

**Summary of Major Mobility Disability Research Methodologies**  
**Dorothy I. Riddle, Ph.D., CMC**  
**January 2017**

The design of research on disabilities has shifted in the past 15 years from a medical model that categorized people based on the type of deficiency or impairment to a social model that focuses on identifying those at greater risk than the general population of experiencing limited social participation because of difficulties with certain basic actions. The social model assumes that disability is not inherent to the person but rather is a social disadvantage that results from the interaction between functional limitations and a lack of accommodation in the environment. This shift has been given impetus by the adoption of the UN Convention on the Rights of Persons with Disabilities and the need to gather data to measure the degree of equalization of opportunities between those with and without disabilities.

The International Classification of Functioning, Disability and Health (ICF) is now the underlying common framework for the work described below and portrays disability as a complex interaction between a body impairment, an activity limitation, and a participation restriction, affected in addition by environmental and personal factors.

Regarding distances walked, 100 meters is the equivalent of 328 feet, half a kilometer is the equivalent of 1,640.5 feet, and one kilometer is 3,281 feet. The Washington Group's Extended Question Set on Functioning used football fields and city blocks to describe these distances.

**World Health Organization: Model Disability Survey (MDS)**

<http://www.who.int/disabilities/data/mds/en/>

The MDS is a general population survey designed to gather data on all aspects of disability such as prevalence of impairments, activity limitations, participation restrictions, related health conditions, and environmental factors. It defines disability as "an outcome of interactions between a person with a health condition and various environmental and personal factors, rather than focusing only on a person's health or impairments."

Questions about a person's functioning with regard to mobility include the following, rated on a five-point scale from None to Extreme:

<b>I4002</b>	How much of a problem is standing for long periods such as 30 minutes for you?
<b>I4004</b>	How much of a problem is walking a short distance such as 100 m for you?
<b>I4005</b>	How much of a problem is walking a kilometre for you?

There is also a question under Health Conditions regarding stairs, rated on a five-point scale from No Difficulty to Cannot Do At All:

<b>WG3</b>	Do you have difficulty walking or climbing steps?
------------	---

The MDS also explores a range of environmental factors, the attitudes of others, issues in interpersonal relationships, and personal factors.

**World Health Organization: Disability Assessment Schedule 2.0 (WHODAS)**

<http://www.who.int/classifications/icf/whodasii/en/>

The WHODAS is a short generic assessment tool covering six domains of functioning, one of which is mobility, which comes in a 36-item and a 12-item version. Questions on “getting around” include the following, rated on a five point scale from None to Extreme/Cannot Do:

In the past 30 days, how much difficulty did you have in:		
36-item	12-item	
D2.1	S1	Standing for long periods such as 30 minutes?
D2.4	-	Getting out of your home?
D2.5	S7	Walking a long distance such as a kilometre?

The WHODAS 2.0 also includes general questions on participation in society, including the impact of both physical and attitudinal barriers.

### UN Statistical Commission, Washington Group on Disability Statistics

[https://www.cdc.gov/nchs/washington\\_group/index.htm](https://www.cdc.gov/nchs/washington_group/index.htm)

<http://www.washingtongroup-disability.com/>

The Washington Group is a UN city group formed in 2001 to develop cross-nationally comparable measures of disability. It first endorsed six questions on disability that can be added to general census surveys in order to measure difficulties the person may have doing certain activities because of a health problem (the WG Short Set). One of the questions relates to mobility:

3	Do you have difficulty walking or climbing steps?
---	---

The response is on a four-point scale: No-No Difficulty, Yes-Some Difficulty, Yes-A Lot of Difficulty, Cannot Do At All. Difficulty in standing is not measured.

An Extended Question Set on Functioning is in the process of being field tested. It contains the following eight questions on mobility, most of which use the same four-point rating scale as the WG Short Set:

MOB_1	Do you have difficulty walking or climbing steps? [4-point scale]
MOB_2	Do you use any equipment or receive help for getting around? [Yes/No]
MOB_3	Do you use any of the following? [list of mobility aids] [Yes/No]
MOB_4	Do you have difficulty walking 100 m on level ground without the use of an aid? [4-point scale]
MOB_5	Do you have difficulty walking half a km on level ground with the use of an aid? [4-point scale]
MOB_6	Do you have difficulty walking up or down 12 steps? [4-point scale]
MOB_7	Do you have difficulty walking 100 m on level ground when using an aid? [4-point scale]
MOB_8	Do you have difficulty walking half a km on level ground when using an aid? [4-point scale]

There are also questions about anxiety and depression, pain, and fatigue. Again difficulty in standing is not measured.

The Washington Group is an important part of the UN Disability Statistics Programme (<http://unstats.un.org/unsd/demographic/sconcerns/disability/>).

## U.S. Census Bureau

<https://www.census.gov/people/disability/>

The Census Bureau collects data on disabilities through two survey instruments: the American Community Survey (ACS) and the Survey of Income and Program Participation (SIPP). The ACS questions have changed from the 2008 census to focus on “ambulatory difficulties” (serious difficulties walking or climbing stairs) rather than the presence of a physical disability. The SIPP asks in addition about functional limits on walking or using stairs as well as the use of assistive devices.

The most recent comprehensive report is *Americans with Disabilities: 2010* in which data are reported as the difficulty being “severe” or “not severe.” The data tables include the percent of persons having difficulty with standing, even though standing is not included as part of the definition of a disability. Below are the data from that publications:

Difficulty with:	Total %	% Severe difficulty	% Not Severe
Walking	9.9%	5.4%	4.5%
Using stairs	9.2%	3.2%	6.0%
Standing*	10.0%	n/a	
% using a wheelchair	1.5%	n/a	
% using a cane/crutches/walker	4.8%	n/a	

\*Not part of disability definition

## Statistics Canada

<http://www.statcan.gc.ca/pub/89-654-x/89-654-x2016005-eng.htm>

<http://www5.statcan.gc.ca/olc-cel/olc.action?objId=89-654-X&objType=2&lang=en&limit=0>

<http://www.statcan.gc.ca/pub/89-654-x/89-654-x2016003-eng.htm>

The 2012 *Canadian Survey on Disability* (CSD) defines persons with a mobility disability as those who have difficulty walking on a flat surface for 15 minutes or have difficulty walking up and down a flight of 12 stairs *and* also have their daily activities limited because of these difficulties.

The Disability Screening Questions (DSQ) used in the Canadian Survey on Disability are based on the social model of disability. In identifying a disability, they take into account activity limitations and the frequency with which those limitations affect respondents’ daily lives. The DSQ are intended for use in various population surveys.

DSQ addressing physical disabilities include four types of disabilities: mobility, flexibility, dexterity, and pain. The initial filter question is:

<b>F2</b>	Do you have any difficulty walking, using stairs, using your hands or fingers, or doing other physical activities? [No/Sometimes/Often/Always]
-----------	--

The subsequent screening questions for mobility are as follows:

<b>S7</b>	How much difficulty do you have walking on a flat surface for 15 minutes without resting? [None/Some/A Lot/Cannot do at all]
<b>S8</b>	How much difficulty do you have walking up or down a flight of stairs, about 12 steps without resting? [None/Some/A Lot/Cannot do at all]

<b>S9</b>	How often does this difficulty limit your daily activities? [Never/Rarely/Sometimes/Often/Always]
-----------	---

Mobility disabilities were defined by Statistics Canada for the 2012 Canadian Survey on Disability using a combination of level of difficulty experienced and the frequency of activity limitation, giving the following matrix for definition:

<b>How much difficulty do you have...?</b>	<b>How often are your daily activities limited by...?</b>				
	<b>Never</b>	<b>Rarely</b>	<b>Sometimes</b>	<b>Often</b>	<b>Always</b>
<b>No difficulty</b>	No disability	No disability	Disability	Disability	Disability
<b>Some difficulty</b>	No disability	No disability	Disability	Disability	Disability
<b>A lot of difficulty</b>	No disability	Disability	Disability	Disability	Disability
<b>Cannot do</b>	No disability	Disability	Disability	Disability	Disability

Note that difficulties standing are not measured.