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Adverse childhood experiences

I want to share with you something that I have become increasingly passionate about. This is not new; in fact, the study I want to share comes from 1998. But it lies at the heart of many of our most challenging tasks and consultations in primary care.

This article was updated in May 2026.

Did you know that **one factor** is implicated in 7 out of 10 deaths in the USA?

If exposed, your life expectancy may be shortened by up to 20 years and you have triple the risk of heart disease and lung cancer. You have double the chance of developing mental health problems ([BMJ 2019;364:l854](#)).

Based on these numbers, you would expect this to be a public health priority akin to sepsis...yet, despite an evidence base dating back 20 years, we don't have automatic scores popping up on our computer, and most of us have had

no training in how to identify or manage this problem!

What is it, I hear you ask?

Childhood trauma...yes, that's right... I don't remember many lectures on this at medical school or questions in MRCGP exams!

1. The Adverse Childhood Experience (ACE) Study

The Adverse Childhood Experience (ACE) Study found a strong relationship between exposure to abuse or household dysfunction during childhood and multiple risk factors for several of the leading causes of death and disability in adults ([Am J Prev Med 1998;14:245](#)). In summary:

Between 1995 and 1997, over 17 000 adults attending Kaiser-Permanente clinics were asked about history of exposure to ACEs. Researchers asked about repeated or prolonged exposure to a number of adverse experiences:

- Physical, emotional or sexual abuse.
- Parental mental illness.
- Parental substance abuse.
- A parent who spent time in prison.
- Divorce.
- Domestic violence.

Each *type* of trauma scored 1 point, regardless of how many times the child was exposed. Researchers then correlated the results against health outcomes.

- About 2/3 of the participants had experienced an ACE.
- Of those, 87% had experienced 2 or more and, shockingly, 1 in 8 adults had 4+ ACEs.
- They were not confined to lower socioeconomic status, and occurred across age ranges and genders.

The impact on health outcomes was stark:

- The higher your ACE score, the worse your health outcomes, including mental health.
- Those with an ACE score of 4+ had a relative risk of COPD 2.5x that of a person with an ACE score of 0, a 3x increased risk of heart disease and a 12.5x increased risk of suicidality.
- Unsurprisingly, these people are more likely to have maladaptive coping strategies that expose them to greater health risks – but the effect remained even once researchers controlled for risk-taking behaviours.

How common are ACEs in the UK?

A 2020 combined analysis of five cross-sectional population surveys found slightly lower levels of ACEs in the UK population than the results from the ACE study. Around half of UK adults had experienced at least one ACE, and around one in ten reported four or more ACEs – the threshold often linked with markedly elevated risks of poor physical and mental health and substance misuse ([BMJ Open 2020;10:e036374](#)).

Which negative health outcomes are associated with ACEs?

A large systematic review and meta-analysis found that adults who had experienced four or more ACEs were at increased risk of a wide variety of negative health outcomes ([Lancet Public Health 2017;2:e356](#)).

Outcomes with the strongest association included:

- Problematic drug or alcohol use.
- Depression and anxiety.
- Suicide attempts.
- Sexual health risks, including sexually transmitted infections and teenage pregnancy.
- Low life satisfaction.

Outcomes with a moderate association included:

- Smoking.
- Cancer.
- Cardiovascular disease.
- Chronic respiratory illnesses.
- Liver disease.

The negative impact on physical outcomes was also found in a 2025 study ([Eur J Public Health 2025;35:498](#)). Adults who had experienced ACEs were significantly more likely to develop a wide range of physical health problems, including **hypertension, heart failure, diabetes, obesity, kidney and respiratory disease, arthritis, migraine and chronic pain**. The study showed a dose–effect relationship, with risks increasing as the number of ACEs rose. People who continued to ruminate about adverse experiences faced even higher risks.

2. How do ACEs contribute to adverse health outcomes?

Adverse childhood experiences create chronic stress during childhood, which can trigger long-term biological and behavioural changes that are associated with poorer health in later life. These include ([Lancet Public Health 2017;2:e356](#)):

- **Chronic activation of stress responses** (including cortisol, adrenaline, immune and inflammatory pathways) can affect development of the brain, endocrine and immune systems.
- This results in **impaired cognitive, social and emotional functioning** due to increased 'allostatic load' (cumulative wear and tear on the body's regulatory systems, caused by chronic stress).
- These effects make individuals more vulnerable to illness via two main pathways:
 - **Biological effects:** neuroendocrine, immune and metabolic changes associated with chronic stress.
 - **Behavioural changes:** coping strategies for emotional distress may include unhealthy behaviours such as smoking, alcohol and drug use, risky sexual activity, poor diet or inactivity.

3. What's the mechanism in the brain?

Adverse childhood experiences are associated with functional and structural alterations in areas of the brain such as the amygdala, hippocampus and anterior cingulate cortex. It has been hypothesised that these emotion-sensitive regions have a high density of glucocorticoid receptors and may be damaged by the prolonged release of glucocorticoids during traumatic childhood events. This leads to negative effects on neurocognitive functioning such as working memory and inhibitory control. These effects may be particularly marked during specific periods of brain

development and maturation such as during pre- and early adolescence (age 9–13y) ([Lancet 2022;400: 60–72](#)).

4. How does this affect us in primary care?

- We may see children being exposed to ACEs, and need to make referrals to social care or signpost families to additional support.
- We will also see large numbers of adults living with the lifelong consequences of their own childhood trauma.

Understanding the role of childhood trauma in the health of our patients – physical as well as mental – gives us another option when all our usual brief interventions have not helped and we are struggling to manage their medications, or are having recurrent appointments where nothing seems to change.

One of our Red Whale team says, “Since reading this study, I have started asking my ‘frequent flyers’ directly about their experiences of childhood trauma. So far, none have been surprised or offended by my question, and all but one has disclosed multiple ACEs when asked. I would never have asked in the past. For a couple, it has unlocked a route to managing chronic pain through psychological support rather than recurrent medication-seeking behaviour.”

We think the ACEs trial might just be the most important public health study you’ve never heard of. What, if anything, can we do about it?

5. What can be done?

Tackling adverse childhood experiences (ACEs) can be considered in three

parts:

- Prevention of future risk.
- Early identification and addressing of current risks.
- Recovery from previous ACEs.

6. Prevention of future risk

Across the UK, public health teams are working with education, social care, housing, health and policing to address current and future ACEs risk.

The scale of possible impact will be determined by government investment in public health – which has reduced over the recent past ([UK Health Security Agency blog – investing in prevention: the need to make the case now](#)).

With more integrated working in PCNs and integrated care systems, primary care can contribute to a greater say in how we support populations in this way.

Evidence also suggests that improving childhood environments may have lasting benefits. A Swedish study ([BMJ 2026;393:e087844](#)) found that children from families affected by psychiatric illness, suicide or criminal behaviour who were adopted early into more stable and advantaged family environments had better long-term outcomes than siblings who remained in the biological family home. These included lower rates of mental illness, criminal convictions and social welfare dependency, and better educational and cognitive outcomes. Some benefits were also seen in the next generation.

These findings highlight the importance of safe, stable and supportive

childhood environments in reducing the long-term impact of adversity. However, the authors emphasise that this should not be interpreted as advocating for adoption, which can involve complex emotional and relational experiences, including loss of connection to biological family and challenges around identity and belonging – issues that were not examined in this study.

7. Early identification

- Focus on the early years.
- Consider ACE history of parents – identify vulnerable families.
- Provision of parenting support.
- Promote emotional support and resilience in schools.
- Consider whether trauma could be at the base of non-specific symptoms or behaviour – in adults and children.
- Develop clear referral pathways, with joint working between services.

Again, this needs a multi-agency public health approach but, as GPs, we can make a difference by being 'ACE aware' when we see children and expectant parents in our surgery.

Having a strong relationship with a trusted adult throughout childhood has been found to reduce the long-term negative impacts of childhood adversity, which is why early intervention is so important ([BMC Psychiatry 2017;17:110](#)).

Consider asking?

So, how can we identify this group? Well, we could consider just asking! Waiting to be told doesn't work.

If you ask people, they tell you: 82% compared with only 8% volunteering information without being asked. It does not appear that asking increases demand on services ([Psychiatric Services 1998; 49:355–359](#)).

8. Trauma-informed care

We can offer support to people who have experienced ACEs by providing **trauma-informed care**.

The aim is to create healthcare settings that feel safe, respectful and empowering, supporting each person's sense of control and choice. These principles apply across all levels of care, from individual clinical encounters to service design and system-wide organisation. Unlike trauma-focused therapies such as CBT or EMDR, trauma-informed care does not treat trauma symptoms directly, but provides a framework that promotes safety and trust across all areas of healthcare.

Given the high prevalence of ACEs and trauma, all of healthcare benefits from being grounded in trauma-focused principles. This means providing care that builds trust, supports safety and strengthens personal agency, **whether or not a history of trauma is known or disclosed**.

We discuss this in more detail in our article, *Trauma-informed care*.

9. Recovery after ACEs

Although ACEs are associated with a wide range of negative outcomes, **recovery is possible**.

An umbrella review of 44 systematic reviews and meta-analyses found that

people who had experienced early adversity can develop resilience in later life ([Front Psychiatry 2024;15:1391312](#)):

- Resilience was defined as the capacity to maintain or recover mental health after stress, trauma or major life challenges.
- The study looked at both personal protective factors that buffer against later harm, and the impact of interventions designed to promote resilience.
- Personal protective factors most closely linked with resilience included the ability to self-regulate; having a positive self-perception; social support from friends, family or school; and religious or community support.
- Interventions shown to improve resilience included resilience-training programmes, CBT and mindfulness-based approaches.

A 2020 systematic review of interventions for young people aged 3–18y who had experienced abuse, neglect or household adversity found that ([BMC Public Health 2020;20:657](#)):

- **CBT showed the strongest and most consistent evidence of benefit**, with improvements in post-traumatic stress, anxiety and depressive symptoms.
- Evidence for other psychological therapies, including psychodynamic, family or group therapy, was inconclusive.
- Approaches such as psychoeducation, parent/foster carer training and educational or life-skills interventions had inconsistent or mixed results.
- There is a lack of evidence about the impact on broader outcomes such as social relationships, drug use, criminality or physical health outcomes.

We talk more about treatment of trauma in our article, *Post-traumatic stress disorder (PTSD)*.

Support for those who have experienced ACEs

A 2021 BMJ review of 20 qualitative studies explored how people in the UK experience services supporting those affected by ACEs ([BMJ 2021;375:n2608](#)). It identified three main areas of support that people found most helpful:

- Emotional support:
 - Empathy, active listening and being non-judgemental were highly valued.
 - Many young people struggled with shame and stigma that made it hard to build relationships with peers. Support from adults helped them engage with services and develop a shared sense of solidarity.
- Practical advice. People valued:
 - Continuity of care, with consistent services they could depend upon.
 - Flexibility and choice around communication, e.g. being offered the option of text contact.
 - Practical advice and support in navigating housing, finances, education and benefits systems.
 - Being involved in decisions about their lives, e.g. where they might live.
- Respite:
 - This included opportunities for recreation, music or sport to relieve stress and build social connection.

Social prescribing may have a role here. Are you aware of local services in your area?

	Adverse childhood experiences • Adverse childhood experiences are common – 1/8 adults in the original studies had 4+ ACEs. • ACEs have significant effects on the risk of developing long-term health conditions. • Using a trauma-informed approach can help GPs unlock complex health presentations. • Refer patients to mental health services for trauma therapies such as DBT or EMDR.
	Become an ACE-aware practice: Use this article and recommended videos below, either alone or with your team at work, to reflect on how these issues might affect your population, both from a health and safeguarding perspective. This could contribute to your safeguarding training requirement for this year.
	Useful resources: <u>Videos</u> (all resources are hyperlinked for ease of use in Red Whale Knowledge) • Public Health Wales: adverse childhood experiences (Vimeo) (explores ACEs and their impact across the life course from the point of view of one family. This is compelling viewing and would be a great addition to safeguarding training for your practice team) • TED Talks: How childhood trauma affects health across a lifetime

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