

Disabilities

Disabilities may be developmental or may result from life experiences and may be permanent or temporary. Developmental disabilities are chronic conditions that initially manifest in persons ≤ 18 y old and result in impairment of physical health, mental health, cognition, speech, language, or self-care. It is estimated that the average lifetime economic costs per person are \$1,014,000 for mental retardation, \$921,000 for cerebral palsy, \$417,000 for hearing loss, and \$566,000 for vision impairment.²⁶¹

In Missouri it is estimated that 20.2% of the adult population suffers from at least one disability with the prevalence higher among non-Hispanic whites (20.5%) than non-Hispanic blacks (18.8%).²⁶² The prevalence of disability rises with age.

Census 2000 identified 85,046 non-institutionalized Kansas City residents ≥ 5 years of age (21.0%) who had a disability (Table 90). Of those 16-64 years of age who had a disability, 56.7% were employed.

Table 90 Disabilities by age group and employment, Kansas City, Mo, Census 2000 data

Age Group			Employment		
Age-Group	Disability	No Disability	Type of Disability	Disabilities Tallied	Employed 16-64 y
5-15 y	3,837	65,009	Sensory	14,025	3,525
16-20 y	4,875	22,525	Physical	35,017	7,071
21-64 y	54,899	204,125	Mental	20,072	3,855
65-74 y	9,496	17,552	Self-care	11,347	1,291
75+ y	11,939	10,477	Go-outside-home	31,379	9,403
Total	85,046	319,688	Employment	38,847	24,837

Functional limitations among Americans 55 to 84 years of age have been found to be inversely related to social class across the full spectrum of the socioeconomic gradient.²⁶³ This did not extend beyond 85 years of age. Females are more likely than males to experience functional difficulties and these increase with age.²⁶⁴ Obese individuals report more difficulties than those with overweight individuals.

²⁶¹ Honeycutt A et al. Economic costs associated with mental retardation, cerebral palsy, hearing loss, and vision impairment – United States, 2003. *MMWR* 2004;53:57-59.

²⁶² Centers for Disease Control and Prevention. *Disability and Health State Chartbook 2006*. www.cdc.gov

²⁶³ Minkler M et al. Gradient of disability across the socioeconomic spectrum in the United States. *New Engl J Med* 2006;355:695-703.

²⁶⁴ Ervin RB. Prevalence of functional limitations among adults 60 years of age and over: United States, 1999-2002. *Vital Health Stat* 2006;375. www.cdc.gov/nchs

Hearing loss

There are many causes of hearing loss with some being genetic and others being environmental causes such as infections, head trauma, subarachnoid hemorrhage, drug toxicity, and exposure to sounds.

Genetic causes account for 50-60% of childhood hearing loss in developed countries.²⁶⁵ Five of every 1,000 babies born in the US have some degree of hearing loss. Congenital hearing loss is more common than cleft lip or Down's Syndrome. Early identification of hearing loss and enrollment in appropriate intervention services during the first 6 months of life provides infants with a greater chance of developing speech and language consistent with their hearing peers. However, among children with bilateral permanent hearing loss, early detection of hearing impairment is associated only with higher scores for language and not speech in mid-childhood.²⁶⁶

With the advent of national newborn screening, the average age at which hearing loss is confirmed has dropped from 24-36 months to 2-3 months.²⁶⁷ Infants in whom remediation is begun within 6 months are able to maintain language, social and emotional development that is appropriate for their physical development, in striking contrast with those whose hearing loss is first detected after 6 months of age.²⁶⁸

Missouri mandated newborn hearing screening as of January 1, 2002. Approximately 1.68 per 1,000 newborns screened are found to have hearing loss. Newborns with hearing loss can be enrolled in an early hearing intervention program. Newborn hearing screening data specific for Kansas City is not available.

Children need to have their hearing periodically assessed. About 10% of children fail hearing screening tests at well-child visits, but providers neither recheck nor refer more than half of these children.²⁶⁹ This is important because, according to 2006 survey by the American Speech-Language Hearing Association, high school students are more likely than adults to say they have experienced 3 of the 4 symptoms of hearing loss, namely, turning up the television or radio volume, asking people to repeat what they say during conversations, and ringing in the ears (www.zogby.com). Only 49% of high school students report not experiencing any of these symptoms compared to 63% of adults. Hearing loss was attributed to the use of personal electronic devices and head phones.

Vision loss

According to the American Academy of Ophthalmology, more than 43 million Americans will

²⁶⁵ Morton CC, Nance WE. Newborn hearing screening – a silent revolution. *New Engl J Med* 2006;354:2151-2164.

²⁶⁶ Kennedy CR et al. Language ability after early detection of permanent childhood hearing impairment. *New Engl J Med* 2006;352:2131-2141.

²⁶⁷ Harrison M et al. Trends in age of identification and intervention in infants with hearing loss. *Ear Hear* 2003;24:89-95.

²⁶⁸ Yoshinaga-Itano C. Early intervention after universal neonatal hearing screening: impact on outcomes. *Ment Retard Dev Disabil Res Rev* 2003;9:79-88.

²⁶⁹ Halloran DR et al. Hearing screening at well-child visits. *Arch Pediatr Adolesc Med* 2005;159:949-955.

develop age-related eye diseases by 2020, and the majority of those at risk are unaware (www.geteyesmart.org). The Academy's Eye-Smart campaign recommends that all adult be screened for eye disease starting at age 40, when symptoms and vision changes typically occur. The campaign focuses on five major eye diseases: age-related macular degeneration, cataracts, diabetic retinopathy, dry eye, and glaucoma. The Academy estimates that eye diseases cost the nation \$51.4 billion annually, plus Medicare costs for indirect eye disease expenses were estimated at \$2 billion.

Approximately 14 million persons in the US who are ≥ 12 y of age have visual impairment (defined as distance visual acuity of 20/50 or worse), and 11 million individuals could have their vision improved to 20/40 or better with refractive correction.²⁷⁰ Also, 3.3 million Americans >40 y old (or 1 in 28 individuals) are blind or have low vision, a non-correctable impairment that interferes with the ability to perform everyday tasks. According to the National Eye Institute, this number is expected to rise to 5.5 million by 2020 as the baby boomer generation ages.²⁷¹ This of major concern since poor vision may speed mental decline in the elderly.²⁷² Cataract surgery may prevent falls and fractures among the elderly.²⁷³

The Los Angeles Latino Eye Study found that visual impairment afflicts Hispanics more than those from other racial and ethnic groups (www.avro.org). However, the causes of vision loss vary by race and ethnicity. The leading cause in non-Hispanic whites is age-related macular degeneration (AMD), while most non-Hispanic blacks lose their sight from glaucoma or cataracts. AMD is strongly associated with increasing age, particularly after age 60 and the risk of developing ADM is more than twice as high for smokers as non-smokers.²⁷⁴ AMD rises dramatically in whites over age 80; >10% of non-Hispanic white >80 y old has vision loss from AMD. Glaucoma is almost three times as common in non-Hispanic blacks as in non-Hispanic whites. The prevalence of glaucoma rises rapidly in Hispanics over age 65. Cataract is the leading cause of low vision among all Americans, responsible for about 50% of all cases. One in every 12 people with diabetes ≥ 40 y old has vision-threatening diabetic retinopathy.

The American Optometry Association recommendations for eye examinations for children and adults are presented in Table 91. In a health assessment survey commissioned by the Kansas City Health Department during 2004, a quarter of respondents reported not receiving routine eye care.²⁷⁵ Forty-five percent of respondents received routine eye care from optometrists, 21% from ophthalmologists, 7% from community health centers, and 2% from other sources. Sixty-percent had their eyes examined within the preceding two years and 80.5% within the preceding 5 years.

²⁷⁰ Vitale S et al. Prevalence of visual impairment in the United States. *J Am Med Ass* 2006;295:2158-2163.

²⁷¹ The Eye Disease Prevalence Research Group. Causes and prevention of visual impairment among adults in the United States. *Arch Ophthalmol* 2004;122:477-485.

²⁷² Reyes-Ortiz CA et al. Near vision impairment predicts cognitive decline: data from the Hispanic Established Populations for Epidemiologic Studies of the Elderly. *J Am Geriatr Soc* 2005;53:681-686.

²⁷³ Harwood RH et al. Falls and health status in elderly women following first eye cataract surgery: a randomised controlled trial. *Br J Ophthalmol*. 2005;89:53-9.

²⁷⁴ Evans JR et al. 28,000 cases of age related macular degeneration causing visual loss in people aged 75 years and above in the United Kingdom may be attributable to smoking. *Br J Ophthalmol* 2005;89:550-553.

²⁷⁵ Kansas City Health Department. 2004 Health Assessment Survey. www.kcmo.org.

Table 91 American Optometry Association recommendations for eye examinations

	Age	Frequency
Infant/Toddler	0 to 24 months	By 6 months of age
Preschooler	2 to 5 years	At 3 years of age
School age	6 to 18 years	Before 1 st grade and every 2 years thereafter
Adults	19 to 40 years	Every 2 to 3 years
Adults	41 to 60 years	Every 2 years
Adults	61+	Every year

According to the American Optometric Association's InfantSEE Program, 1 out of every 20 infants may be at risk for abnormal vision (www.infantsee.org). The Centers for Disease Control and Prevention established 3 vision related Yr 2010 objectives for children: 1) reducing visual impairment and blindness, 2) increasing the proportion of preschool children who receive vision screening, and 3) increasing the use of protective eyewear in recreational activities and hazardous situations around the home.²⁷⁶

Data on the prevalence of vision loss for the Kansas City residents could not be located.

²⁷⁶ Cotch MF, Janiszewski R. Visual impairment and use of eye-care services and protective eyewear among children – United States, 2002. *MMWR* 2005;54:425-429.