



Understanding Rangatahi Who Have Experienced Adversity

Written by **Keryn O'Neill**, MA, PGCertEdPsych, Brainwave Knowledge Manager.

Understanding adolescent development can help whānau, educators, and other professionals provide better support for rangatahi. The way in which rangatahi navigate this critical period depends on many factors, including their genes, their experiences, and what support is available to them. For some, this stage of life is also shaped by adversity.

Understanding adolescent development can help whānau, educators, and other professionals provide better support for rangatahi. The way in which rangatahi navigate this critical period depends on many factors, including their genes, their experiences, and what support is available to them.

For some, this stage of life is shaped by adversity: early in their childhood, more recently, or ongoing. This article looks at adversity, some key aspects of adolescent development, and how they interact. How can we help rangatahi make the most of this important time, to set them up for a positive future?

Adolescent development

Beginning at puberty, adolescence is a time of rapid change—physically, socially, emotionally, psychologically, and neurologically.¹ These changes are needed to make the transition from child to adult. This key phase in a person's life affects their future wellbeing and development.²

Genes play a role, as do the experiences and support rangatahi have during this time. In addition, experiences they had as tamariki also influence how their development unfolds. When these experiences have been largely positive, and they have been supported through typical ups and downs, rangatahi are better placed to move through adolescence more 'successfully.'

For some rangatahi this has not been the case, and they have had negative experiences affecting their development. This article explores the potential impacts for those rangatahi who are, or have been, exposed to adversity.

What is adversity?

Adversity refers to a range of experiences that are serious or ongoing and likely to challenge how a child copes. Definitions vary but can include both a single serious event and/or a series of events that continue over time.³ One major set of studies on Adverse Childhood Experiences (ACEs), include various forms of abuse and neglect as well as household dysfunction, experienced before 18 years of age.⁴

Adversity includes both direct harm, such as physical, sexual or psychological abuse, and indirect harm, for example having a parent in prison.⁵ Much research has demonstrated the lasting negative impact these

experiences can have on development, health, and wellbeing throughout life.⁶

Earlier research on adversity tended to focus on factors at the individual or whānau level. Awareness is increasing that social and structural factors, including racism and poverty, can also increase exposure to adversity as well as playing a significant role in inequitable outcomes.⁷ These systemic issues can compound negative outcomes for some groups, contributing to inequities.

A fuller discussion of adversity is available at:

<https://brainwave.org.nz/article/adverse-childhood-experiences-understanding-their-effects/>

How common is adversity?

Exposure to adversity is common. The ACE studies found that more than half of participants had experienced at least one ACE, and a quarter had experienced two or more.⁸

In Aotearoa, the Growing Up in New Zealand (GUINZ) study found that by 4½ years of age, more than half of the tamariki had been exposed to at least one type of adversity.⁹ By age eight, 87% had experienced at least one form of adversity, 27% had experienced two, and 16% had experienced four or more.¹⁰ Similarly, another major study, The

Social and structural factors, including racism and poverty, can also increase exposure to adversity.



Dunedin Multidisciplinary Health and Development study, found that around two thirds of participants reported adversity with 15% exposed to four or more types.¹¹

Although definitions and methods differ across studies—which can lead to varying estimates—these findings collectively show adversity is widespread among young people in Aotearoa.

While any level of exposure to adversity can harm development the risks of poor outcomes increase as the exposure to adversity increases.¹²

Why and how does adversity influence development?

Patterns of connections in the brain change in response to patterns of experience.¹³ This is called neuroplasticity. When tamariki have loving relationships and feel safe, their brain is more likely to wire itself to help them develop, learn and behave in healthy ways.¹⁴

While the brain is plastic throughout life and can change and re-organise itself in response to experiences, the older we get, the harder it becomes to alter circuits in the brain.¹⁵ Changing connections in a young, developing brain is easier. However, the rangatahi brain is still more plastic than an adult brain, particularly during early adolescence.¹⁶ For instance, think about how quickly a child or young adolescent can pick up a new language or learn a musical instrument compared to an adult. This ability to rewire and adapt can make adolescence a key window of opportunity for positive interventions—if rangatahi receive supportive and enriching experiences.

When adverse experiences are severe, repeated, or on-going, tamariki and rangatahi can experience repeatedly activated stress response systems in their brain and body.¹⁷ Their brain can wire itself in ways that impact negatively on their wellbeing.¹⁸ Without support from at least one close adult, and/or effective interventions, this stress can become toxic, affecting the structure and function the developing brain.¹⁹

A fuller discussion of the impacts of stress is available at: <https://brainwave.org.nz/article/how-stress-affects-tamariki/>

The consequences of these brain changes can continue through adolescence and into adulthood.



Likewise, frequent activation of the stress system can take a toll on other parts of the body as well as the brain.

Rangatahi who have been exposed to multiple types of adversity may have several neurodevelopmental processes up- or down-regulated potentially increasing their risk for psychopathology.²⁰

For rangatahi who haven't fared well in their early years, this can be a period of opportunity. Positive relationships and experiences can change the circuitry of the brain in ways that may be lasting.²¹

What can happen?

Adversity is strongly associated with a variety of poorer health outcomes.²² It's important to note that not all rangatahi who have experienced adversity have poor outcomes, however, they are more likely to do so than their peers who did not experience adversity.

There are multiple ways in which adversity can impact rangatahi health, development and wellbeing. Some of these are described below.

1. Physical health

The high or ongoing stress caused by adversity can

change how the body functions including immune systems, metabolism, cardiac function, and sleep.²³ The function of many of the body's organs can be affected as can some of the ways in which the body regulates itself. For example, "systemic inflammation and insulin responsivity"²⁴ can contribute to chronic diseases and obesity.²⁵

Health changes associated with adversity may also be seen during childhood. For example, the GUiNZ study found that tamariki exposed to one type of adversity were twice as likely to be obese by 8 years old, compared to those with no exposure. Those exposed to four or more ACEs were almost three times as likely to be obese.²⁶

2. Mental health

Adolescence provides "a window of vulnerability to psychiatric disorders."²⁷ Most adult mental health concerns begin during adolescence, with 75% beginning before 18 years of age.²⁸ These often go unrecognised and untreated.²⁹

Mental health is complex, with multiple contributing factors,³⁰ including genes, as well as "social, environmental, political and structural determinants."³¹ However, childhood adversity considerably increases the likelihood of mental health challenges.³²

Adolescents with mental health conditions following maltreatment may respond less well to typical treatments and experience "a more pernicious course with an increased risk for suicide."³³

Findings from New Zealand's Youth19 studies indicate that 69% of secondary school students report having good wellbeing. However, New Zealand's rate of mental health issues is high compared to other nations and has increased in recent years.³⁴

3. Health-harming behaviours

The social, emotional, and cognitive challenges often faced by rangatahi exposed to adversity increase the likelihood they adopt behaviours that can harm their health, including smoking, alcohol and other drug use, and having unprotected sex.³⁵ The first study of its kind also found that adversity was associated with greater likelihood of ever having vaped, currently vaping regularly, and intending to vape in future.³⁶

These behaviours further increase health issues with ongoing effects into adulthood, including the likelihood of earlier death.³⁷

4. Emotion regulation & impulsivity

Impulse control typically improves gradually throughout adolescence and into adulthood.³⁸ Rangatahi who have experienced childhood trauma (e.g. physical or sexual abuse, emotional abuse or neglect) are more prone to impulsive behaviour.³⁹ This is thought to be linked to the impact of adversity on the ability to regulate one's emotions.⁴⁰ Experiences of adversity can not only affect the ability of rangatahi to regulate their emotions at the time, but also impact how the ability to regulate their emotions develops and matures over time.⁴¹

Difficulties with regulating their emotions increase the likelihood of rangatahi using "maladaptive strategies

When rangatahi have not had the support or opportunity to develop healthy ways to handle their feelings, they may be more inclined to behave impulsively to get short-term relief from their difficult feelings.





The stress caused by adversity can negatively affect both the structure of the developing brain and how different areas of the brain connect with each other.

to cope with challenging emotions,” increasing their risk of behaving impulsively.⁴² When rangatahi have not had the support or opportunity to develop healthy ways to handle their feelings, they may be more inclined to behave impulsively to get short-term relief from their difficult feelings.⁴³

5. Cognitive functioning & learning

Experiences of adversity can “have lasting negative impacts on cognitive functioning and brain development.”⁴⁴ The stress caused by adversity can negatively affect both the structure of the developing brain and how different areas of the brain connect with each other.⁴⁵

As a result, children and adolescents may struggle with essential cognitive skills such as attention,

memory, and problem-solving—which are crucial for academic success and effective everyday functioning. This can contribute to poorer school readiness and lower academic performance.

Greater exposure to adverse experiences is significantly associated with diminished academic achievement and reduced cognitive performance.⁴⁶

6. Sleep

Having sufficient sleep is vital for health and wellbeing – particularly during periods of heightened brain development, like adolescence.⁴⁷

Insufficient sleep can affect every area of adolescent health and development. These include physiological, psychological, psychosocial, and cognitive effects.⁴⁸

Rangatahi have a greater need for sleep than adults, and their behaviour is more likely to be affected by lack of sleep.⁴⁹ When young people do not get enough sleep, they are more prone to risk-taking behaviours—such as using alcohol and other substances, driving under the influence, or engaging in unprotected sex and violence.⁵⁰ This, in turn, raises their chances of harm or injury.⁵¹

Sleep can be negatively impacted by adversity. Studies have found ACEs can impact both the quality and quantity of sleep⁵², with evidence of a



Having sufficient sleep is vital for health and wellbeing – particularly during periods of heightened brain development, like adolescence.

For more detailed information about sleep in adolescence: <https://brainwave.org.nz/article/why-sleep-matters-for-rangatahi/>

dose-response effect. In other words, the more adversity rangatahi are exposed to, the more likely they are to have insufficient sleep.⁵³ Emerging evidence suggests that one of the ways adversity might contribute to poorer health and behaviour is through its effect on sleep.⁵⁴ Further research is needed on this and to explore whether improving sleep might reduce the long-term effects of adversity.⁵⁵

7. Youth justice involvement

Being exposed to adversity increases the likelihood of contact with the youth justice system, particularly those exposed to recurring adversity, or four or more types of adversity.⁵⁶ A US study found this increases the likelihood of being arrested, being arrested more often, being incarcerated, and being incarcerated more often in adulthood.⁵⁷

One of the reasons for this is the potential impact on cognitive development, particularly when adversity occurs during important developmental stages.⁵⁸

Summary of impacts

Adversity can influence many domains, only some of which are described above. These impacts may appear, or become more evident, during the developmental phase of adolescence. This makes it much harder for rangatahi to navigate the challenges of adolescence in healthy ways.

Although aspects of health and development are described separately above, these and other aspects of rangatahi development are inextricably linked. Harm or disruption in one area is likely to have flow-on effects to other areas. For example, a rangatahi struggling with chronic stress at home might lose sleep, leading to poor concentration at school and heightened irritability with peers and teachers. Over time, these academic and social difficulties could escalate, potentially increasing the risk of conflict or involvement with youth justice services.

Given these impacts accumulate, it is easier to see why some rangatahi who experience adversity may find it harder to develop in healthy, positive ways.

When thinking about rangatahi whose behaviour causes concern, it is vital to hold in mind the many areas of their life that may continue to be affected both by the adversity they have experienced as well as its varied and often lasting impacts. Support and solutions for rangatahi require awareness of their complex challenges. The popular narrative that 'their brain hasn't fully developed' is overly simplistic and

risks denying rangatahi the support and intervention they need.

Individual differences

Research on adolescent development tends to look at averages, or patterns across groups. While informative this also “obscures meaningful individual variation in development.”⁵⁹

Some adolescents who experience early adversity have better outcomes as they grow than others. Genes combine with relationships and experiences to shape development, including of the brain. Tamariki and rangatahi can be less or more vulnerable to the harmful effects of early adversity depending on the genes they were born with.⁶⁰ The genetic make-up of some adolescents makes them more negatively affected by harmful relationships and experiences. However, these same rangatahi may also benefit more than others from positive, supportive relationships and experiences.⁶¹

It's important to consider societal and systemic factors that also play a role influencing development and wellbeing. Rangatahi are not developing in a

vacuum—factors such as inequality, marginalisation, and discrimination play a large role in the lives of some rangatahi. For example, those who are gender and sexuality diverse, have a disability, and/or are experiencing the ongoing impacts of colonisation and racism.⁶²

Other aspects of individual differences include gender, their developmental stage when adversity occurred, and the presence of other risk or protective factors.

The key thing to understand is that each rangatahi is unique. The impacts of adversity will differ, even if they've experienced similar or the same events as a sibling, for example. Similarly, the type and amount of support needed during or after exposure to adversity will differ. There is no 'one size fits all.'

Rangatahi are not developing in a vacuum—factors such as inequality, marginalisation, and discrimination play a large role in the lives of some rangatahi.



Challenges rangatahi face should be understood in light of their history and not seen as simply resulting from their age or stage of brain development.

What can help?

Every rangatahi needs support to develop well. This need is even greater for those who have, or are, facing adversity. Plasticity during adolescence creates opportunities for positive changes that may help offset the effects of adversity. To best support rangatahi impacted by adversity, it's vital that the impacts of their experiences on their development are recognised. Challenges rangatahi face should be understood in light of their history and not seen as simply resulting from their age or stage of brain development.

Some specific aspects of support are described below.

1. Supportive relationships with adults

Strengthening relationships can make a difference. Loving, healthy, support from parents and whānau is one of the most important protective factors.⁶³ Adolescents also need support from other trusted adults who treat them in respectful ways and who they feel genuinely care for them.⁶⁴ Those who



A more in-depth look at the role of adults can be found here: <https://brainwave.org.nz/article/adolescents-need-adults/>

experienced early adversity and have problems in their relationships with their parents, are particularly in need of support from other adults. It's important that involved adults are aware that early adversity is likely to have negatively influenced an adolescent's development, health, and behaviour.

Adolescents need safe and stable environments at home, at school, and in their communities.

2. Opportunities to develop skills

Those who've experienced early adversity need support to build skills that help them adapt to and cope with stress. These skills include self-regulation, goal-setting, planning, problem-solving, and being able to adapt to change.⁶⁵ Rangatahi who can self-regulate are usually able to better control how they respond to their feelings and are in a stronger position to cope with stressful situations.⁶⁶ Planning and problem-solving are important skills for day-to-day decision-making, for example, resolving how to finish an assignment on the same weekend as a sports tournament. Like the skills rangatahi developed when they were little, these skills require opportunities to practice, and mistakes are likely along the way.

It's important to recognise that rangatahi have adapted to survive and cope with the adversity they have been exposed to, but these adaptations may not be helpful in their current circumstances.⁶⁷ For example, they may have learnt to behave in certain ways to keep safe in an unsafe or untrustworthy environment, but these behaviours can be problematic in the wider community and as they age.

3. Supporting health

The things that support health and wellbeing for all of us may be particularly important for rangatahi exposed to adversity, including:

- Supporting rangatahi to have enough sleep (8-10 hours per night) by establishing good sleep hygiene will help them to function at their best⁶⁸
- Access to nutritious food, which is culturally relevant⁶⁹
- Exercise and physical activity
- Avoiding the use of alcohol and other drugs.

4. Professional intervention

In addition to the protective factors described above, rangatahi may also benefit from suitable professional support to address the adversity they've experienced and the ways in which it has impacted them. This might be psychological therapy to address trauma, educational support to assist with learning issues, or medical input to address health issues. Those

exposed to adversity as tamariki or rangatahi should be offered support and intervention to reduce both short-term and longer-term impacts on their mental health.⁷⁰

It's important that the adults in the lives of rangatahi are aware of the potential lasting impacts of exposure to adversity.⁷¹ The earlier such interventions can be provided to rangatahi who need them, the better their outcomes are likely to be.

Given the wide-ranging impacts of adversity across many domains, research indicates that a co-ordinated multidisciplinary approach is necessary to address the issues rangatahi face.⁷² For example, this might include collaboration among educators, health professionals, and community services.

These supports are all protective factors. While each protective factor can make a difference, the biggest changes are likely to happen when a combination of protective factors are put in place. In the same way that the number of risks add up to increase the chance of poor outcomes, reducing risks and increasing protective factors can improve outcomes. Those who have been affected the most by early adversity



Enough sleep, physical activity, access to nutritious food, and avoiding drugs and alcohol, are particularly important for rangatahi exposed to adversity.



may also be the ones who respond the best when they are being well-supported.

Conclusions

Adversity can have wide-ranging effects on rangatahi, influencing their physical and mental health, learning, and behaviour. These challenges often become more noticeable during adolescence and, without support, can have lasting impacts into adulthood. However, recovery is possible. Positive experiences, strong relationships, and access to the right support can help rangatahi build resilience and move forward in healthy ways.

Poor outcomes are not inevitable.⁷³ Stable, nurturing adults play a critical role in reducing risk and promoting wellbeing. When rangatahi feel supported and connected, they are better placed to navigate challenges. At the same time, adversity does not only affect individuals—it can also have lasting impacts on whānau and communities.⁷⁴ Recognising these broader effects is important, not only for responding to adversity but also for preventing it.⁷⁵ Strengthening protective factors and reducing exposure to adversity at all levels can help create conditions that support healthy development for all rangatahi, both now and into the future.

This article replaces and updates “Understanding Adolescents Who Have Experienced Early Adversity,” written by Hilary Nobilo in 2018. This version was written by Keryn O’Neill.

Endnotes

1. Galván, 2021
2. Koenig, Farhat, & Bloch, 2025
3. McLaughlin, 2016
4. Testa, Jackson, Ganson, & Nagata, 2022
5. Felitti et al., 1998; Hughes et al., 2017
6. Testa et al., 2022
7. Joy & Beddoe, 2019; Merrick, Ford, Ports, & Guinn, 2018
8. Felitti et al., 1998
9. Walsh, Joyce, Maloney, & Vaithianathan, 2019
10. Hashemi et al., 2025
11. Reuben et al., 2016, cited by Walsh et al., 2019
12. Wade, Wright, & Finegold, 2022
13. Dahl & Suleiman, 2017
14. National Scientific Council on the Developing Child, 2010
15. Dahl & Suleiman, 2017
16. Dahl & Suleiman, 2017
17. National Scientific Council on the Developing Child, 2010
18. Shonkoff, 2012
19. Madigan et al., 2025; National Scientific Council on the Developing Child, 2010
20. Wade et al., 2022
21. Fuhrmann, Knoll, & Blakemore, 2015
22. Madigan et al., 2025
23. Lin et al., 2022
24. Shonkoff, Slopen, & Williams, 2021, p.3
25. Madigan et al., 2025
26. Hashemi et al., 2025
27. Koenig et al., 2025, p. 1
28. Kretzer et al., 2024
29. Rahman et al., 2023
30. Stubbing, Rihari, Bardsley, & Gluckman, 2023
31. Bowler et al., 2010, and Helbich, 2018, cited by Hobbs et al., 2023, p. 2
32. Juwariah et al., 2022; Whittle, 2025
33. Samson, Newkirk, & Teicher, 2024, p. 370
34. Sutcliffe et al., 2023
35. Zhu et al., 2023, Merrick et al., 2017, and, Hughes et al., 2017, cited by Madigan et al., 2025; Raposa, Hammen, Brennan, O’Callaghan, & Najman, 2014
36. Rowe et al., 2025
37. Brown et al., 2009, Campbell et al., 2016, and Dube et al., 2001, cited by Madigan et al., 2025
38. Casey, Jones, & Hare, 2008
39. J. H. Kim & Choi, 2020
40. Kim & Cicchetti, 2010, and, Weiss et al., 2013, cited by J. H. Kim & Choi, 2020
41. J. H. Kim & Choi, 2020
42. J. H. Kim & Choi, 2020, p. 2
43. J. H. Kim & Choi, 2020
44. Anda et al., 2006, cited by Testa et al., 2022, p. 973
45. Lin et al., 2022
46. Qu et al., 2024
47. Becker, Langberg, & Byars, 2015; Galván, 2020; Lin et al., 2022
48. Ginsburg & Jablow, 2011; Sleep Health Foundation, 2020
49. Galván, 2020; Short, Weber, Reynolds, Coussens, & Carskadon, 2018
50. Shochat, Cohen-Zion, & Tzischinsky, 2014; Short & Weber, 2018
51. Snyder, 2020
52. Lin et al., 2022; Song, McHill, Dieckmann, Musil, & Hayman, 2024; Qu et al., 2024
53. Lin et al., 2022
54. Lin et al., 2022
55. Lin et al., 2022
56. B. Kim & Royle, 2024; Testa et al., 2022
57. Testa et al., 2022
58. Testa et al., 2022
59. Foulkes & Blakemore, 2018, p. 315
60. Boyce, Levitt, Martinez, McEwen, & Shonkoff, 2021
61. Grazioplene, DeYoung, Rogosch, & Cicchetti, 2012
62. Boyce et al., 2021
63. National Scientific Council on the Developing Child, 2010
64. Beier et al., 2000, cited by Collins, 2010
65. Center on the Developing Child, 2016
66. Center on the Developing Child, 2016
67. Teicher, 2002 and Teicher and Samson, 2016, cited by Samson et al., 2024
68. Galván, 2020; Samson et al., 2024
69. Jacka, 2019
70. McKay et al., 2022
71. McKay et al., 2022
72. B. Kim & Royle, 2024
73. Lacey & Minnis, 2020
74. Massetti, Hughes, Bellis, & Mercy, 2020
75. B. Kim & Royle, 2024

Stable, nurturing adults play a critical role in reducing risk and promoting wellbeing.



Glossary of Māori words:

Rangatahi – youth, young person, adolescent

Tamaiti – child

Tamariki – children

Whānau – extended family

If you found this article useful, these may also be of interest:

Understanding Adolescent Risk-taking

<https://brainwave.org.nz/article/understanding-adolescent-risk-taking/>

Family Violence: Children Get Hurt

<https://brainwave.org.nz/article/family-violence-children-get-hurt/>

Alcohol in Adolescence – what the research tells us

<https://brainwave.org.nz/article/supporting-childrens-social-and-emotional-development/>

References

- Becker, S. P., Langberg, J. M., & Byars, K. C. (2015). Advancing a biopsychosocial and contextual model of sleep in adolescence: a review and introduction to the special issue. *Journal of Youth & Adolescence*, *44*, 239-270.
- Boyce, W. T., Levitt, P., Martinez, F. D., McEwen, B. S., & Shonkoff, J. P. (2021). Genes, environments, and time: the biology of adversity and resilience. *Pediatrics*, *147*(2), e20201651.
- Casey, B. J., Jones, R. M., & Hare, T. A. (2008). The adolescent brain. *Annals of the New York Academy of Sciences*, *1124*, 111-126.
- Center on the Developing Child. (2016). *Building the core skills youth need for life: a guide for education and social service practitioners*. Retrieved from <https://developingchild.harvard.edu/resources/building-core-skills-youth/>
- Collins, B. (2010). *Resilience in teenage mothers: A follow-up study*. Wellington.
- Dahl, R., & Suleiman, A. (2017). Adolescent brain development: Windows of opportunity. *The adolescent brain: A second window of opportunity*, 21-28.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., . . . Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, *14*(4), 245-258.
- Foulkes, L., & Blakemore, S.-J. (2018). Studying individual differences in human adolescent brain development. *Nature Neuroscience*, *21*(3), 315-323.
- Fuhrmann, D., Knoll, L. J., & Blakemore, S. J. (2015). Adolescence as a sensitive period of brain development. *Trends in Cognitive Science*, *19*(10), 558-566.
- Galván, A. (2020). The need for sleep in the adolescent brain. *Trends in Cognitive Neuroscience*, *24*(1), 79-89.
- Galván, A. (2021). Adolescent brain development and contextual influences: A decade in review. *Journal of Research on Adolescence*, *31*(4), 843-869.
- Ginsburg, K. R., & Jablow, M. M. (2011). *Building resilience in children and teens: Giving kids roots and wings* (2nd ed.): American Academy of Pediatrics.
- Grazioplene, R. G., DeYoung, C. G., Rogosch, F. A., & Cicchetti, D. (2012). A novel differential susceptibility gene: CHRNA4 moderation of the effect of maltreatment on child personality. *Journal of Child Psychology and Psychiatry*, *54*(8), 872 - 880.
- Hashemi, L., Mellar, B., Gashemi, M., Gulliver, P., Swinburn, B., Milne, B., . . . Fouche, C. (2025). *Adverse childhood experiences and childhood obesity. Can positive childhood experiences mitigate the association?* Retrieved from Wellington: <https://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/research/adverse-childhood-experiences-and-childhood-obesity/adverse-childhood-experiences-and-childhood-obesity.pdf>
- Hobbs, M., Bowden, N., Marek, L., Wiki, J., Kokaua, J., Theodore, R., . . . Hetrick, S. (2023). The environment a young person grows up in is associated with their mental health: A nationwide geospatial study using the integrated data infrastructure, New Zealand. *Social Science & Medicine*, *326*, 115893.
- Hughes, K., Bellis, M. A., Hardcastle, K. A., Sethi, D., Butchart, A., Mikton, C., . . . Dunne, M. P. (2017). The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. *The Lancet Public Health*, *2*(8), e356-e366.
- Jacka, F. (2019). *Brain Changer*. NSW, AU: Pan Macmillan.
- Joy, E., & Beddoe, L. (2019). ACEs, cultural considerations and 'Common Sense' in Aotearoa New Zealand. *Social Policy and Society*, *18*(3), 491-497.
- Juwariah, T., Suhariadi, F., Soedirham, O., Priyanto, A., Setiyorini, E., Siskaningrum, A., . . . Fernandes, A. d. C. (2022). Childhood adversities and mental health problems: A systematic review. *Journal of Public Health Research*, *11*(3), 22799036221106613.
- Kim, B., & Royle, M. (2024). Annual Research Review: Mapping the multifaceted approaches and impacts of adverse childhood experiences—an umbrella review of meta analyses. *Journal of Child Psychology and Psychiatry*.
- Kim, J. H., & Choi, J. Y. (2020). Influence of childhood trauma and post-traumatic stress symptoms on impulsivity: focusing on differences according to the dimensions of impulsivity. *European Journal of Psychotraumatology*, *11*(1), 1796276.
- Koenig, J., Farhat, L. C., & Bloch, M. H. (2025). Editorial: From adolescence into young adulthood – the importance of a longitudinal perspective across development in child and adolescent mental health. *Journal of Child Psychology and Psychiatry*, *66*(1), 1-3.
- Kretzer, S., Lawrence, A. J., Pollard, R., Ma, X., Chen, P. J., Amasi-Hartoonian, N., . . . Dazzan, P. (2024). The dynamic interplay between puberty and structural brain development as a predictor of mental health difficulties in adolescence: a systematic review. *Biological Psychiatry*, *96*(7), 585-603.
- Lacey, R. E., & Minnis, H. (2020). Practitioner Review: Twenty years of research with adverse childhood experience scores—Advantages, disadvantages and applications to practice. *Journal of Child Psychology and Psychiatry*, *61*(2), 116-130.
- Lin, S. X., Cheslack-Postava, K., McReynolds, L., Amsel, L., Bresnahan, M., & Hoven, C. W. (2022). Adverse Childhood Experiences and insufficient sleep among U.S. children and adolescents. *Academic Pediatrics*, *22*(6), 965-971.
- Madigan, S., Thiemann, R., Deneault, A.-A., Fearon, R. M. P., Racine, N., Park, J., . . . Neville, R. D. (2025). Prevalence of Adverse Childhood Experiences in child population samples: A systematic review and meta-analysis. *JAMA Pediatrics*, *179*(1), 19-33.
- Masseti, G. M., Hughes, K., Bellis, M. A., & Mercy, J. (2020). Global perspective on ACEs. In G. J. G. Asmundson & T. O. Afifi (Eds.), *Adverse Childhood Experiences* (pp. 209-231): Academic Press.

- McKay, M. T., Kilmartin, L., Meagher, A., Cannon, M., Healy, C., & Clarke, M. C. (2022). A revised and extended systematic review and meta-analysis of the relationship between childhood adversity and adult psychiatric disorder. *Journal of Psychiatric Research*, 156, 268-283.
- McLaughlin, K. A. (2016). Future directions in childhood adversity and youth psychopathology. *Journal of Clinical Child & Adolescent Psychology*, 45(3), 361-382.
- Merrick, M. T., Ford, D. C., Ports, K. A., & Guinn, A. S. (2018). Prevalence of adverse childhood experiences from the 2011-2014 behavioral risk factor surveillance system in 23 states. *JAMA Pediatrics*, 172(11), 1038-1044.
- National Scientific Council on the Developing Child. (2010). *Persistent fear and anxiety can affect young children's learning and development. Working Paper 9*. Retrieved from <http://www.developingchild.net>
- Qu, G., Liu, H., Han, T., Zhang, H., Ma, S., Sun, L., . . . Sun, Y. (2024). Association between adverse childhood experiences and sleep quality, emotional and behavioral problems and academic achievement of children and adolescents. *European Child & Adolescent Psychiatry*, 33(2), 527-538.
- Rahman, M. A., Kundu, S., Christopher, E., Ahinkorah, B. O., Okyere, J., Uddin, R., & Mahumud, R. A. (2023). Emerging burdens of adolescent psychosocial health problems: a population-based study of 202 040 adolescents from 68 countries. *British Journal of Psychology Open*, 9(6), e188.
- Raposa, E. B., Hammen, C. L., Brennan, P. A., O'Callaghan, F., & Najman, J. M. (2014). *Early adversity and health outcomes in young adulthood: the role of ongoing stress. Health Psychology*, 33(5), 410-418.
- Rowe, A.-L., O'Dean, S. M., Champion, K. E., Barrett, E. L., Grummitt, L., Mills, K. L., . . . Gardner, L. A. (2025). *Childhood traumatic experiences and vaping among Australian adolescents: A prospective investigation. Drug and Alcohol Review*, 44(1), 267-272.
- Samson, J. A., Newkirk, T. R., & Teicher, M. H. (2024). Practitioner Review: Neurobiological consequences of childhood maltreatment—clinical and therapeutic implications for practitioners. *Journal of Child Psychology and Psychiatry*, 65(3), 369-380.
- Shochat, T., Cohen-Zion, M., & Tzischinsky, O. (2014). Functional consequences of inadequate sleep in adolescence: a systematic review. *Sleep Medicine Reviews*, 18, 75-87.
- Shonkoff, J. P. (2012). Leveraging the biology of adversity to address the roots of disparities in health and development. *Proceedings of the National Academy of Science USA*, 109(2), 17302-17307.
- Shonkoff, J. P., Slopen, N., & Williams, D. R. (2021). Early childhood adversity, toxic stress, and the impacts of racism on the foundations of health. *Annual Review of Public Health*, 43, 115-134.
- Short, M. A., & Weber, N. (2018). Sleep duration and risk-taking in adolescence: a systematic review and meta-analysis. *Sleep Medicine Reviews*, 41, 185-196.
- Short, M. A., Weber, N., Reynolds, C., Coussens, S., & Carskadon, M. A. (2018). Estimating adolescent sleep need using dose-response modeling. *Sleep*, 41(4).
- Sleep Health Foundation. (2020). Quick facts and FAQ about sleep for high school students. www.sleephealthfoundation.org.au
- Snyder, C. K. (2020). Biopsychosocial outcomes of poor sleep in adolescence. *Journal of Pediatric Nursing*, 54, 114-115.
- Song, M., McHill, A. W., Dieckmann, N. F., Musil, C. M., & Hayman, L. L. (2024). Association between Adverse Childhood Experiences and sleep duration in US children: Analysis of 2020–2021 National Survey of Children's Health. *Journal of Cardiovascular Nursing*, 10.1097/JCN.0000000000001128.
- Stubbing, J., Rihari, T., Bardsley, A., & Gluckman, P. (2023). *Exploring factors influencing youth mental health: What we know and don't know about the determinants of young people's mental health*. Retrieved from Auckland, NZ: <https://informedfutures.org/wp-content/uploads/pdf/Koi-Tu-Report-Exploring-factors-influencing-youth-mental-health.pdf>
- Sutcliffe, K., Ball, J., Clark, T. C., Archer, D., Peiris-John, R., Crengle, S., & Fleming, T. (2023). Rapid and unequal decline in adolescent mental health and well-being 2012–2019: Findings from New Zealand cross-sectional surveys. *Australian & New Zealand Journal of Psychiatry*, 57(2), 264-282.
- Testa, A., Jackson, D. B., Ganson, K. T., & Nagata, J. M. (2022). Adverse Childhood Experiences and criminal justice contact in adulthood. *Academic Pediatrics*, 22(6), 972-980.
- Wade, M., Wright, L., & Finegold, K. E. (2022). The effects of early life adversity on children's mental health and cognitive functioning. *Translational Psychiatry*, 12(1), 244.
- Walsh, M. C., Joyce, S., Maloney, T., & Vaithianathan, R. (2019). Adverse childhood experiences and school readiness outcomes: results from the Growing Up in New Zealand study. *The New Zealand Medical Journal*, 132(1493), 15-24.
- Whittle, S. (2025). Childhood adversity and the pace of brain development. *Biological Psychiatry*, 97(1), 5-6.