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Family Justice Council Draft Guidance on the Use of Hair Strand Testing within Family Proceedings

November 2026

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I. Introduction and Scope of the Guidance

1. Hair strand testing is widely used within family proceedings to gather evidence when there are concerns that the use of alcohol or substances by caregivers poses a risk to children. Whilst the toxicological methods used to detect substances in hair are scientifically robust there are a number of variables which affect the interpretation of the results. In recent years, there has been growing concern regarding an over-reliance on hair strand evidence within family proceedings.[1]

2. This guidance does not seek to undermine the underlying science in hair strand testing. For well over a decade, the High Court and the Court of Appeal have consistently stated that the science of hair-strand testing '*is now well-established and not controversial*'.[2] [3] Rather, there is a real need '*to treat numerical data with proper caution*'. As has been said by Hayden J, while the science itself may be well established, the '*interpretation of the testing may not always be free from controversy*'.[4]

3. This guidance aims to provide an overview of the factors which impact upon hair strand testing and interpretation; guidance on best practice when instructing a testing provider and on the interpretation of hair strand test results; and consideration of how hair strand testing sits within the wider context of decision-making for children and families.

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[1] Taking a strand: Time to tackle overreliance on hair strand tests in the family courts. Open letter to the Family Division and the Family Justice Board. Birth Companions, MSB Solicitors, 4PB & co-signatories. 2024.

[2] *Bristol City Council v A and A and others* [2012] EWHC 2548 (Fam), [2013] 2 FLR 1153, per Baker J (as he was)

[3] *Re D (Children: Interim Care Order: Hair Strand Testing)* [2024] EWCA CIV 498, per Cobb J at [46]

[4] *London Borough of Islington v M and R* [2017] EWHC 364 (Fam) at [35].

II. Executive Summary

4. Hair strand testing is widely used in the Family Court when issues around drug or alcohol use arise. Hair strand testing is a **scientifically robust method** for detecting substances in hair. Interpretation of the results of testing, however, is **complex** and requires a **degree of caution**.

5. Laboratory testing and the interpretation of results is a form of **expert evidence** engaging Part 25 FPR 2010 and s.13 of the Children and Families Act 2014. Hair strand testing should only be directed when it is necessary to assist the court to resolve proceedings justly. Failure to obtain the court's permission may render the results of any testing inadmissible.

6. There are clear **evidential limitations** to testing results. Hair strand testing can show the presence and concentration of a substance (or its metabolites) in hair. The results **do not** indicate the quantity consumed nor do they reliably determine frequency or timing of specific use. Testing can help to **identify patterns** of use over a period of months, but it cannot be used to pinpoint when that use occurred during that period. In some cases, complementary testing (e.g. urine or blood) may be necessary.

7. The current industry standard in England and Wales for cut-off thresholds[5] remains the guidelines issued by the Society of Hair Strand Testing. **Cut-offs are helpful tools** to understand the data, but they must be treated with some caution. A "positive" result will depend on the cut-off threshold applied but, in some cases, results falling below the cut-off may still be forensically relevant. The thresholds themselves may introduce **a level of bias**, for example, of hair type or ethnicity. The research base used to inform industry cut-offs is constantly evolving.

8. A very high numerical result above a cut-off might amount to compelling evidence as to substance misuse. The interpretation of results in the low numerical range, however, should be approached with appropriate caution and the need to set such results alongside other evidence will be even greater.

9. The interpretation of hair strand testing results is **highly context-dependent** such that results will not be uniform across individuals, different substances or even between laboratories. There are many **variables** which may affect the results, either by impacting an individual's growth rate of hair (which in turn may impact segmentation) or else that individuals' absorption rate (which may impact use of cut-offs). Common factors include but are not limited to:

   (a) Hair colour;

   (b) Ethnicity;

   (c) Pregnancy;

   (d) Environmental exposure;

   (e) Hair treatment; and

[5] A 'cut-off' is the concentration which defines the threshold above which a substance is determined to be detected. Further explanation is given in section V.

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(f) Health factors.

10. The reports produced by laboratories **must be read in full**, not just the summaries. It is important to interrogate the underlying data and reasons given by the author of the report. Executive summaries may omit important **qualifications and caveats**, and an overreliance on such summaries risks misinterpretation of test results. Caution must be exercised to ensure that the underlying numerical data does not give rise to a false sense of certainty in the findings.

11. **Legal representatives and advocates** in family proceedings must recognise their duties (a) to draw the court's attention to what the science involved with hair strand testing can and cannot demonstrate, and (b) to carefully examine hair strand test results in full to provide the court with a reliable summary (and not simply rely upon a "summary" section of a report) and (c) to assist the court to consider hair strand test results in the context of the whole of the evidence.

12. The toxicological results of hair strand testing are only ever **part of the evidential picture** when trying to understand an individual's substance use. Testing should not be used in isolation to determine use: it must be considered alongside any available witness evidence, clinical evidence and wider behavioural observations. The context of the testing is key.

13. Hair strand testing results can **inform safeguarding assessments** and **welfare analysis** but only as part of a broader consideration of the evidential canvass. It cannot and should not be used as a substitute for properly assessing parenting capacity and risk to children. When considering test results as part of the overall assessment of risk and/or welfare analysis, clinical factors must also be considered including observations of behaviour, patterns of relapse and engagement with support.

14. Only **accredited laboratories** should be instructed which comply with the prescribed requirements of the International Organisation for Standardisation (ISO). It is good practice to ensure the expert is provided with **full contextual information**, drawing attention where relevant to known variable factors which may impact the reliability or interpretation of the testing results.

15. There is a need for **ethical considerations** when directing testing, which is intrusive and requires consent. While a refusal to undergo testing may lead to negative inferences, consideration needs to be given for the reasons given for that refusal as well as ensuring that the individual is properly warned and understands the consequences of not undergoing testing when asked. Testing of children will be rare.

16. When hair strand testing is used appropriately it can be a very helpful tool which provides professionals with timely information to safeguard children. It can also provide caregivers an opportunity to demonstrate the progress they are making and can help to sustain motivation in their recovery.

17. More research is needed into how and when hair strand testing data is currently obtained and used within the family justice system.

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III. Overview of Hair Strand Testing

What is Hair Strand Testing?

18. The toxicological analysis of a hair sample measures the concentration of specific substances within a person's hair. There are a number of ways in which substances are absorbed into a person's hair and, once absorbed, the substances can remain stable and detectable for the remainder of the hair's life cycle.[6] Alcohol, drugs and their metabolites are incorporated into the hair via the bloodstream. Substances may also be absorbed into the hair through sweat, sebum[7] or environmental exposure.

19. The most common procedure is for a sample of hair to be taken at the scalp, roughly the thickness of a pencil. Although scalp hair is most frequently used, hair from other bodily sites can be used. Samples of finger and toenails may also be used. Differing absorption rates, growth rates and detection windows, however, will impact the interpretation of results from different sample sites. Hair strand testing is not the only method by which alcohol and drugs may be detected in a person's body; testing of blood, urine, sweat and saliva are also possible but generally provide shorter windows of detection.

Why does Hair Strand Testing take place?

20. Parental alcohol and substance use is a common concern in both public and private law children proceedings. It was found to be a factor in 60% of care proceedings in the UK[8] and in 36% of serious case reviews.[9] The use of alcohol and substances by caregivers is associated with direct and indirect risks to children's safety, development, physical health, mental wellbeing and living conditions.[10]

21. Hair strand testing is frequently undertaken within family proceedings (as well as PLO pre-proceedings) to gather evidence regarding the presence of alcohol or substances in a person's hair in order to determine whether the person has been exposed to or consumed substances. This is with a view to informing assessments of parental capacity and safety for children. Most testing is carried out with adult caregivers; in specific circumstances, however, children may be tested.

22. is commonly used within family proceedings in an attempt to establish the following:

- Whether a caregiver is using substances.

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[6] Usman, M., Naseer, A., Baig, Y. *et al.* Forensic toxicological analysis of hair: a review. *Egypt J Forensic Sci* 9, 17 (2019). https://doi.org/10.1186/s41935-019-0119-5

[7] 'Sebum' is a natural oil secreted on the scalp which provides moisture and protection.

[8] Forrester, D., & Harwin, J. (2008). Parental substance misuse and child welfare: Outcomes for children two years after referral. *British Journal of Social Work*, *38*(8), 1518-1535.

[9] DfE data 2011 to 2014

[10] E.g. Vella, A. M., Savona Ventura, C., & Wolff, K. (2016). Pregnancy outcomes in substance-misusing pregnant women: A 10-year retrospective study. *Journal of Obstetrics and Gynaecology*, *36*(4), 468-472. Velleman, R., & Templeton, L. J. (2016). Impact of parents' substance misuse on children: An update. *BJPsych Advances*, *22*(2), 108-117. Raitasalo, K., & Holmila, M. (2017). Parental substance abuse and risks to children's safety, health and psychological development. *Drugs: Education, Prevention and Policy*, *24*(1), 17-22.

- Whether a caregiver is being honest about their self-reported use of substances.
- Whether the caregiver is reducing or has achieved abstinence from substances.
- Whether a child has ingested or been exposed to substances.

23. Whilst there is clear evidence that dependent or harmful use of substances by caregivers increases the risk of harm to children, not everyone who uses alcohol and substances does so to a harmful degree. Many children live with parents who use alcohol and substances without coming to the attention of children's services. It is therefore important that any evaluation of alcohol and substance use considers the whole picture: not only the presence of substances in a person's hair but the extent and pattern of use, the impact upon day-to-day functioning and the impact upon the safety and wellbeing of any children involved.

Current guidance and governance of Hair Strand Testing

Laboratory and toxicology practices

24. Much of the guidance available in this sector pertains to the regulation of laboratory practices. The Society of Hair Strand Testing provides industry standards to which most testing firms adhere; in addition, there are several industry safeguards and quality assurance practices in place to ensure that toxicology laboratories provide accurate measurement of substances within hair samples tested.[11]

25. A (perhaps overlooked) requirement when instructing a laboratory to undertake hair strand testing is that contained in the FPR 2010 at Practice Direction 25G, 'Toxicology Test Evidence'. Paragraphs 4 and 5 require that any laboratory used must be accredited to either the International Organisation for Standardisation ISO/IEC 17025: 2017[12] General Requirements for the competence of testing and calibration laboratories, or else the International Organisation for Standardisation ISO 15189: Medical laboratories – Requirements for quality and competence. In the event results are obtained from a laboratory not so accredited, the court '*must be satisfied that there are exceptional circumstances justifying giving permission to put the evidence before the court*'.[13]

26. Whilst research has established the reliability of hair testing methods in detecting substances in hair, the data which informs the interpretation of results is less robust and the subject of ongoing debate.[14] Changing trends in substance use mean there is less data available on certain substances, e.g.

[11] Ellio, S.P., Duncan, W.S.S. & Paterson, S. (2018). The United Kingdom and Ireland association of forensic toxicologists forensic toxicology laboratory guidelines. *Science & Justice*, 58, 335-345.

[12] ISO/IEC 17025 accreditation is managed by the United Kingdom Accreditation Service (UKAS) and is for a specified schedule of tests. Schedules of accreditation for UK laboratories can be viewed at https://www.ukas.com/find-an-organisation.

[13] FPR 2010, Practice Direction 25G, para. 5(b)

[14] Preece, D. & Jones, A. (2026). The forensic limits of hair drug testing: a critical assessment of drug intake and hair concentration relationships. *Science & Justice*, 66.

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ketamine[15], synthetic cannabinoids[16]. Research in the field is continuously evolving requiring those interpreting test results to remain up to date on current research. The reports provided by laboratories should be written by reporting scientists who have sufficient training, experience and knowledge in the field[17] and findings should be reviewed by a forensic toxicologist with appropriate experience before the report is issued.[18] Laboratories should have appropriate processes for quality checking and peer reviewing the findings and conclusions reported by their practitioners.[19]

27. Whilst there is clear guidance and regulation of laboratory testing practices, there is less consensus regarding the interpretation of toxicological results.[20] The Society of Hair Strand Testing provides some considerations for interpretation, including benchmarks regarding 'cut off' thresholds for determining drug use[21]. Differences may exist, however, among testing providers in how they utilise cut off values and their approach to interpretation in general. The use of standardised cut offs has been particularly controversial (see section IV, below).

28. That being said, as matters stand the courts have tended to adopt the industry standards provided by the Society of Hair Strand Testing. As Peter Jackson J (as he was) observed:[22]

> … the current industry standard in this country is found in the guidelines issued by the SoHT. It may be that these guidelines will be changed in time, possibly even in the direction of the more rigorous requirements of the other organisations. But in the meantime, it is not appropriate to require compliance with a higher set of standards.

Local authority and family justice practices

29. Despite being widely used and carrying significant weight in decision making[23] there is very little research on how drug and alcohol testing is initiated, procured

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[15] Larabi IA, Etting I, Alvarez JC. The duration of ketamine detection in hair after treatment cessation: Case study and review of the literature in forensic and clinical casework. Drug Test Anal. 2023 Sep;15(9)

[16] Cho, B., Cho, H. S., Kim, J., Sim, J., Seol, I., Baeck, S. K., ... & Kim, E. (2020). Simultaneous determination of synthetic cannabinoids and their metabolites in human hair using LC-MS/MS and application to human hair. *Forensic science international*, *306*

[17] Forensic Science Regulator: *Statutory code of practice (2025)* 22.2: Competence required for reporting. UK & Ireland Association of Forensic Toxicologists (UKIAFT) *Code of conduct*.

[18] The United Kingdom and Ireland association of forensic toxicologists forensic toxicology laboratory guidelines (2018)

[19] Forensic Science Regulator: *Statutory code of practice (2025)* 20: Checking and review.

[20] Hubbard, J.A. (2025) Review on toxicology testing in hair. *Journal of Applied Laboratory Medicine*, 10(4).

[21] SoHT Consensus of drugs of abuse testing in hair (2021)

[22] *Re H (A Child) (Care Proceedings: Hair Strand Testing)* [2017] EWFC 64, sub nom *Re H (A Child: Hair Strand Testing)* [2018] 1 FLR 762, sub nom *A Local Authority v T (Mother) and others (Alere Toxicology and others intervening)* [2017] All ER (D) 48 (Oct), FC at [45]

[23] Flacks, S. (2023). Parental substance use as a child protection problem: A poststructural interview analysis. *Contemporary Drug Problems*, 50(4).

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and utilised within local authority and Family Court settings. Findings from one UK study indicate that women involved with local authorities experience variable testing practices.[24] It appears that limited local protocols are available

30. Most of the information regarding the process and practice of testing is provided by private companies, such as testing providers and legal firms. There is very little formal guidance available from public sector and statutory bodies as to best practice regarding the use of hair strand testing in safeguarding and family proceedings. Local authorities frequently commission testing during pre-proceedings; a survey conducted by this FJC working group found that the majority of the 19 local authorities who responded had no formal written policy regarding drug and alcohol testing. However, some key themes emerged from the survey:
    - Decisions regarding testing are taken on a case-by-case basis, often as part of legal planning processes.
    - Cost is a strong driver when selecting a testing provider.
    - There is variability as regards who is responsible in the authority for interpreting the reports received from the laboratories.

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[24] Gilmour, L., Honeybul, L., Lewis, S. *et al*. Scoping review: mapping clinical guidelines and policy documents that address the needs of women who are dependent on drugs during the perinatal period. *BMC Pregnancy Childbirth* **24**, 84 (2024).

IV. Instructing a laboratory to undertake Hair Strand Testing before and during Family Court proceedings

Deciding whether to test

31. Given that many caregivers may use substances or alcohol without causing significant harm to their children, the decision to carry out hair strand testing should be contextualised within the overall understanding of the risk in each case.

32. Testing should be both necessary and proportionate (it is expert evidence, see below). The available information from caregivers, social workers, treatment providers and clinicians should be considered as a whole to determine whether testing is necessary and what type of testing might be needed in order to address the welfare issues.

33. It can be difficult for people struggling with substances to be open, which means that self-report alone may not be a reliable basis for deciding upon testing. A caregiver's account of their use needs, therefore, to be weighed up alongside other indicators of the impact of substances on parenting. Practitioners should also be mindful that unconscious bias may influence professional decision-making regards testing.[25]

Testing as expert evidence

34. Hair strand testing by a laboratory is expert evidence. That is because, invariably, the testing results are accompanied by a statement of opinion as to the significance and meaning of the testing results made by a representative of the testing laboratory who should be qualified and hold the necessary expertise to give such an opinion. Such instructions should, therefore, be considered expert instructions and the usual procedural principles are engaged.

35. It follows that – in family proceedings concerning children – hair strand testing should not be obtained unless the grounds are met under s.13 of the Children and Families Act 2014 and Part 25 FPR 2010. The 2014 Act makes clear that '*a person may not without the permission of the court put expert evidence (in any form) before the court*'.[26] The court will only give such permission where it is '*of the opinion that the expert evidence is necessary to assist the court to resolve proceedings justly*'.[27] In deciding whether or not to grant permission, the court must have particular regard to the factors set out at s.13(7) of the Act.

36. Parties should not instruct a laboratory to undertake testing without first obtaining the permission of the court.[28] In the event that expert evidence is

[25] Oh, S., Hodges, J., Salas-Wright, C., Smith, B., & Goings, T. C. (2023). Ethnoracial differences in workplace drug testing and policies on positive drug tests in the United States. *Drug and alcohol dependence*, *247*; Schoneich S, Plegue M, Waidley V, McCabe K, Wu J, Chandanabhumma PP, Shetty C, Frank CJ, Oshman L. Incidence of Newborn Drug Testing and Variations by Birthing Parent Race and Ethnicity Before and After Recreational Cannabis Legalization. *JAMA Netw Open*. 2023 Mar 1;6(3)

[26] Children and Families Act 2014, s.13(5)

[27] Children and Families Act 2014, s.13(6)

[28] Children and Families Act 2014, s.13(1)

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obtained before the court has granted permission, any testing will be deemed inadmissible unless the court subsequently rules it admissible.[29]

37. Additional rules as to the timing of such applications is contained in FPR 2010, rule 25.6. All applications for permission to obtain expert evidence '*must*' be made '*as soon as possible*'. Within public law proceedings, this means that any application ought to be made by no later than the Case Management Hearing, see rule 25.6(a). In private law proceedings, applications should be made no later than the First Hearing Dispute Resolution Appointment, see rule 26.6(b).[30] These preferred timings are subject to the provision that the court may direct otherwise, with possible examples of being given in PD25C.

Choosing what, when and how to test

38. The choice of test should relate to the key questions before the court. This ensures that the *substance of concern* is tested for with the *appropriate method* over the desired *time period*. Some key considerations are given below:

Type of testing

39. Hair strand testing is not the only testing method available. Other methods – such as blood, saliva and urine testing – have relative merits depending on the issues of concern. Head hair strand testing is particularly helpful to determine a pattern of use over a period of months, given it can be segmented. It cannot, however, pinpoint the time of use within that period. In contrast, urine screening can detect use within a few days, although intermittent urine screening leaves gaps where use may be undetected.

40. Because of variability in how substances behave in the body and in response to external agents, the choice of test may vary depending on the substance. For example, alcohol hair testing is affected by a range of variables which means it may be less accurate than PEth testing of blood samples.

41. The method of testing may also be dependent on other factors such as the person's hair type, specific health contraindications, or religious and cultural beliefs and practices[31]. People who are not able to provide a head hair sample may provide a body hair or nail sample; these samples, however, have a wider window of detection. This in turn may make it difficult (for example) for the person to demonstrate cessation. Other forms of screening may provide a helpful adjunct in these situations.

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[29] Children and Families Act 2014, s.13(2)

[30] This concerns the Child Arrangements Programme. It is not yet clear whether or not there will be a corresponding provision under the Child Focused model.

[31] For example, people of Rastafarian or Sikh faiths.

Example:

The local authority is concerned about Mr A's cocaine use over the past 2 months. He reports only using at the weekends; however, professionals are concerned he has used cocaine when collecting the children from school.

❍ A hair strand test can provide information on whether Mr A has used cocaine during the past two months and some indication of the overall level of use. However, it will not provide information on whether he uses cocaine during the week or the weekends. Randomly administered urine drug screens or oral swabs would provide clearer information regarding his pattern of use during the week.

Timing and frequency of testing

42. Timing and/or frequency of testing determines what time window is covered and can help to establish a pattern of use. Windows of testing may need to be consecutive as gaps between testing windows risks leading to gaps in evidence. As some hair is left near the scalp when a sample is taken, some hair samples may not cover the most recent time period of between 4 to 8 weeks depending on hair growth rates.[32,33]

43. The testing schedule should be matched to any known pattern of use. For example, a 3-month window of testing may not be appropriate for a person whose historical pattern is of relapse every 6 months.

44. The testing schedule should be determined by the questions before the court. Whether testing is being used to ascertain use or cessation during a particular period may require different timings or frequency of testing. Testing may also need to take into account other factors such as previous levels of use or pregnancy, which might affect the time that substances remain in the hair (see **Annex 4** and **Table 2** for other factors which may be relevant to issues of timing).

Example:

Ms B has just given birth to a baby. She reports that she stopped using heroin during her pregnancy.

❍ A 3-month segmented hair strand test at this point is likely to show ongoing presence of heroin due to the recency of cessation and the impact of pregnancy on the rate of hair growth. Repeat testing would be recommended to cover the months following the birth to allow for the time it may take for heroin to grow out of her hair.

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[32] LeBeau, M.A., Montgomery, M.A. & Brewer, J.D. (2011). The role of variations in growth rate and sample collection on interpreting results of segmental analyses of hair. *Forensic Science International*, 210(1-3).
[33] See paragraph (3) of the "12 propositions" in *Re H (A Child) (Care Proceedings: Hair Strand Testing)* [2017] EWFC 64 at [28]

Ethical considerations

45. Biological sampling is an intimate and intrusive process which some people find distressing. People with previous experience of trauma may be particularly affected by testing processes and should be consulted beforehand on any adjustments to the process that may ease their anxiety.

46. Testing may also bring stigma, particularly when visible patches of hair are missing. Whilst it is important that people do not dye or cut their hair during periods of monitoring and testing, it is important to balance this against the impact on a person's dignity and self-esteem. The type and frequency of testing should be based on what is necessary and proportionate in order to minimise unnecessary distress.

47. Anecdotally, the testing of children is infrequent and should be avoided unless absolutely necessary to ensure the welfare of the child. Testing may be confusing and alarming for children, and every care should be taken to minimise the impact upon them. Children's hair is fine and porous with variable growth rates, making interpretation difficult.[34]

Procuring and instructing a test

Consent:

48. People have the right to refuse testing. The court cannot compel a capacitous adult to undergo such testing without their consent.[35] Where an individual refuses to undergo testing, they should be made aware of the potential negative inferences that could be drawn in light of that decision. Within the template orders from the precedent library as of May 2024, the standard provision for drug and alcohol testing includes a warning in the following terms:

> "The court may draw a negative inference against [*name*] from failure to comply with the [drug] [and] [alcohol] testing directed above."

49. Advocates and the court should ensure that this warning is understood by the parties at the hearing and that this warning is not simply recorded after the fact. It may also be helpful to record the need to avoid hair cutting and treatment pending a sample being taken, and the potential consequences and significance of doing so.

50. It should always be remembered that an individual may have a legitimate reason for anxiety around being tested.[36]

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[34] Kintz, P., Farrugia, A., Ameline, A., Eibel, A., & Raul, J. S. (2017). High risk of misinterpreting hair analysis results for children tested for methadone. *Forensic science international*, *280*, 176-180.

[35] For comparison, see s.21 of the Family Law Act 1969 in the context of scientific testing for determining paternity: 'a bodily sample which is required to be taken from any person for the purpose of giving effect to a direction under section 20 of this Act [for paternity testing] shall not be taken from that person except with his consent'.

[36] In *Re D (Children: Interim Care Order: Hair Strand Testing)* [2024] EWCA CIV 498, for example, the Court of Appeal highlighted the need to explore the reluctance of the maternal grandmother to being tested. The court in fact found her position to have been vindicated and that she was '*entitled to be concerned as*

Choosing a provider and sample collection:

51. Providers of testing should meet the required UK governance standards to ensure the reliability of test results.[37] Beyond this the choice of provider is down to local decisions based upon availability, cost and whether the appropriate testing and analysis can be provided within the required timeframe. When testing has already been carried out, consideration should be given to using the same provider unless there have been concerns regarding the way in which the previous testing was conducted. This is because there is some variability among providers in terms of their equipment, calibration of their instruments and specific methods used, which may mean that results between different providers are not directly comparable.

52. Sample collection should be undertaken by appropriately trained personnel to ensure that the hair sample is cut from the appropriate location on the head and as close to the scalp as possible. There is a strict chain of custody process which needs to be followed to ensure samples are appropriately labelled, documented and sealed in a tamper-proof envelope before sending to the laboratory[38]. This ensures there is no question regards tampering or the identity of the donor.

Information to be provided to laboratories:

53. Most laboratories carry out a pre-testing questionnaire which gathers information from the person being tested about a range of factors which might impact upon the results. This includes things like recent use of substances, health conditions or prescribed medications.

54. **The laboratories can only consider the information that is made available to them**. The person being tested may not know themselves of the significance of certain issues, such as the use of hair products and treatment, and may not divulge information unless specifically asked. It is also important to consider that some people may find it hard to be fully open with the sample collector. The parties and their legal representatives should therefore ensure that any significant information has been shared with the laboratories as part of the instruction, provided that consent is given.

Part 25 instructions and the expert's duties:

55. Although instruction of a laboratory is an expert instruction, it seems to be less common in practice for the parties to produce a letter of instruction. Production of a letter of instruction is mandatory unless the court directs otherwise.[39]

56. To get the best evidence, a letter of instruction would assist in ensuring the testing laboratory is aware of the context of testing and the key questions of concern, allowing it to report accordingly. It ensures that important information is

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to the implications for her as a carer and a teaching assistant if false test results were to be returned in respect of her and the uncle'.

[37] And see FPR 2010, Practice Direction 25G, 'Toxicology Test Evidence'.

[38] https://fflm.ac.uk/resources/publications/recommendations-labelling-forensic-samples/

[39] FPR 2010, rule. 25.12(1) and see PD25C, para. 4.1

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brought to the attention of the professional asked to give an opinion on the results once obtained, including (for example) relevant clinical history, medication, hair treatment and factors such as use of hair-straighteners.

57. When instructing laboratories, it is important to be aware of the questions they can and cannot answer. As stated above, legal representatives should also be aware of the information the expert will need in order to contextualise their analysis. Example questions for inclusion in a letter of instruction are provided in **Annex 1**.

58. Several authorities have confirmed the need for laboratories instructed as experts to be reminded of their duties.[40] A letter of instruction ensures that laboratories are aware of the requirements placed on them as experts under Part 25, PD 25B – The Duties of an Expert, the Expert's Report and Arrangements for an Expert to Attend Court, as well as the *Standards for Expert Witnesses in Children Proceedings in the Family Court*.

59. In particular, attention should be drawn to the following duties:

para. 4.1(c), PD 25B	to provide advice to the court that conforms to the best practice of the expert's profession;
para. 4.1(e), PD25B	to confine the opinion to matters material to the issues in the case and in relation only to the questions that are within the expert's expertise (skill and experience); and
para. 4.1(g), PD25B	in expressing an opinion, to take into consideration all of the material facts including any relevant factors arising from ethnic, cultural, religious or linguistic contexts at the time the opinion is expressed.

60. PD25B, para. 9.1 provides a detailed list of what is required from the content of an expert's report. While all of these requirements are mandatory, the High Court has drawn attention to the following duties in the specific context of hair strand testing:[41]

para. 9.1(f)(iii)	in expressing an opinion to the court, indicate whether any proposition in the report is a hypothesis (in particular a controversial hypothesis), or an opinion deduced in accordance with peer-reviewed and tested technique, research

[40] See e.g. Hayden J in *London Borough of Islington v M and R* [2017] EWHC 364 (Fam) at [33], citing Moylan J (as he was) in *Richmond London Borough Council v B, W, B and CB* [2010] EWHC 2903 (Fam), [2011] 1 FLR 1345 at [10]

[41] *Richmond London Borough Council v B, W, B and CB* [2010] EWHC 2903 (Fam), [2011] 1 FLR 1345 at [8]. The provisions cited by the court are now contained in PD25B as opposed to Practice Direction *'Experts in Family Proceedings Relating to Children*' (2009) 2 FLR 1383.

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	and experience accepted as a consensus in the scientific community;
para. 9.1(g)	where there is a range of opinion on any question to be answered by the expert –
	(i) summarise the range of opinion;
	(ii) identify and explain, within the range of opinions, any ‘unknown cause’, whether arising from the facts of the case (for example, because there is too little information to form a scientific opinion) or from limited experience or lack of research, peer review or support in the relevant field of expertise…

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V. Interpretation of hair strand results

61. The value of hair strand testing evidence depends in part on the nature of the question(s) being asked. Whilst hair testing provides robust toxicological analysis of concentrations of substances, there are many variables which affect the interpretation of those findings. Some hair strand test results provide very straight forward information which, when considered in the context of the other information provided, does not require any complex analysis.

> ***Example:***
>
> Miss D has been working with local treatment services for several months and has been stabilised on a methadone prescription. She reports abstinence from heroin for over 7 months and her treatment provider reports she consistently attends review appointments. There has been no detection of heroin in her urine drug screens.
>
> → Miss D's 6-month hair strand test results show a small amount of heroin in the first section, and then no further heroin in the 5 most recent sections. There are no other substances present aside from a consistent detection of methadone. The laboratory analysis is that the results are consistent with cessation of heroin use during this 6-month

62. Complexities arise, however, where:
    - toxicological findings may have more than one possible interpretation, e.g. abstinence or a lower level of use; powder cocaine vs crack cocaine use; single use vs multiple lower-level use vs cessation.
    - the concentrations of substances in the hair may be affected by contextual factors, such as hair type or environmental exposure; and
    - positive findings fall below established cut offs or above the calibration range, either for a parent drug and/or its metabolites.
63. The following sections explore some of the common questions which arise, key contextual factors to consider and appropriate cautions in interpretation.

<u>Interpretation: the roles of the report writer and the report reader</u>

64. Before exploring the key issues that can arise in interpretation, it is worth remembering that the responsibility for analysing the raw data and expressing an opinion regarding the most likely interpretation of the results rests with the instructed expert.

65. That being said, the Court of Appeal in *Re D (Children: Interim Care Order: Hair Strand Testing)* [2024] EWCA CIV 498 at [49] emphasised the respective roles, not only of the laboratory report writers but of the readers and advocates. The following observations of Peter Jackson J in the earlier case of *Re H* at [57] were cited with approval:

> The writer [of a hair strand test report] must make sure as far as possible that the true significance of the data is explained in a way that reduces the risk of it becoming lost in translation. The reader must take care to understand what is being read and not jump to a conclusion about drug or alcohol use without understanding the significance of the data and its place in the overall evidence.

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66. Particular care must be paid – both by the writer and the reader – to the use of executive "summaries" at the beginning of reports as well as narrative "opinions", where there remains a danger of disconnect between the conclusions expressed and the underlying data upon which those opinions and conclusions are said to have been based. This issue was illustrated most starkly in the case of *Re D*, a decision which represents a cautionary tale for experts, practitioners and judges alike in the pitfalls of relying too heavily on the headline conclusions contained in the narrative summaries.

Re D – A Cautionary Tale

Three children were removed from the care of their maternal grandmother and uncle on the basis that hair strand testing was said to show continued exposure to Class A drugs when in their care. On appeal, that decision was overturned.

The Court of Appeal considered that an overreliance had been placed on the general summaries provided by the laboratories, which themselves were inaccurate and misrepresented the underlying data such that they did *'not reflect fully or perhaps appropriately the material qualifications provided by the data on which they are based*'.

The data was not in fact indicative of continued exposure of the children to Class A drugs in the period since the children had moved to live with the grandmother and uncle.

In drawing the Judge's attention to the headline summaries only, the advocates had not reflected '*the important qualifications offered by the data evidence which was located deeper into the reports*'. Qualifications regarding the potential of carry-over and the insufficiency of the data to estimate frequency of exposure accurately were omitted. The court expressed its sympathy for the trial Judge, who was '*presented with an unduly bald, and at least partly misleading, representation of the results of the hair strand tests … in the Position Statements to the advocates*'.

67. In all cases involving hair strand evidence – especially where results are in the lower range – the Court of Appeal in *Re D* at [58] observed that it is '*vital*' that the advocates:
    (i) Draw the Judge's attention to what the science can and cannot tell you, as explained in *Islington v M* and *Re H*;
    (ii) Carefully examine the hair strand test reports in full; as far as it is thought helpful or appropriate to do so, they should distil their contents accurately so as to provide the Judge with a reliable summary, not just a rehearsal or précis of the general 'Summary' or 'Opinion' section;
    (iii) Assist the Judge to consider the hair strand test results in the context of the whole of the evidence, including:
        (a) The statements of those who are alleged to have exposed the children to the drugs identified;
        (b) Other evidence (i.e., from observation) which may suggest drug use within the home;

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(c) Other evidence which may suggest that drugs are not used within the home;

(d) The presentation of the children and the adults;

(e) The history of the family generally.

Inferring the quantity of consumption from the test results

68. The results of laboratory hair strand analysis provide the concentration of a substance in the hair sample only. This should not be confused with measuring the amount of a substance consumed by a person. This point was neatly summarised by the High Court as follows:

> A positive identification of a drug at a quantity above the cut-off level is reliable as evidence that the donor has been exposed to the drug in question … The quantity of drug in any given section is not proof of the quantity actually used in that period but is a good guide to the relative level of use (low, medium, high) over time.[42]

69. The relationship between the concentration of a substance in a person's hair and the amount of substance they have consumed is affected by several individual, environmental and contextual factors (see **Annex 4**). The concentration of a substance in a person's hair therefore *cannot* provide definitive proof of how much or how often a person has used a substance.[43] This can only be *inferred* on the basis of:

- Comparing the concentration in the hair with levels found in reference populations in research studies.
- Information shared by the person being tested or third parties regarding variables which might affect the interpretation of the concentrations detected.
- Cross-referencing toxicological findings with the client's self-report, other test results, their clinical presentation and third-party information.

70. The use of comparison benchmarks of "low", "medium" and "high" can be helpful but they must be approached with caution, not least because different laboratories apply different descriptions to different numerical values. These issues were considered in *Re H* at [41]:

> The danger is that the report is too easily taken to be conclusive proof of high/medium/low use, when in fact the actual level of use may be lower or higher than the description. You cannot read back from the result to the suspected use. Two people can consume the same amount of cocaine and give quite different test results. Two people can give the same test result and have consumed quite different amounts of cocaine. This is the consequence of physiology: there are variables in relation to

[42] *Bristol City Council v A and A and others* [2012] EWHC 2548 (Fam), [2013] 2 FLR 1153, per Baker J (as he was) at [25]

[43] Preece, D. & Jones, A. (2026). The forensic limits of hair drug testing: a critical assessment of drug intake and hair concentration relationships. Science & Justice, 66.

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> hair colour, race, hair condition (bleaching and straightening damages hair), pregnancy and body size. Then there are the variables inherent in the testing process …

71. The court did not, however, rule out the use of these descriptors, subject to several caveats, see **Annex 5**.

Active use, exposure and 'cut-offs'

72. A substance may be detected in a hair sample for a variety of reasons including environmental exposure. To account for this, laboratories generally use cut-off values determined by the Society of Hair Testing[44] to set a threshold above which they can confidently report a 'positive detection' indicative of active drug use.

73. A reliance on cut offs is problematic for a number of reasons. First, recent research suggests that prolonged environmental exposure may yield concentrations above cut off levels.[45] Second, low level or single use may yield a result below the cut off and therefore be reported as 'negative'. This can be misleading and a result which falls below the cut off may still have forensic significance.

74. Of greatest concern is the fact that cut off concentrations are based on standardised samples which do not take into account individual variations. Darker hair absorbs substances more than blond or red hair due to melanin concentrations. This means that standardised cut off levels may unfairly bias against people with Afro Caribbean or Asian ethnicity.[46]

75. Cut offs provide a safeguard against over-interpreting low concentrations of a substance but they need to be interpreted in the context (and with an understanding) of their limitations.

Cessation and growth rates

76. This is a frequent question within family proceedings. It can be difficult, however, to ascertain abstinence definitively from a single test, particularly over a short time frame. Substances vary in the time it takes for them to metabolise and be eliminated from the body; this timeframe also differs depending on a range of individual factors, such as ethnicity and hair type. While laboratories should routinely consider these factors in their analysis, all professionals should be aware of the way in which individual differences may impact on hair strand test results.

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[44] SoHT Consensus of drugs of abuse testing in hair (2021)

[45] Giorgetti, A., Mohamed, S., Rossi, F., Santelli, S., Pirani, F., Pelletti, G., ... & Pelotti, S. (2025). Analysis of Δ9-tetrahydrocannabinol (Δ9-THC) and cannabidiol (CBD) on hair after single and repeated short in vivo passive exposures to low-and high-Δ9-THC-cannabis. *Forensic Science International*, *373*, 112515.

[46] Branson, S. & Hunter, P. (2023) Recent scientific developments in hair strand testing and racial bias in current practices of hair strand testing. Family Law, June.

Table 2: Considerations in the evaluation of cessation based on hair strand testing

Factors which affect interpretation of results	**Considerations**
The hair growth rate	Several factors influence growth rate and the speed at which substances leave the hair, e.g. ethnicity, age and pregnancy. • Caution is required when using cut offs as these do not take these individual differences into account.
The type of substance	Substances have different chemical structures which affect their incorporation rates and elimination half-life.[47] Segmentation analysis may also be problematic for specific substances, e.g. the analyte for THC is incorporated across the hair shaft[48] & GHB may be found at higher concentrations near the scalp due to endogenous production.[49] • Do not assume all substances have the same properties or eliminate from the hair at the same rate.
The baseline level and duration of use	High levels of use over a long period may take longer to grow out of a person's hair. • Use longer testing windows segmented by month.
It can be difficult to differentiate between cessation and reduction.	Cessation usually follows a pattern of sharp initial decline with a longer tail of lower levels. • A longer time period of testing may be needed to confidently confirm cessation. • Other factors such as a person's clinical presentation should be considered.
Ethnicity	Month-by-month hair segmentation is based on the average growth rate of hair at 1cm/month. Hair growth rates vary with age, ethnicity, hormones and health. - Asian hair - approx. 1.4cm /month - Caucasian hair - approx.1.2cm/month - Afro-Caribbean hair - approx. 0.9cm/month Darker hair with higher levels of melanin content absorb • It may take a person with Afro-Caribbean hair longer to demonstrate abstinence through hair strand testing.
Pregnancy	Pregnancy affects the hair growth cycle, with periods of increased growth or shedding at different stages in pregnancy.

[47] The 'half-life' is the average time it takes for the concentration of the substance in the hair to decrease by half.

[48] Hubbard, J.A. (2025) Review on toxicology testing in hair. *Journal of Applied Laboratory Medicine*, 10(4).

[49] GHB naturally occurs in the body at low concentrations. This may incorporate into hair via sweat and sebum near the scalp. Busardò FP, Pichini S, Zaami S, Pacifici R, Kintz P. Hair testing of GHB: an everlasting issue in forensic toxicology. Clin Chem Lab Med. 2018 Jan 26;56(2):198-208.

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	• It may take longer for recently pregnant women to demonstrate abstinence through hair strand testing. • If there are immediate safeguarding concerns (e.g. breastfeeding), urine or saliva screens should be considered, as they have shorter windows of detection.
Laboratory cut offs	Many laboratories use standardised cut-off levels when reporting hair test results. These cut off levels do not take into account individual differences which affect the concentration of analytes. • It may take longer for some people's hair to evidence a level below the cut off than others depending on a range of factors including ethnicity and hair colour (see Annex 4).

Example:

Mrs F is a 24-year-old woman with Afro-Caribbean hair. Her initial 3-month hair strand test detected cocaine and the metabolite for cocaine, benzoylecgonine, in all three sections above the calibration range (see **Annex 2**). Miss F reported that she stopped using cocaine around the time that this sample was taken. Her engagement with services and attendance has been very positive since that time.

→ Mrs F has had another hair strand test, 3 months after the last sample was taken. It shows a rapid decrease in the levels of both cocaine and the metabolite benzoylecgonine in the first two sections, however the most recent section still shows cocaine above the laboratory cut-off. These results could be consistent with Mrs F's self-reported abstinence; repeat testing in 3 months should show a continued reduction, with the rate of reduction levelling off. Regular urine or saliva screening may help to provide reassurance regarding abstinence in the meantime.

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Clinical and safeguarding inferences

77. On their own, the levels of substances in a person's hair do not give a picture of their pattern of use, their behaviour when under the influence of substances nor the impact upon their parenting. Whilst high levels of any substance is a cause for concern, any test results should be considered in the context of the full evidence available to determine what the implications are for any children. Basing evaluations on toxicological data alone risks either over-estimating or under-estimating the risks to children. The table below explores the range of clinical considerations which should be taken into account alongside hair strand testing.

Table 3: Clinical considerations among people whose hair strand test indicate substance use

Clinical considerations	**Key issues to consider**
Level of intoxication.	People experience different levels of intoxication with the same level of consumption.

	Tolerance may be reduced after a period of abstinence causing increased intoxication and risk of overdose for some substances.
Behavioural pattern when intoxicated.	The amount consumed may be less important than the behaviours associated with consumption e.g. dysregulation, decision making, unconsciousness or psychosis. Consider police reports, A&E attendance and safeguarding concerns.
Frequency and pattern of use.	Periodic binge use may be as harmful as daily use but may be associated with lower levels in hair testing. Alternative forms of testing may be needed to assess.
Indirect impacts on lifestyle and stability.	A person's use may have indirect impacts such as finances, involvement in crime, driving under the influence etc.
Exacerbation of other issues.	Substance use may interact with other factors e.g. mental health or domestic abuse to cause harm.
The distinction between lapse and relapse.	It is common for people to have lapses during recovery. It may be important to consider a positive detection in testing in the context of the person's overall progress in treatment.
Insight and engagement with treatment.	A person may still be using substances but have good insight and remain engaged with treatment and recovery.

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Context is key

78. The courts have repeatedly emphasised the need to treat hair strand testing as part of the evidence as a whole. It should not be viewed in a silo, detached from the broader canvas of the evidence. This point was emphasised in *London Borough of Richmond upon Thames v B, W, B and CB* [2010] EWCA 2903 (Fam) [2011] 1 FLR 1345 at [22]:

> When used, hair tests should be used only as part of the evidential picture. Of course, at the very high levels which can be found (multiples of the agreed cut off levels) such results might form a significant part of the evidential picture.

79. This point has been re-emphasised:

In *Re H* per Peter Jackson J at [40],

> … as previous decisions remind us, a test result is only part of the evidence. A very high result may amount to compelling evidence, but in the lower range numerical information must be set alongside evidence of other kinds.

80. And most recently by the Court of Appeal in *Re D* at [47],

> … hair strand test drug results cannot be viewed in isolation, separately from the wider environmental factors.

81. It is important, therefore, that prior to testing as much information is gathered as possible about individual and contextual factors which might affect the interpretation of test results. Likewise. those interpreting hair strand test results should be aware of the range of factors which might impact upon test results and seek appropriate guidance where results are ambiguous.

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VI. Using toxicological reports to inform case analysis and decision making

Writing laboratory reports

82. It is imperative that reports prepared for court provide sufficient information in a format to help both professionals and the parties to understand the results and the opinion expressed. As Peter Jackson J (as he was) observed:[50]

> These tests can provide important information, but in order for that to be of real use, the expert must (a) describe the process, (b) record the results, and (c) explain their possible significance, all in a way that can be clearly understood by those likely to rely on the information. If these important requirements are not met, there is a risk that the results will acquire a pseudo-certainty, particularly because (unlike most other forms of information in this field) they appear as numbers.

83. In the same decision, the court went on to give "seven suggestions" for the preparation of hair strand testing reports for court. Those suggestions can be found in **Annex 5** to this Guidance. It is suggested that, where possible, reports should follow those suggestions unless there is a good reason to depart from them.

Reading laboratory reports

<u>Donor information</u>

84. The identity of the person giving the sample is confirmed along with the date of testing. It is helpful to note the information that was shared at the time of testing as regard recent use of substances, medications and any other disclosures such as hair treatments.

<u>Executive summary</u>

85. This will provide a brief summary of the overall results. It may also include a summary of the conclusions based upon the toxicologist's analysis and opinions. It is important to remember, however, that an executive summary may not include information about all of the possible variables and analyses which have been weighed up in drawing the conclusions reached. It is therefore important to read the full report, as important information regarding any variables which might affect the results and possible alternative interpretations which may be contained in the body of the report.

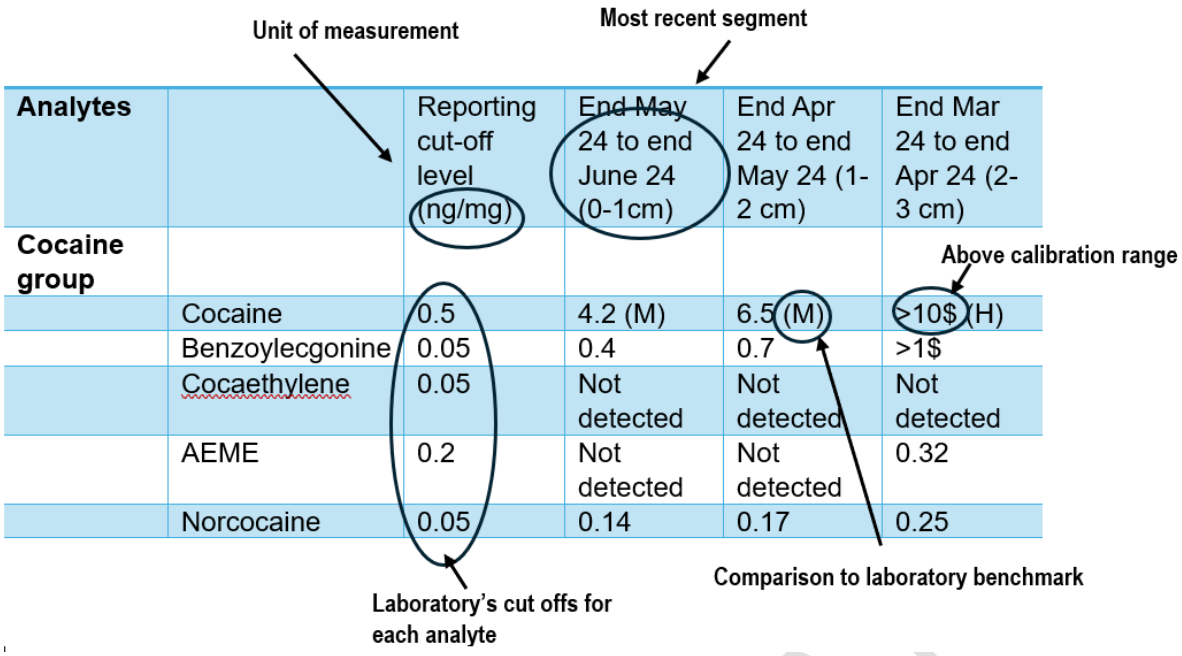
<u>Tables and graphs</u>

86. The testing results may be presented in tables or graphs. An example table below provides a guide to common terms and notations (see **Annex 2** for a glossary). Family Court professionals should be cautious in directly interpreting the values presented and should read the analysis provided by the toxicologist.

---

[50] *Re H (A Child) (Care Proceedings: Hair Strand Testing)* [2017] EWFC 64 at [25]

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Analytes		Reporting cut-off level (ng/mg)	End May 24 to end June 24 (0-1cm)	End Apr 24 to end May 24 (1-2 cm)	End Mar 24 to end Apr 24 (2-3 cm)
Cocaine group					
	Cocaine	0.5	4.2 (M)	6.5 (M)	>10$ (H)
	Benzoylecgonine	0.05	0.4	0.7	>1$
	Cocaethylene	0.05	Not detected	Not detected	Not detected
	AEME	0.2	Not detected	Not detected	0.32
	Norcocaine	0.05	0.14	0.17	0.25

Interpretation and opinion

87. Reports should set out the range of possible interpretations of the numerical results as well as highlighting any variables taken into consideration. An opinion may be given as to the most likely interpretation; the report reader, however, should consider this in the context of the broader information available. The report reader may be party to a range of information regarding family circumstances, social networks and current clinical presentation which the toxicologist is not party to. This in turn may affect how alternative interpretations are weighed up.

Technical information

88. Most toxicological reports include appendices with technical information which may assist the reader in understanding the context of the opinion given. The appendices may also contain important information regarding the laboratory's use of cut offs and sources of reference data (for example).

When further clarification is needed

89. In the majority of cases, the laboratory analysis provided should be sufficient to assist the court with the questions at hand. It is important to acknowledge, however, the limits to the inferences which may be drawn from any toxicological testing.

90. It is important for Family Court professionals to recognise when they might be straying beyond their expertise in interpreting hair strand test results and to seek additional advice or information. There are a number of ways to do this:
- Seek further clarification from the laboratory by way of written questions e.g. where alternative explanations have been put forward by the parties.
- Where results are disputed by parties and a B-sample has been taken, further confirmation tests or second opinions may be sought.
- Seek corroborating information from professionals who have been involved with the family (e.g. in the context of substance use treatment, mental health, social care etc) which may help to contextualise the results.

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91. Infrequently, where there is a significant dispute over the interpretation of hair strand test results and this is central to decision making in a case, it may be necessary to instruct an additional expert. The nature of the questions should determine what type of expert is instructed.

92. ***Toxicological expert*** - a toxicological expert may be considered necessary where there are questions regarding the **interpretation** of the toxicological results, such as the impact of certain medications or hair treatments, or the degree to which the person's account of passive exposure is consistent with the test results.

93. ***Clinical expert*** - a clinical expert may be considered necessary where there are questions regarding the **implications** of the test results for a person's progress in drug or alcohol treatment, their prognosis and implications for parenting. Clinical experts should have expertise in the assessment, treatment and impact of substance use disorders and may come from a range of backgrounds including substance use specialist, psychology, psychiatry, nursing or FDAC.

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VII. Conclusions

94. Toxicological analysis of hair strand samples is reliable and accurate. The interpretation of results, however, may be affected by a range of variables. Family Court practitioners can assist the process by ensuring clear instructions are given which include as much information as possible about such variables. Care should be taken to read the full reports provided by laboratories and to consider the range of alternative explanations for the findings.

95. The numerical nature of hair test results can lead those involved in the family justice system to place too much confidence on the findings. Practitioners should hold in mind the limitations of interpretation and be aware that the research base is continuously evolving. Clinical and safeguarding interpretations on the basis of toxicological findings should take this into account and should always consider the full range of information available.

96. Hair strand test results should never be used in isolation to make clinical and/or safeguarding decisions.

97. When hair strand testing is used appropriately it can be a very helpful tool which provides professionals with timely information to safeguard children. It can also provide caregivers an opportunity to demonstrate progress they are making and can help to sustain motivation in their recovery.

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Annex 1: Example of Questions in the instruction of Hair Strand Testing providers

Your instructions

1. You are instructed to undertake toxicological testing by way of ***[scalp hair] / [body hair] / [nail]*** of ***[name of party]*** in respect of the following substances ***[delete as required]:***
   (a) Amphetamines
   (b) Alcohol (including Ethyl Glucuronide (EtG) and Ethyl Palmitate (EtPA/FAEE);
   (c) Benzodiazepines
   (d) Cannabinoids
   (e) Cocaine (including crack cocaine);
   (f) Ketamine;
   (g) Methadone;
   (h) Methamphetamines
   (i) Opiates (including heroin);
   (j) Tramadol.
   (k) Other [add substance]
   Testing should cover the preceding ***[number]*** of months ***[segmented by month].***

2. Where a descriptor of high/medium/low is used, please provide a numerical description of the boundaries between each category with an explanation of the manner in which the boundaries are set, with a clear statement that the description is of the level of substance found and not of the level of use.

3. Where a substance is detected below the cut-off threshold adopted, please:
   (a) record the same in a numerical form or else confirm that the substance was "detected, but so low that it is not quantifiable"; and
   (b) provide a clear explanation of the reason for the cut-off point and the need for particular caution in relation to data that falls below it.

4. Please confirm whether, in your opinion, the results of toxicological testing are more likely than not explained by ingestion of the substance[s] tested for and over what period of time.

5. Please confirm whether, in your opinion, the results of toxicological testing are more likely than not explained by ***[environmental exposure] [other explanation provided by tested person]*** and over what period of time.

6. Please explain to what extent (if any) the following variable factors are relevant to your conclusions ***[delete as required]:***
   (a) Hair colour;
   (b) Race of [name of tested person];
   (c) Pregnancy;
   (d) Diagnosis of [specify health condition];
   (e) Prescription of [name of medication] at [quantity] mg per day;
   (f) Hair treatment [specify whether colour or heat, and name of product/brand].

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7. Are there any other factors or available information not listed above which may have impacted on the results?

8. *[Name of tested person] [confirms having last used [substance] on [date] and they report using [substance] on a [daily] [weekly] [monthly] frequency] OR [confirms having been exposed to [substance] on [date]] OR [denies any use of or exposure to [substance]].* Please confirm to what extent the results of toxicological testing are consistent with the reported level of use or exposure.

9. Please confirm to what extent you are able to identify a pattern of use from the test results.

10. ***[For alcohol use only]*** Is Liver Function Testing (LFT) Phosphatidylthanol (PEth) Carbohydrate-Deficient Transferrin (CDT) testing required to determine a pattern of use? If so, over what period of time?

11. Please identify any further testing which might help to determine a pattern of use or else which is indicated by the results as requiring further investigation (for example, the detection of other metabolites/compounds).

12. Please comment on any other matter you consider to be relevant to the question of ***[name]***'s use of ***[alcohol] [substances***].

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Annex 2: Glossary of terms used in reporting

Analyte – The specific substance being measured.

Metabolite – A substance which is formed when another substance is metabolised in the body. The presence of metabolites indicates that substances have been processed by the body.

Reporting cut off level – Threshold used to determine whether a substance is detected or not. Most laboratories use those set by the Society of Hair Strand testing and are designed to identify repeated use of a substance not a single instance of use or passive exposure.

Detected/positive – The concentration falls above the laboratory's reporting cut off level

Not detected/negative – The concentration falls below the laboratory's reporting cut off level

Calibration range – The range within which accurate measurements of an analyte can be made. N.B. The specific concentrations which fall outside of this range are not reported however this information may be sought form laboratories where further clarification is needed.

Lower limit of quantification – LLOQ – lowest concentration of an analyte that can be measured accurately.

Upper limit of quantification – ULOQ – highest concentration of an analyte that can be measured accurately.

Ng/mg – Nanograms per milligram of hair (1000 nanograms = 1microgram)

Pg/mg – Picograms per milligram of hair (1000 picograms = 1 nanogram)

Invalid/inconclusive – The results cannot be interpreted due to a technical issue.

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Annex 3: Industry safeguards to ensure reliability of laboratory testing.

Factor affecting reliability	Safeguards	Considerations or limitations
Quality of the laboratory equipment and processes.	Labs must adhere to international standard ISO17025, assessed by the United Kingdom Accreditation Service (UKAS) & standards set out by the Society of Hair Strand Testing (SoHT).	Accreditation is for specific tests *not* the lab or toxicologist. Accreditation is of the accuracy of the 'analytical result' NOT subsequent interpretation of the result.
Subcontracting to overseas laboratories.	Labs must ensure that non-UK subcontractors comply with UK standards.	Where relevant this should be stated in the report.
Maintenance of quality standards.	Accredited labs undergo proficiency testing via blind samples which are analysed and checked against other laboratories.	Variable methodology & equipment means one cannot assume results from different labs are directly comparable.
Sensitivity and accuracy of equipment.	Instruments have a calibration range within which reliable results are guaranteed. Labs will advise when results fall outside of this range.	Results that are out of calibration range may still provide useful information to inform interpretation.

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Annex 4: Factors which influence hair test results.

Factor	Impact upon hair testing
Genetic & physiological differences in individuals	Variability in metabolism & hormone function impact the rate that substances are processed and the level of uptake.
Body mass	Body weight, body fat ratio can also affect the absorption rate. e.g. THC is fat soluble and may stay in the system longer.
Age	Slowed growth rate. Metabolic rate, hormone changes, melanin changes
Hair colour	Higher melanin in the hair increases the uptake of a substance.
Hair growth rate	Growth rates vary between individuals. Hair is at different points in growth cycle in each person. Growth rates are impacted by age, ethnicity, hair type, pregnancy, health conditions & treatments (e.g. alopecia, chemotherapy)
Ethnicity	Affects growth rate of hair & melanin levels.
Pregnancy	Affects growth rate and shedding rate due to changes in hair cycle. Can take 12-18 months for hair growth rates to stabilise.
Environmental agents	Which affect levels of substances in the hair e.g. hair treatments (dyes, chemicals, heating with straighteners) lifestyle (swimming/UV)
Source of the hair	Head hair and body hair have different growth rates and absorption.
Location of the sample & amount of the sample	Vertex posterior (at the back of the head) is the best area as growth rate is more uniform in this area, less influence of age and gender.
Health conditions	Health conditions may have physiological impacts which affect absorption, metabolism and storage of substances. e.g. liver conditions.
Medications & treatments	Some medical treatments and medications may impact upon test results.
Concentration of street drugs varies	A person may use ‘a gram’ but we do not know the purity of the substance they took.

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Annex 5: Seven Suggestions for Reports.

In *Re H (A Child) (Care Proceedings: Hair Strand Testing)* [2017] EWFC 64 at [59], Peter Jackson J proffered '*the following seven suggestions in case they are helpful*' in the preparation of reports for court:

(1) *Use of high/medium/low descriptor:*

This is in my view useful, provided it is accompanied by:

- A numerical description of the boundaries between high/medium/low, with an explanation of the manner in which the boundaries are set should be stated.[51]
- A clear statement that the description is of the level of substance found and not of the level of use, though there may be a broad correlation.
- A reminder that the finding from the test must always be set alongside other sources of information, particularly where the results are in the low range.

(2) *Reporting of data below the cut-off range:*

There is currently inconsistency as between organisations on reporting substances detected between the lower limit of detection (LLoD) and the lower limit of quantification (LLoQ), and those between the LLoQ and the cut-off point.

I would suggest that reports record all findings, so that:

- a finding below the LLoQ is described as "detected, but so low that it is not quantifiable"
- A result falling below the cut-off level is given in numerical form

and that this data is accompanied by a clear explanation of the reason for the cut-off point and the need for particular caution in relation to data that falls below it.[52]

(3) *Terminology*

Efforts to understand the significance of tests are hampered by the lack of a common vocabulary to describe results in the very low ranges, Descriptions such as "positive", "negative", "indicates that" and "not detected" can be used and understood vaguely or incorrectly. The creation of a common vocabulary across the industry could only be achieved by a body such as the SoHT. In the absence of uniformity, reporters should define their terms precisely so that they can be accurately understood.

(4) *Expressions of probability:*

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[51] Laboratories should include a description of the data set upon which their boundaries are based.

[52] Caution may also be needed when interpreting values above the ULoQ as the quoted ceiling value of '>10$' can be misread as a consistent level but the actual levels may vary considerably.

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The Family Court works on the civil standard of proof, namely the balance of probabilities. It would therefore help if opinions about testing results could be expressed in that way. For example:

"Taken in isolation, these findings are in my opinion more likely than not to indicate ingestion of [drug]."

"Taken in isolation, these findings are in my opinion more likely than not to indicate that [drug] has not been ingested because…."

"Taken in isolation, these findings are in my opinion more likely to indicate exposure to [drug] than ingestion."

(5) Where there is reason to believe that environmental contamination may be an issue, this should be fully described, together with an analysis of any factors that may help the reader to distinguish between the possibilities.

(6) The FAQ sheet accompanying the report (which might better be described as "Essential Information"), might be tailored to give information relevant to the particular report, and thereby make it easier to assimilate.

(7) When it is known that testing has been carried out by more than one organisation, the report should explain that the findings may be variable as between organisations.

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Annex 6: Further Resources

Guidance & governance

- The United Kingdom and Ireland association of forensic toxicologists' Code of Conduct:
  https://www.ukiaft.org/code-of-conduct/

- The United Kingdom and Ireland association of forensic toxicologists forensic toxicology laboratory guidelines (2018):
  https://www.ukiaft.org/wp-content/uploads/UKIAFT-Lab-Guidelines-2018-published.pdf

- Society of Hair Strand Testing – Consensus guidance on hair testing
  https://www.soht.org/images/pdf/General_Consensus_Hair_Testing_2022.pdf

- Forensic Science Regulator – Code of practice – June 2025 & Legal guidance 2019
  https://www.gov.uk/government/publications/forensic-science-activities-statutory-code-of-practice-version-2
  https://www.gov.uk/government/collections/fsr-legal-guidance

- Recommendations for collecting hair samples for toxicology. The faculty of Forensic and Legal medicine of the Royal College of Physicians. Updated Jan 2025.
  https://fflm.ac.uk/resources/publications/recommendations-for-collecting-hair-samples-for-toxicology/

- Nottinghamshire Children's Social Care – Drug testing in children's social care (Oral Fluid Sampling).
  https://nottinghamshirecs.trixonline.co.uk/chapter/drug-testing-in-childrens-social-care-oral-fluid-sampling

- Drug testing and drug appointment licence and post-release supervision conditions

- Guidance on supporting integrated delivery. Offender Management Service, July 2015.
  https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/444764/Guide_to_Drug_Testing_and_Drug_Appointment_Licence_and_Post_Sentence_Supervision_requirements_July_2015.pdf

Useful reviews & commentary

- Moller M, Gareri J, Koren G. A review of substance abuse monitoring in a social services context: a primer for child protection workers. Can J Clin Pharmacol. 2010 Winter;17(1):e177-93.
  https://pubmed.ncbi.nlm.nih.gov/20436210/

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- Edwards, O. (2022) Forensic substance testing in the Family Courts. Family Law, July 2022.

- Flacks, S. (2023) Parental substance use and family justice: recent research. Family Law, April 2023.

- Branson, S. & Hunter, P. (2023) Recent scientific developments in hair strand testing and racial bias in current practices of hair strand testing. Family Law, June 2023.

- Branson, S. & Hunter, P. (2023) What next for hair strand testing in the family justice system: Re D (Children Interim Care Order Hair Strand Testing). Family Law 2024

- Hubbard, J.A. (2025) Review on toxicology testing in hair. *Journal of Applied Laboratory Medicine*, 10(4). https://pubmed.ncbi.nlm.nih.gov/40156129/

- Rygaard, K., S. K. Hermansen, and M. K. K. Nielsen. 2025. "Hair Testing in Forensic Toxicology: Recent Insights From Root to Tip." *Wiley Interdisciplinary Reviews: Forensic Science*7, no. 4
- Preece, D. & Jones, A. (2026). The forensic limits of hair drug testing: a critical assessment of drug intake and hair concentration relationships. *Science & Justice*, 66. https://pubmed.ncbi.nlm.nih.gov/42215180/

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