

# Glossary of Terminology and Abbreviations

## Medical

Term	Definition
<b>ADLs</b>	Activities of daily living
<b>Ambulatory</b>	Able to walk
<b>Arrhythmia</b>	A condition where the heart beats in an irregular or abnormal rhythm
<b>Ataxia</b>	Loss of coordination
<b>Cardiomyopathy</b>	Condition of the heart muscle where tissue is thickened between the ventricles; weakens heart function over time
<b>Dysarthria</b>	Difficulty of speech; slow, slurred speech
<b>Dysphagia</b>	Difficulty swallowing
<b>Dyspnea</b>	Shortness of breath; in FA, this condition often occurs in conjunction with cardiac insufficiency
<b>Ejection fraction</b>	Percentage of blood pumped from the heart with each heartbeat; normal EF is usually in the range of 55-70%
<b>HbA1c</b>	Measurement in diabetes of glycated hemoglobin over a 3-month time period; normal = <5.6%
<b>Natural History</b>	Description of the progression of disease over time
<b>Nystagmus</b>	Uncontrolled repetitive movements of the eye that usually do not affect vision
<b>Pes cavus</b>	A condition where the feet have a very high arch
<b>Proprioception</b>	Awareness of the position of the body and the strength of movement being employed. People with FA have a <i>lack</i> of proprioception in that when their eyes are closed or they are in low light conditions, they are often not able to maintain stability.
<b>Scoliosis</b>	Abnormal curvature of the spine
<b>Clinical diagnosis</b>	Diagnosis made on the basis of medical signs and patient-reported symptoms
<b>Genetic diagnosis</b>	Laboratory analysis of DNA to aid in the clinical diagnosis of disease; genetic testing can confirm a diagnosis or help predict likelihood of developing symptoms before they appear

## Genetics

Term	Definition
<b>Allele</b>	Different forms of the same gene
<b>DNA</b>	<u>D</u> eoxyribo <u>n</u> ucleic <u>a</u> cid; double-helix (double-stranded) molecules that contain genetic instructions; transcribed to RNA
<b>Exon</b>	The region within a gene that directly codes for a protein
<b>Gene</b>	Region of DNA that is a molecular unit of heredity; gene for FA is frataxin ( <i>FXN</i> )
<b>Genotype</b>	Genetic makeup of an individual organism
<b>Heterozygous</b>	Having two different alleles of a gene
<b>Homozygous</b>	Having two of the same alleles for a gene
<b>Intron</b>	The region within a gene that does not directly code for a protein but may have regulatory functions

<b>Loss of function mutation</b>	A mutation in a gene that causes the gene to not work as well as normal or produce less protein than it should
<b>Phenotype</b>	The physical manifestation of our genes; symptoms of a condition
<b>Point mutation</b>	A change in a single letter of DNA which may/may not affect protein structure
<b>RNA</b>	<u>R</u> ibon <u>u</u> cleic <u>a</u> cid; single-stranded molecules that contain genetic code and control gene expression; translated to proteins
<b>Triplet Repeat Expansion</b>	Increase in the number of three nucleotide units within a gene beyond the normal number; GAA expansion in FA causes the dysfunction in the <i>FXN</i> gene and low levels of frataxin protein to be made in the mitochondria

## Friedreich's Ataxia

Term	Definition
<b>FA/FRDA</b>	Friedreich's Ataxia
<b><i>FXN</i></b>	Frataxin gene
<b>frataxin</b>	Protein produced by <i>FXN</i> gene
<b>mitochondria</b>	Energy producing units within cells; produce ATP for cellular function

## Research and Clinical Trials

Term	Definition
<b>Biomarker</b>	A biological measure or molecule that can be found in blood, other body fluids, or tissues as a sign of a normal or abnormal process or an indicator of disease; may be measured to see how the body responds to a treatment for a disease
<b>CBER</b>	Center for Biologics Evaluation and Research; part of FDA
<b>CCRN</b>	Collaborative Clinical Research Network; FA specialty clinics
<b>Clinical Study</b>	Allows investigators to research humans affected by a disease to provide further medical knowledge of the condition
<b>Clinical Trial</b>	An investigation to explore if a medical strategy, treatment, or device is safe and effective for humans
<b>COA</b>	Clinical outcome assessment; measures how a patient feels or functions and is used to determine whether a treatment has demonstrated a benefit
<b>CRU</b>	Clinical research unit
<b>Ex vivo</b>	Procedure where organ, tissue, or cells are taken from a living organism, treated, and then returned to the living body; this term describes procedure for gene therapy
<b>FARS/mFARS</b>	(m=Modified) Friedreich's Ataxia Rating Scale - measures upper and lower limb coordination, upright stability, bulbar function, and peripheral nervous system function
<b>FDA</b>	Food and Drug Administration; regulates the drug development process
<b>Gene editing</b>	Methodology to directly change the sequence of DNA within a gene to correct genetic disorders
<b>Gene therapy</b>	The transfer of a normal gene into cells in replace missing or defective genes to correct genetic disorders
<b>Half-life</b>	The time required for a drug concentration to reach half its original value in the body

<b>IND</b>	Investigational new drug
<b>In vitro</b>	Studies performed on biological material (cells, tissues) outside their normal biological environment; opposite of in vivo; allows for control over what is introduced during the study to assess the outcome; this term describes type of studies performed during pre-clinical research
<b>In vivo</b>	Studies performed within a living organism (animals, humans); opposite of in vitro; this term describes type of studies performed in drug clinical trials
<b>NCATS</b>	National Center for Advancing Translational Sciences; part of NIH
<b>NDA</b>	New drug application
<b>NIH</b>	National Institutes of Health
<b>Oligonucleotide</b>	Short DNA or RNA molecules, called oligomers, that have a wide range of applications in genetic testing and research
<b>Outcome measures</b>	An assessment of physical performance used in clinical trials; examples include the timed 25-foot walk and the 9-hole pegboard test
<b>Oxidative stress</b>	Imbalance between the production of free radicals and the ability of the body to counteract or detoxify their harmful effects through neutralization by antioxidants. A free radical is an oxygen containing molecule that has one or more unpaired electrons, making it highly reactive with other molecules
<b>p-value</b>	Probability value; defines statistical significance; the lower the p-value (usually <0.05), the greater the likelihood the result/outcome did <u>not</u> happen by random chance
<b>Peak-value</b>	The time during which a drug has its maximum biological effect
<b>Pharmacodynamics</b>	Biochemical and physiological effects; relationship of drug concentration and biological effect
<b>Pharmacokinetics</b>	Measurements of how a drug is taken up and distributed throughout the body; sometimes described as “half-life” of clearance of drug from body
<b>Placebo</b>	A substance that has no therapeutic effect; used as a control within clinical research for comparison to what is being evaluated in the study
<b>PROs</b>	Patient reported outcomes; description directly from a patient about his/her own health status, and, ideally, implicates the symptoms that are most meaningful for targets of drug development
<b>Prospective study</b>	the researchers want to determine an outcome by following groups of people over time after a drug is administered or by recording medical and/or lifestyle changes
<b>Randomized controlled study</b>	Clinical study that randomly (by chance) assigns participants to two or more groups of observation or treatment; <b>double-blind randomized controlled study</b> is a study where neither the participants nor the investigators know who is getting the drug and who is getting the placebo to avoid bias in interpreting observations and measurements
<b>Retrospective study</b>	researchers already know the outcome and are searching for the correlation, influencing factors, or cause
<b>SAE</b>	Serious adverse event; can occur during evaluation of a potential treatment – drug or medical device – and must be reported to FDA
<b>Statistical significance</b>	defines numerical data where it is very <u>unlikely</u> that the result (outcome) occurred by random chance
<b>Vector</b>	Biological vehicle used to deliver gene therapy to cells (ex. viruses)