

Childcare and Children's Health

A national program developed by the Centre for Community Child Health at the Royal Children's Hospital in Melbourne with support from Johnson & Johnson. This publication promotes current expert advice on child health and wellbeing and current policies and practices for those who work with young children and their families.

Australian Early Development Index

For the very first time, Australia has information about early childhood development in communities. Data about five key areas of child development – such as physical development, language skills and communication skills – have been collected on the nation's children and can be found as maps and reports on the Australian Early Development Index (AEDI) website (www.aedi.org.au).

The AEDI is like a census. In 2009, data were collected on over 250,000 children. After the nationwide data collection, the information was sorted according to where the children live (by community).

As we know, children's development is influenced by nature and by nurture – genes and environment. So both experiences and environments affect children's development. A child's family usually has the strongest impact on their development. However, other factors – their neighbourhood, their early childhood education and care services and other local services – also play an important role.

The information about child development that the AEDI provides is invaluable. It gives us a picture of children's health and wellbeing and it also gives an indication of how they are likely to develop in the future. Information gained from the AEDI, in conjunction with other demographic information, can help communities identify gaps in children's services and family supports and inform the work they do to provide appropriate services that can address children's needs now and in the future.

¹ School-based refers to language and cognitive skills necessary for school (with English as the language of instruction).

Why use a population measure?

The AEDI is a population measure that focuses on all children in the community, rather than looking at individual children. An individual approach can help one child at a time; putting the spotlight on an entire community and taking a universal approach can make a bigger difference for all those children. For example, if the AEDI shows that your community's children are vulnerable in their language and cognitive skills, your community might focus their efforts on early literacy.

It is important to understand that the AEDI is not an individual diagnostic measure – it does not score individual children as developmentally vulnerable or on track. Similarly, it does not identify children with specific learning needs, or children with a disability or areas of developmental delay. The AEDI results cannot be used to make individual recommendations, such as which children should be placed in special education categories.

How is the AEDI information collected?

There are five key areas of early childhood development in the AEDI:

- physical health and wellbeing
- social competence
- emotional maturity
- language and cognitive skills (school-based ¹)
- communication skills and general knowledge.

To collect the AEDI information, teachers completed an online questionnaire on children who are in their first year of full-time school. Between May and July 2009, 15,528 teachers collected information for the AEDI on 261,203 children (97.5% of the estimated five year-old child population). This was an enormous effort involving over 7000 local communities (e.g. suburbs) across Australia.

Key findings from the 2009 national data collection

- The majority of children are doing well on each of the five developmental domains of the AEDI.
- 23.5 per cent of Australian children are developmentally vulnerable on one or more of the AEDI domain/s.
- Children living in the most socio-economically disadvantaged Australian communities are more likely to be developmentally vulnerable on each of the AEDI domains.
- Girls are more likely to be developmentally on track on the AEDI domains in comparison to boys. This is consistent with other research.
- The majority of Australian Indigenous children are developmentally on track on all the AEDI domains, with the exception of the language and cognitive skills (school-based) domain.
- Children who are proficient in English and speak another language at home are less likely to be developmentally vulnerable on the AEDI domains compared to all children.
- There are children in Australia who only speak English, but are reported as not proficient in English. These children are more likely to be developmentally vulnerable on all the AEDI domains.

How can the AEDI be used?

The five developmental domains of the AEDI are good predictors of school-based education and social outcomes. The AEDI results can help governments and communities better understand how their local children are developing before they begin school.

For educators in early childhood education and care services, the AEDI results are a particularly useful resource, offering insights into how children in their community are developing. When the AEDI results are overlaid with other socio-demographic and

community information (such as census data), the combined information provides powerful evidence to influence planning and policy around early childhood development.

The results also provide a common language for the whole community to talk about how children are developing. By providing a common ground on which people can work together, the AEDI results can help build and strengthen communities to give their children the best start in life.

The AEDI results can prompt educators to consider:

- In what domains are children 'on track' in our community? In what domains are children most developmentally 'vulnerable'?
- Do the AEDI results match up with our community's other data (such as census data)?
- What are we doing well to support local children? What programs and initiatives are already in place and working well? How can we strengthen these?
- What services and programs could be refocused to be more effective? Where do we need more resources?
- Are there strong links between our early childhood education and care service, and other local early childhood services such as health centres, libraries and schools?
- What kinds of programs does our service have in place to work with schools to support children's transition?
- How well does our service engage with parents to support children's development?

The AEDI can help to:

- Increase awareness of the importance of children's early years
- Provide evidence for more effective use of resources, new initiatives, improved strategies and funding applications to improve outcomes for children
- Facilitate links between early childhood education and care centres and schools, playgroups, local government agencies, health centres, libraries and other local organisations and encourage them to explore new ways of working together

- Provide educators with the chance to reflect how well children in their community transition to school and the impact this will have on their programs, intentional teaching strategies and partnerships with families
- Reflect on what their service, schools, families and other groups in their community can do to collaboratively support children and families – a whole of community approach
- Enable early childhood education and care services to open dialogue with schools, reflecting on how schools will be ready for the diversity of children and families entering their system
- Engage with and raise awareness among parents of the importance of their children's early years.

Next steps for the AEDI

In 2010, follow-up data collection may occur in some areas. This will allow more communities around Australia to see and use their AEDI results. The final national results will be available in 2011.

AEDI results are now available online. A comprehensive online results guide is available to help you understand your AEDI results, engage with and plan actions in your community. For more information about the AEDI including the results guide, case studies, videos, FAQs and fact sheets visit www.aedi.org.au

The AEDI is being conducted by the Centre for Community Child Health (at The Royal Children's Hospital Melbourne, and a key research centre at the Murdoch Childrens Research Institute) in partnership with the Telethon Institute for Child Health Research in Perth. The AEDI is funded by the Australian Government Department of Education, Employment and Workplace Relations.

A full list of references and the Parent Fact Sheet (available in different community languages) can be downloaded from the Early Childhood Connections website: www.ecconnections.com.au

Case Study: AEDI in action

Armadale and the Challis Early Childhood Education Centre

Lee Musumeci is the principal of Challis Early Childhood Education Centre in Armadale, Western Australia. She believes the early years of a child's life present a 'window of opportunity' to foster children's potential. She also believes children and their families need integrated and coordinated service delivery: "If we get it right for children and families, we get it right for society."

Armadale is located 30 kilometres south-east of Perth and is one of the 60 Australian communities that participated in the Australian Early Development Index (AEDI) pilot project (between 2004 and 2008).

Armadale participated in the AEDI for the first time in 2005 and has also had AEDI data collected in 2008 and 2009.

In 2008, Armadale had a population of 50,536

including 4137 children aged between birth and five years of age. As part of the AEDI, 736 children from 22 schools were surveyed, including the school at Challis. Of those children, 2.7 per cent had English as a second language and 18.2 per cent were Aboriginal or Torres Strait Islander.

What did the AEDI results show?

The 2005 and 2008 AEDI results revealed a high degree of variability in children's development across the Armadale community. Although the majority of children were developmentally on track, there were pockets of Armadale with many developmentally vulnerable children. Challis was one such area and had children who were particularly vulnerable in the language and cognitive skills (school-based) domain.

As can be seen in the table, in 2008, more than half of the children in Challis were developmentally vulnerable in at least one domain.

Using the AEDI results

The AEDI results proved to be a key impetus for many diverse service providers to mobilise around the needs of Armadale's young children. Before the AEDI, the local council did not have a clear understanding of the community's needs for improving early childhood development. This situation has turned around since the release of AEDI results.

Armed with information from the AEDI results, key stakeholders from the primary school in Challis set out to improve their young children's development. A first step included engaging the local council, followed by beginning conversations with other services and stakeholders involved with children, such as healthcare services, parents, and early childhood education and care services.

As a result of the community's multiple discussions and comprehensive planning, the primary school developed the Challis Parenting and Early Learning Centre, a comprehensive, integrated, multi-agency health, education and social resource focused on early learning and family support. It prides itself on being built 'from the ground up' offering programs targeted to its children and families. The Centre's supporting staff include: an early childhood educator, a family support worker, child health nurse, community health nurse, social worker and allied health staff.

The Centre has used AEDI results to reflect on local children's development and as evidence to initiate targeted programs and services.

Other initiatives and programs include:

- **Parent and Play** sessions, where parents are shown how development is enhanced through connecting with their child.
- **Kartajin Danjo**, a playgroup for Indigenous children.
- **3-year-old kindergarten**, for eligible children based on social and language needs. The emphasis is on building the language, social/emotional and physical development of children in readiness for school entry.
- **Getting Ready for School Program**, to develop confidence in a school environment, familiarity with school routines and parent awareness of school.
- **Coffee and Chat session** for parents and carers.
- **My Time**, a support program for parents of children with additional needs.
- **Parenting workshops** which cover topics including behaviour management, first aid, cooking and nutrition, sleep and child development.

The Challis community has established an excellent network to continue to monitor and improve the development of their children.

An extended version of this case study is available at www.econnections.com.au

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2008 AEDI results*	Children developmentally vulnerable on one or more AEDI domain/s
National (based on the total number of children surveyed for the pilot AEDI project in 2008)	24%
Armadale	39%
Challis	52%

* Comparisons to 2009 AEDI cannot be made; cut-offs to determine vulnerability have changed between 2008 and national roll-out of the AEDI in 2009.

¹ School-based refers to language and cognitive skills necessary for school (with English as the language of instruction).

Vitamin D Deficiency in Infants and Young Children

When our skin is exposed to the sun, our bodies are able to make vitamin D, which is essential for healthy bones and muscle development. Despite Australia's abundant sunshine, the Medical Journal of Australia reported in 2006 that vitamin D deficiency has re-emerged as a significant child health issue in Australia.

Children with a vitamin D deficiency can develop a range of problems including muscle and bone pain and poorly mineralised (soft) bones.

For educators in early childhood education and care services, the dilemma is how to balance the risks of sun exposure with the need for vitamin D. Most Australians have sufficient sunlight exposure to ensure adequate vitamin D production.

However, some groups of children are more at risk of vitamin D deficiency than others.

Vitamin D – why it is so important for health

Vitamin D is a hormone that controls calcium levels in our blood. Our bodies need calcium for normal bone growth, and for healthy muscles and teeth. Vitamin D is also important for our immune system and general health.

How do we get vitamin D?

Vitamin D is made in our skin from exposure to the sun's UV radiation. People with dark-coloured skin require more sunlight to make adequate vitamin D than those with fair skin. However, the precise amount of sunlight exposure required for children to maintain healthy vitamin D levels is unclear (Paxton,G and Buttery,J. 2009).



Sunlight is not our bodies' only source of vitamin D; small amounts can be found in foods including oily fish such as mackerel and sardines, and in eggs. Other foods have vitamin D as an additive, notably margarine and some types of milk. However, food alone will not provide enough vitamin D. A child's diet supplements the vitamin D from sun exposure.

The effects of vitamin D deficiency

Children with a vitamin D deficiency may have seizures, growth failure, lethargy, irritability, and a predisposition to respiratory infections during infancy (Wagner et al, 2008). If their deficiency is extreme, they may develop rickets, a disorder that leads to softened and weakened bones.

Rickets most commonly becomes apparent in children between 3 and 18 months of age. However, these children will have been vitamin D deficient for months before the disorder becomes obvious on physical examination (ibid).

Some children are at particular risk of vitamin D deficiency

Cultural practices, religious beliefs and naturally darker skin place many children and adults in Australia at particular risk of vitamin D deficiency. This group notably includes those who have emigrated from Africa and the Middle East. Australian living conditions do not always provide the opportunity for these families to experience adequate sun exposure, e.g. some homes may not have private outdoor areas. Babies born to vitamin D-deficient mothers in this group are particularly at risk of developing a vitamin D deficiency condition. However, pregnant and nursing mothers with vitamin D deficiency can increase their vitamin D intake to adequate levels or receive a vitamin D supplement.

Prevention and treatment of vitamin D deficiency

Regular sunlight exposure can prevent vitamin D deficiency, **but the safe exposure time for children is unknown** (MJA 2006; 185: 268-272).

There is also significant variation in the amount of available sunlight and the strength of sunlight between seasons and across different geographical areas in Australia.

Recommendations published in 2005 suggested that babies could maintain adequate levels of vitamin D through exposure of small amounts of skin – such as the arms or legs – to sunlight for very brief periods before 10am and after 3pm. Dark-skinned babies are likely to require more time.

In some cases of severe vitamin D deficiency, dietary supplements may be prescribed by a medical practitioner.

Working to ensure infants and children in your care get their daily dose of vitamin D

- **Ensure children in your care have safe sunlight exposure** as part of beneficial outdoor play. Cancer Council Australia recommends that exposure to some sunlight is essential for good health. The Cancer Council and Australian College of Dermatologists have published a detailed position statement on Sun Exposure and Infants. It can be downloaded from www.dermcoll.asn.au/downloads/Sun_protection_infants_May_2005.pdf
- **Be aware of the risk of vitamin D deficiency when working with families from culturally diverse backgrounds** (notably recently arrived immigrants from Africa or the Middle East) and work with those families to secure appropriate support if needed, such as referral to local child and family health services. Access www.refugeehealthnetwork.org.au/resources/Nutrition for helpful information, available in a range of community languages.

- **There are a number of variables that will affect the time children need to be in the sun.** These include the child's skin colour, clothing and other coverings as well as geographical location, time of day and the time of year. Take time to read the Risks and Benefits of Sun Exposure Position Statement that can be downloaded from www.dermcoll.asn.au/downloads/Risks_and_Benefits_of_Sun_Exposure03May07.pdf
- **Check that your policy related to sun exposure is thorough.** It should address such points as variations related to time of day, age and mobility of children, shade provided, amount of clothing worn, use of sunscreens and which sunscreens you choose. The Cancer Council's SunSmart guide for service providers has good information on how to balance the need for sun protection and the need for vitamin D: www.cancercouncil.com.au/html/prevention/sunsmart/downloads_schools/ech_sunsmartguide_serviceproviders.pdf

SunSmart advises that when UV levels are at or above 3 (you can find daily UV levels at www.bom.gov.au or the website of the Cancer Council in your state or territory), children using sunscreen will still get enough vitamin D. When the UV index is at or below 3, you need to balance the need for vitamin D with the importance of being sun safe.

QIAS: Principle 6.5

FDCQA: Principle 2.1, 4.1, 4.5

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