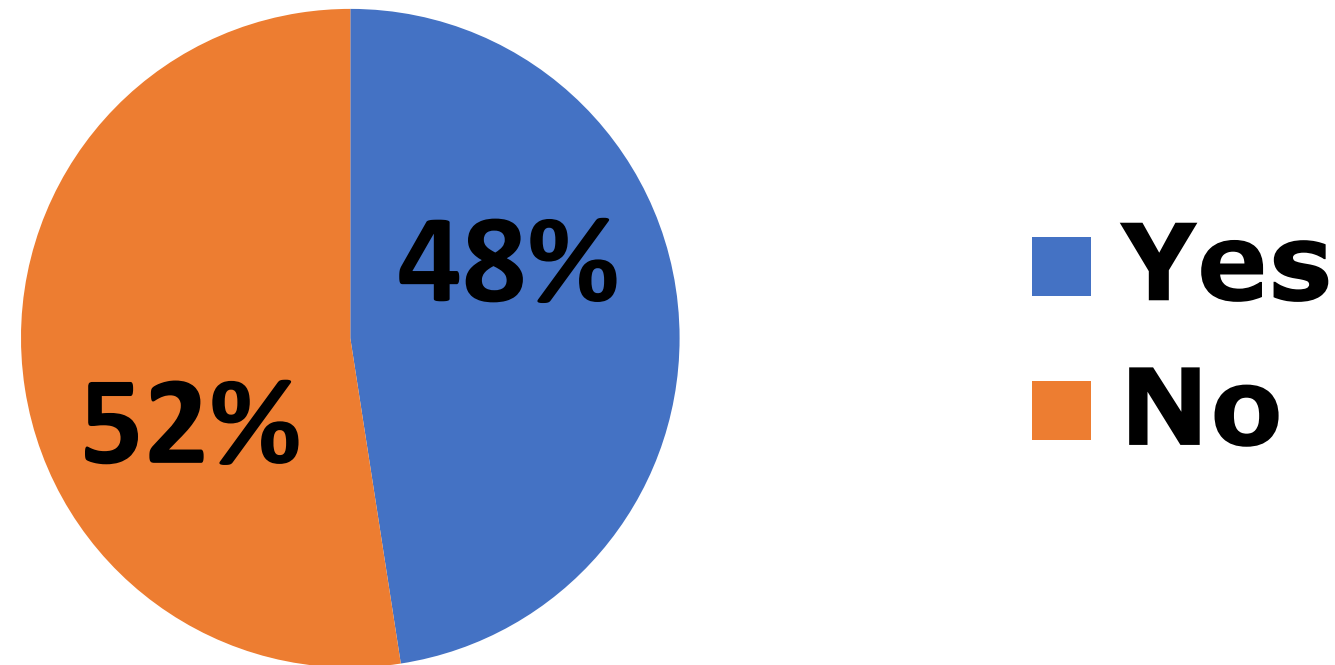


Neck & Head Injuries

Saint Mary's Adult NFS cases 2017-2019

n=204

Neck & head injury seen at FME



<https://authors.elsevier.com/a/1ccS3,dssAKy-7>

Non-fatal strangulation in children: Analysis of case files of children reporting strangulation as part of a sexual assault

Professor Catherine White (Medical Director IFAS, Forensic Physician, Saint Mary's SARC), Dr Glen Martin (The University of Manchester), & Dr Rabiya Majeed-Ariss (Saint Mary's SARC).

Background

There is increasing awareness of the prevalence and health consequences of non-fatal strangulation (NFS) in adults but less is known with regards to children and young people (CYP) i.e. those less than 18 years old.

Aims

- To identify the prevalence of NFS amongst CYP attending Saint Mary's Sexual Assault Referral Centre (SARC) for an acute forensic medical examination (FME) following a report or suspicion of rape or sexual assault.
- To explore the characteristics of these children and explore the prevalence of various symptoms and injuries associated with NFS.

Methods

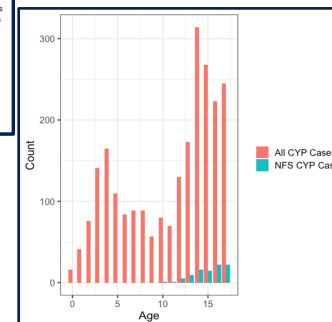
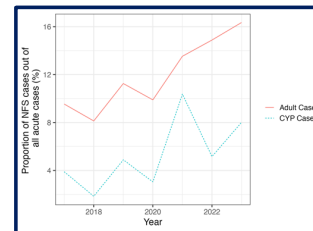
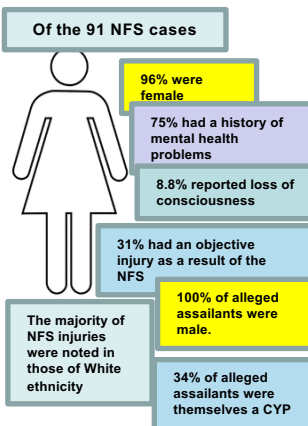
Study design: Retrospective analysis of case notes of CYP attending for an acute FME following a report or suspicion of rape or sexual assault and reporting NFS as part of that assault. Study period: 7 years, 1st Jan 2017-31st Dec 2023.

Results

- 1652 CYP attended for an acute FME in the 7-year study period.
- 91 CYP gave a history of NFS (5.1%)

- Although the overall prevalence of NFS was 5.1% for the CYP, the trend is rising (as too with adults).

- NFS is mainly seen in the older CYP, with the youngest being 10 years old.
- The mean age of CYP reporting NFS at FME was 15.1 years, compared to a mean age of 10.8 years amongst all CYP attending SARC for an FME.



Highlights and recommendations

- Whilst lower than in adults¹, the prevalence of NFS in CYP is increasing.
- Lack of visible injury does not refute NFS allegations, particularly in those with darker skin tones.
- Vulnerable children, for example those with pre-existing mental health problems, are vulnerable to sexual assault² and also strangulation.
- Professionals working with CYP should have an awareness of NFS, its signs, symptoms and management.
- Research to understand, and thereby seek to prevent, why some boys strangle others (mainly girls) is required.

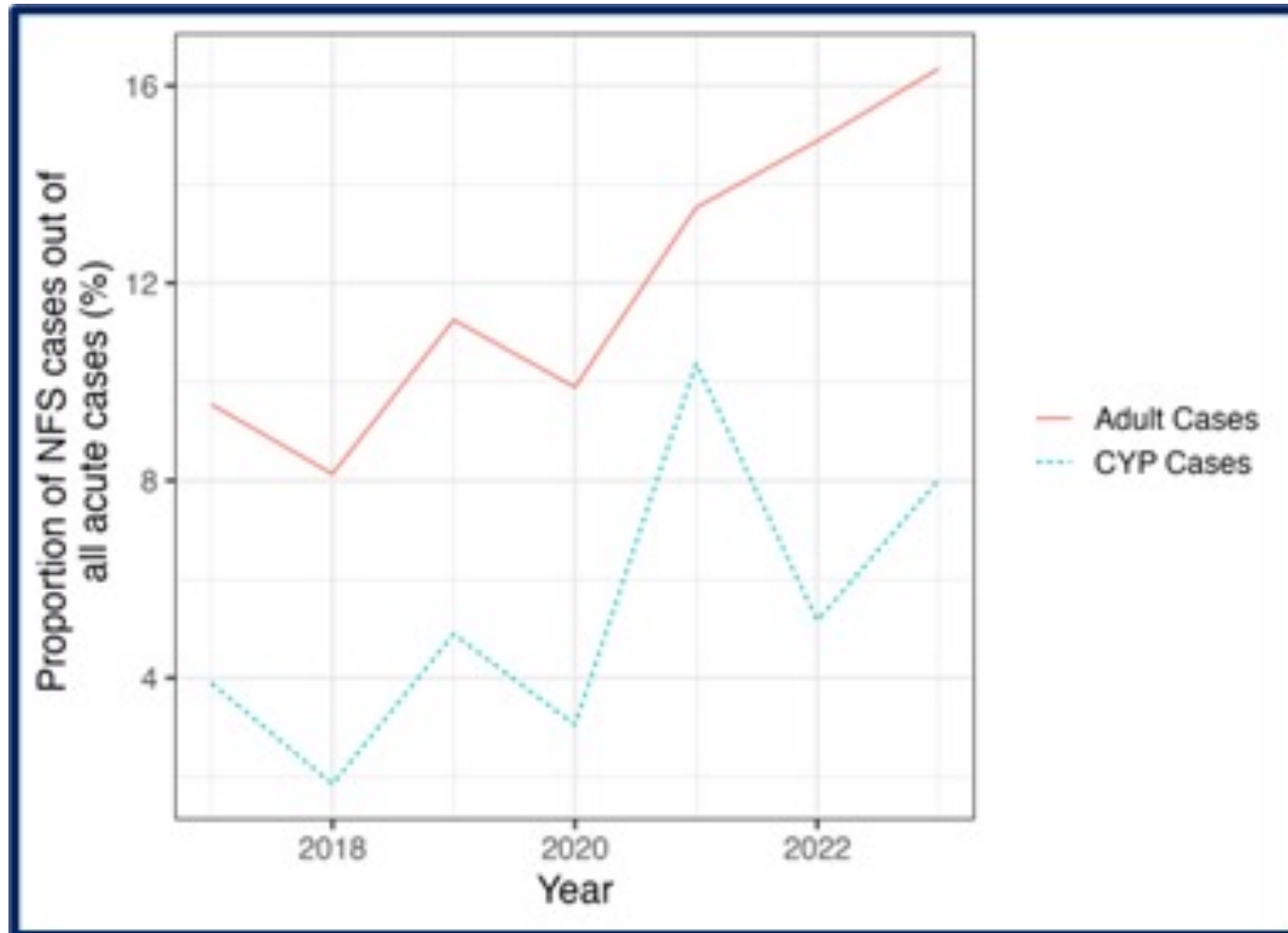
References

- White C, Martin G, Schofield AM, Majeed-Ariss R. (2021) "I thought he was going to kill me": Analysis of 204 case files of adults reporting non-fatal strangulation as part of a sexual assault over a 3-year period. *Journal of Forensic and Legal Medicine* 79 (2021) 102128
- Manning D, Majeed-Ariss R, Mattison M, White C. The high prevalence of pre-existing mental health complaints in clients attending Saint Mary's Sexual Assault Referral Centre. *J Forensic Leg Med.* 2019 Feb;61:102-107. doi: 10.1016/j.jflm.2018.12.001.



Increasing Prevalence

Saint Mary's SARC data



Age range

1652 CYP forensic medical examinations in 7 years

Age range 0-17 years

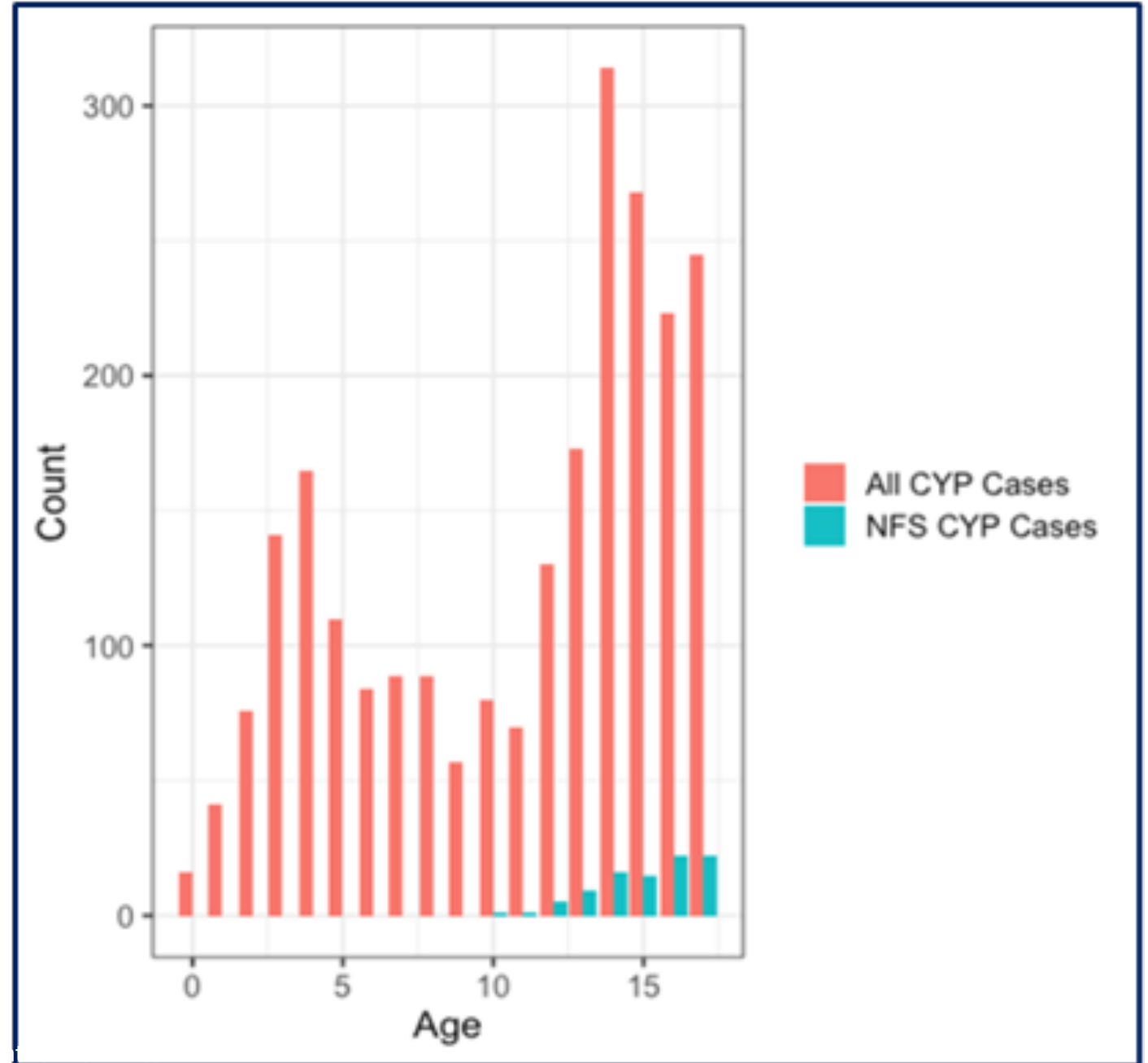
Mean **10.8** years

91 NFS CYP

10-17 years old

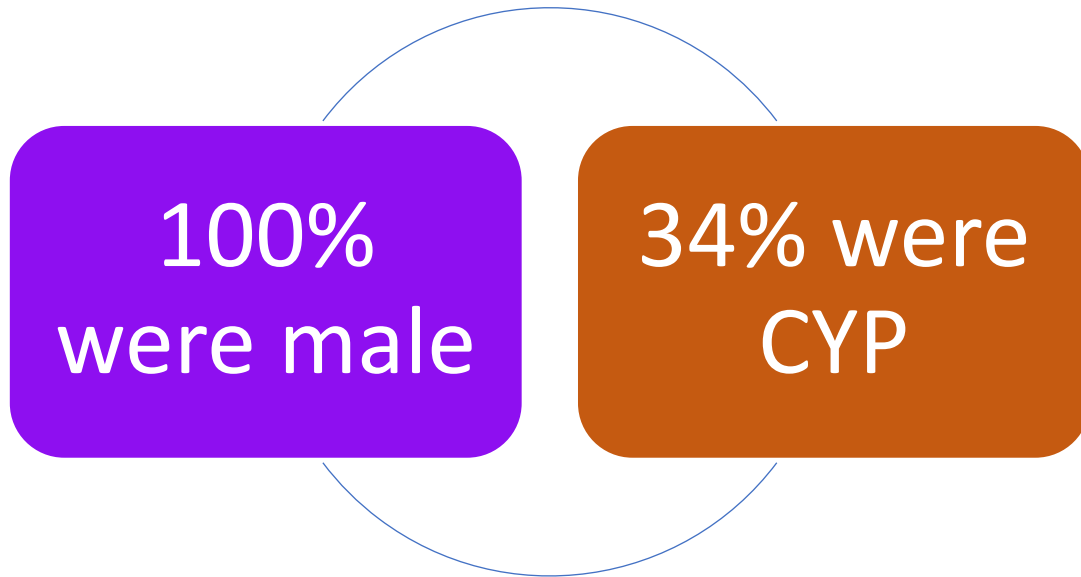
Mean **15.1** years

St Mary's SARC study



Saint Mary's SARC Child NFS Study

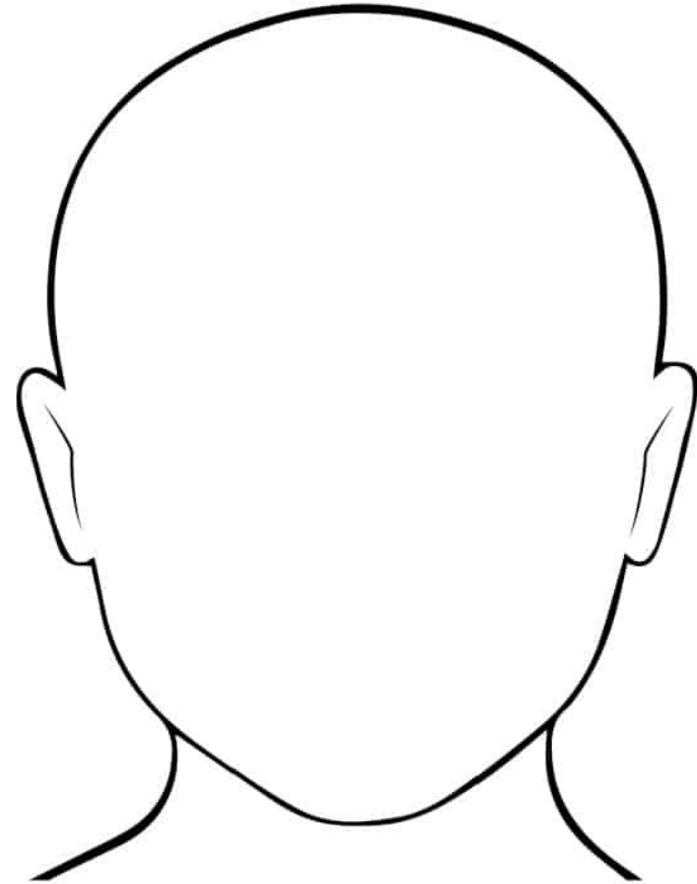
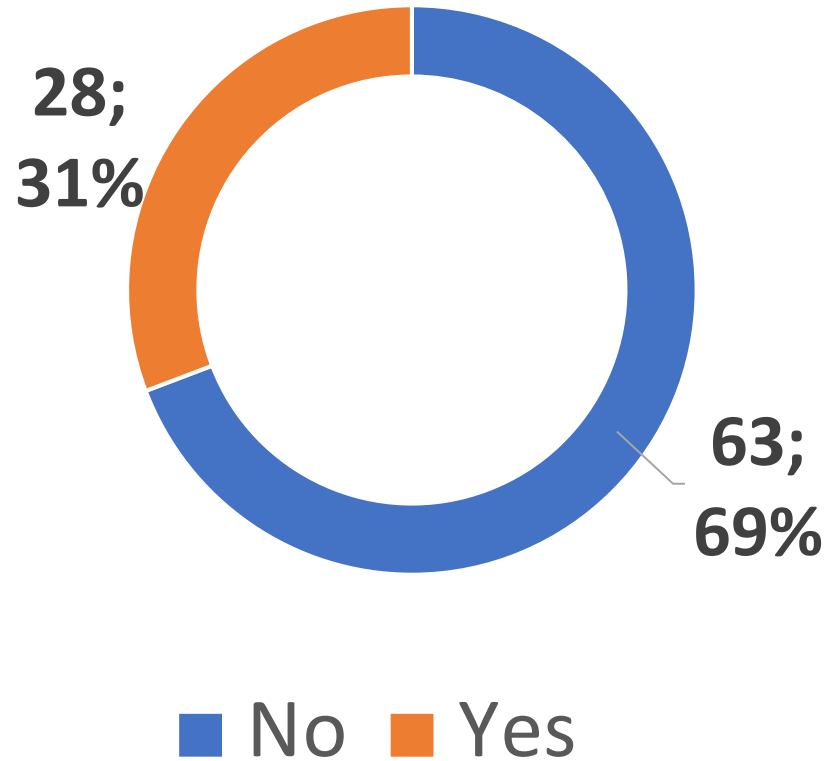
Alleged assailants





Saint Mary's SARC Child NFS Study

Objective External Injury from NFS





Fitzpatrick Skin Colour Scale



TYPE I

Light, Pale
White

Always burns,
never tans



TYPE II

White, Fair

Usually burns, tans
with difficulty



TYPE III

Medium, White
to Olive

Sometimes mild
burn, gradually tans
to olive



TYPE IV

Olive Tone

Rarely burns, tans
with ease to
moderate brown



TYPE V

Light Brown

Very rarely burns,
tans very easily



TYPE VI

Dark Brown

Never burns, tans
very easily, deeply
pigmented



Children witnessing NFS

- Saint Mary's 2021 study
 - 40% strangled in their own home
 - 30% had children living at home
- San Diego Paper 1
 - Children witnessed the NFS in at least 41% of cases
- CPS Dec 2022
 - Children present in more than a third of NFS offences, according to analysis of a sample of cases by CPS
 - www.cps.gov.uk/cps/news/children-are-often-present-during-non-fatal-strangulation-cps-analysis-shows





Rise of consensual “choking” in young people

- **Herbenick, D.**, Fu, T. C., Patterson, C., Rosenstock Gonzalez, Y. R., Luetke, M., Svetina Valdivia, D., ... & Rosenberg, M. (2023). Prevalence and characteristics of choking/strangulation during sex: Findings from a probability survey of undergraduate students. *Journal of American college health*, 71(4), 1059-1073





Non-fatal strangulation proforma

Jul 2024 Review date Jul 2027 – check www.ifas.org.uk for latest update

This proforma focuses on the non-fatal strangulation (NFS) elements of an examination and as such should be used as an adjunct to other clinical documentation e.g. SARC proforma/ED/custody proforma etc. where issues such as consent/capacity/alleged assailant details/general medical assessment etc. should be covered. Whilst it is acknowledged that in some circumstances the strangulation may have been consensual, for the purposes of this document the terms 'patient' and 'alleged assailant' have been used.

Date _____ Time _____

Clinician _____ Regulatory number _____

Patient name _____ Patient DOB _____

Patient number _____

History of strangulation

History from _____ Did alleged assailant say anything during strangulation?

Persons present _____ Yes No Unknown Not asked

Method Manual one hand Manual two hands

Ligature Head lock

Other
specify below _____

Actions of the patient during the strangulation

Unknown Not asked

From 1 to 10 how hard was alleged assailant's grip?
(Low) 1 2 3 4 5 6 7 8 9 10 (High)

From 1 to 10 how painful was it?
(Low) 1 2 3 4 5 6 7 8 9 10 (High)

What was the patient thinking at time of strangulation?

Unknown Not asked

Time strangulation occurred
(date/time) _____

Time since strangulation
(hours/days) _____

Has the alleged assailant strangled the patient before?

Number of episodes of strangulation in this event

One More than one Unknown

Yes No Unknown Not asked

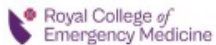
NFS Examination proforma

- To be used alongside other documentation

- <https://ifas.org.uk/wp-content/uploads/2024/08/NonFatalStrangulation-ProForma-IFAS-July-2024.pdf>

Guidelines for clinical management of non-fatal strangulation in acute and emergency care services

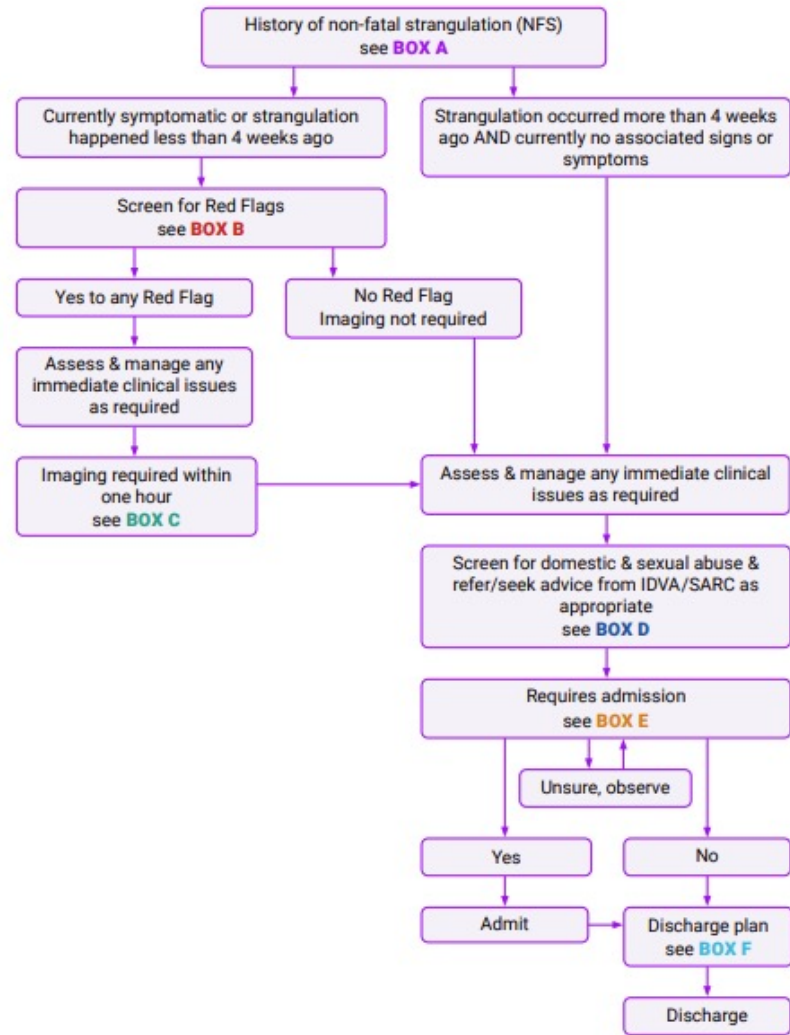
Feb 2024 Review date Feb 2025



The Faculty of Forensic & Legal Medicine



- Published 2nd Feb 2024
- <https://ifas.org.uk>
- Adults & adolescents
- Acute (less than 4 weeks) or symptomatic



BOX A

- Non-fatal strangulation (NFS) is common, especially in domestic and sexual abuse/rape² and suicide attempts³
 - NFS can have serious consequences such as carotid artery dissection, stroke, acquired brain injury^{4,5}.
 - A trauma informed approach is required, including seeing the patient alone when taking history to ensure safety and privacy.
 - Patients are unlikely to spontaneously give a history of strangulation.
 - Consider NFS:
 - In domestic abuse and sexual violence cases.
 - Patients who appear confused with possible memory gaps. Intoxication, in addition to oxygen deprivation, may add to any confusion.
 - Some may be reluctant to disclose strangulation as it may have been part of consensual activity, including self-inflicted with a ligature.
 - May use language such as "grabbed, held by neck/throat, choked, pinned me down" May use the term "breath play".
 - 50% of victims will have no visible external injury to their neck/head as a result of the strangulation?
 - **A lack of visible injury MUST NOT influence decision-making around proceeding with radiological investigation.**
- Given the potential seriousness, (clinically, legally, psychosocial, safeguarding etc.) SENIOR clinical decision maker input is required with NFS patients.
- *The law in England & Wales⁶ and separately in Northern Ireland⁷, is that one cannot consent to something that causes serious harm

BOX B: Red flags related to the strangulation

A Airway compromise

- History of significant pressure applied to the neck
- Dyspnoea (objective signs/symptoms¹⁰)/ voice changes
- Dysphagia or odynophagia (difficulty or pain on swallowing)
- Neck swelling or tenderness of larynx/ trachea

(C) Cervical Spine

- Mechanism concerning for, or radiological evidence identified of, cervical spine injury

B Dyspnoea (objective signs/symptoms¹⁰)

Subcutaneous emphysema

C Petechial haemorrhages on face/neck/oral/conjunctival

Any degree of bruising to neck or ligature marks (Note 50% have no mark so absence is not reassuring)

Carotid bruits (absence is not reassuring)

Carotid tenderness

D Loss or near loss of consciousness

Amnesia or altered mental state (dizzy, confused, loss of memory or awareness)

Incontinence (bladder and/or bowels)

Neurological symptoms or signs

- Seizure
- Stroke like symptoms
- Severe headache
- Tinnitus
- Hearing loss
- Parasthesia

Visual symptoms

- Flashing lights, spots, stars, tunnel vision

Previous head injury/stroke



What imaging should be done?



BOX C

Imaging (should be done within 1 hour)

- CT angiography of the neck and intracranial vessels^a
- +/- CT head^b
- +/- CT chest^c

- a. Arterial phase study with bone reconstructions of the cervical spine recommended.
- b. Initial non-contrast CT head scan if clinical indicators present (GCS <14, witnessed seizure, history of incontinence, focal neurology, concerning blunt trauma to head evident clinically).
- c. CT chest scan if clinical indications of subcutaneous emphysema, dyspnoea or concerning blunt trauma to the chest evident clinically

Ultrasound/carotid doppler ultrasound and plain X-rays are NOT RECOMMENDED for evaluation of the vascular or soft tissue structures in this setting.

Consideration in ALL cases

BOX D: All cases

- Safeguarding assessment including any children or vulnerable adults that may be at risk.
- Discuss with patient options of reporting to police taking into consideration capacity, confidentiality & best interest¹¹.
- Undertake suicide risk/ self-harm assessment. Self-harm by hanging/strangulation often indicates a very high suicide intent¹².

Domestic abuse with no report of sexual violence

- All of the above plus:
- Complete DASH assessment (note NFS in itself would warrant a MARAC referral, regardless of overall DASH score) Dash risk checklist quick start guidance FINAL.pdf (safelives.org.uk)
- Independent Domestic Violence Advisor (IDVA) referral

Sexual assault/rape cases (including sexual assault/rape in the context of domestic abuse)

- All of the above plus:
- Consider referral / seek advice from local Sexual Assault Referral Centre (SARC) as a self or police referral.
England: www.nhs.uk
Wales: executive.nhs.wales
Scotland: www.nhsinform.scot
Northern Ireland: www.nidirect.gov.uk
- For forensic medical examination
- Independent Sexual Violence Advisor (ISVA) support
- Counselling
- Assess for
 - Emergency contraception
 - HIV & Hep B post exposure prophylaxis.
 - Signpost for window period for STI screening



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Information for Victims of Strangulation

ifas.org.uk contact@ifas.org.uk

MARCH 2023

Professor Catherine White

Risks of not knowing the risks

<https://static1.squarespace.com/static/63bd7ef0794e9f154bdce4ce/t/64131368ee0266496d81dde8/1678971753356/IFAS+01++Patient+Information+v5.pdf>

Scrutiny panel of police investigations

- False belief that there should always be injuries
- Lack of medical assessment
 - Injuries
 - Signs and symptoms
- Victims not given information about NFS
- “One word against another”



Case 1

- Unidentified male calls emergency services
- Unconscious female found on hotel room floor
- Carpet noted to be wet.
- Wet with what?



Case 2

- Husband witnessed by neighbour strangling wife.
- Police & paramedics arrive.
- Woman unconscious.
- No forensic examination.
- Injuries captured on body worn video



Case 2

- Retraction
- Says no assault
- Injuries due to love bites



Case 3

- Emergency call to police by teenage son
- On arrival male very angry, wife upset.
- “No injuries” noted by police officer”
- Wife agrees she was strangled but does not wish to make a report.





Scrutiny panel of police investigations

- False belief that there should always be injuries
- Lack of medical assessment
 - Injuries
 - Signs and symptoms
- Victims not given information about NFS
- “One word against another”





Police Toolkit for investigating NFS

Guidance for Police Management of Strangulation



Investigation/Further Evidence

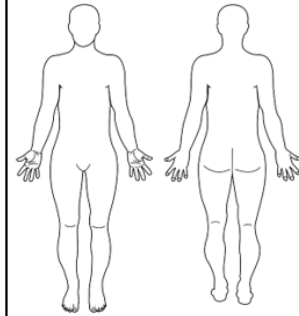
Offence Details

1. Context of strangulation (e.g., during sex/ sexual violence, during an argument)
2. Method of strangulation (see Box D)
3. Number of incidents of strangulation related to this report
4. Length of strangulation(s) (if known)
5. Other suspect behaviours in addition to strangulation (e.g., punching, kicking, shaking, scratching)
6. Suspect speech during strangulation (e.g., verbal threats, shouting, screaming)
7. Suspect demeanour during strangulation
8. If anything caused the strangulation to stop

Victim Impact (see Box E-G)

9. Extent of pain during and after
10. Impact on breathing during and after
11. Loss of consciousness before and after
12. Behaviours/actions by the victim during and after (consider any dialogue with suspect, any incontinence by the victim)
13. Victim thoughts and feelings during and after

Victim Injury Recording (see Box F-G)



Physical Details (see Box F-G)

14. Photographs of any injuries to the party/parties involved
15. Photographs of the scene
16. Capture/collection of relevant evidential materials (e.g., clothing, any ligature/equipment used)
17. Examination of the scene in relation to victim experience (e.g., signs of bleeding, signs of incontinence)

Box E: Strangulation Victim Experience

Individuals who have been strangled may not identify their experience as "strangulation", and instead may say they have been "choked" or "grabbed by the throat" or "throttled". The focus in response, therefore, is not how a person defines their experience, but the impact and effect of the incident itself.

Box F: Strangulation Impacts

Examples of immediate and significant effects have been provided below from 'Non-Fatal Strangulation: in physical and sexual assault' (IFAS, 2023).

- Obstruction of the arteries leads to hypoxia (lack of oxygen)
- Obstruction of the veins can lead to increased cerebral blood pressure and 'stagnant hypoxia' (low blood flow – therefore lack of oxygen)
- Obstruction of the trachea causes hypoxia and hypercapnia (high levels of carbon dioxide)
- Damage to the spinal column, and in turn to the cord and nerves

The physical and psychological impact of these effects on individuals may include:

- Pain in the neck
- Difficulty with, and/pain when, breathing
- Vision defects such as blurry and/or loss of vision, dizziness
- Speech/voice difficulties
- Unconsciousness
- Incontinence of the bowel or bladder
- Confusion, disorientation, agitation, memory loss
- Hypervigilance or emotional numbness, flashbacks
- Memory loss from loss of consciousness

Box G: Strangulation Injury

Around 50% of people who are strangled will not have visible injuries. Where injuries are present, these may include bruising or scratches or pinpoint marks called petechiae (from burst blood vessels) on the head, neck or face. Strangulation in the context of other physical violence may lead to other/different physical injuries. Physical injury is not a requirement for an act of strangulation to be charged or convicted under law in England and Wales. It is also important to recognise how some injuries may develop and become visible over time.

- Initial response
- Investigation
- Senior supervision
- Impact on staff



Next steps:

- Guidelines for non-acute NFS
- Neuropsychological assessments
- Paediatric guidelines
- Auditing of guidelines



	NFS + sexual assault	NFS but no sexual assault
Specialist secure victim focussed centre	✓	✗
Forensic clinician assessment	✓	✗
Crisis worker	✓	✗
Colposcopic images	✓	✗
Forensic samples	✓	✗
ENT Radiology pathway	✓	✗
Forensic report	✓	✗
Shower & clothing	✓	✗
Expert report	✓	✗
Advocacy	✓	✗
Quality assurance & peer review	✓	✗



Killed by strangulation: data from ONS year ending March 2023

- Apr, 2024
- IFAS
- Review article

An overview of homicide data published by the Office for National Statistics (ONS) on strangulation as a method of killing year ending March 2023.



Strangulation and Suffocation Offences Police Data Report 2024

- Feb, 2024
- IFAS
- Research report

A report into the latest data surrounding strangulation and suffocation cases recorded by police forces across England and Wales in the first year post-legislation (up to June 6th, 2023).



An analysis of Domestic Homicide Reviews with fatal suffocation and smothering (Report 1)

- Feb, 2024
- IFAS
- Research report

This report provides a detailed exploration into victim/perpetrator demographics and offers new insights into suffocation and smothering in domestic homicide, including the associated patterns and characteristics of such cases.

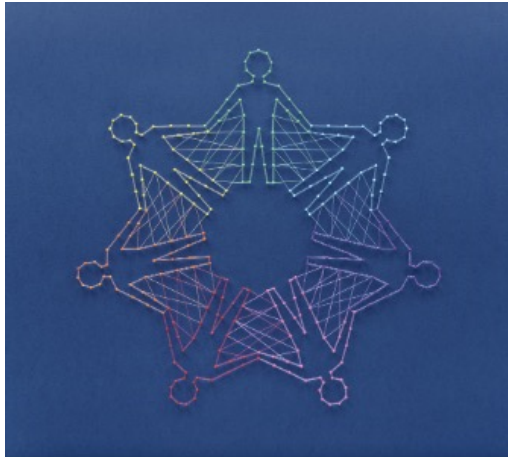


An analysis of Domestic Homicide Reviews with a history of non-fatal strangulation (Report 2)

- Feb, 2024
- IFAS
- Research report

This report provides a detailed exploration into the victims and perpetrators of non-fatal strangulation, reporting of non-fatal strangulation to the police and the use of formal domestic abuse risk assessments in cases of non-fatal strangulation.

IFAS Events

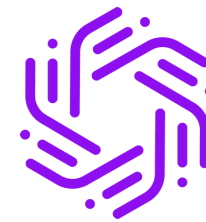


**Tackling Strangulation:
Working Together to Save
Lives - November
Conference**

12 Nov 2024,



**IFAS Clinical Webinar
Series Autumn 2024**



**Institute For
Addressing
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Thank You & Stay Connected

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