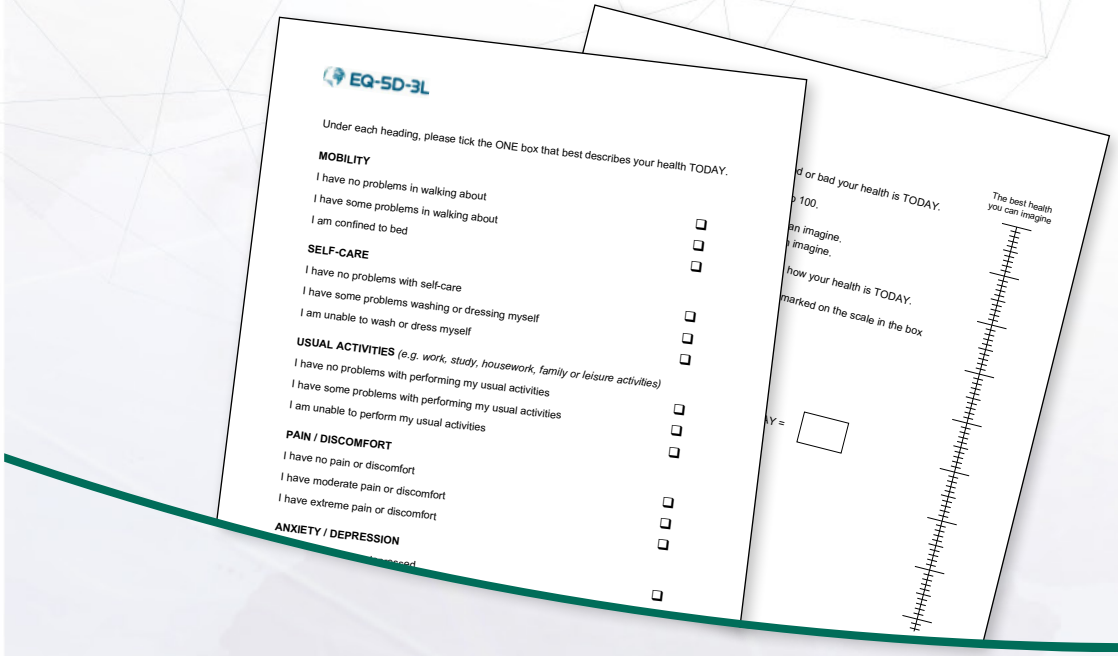
EQ-5D

EQ-5D-3L User Guide

Basic information on how to use the EQ-5D-3L instrument



Version 6.0
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SIGNIFICANT CHANGES
included in this update of the EQ-5D-3L User Guide

- A change to the EQ-5D-3L, reflected in this User Guide update, has been made to the **paper self-complete version**. The instructions and the EQ VAS scale have been harmonised to the EQ-5D-5L. In previous versions, the numerical scale straddled the VAS. In the latest version, the scale is now placed to the right of the VAS. This change harmonises the paper self-complete version of the EQ-5D-3L with the electronic and proxy versions of the EQ-5D-3L, as well as with the EQ-5D-5L. The previous paper self-complete version of the EQ-5D-3L VAS is provided in an annex of this User Guide for reference.
- Following the launch of the new EuroQol website – which contains regularly updated, detailed information about the EQ-5D – this update of the User Guide refers the user to relevant webpages, using hyperlinks, for the latest information on a given topic.

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How to obtain the EQ-5D: To register your interest in using the EQ-5D for your study/trial/project, please complete the registration form on the **EuroQol website**. The EuroQol Office will then contact you by e-mail and inform you about the terms and conditions that apply to your use of the EQ-5D, including licensing fees (if applicable).

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Table of contents

1. INTRODUCTION 4
   - 1.1 EUROQOL 4
   - 1.2 EQ-5D® 5
   - 1.3 EQ-5D-3L 6
   - 1.4 WHAT IS A HEALTH STATE? 9
2. DERIVING A HEALTH STATE USING THE EQ-5D-3L DESCRIPTIVE SYSTEM 10
3. SCORING THE EQ VAS 11
4. CONVERTING EQ-5D STATES TO A SINGLE SUMMARY INDEX 12
5. ORGANISING EQ-5D-3L DATA 15
6. PRESENTING EQ-5D-3L RESULTS 16
   - 6.1 HEALTH PROFILES 16
   - 6.2 EQ VAS 18
   - 6.3 EQ-5D INDEX 20
7. EQ-5D-3L TRANSLATIONS AND MODES OF ADMINISTRATION 22
   - 7.1 EQ-5D TRANSLATIONS 22
   - 7.2 MODES OF ADMINISTRATION 23
8. OTHER EQ-5D PRODUCTS 24
   - 8.1 EQ-5D-5L 24
   - 8.2 EQ-5D-Y (YOUTH) 25
9. HOW TO OBTAIN EQ-5D-3L 26
10. ADDITIONAL RESOURCES ON THE EUROQOL WEBSITE 27
11. ANNEX: PREVIOUS VERSION OF THE UK (ENGLISH) EQ-5D-3L PAPER SELF-COMPLETE (SAMPLE VERSION) 28
12. REFERENCES 31

1. Introduction

This guide provides users with basic information on how to use the EQ-5D questionnaire. Topics include administering the instrument, deriving the summary index, value sets, setting up a database for data collected using EQ-5D, presentation of EQ-5D results, modes of administration and translations. The guide should be used in conjunction with the EuroQol website, which contains regularly updated, detailed information about the EQ-5D (see below). Where appropriate, weblinks to relevant resources on the EuroQol website are provided in this guide. For further information or assistance regarding the use of the EQ-5D, you can also contact the EuroQol Office directly.

1.1 / EUROQOL

EuroQol consists of an association (the EuroQol Group) and a foundation (the EuroQol Research Foundation). The EuroQol Group is a not-for-profit organisation that supports, initiates and performs scientific research and development into instruments that describe and value health.
The EuroQol Group is responsible for the development of the EQ-5D, a preference-based measure of health status that is widely used around the world in clinical trials, population studies and real-world clinical settings.
The EQ-5D is recommended by several health technology assessment bodies internationally as a key component of cost-utility analysis.

The EuroQol Group consists of a large global network of experts, from a wide range of academic disciplines and countries, who are committed to ongoing research on the EQ-5D family of instruments.

The scientific expertise behind EuroQol is the EuroQol Group Association, an international network of multidisciplinary researchers dedicated to the measurement of health status. When established in 1987, the EuroQol Group originally consisted of researchers from Europe. Today, the EuroQol Group Association is a global network of more than 90 members from Africa, Asia, Europe, North America, Oceania and South America.

The EuroQol Group can be justifiably proud of its collective scientific achievements over the last 30 years. Research areas include: valuation, EQ-5D use in clinical studies and in population surveys, experimentation with the EQ-5D descriptive system, computerised applications, interpretation of EQ-5D responses, the role of EQ-5D in measuring social inequalities in self-reported health, and the measurement and valuation of health in younger populations.
The EuroQol Group has been holding annual scientific meetings since its inception in 1987.

EuroQol is a registered not-for-profit organisation that invests all income into EQ-5D research, education and user support.

The EuroQol Research Foundation is the single organisation that manages the distribution and licensing of the EQ-5D family of instruments worldwide. The EuroQol Group invests all income into EQ-5D research, education and user support.

The **EuroQol website** provides detailed information and latest developments about the EQ-5D, guidance for users, a list of available language versions and value sets by country/region, key EQ-5D references, frequently asked questions regarding the use of EQ-5D, EQ-5D registration process and forms, information about the EuroQol Group organisation and contact details.

1.2 / EQ-5D®

*EQ-5D is a standardised measure of health status developed by the EuroQol Group to provide a simple, generic measure of health for clinical and economic appraisal.**

The EQ-5D family of instruments have been developed to describe and value health across a wide range of disease areas. They are also frequently used in research into health in the general population. There are three versions of the instrument: EQ-5D-5L, EQ-5D-3L and EQ-5D-Y. For over 25 years, they have been widely used in clinical trials, population studies and in real-world clinical settings – and have proven to be valid, reliable and responsive in numerous conditions and populations.
The EQ-5D is used worldwide and has been translated into most major languages through a closely monitored translation process.

Each EQ-5D instrument comprises a short questionnaire that is cognitively undemanding, taking only a few minutes to complete.
The EQ-5D provides a simple descriptive profile and a single summary index value for health status that can be used in the clinical and economic evaluation of health care as well as in population health surveys. Designed for self-completion by respondents and available in both paper and digital versions, the EQ-5D is ideally suited for use in online or postal surveys, in clinics and in interviews (face-to-face or telephone). Proxy versions are also available for populations in which self-completion is not possible (see **Section 7.2**). Instructions to respondents are included in the questionnaire. Value sets for the EQ-5D-5L and -3L, for use in economic evaluation, are available in a large and growing number of countries (see **Section 4** for more information on converting EQ-5D states to a single index and the **EuroQol website** for more detailed information on valuation research).

* *Please note that 'EQ-5D' is not an abbreviation and is the correct term to use in print or verbally.*

1.3/EQ-5D-3L

The EQ-5D three-level version (EQ-5D-3L) was introduced in 1990. It is one of the most widely used instruments for measuring health-related quality of life. Currently, more than 180 official self-complete language versions of EQ-5D-3L are available (see Section 7).

The EQ-5D-3L essentially consists of two pages: the EQ-5D **descriptive system** (page 2 of the questionnaire) and the **EQ-5D visual analogue scale** (EQ VAS) (on page 3 of the questionnaire):

- The EQ-5D-3L descriptive system comprises the following five dimensions, each describing a different aspect of health: **MOBILITY**, **SELF-CARE**, **USUAL ACTIVITIES**, **PAIN / DISCOMFORT** and **ANXIETY/DEPRESSION**. Each dimension has three levels: no problems, some problems, extreme problems (labelled 1–3). The respondent is asked to indicate his/her health state by checking the box against the most appropriate statement in each of the five dimensions.
- The EQ VAS records the respondent's self-rated health on a vertical VAS where the endpoints are labelled 'The best health you can imagine' and 'The worst health you can imagine'. This information can be used as a quantitative measure of health outcome as judged by the individual respondents.

A sample version of the EQ-5D-3L Paper Self-Complete in English for the UK is provided on pages 7 and 8, illustrating the descriptive system and VAS scale (Figure 1). Demonstration self-complete electronic versions of the EQ-5D-3L are available on the EuroQol website.

SEVERITY LEVELS
for dimensions in the descriptive system

The labels 1–3 describe different severity levels of a dimension and are used to form part of a numerical description of a health state (see Section 1.4). They have no arithmetic properties and should **not** be used to derive a summary score. To derive the summary index score an appropriate value set is required, which provides values (weights) for each health state description according to the preferences of the general population of a country/region (see Section 4).

For the latest EQ-5D-3L product versions for different modes of administration and countries of interest, please check the **EuroQol website**.

Figure 1 / UK (English) EQ-5D-3L Paper Self-Complete (sample version)

Under each heading, please tick the ONE box that best describes your health TODAY.

MOBILITY

I have no problems in walking about ❑

I have some problems in walking about ❑

I am confined to bed ❑

SELF-CARE

I have no problems with self-care ❑

I have some problems washing or dressing myself ❑

I am unable to wash or dress myself ❑

USUAL ACTIVITIES (*e.g. work, study, housework, family or leisure activities*)

I have no problems with performing my usual activities ❑

I have some problems with performing my usual activities ❑

I am unable to perform my usual activities ❑

PAIN / DISCOMFORT

I have no pain or discomfort ❑

I have moderate pain or discomfort ❑

I have extreme pain or discomfort ❑

ANXIETY / DEPRESSION

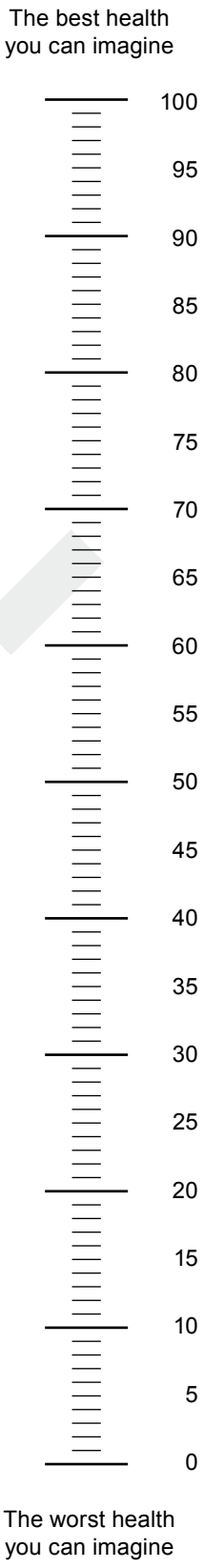
I am not anxious or depressed ❑

I am moderately anxious or depressed ❑

I am extremely anxious or depressed ❑

- We would like to know how good or bad your health is TODAY.
- This scale is numbered from 0 to 100.
- 100 means the best health you can imagine.
  0 means the worst health you can imagine.
- Mark an X on the scale to indicate how your health is TODAY.
- Now, please write the number you marked on the scale in the box below.

YOUR HEALTH TODAY = ☐



In previous versions of the EQ-5D-3L, the numerical scale straddled the EQ VAS (provided in the annex for reference). Users are encouraged to use the latest version of the EQ-5D-3L in new studies.

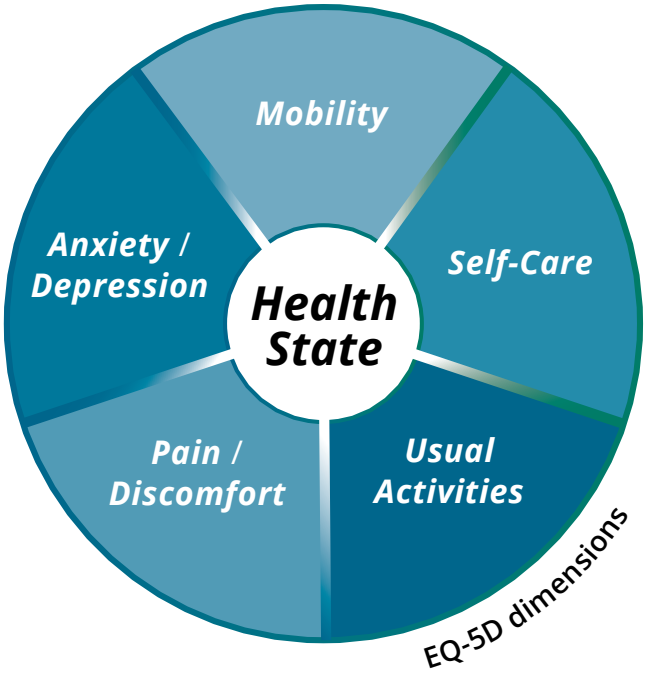
1.4 / WHAT IS A HEALTH STATE?

Each of the five dimensions comprising the EQ-5D descriptive system is divided into three levels of perceived problems:

LEVEL 1: indicating no problem
LEVEL 2: indicating some problems
LEVEL 3: indicating extreme problems

A unique health state is defined by combining one level from each of the five dimensions.

A total of 243 possible health states is defined in this way. Each state is referred to in terms of a 5-digit code. For example, working clockwise from the top of the diagram, state **11223** indicates no problems with mobility and self-care, some problems with performing usual activities, moderate pain or discomfort and extreme anxiety or depression, while state **11111** indicates no problems on any of the five dimensions.



2. Deriving a health state using the EQ-5D-3L descriptive system

This example shows how a health state is described using the EQ-5D-3L descriptive system:

Under each heading, please tick the ONE box that best describes your health TODAY.

MOBILITY

- I have no problems in walking about ☑
- I have some problems in walking about ☐
- I am confined to bed ☐

SELF-CARE

- I have no problems with self-care ☑
- I have some problems washing or dressing myself ☐
- I am unable to wash or dress myself ☐

USUAL ACTIVITIES (e.g. work, study, housework, family or leisure activities)

- I have no problems with performing my usual activities ☐
- I have some problems with performing my usual activities ☑
- I am unable to perform my usual activities ☐

PAIN/DISCOMFORT

- I have no pain or discomfort ☐
- I have moderate pain or discomfort ☐
- I have extreme pain or discomfort ☑

ANXIETY/DEPRESSION

- I am not anxious or depressed ☐
- I am moderately anxious or depressed ☑
- I am extremely anxious or depressed ☐

Levels of perceived problems are coded as follows:

☑ ☐ ☐ Level 1 is coded as a '1'

☐ ☑ ☐ Level 2 is coded as a '2'

☐ ☐ ☑ Level 3 is coded as a '3'

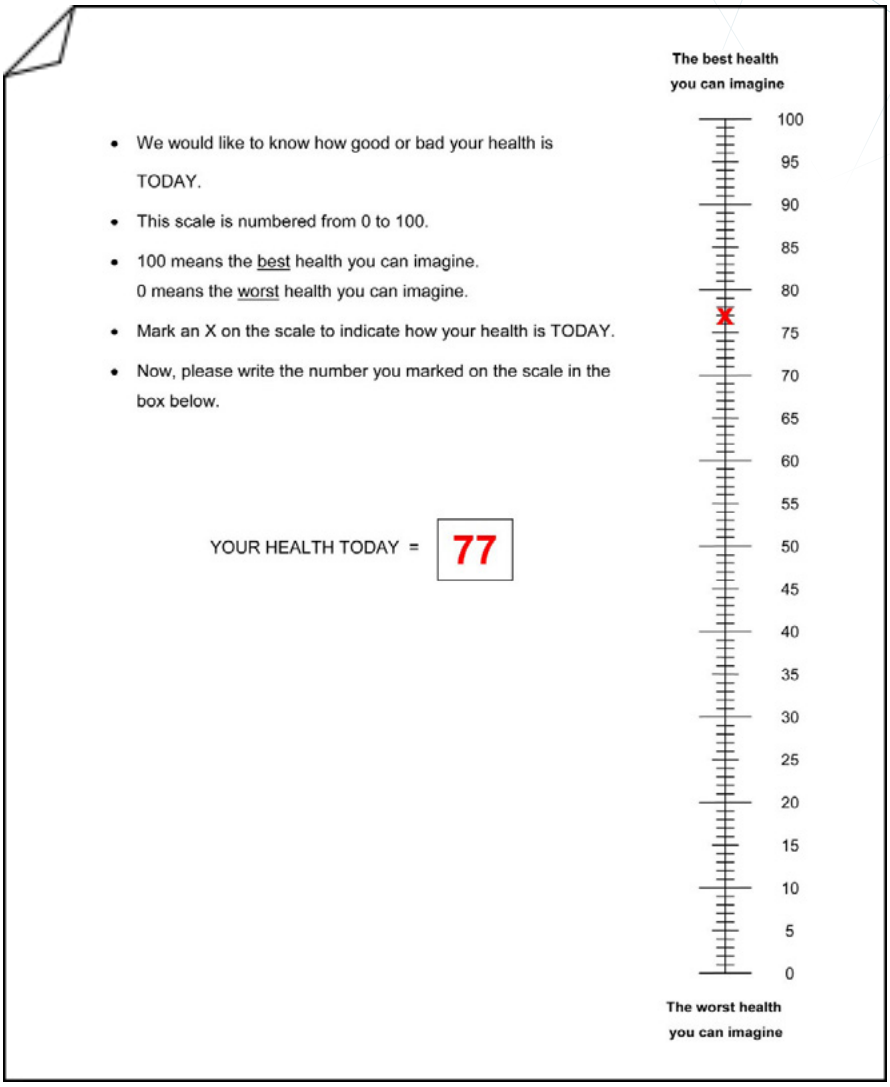
This example identifies the state 11232.

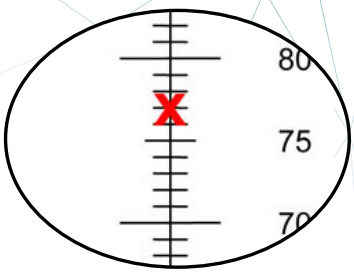
Notes:

- There should be only one response for each dimension.
- Missing values can be coded as '9'.
- Ambiguous values (e.g. two boxes are ticked for a single dimension) should be treated as missing values.
- This example is for the EQ-5D-3L Paper Self-Complete. Instructions for the interview and proxy versions are provided with those instruments.

3. Scoring the EQ VAS

This example from the EQ-5D-3L Paper Self-Complete shows how the EQ VAS is scored.





For example,
the response above
should be coded as 77

Notes:

- **Missing values** should be coded as '999'.
- If there is a discrepancy between where the respondent has placed the X and the number he/she has written in the box, the scoring convention is that administrators should use the number in the box. (This is only relevant for the paper self-complete version).

4. Converting EQ-5D states to a single summary index

The descriptive system element of the EQ-5D questionnaire produces a 5-digit health state profile that represents the level of reported problems on each of the five dimensions of health, e.g. 11223 (see Section 1.4). EQ-5D health states may subsequently be converted into a single summary number (index value*), which reflects how good or bad a health state is according to the preferences of the general population of a country/region. Index values are a major feature of the EQ-5D instrument, facilitating the calculation of quality-adjusted life years (QALYs) that are used to inform economic evaluations of healthcare interventions.

An EQ-5D summary index is derived by applying a formula that essentially attaches values (**weights**) to each of the levels in each dimension. The index can be calculated by deducting the appropriate weights from 1, the value for full health (i.e. state 11111). The collection of index values (weights) for all possible EQ-5D states is called a **value set**. Most EQ-5D value sets have been obtained from a standardised valuation exercise, in which a representative sample of the general population in a country / region is asked to place a value on EQ-5D health states using methods such as the time trade-off (TTO) valuation technique or the VAS valuation technique. This approach ensures that the values represent the societal perspective.

Value sets for EQ-5D-3L have been derived for many countries (see Table 1). EQ-5D valuation research continues to be undertaken around the world and an updated list of available value sets can be found on the EuroQol website. If a value set is not available for your country/region, you can opt to select a value set for a country / region that most closely approximates yours.

* *Many different terms are in use for these index values, such as preference weights, preference-based values, utilities, QALY weights, etc. Here, we use the term 'index value'.*

Table 1 / **List of available value sets for the EQ-5D-3L**

Country/ Region	Year of Data Collection	N	Valuation Method	Country/ Region	Year of data Collection	N	Valuation Method
AFRICA							
Zimbabwe[2]	2000	2440	TTO				
ASIA							
China[3]	2011	1147	TTO	China[4]	2014	5503	TTO
Japan[5]	1998	621	TTO	Korea[6]	2007	1264	TTO
Malaysia[7]	2004–2005	153	VAS+TTO	Singapore[8]	2014[a]	456	TTO
Sri Lanka[9]	2015[a]	736	TTO	Taiwan[10]	2007	456	TTO
Thailand[11]	2007	1409	TTO				
EUROPE							
Belgium[12]	2001	722	VAS	Denmark[13]	2000	1332	TTO
Europe (6 countries)[b 14]	1991–1998	8709	VAS	Finland[15]	1992	1634	VAS
France[16]	2013	443	TTO	Germany[17]	1997–1998	339	VAS+TTO
Italy[18]	2012	439	TTO	Netherlands[19]	2003	309	TTO
Poland[20]	2008	305	TTO	Portugal[21]	2012	450	TTO
Slovenia[22]	2000	733	VAS	Spain[23]	1997	1000	TTO
Sweden[24]	2004; 2006	49,169	VAS+TTO	UK[25]	1993	3395	TTO
NORTH AND SOUTH AMERICA							
Argentina[26]	2003–2004	611	VAS+TTO	Brazil[27]	2011	3362	TTO
Canada[28]	2012[a]	1145	TTO	Chile[29]	2008	2000	TTO
Trinidad and Tobago[30]	2015	307	DCE/TTO	USA[31]	2002	4048	TTO
OCEANIA							
Australia[32]	2011[a]	417	TTO	New Zealand[33]	1999	1360	VAS

[a] Publication date.
[b] Finland, Germany, Netherlands, Spain, Sweden, UK.

DCE, discrete-choice experiment; TTO, time trade-off; VAS, EQ-5D-visual analogue scale.

FURTHER INFORMATION ON VALUE SETS

- For more information on how to choose a value set, see the **EuroQol website**.
- For anyone working with EQ-5D data, an essential guide to the use of the EuroQol Group's value sets can be found in Vol. 2 of the EuroQol Group Monograph series, *EQ-5D Value Sets: Inventory, Comparative Review and User Guide* (Springer, 2006), available at **https://euroqol.org/publications/books**.
- Documents containing the scoring algorithms, information on the valuation studies, tables of values for all 243 health states and syntax files* may be requested from the EuroQol Office.

* *A syntax file is a computer program that can be run using statistical software to automatically calculate the values for the EQ-5D health states stored in a database.*

5. Organising EQ-5D-3L data

Data collected using EQ-5D-3L can be entered in a database according to schema below.

Variable Name	ID	Country	Year	Mobility	Self-Care	Activity	Pain	Anxiety
Variable description	Patient ID number			1 = No problems 2 = Some problems 3 = Extreme problems 9 = Missing value	1 = No problems 2 = Some problems 3 = Extreme problems 9 = Missing value	1 = No problems 2 = Some problems 3 = Extreme problems 9 = Missing value	1 = No problems 2 = Some problems 3 = Extreme problems 9 = Missing value	1 = No problems 2 = Some problems 3 = Extreme problems 9 = Missing value
Data row 1	1001	UK	2006	2	1	2	2	1
Data row 2	1002	UK	2006	1	1	1	1	1

Variable Name	State	EQ_VAS	Sex	Age	Edu	Method	SOC_Econ
Variable description		999 = Missing value	1 = Male 2 = Female 9 = Missing value	999 = Missing value	1 = Low 2 = Medium 3 = High 9 = Missing value	0 = Postal 1 = Interview 2 = Telephone 9 = Missing value	1 = Employed 2 = Retired 9 = Missing value
Data row 1	21221	80	1	43	1	0	1
Data row 2	21111	90	2	24	2	0	4

The variable names are just examples. However, the variables for the five dimensions of the EQ-5D descriptive system should be named 'mobility', 'self-care', 'activity', 'pain' and 'anxiety'.

6. Presenting EQ-5D-3L results

Data collected using EQ-5D-3L can be presented in various ways. A basic subdivision can be made according to the structure of the EQ-5D-3L:

1. Presenting results from the descriptive system as a health profile
2. Presenting results of the EQ VAS as a measure of overall self-rated health status
3. Presenting results from the EQ-5D-3L index value.

The way results can be presented is determined both by the data and by what message you, as a researcher, wish to convey to your audience. The following subsection illustrates some of the basic ways of presenting EQ-5D data.

6.1 / Health profiles

Reporting descriptive statistics on patient-reported outcomes (PRO) data can be very insightful. They can help identify *which* aspects of patient or population health have been most affected by their condition, or improved by treatment – information that is hard to discern from the summary index alone.

Useful insight can be gained by reviewing the boxes patients have ticked on the EQ-5D questions. Therefore, when reporting data, the number and percentage of patients reporting each level of problem on each dimension of the EQ-5D is important to describe. This information can be presented in a table with the frequency and/or proportion of reported problems for each level for each dimension. Table 2 gives an example from a recent survey that included the EQ-5D-3L (and 5L) which was conducted in 6800 individuals who were representative of the Lombardy general adult population for age, gender and geographic distribution.[34] The study authors also reported the proportion of patients with a full health state of 11111 (43.9%), as well as stratifying the results by age and gender (data not presented here). Tables can also be broken down for other subgroups – for example, by treatment arm. It is also possible for these tables to include the proportions per subgroup, such as age, before / after treatment, treatment versus comparator, etc.

Table 2 / **EQ-5D-3L frequencies reported by dimension and level**[34]

	MOBILITY N (%)	SELF-CARE N (%)	USUAL ACTIVITIES N (%)	PAIN / DISCOMFORT N (%)	ANXIETY / DEPRESSION N (%)
Level 1	5880 (86.5)	6535 (96.1)	5984 (88.0)	3971 (58.4)	4524 (66.5)
Level 2	899 (13.2)	249 (3.7)	759 (11.2)	2709 (39.8)	2163 (31.8)
Level 3	21 (0.3)	16 (0.2)	57 (0.8)	120 (1.8)	113 (1.7)
Total	6800 (100)	6800 (100)	6800 (100)	6800 (100)	6800 (100)

Sometimes it is more convenient to dichotomise the EQ-5D levels into 'no problems' (level 1) and 'any problems' (levels 2 and 3), thereby changing the profile into frequencies of reported problems.

It can be useful not only to describe patient health at one specific point in time, but also when looking at changes in health over time – for example, before or after an intervention, or at different study visits in a clinical trial as compared to baseline. The example below demonstrates the value of descriptive EQ-5D data when looking at pre- and post-treatment data. Devlin et al (2010)[35] looked at the change in the number and percentage of NHS hip replacement patients reporting problems by dimension (see Table 3), before and after surgery. They found that there were improvements in patients' anxiety or depression, self-care and pain or discomfort – not just mobility.[35]

Table 3 / **Numbers and proportions reporting levels within EQ-5D dimensions: pre- and post-operation for hip replacements**[35]

	MOBILITY		SELF-CARE		USUAL ACTIV-ITIES		PAIN / DISCOMFORT		ANXIETY / DEPRESSION	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Level 1	19 (4.3%)	239 (54.4%)	168 (38.6%)	319 (73.3%)	15 (3.4%)	199 (45.6%)	1 (0.2%)	219 (50.5%)	240 (55.5%)	349 (80.8%)
Level 2	420 (95.7%)	200 (45.6%)	264 (60.7%)	115 (26.4%)	347 (79.6%)	221 (50.7%)	240 (55.3%)	200 (46.1%)	183 (42.4%)	74 (17.1%)
Level 3	0 (0%)	0 (0%)	3 (0.7%)	1 (0.2%)	74 (17.0%)	16 (3.7%)	193 (44.5%)	15 (3.4%)	9 (2.1%)	9 (2.1%)
Total[a]	439 (100%)	439 (100%)	435 (100%)	435 (100%)	436 (100%)	436 (100%)	434 (100%)	434 (100%)	432 (100%)	432 (100%)
Reporting some problems[b]	420 (95.7%)	200 (45.6%)	267 (61.4%)	116 (26.6%)	421 (96.6%)	237 (54.4%)	433 (99.8%)	215 (49.5%)	192 (44.5%)	83 (19.2%)
Change in numbers reporting problems	–220		–151		–184		–218		–109	
% change reporting problems	–52%		–57%		–44%		–53%		–57%	
Rank of dimensions in terms of % changes	3		1=		4		2		1	

[a] Results are for those who responded to both the pre- and postoperative questionnaire. About 84% of respondents to the preoperative EQ-5D also responded to the postoperative EQ-5D.

[b] Some problems = levels 2 + 3.

Although very useful information is contained in tables like Table 3, they can be hard to read; an overall summary is sometimes helpful. One way of simplifying the information is based on the principles of a Pareto improvement in Welfare Economics – the Pareto Classification of Health Change (PCHC).[35] With this approach, an EQ-5D health state is deemed to be 'better' than another if it is better on at least one dimension and is no worse in any other dimension. An EQ-5D health state is deemed to be 'worse' than another if it is worse in at least one dimension and is no better in any other dimension.

Using that principle to compare a patient's EQ-5D health states between any two time periods, there are only four possibilities:

- Their health state is better
- Their heath state is worse
- Their health state is exactly the same
- The changes in health are 'mixed': better on one dimension, but worse on another.

When Devlin and colleagues applied this approach to the hip replacement data shown in Table 3, they found that <5% had no change, 82% had improved health, <5% had worse health, and <10% had a 'mixed' change.[35] Therefore, a simple analysis provided a very clear summary of what is happening to patients' health as a result of hip surgery without relying on value sets.

6.2/EQ VAS

As described earlier, the EQ VAS is a 0–100 scale where patients are asked to indicate their overall health today. The EQ VAS generates data that represent what the patient's own assessment of their health is, as opposed to profiles summarised by preferences from the general public. Therefore, it is conceptually different from the EQ-5D index and provides additional data.

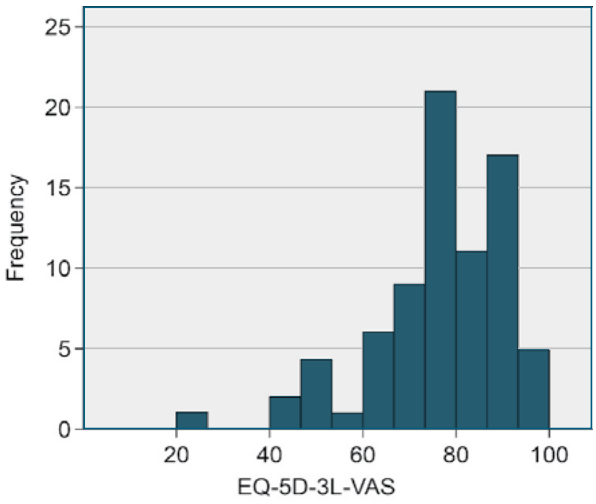
When presenting data from the EQ VAS, it is important to present both a measure of the central tendency and a measure of dispersion. This could be the mean value and the standard deviation (SD) or, if the data are skewed, the median values and the interquartile range (IQR). A couple of examples are given below.

- EQ-5D-3L data from the National Health Services Survey 2008 (n=120,709, aged 15–103 years) in China were reported by Sun et al (2015).[36] In this study, the mean (SD) EQ VAS score was reported as 80.1 (14.1).

- A study from the Netherlands reported EQ-5D-3L data for patients (n=110) with gout.[37] For EQ VAS, the mean (SD) and median (IQR) were reported to be 66.1 (15.4) and 70 (57–77), respectively.

EQ VAS data can also be presented graphically, such as in frequency charts (Figure 2).

Figure 2 / EQ-5D-3L VAS frequency distribution (hypothetical data)



6.3/EQ-5D index

Information about the EQ-5D index can be presented in much the same way as the EQ VAS data. This means that for the index, you can present both a measure of the central tendency and a measure of dispersion. This could be the mean values and the SD (or standard error). If the data are skewed, the median values and the 25th and 75th percentiles could be presented. Note, when reporting index values, usually a maximum of three decimal places is sufficient.

Table 4 provides an example where index values are given for a total patient population and by age group using pooled (2000–2002) data from the Medical Expenditure Panel Survey (MEPS) to create a data set of 38,678 adults.[38]

Table 4 / EQ-5D-3L index scores by age group[38]

Age group	Mean EQ-5D	Standard error EQ-5D
18–29	0.922	0.0019
30–39	0.901	0.0021
40–49	0.871	0.0024
50–59	0.842	0.0028
60–69	0.823	0.0034
70–79	0.790	0.0036
≥80	0.736	0.0062

Table 5 gives a hypothetical example of how to present EQ-5D index results for an intervention study. The improvement in health state utility associated with treatment with Drug A versus Drug B was 0.08 ($p<0.05$) at Week 12.

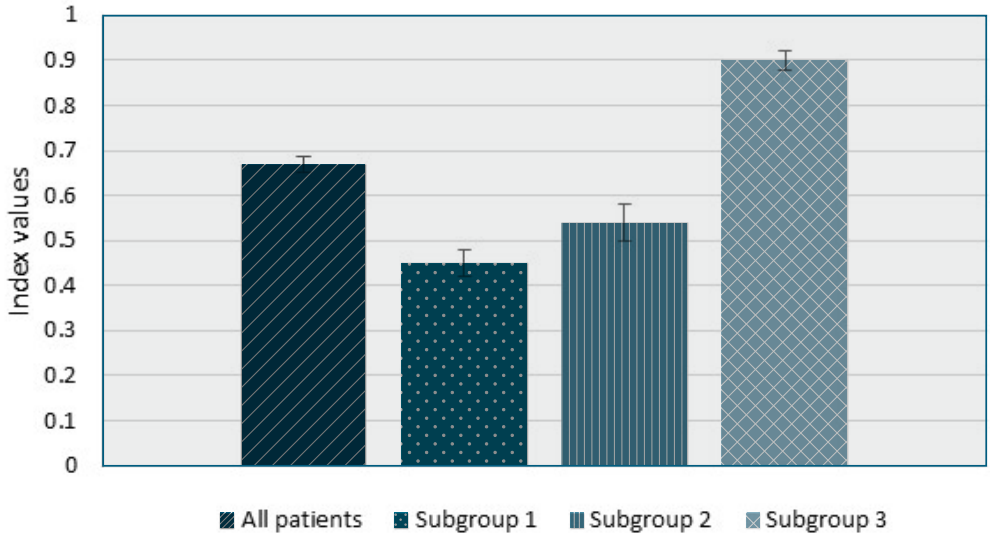
Table 5 / Impact of treatment on EQ-5D-3L index score (hypothetical data)

Visit	Drug A		Drug B		p-value[a]
	N	Mean (SD)	N	Mean (SD)	
Baseline	229	0.59 (0.30)	227	0.60 (0.28)	0.6345
Week 12	194	0.57 (0.32)	186	0.65 (0.29)	0.0149

[a] Using *t*-test.

Data can also be presented graphically; here is a hypothetical example where the group highest mean health status, using the EQ-5D index, is subgroup 3. Subgroup 1 reported the worst health. The differences between all subgroups were statistically significant ($p<0.05$).

Figure 3 / **Mean EQ-5D-3L index values and 95% confidence intervals for the total patient population and three subgroups (hypothetical data)**



Example text for describing the EQ-5D and reporting and analysing EQ-5D data for study protocols/proposals

Study protocols and project proposals often require information to be included describing the EQ-5D instrument and how the results will be reported and analysed. Below is an example outline of the kind of information that could be provided on the EQ-5D-3L for an intervention study.

About the EQ-5D

- The EQ-5D-3L[1] is a widely used generic measure of health status consisting of two parts. The first part (the descriptive system) assesses health in five dimensions (MOBILITY, SELFCARE, USUAL ACTIVITIES, PAIN / DISCOMFORT, ANXIETY / DEPRESSION), each of which has three levels of response (no problems, some problems, extreme problems / unable to). This part of the EQ-5D questionnaire provides a descriptive profile that can be used to generate a health state profile. For example, a patient in health state 11223 would have no problems in mobility and self-care, some problems with usual activities, moderate pain/discomfort, and extreme anxiety or depression. Each health state can potentially be assigned a summary index score based on societal preference weights for the health state. These weights, or utilities, are often used to compute QALYs for use in health economic analyses. Health state index scores generally range from less than 0 (where 0 is a health state equivalent to death; negative values are valued as worse than death) to 1 (perfect health), with higher scores indicating higher health utility, though health state preferences can differ between countries. The second part of the questionnaire consists of a VAS on which the patient rates his / her perceived health from 0 (the worst imaginable health) to 100 (the best imaginable health). The EQ-5D questionnaire is cognitively undemanding, taking only a few minutes to complete. Instructions to patients are included in the questionnaire.

Reporting and analysis of results

- A health profile will be generated by visit and by treatment. Summary statistics will be derived, including numbers of patients and proportions of categorical responses for the five EQ-5D dimensions.
- A health state index score will be calculated from individual health profiles using [insert country/region specific value set and reference here – where a value set is not available for your country / region, it may be possible to use a value set for a country/region that most closely approximates yours*]. Mean, standard deviation (SD), minimum, median, and maximum scores will be provided for the study population by visit and by treatment.
- The EQ VAS score (between 0 and 100) will be summarised using mean, SD, minimum, median, and maximum scores by visit and by treatment.
- For the health state index and EQ VAS scores, mean, SD, minimum, median and maximum will be provided for change from baseline to [enter questionnaire assessment time points here, e.g. Week 12, Week 24] and [final study assessment, e.g. Week 52].
- The type of model used and the covariates and fixed effects will be study-dependent. As an example, an ANCOVA model could be conducted for the changes from baseline to [assessment time points], with country and treatment as fixed effects and baseline as a covariate. In this example, significance of change within each treatment group and significance of the difference between the treatment groups would be reported.

* *See* **EuroQol website** *section on choosing a value set, for more information.*

7. EQ-5D-3L translations and modes of administration

7.1 / EQ-5D translations

The EQ-5D-3L (paper self-complete version) is available in more than 180 official language versions. All translations / adaptations of EQ-5D are produced using a standardised translation protocol that conforms to internationally recognised guidelines. These guidelines aim to ensure equivalence to the English 'source' version and involve a forward/backward translation process and cognitive debriefing.[39] New translations can be produced on request. The EuroQol Office manages the production of new translations and in general, translation costs are covered by the client requesting a translation. For more information on the EQ-5D translation process, consult the **EuroQol website** or contact the **EuroQol Office**. See the next section regarding the availability of EQ-5D-3L translations for different modes of administration.

7.2 / Modes of administration

The EQ-5D-3L is available in a wide range of modes of administration (Table 6).

Table 6 / Language versions available for various modes of administration of the EQ-5D-3L

Modes of administration	Total number of languages versions available
SELF-COMPLETE VERSIONS	
Paper	>180
PDA / Smartphone	>90
Tablet	>100
Laptop/Desktop	>70
REDCap Platform [a]	>50
INTERVIEW VERSIONS	
Face-to-face	>30
Telephone	>90
PROXY VERSIONS	
Proxy version 1 [b]	>40
Proxy version 2 [c]	>80
INTERACTIVE VOICE RESPONSE SYSTEM VERSION	
IVR system version	>30

[a] REDCap is a secure web application for building and managing online surveys and databases. It is specifically geared to support data capture for research studies. More information on the REDCap project can be found on the **EuroQol REDCap webpage**.

[b] Proxy version 1: The caregiver (the proxy) is asked to rate the patient's health-related quality of life in their (the proxy's) opinion.

[c] Proxy version 2: The caregiver (the proxy) is asked to rate how they (the proxy) think the patient would rate his/her own health-related quality of life, if the patient were able to communicate it.

To find out whether an EQ-5D-3L language version is available for your country/region, please consult the relevant mode of administration section of the **EuroQol website**. If a language version is not currently available, please contact the **EuroQol Office**.

8. Other EQ-5D products

8.1 / EQ-5D-5L

The EQ-5D-5L has a descriptive system that comprises the same five health dimensions as in the EQ-5D-3L, but each dimension has five levels: no problems, slight problems, moderate problems, severe problems and extreme problems. The EQ-5D-5L is currently available in more than 150 different language versions (for the self-complete versions), across several modes of administration.

EQ-5D-5L available modes of administration	
Self-complete versions	**Interview versions**
• Paper	• Face-to-face
• PDA/Smartphone	• Telephone
• Tablet	
• Laptop/Desktop	**Proxy versions**
• REDCap platform	**Interactive Voice Response system version**

A growing number of value sets are available for the EQ-5D-5L, derived using a standardised valuation study protocol. The status of all valuation research for the EQ-5D-5L is available on the EuroQol website (ongoing and completed), along with references for published value sets.

A list of publications that have compared the EQ-5D-3L with the EQ-5D-5L has also been compiled on the EuroQol website.

For more information on the EQ-5D-5L and whether an EQ-5D-5L version exists for your country/region, please consult the **EuroQol website**.

8.2 / EQ-5D-Y (Youth)

The EQ-5D-Y is a child-friendly version of the EQ-5D-3L questionnaire that has been developed specifically for children and adolescents aged 8–15 years (and can also be used in paediatric studies that include children up to 18 years, to ensure just one EQ-5D version in the study). Self-complete and proxy versions of the EQ-5D-Y are available. The self-complete version is now available in more than 50 language versions.

Research is currently ongoing, partly funded by the EuroQol Research Foundation, to derive EQ-5D-Y value sets for use in children and adolescents. Please consult the **EuroQol website** for the latest developments on EQ-5D-Y valuation research.

EQ-5D-Y available modes of administration	
Self-complete versions	**Proxy versions**
• Paper	• Face-to-face
• PDA/Smartphone	• Telephone
• Tablet	

If you would like to know whether there is an EQ-5D-Y version appropriate for your country/region, please consult the **EuroQol website**.

9. How to obtain EQ-5D-3L

To register your interest in using the EQ-5D for your study/trial/project, please complete the registration form on the **EuroQol website**. The EuroQol Office will then e-mail you with details of the terms and conditions that apply to your use of the EQ-5D, including licensing fees (if applicable).

Licensing fees are determined by the EuroQol Office on the basis of the user information provided on the registration form. The amount depends on the type of study/trial/project, funding source, sample size and number of requested languages. You are not obligated to purchase by registering.

10. Additional resources on the EuroQol website

Throughout this User Guide weblinks to relevant resources on the EuroQol website have been provided.

Here is a selection of additional web resources that the reader may find useful.

Answers to frequently asked questions	https://euroqol.org/support/faqs/
EQ-5D terms explained	https://euroqol.org/support/terminology/
Key EQ-5D-3L references	https://euroqol.org/publications/key-euroqol-references/eq-5d-3l/
EQ-5D books	https://euroqol.org/publications/books/
EQ-5D working papers	https://euroqol.org/publications/working-papers/
EQ-5D-3L population norm data	https://euroqol.org/eq-5d-instruments/eq-5d-3l-about/population-norms/
Explanation of EQ-5D version numbering and quality control	https://euroqol.org/support/quality-control/

11. Annex: Previous version of the UK (English) EQ-5D-3L Paper Self-Complete (sample version)

Note: the previous version of the EQ-5D-3L is provided here for historical reference only. New studies should use the most recent version on pages 7 and 8 (Figure 1).

By placing a tick in one box in each group below, please indicate which statements best describe your own health state today.

Mobility

I have no problems in walking about ❑

I have some problems in walking about ❑

I am confined to bed ❑

Self-Care

I have no problems with self-care ❑

I have some problems washing or dressing myself ❑

I am unable to wash or dress myself ❑

Usual Activities (*e.g. work, study, housework, family or leisure activities*)

I have no problems with performing my usual activities ❑

I have some problems with performing my usual activities ❑

I am unable to perform my usual activities ❑

Pain / Discomfort

I have no pain or discomfort ❑

I have moderate pain or discomfort ❑

I have extreme pain or discomfort ❑

Anxiety / Depression

I am not anxious or depressed ❑

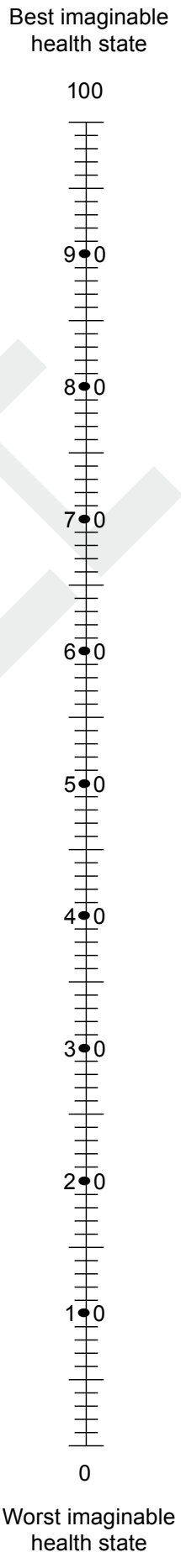
I am moderately anxious or depressed ❑

I am extremely anxious or depressed ❑

To help people say how good or bad a health state is, we have drawn a scale (rather like a thermometer) on which the best state you can imagine is marked 100 and the worst state you can imagine is marked 0.

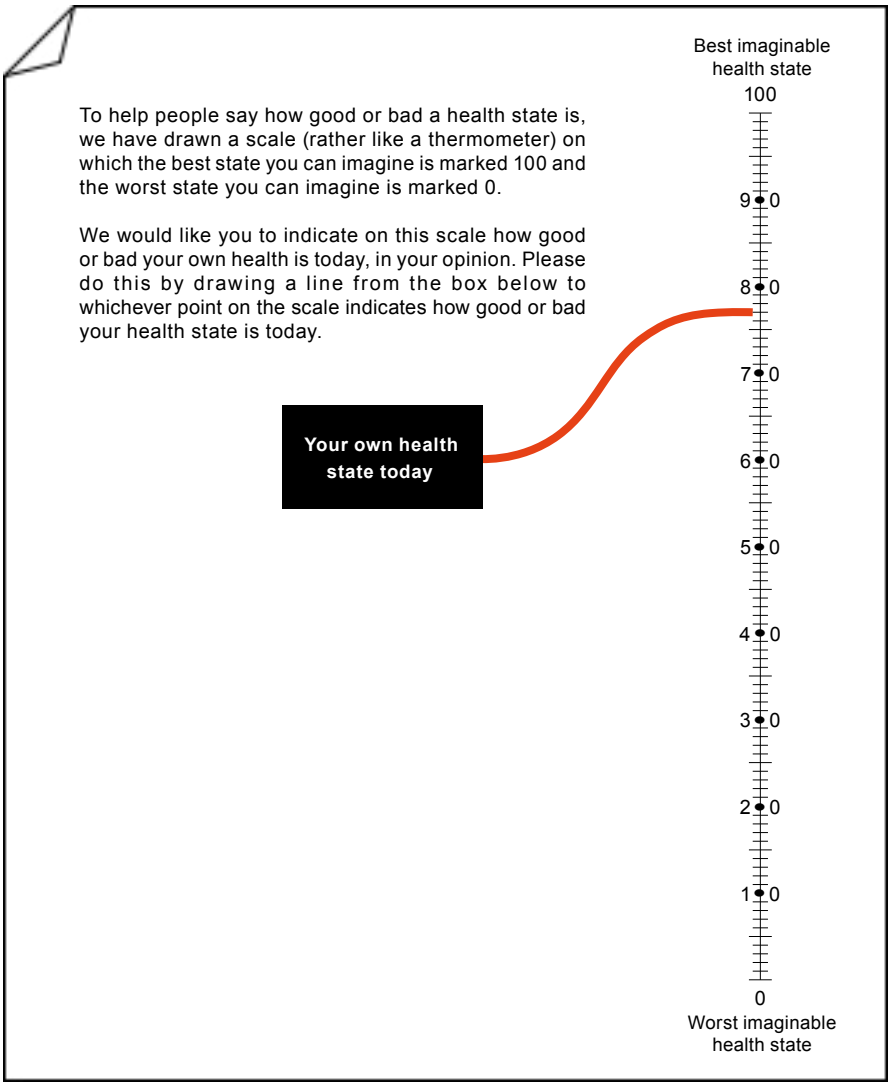
We would like you to indicate on this scale how good or bad your own health is today, in your opinion. Please do this by drawing a line from the box below to whichever point on the scale indicates how good or bad your health state is today.

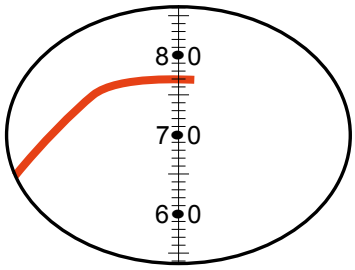
Your own health state today



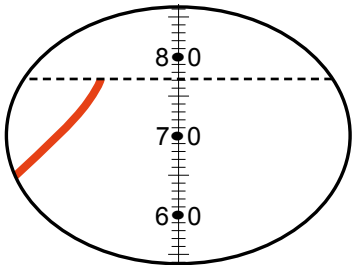
Previous instructions for scoring the EQ VAS (from User Guide v.5.1)

The EQ VAS should be scored as follows:





For example, this response should be coded as 77



Even though the line does not cross the VAS, this response can still be scored by drawing a horizontal line from the end point of the response to the VAS. In this example, the response should be coded as 77

Notes:

- Missing values should be coded as '999'.
- Ambiguous values (e.g. the line crosses the VAS twice) should be treated as missing values.

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EQ-5D

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