

SALSA Scale

(Screening Activity Limitation and Safety Awareness)

Users Manual
Version 1.1

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Preface

This manual is intended to equip programme managers and users of the SALSA Scale to use the scale effectively. It contains an explanation of the rationale for using the SALSA Scale, practical instructions regarding interviewing and using of the scale, detailed training notes for users, how to calculate the score, a sample of the SALSA Scale and a copy of the Question-by- Question (QbyQ) interview guide. It also contains a protocol for translation of the questionnaire and QbyQ into other languages.

The SALSA Scale was originally developed by the SALSA Collaborative Study Group and the result was published in 2007¹. Since then, the composition of the group has changed as new users of the scale came in and earlier members moved on to other roles and responsibilities. The SALSA community communicates through a Yahoo news group (<http://health.groups.yahoo.com/group/salsa-scale/>).

There is a page on the website of International Federation of Anti-Leprosy Organisations (ILEP) which will be updated to include the most recent publications and materials related to the SALSA scale: <http://www.ilep.org.uk/library-resources/infolep-information-services/subjectguides/salsa-scale/>

The SALSA Collaborative Study Group welcomes any comments and suggestions for further improvement from all users of this instrument and readers of this manual. Kindly inform the SALSA Collaborative Study Group (through Dr. Johan Velema) of use of the questionnaire. A form to provide feedback is included as an Annex.

The SALSA Collaborative Study Group also request that copies of any further translations of the SALSA Scale be sent to the address on page 2.

Acknowledgement:

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This manual was prepared by Jannine Ebenso with support from Priscila Fuzikawa, Linda Lehman, Hanna Melchior and Johan Velema. The training module is based on an original text by Catherine Benbow.

Thanks to the Participation Scale Development Team for allowing us to use and adapt parts of their own users' manual in developing this manual.

¹ SALSA Collaborative Study Group. The development of a short questionnaire for screening of activity limitation and safety awareness (SALSA) in clients affected by leprosy or diabetes. *Disabil Rehabil* 2007 May 15;29(9):689-700.

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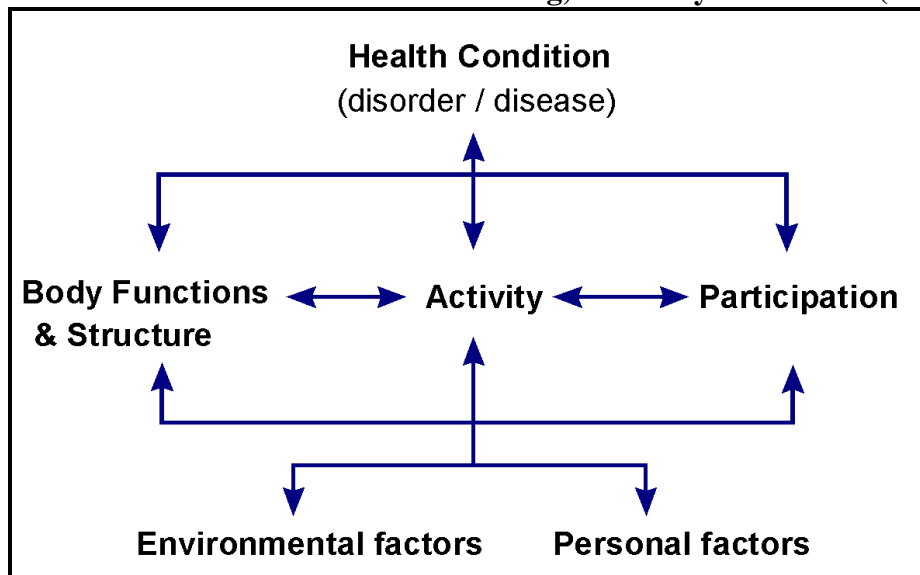
1 Introduction:

SALSA is the acronym for **S**creening of **A**ctivity **L**imitation & **S**afety **A**wareness

The **International Classification of Functioning, Disability and Health (ICF)** provided the concept of functioning and disability and forms the rationale supporting the development of the SALSA Scale. The ICF describes functioning as “an umbrella term encompassing all body functions, activities and participation” and disability as “an umbrella term for impairments, activity limitations or participation restrictions”.

The following diagram presents the relationship between health, functioning, environmental and personal factors.²

Figure 1: International Classification of Functioning, Disability and Health (ICF)³



The SALSA Scale is designed to screen and to measure activity limitation. It should be used in conjunction with other tools designed to measure impairments and participation restrictions.

According to the ICF, activity limitations are **difficulties an individual may have in executing or doing activities**.

² Environmental factors make up the physical, social and attitudinal environment in which people live and conduct their lives. Personal factors include gender, age, coping styles, social background, education, profession, past and current experience, overall behaviour pattern, character and other factors that influence how disability is experienced by the individual.

³ WHO 2002. **Towards a Common Language for Functioning, Disability and Health: ICF The International Classification of Functioning, Disability and Health**. Geneva, World Health Organization

In leprosy, we know a lot about impairments and how to measure them, but we have no standard tool for measuring the difficulties a person affected by leprosy may have doing his daily activities. Most existing activity limitation assessment tools are for those with mobility impairments, or sensory impairments, such as blindness. The traditional tools used do not pick up the problems of safety and the risk of worsening of existing impairments related to the insensate hands and feet found in peripheral neuropathy. It is important to realise some people with insensate hands avoid carrying out certain activities because they fear they may injure themselves; others will have adapted the way they carry out an activity to avoid injury. Additionally, most tools have been developed in the Western world and may not be applicable to low-resourced countries.

The SALSA Scale measures activity limitations and when considered together with impairment and participation restriction measurements, a full picture of disability and functioning as described by the ICF is measured. The SALSA Scale was developed to be used for people with peripheral neuropathy such as occurs in leprosy and diabetes. The SALSA Scale is expected to be a helpful measuring tool of activity limitations found in other diseases and disorders although it was not tested. It was developed in 5 countries simultaneously (Brasil, China, India, Israel and Nigeria), the majority of which are middle to low-resourced countries.

1.1 Objectives of the SALSA Scale:

The SALSA Scale is a **screening tool** that aims to:

- Identify persons with activity limitation
- Assess the extent of Activity Limitation and the risk of increasing impairment
- Target people affected by leprosy, diabetes or other peripheral neuropathies
- Be applicable world-wide.
- Be used in combination with “Impairment” and “Participation-Restriction”⁴ tools in order to measure disablement from a holistic point of view.
- Provide a means to measure the results of interventions whose goal is to improve function and/or self-care.

1.2 **Development of the SALSA Scale**

The SALSA Scale was developed from 2000 – 2006 as a standardised tool to measure activity limitations and safety awareness encountered by people affected by leprosy, diabetes and other peripheral neuropathies in both low-income and developed areas.

Phase I: Lists of activities of daily living relevant for the target populations were generated through individual interviews and focus group discussions. A questionnaire of 374 items (questions) was compiled and administered to 436 persons affected by leprosy and 132 affected by diabetes in five

⁴ Van Brakel, W. [et al.]. The Participation Scale: measuring a key concept in public health. *Disability and Rehabilitation* 2006, 28, (4), 193-203. Available from Infolep

countries in four continents. 76% of respondents had impairments. Occupational therapists not otherwise involved in this study gave an independent assessment of the degree of activity limitation of 207 respondents. At this stage face validity was tested (see 'Properties of the SALSA Scale')

Phase II: The 374 items were reduced to the 20 items which make up the current questionnaire using criteria:

- Items for the SALSA scale were practiced by at least 70% of respondents in all participating populations
- Items were easy to perform for some but difficult for others
- Items correlated well with the assessment of independent practitioners and had good item-total correlation.

At this stage construct validity was tested (see 'Properties of the SALSA Scale')

Phase III: Reliability Testing. Using the Nigerian data, the 20-item SALSA Scale has been shown to be reliable (see 'Properties of the SALSA Scale')

The development process has resulted in the SALSA Scale, a short questionnaire which can be administered within 10 minutes and which provides a standardised measure of activity limitation in clients with a peripheral neuropathy. It can be used to make comparisons between (groups of) individuals throughout the world and in the same person (or group) over time. General health workers can use the SALSA Scale to screen clients and refer those with high scores to specialised services. In addition, the scale will assist service providers in designing appropriate interventions.

2 Properties of the SALSA Scale^{5,6,7,8}

The SALSA Scale has good psychometric properties⁹. The collaborative study has established face validity, internal consistency and external validity compared to expert assessment. Items for the SALSA Scale were selected because they were practised by at least 70% of respondents in each of the five participating centres in as many continents and because they were easy to perform for some but difficult for others i.e. they discriminated between people with greater or lesser activity limitation.

Face validity was ensured in the earliest phase of the process of questionnaire development. Investigators prepared lists of activities of daily living in their respective countries and converted each activity into an item on a questionnaire according to a pre-agreed format. They then tested this questionnaire on a small number of people – colleagues and clients – to verify that the questions were understood. The emphasis at this stage was not on getting responses but on discussing how the respondents understood the questions. Thus the face validity of all the items on the long questionnaire was established.

Construct validity refers to the proposed underlying factors or theoretical concepts of a scale. The theoretical construct of the SALSA Scale was analysed with factor analysis, which explores interrelationships among questionnaire items to discover factors measuring the same construct (Cardol, 2001). We strove to maximise the importance of the first factor, which we believe to represent the concept of activity limitation. We demonstrated that all items in the questionnaire contributed substantially to the first factor and that this factor explained 88% of the variation in the data.

The investigators supposed that activity limitation would be related in a general sense to the level of impairment of the respondent. This proved to be the case as the SALSA score (see was positively associated with the EHF score (see annex 3) which measures the level of impairment in eyes, hands and feet. This was another demonstration of construct validity.

Convergent validity refers to the assumption that different methods of measuring the same theoretical concept yield similar results.

⁵ Cano SJ, Browne JP, Lamping DL, Roberts AHN, McGrouther DA and Black NA. The patient outcomes of surgery-hand/arm (pos-hand/arm): a new patient-based outcome measure. *J Hand Surgery* 2004 5: 477-485.

⁶ Cardol M, De Haan RJ, De Jong BA, Van den Bos GAM, De Groot IJM. Psychometric properties of the Impact on Participation and Autonomy Questionnaire. *Arch Phys Med Rehabil* 2001; 82:210-216.

⁷ Ebenso J & Velema JP. Test-Retest Reliability of the Screening Activity Limitation and Safety Awareness (SALSA) Scale in North-West Nigeria. *Lepr Rev* (2009) 80:197–204

⁸ Melchior H & Velema J. A comparison of the SALSA scale to other hand function assessments. 17th International Leprosy Congress. Hyderabad, India 2008.

⁹ Most of the information in this section comes from the original SALSA publication in 2007.

- * In the five country collaborative SALSA study, activity limitation of each respondent was independently assessed by an occupational therapist or similar expert who was not aware of the questions that were included in the questionnaire. Their expert scores were related to the responses to the questionnaire items using regression analysis and it was verified that all items in the final SALSA Scale correlated significantly to the expert scores. Thus convergent validity was established through the way the SALSA Scale was developed.
- * In a validation study in Israel, the SALSA scores of 25 persons affected by leprosy were compared to their performance on objective hand function tests i.e. the nine hole peg tests, the functional dexterity test and the Smith hand function evaluation. In each case, significant association could be demonstrated between the self-reported SALSA scores and the objective hand function tests (Melchior & Velema, 2008).

Reliability refers to the internal consistency and to test-retest reliability of the SALSA Scale.

Internal Consistency refers to the statistical coherence of the items and was expressed in two ways (Cano, 2004):

- * First, we considered the correlation coefficients between each item and the sum of the other items in the questionnaire. For the items in the SALSA Scale, these coefficients were always higher than 0.30 ranging from 0.31 to 0.65.
- * Secondly, we calculated Cronbach's alpha correlation coefficient also known as the scale reliability coefficient. This coefficient is based on the (weighted) average correlation coefficient of items within the scale. Internal consistency is considered good if alpha ranges between 0.70 and 0.90 (Cardol, 2001). For SALSA Cronbach's alpha was 0.884.

Test-retest reliability refers to the agreement of SALSA scores obtained during two different interviews. In Nigeria, the reliability of the SALSA Scale was assessed in a Hausa speaking population (Ebenso, 2009). If the two interviews were administered by the same interviewer (intra-tester reliability), the mean SALSA scores of first and second interviews were 27.36 (95%CI ¼ 24.36–30.36) and 26.68 (95%CI ¼ 23.93–29.43), respectively. If the two interviews were administered by different interviewers (inter-tester reliability), the mean SALSA scores of first and second interviews were 36.5 (95%CI ¼ 34.96–38.05) and 35.02 (95%CI ¼ 35.01–37.99). On item level, the score agreement was quantified with the Kappa statistic. Kappa represents the proportion of agreement corrected for agreement that would occur purely by chance. For intra-tester reliability, the 20 items had Kappa's ranging from 0.51–1; 15 items had Kappa's > 0.6; 12 items had Kappa's > 0.7. For inter-tester reliability, Kappa's ranged from 0.45–0.8; 15 items had Kappa's > 0.6; 8 items had Kappa's > 0.7.

3 Applications of the SALSA Scale

3.1 The SALSA Scale can be useful in the following situations:

- Screening and identifying persons with activity limitations
- Screening and referral of individuals for further attention by a therapist
- Assessing the level of activity limitation in an individual
- Quantifying the level of activity limitation in a group of people affected by peripheral neuropathy
- Comparing the level of activity limitation between groups or patient populations
- Comparing the level of activity limitation in an individual or group at different moments in time (e.g. before and after an intervention) to evaluate progress

The SALSA Scale is a valuable tool to help assess disability in people affected by leprosy. It is also valuable in assessing interventions such as corticosteroids, self-care groups, reconstructive surgery, occupational therapy, etc.

3.2 Users of the SALSA Scale

Any literate medical or non-medical worker/volunteer can administer the SALSA Scale.

People using the SALSA Scale should have proper training during two days from an experienced, previously trained user. The training should address how to administer the questionnaire, how to calculate the score and how to interpret the results.

A brief [Training module](#) is given in this manual. At least two-days training are recommended.

4 Administering the questionnaire

The questionnaire is expected to take about 10-15 minutes.

4.1 Question-by-Question Guide

The SALSA Scale is an interview-based instrument. The items in the scale are closed, structured questions. The questions therefore should be asked exactly as they are written. In practice, not all questions will be self-explanatory; some will need additional explanation by the interviewers. The interviewer may explain the question as well as (s)he can, using standard practical examples. To minimize interviewer bias a [Question-by-Question Guide](#) (Q/Q, pronounced 'Q by Q') has been developed to accompany the questionnaire. The Q/Q helps the interviewer and respondent to understand the underlying meaning of the individual questions in a uniform way in different cultural contexts. The Q/Q is structured and should not be changed by the interviewer, without written permission of the SALSA Collaborative Study Group. If a question needs to be explained it should be explained using one or more examples given in the Q/Q.

4.2 Suggestions for Interventions

The scale indicates the types of activity limitation experienced by the respondent and if it is significant enough for them to mention it. This will help determine if a referral is needed and can assist service providers in designing appropriate interventions for doing self-care, wound care, exercises for muscles and joints, daily activities and work to prevent or minimize injury. It can also help indicate which protective and assistive devices or surgical procedure may be needed.

If you wish to get ideas about possible interventions, mostly designed to improve function and/or prevent further deterioration of impairments and consequent activity limitation, please refer to the “Suggestions for Interventions” sheet in [Annex 5](#)

There is a growing awareness that the scores of SALSA and Participation scales will be increased by depression. Thus if a measure of mental status is available, it is advisable to consider this association.

The significance of the limitation must be explored to determine the need for referral, even if there is a mild activity limitation.

4.3 The Interview

Before the actual questionnaire interview is started, the interviewer should build rapport with the respondent and make the respondent feel at ease as much as possible.

Where possible, the questionnaire interview should be done in private and by a same-sex interviewer.

Once the interview has started, it should not be interrupted for answering other questions. Therefore explanations that do not relate to the questionnaire or discussions of other topics should be done **only** after the interview.

It is very important, that if the respondent asks a question or discusses another topic, the interviewer should insist in a friendly, but firm manner that the questionnaire interview needs to be completed first and that (s)he will then come back to the other questions or concerns of the respondent.

The Q-by-Q guide is available to give a definition of each question, and some examples of the type of activity being asked about. It should be used in parallel with the questionnaire.

1. Before starting the questions, clarify to the interviewee that the questionnaire is to help us identify and understand if there are any difficulties or limitations in doing activities.

Let the interviewee know that activities have been selected to reflect the things the respondent might do normally or regularly. It is important that the responses to the questionnaire reflect the perspective of the interviewee.

2. All questions must be asked.
3. All questions must be asked exactly as is written on the form in **Bold**. Examples and further details are written in regular font; these should be used only if the respondent does not fully understand the question or expresses uncertainty whether his/her responses are relevant. They are also provided so that the interviewer does not have to refer frequently to the Q-by-Q during the interview.
4. These are closed questions. Whilst the respondent's answer may give more detail than is required to fill in the questionnaire, the respondent must give a response that permits marking only one of the 4 response categories.
5. It is the respondent's personal opinion of each activity question that should be recorded. The interviewer must **not** interpret the answer according to his/her own expectations or knowledge of the patient's situation/ history. It is only the respondent's opinion and answer that should be recorded. . It is not necessary for the respondent to demonstrate carrying out the activity.

IMPORTANT:

**Notice that ONLY question 1 allows the interviewer to use the word CAN.
All other questions require the interviewer to use the word DO.**

HELPFUL SUGGESTIONS:

- If the respondent does not understand, repeat the question.
- If the respondent still does not understand then the examples in non-bold characters should be read out as they are written on the questionnaire.
- If the respondent still does not understand, give each of the possible responses and ask the respondent to choose one

4.4 Response options

For each question there are boxes which are white (open) and boxes which are shaded (closed). You must only mark in the open (white) boxes. Mark the appropriate box with a tick. There should be only one tick on each line.

“Do you?” questions indicate that the respondent may or may not do the activity.

If the respondent says **“YES”**, s/he does the activity; we need to know how easy it is for him/her.

(NB. if the respondent answers “sometimes” this is a “YES” answer.)

Mark one of the 3 possible boxes to indicate how easy or difficult the respondent says it is:

“Easy” means s/he carries out this task without any difficulty

“Little difficult” means s/he carries out this task after thinking about it and possibly doing it in a different way, or takes slightly longer

“Very difficult” means s/he carries out this task with a lot of difficulty. The task causes a lot of stress. If a respondent mentions needing help from another person, then this is automatically a “very difficult”.

If a respondent mentions needing help from another person, then this is automatically a “very difficult”. **Do not** include other people as assistive devices.

If a respondent says **“NO”** s/he does not do the activity, we need to know why:

“I don’t need to do this” means that this is not an activity the respondent needs to do regularly.

“I physically cannot” means that they would have done this but impairments restrict them

“I avoid because of risk” means that they could do it, and want to do it, but the safety risk is perceived to be too high. S/he does not do this activity because doing it could result in injury to hands, feet or eyes (any or all of them).

If a respondent gives an answer that cannot be categorised at all, repeat the answer options and ask the respondent to choose one of them.

4.5 Marking the responses and computing the score

The SALSA Scale leads to an overall score for Activity Limitation and Safety Awareness – the SALSA score.

During the interview, the interviewer ticks one answer box for each question asked. To calculate the SALSA score, *add up* the scores written in the boxes ticked. This can be done column by column as suggested on the form, but it is not strictly necessary.

A low score indicates little difficulty with activities of daily living, while higher scores indicate increasing levels of activity limitation.

Among 568 respondents in five countries¹⁰, the results ranged from 10 – 80 amongst patients with leprosy and diabetes. The score correlated well with the EHF score (see annex 3). If the EHF score was below 5, the average SALSA score was below 30; if the EHF score was 5 or more, the average SALSA score was above 40. The SALSA score tends to increase with age but does not differ between men and women of the same age and impairment status. In the development stage, the SALSA score was not significantly different between clients affected by diabetes and clients affected leprosy.

4.6 Analysis of SALSA scores

When SALSA scores are measured in groups of people, a statistical analysis is in order. This can be quite simple when the purpose is to make a standardized report of the results obtained. It can also be more sophisticated where SALSA scores are compared between groups of respondents with different characteristics.

The first step is to present the distribution of SALSA scores in the group of respondents studied. This can be done in different ways, but a simple approach is to use the following standardized categories of SALSA values in order to distinguish between no activity limitation, mild, moderate, severe and very severe activity limitation. These categories have been derived from the data in the original SALSA paper (2007)¹¹. It is important to find out how significant the limitation is to the person.

No significant limitation	Mild limitation	Moderate limitation	Severe limitation	Extreme limitation
10-24	25-39	40-49	50-59	60-80

A next step is to analyze the association between the SALSA score and several other important variables.

Since it is known that the SALSA score increases with age, it is important to present SALSA score distributions for different age-groups. The simplest is to use 10 year age groups. Because whole decades tend to be over-reported (in other words respondents tend to round their own ages to the nearest decade), it is wise use categories that began at mid-decade: 15-24, 25-34, 35-44, 45-54 etc.

Therefore a standard data reporting table for SALSA scores looks like this, with counts of numbers of respondents in each category:

	SALSA scores

¹⁰ The original SALSA dataset (2007).

¹¹ It is possible to derive one's own categories in a specific population if the dataset is large enough.

	1524	25-39	40-49	50-59	60-80
Age groups					
15-24					
25-34					
35-44					
45-54					
55-64					
65-74					
75+					

Another variable to which the SALSA score is correlated is a measure of impairment, e.g. the EHF score¹² ([annex 3](#)):

	SALSA scores				
	15-24	25-39	40-49	50-59	60-80
EHF Score					
0					
1-2					
3-4					
5-6					
7-8					
9-12					

In diabetes other measures of impairment may be more common e.g. wound count or visual acuity. Other variables worth analyzing are the change in SALSA scores during reactions and before and after interventions such as corticosteroids and/or nerve decompression surgery. **Note:** SALSA and Participation scores are often associated with each other but the relationship is not one-to-one. Some people will have few activity limitations but experience great social restrictions and vice versa.

If you prefer to reduce the SALSA scores to two categories (with or without activity limitation), It is recommended to classify respondents who score 24 or less as not having activity limitation and respondents who score 25 or higher as having activity limitation. Alternatively, one might use the boundary between mild and moderate activity limitation (39 or less and 40 or more).

¹² EHF scores may be categorized in such a way that all cells contain sufficient data for meaningful analysis. The SALSA paper used 0, 1-2, 3-4, 5-6, 7-8, 9-12.

Example¹³:

	No activity limitation (SALSA Score \leq24)	Activity limitation (SALSA Score 25+)
No formal education		
Primary Education		
Secondary Education		
Higher education		

More detailed analysis:

It is advisable, once all variables showing statistically significant association have been identified, to do a multivariate analysis. This will show which of the identified factors are associated with each other and which variables make an independent contribution to explaining the variance of the SALSA scores. If you are not familiar with this type of analysis you should ask assistance from someone who is.

By doing this type of analysis we will learn more about how activity limitation varies by other important variables and what are the most likely confounders of activity limitation.

¹³ In this case, you could use a chi square test with 3 degrees of freedom [$(r-1)*(c-1)$ where 'r' is the numbers of rows and 'c' the number of columns.

5 Translation Guidelines¹⁴

If you need to translate the SALSA Scale and the Q-by-Q into any other language, please note that it was originally developed and tested in six languages: Chinese (Mandarin), English, Hausa, Hebrew, Portuguese (Brazilian), Tamil

The SALSA Scale should be used in the local language and, where needed, translations into that language should be done using the English scale as a basis. Since the items in the scale have an intrinsic meaning that needs to be retained in any translation, the translated document has to be back-translated into English, which is the master questionnaire, to verify that the meaning of the items has not changed substantially. Translation should be done by someone experienced in the field of activities of daily living and rehabilitation and back-translation by an expert in both the vernacular and English language.

Please find below some guidelines for the translation of the SALSA Scale. The English version of the scale will be referred to as the 'generic English version'. The 'Question-by-Question' document with explanations of each question should be thoroughly read by all interviewers and should also be translated as well.

General translation guidelines

Always aim at the CONCEPTUAL EQUIVALENT, not a word-by-word translation or etymological equivalent. Think about the meaning of the original question and try to translate the question in the most relevant (to your setting) manner. Try to be simple, clear and concise.

The minimum that needs translating is the scale itself and the question-by-question explanations. You may consider translating the client information form as an option.

The translation in the TARGET language should aim at the most common audience. Avoid addressing only the medical, legal or any other group.

AVOID JARGON - Do not use :

- Technical terms - that cannot be understood clearly
- Colloquialisms - those idioms and vernacular terms that cannot be understood by most common people in everyday life.

Think about gender applicability and age applicability - is the term applicable or offensive?

Translation procedure

The translation procedure should consist of a translation from the generic English version into the target language. This is followed by a back-translation into English, to check that the original meaning has been preserved.

¹⁴ The translation guidelines have been modified from the translation guidelines of the Participation Scale version 4.6

The initial TRANSLATION should be done by an EXPERT in DISABILITY, i.e. who is familiar with the concepts and, therefore, knows what concept is to be translated.

The BACK-TRANSLATION should be conducted by a LINGUISTIC EXPERT (blind to initial -original terms and independent of the TRANSLATORS).

The person initiating the SALSA work should compare the two versions and note all discrepancies. S/he should then bring together the TRANSLATOR(S) and BACK TRANSLATOR(S) and together resolve all differences to arrive at a final translation.

Response scale translation

As noted, the goal in translation is conceptual equivalence. This is particularly true when translating the 5-point response scales of the SALSA scale. The response scale is critical to the SALSA scale and therefore, translation should be carefully conducted to reflect the original response categories and also be meaningful in the culture. Attention should be paid to the context in which the scale will be used while selecting the terms for the scales.

Problems with the translation

Linguistic differences such as problems caused by changes in the meaning of words between dialects, translation difficulties, and difficulties that arise while applying a concept across cultures constitute some of the primary cross-cultural barriers to the applicability of an assessment instrument.

During the translation process, several possible problems will be encountered. These are:

- a. The term cannot be translated into the local language, or translation is very difficult, because there is no exact equivalent idiom or concept in the local language. This may apply to local variations in the English language as well and ought to be addressed.
- b. The meaning of the original term is modified during translation because a) only part of the original meaning is present in the local language term. Part of the original connotations is lost. This makes the item too narrow in meaning. Alternatively, b) the original meaning is expanded in the local language term. The local term has more (and different) connotations than the original. This makes the translated item too broad in meaning.
- c. Two or more terms from the SALSA scale translate into the same term in the local language. The distinctions between the original items are lost.
- d. The term can be translated, but there are cultural applicability issues with the definition or the examples given in the definition. These issues can include cultural applicability of the item, definition, or examples; a lack of correspondence between the local resources

or environment and the definition or examples; or a condition that makes the item or definition irrelevant in the local culture.

- e. Care needs to be given with the translation of Question 1 compared to the other 19 questions. Question 1 says 'Can you?' all the other questions say 'do you?' (The logic being that you would not choose to not see if you physically could!)

In case a translation problem cannot be locally resolved, the Principal Investigator should seek advice from the SALSA Scale community. This community can be accessed through the Yahoo group [SALSA-scale](#).

We would appreciate receiving copies of the new translation, together with the back translation, for our records. Please send them to the address on page 2.

6 Training module for interviewers

Though no specialist training is required, the staff involved in administering the scale need to be trained in the following topics.

TOPIC	OBJECTIVES
Interview technique	<p>To discuss what is ‘interview technique’ and how an interview is different from a conversation. To discuss the ‘do’s and don’ts’ of good interviewing.</p> <p>Role play might be good here:</p> <ul style="list-style-type: none"> • The aim is that trainees observe an ‘interview’ in the form of a role-play, so they begin to identify what contributes towards a good and effective interview, and conversely what hinders or even spoils an interview. • The facilitator should choose a subject that is appropriate, interesting and (hopefully) fun for the trainees in their centre. It may be a good idea to choose a subject unrelated to SALSA at this stage so the trainees focus on points relating to the ‘interview’ technique, rather than the details of SALSA. Interview subjects may include: proposed changes to the local bus timetable; the position of a new tube well or health centre; setting up a local business co-operative; animal husbandry and veterinary needs; increased accessibility to primary education, etc. • The trainees can give their feedback as to what is good and what is bad. • The facilitator should review the basic principles of communication which include: the art of listening – both verbal and non verbal communication; the importance of a clear speaking voice; the use of simple, understandable sentences; whether the person being spoken to really understands what is being said. • If there are insufficient examples, the study co-ordinator should present other examples for the trainees to comment upon, or the trainees should give examples themselves, illustrating their grasp of the skills required.
Rapport establishment	<p>To make the trainees aware of the importance of establishing good rapport before starting the interview.</p>
Closed interview technique	<p>To make the trainees aware of the advantages of the closed interview method, the importance of confining oneself to asking the questions as they are and to the prompts given in the Q/Q.</p> <p>To make trainees aware of ways to handle responses that may not choose one of the categories.</p>
SALSA interview procedure	<p>To explain the general information, the questions in the scale, the response options, the sequence to be followed in asking the questions, the scoring method and the score cut-off and its significance.</p> <p>The study co-ordinator should first take the trainees ‘step by step’ through the question format and the answer possibilities. See Appendix 1 for instructions on answering the item questions.</p> <p>Finally, the trainees should go through a number of the item questions and give fictitious answers so they become familiar with the variety of possible answers.</p> <p>Important points the interviewer should highlight are:</p> <ul style="list-style-type: none"> • The item questions must be asked exactly as they are written. Care needs be

	<p>taken between the 1st question and the other questions.</p> <ul style="list-style-type: none"> • If the respondent does not understand, then the examples in non-bold characters should be read out as they are written • If the respondent does not immediately respond, it may be helpful to simply repeat the question • If the respondent is still not sure how to relate the question to his or her situation, the interviewer should refer to the Q by Q for additional information • If the respondent cannot decide on an answer category because sometimes it is like this and sometimes it is like that, the interviewer should ask, ‘What is your usual experience?’ and then repeat the response categories • If the respondent gives more information than is needed, examples of how the interviewer can bring the respondent back to the question should be illustrated • If the respondent is still not sure of what answer to give, more specific questions may be asked: <ul style="list-style-type: none"> ○ “Do you do this activity more often than not despite your impairment problems?” or “Do you do this activity less often than you would like or need to because of your impairment problems?” ○ ‘What is the usual level of difficulty?’ • The answer recorded on the data sheet must be the personal opinion of the respondent <u>not</u> the interviewer’s opinion or knowledge. <p>Again role play can be used to show the ‘model interview’. The facilitator may be the ‘interviewer’ or someone else who is familiar with the questionnaire and the respondent should preferably be someone with peripheral neuropathy (who has been briefed about the interview format and the training reasons of this role-play).</p>
<p>Practical training in filling in the scale</p>	<p>To thoroughly familiarise the trainees with how the SALSA Scale interview is conducted. At least 4 simulated interviews should be conducted by each interviewer, followed by a report back session where experiences are discussed and any difficulties encountered are resolved</p> <p>Try to interview people in different situations: in treatment, released from antibiotic treatment, those with wounds, those living in old settlements, those living in communities, those with acute neuritis, those having had reconstructive surgery</p>
<p>Uses of the SALSA Scale</p>	<p>To explain the different uses that could be made of the SALSA Scale in different settings.</p>
<p>Comparison of the SALSA with other variables</p>	<p>To show the association of the SALSA score with other variables. This could include age, sex, impairment measurements, complications of the disease etc. and to allow participants to further reflect</p>

A 2-day training programme (a suggested guideline)

Day 1	Time	Day 2	Time
Introduction of trainees & facilitator(s)	30 mins	Review/ Questions from the previous day	10 mins
Basic introduction to ICF, measuring disability and SALSA	30 mins	Summary of Interview format, questionnaire and QbyQ	30 mins
Interview technique (Role play)	20 mins	Role play with the SALSA scale	20 mins
Break	30 mins	The facilitator may be the 'interviewer' or someone else who is familiar with the questionnaire and the respondent should preferably be someone affected by leprosy (who has been briefed about the interview format and the training reasons of this role-play).	
Feedback	45 mins		
Review of the Interview setting and communication skills	45 mins		
Lunch	45mins	Questions and feedback	30 mins
Introduction to the SALSA scale interview format	60 mins	Break	20 mins
Questions and feedback	30 mins	Practice time and feedback (The interviewers should conduct interviews on each other - at least 3 interviews each)	60 mins
Homework – trainees to read through the scale and Q by Q		Scoring and Analysis	30 mins
		Lunch	45 mins
		Practice with people affected by leprosy/diabetes (At least 3 interviews should be conducted by each interviewer)	60 mins
		To explain the different uses that could be made of the SALSA Scale in different settings.	20 mins

If other topics are added to the training, the training will be correspondingly longer.

Annex 1: The SALSA Scale

SALSA scale Screening of Activity Limitation & Safety Awareness Tick one box on each line in response to each question.		If Yes, how easy is it for you?			If No, why not?		
		Easy	A Little difficult	Very difficult	I don't need to do this	I physically cannot	I avoid because of risk
1	Can you see (enough to carry out your daily activities)?	1	2	3		4	
2	Do you sit or squat on the ground?	1	2	3	0	4	4
3	Do you walk barefoot? e.g. most of the time	1	2	3	0	4	4
4	Do you walk on uneven ground?	1	2	3	0	4	4
5	Do you walk longer distances? i.e. longer than 30 minutes	1	2	3	0	4	4
6	Do you wash your whole body? (using soap, sponge, jug; standing or sitting....)	1	2	3	0	4	4
7	Do you cut your finger or toenails? e.g. using scissors or clippers...	1	2	3	0	4	4
8	Do you hold a cup or basin with <u>hot</u> contents? e.g. drinks, food ...	1	2	3	0	4	4
9	Do you work with tools? i.e. tools which you hold in your hands to help you work ...	1	2	3	0	4	4
10	Do you carry heavy objects or bags? e.g. shopping, food, water, wood ...	1	2	3	0	4	4
11	Do you lift objects above your head? e.g. to place on a shelf, on your head, to hang clothes to dry ...	1	2	3	0	4	4
12	Do you cook? i.e. prepare food both hot and cold	1	2	3	0	4	4
13	Do you pour hot liquids?	1	2	3	0	4	4
14	Do you open/close screw capped bottles? e.g. oil, water ..	1	2	3	0	4	4
15	Do you open jars with screw-on lids? e.g. jam...	1	2	3	0	4	4
16	Do you handle or manipulate small objects? e.g. coins, nails, small screws, grains and seeds ...	1	2	3	0	4	4
17	Do you use buttons? e.g. buttons on clothing, bags...	1	2	3	0	4	4
18	Do you thread needles? i.e. pass thread through the eye of a needle	1	2	3	0	4	4
19	Do you pick up pieces of paper, handle paper or put it in order?	1	2	3	0	4	4
20	Do you pick up things from the floor?	1	2	3	0	4	4
Subtotal scores(<i>add up the column</i>)							
SALSA score (<i>add up all subtotal scores</i>)							

Annex 2: Question-by-Question explanation (Q-by-Q)

It is okay if clients make use of an assistive device to do an activity. You may wish to record any devices which are used or comments on the client information form.

1. **To see** means to perceive with your eyes (possibly aided by glasses etc.) the environment around you, near or far, sufficiently to carry out your daily activities. *Record glasses etc as assistive devices.*
2. **To sit** means to place your bottom / backside on or near the floor or ground - you may sit on a cushion, mat or very low platform. You may also sit cross-legged
To squat is to sit in a crouching position, your knees bent, with your body weight passing through your feet not through your bottom / backside.
3. **To walk barefoot** means to walk without any footwear or protective covering on your feet.
4. **To walk on uneven ground** or surfaces means to walk on stony ground or the earth that is broken up – any rough surface.
5. **To walk longer distances** means you walk for 30 minutes or more.
6. **To wash your whole body** means you wash or rub your neck, chest, stomach, back, arms and legs, usually with water and soap (if available) until your body is clean and then rinse off the soap.
7. **To cut your finger or toenails** means to trim or cut away excess nail growth from either your finger or toe nails. Record difficulty or avoid because of risk if there are problems with either the finger or toenails or both.
8. **To hold a cup or basin with hot contents** means to grasp or place in your hand or hands a container with or without handles. *Record any cloth or other device used on the client information form.*
9. **To work with tools** means to use various tools, held in your hand, to assist you with your work.
10. **Heavy objects** are those that weigh above 10-20 kilos and may be carried on your head, back, shoulders, hands or arms. They may or may not be carried in a bag, box, or basket.
11. **To lift objects up above your head** means to lift an object with your hands and arms above your head, and place it on a high shelf, hook, roof beam, line or rope or on your head for example.
12. **To cook** means to prepare food, both hot and cold.
13. **To pour hot liquids** means to pour hot liquids from a pot, vessel, jug or ladle, usually into another container.

14. **To open or close screw capped bottles** means you twist or turn the cap to open the bottle, and turn it in the opposite direction to close it. *If any assistive device is used, record this on the client info form.*
15. **A jar with a screw on lid** usually means that the lid is larger in diameter than a bottle lid to turn or twist the lid in one direction to open it and the opposite direction to close it. *If any assistive device is used, record this on the client info form.*
16. **To handle or manipulate small objects** means, picking up, holding and turning over small objects in your hands such as, coins, nails, small stones, grains and seeds, for example.
17. **A button** is a disc or knob usually attached to a garment or bag, which is used for holding two surfaces or pieces together by passing it through a loop or buttonhole.
To button or unbutton means to open and close your garments or objects using buttons.
18. **To thread needles** means to pass a length of cotton thread, yarn or string through the hole or eye of a sewing needle.
19. **To pick up pieces of paper, handle paper / put it in order** means you pick up loose pieces of paper to sort, arrange, fold or shred them; you may also use the paper for wrapping.
20. **To pick up objects from the floor** means, bending, kneeling, squatting so you can reach the floor with your arm to pick up something with your hand.

Annex 3: EHF sum score

EHF Score is a different way of summarizing impairment data than the World Health Organization (WHO) impairment grade¹⁵. The WHO Impairment Grade summaries impairment as either a 0, 1, 2.

Grade 0 means **no impairment** found.

Grade 1 means that **loss of sensation** has been noted in the hand or foot (the eyes are not given a grade of 1).

- Loss of sensation in the hand or foot means that one of the main peripheral nerve trunks has been damaged by leprosy and this is more common in the later stages of the disease than during diagnosis.

Grade 2 means that **visible damage** is noted.

- For the eyes, this includes the inability to close the eye fully or obvious redness of the eye (in leprosy, this is typically caused by either a corneal ulcer or by uveitis). Visual impairment or blindness also gives an impairment grade of 2.
- For the hands and feet, visible damage includes wounds and ulcers, as well as visible impairments due to muscle weakness, such as a foot drop or a claw hand. Loss of tissue, such as the loss or partial reabsorption of fingers or toes, is a late sign in leprosy, but it also gives an important grade of 2 for that particular hand or foot.

Each eye, each hand and each foot is given its own grade, so the patient actually has six grades:

	Eye	Hand	Foot
Right			
Left			

With the WHO Maximum grade, we would record the highest number seen in any part of the body (0, 1, or 2) as the grade for that person. In the EHF Sum Score, however, we determine the maximum grade for each of six body sites (eyes, hands and feet) and then add all 6 numbers together. Thus the EHF score can range from zero to 12.

¹⁵ WHO Enhanced Global Strategy for further reducing the disease burden due to leprosy (2011-2015) - Operational Guidelines, pp 22-23

Example

WHO Impairment Grading 1998

	Eye	Hand	Foot
Right	0	1	1
Left	2	1	1

WHO Maximum Grade = 2
EHF Sum Score = 6

WHO Impairment Grading 1998

Eye	Hand	Foot
0	1	2
2	1	2

WHO Maximum Grade = 2
EHF Sum Score = 8

We can see from this example that the EHF Sum Score is more sensitive to changes in impairment status than the WHO Grade alone.

Since the WHO maximum impairment grade is only defined in leprosy, the EHF is similarly only defined for persons affected by leprosy. Clients with other diagnoses will need to be graded by systems currently in use for those diseases. The client information form allows for this or may be adjusted to include this.

Publications describing the EHF score include:

Ebenso, J. & Ebenso, B. (2007) 'Monitoring impairment in leprosy: choosing the appropriate tool' **Lepr Rev** (2007) 78, 270–280.

Van Brakel, WH. & Officer A. (2008) 'Approaches and tools for measuring disability in low and middle-income countries' **Lepr Rev** (2008) 79, 50–64.

Van Brakel, WH., Reed NK. & Reed DS. (1999) 'Grading impairment in Leprosy'. **Lep Rev** 70:180-188.

Publications about the SALSA Scale

The SALSA Collaborative Study Group. 'The development of a short questionnaire for screening activity limitation and safety awareness (SALSA) in clients affected by leprosy or diabetes'.

Disabil Rehabil, 2007; 29: 689–700. Available from Infolep infolep@leprastichting.nl

Barbosa JC, Ramos AN Jr, Alencar MJ, & Castro CG. Pós-alta em Hanseníase no Ceará: limitação da atividade funcional, consciência de risco e participação social [Post-treatment of Leprosy in Ceara: activity and functional limitation, safety awareness and social participation.].

Rev.Bras.Enferm, 2008; 61 (6): 727-733. Available online at [the ILEP website](#)

Ebenso J, Velema JP. 'Test-Retest Reliability of the Screening Activity Limitation and Safety Awareness (SALSA) Scale in North-West Nigeria'. **Lepr Rev**, 2009; **80**, 197–204 Available online at [the ILEP website](#)

Melchior H. 'A comparison of the SALSA scale to other hand function assessments' **presented at the 17th International Leprosy Congress, Hyderabad**, February 2008 (SPL-37).

Meyer TN, Lehman JF, Grossi. MAF. 'Evaluation of asylated patients of an ex-colony of leprosy through SALSA and Participation Scale' **presented at the 17th International Leprosy Congress, Hyderabad**, February 2008 (SPL-36).

Nascimento AV, Gomes MK, Halfoun VL, Torres F, Ramos-e-Silva M, Carbeiro S. 'The impact of leprosy on quality of life: use of DIQI and SALSA Scales' **presented at the 17th International Leprosy Congress, Hyderabad**, February 2008 (SPL-35).

Norman G, Cross H, Sathiyaraj Y, Sudhakar G. 'Effect of home based POID care among persons affected by leprosy' **presented at the 17th International Leprosy Congress, Hyderabad**, February 2008

Roddawar V. 'Comparative analysis of SALSA scale among the rural leprosy affected persons in Adilabad District' **presented at the 17th International Leprosy Congress, Hyderabad**, February 2008 (SPL-34).

Van Veen NHJ, Bowers B, Dinabandhu HR, Negrini JF Jan Hendrik Richardus JH, Velema JP. 'Prospective Assessment of Disability, Surgery and Quality of Life: Design, Methodology and Intake findings of the PASQUAL Study' **presented at the 17th International Leprosy Congress, Hyderabad**, February 2008 (O-211).

Velema JP. 'Application of the SALSA scale for screening of activity limitation and safety awareness's' **presented at the 17th International Leprosy Congress, Hyderabad**, February 2008 (SPL-32).

Some of these publications can be found online at the Yahoo SALSA group. Contact Hanna Melchior at hanna.melchior@gmail.com for more information or an invitation to join.

Glossary

Activity is the execution of a task or action by an individual.

Activity limitations are difficulties an individual may have in executing activities.

Body functions are the physiological functions of body systems (including psychological functions).

Body structures are anatomical parts of the body such as organs, limbs and their components.

Disability is an umbrella term for impairments, activity limitations or participation restrictions.

Environmental factors make up the physical, social and attitudinal environment in which people live and conduct their lives.

Functioning is an umbrella term encompassing all body functions, activities and participation;

Impairments are problems in body function or structure such as a significant deviation or loss.

Participation is involvement in a life situation.

Participation restrictions are problems an individual may experience in involvement in life situations.

Personal factors include gender, age, coping styles, social background, education, profession, past and current experience, overall behaviour pattern, character and other factors that influence how disability is experienced by the individual.

SALSA Scale Feedback Form

Details of the institution or programme:

Name of the institution or programme:

Mailing address:

Telephone number:

Fax number:

Email address:

Superintendent or Director's name:

Training in the use of the SALSA Scale

Number of staff trained in the use of the Participation Scale:

Designation:	Number:
Designation:	Number:
Designation:	Number:
Designation:	Number:

Comments on the Training instructions:

Suggestions for improvement:

Comments on the rest of the Manual:

Suggestions for improvement:

Use of the SALSA Scale

Type of programme in which the scale was used (please circle as many as applicable):

- Field- or community-based rehabilitation programme
- Hospital-based rehabilitation programme
- Hospital in-patient assessment
- In an Occupational Therapy department in a hospital or rehabilitation centre
- In a Physiotherapy department in a hospital or rehabilitation centre
- In a Social Work department in a hospital or rehabilitation centre
- Other (please describe)

Number of staff involved in the interviews with the Participation Scale:

Designation:	Number:
Designation:	Number:
Designation:	Number:
Designation:	Number:

Total number of interviews conducted:

Category and number of (potential) clients interviewed:

Leprosy:
 Diabetes:
 Other peripheral neuropathy (please specify):

Average interview duration:

Assessment of the ease of asking the questions in the scale (please tick):

Very easy	Easy	Not too difficult	Difficult	Very difficult

Comments on the Question by Question guide:

Suggestions for improvement:

Assessment of the ease of use of the response scales (please tick):

Very easy	Easy	Not too difficult	Difficult	Very difficult

Assessment of the ease of calculating the SALSA score (please tick):

Very easy	Easy	Not too difficult	Difficult	Very difficult

Overall assessment of the ease of use of the SALSA Scale (please tick):

Very easy	Easy	Not too difficult	Difficult	Very difficult

Who used the results of SALSA Scale?

Category of staff:

Purpose:

Category of staff:

Purpose:

Overall assessment

Overall assessment of the utility of the SALSA Scale in your (rehabilitation) work (please tick):

Not useful	Sometimes useful	Useful	Very useful	Essential

Will you continue to use the SALSA Scale in your institution or programme (please tick)?

No	Only after revision	For some clients	For most clients	Yes, always

If yes, in which programme(s):

- 1.
- 2.
- 3.

Are there any additional comments you would like to make?

Name of the person who filled in the form:

Designation:

Date:

Please email the form to irdo@tlmi.nl

Thank you very much for your kind cooperation!

Data sharing

We would be delighted if you were willing to share the data you have collected with the SALSA study group. Your data could then be used to analyse what scores are measured in different parts of the world and in different client groups with different characteristics.

You could share your data with us in a number of different ways:

1. You could photocopy all the questionnaires you filled out and send them to us as hardcopy. We would then enter the data on the computer in a way that suited us.
2. You could enter the data into a computer in a way that suited you and give us a copy of the information with enough explanation for us to be able to use them.
3. You could enter into an EXCEL spreadsheet the following data for each individual interviewed:
ID, Age, Sex, Main Diagnosis, Disability status (EHF for Leprosy) followed by the subtotals and totals at the bottom of the page: S1, S2, S3, S4, S5, S6, the Salsa score and the Safety Awareness score. It would then be easy to e-mail the spreadsheet to us.

Any data you are willing to share with us can be sent by post to the address on page 2, or by email to irdo@tlmi.nl

Thank you so much.