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Adverse Childhood Experiences (ACEs): Summary of evidence and impacts

What are 'ACEs'?

Adverse Childhood Experiences (ACEs) is a term used to describe very stressful events or circumstances that children may experience during their childhood. The term was introduced in a seminal 1998 US study on the impact of childhood abuse and neglect and household challenges on later-life health and wellbeing (n = 17,337) (Felitti et al., 1998). This early study showed an association between adverse experiences in childhood and potentially profound impacts on later health and social functioning. Twenty years of extensive international research has since shown a strong predictive relationship between the number of ACEs one is exposed to as a child, and the probability of physical health, mental health and social and behavioural problems occurring through childhood into adult life, and being passed on to the next generation (Hughes et al., 2017).

The most widely recognised and researched ACEs relate to abuse, neglect and household adversities, and include:

- childhood physical, sexual and emotional abuse
- physical neglect and emotional neglect
- exposure to family violence
- parental substance use
- parental mental illness
- parental separation or divorce; and
- parental incarceration.

There is a misconception that these adversities are experienced only, or predominantly, by certain population sub-groups. While children from lower socio-economic positions have a greater risk of experiencing ACEs (Walsh, McCartney, Smith & Armour, 2019), research consistently shows that individuals across all demographics can be exposed to ACEs. An estimated 72% of Australian children have been exposed to at least one ACE, with this rate being higher in some vulnerable Australian populations e.g. Aboriginal and Torres Strait Islanders (Zubrick et al., 2005), juvenile offenders (Baglivio et al., 2014), and children involved in welfare services (Kerker et al., 2015).



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January 2020

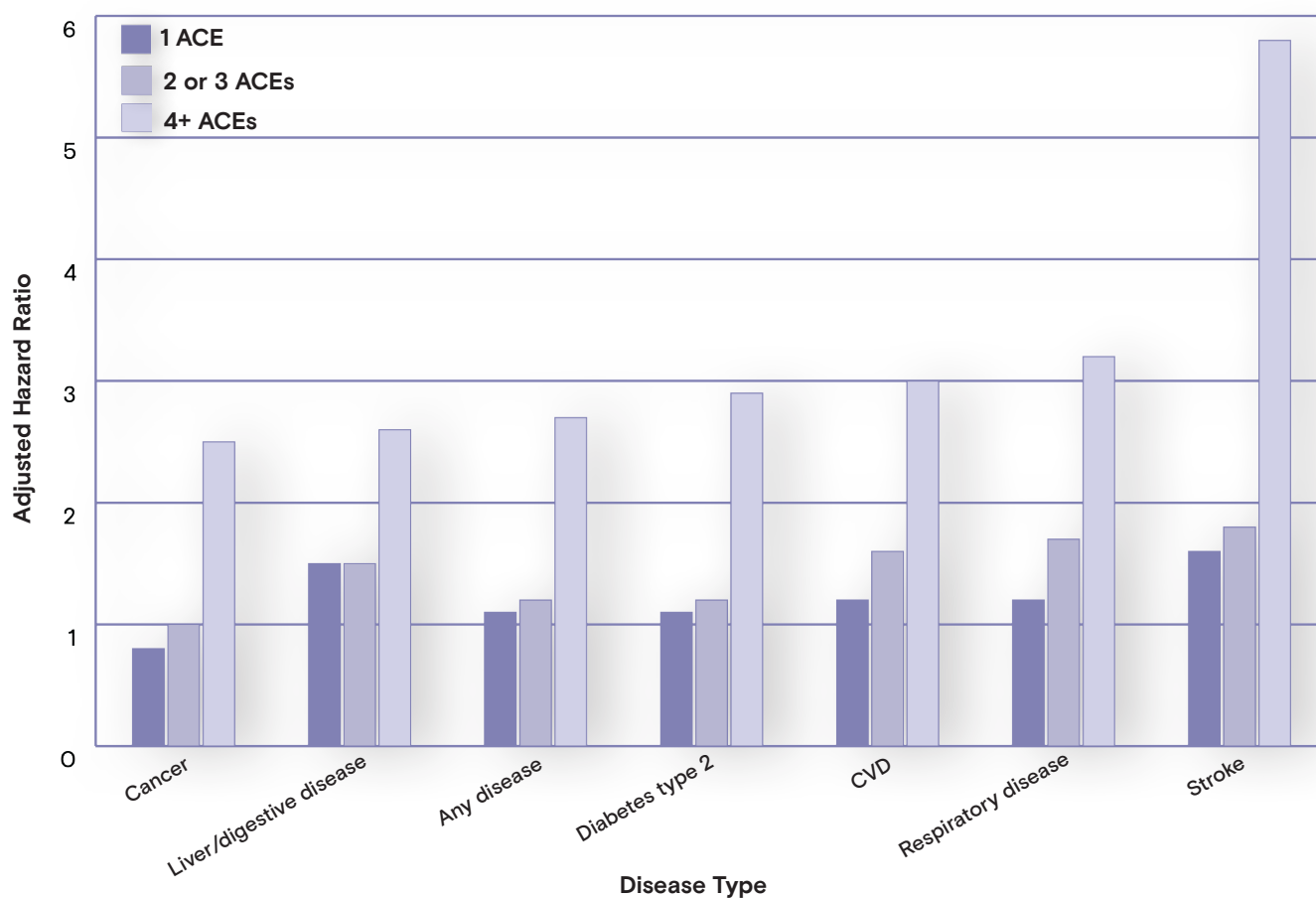


Chart: Odds ratios - ACEs and lifetime chronic health conditions
(Source: Institute of Health Equity, University College London)

The impact of ACEs on health and functioning

During childhood and adolescence, exposure to ACEs can result in significant developmental delays, lower educational attainment and social and emotional maladjustment. ACEs are also associated with the onset of substance use disorders (Dube, Cook & Edwards, 2010), eating disorders (Williamson, Thompson, Anda, Dietz & Felitti, 2002), self-harming behaviours (Felitti & Anda, 2010; McLaughlin, Koenen, Bromet & Karam, 2017), PTSD, schizophrenia (McLaughlin, Koenen, Bromet & Karam, 2017), depression, and anxiety disorders (Choi, DiNitto, Marti & Choi, 2017).

Exposure to ACEs increases the risk of chronic and cardiovascular conditions in adulthood. The chart above (Allen & Donkin, 2015) shows that the more ACEs a child is exposed to, the greater their risk of developing a range of chronic and cardiovascular conditions as adults – regardless of the particular combination of ACEs experienced. These diseases were also found to develop at an earlier age in those exposed to ACEs. Individuals with six or more ACEs have been found to die 20 years earlier than those exposed to none (Felitti et al., 1998).

A dose-response relationship is also observed with health risk behaviours and social functioning (Bellis et al., 2016; McGavock & Spratt, 2016). For example, adults who had been exposed to four or more ACEs as a child (i.e. who had an ACEs 'score' of four or more) were:

- 10.3 times more likely to have injected drugs
- 6 times more likely to have had or caused unintended teenage pregnancy
- 2.5 times more likely to contract sexually transmitted infections
- 15 times more likely to have committed violence against another person in the previous 12 months
- 20 times more likely to have been incarcerated during their lifetime
- 4.6 times more likely to suffer from depression
- 12.2 times more likely to have attempted suicide.

Exposure to ACEs can have intergenerational effects. Children who experience ACEs are more likely to have parents who experienced ACEs themselves (Allen & Donkin, 2015).

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Parents who report four or more ACEs in their own childhood are more likely to have children who are diagnosed with mental health or behavioural problems (Schickedanz, Halfon, Sastry & Chung, 2018). One study estimates that approximately one-third of parents who were maltreated will maltreat their own children (Kaufmann & Ziegler, 1993).

Toxic stress and brain changes: How ACEs influence health and functioning

The consistent dose-response association between ACEs and poor outcomes suggests an underlying causal relationship. There is increasing research evidence that exposure to ACEs disrupts brain and neurobiological development in the critical early years of life by triggering a chronic stress response ('toxic' stress), which maintains persistently high systemic levels of cortisol (Shonkoff, Boyce & McEwen, 2009). These chronically abnormal cortisol levels affect the development and functioning of the brain centres responsible for self-regulation, reward-seeking, executive function and threat perception (National Scientific Council on the Developing Child, 2005). It is also thought these abnormal cortisol levels are responsible for epigenetic changes that trigger a chronic organic inflammatory response that contributes to the onset of ACEs-related diseases (Murgatroyd & Spengler, 2011).



Resilience and protective factors

Exposure to ACEs does not mean poor outcomes are inevitable. There are known protective factors that, if present and reinforced in a child's life, can build the child's resilience and reduce the impacts of adversity.

One of the most influential protective factors in a child's life is having a safe, caring and supportive relationship with someone they trust (National Scientific Council on the Developing Child, 2015). Nurturing relationships form the basis of healthy brain development, effective early learning, and a child's capacity to positively respond and adapt to life challenges. Research shows that having just one positive caring relationship in their life

can substantially improve a child's recovery and healing from stressful life events (Crouch, Radcliff, Stropolis & Srivastav, 2019). This is the case regardless of the type of childhood adversity involved.

Many adults who experienced significant adversity in their childhood have gone on to have successful lives and happy relationships. These adults report that having an adult or other person in their lives who made them feel safe and protected while growing up helped support their resilience. It could be one person, or a number of different people, including a parent, sibling, relative, teacher, neighbour or coach. The caring relationship gave them:

- an emotionally supportive person in their life
- someone who saw them as unique and interesting
- someone who supported their ideas or dreams.

Prevention and early intervention measures regarding ACEs, including general practitioners' advice to parents and referral options, should focus on building and strengthening safe and positive relationships for the child (Marie-Mitchell & Kostolansky, 2019; Traub & Boynton-Jarrett, 2017).

International ACEs awareness – emerging initiatives and programs

There is increasing international awareness of the role of ACEs in individual life outcomes and population health generally, and of the importance of early identification and intervention. For example, Washington State in the USA has enacted legislation to prevent and mitigate ACEs (Kagi & Regala, 2012); Wisconsin has conducted a state-population study and declared itself a 'trauma-informed state' (Stevens, 2017); the National Health Service in Scotland has undertaken to progress action on ACEs (Couper & Mackie, 2016), and Public Health Wales (UK) recently sponsored a national population study on ACEs, with a view to developing population-level early intervention programs (Bellis et al., 2016). Since 2009, 42 US states have collected information on the prevalence of ACEs in their populations.

In Australia there is increasing interest in the ways understanding and utilisation of ACEs science can support practice, particularly with regard to early intervention and prevention for children. In 2020, the ACEs survey will be added to the ACT Kindergarten Health Check (KHC) program – a population-level whole child screening program of all children entering kindergarten in the ACT. The ACEs survey will add to information regarding health, development and wellbeing collected as part of the project.

The addition of the ACEs survey is being supported by a suite of resources for GPs, health and social service workers and families.

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