

# **Disability: the use of aids and the role of the environment**

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DISABILITY SERIES

# **Disability: the use of aids and the role of the environment**

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- Lynne Davis of the National Disability Advisory Council.



## Abbreviations

A&EP	Aids and Equipment Program (Victoria)
ABS	Australian Blindness Forum
ABI	Acquired Brain Injury
ABS	Australian Bureau of Statistics
AIWH	Australian Institute of Health and Welfare
ALS	Artificial Limb Scheme
CAAS	Continence Aids Assistance Scheme
CAEP	Community Aids and Equipment Program (Western Australia)
CRS	Commonwealth Rehabilitation Scheme
CSDA	Commonwealth/State Disability Agreement
DVA	Department of Veterans' Affairs
ICF	International Functioning of Disability and Health
ILEP	Independent Living Equipment Program (South Australia)
NGO	non-government organisation
PADP	Program of Appliances for Disabled People (New South Wales)
PDCN	Physical Disability Council of NSW
RAP	Rehabilitation Appliances Program
SAEAS	Supported Accommodation Equipment Assessment Scheme (Victoria)
TAFE	Technical and Further Education
TIMES	Territory Independence Mobility and Equipment Scheme (Northern Territory)

## Symbols

- when used in a table, means nil or rounded to zero (including null cells)
- .. when used in a table, means not applicable

## Summary

Recognition of the environment as having a direct impact on the experience of disability is an important conceptual and practical step on the road to improving participation and the quality of life of people with disabilities. The provision of affordable aids and equipment, support arrangements in educational and workplace settings, mainstream education, accessible public transport and personal assistance all act to facilitate opportunities for individuals to participate in the economic and social world. Furthermore, and just as importantly, they provide people with disabilities an added independence to explore these opportunities. Nonetheless, features of the environment may still act as barriers for different people in different circumstances.

The International Classification of Functioning, Disability and Health recognises environmental factors as one of three components defining functioning and disability (WHO 2001). Environmental factors make up the physical, social and attitudinal environment in which people live and conduct their lives, and influence the experience of disability both at the body level (function and structure) and in terms of the activities they do and the areas of life in which they participate.

Aids and equipment are environmental factors with the potential to improve the life of people with disabilities through the attainment of greater independence and less reliance on personal assistance. Some research suggests that aids and equipment alone may be a more efficacious form of assistance than personal assistance in reducing difficulty associated with performing tasks of daily living. Nonetheless, the prescription of aids and equipment to people with disabilities is not always beneficial to the client, sometimes leading to the acquisition of an inappropriate aid and its eventual abandonment.

In Australia, a range of Commonwealth and state and territory based schemes provide cost-free or low-cost aids to people with disabilities. These schemes, however, do not generally provide complete coverage in terms of scope, size and the types of aids and equipment provided, despite recent reviews to improve the quality and delivery of aids.

This report describes the use of aids and equipment by people with disabilities in Australia, and other relevant environmental factors, such as support arrangements in educational and workplace settings, access to public transport, assistance with daily activities, and home modifications. A summary of the findings from analysis of the 1998 Survey of Disability, Ageing and Carers is given below.

### Aids and equipment

- In 1998, 48% of people with a disability used some form of aid. Of this group, 40% were under the age of 65 years (Section 4.2).
- The use of aids and equipment was more likely in older age groups and for those with more severe core activity restrictions (Sections 4.3 and 4.4).
- Medical aids were the most frequently used aid for people aged 15–64 years, followed by mobility aids. The exception was children under 15 years, where self-care and communication aids were the second most used aid categories, after medical aids (Sections 4.3).

- The average number of aids used generally rose with increasing severity of core activity restriction. People with a mild core activity restriction used on average 1.2 aids compared to 1.5 for a moderate core activity restriction and 1.9 aids for a severe core activity restriction. People with a profound core activity restriction used an average of 3.5 aids (Section 4.4).
- People aged 0–64 and with physical/diverse or hearing impairments were more likely to be users of aids compared with people with an intellectual, psychiatric or vision and speech impairment (Section 4.5).
- People who needed assistance with core and other daily activities were more likely to use aids than those who did not need assistance. However, needing assistance with a core activity was not necessarily associated with a high use of aids specific to the core activity. Around 40% of people who needed assistance with self-care or mobility used self-care and mobility aids respectively. Only 8% of people needing assistance with communication used communication aids (Section 4.6).
- Almost half of people aged 0–64 years and reporting a need for assistance with self-care, mobility or communication received personal assistance only, suggesting that ‘low’ aid use is offset by receipt of personal assistance. Nonetheless, a high proportion of people still reported using neither personal nor aid or equipment assistance for core activities, in particular in relation to communication where the proportion having no personal or equipment assistance was 43% (Section 4.6).
- People with a primary carer were more likely to use aids. For people aged under 65 years and using aids and equipment, the primary carer was usually a spouse or partner, and to a lesser extent a parent; for people who did not use aids, a parent was the main primary carer. Aid and equipment users generally received shorter hours of primary care, albeit only slightly less so (Section 4.7).

## **Other environmental factors**

### **Education (Section 5.2)**

- Over 70% of school-aged (5–19 years) children with a severe, moderate or mild core activity restriction and 49% of children with a profound core activity restriction attended ordinary classes in 1998.
- Receipt of support arrangements was more likely if a primary or secondary school student attended a special class or a special school. This might reflect the greater needs of children in these educational settings compared to those in ordinary classes and/or a better array of facilities in classes or schools specifically catering for children with disabilities. However, it was not possible to determine the proportion of children who did not have access to support arrangements, but who needed them, compared to those who did not need them.

### **Employment and workplace arrangements (Section 5.3)**

- Support arrangements in the workplace were more common for people with a profound or severe core activity restriction than those with other restrictions. Special equipment and assistance from a disability support person were the most common forms of support arrangement. Again, however, it was not possible to determine the proportion of adults

who did not have access to workplace support arrangements, but who needed them, against those who did not need such arrangements.

### **Access to public transport (Section 5.4)**

- Public transport systems were available to over 80% of people with a disability. For people aged over 65 years, 98% had a concession card but only 52% of those aged under 65 years held a similar card.
- Six per cent of people who used private transport did so because the absence of public transport in their area meant they had to rely on other transportation means.
- Problems with safety, frequency and reliability of services, ability to transfer between home and stops or station, and in and out of vehicles, and the absence of direct services have been identified as barriers to regular public transport use.

### **Personal assistance with daily activities (Section 5.5)**

- Personal assistance with daily activities was predominantly provided by informal assistance. Formal personal assistance accounted for only a small proportion of assistance received. This is particularly so for people aged under 65 years where the proportion of assistance received from formal sources ranges from 2% to 11% for specific activities, the exception being health care where 19% of assistance is formal.
- Between 5% and 33% of people with a core activity restriction and aged 0–64 years reported that their need for assistance with a specific daily activity was partly met. For people aged over 65 years, the range is from 3% to 19%.
- Between 4% and 8% of people with a core activity restriction and aged 0–64 years who need assistance with a specific daily activity report they do not receive any assistance at all. Between 2% and 11% of people aged 65 years and over and with a core activity restriction also report not receiving assistance for specific activities.

### **Home modifications (Section 5.6)**

- Home modifications were more common for people with a profound or severe core activity restriction (23% and 14% respectively), those aged under 14 years (11%) or over 65 years (16%) and home owners, boarders or lodgers living rent-free (13–14%).
- People using aids were significantly more likely to live in homes with modifications.
- Type of home modifications varied with age. Ramps and structural changes were more common in the homes of people aged under 30 years and handgrab rails more common in the homes of people aged over 30 years. Toilet, laundry and bath modifications are equally important to all age groups.

The role of the environment in the experience of disability is a new and important area for information in the disability field in Australia. Information here and internationally is rather scarce and tends to neglect the population under the age of 65 years. This report starts to fill this gap by providing a broad-scale picture of the association between disability and the environment, for all age groups. However, in turn, further questions are unlocked, for example, the effect of the environment on specific disability groups (e.g. vision impaired) or age groups (e.g. children), the adequacy and scope of current schemes responsible for the provision of support arrangements, aids and equipment, and other assistance, and policy implications of these findings.



# 1 Disability and the environment

The 'social model of disability' was pioneered in the late 1960s and early 1970s, and continued to gain momentum and acceptance in the decades that followed. This model, introduced by people with disabilities, civil/human rights activists and social theorists, specified that disability is not simply a manifestation of a person's impairment, but rather a complex phenomenon, created in part by features of the physical and social world. It is the environment that acts to facilitate integration or contribute to isolation, influencing a person's ability to participate in society (see Bickenbach et al. 1999 for a review).

The recognition of the environment's influence on the experience of disability and the implementation of Disability Discrimination Acts in various countries have led to the development and implementation of programs and initiatives for improving the environment experienced by a person with disabilities. Some examples include:

- The concept of Universal Design, where the underlying principle is the design of products, buildings and environments that are useable by *all* people (see Mace et al. 1991). Issues such as accessibility, safety, individual ability and efficiency underpin the design of articles that make up the physical world, from buildings and forms of transportation to computer and Internet access, and products used in the home.
- Integration of students with disabilities into mainstream or regular educational settings. Enabling students with disabilities to participate in a regular education setting is thought to improve rather than hinder both academic and social learning (e.g. Center and Curry 1993; Wang and Baker 1986). Furthermore it improves their chances of participating in the future, instead of setting them on 'a straight pathway to a segregated life' (Uditsky 2002).
- Schemes for the provision of aids and equipment, where individuals receive cost-free or low-cost equipment to help their performance of daily activities, such as self-care and mobility in and outside the house, and facilitate participation in sport, work, education and other activities.
- Improvement of standards for accessible public transport. Transport is a fundamental human right, including having ready access to safe and disability-friendly forms of public transport, but remains a common problem for people with disabilities (see AIHW 2002). There have been recent developments in Australia, such as the implementation of the Disability Standards for Accessible Public Transport, passed by Parliament in October 2002.

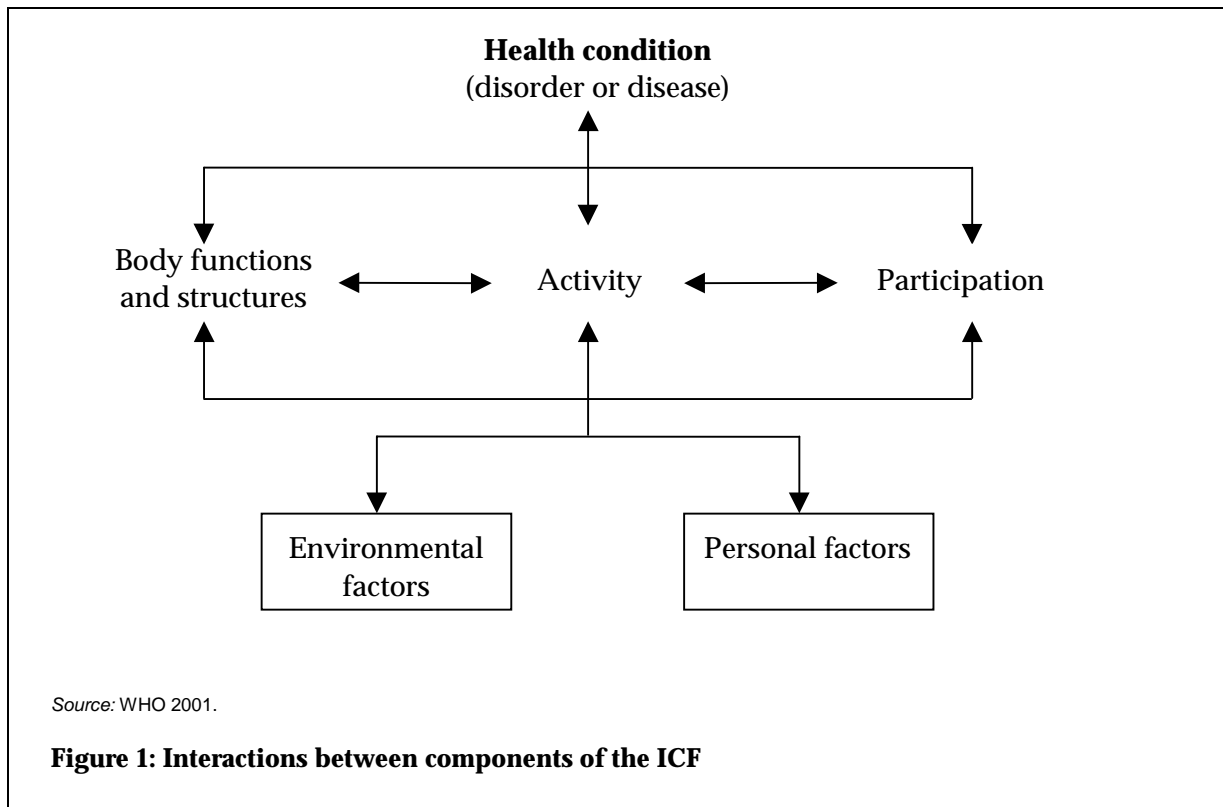
## 1.1 The International Classification of Functioning, Disability and Health (ICF)

Environmental factors are recognised by the International Classification of Functioning, Disability and Health<sup>1</sup> (ICF) as one of three components defining functioning and disability (WHO 2001). The other two components are Body Functions and Structures and Activities and Participation (see Figure 1 and WHO 2001). The inclusion of environmental factors represents an important new component to the classification.

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<sup>1</sup> The World Health Assembly endorsed the ICF in June 2001.

Environmental factors make up the physical, social and attitudinal environment in which people live and conduct their lives. These influence the experience of disability both at the body and in terms of the activities they do and the areas of life in which they participate, affecting a person's impairment extent, activity limitation and/or participation restriction.



The ICF groups environmental factors into five chapters (WHO 2001). These are:

- Products and technology, i.e. natural and human-made products and systems of products, equipment and technology
- Natural environment and human-made changes to environment, i.e. animate and inanimate elements of the natural and physical environment, and components of that environment that have been modified
- Support and relationships, i.e. people or animals that provide practical physical or emotional support, nurturing, protection, assistance, and relationships to other persons, in the home, place of work, school or at play
- Attitudes, i.e. attitudes that reflect the observable consequences of customs, practices, ideologies, values, norms, factual beliefs and religious beliefs
- Services, systems and policies, i.e. services that provide benefits, structure programs and operations to meet the needs of individuals, systems designed to organise, control and monitor these services and policies that govern and organise the systems that organise, control and monitor services.

Environmental factors may act either as facilitators or barriers to an individual, enhancing or hindering their performance. Different environments therefore may have very different impacts on the same individual with a given health condition.



## 1.2 Objectives and structure of the report

In this report we examine information available in Australia on this important component of disability. It includes a discussion of some of the environmental factors recognised by the ICF as influencing the experience of disability—aids and equipment, home modifications, educational settings, support arrangements provided at school and in the workplace, access to public transport and receipt of assistance for daily activities.

The primary focus of the report, however, is aids and equipment and their use by people with disabilities in Australia. Aids and equipment have long been recognised as an environmental factor with the potential to improve the quality of life of people with disabilities, allowing greater independence and reduced reliance on personal assistance. Aids and equipment have also received more attention in the disability literature than other environmental factors, with the possible exception of the built environment.

The majority of data regarding the use of aids and equipment come from the United States or Europe, with little research being undertaken in Australia. This report aims to fill this gap by providing a picture of the current status of provision and use of aids and equipment by people with disabilities in Australia, and the factors associated with this use.

The structure of the report is as follows:

**Chapter 2** identifies some of the current definitions of aids and equipment specific to people with disabilities, and describes the kinds of equipment available in Australia and the Commonwealth and relevant state/territory based schemes operating in Australia. Issues of eligibility, priority and funding are discussed, as is reported cases of unmet need for aids and equipment.

**Chapter 3** reviews the literature on the use of aids and equipment in other countries, the efficacy of aid and equipment use, both overall and compared to personal assistance, and factors identified as being associated with the use and abandonment of aids and equipment.

**Chapter 4** presents analyses of the 1998 ABS Survey of Disability, Ageing and Carers and describes prevalence of the use of aids and equipment by age group, severity of restriction, main disabling condition, need for personal assistance and the use of a primary carer. The types of equipment (e.g. mobility aids, communication aids) used by different demographic groups is also investigated.

**Chapter 5** focuses on some of the other environmental factors relevant to people with disabilities. Environmental factors covered in the Survey of Disability, Ageing and Carers and presented in this chapter include support arrangements provided in educational and workplace settings, receipt of assistance for daily activities, availability of public transport and home modifications.

## 2 Provision and access to aids and equipment in Australia

### 2.1 Definition of aids and equipment

Aids and equipment are generally defined as products that assist a person with disabilities by improving their functioning, increasing participation in society and/or improving their quality of life. Aids and equipment have been defined as operating to:

‘increase or improve functional capabilities of individuals with disabilities’ (Technology-Related Assistance of Individuals with Disabilities Act 1988 (US))

‘improve functioning, enable a person to live at home and in the community, and enhance independence’ (Scherer 1996).

The aims and objectives of Australian equipment schemes also recognise these functions, describing the provision of aids and equipment as acting to:

‘improve the quality of life of people with disabilities and improve capacity to participate in family and community activities’ (PADP, NSW(NSW Department of Health, 2000));

‘to enhance...safety and independence, (and) reduce...reliance on carers’ (A&EP, Victoria (Department of Human Services, 2002));

‘minimise the impact of...disability and maximise...ability to function(ing) effectively’ (CAEP, Western Australia (Disability Services Commission, 2001)); and

‘increase...independence and to enable them to function at optimal levels in their home and communities’ (TIMES, Northern Territory (Department of Health and Community Services, 2001)).

### Categories of aids and equipment

Aids and equipment are sometimes categorised in terms of technological sophistication e.g. as low-, medium- and high-tech aids. Low-tech aids are those that are simple in construction and/or use, such as toilet supports or hand-held showers. Medium-tech aids are more complicated and tend to be mechanically based, for example, wheelchairs and mechanical lifters. Equipment that incorporates sophisticated electronics or computers, such as electronic communication boards and voice amplifiers, are referred to as high-tech aids.

A large range of aids and equipment is available in Australia, for mobility, self-care and communication purposes, to treat medical conditions, plus orthoses and prostheses, and modifications made to homes. Box 2.1 lists the types of aids and equipment (and home modifications) that can be obtained in Australia. For this report, glasses and contact lenses will not be included as aids and equipment.

## Box 2.1: Examples of aids and equipment available in Australia

Primary use	Examples of aids and equipment
Self-care/Personal	Beds/bed table/mattresses Shower hose/hand shower Bath and shower seating Commode Toilet support, frames and steps Continence aids/drainage bags and bottles Safety helmets
Mobility	Bed backrest and bed raise Alternative positional and postural seating supports Standing equipment Hoist/mechanical lifter Crutches/walking stick/walking frame Wheelchair/scooter/stroller (and wheelchair push mitt) Portable ramps
Communication	Communication board Communication cards Communication/chat book Electronic communication device scheme Eye-pointing frame Box scanner Memory/message box with voice input Computer interface/access Alternative keyboards Communication output device with(out) voice Electrolarynx Voice amplifier and other electronic voice aids Cochlear Implant Speech Processor Hearing aids
Medical aids	Pressure management (bed) Ventilator/CPAP appliance/respiratory mask and accessories Humidifier Medical dressings Catheters Tracheostomy tubes and dressings Oxygen concentrators and oxygen gas Continuous positive airway pressure Tube feeding equipment Glucometer Nebuliser
Orthoses	Cervical, cervical thoracic, thoracic lumbar sacral, lumbar sacral and spinal orthoses Lower limb orthosis Upper limb orthosis Pressure management garment Footwear (for deformation or chronic ulceration)
Prostheses	Wigs Mammary prosthesis Optical prosthesis
Home Modifications	Bathroom, toilet, kitchen and laundry modifications Bidet toilet attachment Door fittings and widening Hand-held showers Hand-rails and grips Power outlets and switches Non-slip paint for ramps Safety flooring Ramps/step modifications Thermostats

Sources: ACT Community Care 2002; ALSA 2002; Department of Human Services (Victoria) 2002; Disability Services Commission 2001; NSW Department of Health 2000.

## **2.2 Aids and equipment schemes available in Australia**

The Commonwealth, state and territory governments, and a range of non-government organisations (NGOs), undertake the funding and operation of the majority of equipment schemes in Australia. These schemes provide in most cases cost-free, essential aids and equipment for people with disabilities based on eligibility criteria. Two types of government schemes exist—those funded at the Commonwealth level and those at the state or territory level—while NGO schemes are primarily state- and territory-based.

Aids and equipment are, of course, also available for purchase privately; the focus in this chapter is on schemes with some element of subsidy.

### **Commonwealth**

National equipment schemes are funded by the Commonwealth Government, of which the primary schemes are:

- Rehabilitation Appliances Program (RAP) and Home Modification (Department of Veterans Affairs (DVA))
- Australian Hearing Services
- Commonwealth Rehabilitation Service (CRS)
- Continence Aids Assistance Scheme (CAAS) (Department of Health and Ageing)
- Workplace Modifications Scheme (Department of Family and Community Services).

While the funding of these schemes is through the Commonwealth, their administration varies. The Australian Hearing Services, RAP, CRS and Workplace Modifications Scheme are administered through Commonwealth departments. A non-government organisation, PQ Lifestyles, manages CAAS, under contract to the Department of Health and Ageing.

### **State/territory governments**

State and territory governments fund additional government equipment schemes. Each state/territory manages a single scheme (Table 2.1) although some, such as Victoria and Queensland, have secondary schemes for specific disability groups (e.g. hearing impaired) or connected to other support schemes (e.g. supported accommodation). Responsibility for funding of the Artificial Limb Scheme (ALS) was transferred in the mid-1990s from the Commonwealth to state and territory governments, with their respective health departments implementing its administration.

### **Non-government organisations**

A range of NGOs, for example the Motor Neurone Disease Association of NSW, The Northcott Society (NSW), ParaQuad (NSW), The Spastic Centre (NSW), Spectronics (Queensland), Cerebral Palsy League of Queensland and Anelcomobil (South Australia), also provide aids and equipment. These organisations are mostly self-funded and distribute equipment both on a long-term or temporary loan basis. The manufacturing of specified equipment is also commissioned or undertaken by certain NGOs, for example TAD (Technical Aid to the Disabled), where volunteers make and supply custom-designed aids if commercial equipment is not suitable or cost-effective.

**Table 2.1: Examples of aids and equipment schemes funded by state and territory governments**

State/territory	Equipment Scheme
NSW	Program of Appliances for Disabled People (PADP)
Vic	Victorian Aids and Equipment Program (A&EP) Supported Accommodation Equipment Assessment Scheme (SAEAS) A&EP Communication Devices Scheme
Qld	Medical Aids Subsidy Scheme Queensland Hearing Services
WA	CAEP (Community Aids and Equipment Program)
SA	Independent Living Equipment Program (ILEP)
Tas	Community Equipment Scheme
ACT	ACT Equipment Scheme Oxygen Scheme
NT	Territory Independence Mobility and Equipment Scheme (TIMES)

### Scheme specifics

Commonwealth equipment schemes focus on delivering specific equipment assistance to address particular impairments or population groups. For example:

- CRS provides equipment to people entering the workforce after an extended absence from employment
- the Workplace Modifications Schemes contributes to the cost of workplace modifications for people both in and planning to enter the workforce
- RAP is available to war veterans and their widows/widowers
- CAAS is for people suffering from incontinence
- Australian Hearing Services for people with hearing impairments.

In contrast, the state/territory government (and NGO) schemes are more inclusive with regard to who can apply and are broader in the range of equipment supplied. Tables 2.2 and 2.3 outline funding, eligibility, priority, cost and administration information for the primary Commonwealth and state/territory schemes.

### Eligibility

Eligibility criteria apply for all equipment schemes. For Commonwealth-based schemes, the primary criterion is based on veteran status (DVA schemes), having a specific impairment (e.g. hearing (Australian Hearing Services), incontinence (CAAS)) or demonstrating need for environmental support in the workplace (CRS, Workplace Modifications Scheme). For most state and territory schemes, eligibility criteria require the client to have a disability of permanent or indefinite nature and be able to demonstrate they are:

- a permanent resident of that state or territory
- in receipt of a pension or health card, or a relevant Centrelink payment
- a resident within the community or a non-government-funded group home
- not receiving any form of compensation settlement
- ineligible for assistance from another scheme.

Demonstration of financial hardship is required in some cases in Queensland, Western Australia and the Australian Capital Territory, for example when the client is not a benefit recipient. The New South Wales PADP scheme also stipulates a financial eligibility clause where singles and couples/families are only eligible for equipment if their taxable income is less than or equal to \$26,759 and \$45,490 respectively. A higher income threshold is specified for equipment costing more than \$800 (Table 2.3).

### **Priority**

Only New South Wales and Victoria detail clear priority conditions. In New South Wales priority is based on income, with lower income groups receiving equipment before higher income groups (Table 2.3). In Victoria, it is perceived need that determines priority with three category groups defined: No waiting, High urgency and Low urgency. People requiring the oxygen program, wheelchair repairs and continence aids fall into the 'No waiting' group. 'High category' includes those where the provision of equipment is critical to the safety of the client or could prevent injury or deterioration of health.

### **Associated costs**

In most schemes, and in most cases, the cost of items is met by the equipment scheme. However, aids and equipment costing less than \$50–\$100 or 'non-essential' items are not provided by any of these schemes. Contributions are sometimes required for high-cost items such as electric wheelchairs.

Clients obtaining equipment from the New South Wales PADP scheme normally have to provide a single co-payment of \$100. Co-payments are also essential when items cost less than \$100 (for clients who can demonstrate financial hardship) and for certain income groups where a high-cost item is requested. In this case the client is expected to pay 20% of the retail cost.

ALS also requires some financial commitment from the client—15% of the scheduled cost of provision, maintenance and repair of each prosthetic. However, payment by the client is not to exceed \$200.

**Table 2.2: National equipment schemes funded by the Commonwealth**

Scheme	Funding source	Eligibility	Priority	Cost	Administered
Rehabilitation Appliances Program (RAP) and Home Modifications	Department of Veterans Affairs (DVA)	Veterans, war widows and widowers, and their dependants Holders of DVA Repatriation Gold or White Health Cards	None given	To repairs and alterations if prior financial authorisation has not been sought	Pharmacy or DVA
Australian Hearing Services	Department of Health and Ageing (DoHA)	Children and young adults up to 21 years and aged pensioners Most veterans (veterans benefit holders) Defence Force personnel Clients of CRS Australia with a hearing problem Holders of a Pensioner Concession Card, Health Benefit Card, DVA Gold Repatriation Card or DVA White Repatriation Health card specifying hearing loss or receiving a Sickness Allowance from Centrelink	None given	An annual service charge of \$25 for maintenance of hearing aids and batteries	Australian Hearing Services
Continence Aids Assistance Scheme (CAAS)	Department of Health and Ageing (DoHA)	Permanent and ongoing continence as a result of neurological condition or permanent or severe intellectual impairment Aged 16–64 or 65+ years and working Eligible for Disability Support Pension (DSP) or Mobility Allowance or in receipt of the equivalent sales tax or GST exemption on a vehicle Not resident in a nursing home	None given	Subsidy of \$460 per annum for aids ordered	Intouch, PQ Lifestyles (under contract to Department of Health and Ageing)
CRS Australia	Commonwealth Government	Potential for full-time or part-time work Aged 14–65 years	None given	None	CRS
Workplace Modifications Scheme	Department of Family and Community Services (FaCS)	Worker <sup>(a)</sup> employed for a minimum of 8 hours per week and in employment expected to continue for an excess of 13 weeks.	None given	A \$5,000 cap applies for each client in any one year	FaCS

(a) A 'worker' means an individual with a disability who is supported by a FaCS-funded open employment service or a FaCS-funded s10 Business Service, or is attached to a Job Network Intensive Assistance provider, or is a participant in the Supported Wage Scheme. The scheme is specifically aimed at new workers (i.e. individuals who were unemployed before commencing in the position for which assistance is provided), Supported Wage System and 'job in jeopardy' workers, and some eligible self-employed persons who are participants of the New Enterprise Scheme.

Sources: Australian Hearing Services 2002; Department of Health and Ageing 2002; CRS Australia 2002; Department of Family and Community Services 2002; Department of Veterans Affairs 2001.

**Table 2.3: Primary equipment schemes funded by state and territory governments**

Scheme	Funding source	Eligibility	Priority	Cost	Administered
<p><b>NSW</b></p> <p>Program of Appliances for Disabled People (PADP)</p>	NSW Department of Health	<p>All children and young people under 16 regardless of parental income or all people aged 16 years and over if:</p> <ul style="list-style-type: none"> <li>• has a long term permanent disability</li> <li>• permanent resident of NSW</li> <li>• holds a Centrelink pension or Health Card</li> <li>• unable to obtain aids and equipment from other government programs</li> <li>• not a recipient of a compensation settlement</li> <li>• resident in an NGO-run group home</li> <li>• recently discharged from hospital (1 month) and not eligible for equipment from hospital or health care service</li> </ul> <p>and has a:</p> <p>a taxable income in the preceding financial year that was less than or equal to \$26,759 (single) or \$45,490 (couple or family)</p> <p>or (for high-cost items &gt;\$800)</p> <p>b taxable income in the preceding financial year was \$1 above the upper level in (a) and less than or equal to \$39,941 (single) and \$67,899 (couple or family)</p> <p>c taxable income in the preceding financial year that was above \$39,941 and \$67,899 (couple or family) adjusted for dependants.</p>	Income groups a and b over income groups c	<p>Co-payments are charged in the following:</p> <ul style="list-style-type: none"> <li>• people requiring one item costing &lt;\$100 in a financial year who demonstrate severe hardship</li> <li>• all PADP recipients (except income group c) make a single co-payment of \$100</li> <li>• income group c recipients eligible for high cost items are charged 20% of retail cost</li> <li>• any upgrading will incur the cost of additional item</li> </ul>	PADP Lodgement Centres
<p><b>VIC</b></p> <p>Aids and Equipment Program (A&amp;EP)</p>	Department of Human Services (Disability Services Division)	<p>Children or adults with a long-term or permanent disability, or frail aged</p> <p>Permanent residents of Victoria</p> <p>Holders of a Medicare card</p>	<p>Those 'in greatest need':</p> <p>1. 'No waiting': clinical eligibility for oxygen program, wheelchair repairs and continence aids, and re-issue of aids</p>	Doesn't provide money to cover cost of aids bought by clients	<p>Public hospitals</p> <p>Extended care facilities</p> <p>Other service agencies</p>

(continued)



**Table 2.3: Primary equipment schemes funded by state and territory governments**

Scheme	Funding source	Eligibility	Priority	Cost	Administered
A&EP (continued)		Requires aids and equipment on a permanent or long-term basis Ineligible to receive assistance from other government schemes Not in-patients of a public or private hospital Not able to claim cost of aids and equipment through private health insurance Not post discharge patients	2. 'High urgency': critical to safety or the client or to prevent injury in daily living; or deterioration of health could lead to premature admission to institutional care, hospital or dependence on costly services. 3. 'Low urgency': clinical factors and length of waiting period	Non-refundable contribution can be made.	
SAEAS	Department of Human Services (Disability Services Division)	Eligible for Victorian A&EP Resident in a Department of Human Services-funded accommodation service that is registered or funded under the <i>Intellectually Disabled Persons Services Act 1986</i> , the <i>Community Services Act 1970</i> or <i>The Disability Services Act 1991</i> Ineligible to receive assistance from other government schemes	As above	As above	As above
<b>QLD</b> Medical Aids Subsidy Scheme	Queensland Department of Health	Permanent residents of Queensland Holders of a Pensioner Concession Card, Health Care Card or Pharmaceutical Benefits Card (for oxygen) Recipients of Centrelink payment Able to demonstrate financial hardship Ineligible to receive assistance from other government schemes Not resident in residential care	None given	None	Community health services Home care services Public hospitals
<b>WA</b> Community Aids and Equipment Program (CAEP)	Disability Services Commission	Have a disability of permanent or indefinite nature Holders of or eligible for Pensioner Concession Card, Health Care Card, Commonwealth Seniors Card or Carers Payment or able to demonstrate financial hardship	None given	CAEP funds only the essential component of the item. Clients or other fundraisers are required to pay for the balance.	Health service providers e.g. public funded hospitals Specialist service providers

(continued)

**Table 2.3: Primary equipment schemes funded by state and territory governments**

<b>Scheme</b>	<b>Funding source</b>	<b>Eligibility</b>	<b>Priority</b>	<b>Cost</b>	<b>Administered</b>
CAEP (continued)		Not recipients of a compensation settlement Living in a residential situation that encourages independent living Not currently hospital patients		Items less than \$50 are to be purchased by clients.	
<b>SA</b> Independent Living Equipment Program (ILEP)	South Australian Department of Health	Have a functional disability Permanent residents of South Australia Holders of Pension Health Benefit Card or Health Care Card Living in the community and not resident in hostels, nursing homes or hospital Not recently discharged from hospital or acute care patients Clients of Options Coordination (18–65 years) or clients of Crippled Children's Association (under 18 years)	None given		
<b>TAS</b> Community Equipment Scheme	Department of Health and Human Services	Have a disability of permanent or indefinite nature Ineligible to receive assistance from other schemes (including post-discharge patients) Not resident in hospital or nursing home	None given	Clients meet the cost of purchase, loan and hiring unless exempt under another scheme	Community Outreach Services (in public hospitals)
<b>ACT</b> ACT Equipment Scheme	ACT Department of Health and Community Care	Permanent disability of at least 2 years duration Permanent residents of the ACT Holders of Pension Health Benefit Card or Health Care Card Recipients of a Centrelink payment Able to demonstrate financial hardship Ineligible to receive assistance from other government funded schemes, private health schemes or injury compensation Not resident in a nursing home	None given	A sliding scale contribution of between \$20 and \$150 depending on cost of item. Contribution of \$20 for personal aids	Equipment Loans Service

*(continued)*

**Table 2.3: Primary equipment schemes funded by state and territory governments**

<b>Scheme</b>	<b>Funding source</b>	<b>Eligibility</b>	<b>Priority</b>	<b>Cost</b>	<b>Administered</b>
<b>NT</b> Territory Independence Mobility and Equipment Scheme (TIMES)	Northern Territory Health Service	Have a disability of permanent or indefinite nature  Ineligible to receive assistance from other schemes  Not resident in nursing home	None given	None	Health Service providers
<b>All states and territories</b>  Artificial Limb Scheme	State and Territory Health Departments	Permanent residents of state or territory where applying to scheme  Holders of a Medicare card  Not veterans  Not entitled to compensation payout	None given	15% of scheduled cost of provision, maintenance and repair of prostheses, up to a maximum of \$200 (except pensioners and holders of certain Centrelink cards)	Hospitals  Prosthetic service providers

Sources: ACT Community Care 2002; ALSA 2002; Department of Health and Community Services (NT) 2001; Department of Health and Human Services (Tas) 2001; Department of Human Services (Vic) 2002; Disability Services Commission 2001; Independent Living Centre (SA) 2001; NSW Department of Health 2000; Queensland Department of Health (pers com.).

## 2.3 Review of aid and equipment schemes

In 1996, a national review by the CSDA (Commonwealth/State Disability Agreement) of equipment schemes operating in Australia concluded that availability, access and equity, administration and funding issues continued to beleaguer the distribution of equipment to people with disabilities (CSDA: Ernst and Young 1996). Some of these problems included the:

- exclusion of certain groups from accessing schemes, e.g. some people in employment, children from the CAAS scheme
- insufficient funding, which varies between jurisdictions and depends upon location
- absence of local alternatives for people living in remote or country areas
- inadequate information on eligibility criteria and the range of items available
- inconsistent or total absence of a process to establish priority.

A survey conducted by CSDA/Ernst and Young (1996) also found that for the 389 respondents, 544 cases of unmet need (for specific items) were reported. Of particular concern was a high percentage (37%) of unmet need for children aged 0–15 years.

From these findings, the report recommended that a nationally consistent process of application, assessment and distribution be developed and adopted by national and state/territory based schemes, in order to improve their accessibility and equity.

Some schemes have since undergone at least one review process, leading to reform primarily in improving the range of equipment items available and the broadening of eligibility criteria. For example, following a recent review of the PADP scheme operating in New South Wales a number of significant changes were introduced, including:

- the drafting of a common PADP application form that will be consistently applied across the state
- plans to develop a needs based assessment tool for PADP
- a new set of eligibility criteria
- suspension of most co-payments
- abolishment of income testing for families of children who need equipment.

## 2.4 Health insurance and tax offsets

Most major Australian health insurance and health fund organisations provide some form of benefits cover for aids and equipment, mostly for hearing aids or specific types of medical aid (e.g. nebulisers, TENS machines, CPA machines) but also including mobility aids (e.g. wheelchairs, calipers, crutches) and prostheses and orthoses. The maximum benefit and time period allowed between claims varies somewhat between schemes, and it is stipulated in some that membership be at least one to two years before a claim for aids and equipment can be made. Most schemes only include aids and equipment benefits under higher levels of cover and all require formal prescription from a medical practitioner. Between June 2002 and March 2003 private health insurance organisations paid \$18,944,000 and \$10,348,000 respectively in 'non-contractual ancillaries' benefits for 'prostheses, aids and appliances' and

'hearing aids and audiology' services (PHIAC 2003). This accounted for 0.96% and 0.52% of all benefits paid for services in this time period.

People who have purchased high-cost aids over a specified limit in an income year are also entitled to claim the medical expenses tax offset. For the financial year 2002–03, the tax offset has been set at 20% of net medical expenses over \$1,500. Included under claimable medical expenses are 'artificial appliances', such as limbs or hearing aids, and standard medical aids which have been prescribed by a medical practitioner.

## 2.5 Some examples of unmet need

For some people, access to aids and equipment or aids and equipment schemes remains difficult. While problems of access are not often officially documented, reference to cases of unmet need have been described by the 1996 CSDA review of Australian equipment schemes and in literature prepared by disability advocacy groups. The CSDA review found that:

- Eligibility criteria for some schemes were considered by some to be too restrictive. Nine per cent of people surveyed by Ernst and Young stated that they had been refused access to aids and equipment based on eligibility criteria.
- Funding for equipment schemes was suggested to be insufficient to both increase the number and range of equipment available to clients and properly cover the cost of maintenance, repair and replacement of loan equipment. For example, an estimation by Ernst and Young of the annual replacement cost for wheelchairs, an expensive but regularly used form of equipment, was calculated to be almost 70% of total funds available (CSDA: Ernst and Young 1996:34–35).
- The exclusion of employed people from equipment schemes other than CRS, and the absence of alternatives for this group has the potential to cause financial hardship, particularly for those who require high-cost or numerous equipment items.

Advocacy groups have also highlighted potential and real cases of unmet need.

- Despite support for the recent changes to the PADP scheme, the Physical Disability Council of NSW (PDCN) maintains that access to equipment remains a 'postcode lottery' (PDCN 2001). People with disabilities living in rural and remote locations are disadvantaged by the absence of equipment outlets in these areas and often have to travel long distances on numerous occasions to apply for and obtain required equipment items.
- The Australian Blindness Forum (ABF) has highlighted the difficulty that the legally blind experience in obtaining communication equipment (ACROD 2002). The absence of a program that consistently provides appropriate communication equipment has led to the ABF's proposal for a Commonwealth-funded National Equipment Subsidy Scheme. Provision of communication equipment was also noted by the CSDA review (1996) as a significant problem.
- A recent survey by the Carers Association of Australia found that many carers do not receive enough financial assistance to obtain aids and equipment, which has in some cases resulted in financial hardship (Carers Australia 2001).
- A survey conducted by the Australian Quadriplegic Association in 2000 of users of CAAS found that for 68% of respondents (n=100) allocation of continence equipment did not last the year (PDCN 2000). Fifty seven per cent of respondents ran out of supplies in 9 months or less. One problem identified was the absence of factoring in inflation as 69% of respondents stated their allowance did not last as long as it did 5 years ago. Carers have

also indicated a problem with the limited nature of services and assistance for people suffering from incontinence (Carers Australia 2001).

- Under-funding of the ALS in Northern Territory is reported to have severely limited equipment and staff numbers and the ability to treat remote patients (Barnes 1997). The high traumatic amputation rate in the Northern Territory requires an increase in prostheses which is currently not feasible with current funding levels.

Further emphasis on unmet need for equipment provision was voiced at peak discussions held to inform an Australian Institute of Health and Welfare (AIHW) report on unmet need for disability services in Australia (AIHW 2002). Issues raised included a limited range of equipment, problems with cost, availability and shortage of referral services in remote areas of Australia, and the decline in equipment supply from traditional dispensing units such as hospitals. Systems for the provision of equipment appear to be nationally fragmented.

## 3 Factors associated with aid and equipment use

This chapter reviews literature on the use of aids and equipment and covers three primary issues—factors associated with the uptake of equipment, reasons people abandon equipment and the suggested greater efficacy of equipment assistance over personal assistance. Most of the literature discussed focuses on the aged population (i.e. people aged 65 years and over) living in North America or Western Europe, as similar research based on Australian populations or on younger adults or children has not received the same level of research attention.

### 3.1 Factors associated with the use of aids and equipment

A range of personal and environmental factors, and factors related to impairment and activity limitation, has been identified as being associated with the uptake and use of aids and equipment for people over the age of 55<sup>2</sup>. Some of these factors, however, display varying associations with equipment use, from study to study. Only those factors found consistently and positively to associate with the use of equipment are described here.

#### Impairment and activity limitation

Increased impairment and activity limitation exhibited the strongest and most consistent relationship with equipment use (de Klerk et al. 1997; Forbes et al. 1993; Hartke et al. 1998; Mann et al. 1995; Zimmer and Chappell 1994). Specific factors found to associate with aids and equipment use include:

- limited functional status, as measured by severity of difficulty performing self-care and domestic activities and the number of days of restricted activity
- mobility limitation, as measured by difficulty changing position, walking inside and outside the home, walking up stairs etc.
- higher number of chronic health conditions
- fair or poor self-assessed health status.

Thus, the more difficult it is to perform an activity, the larger the number of impairments experienced and/or the feeling that one's health is compromised influence people to seek assistance from aids and equipment. These factors have been referred to in the literature as 'need' factors, where the combination and volume of need factors influences an individual's ability 'to cope' without assistance (Zimmer and Chappell 1994).

#### Environmental factors

Systems by which people are able to receive financial assistance for aids and equipment, or access aids by other means (e.g. through equipment schemes), exerts a strong influence on whether people adopt aids and equipment or not (Scherer and Cushman 2001). Ease of access is a critical issue and use of equipment is more readily engaged the more generous (in

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<sup>2</sup> In the literature, factors were categorised as either predisposing, enabling or need factors, based on the Anderson and Newman model of health care access (see Andersen and Newman 1973).

terms of financial assistance and equipment availability) and easier the support system. The receipt of personal assistance, either informal or formal, is also related to equipment use (de Klerk et al. 1997; Zimmer and Chappell 1994). An increased need for assistance due to functional limitation might account for this association, especially in elderly people. Also significant is the attitude of others, in particular relatives and friends, who can have a very significant effect on aid and equipment use (Scherer 2000). Expectations held by others may encourage or discourage the uptake of aid and equipment.

### **Personal factors**

Age was a consistent variable linked with aids and equipment use (de Klerk et al. 1997; Forbes et al. 1993; Hartke et al. 1998; Russell et al. 1997; Zimmer and Chappell 1994). Older seniors (over 75 years) were found to be more likely users of aids and equipment compared with younger seniors (between 55 and 65 years). The increase in activity limitation and severity of impairments associated with increasing age is a probable explanation for this association, although Hartke et al. (1998) found that age remained a significant factor in aid and equipment use after controlling for health status. It has been suggested, therefore, that attitudinal or psychological reasons might also influence use or non-use (Hartke et al. 1998; Zimmer and Chappell 1994). For example, younger seniors may think they are still too young to rely on aids and equipment and therefore avoid their use.

Gender also had some association with use, with females tending to use aids and equipment more often than males. In one study, however, males were found to be more frequent users of equipment while females were significantly associated with multiple use (Hartke et al. 1998). Some association was also found with marital status and living arrangement, with equipment users tending to be unmarried and/or living alone. However, it must be noted that this data was not age-standardised.

Other personal factors such as income, education and place of residence were more inconsistently related to aid and equipment use. A higher income and level of education was predicted as improving the chances of people obtaining aids and equipment by respectively providing the financial ability and access to information to do so (de Klerk et al. 1997). However, when income and education did hold a significant association with use, it was less education and low or average incomes that were associated with higher levels of use.

### **Subjective factors**

Subjective factors have also been identified as predisposing people to use aids and equipment (Vash 1983, cited in Phillips and Zhao 1993; Scherer 1996; Scherer and Cushman 2001). Adjustment to and acceptance of one's disability, and a focus to manage their disability, leads the individual to recognise that assistance in some areas is required and an aid or piece of equipment can provide that assistance. Similarly, setting goals for the future, and associated motivation, may also influence the adoption of methods (such as equipment use) which improve the chance of achieving those goals.

## **3.2 Efficacy and impact of aid and equipment use**

The use of equipment has been suggested as being more efficacious in the management of disability than either personal assistance or a combination of assistance types (Agree 1999;



Verbrugge et al. 1997; Verbrugge and Sevak 2002). For people aged over 55 years, a reduction in disability was uniformly achieved only for those using aids and equipment.

Agree (1999) assessed the level of residual difficulty people aged over 70 years experienced with indoor mobility. Residual difficulty was defined as the level of difficulty still experienced despite the receipt of assistance. People using aids and equipment consistently reported experiencing lower levels of residual difficulty with indoor mobility, compared with people relying on personal assistance alone or a combination of personal and non-personal assistance. Controlling the level of underlying physical impairment did not alter these findings, with the report of residual difficulty still around 1.5 and 3 times more likely for people using personal assistance or both assistance types respectively (Agree 1999).

Aids and equipment also proved to be better at reducing any difficulty associated with carrying out tasks of daily living<sup>3</sup> (Verbrugge et al. 1997; Verbrugge and Sevak 2002). Efficacy was measured as the difference between unassisted and assisted degrees of difficulty (Verbrugge et al. 1997), and found to be greatest for people (aged 55 years and over) using aids and equipment. Estimated rates of improvement were generally high, in some cases above 90%, and at least 10–20% higher than estimates for people using both personal and aid and equipment assistance. These rates were lower still for people relying on personal assistance only.

While it is proposed by Agree (1999) and Verbrugge and colleagues (1997; 2002) that aids and equipment benefit those with an impairment more than the other forms of assistance, variation in its effectiveness can depend on the severity of impairment and, in some cases, the type of health condition. For example, 76% of people with a mild impairment had no residual difficulty (i.e. 'the degree of disablement that remains after (assistance has) ameliorated some part of the total underlying need' Agree 1999:429) if using aids and equipment to perform a task (Agree 1999). This dropped to 65% and 52% of people with moderate and severe impairments respectively.

The combined use of personal and aid and equipment assistance follows the reverse pattern (i.e. the proportion of people experiencing residual difficulty increases with severity of impairment). The efficacy of personal assistance did not vary across severity of impairment, with similar proportions of people experiencing no residual difficulty (between 49–53% of people).

With regard to health condition, Agree (1999) focused on five health conditions—chronic lung disease, stroke, heart disease, arthritis and cognitive impairment—and found that aid and equipment assistance was less effective in reducing mobility difficulties and other task related difficulties for those with chronic lung disease and arthritis. Personal assistance provided greater benefit to people with chronic lung disease, possibly because conventional forms of (mobility) equipment did not immediately alleviate shortness of breath and lack of oxygen, the prime antecedent to mobility impairment in this group (Agree 1999). For those with arthritis, the pain associated with using aids and equipment might necessitate the receipt of personal assistance for certain tasks.

Despite these anomalies, aids and equipment appear from the literature available to be more effective than personal assistance, or at least for people aged over 55 years. Verbrugge and

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<sup>3</sup> These tasks included dressing, bending to pick up clothes, opening jars, standing up from a chair, walking a quarter mile, walking from room to room, and getting in and out of bed, the bathtub or the car.

Sevak (2002) suggest that both objective and subjective facets associated with aid and equipment use influence its efficacy in alleviating disability. Objectively, aids and equipment can be fitted to deal specifically with the functional problems experienced by the user. Furthermore, aids and equipment are readily available which might not always be the case with a personal carer. In subjective terms, aids and equipment promote feelings of autonomy and self-sufficiency in the user.

### **3.3 Abandonment of aids and equipment**

Despite the potential advantage of aids and equipment use, some people still choose not to rely on this form of assistance or abandon (i.e. discard) an aid after a defined period of use. Aids and equipment are abandoned for a multitude of reasons, and reported rates of abandonment for a specific aid range from 8% to 75% (Phillips and Zhao 1993; Scherer 1996). High rates of abandonment are costly 'both in terms of dollars and outcome achievement' (Scherer 1996) and suggest 'a waste of a significant resource in an environment where there is an increased need for cost containment and accountability in the provision of AT (assistive technology)' (Kittel et al. 2002). Just as important is the human cost of abandonment, where people who might have improved their ability to both perform activities of daily living and participate in the wider social and economic field find themselves 'back at square one'.

#### **Rates of abandonment**

In a survey of 227 adults with physical impairments, living in the US and aged 18 years and over, it was estimated that one third of devices reported by the survey sample were 'completely' abandoned (Phillips and Zhao 1993). Mobility aids (e.g. crutches, walkers, canes, wheelchairs, electric scooters) tended to be abandoned more readily than other devices. This higher rate of abandonment might be a manifestation of the survey sample, which consisted of people with long-term disabilities, and in particular mobility impairments, who may have needed to change equipment over time. Phillips and Zhao (1993) also suggest that mobility aids, compared with other devices, are used more often in the social world and users might change equipment until they find one with which they feel more comfortable in social settings.

The first year of use generally sees the highest rates of aid and equipment abandonment (Phillips and Zhao 1993; Scherer 1996). Temporary or never-used aids or equipment may account for some of the abandonment but also includes aids or equipment considered ineffective by the user. A second peak of abandonment occurs around 5 years after the individual first started using the device, which might reflect the need for, and the ability to, change the aid or type of equipment used.

#### **Reasons for abandonment**

Reasons cited for abandoning aids and equipment largely relate to the characteristics of the equipment itself, the needs of the user, and the environment and psychosocial setting in which the aid or equipment is used.

Four significant reasons given for abandoning aids and equipment<sup>4</sup> in Phillip and Zhao's (1993) study were, in order of importance:

- Changes in the needs or priorities of users. Both improvement and deterioration in functional ability induced users to discard the original device(s), either because they did not need them any more or to upgrade to another device.
- Ease of obtaining aids and equipment from a supplier. Aids and equipment that were easier to obtain tended to be abandoned more readily since the consumer believed that these devices, when needed again, could easily be replaced.
- Performance. Users indicated that if aids and equipment met their expectations for effectiveness, reliability, durability, comfort, safety and ease of use, they were less likely to abandon the device. Studies examining device preferences (e.g. Brooks and Hoyer 1989, cited in Phillips and Zhao 1993) specified such features as being important characteristics of a good device.
- The level of consumer involvement in aid and equipment selection. Users felt very strongly that their views and needs be taken into consideration when aids and equipment were being selected for them. It followed that where the user participated in the selection of a device, the device was more often than not retained.

Other, more specific reasons for abandonment have been drawn from the sizeable amount of research on mobility aids, in particular wheelchair, abandonment. Many reasons given by wheelchair users for abandonment focused on the physical properties of the wheelchair itself, including weight (too heavy or too light), manoeuvrability, rolling resistance, overall design, and difficulties transporting the wheelchair (Bates et al. 1993; Bell and Hinjosa 1995; Hesse et al. 1996; Post et al. 1997; Scherer 1996; and reviewed in Kittel et al. 2002). Some users also expressed physical discomfort associated with long periods in the wheelchair; limitations placed on function, mobility and access; poor device performance; and the unaesthetic nature of their wheelchair (Bates et al. 1993; Bell and Hinjosa 1995; Brooks 1991; Phillips and Zhao 1993).

Psychosocial factors can also influence whether a person retains or discards an aid or piece of equipment (Bell and Hinjosa 1995; Brooks 1991). For some, the use of a device 'underscores the existence of impairment' i.e. it constantly reaffirms the nature and extent of their disability. These feelings are especially real for new (and younger) device users. If an individual sees the use of a device as undermining or impeding their independence or social acceptance, the chances of a device being abandoned increase.

Finally, one of the major contributions to dissatisfaction with devices, and hence their abandonment, is poor feature matching and prescription practices (Hesse et al. 1996; Scherer 1996). For example, a small group of South Australian wheelchair users interviewed by Kittel et al. (2002) stated that unsatisfactory interview processes with prescribing therapists led to the prescription of inappropriate devices. Unsatisfactory interviews tended to occur when an individual was being prescribed a device for the first time. While users conceded that some of the problem lay with not knowing what their future needs might be<sup>5</sup>, they also felt that

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<sup>4</sup> Abandonment in this study was defined as 'nonuse' of an equipment type or category, in the context that it was once used or prescribed but never used.

<sup>5</sup> Wheelchair users interviewed in this study had been in rehabilitation facilities up until they were prescribed a wheelchair.

prescribing therapists did not spend enough time exploring options, asking their opinion, and 'feature matching' i.e. translating the users' expressed views on needs and lifestyle to what they would require from their wheelchair. Poor feature matching can and does result in the functional needs of the individual not being met, restricting participation in their social and community roles. Those who feel a device impinges on their independence are likely to report negative experiences with that device.

To improve feature matching and prescriptive practices, consideration must be given to the environment in which the person uses the technology, the individual's characteristics and preferences, and the functions and features of the aid or piece of equipment (Scherer 1996). Consumers need to be involved in the process of aids and equipment selection, including being able to make choices and to have control over the final decision. Without this input, and an improvement in information transferral to consumers, family members and providers, discontent with, and the abandonment of, aids and equipment may be the result.

## 4 Use of aids and equipment in Australia

This chapter presents data on the use of aids and equipment by people with a disability in Australia. Aids and equipment are one of the environmental factors recognised by the ICF as influencing the level of impairment, activity limitation or participation restriction experienced by a person with a disability.

The data presented below profile the overall use of aids and equipment by people with a disability in terms of age group, core activity restriction status, and main disabling condition. Use of aids and equipment and its association with assistance from a personal carer and the need for assistance with core activities (i.e. self-care, mobility and communication) are also covered. Aids and equipment will be referred to herein as aids.

### 4.1 ABS Survey of Disability, Ageing and Carers, 1998

The primary data source used in this report is the 1998 Survey of Disability, Ageing and Carers. The 1998 survey is the latest in a series of disability surveys collected by the ABS, the previous surveys taking place in 1981, 1988 and 1993<sup>6</sup>. The ABS disability surveys are an important source of national population data on disability. Data are collected from both households and cared accommodation samples, in all states and territories.

The 1998 disability survey defines people as having a disability if they report a limitation, restriction or impairment which has lasted, or is likely to last, for at least six months and restricts everyday activities (ABS 1999:67). A 'specific restriction' is defined as a restriction in core activities (self-care, mobility and communication), schooling or employment (ABS 1999:72).

Four levels of core activity restriction—profound, severe, moderate and mild—are determined in the 1998 survey, based on whether a person needs help with, has difficulty with, or uses aids and equipment for any of the core activities. A person's overall level of core activity restriction is determined by the highest level of restriction they experience in any of the core activity areas. Each level of core activity restriction is defined in Box 4.1.

In the survey, respondents were also asked to indicate their long-term condition. A long-term condition is defined as a disease or disorder that has lasted or is likely to last for at least six months; or a disease, disorder or event that produces an impairment or restriction that has lasted or is likely to last for at least six months. A main condition is a long-term condition identified by a person as the one causing the most problems. Where only one long-term condition is reported, it is recorded as the main condition (ABS 1999:69).

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<sup>6</sup> The fifth Survey of Disability, Ageing and Carers will be run in 2003.

**Box 4.1: ABS 1998 Survey of Disability, Ageing and Carers: restrictions and their severity****Specific restrictions** are:

- *Core activity restrictions; and/or*
- *Schooling or employment restrictions.*

**Core activities** are:

- *Self care—bathing or showering, dressing, eating, using the toilet, and managing incontinence;*
- *Mobility—moving around at home and away from home, getting into or out of a bed or chair, and using public transport; and*
- *Communication—understanding and being understood by others: strangers, family and friends.*

A **core activity restriction** may be:

- *Profound—unable to perform a core activity or always needing assistance;*
- *Severe—sometimes needing assistance to perform a core activity;*
- *Moderate—not needing assistance, but having difficulty performing a core activity; or*
- *Mild—having no difficulty performing a core activity but using aids or equipment because of disability.*

Source: ABS 1999

**Aids included in the survey**

Survey respondents identified as having a disability (see above) were asked about their use of aids for self-care, mobility and communication tasks and, specifically, the types of aids they used for mobility (e.g. wheelchairs, canes), medical and communication purposes (e.g. non-electronic and electronic aids). These aids are listed in Table 4.1.

**Table 4.1: Types of aids included in the Survey of Disability, Ageing and Carers, 1998**

Broad category	Specific aid
Self-care	Eating, showering, toilet, incontinence and dressing aids
Mobility	Electric wheelchairs and scooters, manual wheelchair, cane, crutches or walking stick, walking frame, seating and bedding aids, modified car aids and other
Communication (Reading and writing)	Non-electronic aids e.g. picture boards, symbol boards, large print books Electronic aids e.g. audio tapes, talking word processor, special computer software and printout system
Communication (Speaking)	Non-electronic aids e.g. picture boards, symbol boards, letter/word boards Electronic aids e.g. digitised or synthesised speech output systems Fax and mobile phone
Meal preparation	Not specified
Medical aids	Nebulisers, dialysis machines, feeding pumps, pacemakers, oxygen concentrator or cylinder, ventilators, medical dressings, surgical stockings, pain management aids and other
Hearing aids	Hearing aids, cochlear implants

Source: 1998 Survey of Disability, Ageing and Carers Questionnaire (including prompt cards).

While this list broadly captures the kinds of aids mostly available to people with a disability, it omits some items provided in Australian aids and equipment schemes, such as prostheses and orthoses, hoists, lifters and standing equipment, and some specific communication aids. Also absent from the survey are questions on 'seeing-eye dogs' and other assistant animals, important for people with vision and hearing impairments, and mobility limitations.

## 4.2 Prevalence of aid use

A total of 1,737,800 people with a disability used aids in 1998, or 48% of all people with a disability (Table 4.2). Among people with a disability, aid use was higher for those aged over 65 (64%) compared with those aged between 0–64 years (40%). Males and females with a disability used aids at similar rates, although females did tend to show a higher use (51%) compared with males (46%). Sex differences in aid use was more pronounced in the under 65 year age group.

**Table 4.2: Use of aids by people with a disability by age group and sex, 1998**

	0–64 years			65+ years			All ages		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
<b>Uses aids</b>									
Number ('000)	496.8	461.6	958.4	337.6	441.8	779.4	834.5	903.3	1,737.8
% of all with a disability	38.7	41.9	40.1	63.0	64.3	63.7	45.8	50.5	48.1
<b>Total with a disability ('000)</b>	<b>1,285.1</b>	<b>1,102.2</b>	<b>2,387.4</b>	<b>536.0</b>	<b>686.7</b>	<b>1,222.5</b>	<b>1,821.1</b>	<b>1,788.9</b>	<b>3,610.0</b>

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

## 4.3 Age

The relationship between age and aids use is represented in more detail in Table 4.3.

People with a disability and aged 45–64 (28%) or 65 years and older (45%) were greater users of aids than younger people (Table 4.2). Aid users with a severe or profound core activity restriction also tended to be older. Fifty two per cent of such users were aged over 65 years and 24% between the ages of 45 and 65.

### Aid use within age groups

The likelihood of aid use showed some variation between age groups. The proportion of younger people using aids ranged from 36% (15–29) to 40% (0–14) (Table 4.3). This compares with 43% of people aged 45–64 years and 64% of people aged over 65 years who reported aid use.

**Table 4.3: People with a disability using aids, by age group, 1998**

	Age group (years)					Total
	0–14	15–29	30–44	45–64	65+	
<b>All with disability</b>						
Number using aids ('000)	118.2	134.8	222.4	483.0	779.4	1,737.8
% of all with a disability	6.8	7.8	12.8	27.8	44.8	100.0
% within age group	39.8	36.1	36.9	43.3	63.7	48.1
<b>Severe/profound core activity restriction</b>						
Number using aids ('000)	66.7	37.7	85.1	181.2	396.2	766.9
% of all with a SP core activity restriction	8.7	4.9	11.1	23.6	51.6	100.0
% within age group	46.2	45.6	60.0	63.1	82.5	67.5

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

Some evidence of an age trend was also found if only people with a profound or severe core activity restriction were considered. While around 46% of people in the two youngest age groups used aids, this climbed to 60% and 63% for the 30–44 and 45–64 age groups respectively and to 83% for the over 65s. This shows that the variation in use of aids with age is not just a result of variation in severity of core activity limitation.

### Type of aids used

Aid users under the age of 65 used an average of 1.5 or 1.6 aids. For the over 65s, the average number of aids used rose to 2.4 aids per individual (Table 4.4).

The use of aids for specific activities also showed a relationship with age (Table 4.4 and see Appendix Table 4.1 for proportional use of all aid types). By far the most commonly used type of aid for people with a disability aged under 65 years were medical aids; these aids represented 40% or more of all aids used in each age group. Mobility aids were the second most used aid for those aged between 15 and 65 years, followed by self-care or communication aids. In contrast, self-care and communication aids were more commonly used by the under 15s (16% each).

Medical aids were also important for people aged over 65, accounting for 17% of all aids used. However, older people tended to rely more on aids for self-care (32%) and mobility (28%). Hearing aids were also an important type of aid for this group, with 18% of all aids used being some sort of hearing aid or cochlear implant.

**Table 4.4: Aids used, by type of aids and age group (people with a disability), 1998**

Type of aid	Age group (years)									
	0–14		15–29		30–44		45–64		65+	
	'000	%	'000	%	'000	%	'000	%	'000	%
Self-care	28.4	15.9	24.3	12.3	47.2	13.2	117.9	15.1	587.7	31.8
Mobility	21.2	11.8	33.7	17.1	60.1	16.8	137.8	17.7	512.4	27.8
Communication	28.5	15.9	24.0	12.1	58.5	16.4	119.1	15.3	87.6	4.7
Hearing	10.1	5.6	10.2	5.1	19.0	5.3	73.3	9.4	322.8	17.5
Meal preparation	*3.0	*1.7	*4.3	*2.2	13.2	3.7	20.9	2.7	21.7	1.2
Medical	88.1	49.1	101.0	51.2	159.7	44.6	309.5	39.8	314.1	17.0
<b>Total aids used</b>	<b>179.3</b>	<b>100.0</b>	<b>197.4</b>	<b>100.0</b>	<b>357.7</b>	<b>100.0</b>	<b>778.5</b>	<b>100.0</b>	<b>1,846.3</b>	<b>100.0</b>
<b>Total users</b>	<b>118.2</b>		<b>134.8</b>		<b>222.4</b>		<b>483.0</b>		<b>779.4</b>	
<b>Average no. of aids used</b>	<b>1.5</b>		<b>1.5</b>		<b>1.6</b>		<b>1.6</b>		<b>2.4</b>	

Note: Estimates marked \* have an associated relative standard error of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

## 4.4 Severity of restriction

Aid use increased with the severity of restriction. Twenty one per cent of people reporting either a schooling or employment restriction only used aids, compared with between 47–52% of those with a moderate or mild core activity restriction and 60% with a severe restriction (Table 4.5). Three quarters of people with a profound core activity restriction used aids.



**Table 4.5: People with specific restrictions, by use of aids and severity of restriction, 1998**

	Severity of core activity restriction				Schooling or employment restriction only <sup>(a)</sup>
	Profound	Severe	Moderate	Mild	
<b>0–64 years</b>					
Number using aids ('000)	127.6	243.1	208.3	249.2	67.9
% uses aids	58.4	55.6	48.0	39.4	20.7
<b>65+ years</b>					
Number using aids ('000)	278.4	117.9	130.9	232.8	..
% uses aids	87.2	73.1	58.0	58.4	..
<b>All ages</b>					
Number using aids ('000)	406.0	361.0	339.3	482.0	67.9
% uses aids	75.5	60.3	51.5	46.8	20.7
<b>Total with restriction</b>	<b>537.8</b>	<b>598.7</b>	<b>659.4</b>	<b>1,030.6</b>	<b>328.4</b>

(a) Schooling or employment restriction is not applicable to the over 65 age group.

.. not applicable

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

Around 58% and 56% of people aged 0–64 and with either a profound or severe core activity restriction respectively used aids. Aid use declined to 48% of people with a moderate core activity restriction and 39% of people with a mild core activity restriction. The generally higher proportion of aid use by the over 65s (as shown in Table 4.3) is reflected in the higher percentages observed for each restriction group, compared with the under 65s.

### Type of aids used

People with a profound core activity restriction used an average of 3.5 aids (Table 4.6). Average number of aids used was lower for people with a severe or moderate core activity restriction—1.9 and 1.5 aids respectively.

**Table 4.6: Aids used, by type of aids and severity of core activity restriction, 1998**

Type of aid	Severity of core activity restriction							
	Profound		Severe		Moderate		Mild	
	'000	%	'000	%	'000	%	'000	%
Self-care	575.0	40.0	127.7	18.4	75.3	15.0	26.8	4.6
Mobility	481.7	33.5	166.9	24.0	77.0	15.3	39.7	6.9
Communication	92.6	6.4	102.3	14.7	57.5	11.5	55.0	9.5
Hearing	73.9	5.1	61.6	8.9	68.4	13.6	231.4	39.9
Meal preparation	26.3	1.8	20.5	3.0	*6.7	*1.3	*6.6	*1.1
Medical	188.2	13.1	215.5	31.0	216.7	43.2	219.7	37.9
<b>Total aids used</b>	<b>1,437.7</b>	<b>100.0</b>	<b>694.4</b>	<b>100.0</b>	<b>501.5</b>	<b>100.0</b>	<b>579.2</b>	<b>100.0</b>
<b>Total users</b>	<b>405.6</b>		<b>361.0</b>		<b>339.3</b>		<b>482.0</b>	
<b>Average no. of aids used</b>	<b>3.5</b>		<b>1.9</b>		<b>1.5</b>		<b>1.2</b>	

Note: Estimates marked \* have an associated relative standard error of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

The type of aid used varied with severity of core activity restriction (Table 4.6 and see Appendix Table 4.2 for proportional use of all aid types). People with a profound core activity restriction relied mostly on self-care (40%) and mobility aids (34%). Medical aids were the most commonly used aid for people with a severe (31%) or moderate (43%) core activity restriction, followed by mobility and self-care aids.

Hearing aids were the most commonly used aid for people with a mild restriction (40%), followed by medical aids (38%) and communication aids (10%). The marked variation in type of aid use between this and other restriction groups is probably due to people with a mild restriction generally not experiencing difficulty performing a core activity (i.e. mobility, self-care or communication) and thus not having as great a need for related aids.

## 4.5 Main disabling condition

For people with a core activity restriction and using aids, most reported a physical/diverse condition as their main disabling condition (Table 4.7 and see Appendix Table A4.3 for list of main disabling conditions associated with each primary category). Around 77% and 74% of aid users under and over the age of 65 years respectively had such a condition. Aid use was most commonly associated with 'other musculoskeletal conditions' (32%) in the under 65s and arthritis in the over 65s (21%).

**Table 4.7: People with a core activity restriction using aids, by main disabling condition, 1998**

Main disabling condition	0–64 years			65+ years		
	Uses aids ('000)	% of all aid users	% uses aid in condition group	Uses aids ('000)	% of all aid users	% uses aid in condition group
Physical/diverse	638.5	77.1	50.7	559.6	73.6	66.7
Circulatory	45.5	5.5	48.4	113.5	14.9	66.1
Respiratory	94.5	11.4	74.3	59.8	7.9	88.3
Arthritis	87.9	10.6	47.6	158.2	20.8	64.5
Neurological	12.8	3.0	47.3	23.5	3.1	77.3
Other musculoskeletal	261.3	31.5	46.4	109.0	14.3	60.4
Other physical	22.4	2.7	67.8	*5.2	*0.7	83.5
All other physical	101.9	12.3	50.1	90.4	11.9	65.7
ABI	12.3	1.5	39.3	*3.8	*0.5	89.8
Psychiatric	47.4	5.7	37.3	60.2	7.9	72.2
Intellectual/learning	47.0	5.7	29.4	*2.6	*0.3	51.9
Sensory/Speech	76.7	9.3	59.3	132.8	17.5	77.6
Vision	*7.2	*0.9	32.0	37.8	5.0	57.1
Hearing	67.7	8.2	78.7	95.0	12.5	91.0
Speech	**1.8	**0.2	8.5	**0.1	**0.0	8.0
Not applicable	*6.3	*0.8	39.1	**0.9	**0.1	56.2
<b>Total</b>	<b>828.3</b>	<b>100.0</b>		<b>759.9</b>	<b>100.0</b>	

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked with \* have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

## **Aid use within main disabling condition groups**

Aid use among people aged 0–64 years and with a core activity restriction was especially prevalent for those with a sensory/speech (60%) or physical/diverse disability (51%) (Table 4.7). Within these groups, aids were commonly used by people with a hearing impairment (79%) or an ‘other physical’ (e.g. paralysis) condition (68%).

For people aged 65 years and over, aid use was generally very high (50% plus) for all disabling condition groups. People with an acquired brain injury (ABI) (90%) or a sensory/speech disability (78%) had the highest prevalence of aid use, followed by people with a psychiatric disability (72%).

## **Average number of aids used**

Generally, people aged under 65 years and with a core activity restriction used an average of one or two aids each (Table 4.8). A low use of aids was reported by people with a neurological condition, with an average of 0.4 aids used. In contrast, people reporting an ‘other physical’ condition used on average 4.7 aids.

Compared with people in the under 65 age group, the average number of aids used by people aged 65 years and over was high (Table 4.9). An average of 4.1 aids was used by people with an intellectual disability and 5.0 aids by those with an ‘other physical’ condition. An interesting difference between the two age groups is the 9-fold increase in the average number of aids used by people with a neurological condition, from 0.4 for the under 65s to 3.6 in the group aged 65+.

## **Type of aids used**

People aged under 65 years and with either a hearing impairment or a respiratory-related condition showed considerable use of just one aid category (Table 4.8). For the hearing impaired these were, not surprisingly, ‘hearing and hearing associated aids’ (80%). Medical aids were the most important group for those with a respiratory-related condition (77%).

Medical aids were also the most commonly used aid for people under 65 years and with ‘all other physical’ conditions or a psychiatric condition. Use of medical aids accounted for 44% and 52% of all aid use for these two groups respectively (Table 4.8). In contrast, those who had a neurological condition most commonly used mobility aids (32% of all aid use) and people with a vision impairment relied mostly on communication aids (46%).

People aged 65 years and over and with a core activity restriction reported a higher proportional use of self-care and mobility aids, regardless of main disabling condition (Table 4.9). People with a respiratory-related condition, however, did show a slightly different pattern. As found for people aged under 65, medical aids were the most important aid used (45% of all aids used), followed by mobility aids at 19%. People with a hearing impairment also showed a significant reliance on hearing and hearing associated aids (78% of all aids used).

## **4.6 Need for assistance**

Table 4.10 examines need for assistance (either help or supervision) with daily activities for people with a core activity restriction of any level or those with a severe or profound restriction, and their use of aids. ‘Core activities’ are communication, mobility and self-care

**Table 4.8: People aged 0–64 years with a core activity restriction and using aids, by main disabling condition and type of aid used, 1998**

Main disabling condition	Type of aid												Total aids ('000)	Total use aids ('000)	Average no. aids
	Self-care		Mobility		Communication		Hearing		Meal preparation		Medical				
	'000	% all aids	'000	% all aids	'000	% all aids	'000	% all aids	'000	% all aids	'000	% all aids			
Physical	180.6	16.4	225.3	20.5	160.1	14.6	33.4	3.0	32.4	2.9	466.7	42.4	1,099.2	638.5	1.7
Circulatory	16.8	19.9	19.7	23.4	15.5	18.5	*2.9	*3.4	**1.4	**1.7	27.9	33.11	84.2	45.5	1.9
Respiratory	*6.0	*5.0	*5.3	*4.5	11.9	10.0	**1.5	**1.3	**2.2	**1.8	92.1	77.4	119.0	94.5	1.3
Arthritis	22.0	15.8	25.1	18.0	19.2	13.7	*7.0	*5.0	*5.2	*3.7	61.2	43.8	139.7	87.9	1.6
Neurological	17.0	25.0	21.6	31.7	10.1	14.8	**1.8	**2.6	*3.4	*5.1	14.2	20.8	68.2	68.2	0.4
Other musculoskeletal	53.7	12.7	88.3	20.9	68.0	16.1	11.9	2.8	10.7	2.5	189.4	44.8	423.1	261.3	1.6
Other physical	39.0	37.1	40.1	38.3	9.8	9.4	**1.5	**1.4	*3.5	*3.3	11.0	10.5	104.9	22.4	4.7
All other physical	26.1	16.2	25.2	15.6	26.3	16.3	*6.8	*4.2	*6.1	*3.8	70.8	43.9	161.3	101.9	1.6
ABI	*6.8	*26.4	*7.3	*28.3	*4.1	15.9	**0.0	**0.0	**1.3	**4.9	*6.3	*24.5	25.7	12.3	2.1
Psychiatric	*8.0	*12.5	*4.5	*7.0	13.2	20.6	*4.4	*6.9	**0.8	**1.2	33.1	51.8	63.9	47.4	1.3
Intellectual	19.4	23.9	*8.1	*10.0	25.0	30.8	*2.8	*3.4	**1.7	**2.1	24.2	29.8	81.3	46.9	1.7
Sensory/speech	**2.4	**2.3	*4.2	*4.0	16.3	15.5	71.9	68.6	**1.7	**1.7	*8.4	*8.0	104.9	76.7	1.4
Speech	0	0.0	0	0.0	**1.7	**71.6	0	0.0	0	0.0	**0.7	**28.4	**2.4	**1.8	1.4
Vision	**0.2	**1.4	*2.9	*22.8	*6.0	*46.3	**0.0	**0.2	**1.4	**10.5	**2.4	**10.5	12.9	*7.2	1.8
Hearing	**2.2	2.5	**1.3	1.5	*8.6	9.6	71.9	80.2	**0.3	0.4	*5.3	5.9	89.6	67.7	1.3

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked with \* have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

**Table 4.9: People aged 65 years and over with a core activity restriction and using aids, by main disabling condition and type of aid used, 1998**

Main disabling condition	Type of aid												Total aids ('000)	Total use aids ('000)	Average no. aids
	Self-care		Mobility		Communication		Hearing		Meal preparation		Medical				
	'000	% all aids	'000	% all aids	'000	% all aids	'000	% all aids	'000	% all aids	'000	% all aids			
Physical	395.5	29.1	337.7	28.9	65.3	4.8	195.0	14.4	18.4	1.4	254.0	18.7	1,357.7	559.6	2.4
Circulatory	127.9	38.4	96.0	28.8	16.5	5.0	37.6	11.3	*4.7	*1.4	50.2	15.1	333.0	113.5	2.9
Respiratory	17.4	16.2	20.6	19.2	*3.2	3.0	16.4	15.3	**1.7	**1.6	48.2	44.9	107.4	59.8	1.8
Arthritis	75.5	21.0	53.1	14.8	17.7	4.9	55.8	15.5	*5.5	*1.5	59.6	16.6	358.9	158.2	2.3
Neurological	39.9	46.8	27.0	31.7	**2.4	**2.8	*4.4	*5.1	**1.5	**1.7	10.0	11.7	85.1	23.5	3.6
Other musculoskeletal	64.3	27.4	73.9	31.6	12.7	5.4	39.9	17.0	*2.8	*1.2	40.7	17.4	234.2	109.0	2.1
Other physical	9.4	36.1	11.9	45.3	**1.1	**4.3	**1.3	**5.0	0	0.0	**2.4	**9.3	26.2	5.2	5.0
All other physical	61.1	28.7	53.3	26.0	11.7	5.5	39.7	18.6	**2.2	**1.1	42.8	20.1	212.8	90.4	2.4
ABI	*4.3	*45.0	**2.2	**23.0	0	0.0	**1.2	**12.2	0	0.0	**1.9	**19.8	9.6	3.8	2.5
Psychiatric	94.6	46.7	72.7	35.9	*3.5	*1.7	9.5	4.7	0	0.0	22.2	11.0	202.4	60.2	3.4
Intellectual	*5.4	*51.0	*3.0	28.3	**1.2	**11.3	**0.2	**2.3	0	0.0	**0.8	**7.1	10.5	2.6	4.1
Sensory/speech	26.6	12.4	33.0	15.4	17.2	8.0	116.3	54.4	*3.3	*1.5	17.5	8.2	213.8	132.8	1.6
Speech	0	0.0	**0.1	**50.0	0	0.0	0	0.0	0	0.0	**0.0	**50.0	**0.1	**0.0	2.0
Vision	18.4	21.6	25.5	29.9	12.4	14.6	16.3	19.2	**2.3	**2.7	10.3	12.1	85.2	37.8	2.3
Hearing	*8.2	*6.4	*7.4	*5.8	*4.8	*3.7	100.0	77.8	**0.9	**0.7	*7.2	*5.6	128.5	95.0	1.4

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked with \* have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

activities while 'All activities' include core activities plus guidance, meal preparation, health care, housework and transport.

## Use of aids for daily activities

People aged 0–64 years, with a core activity restriction and who needed assistance with all daily activities, generally reported a higher proportional use of aids compared with those who did not need assistance. This difference between use and non-use of aids was greater for those who did not need assistance with all daily activities (38% and 62% respectively) than for those who did need assistance (52% and 48% respectively) (Table 4.10). This suggests that aids are less likely to be used when assistance is not needed.

**Table 4.10: People with a core activity restriction, by use of aids and need for assistance with specific activities, 1998**

	0–64 years				65+ years			
	Needs assistance		Doesn't need assistance		Needs assistance		Doesn't need assistance	
	'000	%	'000	%	'000	%	'000	%
<b>Core activity restriction</b>								
<i>All activities<sup>(a)</sup></i>								
Uses aids	623.7	52.2	190.8	37.8	468.9	67.6	147.9	59.0
Not using aids	571.8	47.8	314.3	62.2	224.5	32.4	102.7	41.0
<b>Total</b>	<b>1,195.5</b>	<b>100.0</b>	<b>505.3</b>	<b>100.0</b>	<b>693.4</b>	<b>100.0</b>	<b>250.6</b>	<b>100.0</b>
<i>Core activities<sup>(b)</sup></i>								
Using aids	354.6	56.3	459.9	43.0	250.1	78.7	366.7	58.6
Not using aids	275.7	43.7	610.4	57.0	67.7	21.3	259.5	41.4
<b>Total</b>	<b>630.3</b>	<b>100.0</b>	<b>1,070.3</b>	<b>100.0</b>	<b>317.9</b>	<b>100.0</b>	<b>626.2</b>	<b>100.0</b>
<b>Severe or profound core activity restriction</b>								
<i>All activities</i>								
Using aids	355.8	56.2	**1.5	59.3	256.2	79.0	**1.1	100.0
Not using aids	277.6	43.8	**1.0	40.7	68.3	21.0	0	0.0
<b>Total</b>	<b>633.4</b>	<b>100.0</b>	<b>**2.5</b>	<b>100.0</b>	<b>324.6</b>	<b>100.0</b>	<b>**1.1</b>	<b>100.0</b>
<i>Core activities</i>								
Using aids	354.6	56.3	*2.7	48.1	250.1	78.7	*7.2	92.5
Not using aids	275.7	43.7	*3.0	51.9	67.7	21.3	**0.6	7.5
<b>Total</b>	<b>630.3</b>	<b>100.0</b>	<b>*5.7</b>	<b>100.0</b>	<b>317.9</b>	<b>100.0</b>	<b>*7.8</b>	<b>100.0</b>

(a) All activities include self-care, mobility, communication, health care, housework, guidance, meal preparation and transport.

(b) Core activities include self-care, mobility and communication.

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked \* have an associated relative standard error of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

For persons aged 0–64 years and with a severe or profound restriction, aid use for 'all activities' was slightly higher for those who did not need assistance (59%) compared with those who did need assistance (56%). However, aid use appeared more important for those who needed assistance specifically with the 'core activities'; 56% used aids compared with 48% who did not need assistance. Aid use by the over 65s with a core activity restriction was significant, regardless of whether the person needed assistance or not. However, the

proportion of aid use was much higher if assistance was needed. For example, 68% and 79% of those who needed assistance with 'all activities' or 'core activities' respectively used aids compared with 59% (both activity categories) who did not need assistance.

This trend was not so evident for the over 65s with a severe or profound core activity restriction. Indeed, people reporting no need for assistance used aids more often than those who needed assistance. This finding, however, might be a product of low numbers in this group.

## Type of aid used

Needing assistance with a core activity was not necessarily associated with the use of an aid specific to the activity the aid was designed for (Table 4.11). On average, 40% of people with a severe or profound core activity restriction and reporting a need for assistance with self-care used an aid for self-care purposes. Uptake of self-care aids varied somewhat depending on age group, from 17% for under 15s to 61% for the over 65s.

A similar percentage, i.e. 41%, of people needing assistance with mobility used a mobility aid. Again, the over 65s showed the highest proportional use of aids (59%), with use by the other groups ranging from 16% to 29%.

The majority of people with a communication limitation did not use a communication aid, with only 8% of respondents reporting use of such an aid. The greatest use of communication aids (13%) was found for the age group 30–44 years, the lowest (4%) for the 45–64 year olds.

**Table 4.11: People with a severe or profound core activity restriction and need for assistance with a core activity, by use of aids specific to the core activity, and age group, 1998**

	Age group (years)					Total
	0–14	15–29	30–44	45–64	65+	
<b>Self-care</b>						
Needs assistance ('000)	85.9	34.5	87.3	171.5	302.6	681.8
Uses self-care aid ('000)	14.4	9.6	17.8	45.9	183.2	270.9
%	16.8	27.7	20.4	26.8	60.5	39.7
<b>Mobility</b>						
Needs assistance ('000)	73.3	64.3	109.0	218.2	408.4	873.2
Uses mobility aid ('000)	11.9	13.1	29.4	62.4	239.1	355.9
%	16.2	20.4	27.0	28.6	58.5	40.8
<b>Communication</b>						
Needs assistance ('000)	91.4	25.0	20.0	16.8	133.2	286.3
Uses communication aid ('000)	10.7	**2.3	**2.6	**0.6	*6.8	23.0
%	11.7	**9.3	**12.9	**3.7	*5.1	8.0

### Notes

1. These data for each core activity group are not mutually exclusive, i.e. people expressing need for assistance with one core activity may also express need for assistance with another.
2. Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked \* have an associated relative standard error of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

## Frequency of need for assistance

Generally, people aged 0–64 years who required frequent need for assistance with a core restriction (i.e. more than three times a day) were more likely to use aids (Table 4.12). This was particularly true for those with a high need for self-care assistance; 47% of those who reported using a self-care aid required frequent assistance compared with 19% of those who did not use a self-care aid. As frequency dropped, so too did the reliance on aids. Around 32% and 33% of people reporting use of a self-care and mobility aid respectively needed assistance between twice a week and twice a day. These proportions declined to 21% and 26% when assistance was needed once a week or less.

The non-use of self-care aids was associated with a lower need for self-care assistance but this was not the case for people who needed assistance with mobility or communication. For example, over half of people needing assistance with mobility but not using a mobility aid (55%) needed assistance between twice a week up to twice a day, compared with 10% who needed assistance less than once a week.

While there is evidence that the need for assistance with core activities is associated with the uptake of aids, there remains the finding that many people who need assistance with self-care, mobility or communication did not use any form of aid assistance. Reasons given in the 1981 Survey of Disability, Ageing and Carers for not using aids included:

- the high cost of aids (31%)
- the amount of trouble associated with obtaining aids (30%)
- the respondent not knowing where to get aids (14%)
- the respondent reporting they did not need or cannot use it yet (12%) (ABS 1982).

A similar question was not asked in the 1988, 1993 or 1998 surveys.

**Table 4.12: People aged 0–64 years with a severe or profound core activity restriction, by use of aids specific to core activities, by frequency of need for assistance, 1998**

	Frequency of need for assistance						Total	
	1/month to 1/week		2–6/week to 2/day		3–5/day to 6+ day			
	'000	%	'000	%	'000	%	'000	%
<b>Needs assistance with self-care</b>								
Uses self-care aid	18.0	20.6	28.1	32.0	41.6	47.4	87.8	100.0
Doesn't use self-care aid	121.1	41.6	113.6	39.0	56.7	19.4	291.4	100.0
<b>Needs assistance with mobility</b>								
Uses mobility aid	30.3	26.0	38.8	33.2	47.7	40.9	116.8	100.0
Doesn't use mobility aid	34.9	10.0	191.1	54.9	121.9	35.0	348.0	100.0
<b>Needs assistance with communication</b>								
Uses communication aid	*4.0	*5.0	*4.4	*7.1	*7.7	*47.9	16.2	100.0
Doesn't use communication aid	36.3	26.5	47.8	34.9	52.9	38.6	137.0	100.0

### Notes

1. These data for each core activity group are not mutually exclusive, i.e. people expressing need for assistance with one core activity may also express need for assistance with another.
2. Estimates marked \* have an associated relative standard error of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.



## Type of assistance

Another reason for non-use of aids might be a greater reliance on personal assistance instead. Table 4.13 investigates need for self-care, mobility and communication and the type of assistance received—aids only, personal care only, a combination of aids and personal care, or no assistance at all.

Personal assistance only was by far the most common form of assistance received—44%, 48% and 47% of people aged 0–64 years and who needed help with self-care, mobility and communication respectively relied solely on a primary carer. The sole use of aids was, correspondingly, quite low. Only 12% of people with a need for assistance with self-care or mobility used aids only, falling to 5% for those with a need for communication assistance. The use of both aids and personal assistance accounted for similar levels of use as that found for aids use only—11% for self-care, 14% for mobility and 5% for communication.

Despite considerable reliance on personal assistance, there still exists a large proportion of people who did not receive assistance. Forty three per cent of people who needed assistance with communication did not use either form of assistance. This percentage declined for people needing self-care and mobility assistance but remains significant at 33% and 27% of all respondents respectively.

**Table 4.13: People aged 0–64 years with a severe or profound core activity restriction, by need for assistance with self-care, mobility or communication, by use of aids and primary care, 1998**

Need for assistance	Type of assistance								Total '000
	Uses aids only		Uses primary carer only		Uses aids and personal carer		Uses neither		
	'000	%	'000	%	'000	%	'000	%	
Self-care	46.6	12.3	166.3	43.9	41.2	10.9	125.1	33.0	379.1
Mobility	54.3	11.7	222.7	47.9	62.5	13.5	125.3	27.0	464.8
Communication	*7.9	*5.2	72.0	47.0	*8.3	*5.4	65.0	42.5	153.2

### Notes

1. These data for each core activity group are not mutually exclusive i.e. people expressing need for assistance with one core activity may also express need for assistance with another.
2. Estimates marked \* have an associated relative standard error of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

## 4.7 Assistance from a primary carer

Tables 4.14 to 4.16 focus on use of aids and assistance from a primary carer, the carer's relationship to the person they are caring for, and the hours the primary carer spends in attending to the person's needs. The ABS defines a primary carer as a person of any age who provides the most informal assistance, in terms of help or supervision, to a person with one or more disabilities. The assistance has to be ongoing, or likely to be ongoing, for at least six months and be provided for one or more of the core activities (communication, mobility and self-care) (ABS 1999).

## Receiving assistance from a primary carer

Generally, people with primary carers had a higher use of aids compared with people who did not have carers (Tables 4.15, 4.15 and 4.16). This association held across all severity groups and age groups although it was the least strong among people with a profound core activity restriction.

Sixty percent of people aged under 65 years and who had a primary carer used aids compared with 46% of those who did not have a carer. For the over 65s, this difference was 82% and 63% respectively. Having a primary carer may mean the person has greater assistance requirements and thus is more likely to rely on aids.

## Relationship of primary carer

The relationship of the primary carer to the person they were caring for differed somewhat for users and non-users of aids. Among people under the age of 65 and with a core activity restriction, a spouse or partner was the most likely primary carer for those using aids (57%) whereas a parent was the more likely carer for people not using aids (49%) (Table 4.14). This was not the case for the over 65s where a spouse or partner was the most common primary carer regardless of aid use or non-use.

**Table 4.14: People with a core activity restriction living in households, by primary carer status, relationship of carer and hours of care per week and use of aids, 1998**

	0-64				65+			
	Uses aids		Doesn't use aids		Uses aids		Doesn't use aids	
	'000	%	'000	%	'000	%	'000	%
<b>Primary care assistance</b>								
Has primary carer	139.4	60.0	92.9	40.0	102.5	82.4	21.9	17.6
Doesn't have primary carer	675.2	46.0	793.1	54.0	514.3	62.8	305.3	37.2
<b>Relationship of carer</b>								
Spouse or partner	79.9	57.3	35.9	38.6	65.3	63.7	13.7	62.3
Parent	44.9	32.2	45.8	49.2	0	0.0	0	0.0
Child	*8.2	*5.9	*3.6	*3.9	32.2	31.4	*5.8	26.2
Other relative or friend	*6.4	*4.6	*7.7	*8.2	*5.0	*4.9	**2.5	**11.5
<b>Hours of care per week</b>								
<20 hours	51.8	37.1	31.0	33.4	26.5	25.9	*6.4	*29.4
20-39 hours	25.4	18.2	15.3	16.4	19.1	18.7	*2.7	*12.1
40+ hours	55.0	39.5	40.6	43.7	50.3	49	11.8	53.7
Not stated	*4.6	*3.3	*6.1	*6.5	*6.6	*6.4	**1.1	**4.8

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked \* have an associated relative standard error of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

## Severity of restriction

Aid users with a profound core activity restriction relied relatively equally on parents (50%) or a spouse (44%) to provide primary care, compared with non-users whose parent was the usual primary carer (70%) (Table 4.15). This pattern changed for people with a severe core

activity restriction where the spouse was the most important primary care giver for both users and non-users but more so for the former group (75% as compared to 64%).

**Table 4.15: People aged 0–64 years with a profound or severe core activity restriction living in households, by primary carer status, relationship of carer and hours of care per week, by severity of core activity restriction and use of aids, 1998**

	Profound				Severe			
	Uses aids		Doesn't use aids		Uses aids		Doesn't use aids	
	'000	%	'000	%	'000	%	'000	%
<b>Primary care assistance</b>								
Has primary carer	69.9	57.7	51.1	42.3	61.6	61.9	37.9	38.1
Doesn't have primary carer	45.6	56.2	35.5	43.8	180.3	53.9	154.0	46.1
<b>Relationship of carer</b>								
Spouse or partner	30.4	43.5	9.7	18.9	44.9	75.2	24.2	63.6
Parent	34.8	49.8	35.9	70.3	*8.7	*14.5	9.2	24.2
Child	*2.7	*3.8	**1.7	**3.3	*5.1	*8.6	**1.3	**3.5
Other relative or friend	**2.0	**2.9	*3.8	*7.5	*3.1	*5.2	*3.3	*8.7
<b>Hours of care per week</b>								
<20 hours	13.6	19.4	*8.0	15.6	33.8	56.7	20.6	54.3
20–39 hours	12.3	17.7	11.2	22.0	10.5	17.5	*4.0	*10.5
40+ hours	42.1	60.3	27.2	53.2	12.6	21.1	12.0	31.6
Not stated	**1.2	**1.7	*4.7	*9.2	*2.0	*4.7	**1.4	**3.6

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked \* have an associated relative standard error of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

## Age groups

Parents tended to be the primary care giver for people aged 0–14 and 15–29 years, regardless of whether the care recipient used aids or not (Table 4.16). For the older age groups, care was received primarily from a spouse or partner, again regardless of aid use. Around 71% of primary care givers for aid users 30–44 years and using aids was a spouse or partner. This contrasts with non-users of the same age group where 44% of primary care givers were a spouse or partner and 32% a parent.

## Hours of care

Aids users aged under 65 received shorter hours of care from the primary carer, albeit only slightly less so (Table 4.14). In contrast among the over 65s it was non-users who received fewer hours of care.

## Severity of restriction

Receiving 40 or more hours of care a week was common for people with a profound core activity restriction (Table 4.15). Of those who used aids, 60% reported receiving 40 or more hours of care compared with 53% of those who did not use aids. Hours of care received were less on average for people with a severe core activity restriction. Just over half received less

than 20 hours of care, regardless of aid use. A greater proportion of non-users received 40 or more hours care a week compared with aid users.

### **Age groups**

Sixty three per cent of people aged 14 years or younger and using aids received 40 or more hours of care a week compared to 54% of non-users (Table 4.16). For those over the age of 65 years, 49% and 54% of aid users and non-users respectively obtained 40 or more hours of care.

**Table 4.16: People with a core activity restriction living in households by primary carer status, relationship of carer and hours of care per week, by age group and use of aids and equipment, 1998**

	Age group (years)																			
	0-14		15-29				30-44				45-64				65+					
	Uses aids		Doesn't use aids		Uses aids		Doesn't use aids		Uses aids		Doesn't use aids		Uses aids		Doesn't use aids		Uses aids		Doesn't use aids	
	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%
<b>Primary care assistance</b>																				
Has primary carer	31.3	52.6	28.2	47.4	14.2	51.0	13.6	49.0	32.4	61.9	19.9	38.1	61.5	66.4	31.2	33.6	102.5	82.4	21.9	17.6
Doesn't have primary carer	63.0	42.9	83.4	57.1	85.5	41.9	118.6	58.1	155.3	44.1	196.5	55.9	371.6	48.5	394.6	51.5	514.3	62.8	305.3	37.2
<b>Relationship of carer</b>																				
Spouse or partner	0	0.0	0	0.0	*3.8	*27.1	**1.4	**10.3	23.0	71.1	*8.8	*44.4	53.0	86.2	25.7	82.3	65.3	63.7	13.7	62.3
Parent	29.6	94.3	26.7	94.6	*8.8	62.0	10.9	80.1	*4.5	*13.9	*6.3	*31.5	**2.1	**3.4	**1.9	**5.9	0	0.0	0	0.0
Child	0	0.0	0	0.0	0	0.0	0	0.0	*3.5	*10.8	**1.9	**9.7	*4.7	*7.6	**1.7	**5.4	32.2	31.4	*5.8	*26.2
Other relative or friend	**1.8	**5.7	**1.5	**5.4	**1.5	**10.9	**1.3	**9.6	**1.4	**4.2	*2.9	*14.4	**1.7	**2.8	**2.0	**6.3	*5.0	*4.9	**2.5	**11.5
<b>Hours of care per week</b>																				
<20	*4.8	*15.4	*4.9	*17.4	*5.7	*40.1	*4.5	*33.4	14.7	45.4	*8.7	*43.6	26.6	43.2	26.6	41.6	26.5	25.9	*6.4	*29.4
20-39	*5.5	*17.5	*6.8	*24.2	*4.4	*31.0	*4.0	*29.3	*5.6	*17.4	**0.9	**4.3	9.9	16.1	9.9	11.4	19.1	18.7	*2.7	*12.1
40+	19.8	63.3	15.2	53.8	*3.4	*24.1	*4.4	*32.4	*8.7	*26.7	9.0	45.2	23.1	37.6	23.1	38.4	50.3	49.0	11.8	53.7
Not stated	**1.2	**3.8	**1.3	**4.6	**0.7	**4.8	**0.7	**4.9	**1.2	**3.9	**1.4	**6.9	**1.5	**2.4	**1.5	**8.7	*6.6	*6.4	**1.1	**4.8

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked \* have an associated relative standard error of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

## **5 Other environmental factors**

The experience of disability is influenced, at least in part, by the environment in which an individual lives. This influence might be positive—enabling or facilitating a person with a disability to fulfil roles appropriate to their age, gender, social and cultural identity—or negative, limiting achievement of daily activities and participation in employment, education, and social, cultural and leisure pursuits. Indeed, the environment has been identified as the primary factor that improves or disadvantages the lives of people with disabilities (Hahn 1986; Barton 1994).

The ICF identifies environmental factors as one of three components defining the concept of disability, and represents an important new component of the ICF. Environmental factors recognised by the ICF as instrumental in affecting functioning and disability include products and technology, the natural and built environment, support, attitudes, and services, systems and policies that aim to provide benefits to people with disabilities.

### **5.1 Environmental factors and the Survey of Disability, Ageing and Carers**

Assessing the role the environment plays in the lives of people with disabilities is a complex exercise, as a multitude of environmental factors acting in concert may contribute to disability.

The Survey of Disability, Ageing and Carers provides information on some of the environmental factors potentially impinging on a person's quality of life—support arrangements provided in educational and workplace settings; access to public and private transport; home modifications; receipt of assistance with activities of daily living, and the provision and use of aids and equipment (covered in Chapter 4). However, because of the structure of the Survey questionnaire, it can be difficult to determine whether exposure to any of these 'positive' environmental factors is related to need, what environmental factors are not but should be available, or indeed the effect these environmental factors have on respondents and their lives. Also, the Survey does not contain questions on attitudes and the physical or natural environment or includes only a few questions related to support relationships, three key chapters of the ICF Environmental factors component.

Because of these limitations in the available data, this chapter will focus solely on the state of environmental factors listed above, rather than investigating effect. Some comment will be made from supporting literature on how these environmental factors might affect people with disabilities but will not be translated to evaluate results from data analyses.

### **5.2 Education and support arrangements**

The last 20 years in Australia has seen a strong movement towards educating students with disabilities in mainstream schools and in mainstream classes. Research has shown that children with disabilities benefit from participating in mainstream educational settings and do not necessarily learn any better, either socially or academically, in special schools (see Foreman 2001 for a review). These findings, supplemented by an increasingly widespread acceptance of people with disabilities, have spearheaded this movement into mainstream

education. Special education policies recognise the importance of enabling children with disabilities to receive education in a mainstream classroom, with agreement that children should be educated in the 'least restrictive environment' (Foreman 2001).

The participation of children with disabilities in primary and secondary schooling in 1998 was high in Australia, with over 95% of school-aged children (5–19 years) attending school. The increasing inclusion of children with disabilities in 'ordinary' (or mainstream) classes is reflected in the results given in Table 5.1. For children with disabilities, attendance in ordinary classes was higher than in special classes or schools, regardless of severity of core activity restriction (Table 5.1). Over 70% of children with a severe, moderate or mild core activity restriction and 49% of children with a profound core activity restriction attended an ordinary classes. Around 60% of children with a schooling restriction only<sup>7</sup> also attended ordinary classes.

The proportion of children attending special classes was much lower but similar between core activity restriction groups, ranging from 22% (mild core activity restriction) to 25% (profound, severe and moderate core activity restriction) of school-aged children. The highest level of special class attendance (39%) was found for children with a schooling restriction (but see footnote below). The majority of special school attendants were children with profound core activity restrictions (26%).

**Table 5.1: People aged 5–19 years with a specific restriction, by type of school/class attended and severity of restriction, 1998**

Type of class/school	Profound		Severe		Moderate		Mild		Schooling restriction only	
	'000	%	'000	%	'000	%	'000	%	'000	%
Ordinary class	29.1	49.1	36.9	71.0	11.5	73.0	32.1	77.2	27.9	60.1
Special class	14.9	25.2	13.2	25.3	*4.0	*24.9	9.0	21.7	17.9	38.6
Special school	15.2	25.7	**1.9	**3.7	**0.3	**2.1	**0.5	**1.2	**0.6	**1.3
<b>Total attending</b>	<b>59.2</b>	<b>95.9</b>	<b>52.1</b>	<b>95.8</b>	<b>15.7</b>	<b>96.1</b>	<b>42.0</b>	<b>99.0</b>	<b>46.5</b>	<b>100.0</b>
Not attending	**2.5	**4.1	**2.3	**4.2	**0.6	**3.9	**0.4	**1.0	0	0.0

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked with \* have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

## Support arrangements in primary and secondary schools

For some children, successful participation at school can depend on receiving support arrangements that enable or improve their ability to learn, write, communicate and get to and around school. Table 5.2 lists the types of support arrangements provided by schools for children with a profound or severe core activity restriction. Overall, a higher proportion of children attending special classes and, particularly, special schools, received support arrangements, compared with children attending ordinary classes. This may reflect either the

<sup>7</sup> A person is considered to have a schooling restriction if they are unable to attend school, attend a special school, attend special classes at an ordinary school, need at least one day a week off school on average or have difficulty at school (ABS 1999).

higher support needs of children in special education settings and/or a better array of facilities available in special compared with conventional education settings

Special tuition was the most common form of support received by children in all three education settings. Around 64% of children in special classes and special schools, and 17% of children in ordinary classes, received special tuition. Another common form of support for children was assistance from a disability support person/signing interpreter/counsellor—42%, 17% and 12% of children in special schools and special classes and ordinary classes respectively received this kind of support. A sizeable proportion (47%) of children attending special schools also benefited from special access or transport arrangements, compared with only 5% and 2% of children in special and ordinary classes respectively. This difference again might be related to need, quality and/or quantity of support arrangements.

Eighty four per cent of children attending ordinary classes did not receive or need education support arrangements. This figure is lower for children in special classes or special schools at 31% and 18% respectively<sup>8</sup>.

**Table 5.2: People aged 5–19 years with a specific restriction by type of support provided and type of school/class, 1998**

Support arrangements provided	Ordinary class		Special class		Special school	
	'000	%	'000	%	'000	%
Signing interpreter, counsellor or disability support person	15.8	11.5	10.2	17.3	*7.9	*42.3
Special computer or equipment	**1.3	**0.9	*4.1	*6.9	*4.9	*26.5
Special tuition	23.1	16.8	37.5	63.6	11.8	63.6
Special assessment procedures	*5.1	*3.7	11.3	19.2	*5.4	*29.0
Special access or transport arrangements	*3.2	*2.3	*2.9	*4.9	*8.8	*47.4
Other support conditions	14.6	10.6	**1.6	**2.9	*2.7	*14.3
No support conditions received or needed	114.8	83.5	18.1	30.6	*3.3	*17.9
<b>Total attending school<sup>(a)</sup></b>	<b>137.5</b>		<b>59.0</b>		<b>18.6</b>	

(a) Total may not equal to the sum of the components as more than one answer could be given to question on support arrangements provided. Percentages therefore do not add up to 100%

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked with \* have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

## Support arrangements in post-secondary schools

Support provided to students in post-secondary educational settings was mostly in the form of a support person, special assessment procedures, equipment or transport arrangements (Table 5.3). Higher education establishments and TAFE colleges provided the greater proportion of these support arrangements. Compared with school-aged children, considerably more people in post-secondary education reported not receiving or needing support arrangements—76% of people at university, 85% attending TAFE and 91% in other post-secondary institutions.

<sup>8</sup> The data do not allow separation of children who did not need support arrangements from those who needed support arrangements but did not receive them.



**Table 5.3: People aged 15–64 years with a specific restriction by support arrangements provided and type of higher education institute attending, 1998**

Support arrangements provided	Higher education		TAFE		Other <sup>(a)</sup>	
	'000	%	'000	%	'000	%
Signing interpreter, counsellor or disability support person	*4.1	*7.3	*2.9	*5.1	**0.7	**2.8
Special computer or equipment	**2.2	**3.9	**2.5	**4.4	0	0.0
Special tuition	**1.3	**2.4	**1.9	**3.3	**0.6	**2.4
Special assessment procedures	*3.7	*6.6	**1.3	**2.4	0	0.0
Special access or transport arrangements	*3.1	*5.4	*0.2	*0.4	**0.9	**3.9
Other support conditions	*4.0	*7.1	**0.9	**1.6	0	0.0
No support conditions received or needed	42.5	75.7	48.2	84.8	22.1	90.8
<b>Total attending<sup>(b)</sup></b>	<b>56.2</b>		<b>13.0</b>		<b>24.3</b>	

(a) Other includes business college, industry skills centre and other.

(b) Total may not equal the sum of the components as more than one answer on support arrangements provided could be given. Percentages therefore do not add up to 100%

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked with \* have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

### 5.3 Employment and workplace arrangements

Improving the participation of people with disabilities in the labour force may rely on a system of employment services and workplace arrangements that augment both an increased rate of entry into the workforce and the ability to remain employed.

Taking weekly leave from work might be necessary for some people with a disability. Around 20% of employed people with a profound or severe core activity restriction received some form of regular leave arrangement (Table 5.4). This dropped to 9% for people without a profound or severe restriction.

Workplace arrangements tended to be associated with severity of restriction—a higher proportion of employed people with a profound or severe restriction reported having such arrangements compared with those with a non-profound or severe restriction.

The most common form of workplace arrangements for people with a profound or severe restriction was assistance from a support person or assistant (10%), provision of special equipment (7%) or assignment of different duties (6%). Special equipment (4%) and different duties (3%) were also common forms of workplace arrangements for people with non-profound or severe restrictions.

People who were unemployed or not in the labour force in 1998 were asked what arrangements an employer might need to make if the respondent were to return to the workforce. Special equipment and the assignment of different duties were the most commonly reported workplace arrangements needed. A fifth of unemployed people with a profound or severe restriction also indicated modifications to the workplace as being necessary for workplace return.

**Table 5.4: People aged 15–65 years with a specific restriction, by employment and restriction status, and workplace arrangements, 1998**

	Employed				Unemployed				Not in labour force			
	Profound/Severe		Non Profound/Severe		Profound/Severe		Non Profound/Severe		Profound/Severe		Non Profound/Severe	
	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%
<b>Workplace arrangements</b>												
Support person or assistant	14.4	9.5	11.8	1.9	**0.8	**4.3	**1.0	**1.2	10.0	3.1	*6.0	*1.0
Special equipment	10.2	6.7	23.5	3.8	*4.8	*25.8	*7.0	*8.4	11.6	3.6	14.0	2.4
Modifications to workplace	*4.9	*3.2	*6.4	*1.0	*3.7	*19.8	*2.7	*3.3	*4.9	*1.5	*5.1	*0.9
Training or retraining	**2.5	**1.6	*3.4	*0.5	0	0.0	**1.3	**1.6	*7.7	*2.4	*6.7	*1.2
Different duties	*8.9	*5.9	19.9	3.2	**1.1	**5.7	*4.3	*5.3	12.6	3.9	11.3	2.0
Other arrangements	*6.6	*4.3	9.1	1.5	**1.6	**8.4	*3.3	*4.0	*5.2	*1.6	*6.7	*1.2
No arrangements given or required	71.8	47.2	401.7	64.6	9.0	48.4	62.6	75.1	31.1	9.7	148.9	25.7
<b>Leave arrangements</b>												
Leave arrangements	30.6	20.2	53.1	8.5	..	—	..	—	..	—	..	—
Does not need leave arrangements	80.2	52.8	417.9	67.2	..	—	..	—	..	—	..	—
<b>Total with a restriction</b>	<b>151.9</b>		<b>621.7</b>		<b>18.7</b>		<b>83.3</b>		<b>321.7</b>		<b>579.6</b>	

*Notes*

1. Respondents who were unemployed or not in the labour force at the time of the survey were asked about the types of workplace arrangements they would need to return to the workforce.
  2. Totals may not equal to the sum of the components, as more than one response could be given. Percentages therefore do not add up to 100%
  3. Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked with \* have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.
- .. not applicable  
 — rounded to zero, including null cells

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

## 5.4 Access to public transport

Safe and ready access to public transport enables people with disabilities to obtain independence in transportation, particularly where other forms of transport are not readily available, and to improve participation, by providing the means by which educational, work, and social and cultural settings can be easily reached. In recognition of the importance of public transport to people with disabilities, Parliament passed in October 2002 the Disability Standards for Public Transport under the Disability Discrimination Act, which outlines measures transport operators and providers should take to make public transport more accessible.

### Availability of public transport

Public transport was available to 80% and 72% of all people with a core activity restriction aged 5–64 years or 65 years and over respectively (Table 5.5). Of those people who used public transport, 90% aged under 65 and 95% aged over 65 reported public transport being readily available in their area. The difference between these percentages may be because some people who might otherwise use public transport do not do so because of limited availability.

Ninety eight per cent of people aged over 65 and who used public transport held a concession card compared to 52% of people under 65. This large difference may be partly explained by people over 65 years' eligibility for the Seniors Cards.

**Table 5.5: People with a core activity restriction, by availability and use of public transport, 1998**

Age group (years)	All with core activity restriction		Users of public transport				
	Public transport available		Public transport available		Has concession card		Total users
	'000	%	'000	%	'000	%	'000
5–64	1,376.3	79.4	676.0	90.2	391.3	52.2	749.2
65+	796.0	72.1	397.3	94.8	409.4	97.7	419.0

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

### Problems associated with public transport use

Three quarters of people with a core activity restriction aged under 65 years reported being able to use all forms of transport, 8% some forms of public transport and 13% no form of public transport at all (Table 5.6). In comparison, around 58% of people with a core activity restriction and over the age of 65 years could use all forms of public transport but similar percentages reported ability to use only use some forms (10%) or no form at all (16%).

Survey respondents reported a range of problems and difficulties associated with their use of public transport. Access difficulties associated with doors, steps or other structural features of the mode of transport was the primary problem experienced by both age groups—16% of people aged 5–64 years and 33% of people aged 65 and over (Table 5.6). Being able to get to and from the station or transport stops was another significant problem faced by people with core activity restrictions.

**Table 5.6: People with a core activity restriction, by ability to use public transport and problems or difficulties associated with public transport use, 1998**

	0–64 years		65+ years	
	'000	%	'000	%
<b>Ability to use public transport</b>				
Can use all forms	1,299.2	75.4	640.8	58.0
Can use some forms	139.8	8.1	108.0	9.8
Can't use any form	219.0	12.7	175.1	15.9
Doesn't leave home	11.6	6.7	20.0	1.8
Not applicable	52.3	3.0	160.7	14.6
<b>Reasons or difficulties associated with use</b>				
Getting to stops and stations	121.7	7.1	173.6	15.7
Getting in and out of vehicles (steps/doors/other)	267.0	15.5	360.2	32.6
Inadequate access to toilets	13.7	0.8	12.2	1.1
Crowds/poor ventilation	54.5	3.2	19.0	1.7
Lack of seating	76.6	4.5	68.4	6.2
Discomfort associated with seated position	113.2	6.6	53.7	4.9
<b>Total with a core activity restriction</b>	<b>1,721.7</b>		<b>1,104.8</b>	

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

### Transport use in previous fortnight

Most respondents relied on private transport as their primary form of transport in the fortnight preceding the survey—around 80% of people with a core activity restriction in both age groups (Table 5.7). Public transport accounted for 7% and 8% of transport used respectively by people aged under 65 and over 65 years. Reasons for using private transport over other forms of transport varied, with 85% of people regardless of age group indicating that private transport was more convenient, quicker and/or easier to use. Around 6% of people, however, stated that the absence of public transport in their area meant they had to rely on private transport.

Problems encountered with public transport was the reason given by a smaller proportion of people (2% of those aged under 65; 3% of those aged over 65) for relying on private rather than public transport. Difficulty due to disability was the primary reason most of these people cited as their major problem using public transport: 68% of people aged 5–64 years and 85% of people aged over 65 years reported this reason. Problems with the safety, frequency and reliability of services and, in particular, the absence of direct services, were also identified as barriers to public transport use.

**Table 5.7: People with a core activity restriction, by transport used in last fortnight and problems associated with use of public transport, 1998**

	0–64 years		65+ years	
	'000	%	'000	%
<b>Main form of transport used in last fortnight</b>				
Private transport (as passenger or driver)	1,353.99	82.3	694.3	79.5
Public transport	119.4	7.3	70.8	8.1
Other	172.6	8.1	107.8	10.4
<i>Total made journey last fortnight</i>	<i>1,645.9</i>	<i>100.0</i>	<i>873.0</i>	<i>100.0</i>
<b>Reason for using private transport in last fortnight</b>				
Quicker/more easier/convenient	1,146.2	84.7	588.9	84.8
More comfortable	55.2	4.1	27.9	4.0
No public transport available	83.7	6.2	40.3	5.8
Other problems with public transport	22.4	1.7	18.6	2.7
Other reasons	46.4	3.4	18.7	2.7
<i>Total using private transport in last fortnight</i>	<i>1,353.9</i>	<i>100.0</i>	<i>694.3</i>	<i>100.0</i>
<b>Problems with public transport</b>				
Too infrequent	**2.5	**1.3	**0.7	**3.9
Too unreliable	**1.3	**5.8	0	0.0
Overloaded	**0.7	**3.0	0	0.0
No direct services	*6.2	*27.6	**2.3	**12.3
Safety of services	**2.5	**11.2	0	0.0
Difficulty due to disability	15.3	68.4	16.0	85.4
Other problems	**0.8	**35.6	**0.6	**3.2
<i>Total citing problems with public transport<sup>(a)</sup></i>	<i>22.4</i>		<i>18.6</i>	

(a) Percentages do not add up to 100% as more than one response on problems with public transport could be given.

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked with \* have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

## 5.5 Assistance with daily activities

Respondents in the Survey could report type of assistance received as informal only, formal only or a combination of both. Informal assistance was the main type of assistance received by people aged 0–64 years with a core activity restriction, ranging from 52% for health care to 88% for meal preparation (Table 5.8). For the core activities, informal assistance accounted for 81% of self-care and 76% of mobility assistance received. Communication was the exception, where only 36% of assistance came from informal carers. Instead, around 55% of all assistance for communication was received from a combination of formal and informal services.

Formal services only generally accounted for less than 10% of assistance received for daily activities, with the exception of health care services, where 19% of all assistance with health care being attributed to formal services.

**Table 5.8: People aged 0–64 years with a core activity restriction living in households, by need for assistance with daily activities by type of assistance received, 1998**

Type of activity	% type of assistance received				% extent need for assistance met			Total ('000)
	Informal only	Formal only	Both	None	Fully met	Partly met	Not met	
Self-care	81.4	2.9	8.2	7.4	87.8	4.7	7.4	361.7
Mobility	75.8	3.2	14.2	6.8	82.2	11.0	6.8	440.4
Communication	35.6	*5.4	54.7	*4.3	62.5	33.2	*4.3	138.3
Health care	52.1	18.6	22.3	7.0	82.8	10.2	7.0	477.2
Transport	84.5	3.1	6.4	6.0	81.8	12.3	5.9	410.0
Housework	80.8	5.6	8.4	5.3	77.9	16.9	5.3	438.4
Meal preparation	88.2	*2.1	*5.3	*4.4	86.0	9.7	*4.4	149.2
Paperwork	79.6	4.6	7.4	8.4	79.1	12.6	8.4	188.0
Property maintenance	68.9	10.8	12.7	7.5	73.8	18.6	7.5	629.0

Note: Estimates marked with \* have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

Informal services also tended to be the primary form of assistance for people aged over 65 years. However, there was a greater proportion of assistance attributed to formal services only compared with that reported by people under the age of 65 years (Table 5.9). This was particularly apparent for housework and property maintenance (25% of all assistance), and health care where a higher proportion (48%) of assistance came from formal rather than informal services (30%). There was an interesting contrast between age groups in the receipt of assistance for communication; 86% of all assistance for those age over 65 years came from informal services only whereas just 36% did for people aged under 65 years.

**Table 5.9: People aged 65+ years with a core activity restriction living in households by need for assistance with daily activities by type of assistance received, 1998**

Type of activity	% type of assistance received				% extent need for assistance met			Total ('000)
	Informal only	Formal only	Both	None	Fully met	Partly met	Not met	
Self-care	68.0	8.6	14.3	9.0	86.1	*4.8	9.0	155.2
Mobility	75.7	4.5	13.9	5.9	81.6	12.5	5.9	273.6
Communication	85.9	0.0	**3.3	*10.8	86.6	**2.5	*10.8	28.6
Health care	30.0	48.0	15.3	5.8	85.2	9.1	5.8	369.0
Transport	76.5	6.1	11.6	5.7	84.5	9.7	5.7	232.2
Housework	51.7	25.4	18.7	4.3	82.2	13.5	4.3	365.3
Meal preparation	71.6	15.7	10.6	*2.2	91.9	6.2	*2.2	135.4
Paperwork	88.2	*3.7	*4.2	*4.0	91.1	*4.9	*4.0	136.0
Property maintenance	50.5	25.2	19.2	5.2	75.8	19.1	*5.2	494.0

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked with \* have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

In both age groups, a high proportion (more than 70%) of people who required assistance had their needs fully met, although this was somewhat higher for people aged 65 years and over (Tables 5.8 and 5.9). People aged 0–64 years who needed assistance with communication, however, were less likely to report having their needs fully met (63%), and

were more likely to report having their needs partly met (33%), compared with people needing assistance with other daily activities. There also remained a substantial proportion of people whose needs were not met at all. Among people aged 0–64 years, this especially affected those needing assistance with self-care (7%), mobility (7%), health care (7%), paperwork (8%) and property maintenance (8%). Self-care and communication were the main activities for which people aged over 65 years reported higher levels of no assistance<sup>9</sup>, 9% and 11% respectively. An absence of adequate assistance is a continuing problem for people with disabilities (AIHW 2001), impinging on their potential for participation and quality of life.

## 5.6 Home modifications

Modifications to the home environment can improve the physical independence of people with disabilities, from enhancing mobility in and around the home to facilitating ability to perform self-care activities. These modifications can include alterations to kitchen, bathroom and laundry fixtures, structural and architectural changes, and access alterations.

**Table 5.10: People with a core activity restriction living in households by severity of core activity restrictions, age group, tenure type and type of home modifications, 1998**

	Have home modifications			% type of home modifications <sup>(a)</sup>					Total ('000)
	'000	%	% use aids	Structural changes	Ramps	Bathroom / laundry	Handgrab rails	Other	
<b>Core activity restriction</b>									
Profound	122.9	22.8	87.0	22.7	21.9	54.3	63.2	*6.6	537.8
Severe	80.6	13.5	87.3	16.8	14.7	39.4	52.6	*8.3	598.7
Moderate	65.9	10.0	75.6	*9.5	14.4	39.4	54.2	**3.0	656.3
Mild	54.0	5.2	76.9	*7.3	*6.8	29.1	43.6	*9.9	1,026.8
<b>Age group</b>									
0–14	22.9	11.1	75.2	*29.6	*14.2	*20.7	*14.2	*11.3	205.7
15–29	15.7	6.7	74.8	*31.3	*22.8	*38.3	*18.1	*24.6	234.7
30–44	33.8	8.2	82.5	*20.2	*18.0	39.8	42.2	*12.1	410.0
45–64	70.8	8.1	82.9	23.8	21.7	36.2	40.8	*7.1	870.8
65+	180.1	16.3	84.9	9.0	13.1	50.1	72.3	*3.6	1,104.7
<b>Tenure type<sup>(a)</sup></b>									
Owner	248.0	13.9	82.8	16.1	16.0	41.1	56.3	6.8	1,783.7
Renter	43.4	7.5	86.5	*10.6	*17.3	46.0	52.0	**3.6	575.0
Boarder	15.5	14.6	71.3	*21.5	**10.0	51.7	54.7	**12.6	106.5
Rent-free	13.7	12.7	89.5	**10.9	*18.6	64.0	57.7	**11.9	108.3
Other	2.8	13.9	80.4	*66.0	**24.2	**49.8	**30.7	0.0	20.4

(a) Does not include 'Not applicable' responses.

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked with \* have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

<sup>9</sup> Due to the structure of the Survey CURF, it was not possible to separate people who did not need assistance from those who needed assistance but did not receive it.

People with profound or severe core activities were more likely to modify their homes than those with a moderate or mild core activity restriction. Around 23% and 14% of people with a profound or severe core activity restriction lived in homes that had received some sort of modification (Table 5.10). The occurrence of home modifications generally rose with age, with 16% of people aged 65 and over and with a core activity restriction living in such homes. The exception was the age group 0–14 years, where the occurrence of home modification was second highest at 11%. Rates of home modifications were similar (between 13–14% of homes) in the homes of people who either owned the dwelling or lived in it as a boarder or rent-free. The latter may be because individuals are dependent on family members. Modifications were less common (8%), however, in the homes of renters.

Structural changes, modifications to the toilet, laundry or bath, and the addition of ramps were the most common modifications made to houses for people under 30 years of age. For people aged over 30 years, handgrab rails were the most common type of home modification, followed by toilet, laundry or bath modifications.

Structural modification to the home may not be a cheap option and only those with the financial means, either through personal means or from an equipment scheme, may be in the position to afford such changes. The low occurrence of home modification possibly reflects the financial inability of some people to make the changes to the home they need. Ownership of the home is another potentially confounding factor, with equipment/home modification schemes (e.g. CAEP) stipulating that the home must be privately owned. People living in rental properties are therefore excluded from making such claims.

The occurrence of home modification in the homes of people also reporting the use of aids and equipment is markedly higher than those who do not use aids and equipment, exceeding 71% regardless of severity of core activity restriction, age or housing tenure. This suggests that those who use aids and equipment are more inclined to have their homes modified, possibly to complement their use of specific aids. However, this does not imply that all those people not using aids and equipment do not need home modifications but rather that some are not in the financial position to have these changes made.



# Appendix: Detailed tables

**Table A4.1: Aids used, by types of aids and age group (people with a disability), 1998**

Type of aid	Age group									
	0-14		15-29		30-44		45-64		65+	
	'000	%	'000	%	'000	%	'000	%	'000	%
Eating	*7.2	*4.0	**1.7	**0.8	*6.8	*1.9	*6.7	*0.9	46.5	2.5
Showering	*7.1	*4.0	*8.2	*4.2	18.2	5.1	55.8	7.2	242.0	13.1
Toilet	*6.3	*3.5	*5.5	*2.8	11.6	3.2	25.6	3.3	137.1	7.5
Incontinence	*6.2	*3.5	*5.7	*2.9	*4.4	*1.2	14.3	1.8	98.9	5.4
Dressing	**1.7	**0.9	*3.3	*1.7	*6.1	*1.7	15.7	2.0	63.3	3.4
Electric wheelchair/ scooter	**2.0	**1.1	*4.6	*2.3	*3.4	*1.0	*7.9	*1.0	13.6	0.7
Manual wheelchair	*4.9	*2.7	*8.8	*4.5	9.4	2.6	15.5	2.0	85.0	4.6
Cane	**0.1	**0.3	**0.6	**0.3	*5.5	*1.8	*6.7	*0.9	21.7	1.2
Crutches/walking stick	**1.9	**1.1	*3.8	*1.9	14.8	4.1	50.8	6.5	154.0	8.3
Walking frame	**2.1	**1.2	**1.5	**0.8	**1.9	**0.5	11.7	1.5	85.8	4.6
Seating/bedding	**2.4	**1.3	*5.3	*2.7	*6.5	*1.8	25.1	3.2	101.3	5.5
Car	*2.7	*1.5	*2.9	*1.5	*4.6	*1.3	**1.6	**0.2	*3.3	*0.2
Other mobility	*4.6	*2.5	*6.1	*3.1	14.0	3.9	18.6	2.4	47.8	2.6
Low-tech reading/writing	*8.0	*4.5	*4.2	*2.1	**1.9	**0.5	**1.5	**0.2	12.4	0.7
High-tech reading/writing	11.9	6.7	*4.9	*2.5	*3.8	*1.1	*5.5	*0.7	9.0	0.5
Low-tech speech	*5.5	*3.1	**1.2	**0.6	**1.2	**0.3	**0.3	**0.0	**2.0	**0.1
High-tech speech	**1.3	**0.7	**0.1	**0.0	**0.7	**0.2	**1.1	**0.1	**0.3	**0.0
Mobile/cordless phone	**1.8	**1.0	12.7	6.4	41.0	11.5	94.1	12.1	61.7	3.3
Fax machine	0	0.0	**0.9	**0.5	9.9	2.8	16.6	2.1	**1.8	**0.1
Hearing aids/cochlear implants	10.1	5.6	10.2	5.1	19.0	5.3	73.3	9.4	322.8	17.5
Meal preparation	*3.0	*1.7	*4.3	*2.2	13.2	3.7	20.9	2.7	21.7	1.2
Medical	88.1	49.1	101.0	51.2	159.7	44.6	309.5	39.8	314.1	17.0
<b>Total aids used</b>	<b>179.3</b>	<b>100.0</b>	<b>197.4</b>	<b>100.0</b>	<b>357.7</b>	<b>100.0</b>	<b>778.5</b>	<b>100.0</b>	<b>1,846.3</b>	<b>100.0</b>

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked with \* have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

**Table A4.2: Aids used, by use of types of aids and severity of core activity restriction (people with a disability), 1998**

Type of aid	Severity of core activity restriction							
	Profound		Severe		Moderate		Mild	
	'000	%	'000	%	'000	%	'000	%
Eating	60.1	4.2	*4.9	*0.7	**1.2	**0.2	*2.7	*0.5
Showering	210.9	14.7	62.3	9.0	41.1	8.2	17.0	2.9
Toilet	133.7	9.3	29.5	4.2	16.4	3.3	*6.4	*1.1
Incontinence	105.1	7.3	12.4	1.8	11.7	2.3	**0.3	**0.1
Dressing	65.3	4.5	18.6	2.7	4.9	1.0	**0.5	**0.1
Electric wheelchair/ scooter	23.7	1.7	*4.7	*0.7	**1.9	**0.4	**1.2	**0.2
Manual wheelchair	109.2	7.6	10.2	1.5	**2.4	**0.5	**1.8	**0.3
Cane	18.9	1.3	*7.6	*1.1	*4.9	*1.0	*3.7	*0.6
Crutches/walking stick	88.3	6.1	71.8	10.3	43.1	8.6	22.2	3.8
Walking frame	86.1	6.0	12.0	1.7	*3.1	*0.6	**1.7	**0.3
Seating/bedding	95.4	6.7	31.5	4.5	11.6	2.3	**2.0	**0.4
Car	10.0	0.7	*3.6	*0.5	**0.8	**0.2	**0.8	**0.1
Other mobility	50.0	3.5	25.6	3.7	9.1	1.8	*6.3	*1.1
Low-tech reading/writing	16.7	1.2	*5.5	*0.8	**1.4	**0.3	*4.3	*0.7
High-tech reading/writing	15.4	1.1	13.1	1.9	**1.2	**0.2	*5.6	*1.0
Low-tech speech	*8.8	*0.6	**1.4	**0.2	0	0	0	0
High-tech speech aids	**1.8	**0.1	**0.7	0.09	**0.3	**0.1	**0.7	**0.1
Mobile/cordless phone	46.0	3.2	69.5	10.0	48.8	9.7	38.5	6.7
Fax machine	*3.9	*0.3	12.0	1.7	*5.8	*1.2	*5.9	*1.0
Hearing aids/ cochlear implants	73.9	5.1	44.7	6.4	58.5	11.7	207.5	35.8
Meal preparation	26.3	1.8	20.5	3.0	*6.6	*1.3	*6.6	*1.1
Medical	188.2	13.1	215.5	31.0	216.7	43.2	219.7	37.9
<b>Total aids used</b>	<b>1,437.7</b>	<b>100.0</b>	<b>694.4</b>	<b>100.0</b>	<b>501.5</b>	<b>100.0</b>	<b>579.2</b>	<b>100.0</b>

Note: Estimates marked with \*\* have an associated relative standard error (RSE) of 50% or more. Estimates marked with \* have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers Confidentialised Unit Record File.

**Table A4.3: Grouping of main disabling conditions, using the 1998 ABS Survey of Disability, Ageing and Carers Confidentialised Unit Record File**

<b>Main disability group</b>	<b>Main disabling conditions</b>
<b>Physical</b>	
Circulatory	Includes heart disease nfd; angina; myocardial infarction; other heart disease; hypertension; stroke; and other diseases of the circulatory system.
Respiratory	Includes bronchitis/bronchiolitis; respiratory allergies; emphysema; asthma and other diseases of the respiratory system.
Arthritis	Includes arthritis and related disorders.
Neurological	Includes Parkinson's disease; Alzheimer's disease; brain disease/disorder—acquired; multiple sclerosis; epilepsy; migraine and other diseases of the nervous system.
Other musculoskeletal	Includes back problems (dorsopathies); synovitis; tenosynovitis; repetitive strain injury; occupational overuse syndrome; other soft tissue/muscle disorders; osteoporosis; and other disorders of musculoskeletal and connective tissue.
Other physical	Includes cerebral palsy; paralysis; and spina bifida.
All other physical	Includes poliomyelitis; other infections and parasitic diseases; skin cancer; breast cancer; prostate cancer; other malignant tumours; other neoplasms; diseases of the blood and blood-forming organs; disorders of the thyroid; diabetes; high cholesterol; other endocrine; nutritional and metabolic disorders; stomach/duodenal ulcer; abdominal hernia; enteritis; colitis and other disease of the intestine; other diseases of the digestive system; diseases of the skin and subcutaneous tissue; disorders of the urinary system; disorders of the genital system; other congenital/chromosomal abnormalities; breathing difficulties/shortness of breath; pain, blackouts, fainting and convulsions.
<b>ABI</b>	Includes head injury and acquired brain damage
<b>Psychiatric</b>	Includes mental and behavioural disorders; psychoses and mood affective disorders; dementia; schizophrenia; depression; other psychoses; phobic and anxiety disorders; nervous tension and stress; other neurotic and stress-related disorders; and other mental and behavioural disorders.
<b>Intellectual/learning</b>	Includes intellectual and developmental disorders; mental retardation/intellectual disability; autism and related disorders; development learning disorders; other developmental disorders; ADD/Hyperactivity and Down's syndrome.
<b>Sensory/speech</b>	
Vision	Includes cataracts; retinal disorders and defects; glaucoma; sight loss; and other diseases of the eye and adexna.
Hearing	Includes tinnitus; deafness/hearing loss (nfd, noise-induced, congenital, due to accident, and other cause) and other diseases of the ear and mastoid process.
Speech	Includes speech impediment and unspecified speech difficulties.

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