

# Aging with mental retardation

## Increasing population of older adults with MR require health interventions and prevention strategies

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The second half of the 20<sup>th</sup> century vastly increased the life span of those with mental retardation (MR). Today the average life expectancy of older adults with MR is 66.1 years and growing. As these individuals age, they present increasing challenges to the clinician. Increased rates of hearing and visual impairments, obesity, and osteoporosis as well as high rates of dementia with associated psychiatric problems make care for the aging individual with MR complex. Primary care providers need to be aware that elders with MR will comprise an increasing part of their practice, and that they present with many chronic conditions.

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Improvements in institutional care and residential placements as well as advances in assistive technology and public health programs have enhanced the quality of life for individuals with mental retardation (MR). Indeed, gains in life expectancy for those with MR are one of the clear public health success stories for the second half of the 20th century. Currently, the average life expectancy of persons with MR is 66 years.<sup>1</sup> However, younger adults with MR can expect to live as long as their non-MR peers—76.9 years.<sup>1</sup> Individu-

als with Down's Syndrome (DS), the most common cause of MR in America, have experienced a doubling in life expectancy. In 1983, the average lifespan for an individual with DS was 25 years; by 1997, it had increased to 49 years.<sup>2</sup>

Because of increased longevity, individuals with MR confront the same chronic illnesses (ie, cardiovascular disease, cancer, diabetes) that affect the general aging population. Management of these illnesses is typically accomplished with caregiver supervision or, in some cases, independently. In either situation, providers will need to allow additional time for health education and health maintenance practices with this population. These individuals experience an increased prevalence of certain conditions including thyroid disease, seizure disorders, mental health disorders, obesity, ocular anomalies, and poor oral health.<sup>3</sup> Health interventions and prevention strategies exist to address the chronic illnesses and special needs of the MR patient, but not everyone benefits equally or has access to health care. Those with MR are less likely to receive adequate medical services

compared with those in the general population, even though they have more physical and chronic health problems.<sup>1,4</sup>

The emerging population of older patients with MR will add costs to an already strapped healthcare system. An analysis of costs in the Netherlands attributes 9% of all disease-specific costs of health care to MR.<sup>5</sup> Primary care providers (PCPs) therefore must be familiar with managing the health care needs of this “new” geriatric population. The challenge is to enhance the overall functioning of the aging individual with MR, while allowing them to retain independence for as long as possible. This article will identify common health problems in elders with MR, especially those with DS.

### Systemic age-related changes

**Visual impairment** Visual impairment, including cataracts, keratoconus, refractive errors, strabismus, nystagmus, corneal abnormalities, and hyperplasia are common in patients with MR. Uncorrected refractive errors are identified as the most common cause of decreased vision within this population.<sup>1</sup> While these are typical age-related changes, those with MR may not receive routine eye care. Routine annual eye examinations are recommended for all adults over age 65 and include visual acuity and glaucoma screening.<sup>6</sup> Moreover, severity of MR is associated with an increased prevalence of visual impairments.<sup>7</sup>

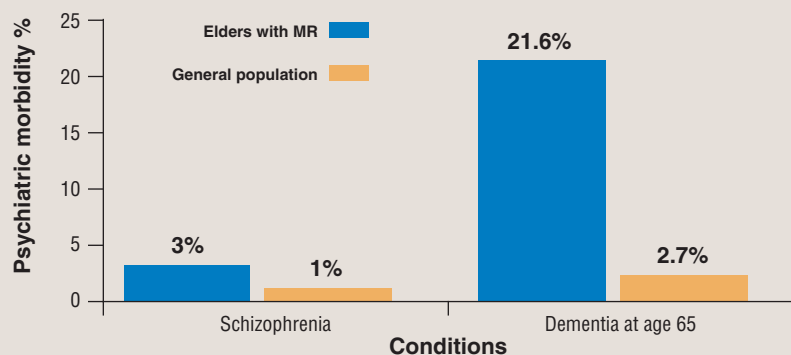
Adults with DS are at higher risk for

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**Figure 1 Psychiatric morbidity in aging populations**



Source: Created for Geriatrics by K Fisher and P Kettl, based on information in references 3, 22, and 23

vision problems and experience these changes (including cataracts, refractive errors, retinopathy, and glaucoma) at earlier ages (ie, >age 35). In one study examining the vision of patients with DS between ages 50 and 59, approximately one-half had moderate to severe visual loss.<sup>8</sup> Another survey found that 50% of those with DS over age 50 had cataracts,<sup>9</sup> while in the non-MR population only mild lens opacities are typically evident at age 50.<sup>10</sup>

**Hearing loss** Individuals with DS are also prone to hearing loss and may experience age-related loss by age 50. For example, 70% of institutionalized DS individuals age 50 to 59 had moderate, severe, or very severe hearing loss on health screening.<sup>7</sup> By comparison, hearing loss affects the non-MR population much later, ie, only 25% of adults age 65 to 74 experience hearing loss, which increases to 50% for those over age 85.<sup>6</sup>

**Oral health** Poor oral health and limited access to dental care can impact the quality of life for those with MR, contributing to difficulties with eating, speech, pain, and sleep. Studies show that individuals with MR have a higher prevalence of dental caries and other periodontal diseases compared with the general population.<sup>1</sup> Acquiring dental care for this population continues to be a challenge, as individuals may not always cooperate in a dental chair and often have poor insurance coverage. A study of 116 elder institutionalized residents with mental or physical disabilities examined the ef-

fectiveness of a dental health promotion program. It showed that caries incidence decreased, but plaque build-up and oral *streptococci* colonization were not affected.<sup>11</sup>

If problems with vision, hearing, and oral health among older persons with MR are not corrected, managing other health problems becomes more difficult. Attention to routine screening for these problems is critical. **We recommend dental examinations continue throughout one's lifetime as in the non-MR population, and that annual hearing and visual screening be done in this population beginning at age 45.**

### Health conditions

Thyroid abnormalities are more common in those with MR. Increased thyroid stimulating hormone (TSH) was found in 48% of persons with DS living in an institutional setting.<sup>8</sup> In another study, 50% of those with DS had never had a thyroid test, despite a known higher prevalence of thyroid dysfunction with DS.<sup>12</sup> **We recommend annual thyroid screening for those with DS over the age of 40.**

Obesity, a major risk factor for diabetes and heart disease, is more prevalent among individuals with MR compared with the general population.<sup>13</sup> A study of adults with DS found 31% of males and 22% of females were overweight, defined as body mass index (BMI) 25–29, while 48% of males and 47% of females were obese (BMI ≥ 30). Causes of obesity in this population are

thought to be multifactorial: poor eating behaviors, high/inappropriate caloric intake, depressed metabolic rate, reduced exercise, hypotonia, and endocrine abnormalities.<sup>14</sup>

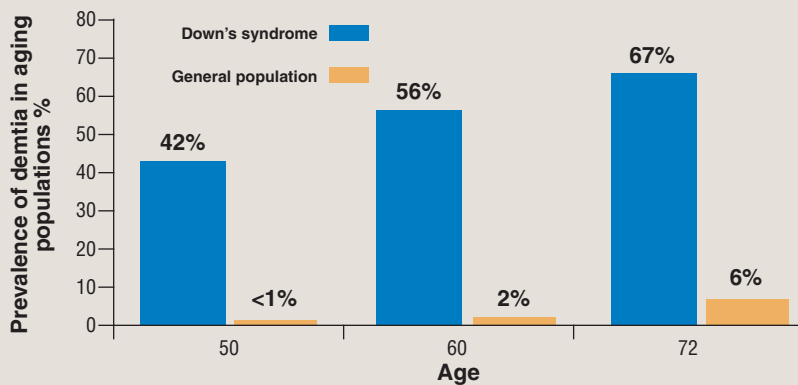
Cardiovascular disease presents at younger ages in this population, and prevalence of disease is predicted to increase with aging. Increased risk factors for cardiovascular disease were found in a study of 202 adults with MR ages 20 to 50. The study group averaged 5.4 medical disorders per person including: hypertension, obesity, epilepsy, asthma, and visual (including blindness) and hearing conditions. Fifty percent of the medical disorders identified on physical examinations had previously been undetected in the study group.<sup>15</sup> Moreover, this study found that even when chronic conditions were recognized in this group, they were not being appropriately managed. Other studies have identified untreated congenital heart disease, acquired heart disease, pulmonary hypertension, and chronic pulmonary interstitial disease in aging individuals with DS.<sup>9</sup>

Osteoporosis may be a larger problem in those with severe MR. One survey of 23 bedridden MR adults with proper nutrition including good calcium intake, found low bone mineral density and low vitamin D levels. Those over age 50 were especially more likely to have long bone fractures and vertebral fractures.<sup>16</sup>

Individuals with DS are also more likely to experience complications of bone disease, including osteoarthritis. In one residential center, one-third of individuals with DS had osteoarthritis, one-half had fractures of the long bones, and 8% had untreated atlanto-occipital instability.<sup>9</sup>

High rates of osteoarthritis and bone fractures in those with MR can lead to unexplained agitation, decreased activity, and social interaction. As cognitive impairment increases, reporting of pain decreases.<sup>17</sup> When caring for the aging patient with MR, a suspicion of pain—especially joint pain—should be prominent and factored in the differen-

**Figure 2 Prevalence of dementia in aging populations**



Source: Created for Geriatrics by K Fisher and P Kettl, based on information in references 8, 9, 21, and 24

tial diagnosis of agitation or violence in this group.

## Behavioral problems

The recognition of mental health disorders is difficult in individuals with MR, due in part to atypical symptom presentation, communication difficulties, and “diagnostic overshadowing.” With diagnostic overshadowing, abnormal symptoms and behaviors are attributed to mental retardation, while coexisting psychopathology is often overlooked.<sup>15</sup> Severe and persistent mental illnesses, including mood disorders or schizophrenia, are more common than in the general population, as are behavioral symptoms, such as agitation or aggression, sleep disturbances, anxiety disorders, and self-injurious behaviors. In long-term care facilities, residents with MR are more likely to be on psychotropic medications than residents without intellectual disability.<sup>18</sup>

As individuals with MR age, they often continue to receive psychotropic medications. While these medications may be required chronically, some, especially when used in combination with other medications, could be discontinued. Reviewing all medications of these patients periodically—particularly antipsychotics and anticonvulsants given for agitation—will help to promote health and minimize side effects.<sup>19</sup>

Patients with mental disabilities often do not receive appropriate psychiatric care<sup>20</sup> and little data is available

on psychiatric disorders specific to elders with MR. One recent study compared psychiatric disorders in older and younger adults with learning disabilities. Researchers found that older adults with MR are more likely to have psychiatric symptoms than their younger peers. Fully 68.7% of those over age 65 had some kind of psychiatric morbidity compared with 47.9% of those who were younger.<sup>21</sup> Similar rates of schizophrenia (about 3% in both groups) and past history of depression (about 9%) were seen in both groups. However, 21.6% of the elder group also had dementia, compared with only 2.7% of the younger group.<sup>22</sup> Thus, much of the difference in psychiatric morbidity between the two groups is accounted for by the higher risk of dementia and its associated psychiatric symptoms. Figure 1 shows psychiatric morbidity in elders with mental retardation compared with the general population.<sup>23</sup>

## Dementia

Frequency of dementia in individuals with MR is unknown. Primary care physicians should interview caregivers to see if there is a change over time in the patient’s ability to care for ADLs, or in pleasurable activities, such as playing games. More formal cognitive screening tools, such as the Mini-Mental Status Exam (MMSE) can be useful in high-functioning adults with mild MR, especially following declines over time.

Initially, it was thought that virtually

all individuals with DS would develop Alzheimer’s disease (AD).<sup>24</sup> While those with DS do suffer from dementia more often than their peers with other kinds of MR and have a much higher rate than the general population (Figure 2), the disease is not universally present in those with DS.

A survey of 134 adults with MR of all types (age ≥65) showed that 20% had dementia.<sup>21</sup> As age advances, so does the risk of dementia. By age 88, 52% of adults with non-Down’s MR had developed dementing illnesses.<sup>25</sup> Psychotic symptoms, particularly delusions of theft or persecution, complicate the task of caring for older adults with MR.<sup>21</sup> Other psychiatric symptoms of dementia, including aggression, sleep disturbance, hallucinations, and wandering, occur commonly.<sup>26</sup>

Two separate surveys show the rate of dementia in individuals over age 50 with DS to be 42%.<sup>8,9</sup> Before age 50, rates of dementia in DS varied widely according to the study, with remarkably high rates of dementia in aging individuals with DS. Dementia is found in 56% of those over age 60 with DS, and in 67% by age 72.<sup>25</sup> Patients with DS and dementia are more likely than their peers with MR and dementia to suffer from low mood, restlessness, disturbed sleep and hallucinations, but are less likely to be aggressive than are other patients with dementia and MR.<sup>26</sup> Antidepressants, antipsychotics, and mood stabilizers are routinely used in this population to treat the behavioral sequelae of dementia.


The use of cholinesterase inhibitors has been investigated for treatment of Alzheimer’s dementia in those with DS. In a 5-month study, donepezil significantly improved cognitive scores in the study group.<sup>27</sup> Similarly, in a 24-week trial of donepezil in those with Alzheimer’s dementia and DS, patients treated with donepezil had less deterioration in dementia rating scales, but no clear change in behavioral symptoms.<sup>28</sup> However, in a 12-week trial, no clear improvement was demonstrated in DS patients treated with donepezil.<sup>29</sup> The use of cholinesterase inhibitors may

lead to lessened decline in those with DS and Alzheimer's disease.

An analysis of health care costs in the Netherlands for those with intellectual disability shows that there are 2 peaks of expenditures. The first occurs between ages 25 and 35, and the second occurs between ages 75 and 85. Researchers observe, "The costs will inevitably increase because of the aging of the population and increasing life expectancy among people with disabilities."<sup>5</sup>

Given this added burden, it is imperative that behavioral symptoms of dementia be treated early in aging patients with MR. No data is available on the standard treatments for AD in this population. However, the prudent clinician should make use of these treatments in those with MR as in any other patient.

## Conclusion

Deinstitutionalization has moved individuals with MR into community-based systems and primary care practices. As such, more comprehensive routine screening and interventions for medical and mental health disorders have become necessary. Lingering medical and psychiatric problems combined with aging and dementia present a challenge for physicians. Clearly, more research is needed to better define health care needs and improved treatment paradigms and service systems. Physicians are reminded that treatment of individuals with MR requires input from providers from multiple disciplines, including special educators, behavior therapists, and occupational therapists. 

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