



24359 Northwestern Hwy. • Suite 100 • Southfield, Michigan • 48075  
*phone* 800.882.5764 • *email* alsofmi@alsofmi.org • *website* www.alsofmi.org

## ALS Research

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## **The Amyotrophic Lateral Sclerosis Functional Rating Scale (ALSFRS)**

The ALS Functional Rating Scale (ALSFRS) is a commonly accepted standard for monitoring disease progression used in clinical trials and in the treatment of patients. It is a dysfunction scale used in assessing the activities of daily living of patients with Amyotrophic Lateral Sclerosis. It was originally developed during the Regeneron CNTF phase I-II trials in the mid 1990's and is based on the Unified Parkinson's Disease Rating Scale and a previous ALS Severity Scale. The ALS Functional Rating Scale consists of 13 items in all. Patient responses (on a 5-point scale) are recorded in relation to the question. Comparisons are made with the patient's status prior to the onset of the disease, not with status of the last visit.

### **a. Speech**

4	Normal speech processes
3	Detectable speech disturbances
2	Intelligible with repeating
1	Speech combined with nonvocal communication
0	Loss of useful speech

### **b. Salivation**

4	Normal
3	Slight but definite excess of saliva; may have nighttime drooling
2	Moderately excessive saliva; may have minimal drooling
1	Marked excess of saliva with some drooling
0	Marked drooling; requires constant tissue or handkerchief

### **c. Swallowing**

4	Normal eating habits
3	Early eating problems - occasional choking
2	Dietary consistency changes
1	Needs supplemental tube feeding
0	NPO (exclusively parenteral or enteral feeding)

### **d. Handwriting**

4	Normal
3	Slow or sloppy; all words are legible
2	Not all words are legible
1	Able to grip pen but unable to write
0	Unable to grip pen

**e. Cutting Food and Handling Utensils  
 (patients without gastrostomy)**

4	Normal
3	Somewhat slow and clumsy, but no help needed
2	Can cut most foods, although clumsy and slow; some help needed
1	Food must be cut by someone, but can still feed slowly
0	Needs to be fed

**Cutting Food and Handling Utensils  
 (alternate scale for patients with gastrostomy)**

4	Normal
3	Clumsy but able to perform all manipulations independently
2	Some help needed with closures and fasteners
1	Provides minimal assistance to caregiver
0	Unable to perform any aspect of task

**f. Dressing and Hygiene**

4	Normal function
3	Independent and complete self-care with effort of decreased efficiency
2	Intermittent assistance or substitute methods
1	Needs attendant for self-care
0	Total dependence

**g. Turning in bed and adjusting bed clothes**

4	Normal
3	Somewhat slow and clumsy, but no help needed
2	Can turn alone or adjust sheets, but with great difficulty
1	Can initiate, but not turn or adjust sheets alone
0	Helpless

**h. Walking**

4	Normal
3	Early ambulation difficulties
2	Walks with assistance
1	Nonambulatory functional movement
0	No purposeful leg movement

**i. Climbing Stairs**

4	Normal
3	Slow
2	Mild unsteadiness or fatigue
1	Needs assistance
0	Cannot do

**j. Breathing**

4	Normal
3	Shortness of breath with minimal exertion (e.g. walking, talking)
2	Shortness of breath at rest
1	Intermittent (e.g. nocturnal) ventilatory assistance
0	Ventilator dependent

**k. Dyspnea**

4	None
3	Occurs when walking
2	Occurs with one or more of the following: eating, bathing, dressing (ADL)
1	Occurs at rest, difficulty breathing when either sitting or lying
0	Significant difficulty, considering using mechanical respiratory support

**l. Orthopnea**

4	None
3	Some difficulty sleeping at night due to shortness of breath. Does not routinely use more than two pillows
2	Needs extra pillow in order to sleep (more than two)
1	Can only sleep sitting up
0	Unable to sleep

**M. Respiratory Insufficiency**

4	None
3	Intermittent use of BIPAP
2	Continuous use of BiPAP
1	Continuous use of BiPAP during the night and day
0	Invasive mechanical ventilation by intubation or tracheostomy



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## **Clinical Trials**

By participating in clinical trials each individual is not only actively trying to help themselves but, are helping others who are diagnosed with ALS. Many research projects and clinical trials are being conducted both at the local and national levels. ***PALS and caregivers should speak to their neurologists or call ALS of Michigan to find out what clinical trials are being done in Michigan or visit <http://www.Clinicaltrials.gov> for more information.***

\*The information found below is available through the U.S National Institutes of Health and can be found at <http://clinicaltrials.gov>. Visit the website for more information.

## **Understanding Clinical Trials**

Choosing to participate in a clinical trial is an important personal decision. The following frequently asked questions provide detailed information about clinical trials. In addition, it is often helpful to talk to a physician, family members, or friends about deciding to join a trial. After identifying some trial options, the next step is to contact the study research staff and ask questions about specific trials.

### **What is a clinical trial?**

Although there are many definitions of clinical trials, they are generally considered to be biomedical or health-related research studies in human beings that follow a pre-defined protocol. ClinicalTrials.gov includes both interventional and observational types of studies. Interventional studies are those in which the research subjects are assigned by the investigator to a treatment or other intervention, and their outcomes are measured. Observational studies are those in which individuals are observed and their outcomes are measured by the investigators.

### **Why participate in a clinical trial?**

Participants in clinical trials can play a more active role in their own health care, gain access to new research treatments before they are widely available, and help others by contributing to medical research.



## **Who can participate in a clinical trial?**

All clinical trials have guidelines about who can participate. Using [inclusion/exclusion criteria](#) is an important principle of medical research that helps to produce reliable results. The factors that allow someone to participate in a clinical trial are called "inclusion criteria" and those that disallow someone from participating are called "exclusion criteria". These criteria are based on such factors as age, gender, the type and stage of a disease, previous treatment history, and other medical conditions. Before joining a clinical trial, a participant must qualify for the study. Some research studies seek participants with illnesses or conditions to be studied in the clinical trial, while others need healthy participants. It is important to note that inclusion and exclusion criteria are not used to reject people personally. Instead, the criteria are used to identify appropriate participants and keep them safe. The criteria help ensure that researchers will be able to answer the questions they plan to study.

## **What happens during a clinical trial?**

The clinical trial process depends on the kind of trial being conducted (See [What are the different types of clinical trials?](#)) The clinical trial team includes doctors and nurses as well as social workers and other health care professionals. They check the health of the participant at the beginning of the trial, give specific instructions for participating in the trial, monitor the participant carefully during the trial, and stay in touch after the trial is completed.

Some clinical trials involve more tests and doctor visits than the participant would normally have for an illness or condition. For all types of trials, the participant works with a research team. Clinical trial participation is most successful when the [protocol](#) is carefully followed and there is frequent contact with the research staff.

## **What is informed consent?**

Informed consent is the process of learning the key facts about a clinical trial before deciding whether or not to participate. It is also a continuing process throughout the study to provide information for participants. To help someone decide whether or not to participate, the doctors and nurses involved in the trial explain the details of the study. If the participant's native language is not English, translation assistance can be provided. Then the research team provides an [informed consent document](#) that includes details about the study, such as its purpose, duration, required procedures, and key contacts. Risks and potential benefits are explained in the informed consent document. The participant then decides whether or not to sign the document. Informed consent is not a contract, and the participant may withdraw from the trial at any time.



## **What are the benefits and risks of participating in a clinical trial?**

### **Benefits**

Clinical trials that are well-designed and well-executed are the best approach for eligible participants to:

- Play an active role in ones own health care.
- Gain access to new research treatments before they are widely available.
- Obtain expert medical care at leading health care facilities during the trial.
- Help others by contributing to medical research.

### **Risks**

There are risks to clinical trials.

- There may be unpleasant, serious or even life-threatening side effects to experimental treatment.
- The experimental treatment may not be effective for the participant.
- The [protocol](#) may require more of their time and attention than would a non-protocol treatment, including trips to the study site, more treatments, hospital stays or complex dosage requirements.

## **What are side effects and adverse reactions?**

Side effects are any undesired actions or effects of the experimental drug or treatment. Negative or adverse effects may include headache, nausea, hair loss, skin irritation, or other physical problems. Experimental treatments must be evaluated for both immediate and long-term side effects.

## **How is the safety of the participant protected?**

The ethical and legal codes that govern medical practice also apply to clinical trials. In addition, most clinical research is federally regulated with built in safeguards to protect the participants. The trial follows a carefully controlled protocol, a study plan which details what researchers will do in the study. As a clinical trial progresses, researchers report the results of the trial at scientific meetings, to medical journals, and to various government agencies. Individual participants' names will remain secret and will not be mentioned in these reports (See [Confidentiality Regarding Trial Participants](#)).



## **What should people consider before participating in a trial?**

People should know as much as possible about the clinical trial and feel comfortable asking the members of the health care team questions about it, the care expected while in a trial, and the cost of the trial. The following questions might be helpful for the participant to discuss with the health care team. Some of the answers to these questions are found in the informed consent document.

- What is the purpose of the study?
- Who is going to be in the study?
- Why do researchers believe the experimental treatment being tested may be effective? Has it been tested before?
- What kinds of tests and experimental treatments are involved?
- How do the possible risks, side effects, and benefits in the study compare with my current treatment?
- How might this trial affect my daily life?
- How long will the trial last?
- Will hospitalization be required?
- Who will pay for the experimental treatment?
- Will I be reimbursed for other expenses?
- What type of long-term follow up care is part of this study?
- How will I know that the experimental treatment is working? Will results of the trials be provided to me?
- Who will be in charge of my care?

## **What kind of preparation should a potential participant make for the meeting with the research coordinator or doctor?**

- Plan ahead and write down possible questions to ask.
- Ask a friend or relative to come along for support and to hear the responses to the questions.
- Bring a tape recorder to record the discussion to replay later.

Every clinical trial in the U.S. must be approved and monitored by an [Institutional Review Board \(IRB\)](#) to make sure the risks are as low as possible and are worth any potential benefits. An IRB is an independent committee of physicians, statisticians, community advocates, and others that ensures that a clinical trial is ethical and the rights of study participants are protected. All institutions that conduct or support biomedical research involving people must, by federal regulation, have an IRB that initially approves and periodically reviews the research.



### **Does a participant continue to work with a primary health care provider while in a trial?**

Yes. Most clinical trials provide short-term treatments related to a designated illness or condition, but do not provide extended or complete primary health care. In addition, by having the health care provider work with the research team, the participant can ensure that other medications or treatments will not conflict with the [protocol](#).

### **Can a participant leave a clinical trial after it has begun?**

Yes. A participant can leave a clinical trial, at any time. When withdrawing from the trial, the participant should let the research team know about it, and the reasons for leaving the study.

### **Where do the ideas for trials come from?**

Ideas for clinical trials usually come from researchers. After researchers test new therapies or procedures in the laboratory and in animal studies, the experimental treatments with the most promising laboratory results are moved into clinical trials. During a trial, more and more information is gained about an experimental treatment, its risks and how well it may or may not work.

### **Who sponsors clinical trials?**

Clinical trials are sponsored or funded by a variety of organizations or individuals such as physicians, medical institutions, foundations, voluntary groups, and pharmaceutical companies, in addition to federal agencies such as the National Institutes of Health (NIH), the Department of Defense (DOD), and the Department of Veteran's Affairs (VA). Trials can take place in a variety of locations, such as hospitals, universities, doctors' offices, or community clinics.

### **What is a protocol?**

A protocol is a study plan on which all clinical trials are based. The plan is carefully designed to safeguard the health of the participants as well as answer specific research questions. A protocol describes what types of people may participate in the trial; the schedule of tests, procedures, medications, and dosages; and the length of the study. While in a clinical trial, participants following a protocol are seen regularly by the research staff to monitor their health and to determine the safety and effectiveness of their treatment.



## **What is a placebo?**

A placebo is an inactive pill, liquid, or powder that has no treatment value. In clinical trials, experimental treatments are often compared with placebos to assess the experimental treatment's effectiveness. In some studies, the participants in the [control group](#) will receive a placebo instead of an active drug or experimental treatment.

## **What is a control or control group?**

A control is the standard by which experimental observations are evaluated. In many clinical trials, one group of patients will be given an experimental drug or treatment, while the control group is given either a standard treatment for the illness or a placebo.

## **What are the different types of clinical trials?**

[Treatment trials](#) test experimental treatments, new combinations of drugs, or new approaches to surgery or radiation therapy.

[Prevention trials](#) look for better ways to prevent disease in people who have never had the disease or to prevent a disease from returning. These approaches may include medicines, vaccines, vitamins, minerals, or lifestyle changes.

[Diagnostic trials](#) are conducted to find better tests or procedures for diagnosing a particular disease or condition.

[Screening trials](#) test the best way to detect certain diseases or health conditions.

[Quality of Life trials](#) (or Supportive Care trials) explore ways to improve comfort and the quality of life for individuals with a chronic illness.

## **What are the phases of clinical trials?**

Clinical trials are conducted in phases. The trials at each phase have a different purpose and help scientists answer different questions:

In [Phase I trials](#), researchers test an experimental drug or treatment in a small group of people (20-80) for the first time to evaluate its safety, determine a safe dosage range, and identify side effects.

In [Phase II trials](#), the experimental study drug or treatment is given to a larger group of people (100-300) to see if it is effective and to further evaluate its safety.

In [Phase III trials](#), the experimental study drug or treatment is given to large groups of people



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(1,000-3,000) to confirm its effectiveness, monitor side effects, compare it to commonly used treatments, and collect information that will allow the experimental drug or treatment to be used safely.

In [Phase IV trials](#), post marketing studies delineate additional information including the drug's risks, benefits, and optimal use.

\*The information found below is available through the U.S National Institutes of Health and can be found at <http://clinicaltrials.gov>. Visit the website for more information.



## **Clinical Trials and Research Sites**

### **ALS Therapy Development Institute**

- ❖ <http://www.als.net>

### **Les Turner ALS Foundation**

- ❖ <http://www.lesturnerals.org>

### **Medsearch Medical Reference for Gulf War-Related Research**

- ❖ <http://www.deploymentlink.osd.mil/deployed/index.jsp>

### **Muscular Dystrophy Association**

- ❖ <http://www.als-mda.org>

### **National ALS Association**

- ❖ <http://www.alsa.org>

### **National Center for Biotechnology Information (NCBI)**

- ❖ <http://www.ncbi.nlm.nih.gov/entrez/>

### **National Institute of Health (NIH)**

- ❖ <http://www.clinicaltrials.gov/>

### **NEALS(Northeast Amyotrophic Lateral Sclerosis Consortium)**

- ❖ <http://hedwig.mgh.harvard.edu/alsconsortium>