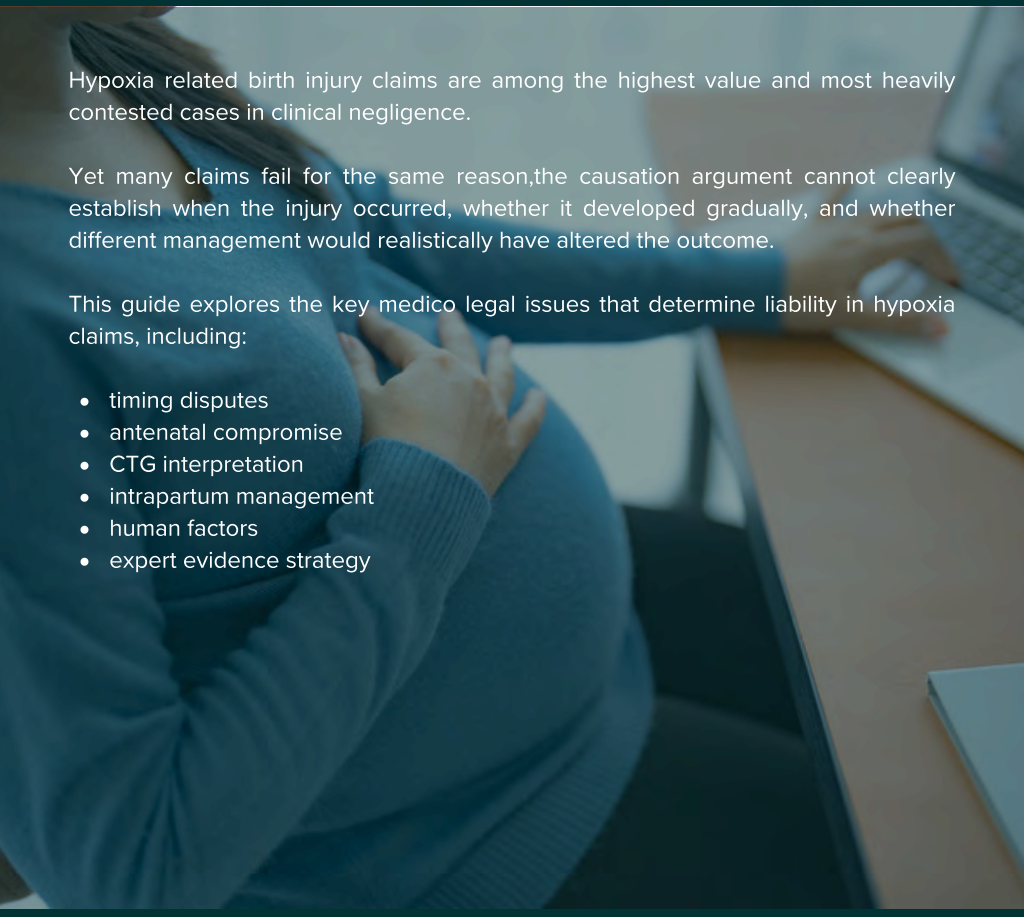
# The Causation Problem in Hypoxia Claims: *Why Timing Decides the Outcome*



Hypoxia related birth injury claims are among the highest value and most heavily contested cases in clinical negligence.

Yet many claims fail for the same reason,the causation argument cannot clearly establish when the injury occurred, whether it developed gradually, and whether different management would realistically have altered the outcome.

This guide explores the key medico legal issues that determine liability in hypoxia claims, including:

- timing disputes
- antenatal compromise
- CTG interpretation
- intrapartum management
- human factors
- expert evidence strategy

*Produced by INNEG based on key clinical and medico-legal insights shared during our webinar on Hypoxia in Birth Injury Claims led by Dr Benjamin Viaris de Lesegno, Consultant Obstetrician and Gynaecologist on 28th April 2026*

INNEG Your Medico-Legal Partner for Complex Legal Cases

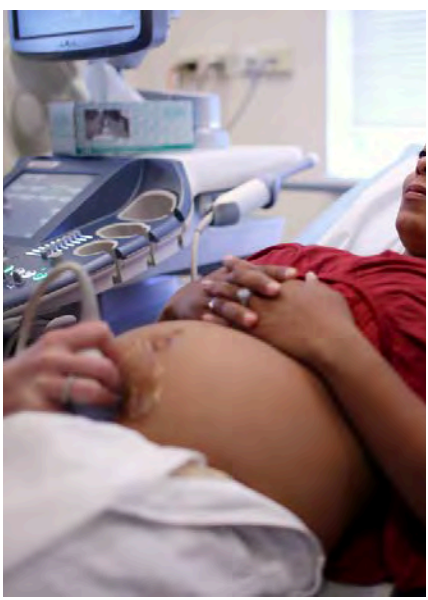
# Why Timing and Causation Often Decide Hypoxia Claims

In many hypoxia related birth injury claims, the central issue is not whether injury occurred, but when it occurred and whether earlier intervention would realistically have altered the outcome.

This is what makes these cases so heavily contested. Small differences in timing, interpretation, and clinical decision making can materially affect how causation is assessed.

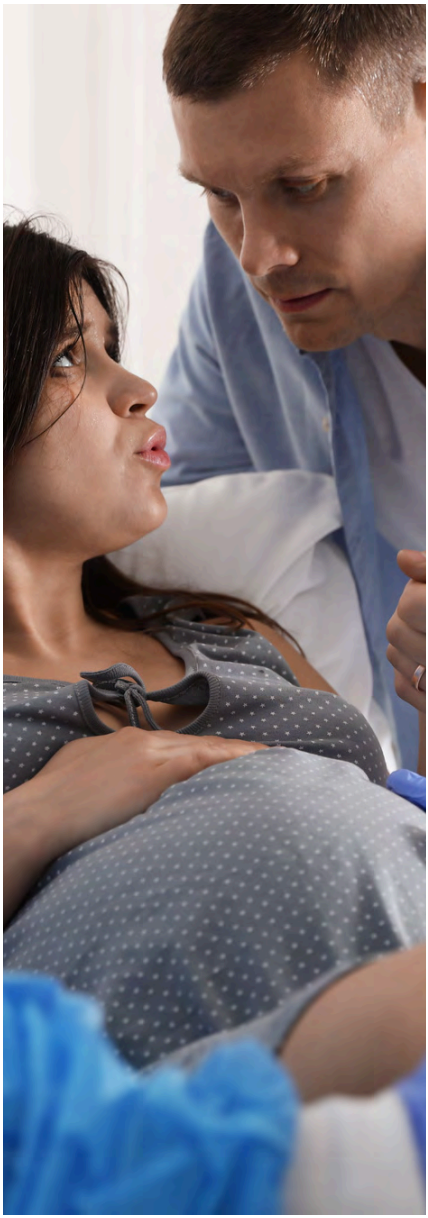
CTG interpretation is inherently subjective, antenatal and intrapartum factors frequently overlap, and deterioration may develop gradually rather than through a single acute event. In many cases, records are incomplete, monitoring is interrupted, or the clinical picture appears inconsistent across different sources of evidence.

As a result, claims that initially appear straightforward can become significantly more complex once the timeline and causation evidence are examined in detail.



For solicitors, the challenge is rarely identifying that something went wrong. The challenge is determining whether the available evidence supports a clear and defensible explanation of when injury developed, how it progressed, and whether different management would probably have altered the outcome.

This is why chronology, documentation, and the quality of expert reasoning often become more important than any individual clinical finding.



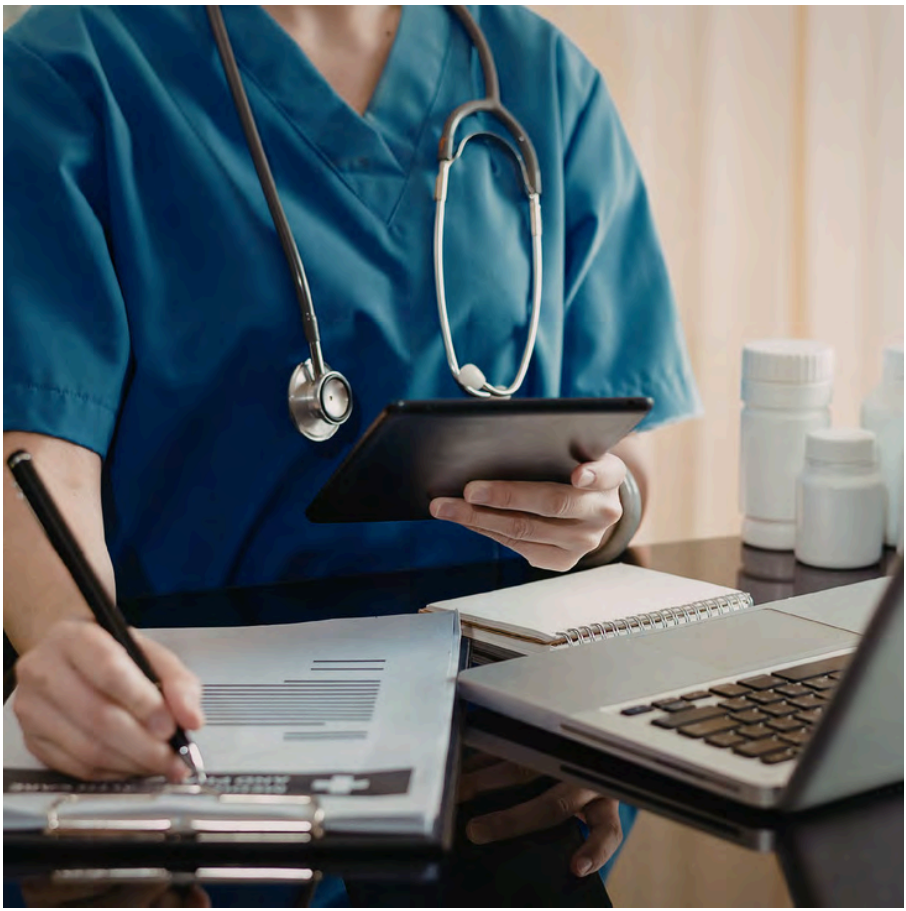
# The Core Legal Question: Timing = Liability

At the centre of any hypoxia-related birth injury claim lies a single, decisive question: when did the injury occur? In obstetric medico-legal analysis, the primary issue is whether the hypoxic insult took place before labour (antenatally) or during labour (intrapartum). This distinction is critical because it directly informs liability. Antenatal hypoxic events are often linked to factors such as placental insufficiency or other physiological processes that may be outside clinical control, whereas intrapartum events raise questions about the standard of care provided during labour, including monitoring, interpretation of clinical signs, and the timeliness of intervention.

In practice, however, causation is rarely clear-cut. While cases are often argued on the basis of a single point of injury, the clinical reality is that hypoxia can develop over time, with antenatal compromise reducing the foetus's ability to tolerate the stresses of labour. This creates a scenario in which both antenatal and intrapartum factors may contribute to the outcome. As highlighted in the transcript, disputes frequently arise where one expert attributes the injury primarily to events before labour, while another places emphasis on intrapartum management. Treating causation as a binary issue oversimplifies what is often a complex, multi-factorial process. A more robust approach requires careful evaluation of the full clinical picture and, where appropriate, consideration of how responsibility may be apportioned across different stages of care.

**What this means in practice:**

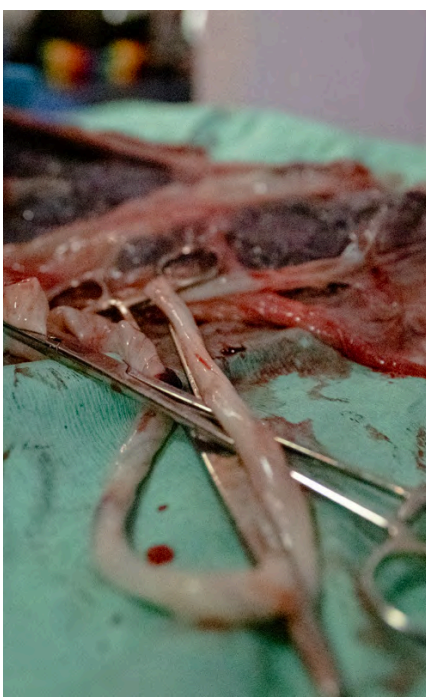
If you treat timing as a simple either/or question, you weaken your case. Most hypoxia claims involve mixed causation, and the defence will exploit any antenatal factors to shift liability. Your argument must show not just when injury occurred, but how much each phase contributed, and why intrapartum care still matters.



# Building Causation: The Four-System Framework

A structured approach to causation in hypoxia cases requires analysis across four key components of the pregnancy: the mother, the placenta, the foetus, and the uterus. As outlined in the webinar, understanding hypoxic injury depends on considering each of these systems individually and in combination, as each can contribute to reduced oxygen delivery or impaired physiological response. While in some cases the uterus and maternal factors may overlap, particularly in labour, they can still require separate consideration depending on the clinical context. This framework ensures that causation is not assessed in isolation but instead reflects the full biological environment in which the injury occurred.

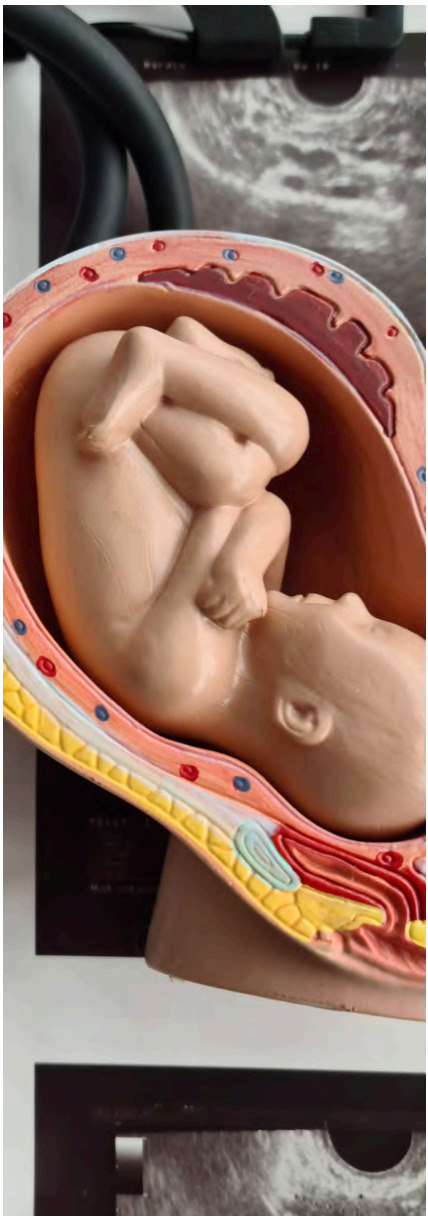
The importance of this approach is practical as much as clinical. If one of these components is overlooked, it creates an immediate weakness in the case. The defence can introduce an alternative causative pathway - for example, placental insufficiency or maternal health factors - that



has not been properly addressed. This, in turn, exposes the claimant's expert to challenge, particularly under cross-examination, where omissions in reasoning can undermine the credibility of their overall opinion. A complete and balanced analysis across all four systems is therefore essential to maintaining a coherent and defensible causation argument.

**What this means in practice:**

If your causation analysis doesn't cover all four systems, the defence will fill the gap for you. Any unaddressed factor (especially placental or maternal) becomes an alternative explanation that weakens your case. Your expert needs a complete, closed causation narrative, or it will be pulled apart under cross-examination.



# Antenatal Red Flags

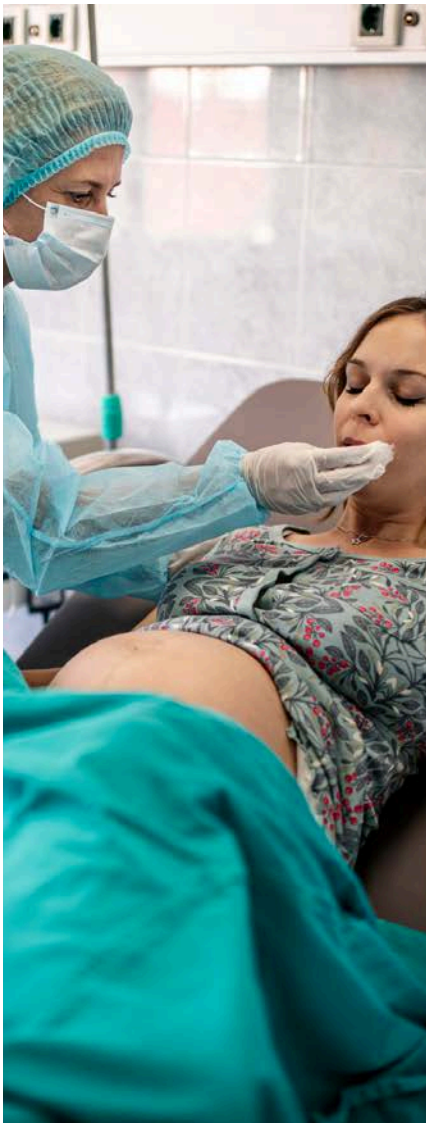
Antenatal indicators of hypoxia play a critical role in shaping causation arguments and are frequently relied upon by the defence to challenge claims. These include evidence of placental insufficiency, which may present as foetal growth restriction or a smaller-than-expected baby, as well as reduced growth velocity where the foetus fails to maintain its expected growth trajectory over time. Maternal conditions such as preeclampsia or rising blood pressure trends can also signal underlying placental dysfunction, even where formal diagnostic thresholds are not met. In addition, clinical signs such as reduced foetal movements and oligohydramnios - reflecting decreased amniotic fluid, often due to reduced foetal urine output - can indicate that the foetus is already experiencing compromised oxygenation before labour begins.

The presence of these features has clear strategic implications. Where antenatal compromise is identifiable, the defence is likely to argue that the hypoxic injury was already developing prior to labour, thereby reducing or negating liability for intrapartum care.

This makes it essential not to ignore or minimise these factors. Instead, they must be directly addressed within the causation analysis. This may involve rebutting their significance where appropriate or, more commonly, acknowledging their role while carefully assessing the extent to which intrapartum events contributed to the overall injury. Failure to engage with these antenatal red flags leaves a gap in the argument that can be exploited to undermine the claim.

**What this means in practice:**

If antenatal red flags are present and you ignore them, the defence will build their case around them. You must either disprove their significance or quantify their impact - there's no neutral position. Left unaddressed, these factors will shift the narrative to "damage already done," undermining any argument on intrapartum negligence.



# Intrapartum Failures

Intrapartum hypoxic injury is most often where liability is established, particularly where there is a clear failure in monitoring, recognition, or timely intervention during labour. These cases can broadly be divided into two categories, the first of which is sentinel events. Sentinel events are acute, often catastrophic occurrences that create an immediate and identifiable risk to the foetus. These include cord prolapse, uterine rupture, placental abruption, and maternal collapse, all of which can result in a sudden and severe interruption to oxygen supply. In these scenarios, the clinical picture is typically unambiguous: a previously stable situation deteriorates rapidly, and urgent action is required.

From a medico-legal perspective, the key issue in these cases is the response. Because the mechanism of injury is acute and time-critical, liability often turns on the speed and appropriateness of intervention. Events such as cord prolapse can leave only a matter of minutes before irreversible damage occurs, making rapid delivery essential. The central question therefore becomes whether the clinical team acted quickly enough once the event was identified, or ought to have been identified. In this context, time-to-delivery effectively becomes the trigger for liability, with delays in recognition, escalation, or intervention forming the basis of many successful claims.

**What this means in practice:**

In sentinel event cases, liability is rarely about whether there was a problem - it's about how fast the team responded. These cases are won or lost on minutes. If there is any delay in recognition, escalation, or delivery that cannot be clearly justified in the records, it becomes the focal point of the claim.

**B. Gradual Hypoxia**

The second and more commonly litigated category of intrapartum hypoxia involves gradual or cumulative oxygen deprivation rather than a single acute event. During labour, each uterine contraction temporarily reduces or stops blood flow to the placenta, meaning the foetus experiences repeated, short periods of reduced oxygenation. As described in the webinar, this can be likened to “holding your breath” for several minutes at a time, repeatedly over the course of labour. A healthy foetus with sufficient physiological reserves can usually tolerate this pattern. However, where those reserves are limited - whether due to subtle antenatal compromise or increasing metabolic demand - the foetus may begin to decompensate over time.

In these cases, the issue is not a single identifiable moment of injury but a progressive deterioration that should be recognised and acted upon. The medico-legal focus therefore shifts to whether clinical staff identified the signs of worsening hypoxia, most commonly through CTG interpretation, and whether appropriate steps were taken in response. Many cases arise from a failure to recognise or act on these changes, rather than from the absence of monitoring altogether. It is within this gradual, evolving pattern of hypoxia - where interpretation, judgement, and escalation decisions come into play - that the majority of disputes between experts occur and where cases are most actively contested.

# CTG: The Battlefield

Cardiotocography (CTG) sits at the centre of most hypoxia-related disputes, yet it is also one of the most unreliable and contested forms of evidence. Misinterpretation of CTG is a dominant feature in litigation, with 80–90% of reviewed cases involving some form of incorrect reading or failure to act on CTG findings. Even where interpretation is attempted in good faith, there is significant variability between clinicians, with disagreement occurring in approximately 40% of cases when different observers assess the same trace.

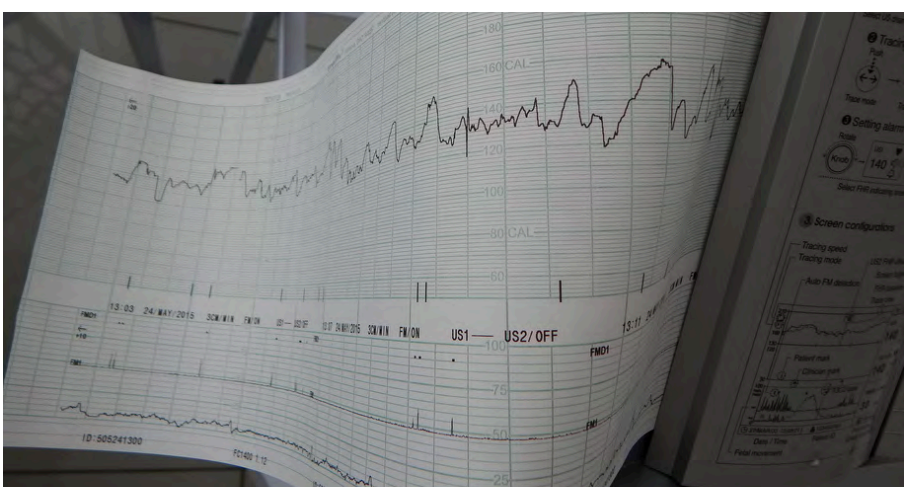
This variability is compounded by the fact that only around half of clearly pathological CTG traces are actually associated with true hypoxia, meaning that abnormal findings do not reliably equate to injury.

The limitations of CTG are not just statistical but structural. As emphasised in the webinar, CTG does not directly measure oxygenation; instead, it provides indirect cardiovascular indicators that must be interpreted within a broader clinical context.

This makes it inherently subjective, particularly in real-time clinical settings where multiple pressures and competing demands exist. Interpretation is also highly susceptible to retrospective bias, as traces are often reviewed with knowledge of the outcome, which can influence how features are perceived. As a result, CTG evidence is frequently challenged in litigation, both in terms of what it shows and how it should have been interpreted at the time. For solicitors, this means that CTG should not be treated as definitive proof of hypoxia but rather as one component of a wider evidential framework that must be carefully analysed and supported by additional clinical findings.

**What this means in practice:**

If your case relies heavily on CTG, it is inherently vulnerable. The defence will challenge both the interpretation and its relevance to actual hypoxia. CTG must be supported by wider clinical evidence and a coherent timeline, or it will be picked apart under scrutiny.



# Common Failures That Create Liability

Analysis of hypoxia-related claims consistently identifies a set of recurring clinical failures that underpin liability. The most common issues include failure to recognise an abnormal CTG trace, failure to act once abnormalities are identified, and failure to escalate concerns to more senior clinicians. These are often accompanied by inadequate monitoring, where observations are either not performed at the required frequency or not interpreted within the full clinical context. Documentation gaps are also a persistent problem, with incomplete or missing records making it difficult to establish what decisions were taken and why. In practice, these failures rarely occur in isolation; they tend to overlap, creating a cumulative breakdown in care.

From a legal perspective, these clinical shortcomings must be translated into the established tests for negligence. The question of breach centres on whether the care provided fell below the standard expected of a reasonably competent clinician, as defined by the Bolam and Bolitho principles.

This involves assessing whether the actions, or inactions, are supported by a responsible body of medical opinion and whether that opinion is logically defensible. Causation then requires a further step: determining whether, on the balance of probabilities, earlier recognition, escalation, or intervention would have prevented or materially reduced the injury. In hypoxia cases, this often becomes the decisive issue, as even clear failures in care will not result in liability unless it can be shown that they made a difference to the outcome.

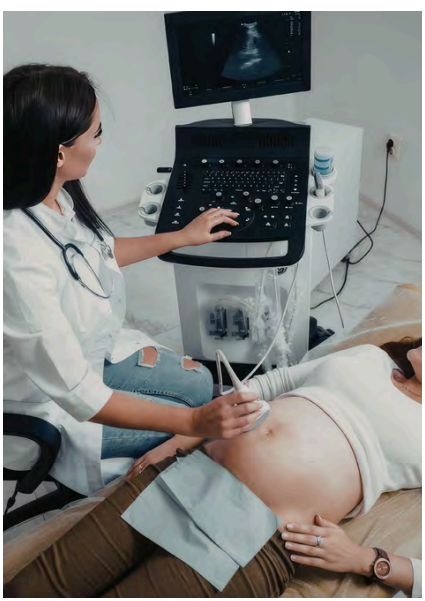
**What this means in practice:**

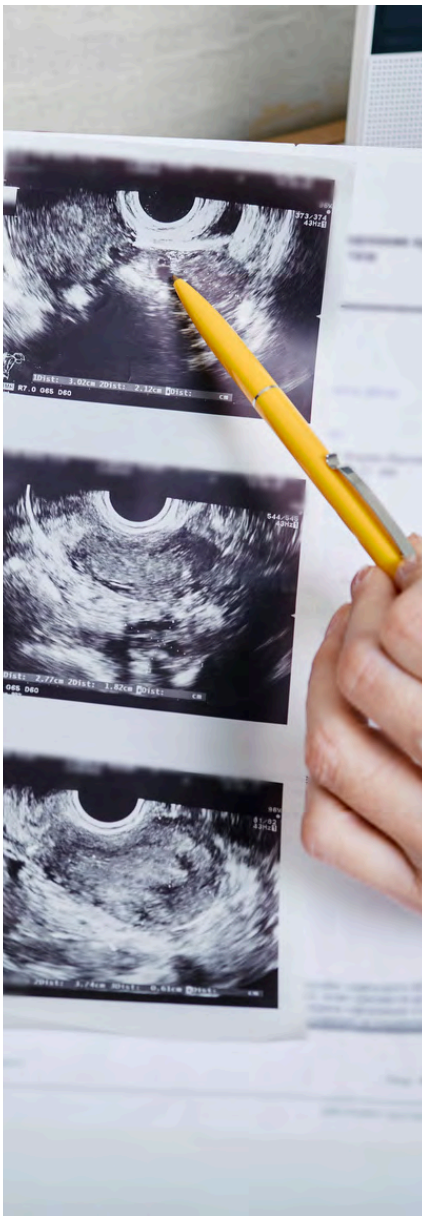
It's not enough to show something went wrong - you have to show it changed the outcome. Multiple small failures may look compelling, but if you can't link them to avoidable injury, the claim weakens. Focus on what should have happened, when, and whether it would have made a difference.

# Human Factors

Human factors play a significant and often underestimated role in hypoxia-related claims, contributing to approximately 30% of cases involving suboptimal care. These factors do not relate to a lack of clinical knowledge, but rather to the way decisions are made in real-world environments. Several common human factors arise repeatedly in practice, including anchoring bias, where clinicians rely too heavily on an earlier impression that the situation was normal and fail to adjust their assessment as conditions deteriorate. There are also issues linked to hierarchy, where junior staff may hesitate to escalate concerns or challenge senior decisions, even when escalation is clinically warranted. In addition, workload pressures, competing priorities, and frequent interruptions can impair judgement and delay action, while communication failures can result in unclear ownership of responsibility for monitoring and decision-making.

From a medico-legal perspective, these factors are important because they provide context for how and why failures in care occurred. Rather than presenting negligence as a simple error, human factors allow a case to demonstrate the underlying conditions that led to that error, such as systemic pressure, cognitive bias, or breakdowns in communication.





This can strengthen the overall narrative by making the sequence of events more coherent and clinically plausible. However, they must be used carefully; they do not excuse substandard care but instead help to explain it within the broader framework of clinical practice.

**What this means in practice:**

Human factors won't prove negligence on their own - but they make it believable. Use them to explain why obvious failures weren't acted on, especially where the defence argues reasonable care. They strengthen your narrative, but they must sit on top of clear clinical breach, not replace it.

# Expert Evidence: What Actually Wins Cases

The outcome of hypoxia litigation is heavily influenced by the quality of expert evidence, particularly in cases where there is disagreement on timing, causation, and interpretation of clinical data. The adjudicated case discussed in the webinar illustrates how courts assess competing expert opinions in practice. Judges do not simply choose between credentials; they evaluate the structure and reasoning of the evidence presented. Preference is given to experts who can demonstrate a clear and coherent causal chain, linking clinical events to the injury in a way that is consistent across the entire timeline of care. This reasoning must be supported by reference to relevant literature, guidelines, and established clinical practice, rather than assertion alone.

Equally important is the expert's ability to engage with opposing arguments. As highlighted in the case, stronger evidence came from the expert who directly addressed points raised by the other side and explained why those interpretations were less persuasive.

Consistency is also critical; opinions that shift or rely on isolated aspects of the evidence are more likely to be undermined. In contrast, weaker expert evidence tends to rely on selective reasoning, focusing only on facts that support a particular conclusion while ignoring contradictory material. Over-reliance on CTG alone, without integrating the wider clinical context, is another common weakness.

Ultimately, courts favour experts whose analysis is balanced, evidence-based, and resilient under scrutiny, particularly during cross-examination.

**What this means in practice:**

A strong expert doesn't just support your case - they withstand attack. If their opinion ignores contrary evidence, lacks clear reasoning, or leans too heavily on CTG, it will be exposed. You need an expert who can defend their position under pressure, not just state it.

# Practical Case-Building Checklist

Before obtaining expert evidence in a hypoxia related birth injury claim, consider:

**Records & Documentation**

- Full antenatal records obtained
- Growth scans and Doppler studies reviewed
- Complete CTG traces available
- Neonatal and NICU records included
- Any documentation gaps identified early
- Timeline of labour clearly reconstructed

**Antenatal Indicators**

- Evidence of placental insufficiency considered
- Growth restriction or reduced growth velocity assessed
- Maternal hypertension or preeclampsia reviewed
- Reduced foetal movements documented
- Oligohydramnios or abnormal Dopplers identified

**Intrapartum Management**

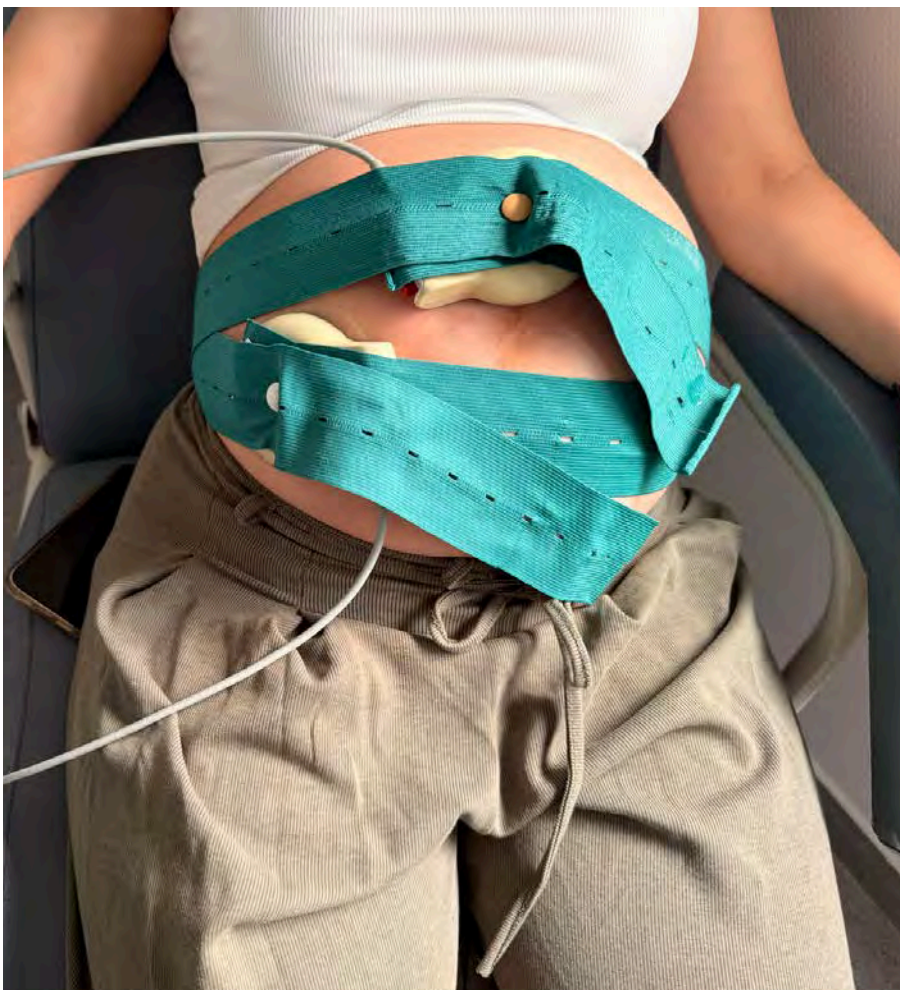
- Timing of CTG deterioration identified
- Escalation points clearly documented
- Delays in review or intervention assessed
- Sentinel events excluded or addressed
- Human factors considered where relevant

**Causation Analysis**

- Timing of injury assessed carefully
- Antenatal and intrapartum factors separated
- Mixed causation considered
- Evidence supports that earlier intervention would probably have altered outcome

**Expert Strategy**

- Expert can address both antenatal and intrapartum issues
- Expert reasoning supported by guidelines and literature
- Contradictory evidence addressed directly
- Opinion capable of withstanding cross examination



# The Single Biggest Mistake Solicitors Make

One of the most significant and recurring weaknesses in hypoxia-related claims is the reliance on events that are not supported by the contemporaneous medical records. As highlighted in the webinar, some claims are constructed around accounts of conversations or actions that are said to have taken place but are not documented anywhere in the notes. While this does not necessarily mean those events did not occur, the absence of a written record creates a substantial evidential gap. In a medico-legal context, where cases are built on objective documentation, this lack of substantiation makes it difficult to establish a reliable factual foundation.

The practical consequence is that such claims are highly vulnerable when challenged. Without supporting documentation, it becomes extremely difficult to prove that a particular discussion, decision, or escalation took place, especially when weighed against formal records that suggest otherwise. This allows the defence to undermine the credibility of the claim by pointing to inconsistencies or absence of evidence. As a result, cases built on assumption rather than documented fact are far more likely to be dismantled under scrutiny, particularly during expert analysis and cross-examination.

**What this means in practice:**

If it's not in the records, you don't have a case - you have a theory. The defence will default to the documented version of events every time. Build your case from what can be proven, not what is alleged, or it will collapse under challenge.