PROF. EAMON McCRORY

CHILDHOOD TRAUMA, THE BRAIN AND THE SOCIAL WORLD

A short guide about the importance of social relationships for mental health

WELCOME

A very warm welcome to this short guide about childhood trauma. This guide aims to share some of the latest research findings with those who are working every day to support children who have experienced complex trauma in the form of maltreatment.

Our previous guide on Childhood Trauma and the Brain gave an overview of how childhood trauma can affect brain development, and how this in turn can lead to mental health problems. Here, we unpack in more detail how these brain changes can affect a child's social world, and why this is important in helping us understand the mental health of children and young people who have experienced maltreatment.

Supportive social relationships are key to good mental health for everyone. To understand why maltreatment increases a child's risk of later mental health problems, it is important that we consider how such experiences can affect social relationships. We know that early abuse and neglect can impact brain development; we're now learning that this can affect the way a child interacts with the people around them, and how people in turn respond to a child. Over time, this can mean that a child's social world can become more stressful, with fewer trusted relationships – increasing a child's vulnerability to mental health problems.

However, none of this is set in stone. Understanding how past maltreatment affects a child's current and future social world can help us develop more effective ways for a child to build and maintain supportive social relationships. This can ultimately reduce the risk of mental health problems developing.

In this guide, we consider how adults and systems can help build and scaffold a better social world for children. Social workers, foster carers, adoptive parents and teachers can all play a role, as can policy makers, funders and commissioners.

Creating this guide has been made possible by generous funding from the NSPCC and ESRC. I am very grateful to them and to many colleagues, in particular Diana Armbruster-Genc, Lucy Foulkes, Mattia Gerin, Louise Neil, Ruth Roberts and Essi Viding. Finally, I would like to thank our fantastic social care colleagues and the children and families who volunteered to make this research possible in the first place.

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VISIT OUR WEBSITE

You can find the Childhood Trauma and the Brain animation and additional resources to support your learning on our website:
www.uktraumacouncil.org

This includes the animation guide, explainer videos and articles on the research. The animation is also available with Welsh subtitles.

INTRODUCING JON AND JASMINE

In our previous guide Childhood Trauma and the Brain, we introduced two fictional characters who had experienced maltreatment: Jon and Jasmine. We return to them again here. Their stories provide examples of how early trauma can affect a child's social world, how this can increase risk of mental health problems, and what can be done to help.
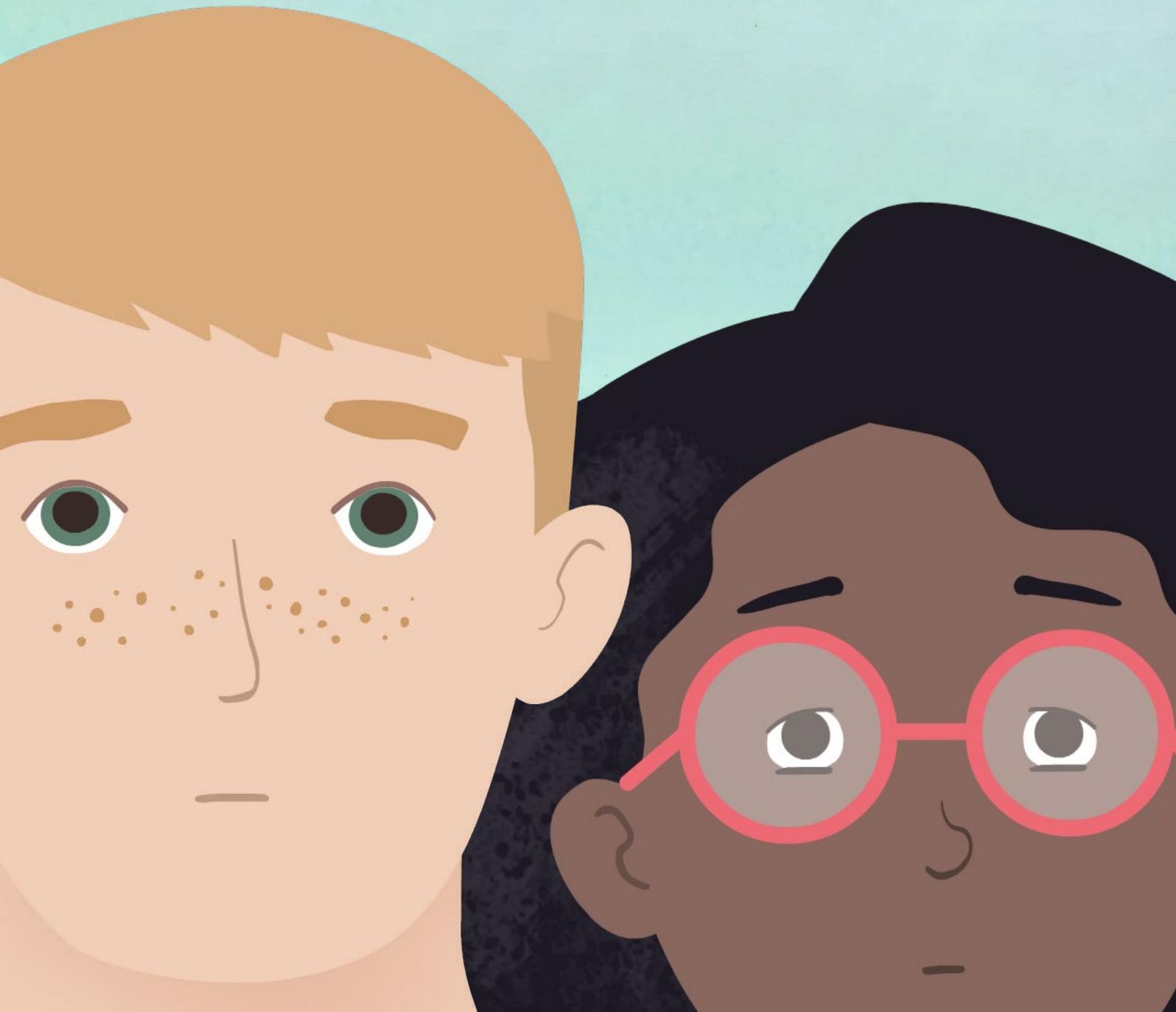
JON

Jon was a happy baby, at least until his mum got a new boyfriend and the violence began. As a young child, he could tell when trouble was brewing and get out of the way. But sometimes he couldn't hide in time. He was sometimes the victim. Worse was the feeling of helplessness watching his mother being hit. One day, shortly after his 10th birthday there was a serious incident which meant his mum had to be taken into hospital. Things began to change soon after that. Doctors and other adults began to speak to him. It was confusing and scary. He was worried about losing his mum, who was often sad and withdrawn. Jon felt angry and powerless.

As he grew older, Jon began to really enjoy sport. Naturally athletic, it was one thing he felt he might be able to do well. When he was 15 years old, his teacher suggested he join the school's senior swim team. He enjoyed taking part, but he found the social side of being on a team really challenging. In particular, he found that his teammates were often messing around and making jokes, but he wasn't sure what the jokes meant. Sometimes, when the comments were about him, he would feel upset and lash out. In and out the swimming pool, Jon often found that stress and conflict arose in his social relationships, even with his friends.

JASMINE

As a young child Jasmine experienced considerable neglect and often missed school. She was often left to fend for herself at home. Eventually, it was decided that she should go into foster care. Now 8 years old, Jasmine was recently placed with a new carer and had to move to a different area. This meant going to a new school. For Jasmine this was scary and she tried everything possible to avoid going. Her new foster carer explained why it was important to get an education and make friends. She walked Jasmine to the school gates every day and spoke to her teachers about her needs.

The children at her new school were friendly, but Jasmine didn't feel like she fitted in. When a group of her classmates approached her, she worried that they wanted to make fun of her. Instead, they showed her a cool new toy. She wasn't sure what to do or say, so she looked down and stepped away. Her classmates sometimes found her behaviour strange and confusing. They stopped showing her their new things and didn't ask her to play. Over time, Jasmine found it difficult to begin or hold onto friendships with other children, which left her feeling increasingly lonely.

WHY IS THE SOCIAL WORLD KEY TO EVERYONE'S MENTAL HEALTH?

For many of us, the COVID-19 pandemic confirmed what we already intuitively knew: social relationships are key to our mental health and wellbeing. This is supported by psychological studies that track people's social relationships over many years. This research has found that being lonely, experiencing stressful social relationships, and having fewer supportive social relationships all increase a person's risk of developing mental health problems.

This is true for everyone, not just people who have had experiences of complex trauma in childhood, such as maltreatment. However, these experiences and their impact on the brain make it more likely that a child will grow up in a more stressful and lonelier social world. In other words, experiencing maltreatment can make it harder for a child to build and maintain the supportive and trusted relationships that help buffer them from stress and provide them with new opportunities to learn and grow.

To understand why maltreatment increases the risk of mental health problems, we need to understand in more detail how social difficulties following maltreatment can arise, and how this can impact a child's social world and mental health over time.

HOW TRAUMA CAN IMPACT A CHILD'S SOCIAL WORLD

Many children with a history of maltreatment have difficulties with social relationships, just like Jon and Jasmine. Research has shown that such young people are more likely to have the following social difficulties:

- To be rejected by their peers at school and/or experience bullying
- To have a smaller number of social relationships in childhood and adulthood
- To have adult relationships that involve more stress, violence and conflict

This can lead to a gradual process in which social relationships are lost, are of poor quality, or never formed in the first place.

It is important to note that social difficulties following maltreatment experience aren't inevitable. But by being more aware of how they might unfold, we are in a better position to help and support children and young people who are affected by adversity.

There are many pathways that can lead to a more challenging and limited social world after maltreatment. Below, we consider two in particular – stress generation and social thinning – and discuss how they may contribute to social and mental health outcomes.
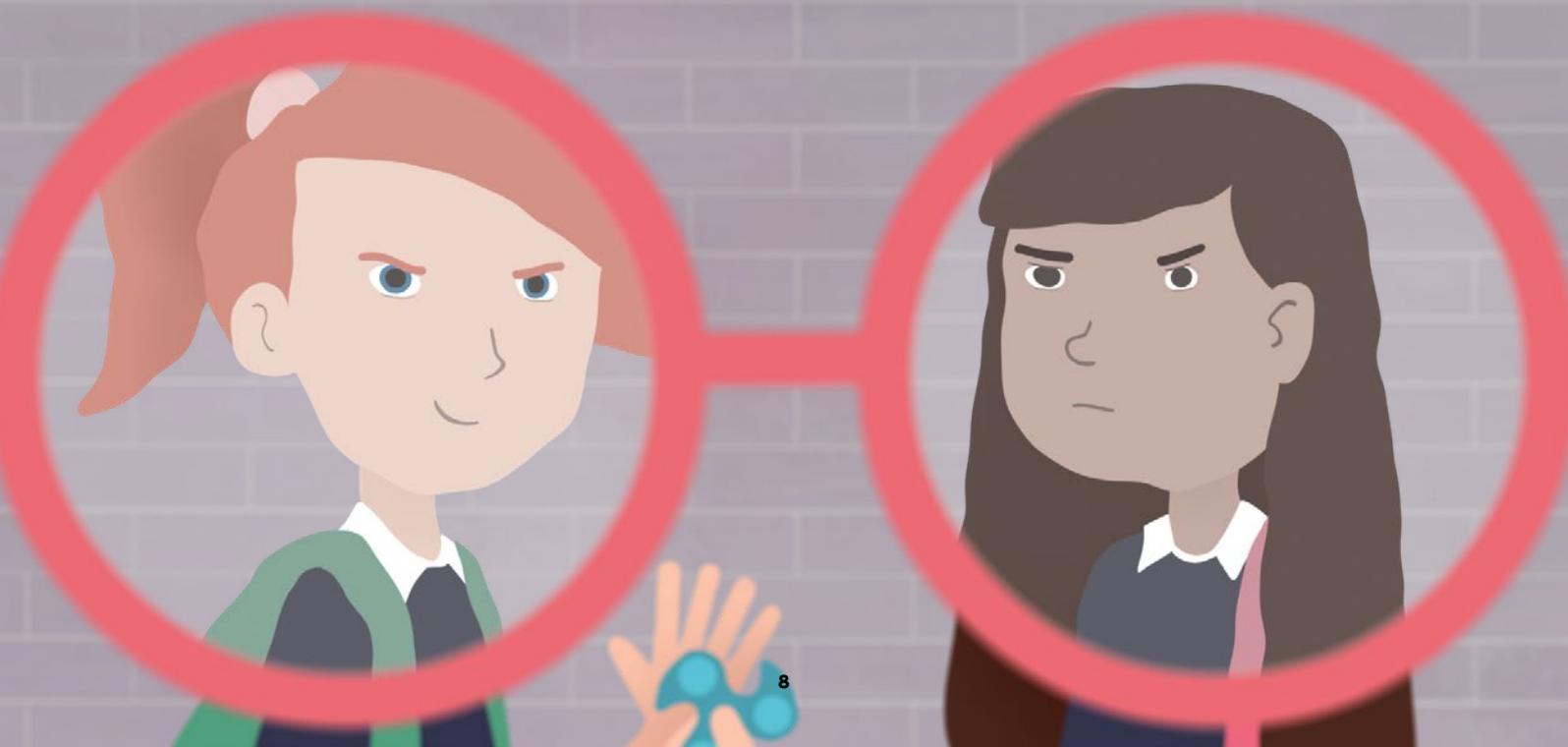
TWO PATHWAYS TO MENTAL HEALTH PROBLEMS

STRESS GENERATION

Children who have experienced abuse and neglect have already experienced significant social stress in childhood. However, these children continue to have more stressful social experiences than their peers, even into adulthood. For example:

- In childhood and adolescence, they are more likely to be victimised or bullied by their classmates
- In adulthood, they are more likely to experience conflict and violence in their friendships or romantic relationships

Importantly, research suggests that stressful experiences between people do not occur randomly. A given individual might themselves partially (and inadvertently) contribute to stressful events that happen to them – this is known as stress generation.

We certainly don't mean that children who have experienced maltreatment are to blame for stressful social experiences. They are not deliberately generating stress in their relationships. Instead, research suggests that they have learned to respond to social situations in ways that can increase the risk of problematic relationships and stressful interactions. This is what we mean by stress generation.

SOCIAL THINNING

Research suggests that individuals with a history of maltreatment have differences in the quality and quantity of relationships in their social network. For example:

- In childhood, they have fewer social contacts and fewer friends their age

- Adults with a history of maltreatment report less social support from family and friends

- Adults with a history of maltreatment are more likely to experience loneliness and social isolation

In other words, the potential network of social relationships diminishes over time. We refer to this gradual loss as a process of social thinning.

Following maltreatment, both stress generation and social thinning can make it harder to build a stable and supportive social world. Having fewer trusted and protective social relationships increases the impact of later stress, and the risk of mental health problems. In order to understand this process further – that is, how maltreatment can increase the risk of social difficulties in the first place – we need to look at the role played by the brain.

THE ROLE OF THE BRAIN IN BUILDING OUR SOCIAL WORLD

Traumatic experiences such as abuse and neglect can change the way a child's brain develops. In this very challenging environment, such adaptations often help the child to cope and survive. However, brain adaptations that are helpful in an abusive or neglectful early environment may make a child more vulnerable to developing mental health problems later on, when they're in a safer environment like school or foster care. We refer to this as latent vulnerability.

This is, in part, because the affected brain systems are often involved in processing social information. Although maltreatment can affect many of these systems, in this guide we focus on three examples:

- The **THREAT SYSTEM**, which processes potential danger

- The **REWARD SYSTEM**, which responds to positive experiences

- The **MEMORY SYSTEM**, which stores and makes use of our past experiences

These systems are all affected by maltreatment and all influence how we process social information. Below, we consider how alterations in these systems might affect a child's social interactions and ultimately shape their social world, increasing the risk of future mental health problems.
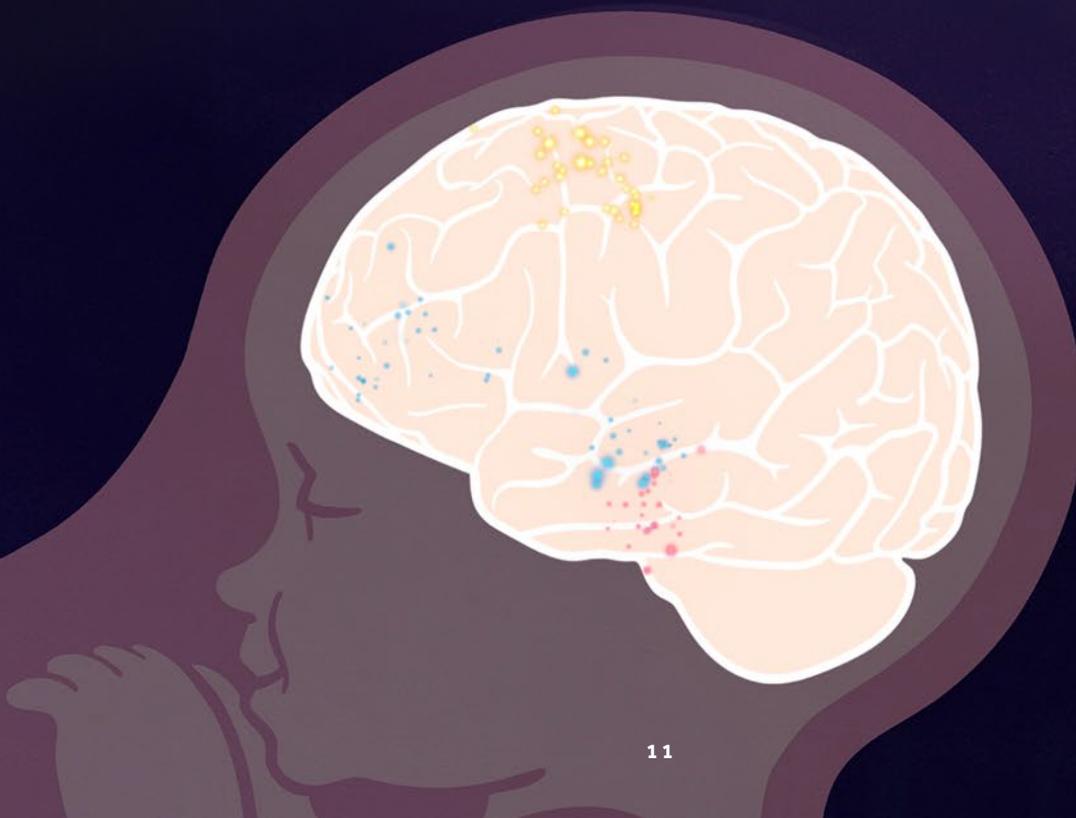
THE THREAT SYSTEM

The threat system in the brain allows us to detect and respond to danger. It helps us step back quickly from a speeding car or avoid an angry dog in the park. We all need to activate a fight-or-flight response occasionally to keep us safe. However, abuse and neglect can create a world where danger is frequent, extreme, and unpredictable. In this kind of world, it can be useful and necessary to be very attuned to potential threats.

The trouble is that maltreatment can lead to enduring changes in how the brain responds to perceived danger, even when the child is in a relatively safe environment. A pattern of hypervigilance can develop, for example. This is the tendency to notice and react to any potential threat in the environment, even things that are harmless. It can also lead to avoidance, in which a person avoids places or situations because they experience them as potentially threatening.

How does this shape social interactions?

- There are many interactions where we must interpret something ambiguous and decide if it is a threat – like a facial expression, a nudge, or even a joke

- A child who is hypervigilant to threat is more likely to jump to the conclusion that someone is out to cause them harm

- If they interpret something as a threat, they might lash out verbally or physically, or become upset and withdrawn, which may compromise their friendships or increase the risk of being isolated, excluded or bullied by peers

- Adults who witness the child lashing out may punish them in ways that lead to further social exclusion

How does this lead to stress generation and social thinning?

When a child interprets a social situation as threatening and reacts accordingly, this can trigger a cascade of difficult social interactions that could ultimately lead to a child being rejected or excluded from their peers, school or community. Such experiences of exclusion and rupture are inherently stressful.

An oversensitive threat system can also lead to withdrawal from potentially enriching relationships and activities. Over time, this can reduce a child's social network, limiting their opportunities to form and maintain helpful social bonds and learn new things about themselves and the world.
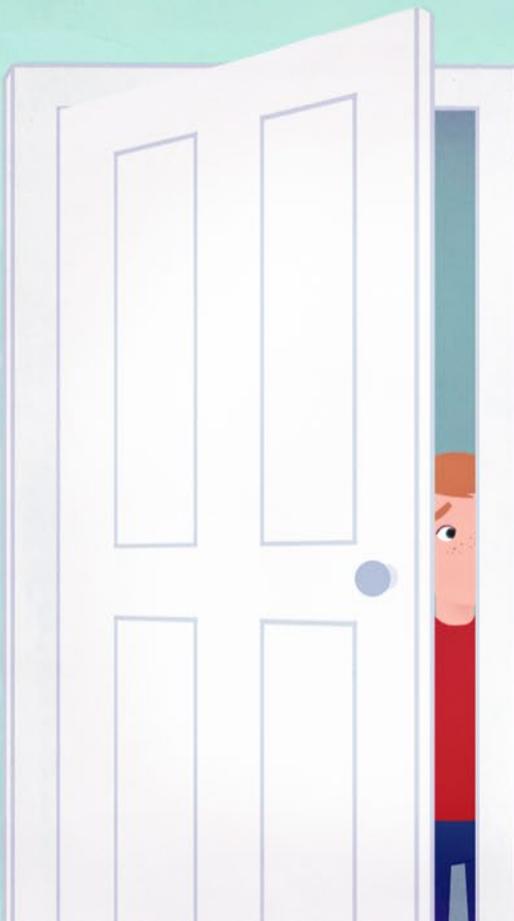
THE REWARD SYSTEM

From the earliest years, our brain learns what is rewarding – a carer's smile, a cuddle, or more basic rewards such as food. The reward system helps us learn about these positive aspects of our environment and guides our behaviour and decision-making to increase the chance of receiving such rewards.

However, when a child experiences abuse or neglect, rewards are inconsistent or absent. This may reduce the brain's responsiveness to rewards later in life. This is important for understanding social behaviour following maltreatment, because many potential rewards involve or come from other people, such as affection from caregivers or close friendships with classmates.

How does this shape social interactions?

- A child who has an altered reward system might not experience the same pleasure from typical rewards, and might find it harder to learn which of their own behaviours elicit positive and helpful responses from others

- This could mean they are less willing or able to put in the effort necessary to attain these rewards, which could potentially make them appear disinterested or withdrawn

- A reduced response to reward might mean adults and other children then try less hard to interact with and engage the child, heightening their experience of isolation

How does this lead to stress generation and social thinning?

Over time, a less sensitive reward system may lead to stress generation. For example, if a child is less motivated to follow rules and social norms to gain rewarding responses from others, this may alienate and frustrate the peers and adults around them.

This may gradually contribute to social thinning, as relationships break down and other people distance themselves from the child. The outcome is a social world that becomes more impoverished over time.

THE MEMORY SYSTEM

In our brains, we store a vast collection of past experiences – this is known as our autobiographical memory. This helps us plan, solve problems, make decisions, regulate our emotions and develop a positive sense of self. However, experiences of neglect and abuse can create overwhelming negative memories that influence how memories are stored and remembered.

Specifically, when children who have been maltreated are asked to recall personal memories from their past, they tend to be vaguer, and give fewer specific details. This is known as a pattern of overgeneral autobiographical memory. When it comes to traumatic or frightening memories, this can be protective. But it has important implications for how a child navigates their social world.

How does this shape social interactions?

- Having poorer access to memories of past social experiences means that a child may be less able to negotiate new social challenges. We all rely on learning from our past to better navigate the future.

- A child may struggle to remember what behaviours were helpful in the past, for example in dealing with conflict, or be less able to draw on memories to make sense of what a person's behaviour might mean.

- As a result, they are less able to come up with helpful solutions to social problems, which may in turn make it harder to deal with everyday social interactions.

How does this lead to stress generation and social thinning?

An overgeneral autobiographical memory can make it harder for a child to benefit from past experiences, making it harder to navigate new social situations. Over time, patterns of stressful interactions can make it harder to cultivate and maintain relationships resulting in a thinner social network, fewer opportunities to learn, and less social support.

WHAT CAN WE DO TO HELP CHILDREN BUILD A MORE SUPPORTIVE SOCIAL WORLD?

As we have seen, brain changes after childhood trauma can lead to social and mental health difficulties. However, this is not set in stone. The brain responds to both negative and positive experiences. This means there are many things that adults can do to help a child grow and adapt after maltreatment, including foster parents, social workers and teachers.

There is much still to learn about which approaches best help build resilience after childhood trauma. One thing we know is that all children are different. As adults, we need to be interested and curious about an individual child: their strengths, weaknesses, likes and dislikes – as well as the nature of their early relationships and experiences.

We also know that relationships are key to healing and recovery. Below, we outline a number of preliminary suggestions. We group these across three different levels: changing systems; changing our own thinking and behaviour; and helping the child to help themselves. All these ideas are based on recent research and clinical practice.

1 CHANGING SYSTEMS AROUND THE CHILD

The formal systems, such as education and social care, can undermine a child's recovery after maltreatment and even cause them to inadvertently experience further trauma. Placing relational quality centre stage is key. This means developing approaches that foster trusted, stable and supportive relationships as well as providing training and support for carers and professionals.

• Prioritising the social experience of children
Systems around the child should develop policies and approaches that foster supportive relationships, right from the earliest years. This means being mindful of how decisions might impact a child's ability to cultivate and maintain relationships. For example, teachers should avoid moving vulnerable children between groups or classes unless there is a good reason to do so. Social workers could support arrangements for a child to participate in extracurricular activities and after-school clubs or to socialise at weekends, depending on the child's own interests. Activities that promote rewarding and stable relationships can have a positive social and educational impact on the child.

• Providing support for parents, carers and professionals
It is common for adults to feel rejected, frustrated or inadequate when they find children's behaviours challenging. Caring for children who have experienced significant adversity can require a lot of emotional resources, and adults need support themselves if they are to help children effectively. Institutions should therefore actively invest in and promote formal systems of ongoing support and evidence-based training.

• Promoting children's sense of agency
It's important that children have a say in shaping their own social lives. To help a child build a more positive social world, it's important that any support and interventions should be done with, and not done to, them. Teachers, carers, parents, social workers and policy makers, among others, should invite and respond to children's views about their social relationships and activities. This will promote their sense of competence, safety and belonging, and can ultimately give them the tools and confidence they need to build supportive social networks.

2 CHANGING ADULTS' THINKING AND BEHAVIOUR

Family, carers and professionals in the community can all play a crucial role by adapting how they respond to a child's social behaviour, ultimately reducing the chance of stress generation and social thinning.

- **Considering the impact of childhood trauma on brain development**

Brain changes following childhood trauma mean that children may perceive the social world differently from those who haven't experienced trauma, especially at times of stress. This can make it more difficult for them to regulate their emotions and behaviour. Understanding and remembering how early experiences shape brain development can help adults adopt a more curious and open attitude.

- **Stepping back and considering the meaning behind behaviours**

If parents, carers and professionals interpret behaviour at face value, they can react in unhelpful ways and inadvertently contribute to stress generation and social thinning for the child. Instead, they could pause and consider that some behaviours may have been necessary in a hostile home environment, or the only way a child has found to navigate a challenging social world. Behind disruptive behaviours, there is often a sense of vulnerability, fear, or confusion. If adults consider different explanations and are genuinely interested in understanding the child, they are more likely to respond in a calm and supportive way that can help the child learn about how to better navigate social relationships.

3 HELPING THE CHILD TO HELP THEMSELVES

Adults can directly help the child to develop new social competencies, by giving them tools and support to build their own more adaptative social world.

- **Helping a child make sense of everyday social experiences**

As we've seen, childhood trauma can lead to alterations in the memory system, including memories that are fragmented or lack sufficient detail. This can make it more difficult for a child to develop a coherent understanding of the social world around them. By being curious and asking questions, adults can help a child to integrate and make sense of their everyday experiences and better navigate future social situations.

- **Teaching social skills**

Current evidence shows that, for many children, social skills training can improve wellbeing and reduce mental health difficulties. Helping a child develop social problem-solving and communication skills following maltreatment may reduce the likelihood of stress generation, improving the ability to build and maintain relationships with others over time.

- **Supporting emotion regulation**

The effects of childhood trauma, including alterations in the brain's threat system, can make it harder for children to manage their emotions at times of stress. Adults can help the child develop healthy ways of responding to their emotions, such as naming and validating their emotional experience, identifying triggers, and exploring coping/soothing strategies.

SUMMARY

In this Guide, we have explored one way in which maltreatment can increase the risk of mental health problems. Brain adaptations that happen as a consequence of maltreatment can affect how a child interacts with other people, and how people interact with the child in turn. For some children, this can set up a cycle of stress and social thinning that leaves them without the very social network they need to support their mental health.

The good news is that this pathway is not fixed. There are many things that adults can do to build and scaffold a better social world for children. It isn't easy to prevent mental health problems following maltreatment – a concerted effort across many individuals and organisations, along with sufficient resources, will be needed to truly make a difference. This research highlights the critical importance of helping every child who has experienced adversity to build a positive and protective social architecture. This will provide a solid foundation for good mental health across childhood, adolescence and even into adulthood.

DEEP DIVE:
THE IMPORTANCE OF TRUST

Whenever we interact with another person, we make a decision about how much we trust them: whether we believe they have good intentions towards us, and how much we are able to be open with them as a result.

The extent to which we trust others has a big impact on our social relationships. For example, being too trustworthy might lead to a person being duped or manipulated. But the other extreme – having difficulty trusting anyone at all – is problematic too, and this is often seen in individuals with a history of maltreatment.

Our recent study by Neil and colleagues (2021) documented this in a group of children aged 8 to 16. Half of the participants had been referred to social services because of concerns about abuse and neglect, while the other half had no history of maltreatment. We asked all participants to look through a series of photos showing unfamiliar adult faces, and asked them a simple yes/no question for each one: 'Is this face trustworthy?'

As we predicted, the children who had experienced maltreatment were less likely to rate the faces as trustworthy, compared to the control group of participants. It's not that they didn't consider anyone trustworthy at all: they were just, on average, less inclined to say someone was trustworthy. This provides experimental evidence for something that clinicians and other experts have long reported: that maltreatment can affect children's propensity to trust in other people.

We learn to trust others as children, by having relationships with caregivers that are emotionally available and responsive to our needs. Children who experience maltreatment, however, have caregivers who often show unpredictable behaviour that actively causes them harm. These children cannot trust their early caregivers, so it makes sense that they will have more difficulty establishing trust with others later on.

Sadly, difficulty with trusting others can contribute to stress generation and social thinning, increasing the likelihood of social difficulties and fewer stable and supportive relationships with peers and adults. This is why we're working towards understanding how trust can be re-established following maltreatment experiences. Helping children to trust the people around them can help them build exactly the kind of social relationships that are needed to support positive mental health.

Neil, L., Viding, E., Armbruster-Genc, D., Lisi, M., Mareschal, I., Rankin, G., Sharp, M., Phillips, H., Rapley, J., Martin, P., & McCrory, E. (2022). Trust and childhood maltreatment: evidence of bias in appraisal of unfamiliar faces. *Journal of Child Psychology and Psychiatry, 63*(6), 655–662. https://doi.org/10.1111/jcpp.13503

FURTHER READING

For those who are interested in learning more about this field, the links below provide access to video-content and reading materials on the field of childhood trauma which have been created with a general audience in mind.

Childhood Trauma and the Brain resources web page | UK Trauma Council
A UK Trauma Council (UKTC) webpage dedicated to childhood trauma and the brain where a range of accessible video, booklets and articles on the topic can be found.

Childhood Trauma and the Brain – a short animated video | UK Trauma Council
A 5-minute animated video providing a general introduction to what happens in the brain after children face traumatic experiences in childhood, like abuse and neglect.

The Guidebook to Childhood Trauma and the Brain | UK Trauma Council
An accessible guide on the field of neuroscience research on abuse and neglect, with a special focus on understanding the link between childhood trauma and subsequent mental health problems.

Childhood Trauma and the Brain — Deep Dives. Early childhood and the developing brain | UK Trauma Council
An accessible article providing an up-to-date overview of what we know about brain development

We also provide a list of review articles and summaries that address different questions in the field. Note that these are not written with a general audience in mind.

Annual research review: Childhood maltreatment, latent vulnerability and the shift to preventative psychiatry – the contribution of functional brain imaging
This is a comprehensive review of functional brain imaging studies in children who have experienced abuse, neglect or institutionalisation. The review covers threat and reward processing, emotion regulation and executive functioning. There is also a more detailed description of the theory of latent vulnerability and why it is so important in moving toward a preventative model of help.
McCrory, E. J., Gerin, M. I., & Viding, E. (2017). Annual research review: Childhood maltreatment, latent vulnerability and the shift to preventative psychiatry – the contribution of functional brain imaging. *Journal of Child Psychology and Psychiatry, 58*(4), 338–357. https://doi.org/10.1111/jcpp.12713

The brain's emotional development
This is an excellent short introduction to the brain and emotional development. It covers a range of key topics, including the roles of the amygdala and prefrontal cortex, emotion regulation, and what is meant by 'sensitive periods'. It helpfully includes reference to the role and influence of parenting, drawing on human and animal research.
Tottenham N. (2017). The brain's emotional development. *Cerebrum: The Dana Forum on Brain Science*, 2017, cer-08–17

Neurocognitive adaptation and mental health vulnerability following maltreatment: The role of social functioning

This is also a review paper. The focus here is on key findings from the psychological, epidemiological and neuroscience literature. These findings support the view that early maltreatment experience compromises social functioning in children exposed to abuse and neglect in ways that increase mental health vulnerability. The model of latent vulnerability is described as are the concepts of stress susceptibility and stress generation.

McCrory, E., Ogle, J. R., Gerin, M. I., & Viding, E. (2019). Neurocognitive adaptation and mental health vulnerability following maltreatment: The role of social functioning. *Child Maltreatment, 24*(4), 435–451. https://doi.org/10.1177/1077559519830524

Child maltreatment and developmental psychopathology: A multilevel perspective

This is a comprehensive chapter providing a valuable overview of many key concepts related to the field of childhood trauma – including developmental theory, emotion processing, attachment, peer relationships, gene-environment interaction, brain imaging, resilience, intervention and social policy. The chapter isn't available as a direct download but it can be requested from the authors.

Cicchetti, D., & Toth, S. L. (2016). Child maltreatment and developmental psychopathology: A multilevel perspective. In D. Cicchetti (Ed.), *Developmental Psychopathology: Maladaptation and Psychopathology* (pp. 457-512). New York: Wiley.

Assessment of the harmful psychiatric and behavioral effects of different forms of child maltreatment

This seminal paper provides compelling evidence that different types of child abuse have equivalent, broad, and universal effects. That is, in terms of mental health outcomes, physical, sexual and emotional abuse and neglect have similar outcomes for children. As such, effective treatments for maltreatment of any sort are likely to have comprehensive psychological benefits. The authors argue for population-level prevention and intervention strategies particularly in relation to emotional abuse, which occurs with high frequency but tends to be less punishable than other types of child maltreatment.

Vachon, D. D., Krueger, R. F., Rogosch, F. A., & Cicchetti, D. (2015). Assessment of the harmful psychiatric and behavioral effects of different forms of child maltreatment. *JAMA Psychiatry, 72*(11), 1135–1142. https://doi.org/10.1001/jamapsychiatry.2015.1792

Child maltreatment, peer victimization, and mental health: Neurocognitive perspectives on the cycle of victimization

This review article shows that the experience of childhood abuse and neglect is associated with an increased risk of experiencing bullying and peer rejection, which further compounds mental health difficulties. Several theoretical frameworks are explored, including neurocognitive and psychological perspectives on how young people who experience complex trauma become more vulnerable to subsequent problems with peers.

Goemans, A., Viding, E., & McCrory, E. (2021). Child Maltreatment, peer victimization, and mental health: Neurocognitive perspectives on the cycle of victimization. *Trauma, Violence & Abuse.* https://doi.org/10.1177/15248380211036393

GLOSSARY

avoidance
A maladaptive form of coping in which a person changes their behaviour to keep away from situations, activities or people because of the anticipated negative consequences or unwanted feelings.

autobiographical memory system
A distributed brain network of regions, including the hippocampus, that allows us to store information about our past so we can more effectively negotiate new challenges and social situations. Over-general autobiographical memory refers to a difficulty in recalling personal memories in a detailed way.

brain development
The processes that generate and shape the nervous system from the earliest stages of embryonic development to adulthood.

brain systems
A group of brain regions which work together to give rise to a specific function, such as memory processing, perception, emotion regulation, movement, or regulation of body temperature.

complex trauma
Multiple traumatic experiences involving interpersonal threats or harm during childhood or adolescence. Not to be confused with complex PTSD, which refers to specific diagnostic category.

hypervigilance
A heightened state of sensory sensitivity, increased alertness and exaggerated emotional and behavioural reactions to actual or perceived danger.

latent vulnerability
Children (and their brains) adapt in response to abusive or neglectful environments in ways that may help in the short term but increase risk of mental health problems in the future.

maltreatment
Maltreatment encompasses all acts of commission (or threat), including physical abuse, sexual abuse, emotional abuse and witnessing domestic violence as well as all acts of omission (or deprivation), including physical neglect and emotional neglect.

mental health problems
Difficulties in thinking, feeling and behaviour that make it difficult for a person to cope and live their life in the way that they need or want. They can include symptoms of diagnostic categories such as depression, anxiety and conduct disorder.

neuroscience
All of the sciences (e.g. psychology, biochemistry, psychiatry) which deal with the structure or function of the nervous system, including the brain.

resilience
Resilience is not a quality in the child. It refers to a relatively positive outcome – despite a given set of adverse experiences – that emerges through the interaction of a range of risk and protective factors over time, inside and outside the child.

reward system
A group of brain regions and neurotransmitters, including dopamine, which work together to motivate behaviour, guide decision-making, and help us learn about positive aspects of our environment.

social thinning
A concept that refers to a process that constrains or reduces a child's network of affiliative or supportive relationships over time. This may reflect the number as well as quality of relationships and impact the child's opportunities to learn.

stress generation
The phenomena where stressful life events occur more frequently than expected for some individuals. This is likely through the interaction of risk and protective factors.

threat system
A group of brain regions, including the amygdala and anterior insula, that allows us to detect and respond to danger. This is commonly referred to as a fight-or-flight response.

For more information and free resources visit
WWW.UKTRAUMACOUNCIL.ORG