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Aged Care

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Individuals with a developmental disability will experience the same health issues associated with the normal ageing process¹ and will require similar services from their doctor as any other ageing person. However, they may have additional unique needs depending on the aetiology of their disability, their environmental history, their lifestyle, eg exercise, diet, and their patterns of medication usage.¹ It is important to be sensitive to these additional needs.

This chapter will focus on issues pertinent to ageing adults with a developmental disability, and issues that may be overlooked due to communication difficulties or a lack of training or awareness of ageing and health issues.²

AGEING AND SYNDROMES

Some syndromes associated with developmental disability are known to have specific health issues related to ageing. A recent study suggested that adults with cerebral palsy experienced physical changes that they attributed to an early ageing process.³ Individuals with Down syndrome may also experience precocious ageing and the incidence of Alzheimer's disease is higher in individuals with Down syndrome than the rest of the population including those with an intellectual disability.¹

BARRIERS TO CARE

Many health management issues are the same for all individuals who are ageing. However, clinical management of ageing adults with a developmental disability is often complicated.

Communication impairments can cause difficulties in obtaining an accurate history and performing examinations.

Family members are often unaware of changes that occur during the ageing process¹ and may attribute problems to the disability or behaviour rather than a change in health status, secondary to ageing.

Carers who are not family members may have a limited understanding of ageing, as they themselves are often young and untrained^{1,3} and may have limited knowledge of the individual for whom they are caring.

Older adults with a developmental disability may have frequent changes in carers⁴ and residential location, and health records are often inadequate.¹ Consequently, it may take some time to piece together an accurate picture of the individual's health status.

Recommendation

Every older person with a developmental disability needs to be evaluated as an individual and the doctor should encourage individuals and their carers to keep careful records and to attend the practice regularly so that over time the doctor, individual and carer build up a good rapport.

POLYPHARMACY

As developmentally disabled adults age they are likely to develop medical problems requiring additional medications. These are often in addition to an established medication regimen. Interactions between their new and existing medications can cause problems, while changes in the metabolism and excretion of their current drug regimes will need to be considered.

DRUG METABOLISM

Changes in drug utilisation occur with ageing. Absorption is minimally affected. Metabolism, excretion and bioavailability all change with ageing, and are discussed in the next section. As adults age their drug metabolism rate slows secondary to changes in liver metabolism.

- Hepatic oxidative activity decreases with age.
- Liver volume decreases significantly with age.
- Hepatic blood flow decreases with age.⁵

The liver metabolises drugs through two processes.⁶ The first process introduces a polar (water-soluble) group into the drug molecule by one or more of the following processes: oxidation; reduction; demethylation; hydroxylation.

Sites on the drug molecule are now made available for the second process, conjugation. The second process includes acetylation (eg isoniazid), glucuronidation (eg paracetamol) and sulfation. Some drugs go through both phases.

Although current research debates this, the alterations in oxidative metabolism of some drugs in older people may prolong the duration of action of drugs such as diazepam, propranolol, chlordiazepoxide and theophylline.

Be Aware

Be aware of possible adverse drug reactions due to the prolonged duration of action and note that a reduced dose may be required.

Table 13 Some drugs that are affected by age-related changes in hepatic metabolism

<i>Half-life</i>	<i>Clearance</i>
chlordiazepoxide	chlordiazepoxide
chlormethiazole	chlormethiazole
desipramine*	imipramine
diazepam*	metoprolol
lorazepam*	nortriptyline*
metoprolol*	paracetamol
nitrazepam*	phenytoin*
paracetamol	propranolol
quinidine	

* conflicting results from independent studies by different authors

DRUG EXCRETION

Advancing age produces a decline in renal function. From 20 to 90 years glomerular filtration rate decreases by 46 percent, renal blood flow decreases by 53 percent and tubular excretion decreases by 44 percent.

Dehydration, cardiac failure, hypotension and urinary retention may further decrease excretory capacity. Therefore drugs predominantly excreted in the urine may have prolonged duration of action and are more likely to reach toxic levels unless their dose is reduced.

Table 14 Some drugs predominantly excreted by the kidney⁶

aciclovir	cephalexin*	lithium*
amantadine	chlorpropamide	methotrexate
amiloride	cimetidine*	metoclopramide
aminoglycosides	ciprofloxacin	norfloxacin*
amoxicillin	disopyramide	penicillin
ampicillin	enalapril	pyrazinamide
atenolol	famotidine	ranitidine
captopril	imipenem	tetracycline*

* drugs known to have age-related reduction in renal excretion

RECEPTOR SENSITIVITY

Older people become more sensitive to the effects of medication⁷ possibly due to central receptor sensitivity changes. Toxic confusional states and postural hypotension secondary to medication adverse effects are more common in the elderly than younger people. This may be because of changes to the autonomic nervous system and brain acetylcholine levels. There is also an increased sensitivity to benzodiazepines with age via central gamma-aminobutyric acid receptor changes.⁶

Some drugs acting through receptor pathways include tricyclic antidepressants, phenothiazines, diuretics, nitrazepam, diazepam, hypnotics and propantheline.

Note: Lower doses of phenothiazines and psychotropic medications are often required.

BIOAVAILABILITY

The changes described in previous paragraphs coupled with a reduction in lean body mass, relative increase in body fat and impaired plasma protein binding result in a longer half-life for many medications.

Many drugs are stored in fat; in older people, as fat replaces muscle, drug storage is prolonged and the drug is eliminated more slowly.

Protein binding is very significant. The less plasma protein available for binding the more unbound drug there will be and therefore the more likely toxic effects are to occur. Thus, malnourished people and those with protein loss due to disease are vulnerable to intoxication.

Many adults with a developmental disability take prescribed medication and may have done so for much of their lives. In addition, they may take a number of over-the-counter medications and herbal

preparations that they do not discuss with their doctor.⁸ Thus, adverse effects from medications can occur if dosages are not readjusted¹ or if several different substances interact adversely.

Table 15 Some highly protein-bound drugs⁶

<i>Drug</i>	<i>Percent bound to albumin</i>
amitriptyline	96
chlorpromazine	99
diazepam	99
fluoxetine	95
phenytoin	91
promethazine	95
tolbutamide	95
warfarin	97

MANAGEMENT

Review medication regularly and cease any that is not necessary. Review indication for use of medication, especially neuroleptics used for challenging behaviours. Treat the cause where possible rather than symptom modification. Readjust medication dosage to lowest necessary for the desired treatment effect with metabolic and excretion changes in mind.

- Regularly monitor renal function and serum levels of appropriate drugs, eg lithium, antiepileptics.
- Encourage the individuals/carers to discuss all therapeutic substances taken, including over-the-counter preparations, herbal remedies and other doctors' prescriptions.
- Maintain close liaison with the patient's other prescribers, eg specialists, hospital medical staff.
- Encourage the individual to access one pharmacist and one doctor for all the therapeutic substances and request the pharmacist to note over-the-counter preparations purchased as well as prescribed drugs.
- Consider reports of changes in behaviour or mood and reports of confusion in the light of adverse drug reactions or toxic levels of medication.

VISION AND HEARING IMPAIRMENT

Decline in vision and hearing is common in older people⁸ with 60 percent of individuals over 65 experiencing presbycusis and some also suffering from tinnitus.

Such losses can result in social isolation, confusion, and apparent loss of skill, and in the case of visual changes an increased risk for falling. Older adults with a developmental disability may be unable to report sensory losses and may be unaware of how such losses impact on their ability to function in their environment. In addition, carers may attribute nonresponse to behavioural aspects (eg stubbornness) rather than to a sensory impairment.

- Ensure regular hearing and vision assessments by service providers specialised in dealing with people with disabilities.
- Advise family members and carers on good communication practice; consult the Australian Hearing Services or a speech therapist.
- Ensure that carers understand that older individuals require well-lit areas and glare-free environments in order to function safely and optimally.
- Referral to a speech therapist may be beneficial if communication is impaired by sensory loss or the individual is having difficulty in seeing or using his/her communication aid.

SKIN AND TEMPERATURE HOMEOSTASIS

Older people's skin becomes paler, wounds do not heal as quickly and skin becomes more vulnerable to sun damage.⁷ It is also less able to produce sweat. Adults with a developmental disability may not be aware of the importance of wearing sunscreen and that some medication, such as certain neuroleptics, may make them more vulnerable to sunburn.⁸

A decrease in the number of sweat glands in the older individual also means that heat dissipation is more difficult. In addition, age-associated breakdown in collagen and elastin fibres result in thinner, less pliable skin with less subcutaneous fat. This interferes with insulation and older individuals are more susceptible to cold.^{7,8} Individuals with disabilities may not voice their discomfort or may not be able to rectify the situation themselves.

Older adults experience less thirst, therefore they have an increased risk for dehydration and heat stroke.⁸ The risk for older adults with a developmental disability may be increased as they may have difficulty drinking² and may also avoid drinking in an effort to manage incontinence.

- Provide health promotion on the importance of sunscreen and not staying out in the sun for long periods.

- Ensure that carers are aware of the importance of monitoring an individual's body heat, and avoidance of long periods unattended in either the sun or shade.
- Help carers understand the importance of ensuring that the individual is warmly/coolly dressed as appropriate and that the need for more or less clothing can change quickly, eg moving from a sunny verandah into the house.
- Ensure that the individual or carers understand the importance of adequate fluid intake during warm weather.

CONSTIPATION

Many individuals with a developmental disability have poor bowel function as a result of poor toileting habits, lack of dietary fibre, inadequate intake of liquid, inactivity or medications, eg phenothiazines, verapamil.^{1,8} The general population tends to lose bowel motility in the ageing process, thus individuals with a developmental and/or physical disability are at risk of severe problems with constipation that can result in both physical and behavioural problems.

Educate the individuals and carers on the importance of exercise, adequate intake of dietary fibre and fluid. Assisting the individuals to develop regular bowel habits and monitoring bowel output regularly are also important. A change in bowel habit might be an indication of the development of bowel pathology. See the chapter, Adult Healthcare, p.47, for specific therapies.

URINARY INCONTINENCE

Urinary incontinence is very frequent in older age groups, but is **not** part of the normal ageing process. It is usually caused by a treatable medical problem such as an infection, although it is commonly mistaken for a behavioural problem, eg attention-seeking behaviour. Communication difficulties, mobility and cognitive problems complicate management.

For assessment and management of urinary incontinence, see the chapter, Adult Healthcare, p.47.

CARDIOVASCULAR AND CEREBROVASCULAR DISEASE

The incidence of cardiovascular and cerebrovascular disease in individuals with a developmental disability (excluding people who

have Down syndrome) appears similar to that of an ageing population without developmental disability. Most common are congestive cardiac failure, ischaemic heart disease and cerebrovascular accident. However, the incidence of hypertension is lower.

- Manage cardiovascular problems as for older people without disability.
- Identify cardiovascular risk factors.
- Provide regular physical assessments, especially blood pressure and obesity.
- Implement health promotion, eg weight control through dietary and nutritional advice and exercise.

Be Aware

Obstacles such as communication difficulties and polypharmacy may mask the underlying diagnosis. Accurate diagnosis and management can be difficult.

Symptom presentation can be altered by developmental disability.

EPILEPSY

Persons with a lifelong history of epilepsy and antiepileptic therapy are at increased risk of osteoporosis and consequently fractures.¹ Drug interactions can affect therapeutic blood levels. Phenytoin can cause folate deficiency.

For management guidelines see the chapter, Epilepsy, p.131.

- Monitor medication by serum levels and minimise adverse reactions.
- Educate the individuals and carers on the importance of weight-bearing exercise.
- Educate the individual and carers on the importance of adequate vitamin D intake.
- Ensure that the individual has adequate calcium intake.
- Provide appropriate treatment of osteoporosis after diagnosis.

CONFUSION

Acute confusional states are common in ageing individuals with an intellectual disability. Many conditions can present as confusion including depression,¹ delirium, dementia and pain.

Delirium resulting from acute illness such as infection, myocardial infarction, or drug toxicity, can be mistaken for a behavioural problem by carers and staff. Evaluation of dementia or new cognitive impairments is more difficult secondary to underlying or baseline intellectual impairment. Rate of onset of the confusional state, attention to acute illness and associated features helps in accurate diagnosis.

- Establish whether the confusion is of recent onset or developed over a longer period of time.
- Evaluate medication levels.
- Screen for acute illness, metabolic disorder, infections, myocardial infarction, cerebrovascular accident, thyroid deficiency and vitamin B₁₂ deficiency.
- Assess for slow onset of global impairment that may indicate dementia, taking into account baseline intellectual ability.
- Assess for depression, with attention to mood, appetite and level of activity.
- Refer for neuropsychological assessment for in-depth evaluation if necessary.
- Refer to Aged Care Assessment Team or Aged Psychiatry Assessment and Treatment Team for specialist evaluation if necessary.

GRIEF, BEREAVEMENT AND DEPRESSION

Old age is a time of loss and bereavement for people with a developmental disability^{3,9} just as for those without a disability.^{4,7}

The prevalence of psychiatric illness in people with an intellectual disability is known to be high, and people with an intellectual disability appear to be particularly vulnerable to depressive illness.

- Adults with developmental disabilities may experience long periods of grief and depression, particularly at a time of loss and this may not be recognised.
- Older people with an intellectual disability may verbalise that all is well when it is not and carers often take such statements at their face value.
- Atypical presentations are common and accurate diagnosis of depression can be missed, eg behaviour considered to be a form of challenging behaviour.⁹
- The spectrum of depressive disorders range from minor depressive symptoms to life threatening depressive illness.⁹

- The suicide rate in Australia is highest for men aged 75 and over but little is known of the potential suicidal behaviour or suicidal feelings of adults with a developmental disability.¹⁰

Be Aware

It may be difficult to differentiate between depression, early stages of dementia and individuals that are reacting to sensory and/or environmental deprivation or sudden life changes. Dementia, particularly Alzheimer's disease, may be overdiagnosed while depression may be underdiagnosed.⁹

ASSESSMENT

The following issues should be investigated.

- Rate of onset (dementia is slow, depression can be fast).
- Whether the individual has suffered recent loss, including bereavement, change of living arrangements, change of carers, or losses that may have occurred at a much earlier age.
- Whether there is a history of childhood abuse.
- Whether there is a history of substance abuse.
- Previous history of depression or family history of mental illness.
- Review current medication.

MANAGEMENT

- Explain to the family/carers the different stages of grief and how they may be manifested.
- Encourage family/carers to allow the individual to express his/her grief and if necessary refer to an experienced grief counsellor.
- Provide appropriate antidepressant medication.
- Monitor any prescribed medication carefully and ensure that no other substances are being taken that may react adversely with new medication.
- Provide appropriate referral to a multidisciplinary team skilled in managing psychiatric disorders in older disabled people, such as the Aged Psychiatry Assessment and Treatment Team (formerly the Psychogeriatric Assessment).
- If necessary, refer to a psychiatrist (preferably one experienced in working with people with intellectual or developmental disabilities).

ACCESS AND ENVIRONMENT

Although matters relating to access are traditionally dealt with by occupational therapists and physiotherapists, the doctor may need to advise individuals and their carers on environmental modifications that will improve the quality of life of an ageing person with a developmental disability. The following points may require consideration.

LIGHTING

Older individuals typically require more light to see adequately but are susceptible to glare. Blinds and curtains that diffuse light may be helpful. Shiny polishes and paints should be avoided, especially in kitchens and bathrooms.⁸

NOISE

Background noise may be a problem, particularly in institutions or shared houses. Conversations in a noisy environment (eg with music playing or noisy appliances) should be avoided if the individual has any hearing impairment.

MANUAL DEXTERITY

Any decrease in manual dexterity may make opening bottles, jars and doors more difficult. This applies to the ageing carer just as much as to the individuals with a developmental disability. Opening childproof medication or blister packs may be problematic and in such cases the doctor can request medication is put in a Dosette[®] or similar container.

MODIFICATIONS TO THE ENVIRONMENT

Environmental modification and simple safety measures (eg bathroom doors that open outwards, the addition of ramps and rails, equipment such as a wheelchair or scooter) may make the difference between a person remaining at home or being moved into institutional care. There is an obligation to support the person with a developmental disability or their ageing carer in obtaining environmental modification and equipment that will enable them to have an optimal quality of life.

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