

Updated August 2023

Your Contributions to ALS Research through Biomarkers

Where science and altruism come together

What is a biomarker?

A biomarker is an indicator of what is happening inside your body. Biomarkers include everything from vital signs to laboratory tests performed on your blood and other tissues.

A biomarker may be used to: (1) learn more about a disease, (2) follow disease progression, (3) monitor how a disease responds to a study drug, or (4) serve as a target for treatment.

How are biomarkers collected?

Many biomarkers are collected from various tissue and fluids in your body, known as biofluids. Examples of biofluids may be found below.

Blood carries nutrients, drugs, and waste throughout the body. By collecting blood, researchers can measure how a study drug is broken down and used in the body. Additionally, genetic forms of ALS can be discovered by analyzing DNA from blood samples.

Urine carries biomarkers, such as proteins that fluctuate in concentration with ALS progression, as they are flushed out from your body.

Cerebrospinal fluid (CSF) surrounds the brain and spinal cord, containing breakthrough biomarkers that are unique from those found in the blood. CSF samples are collected through lumbar punctures (LPs): Scan the QR codes on the next page to learn more about LPs*.

At-Home Digital Biomarkers

Innovation in technology allows for the collection of biomarkers from your home. Examples include analysis of speech through voice recordings and testing of lung function through home spirometry.

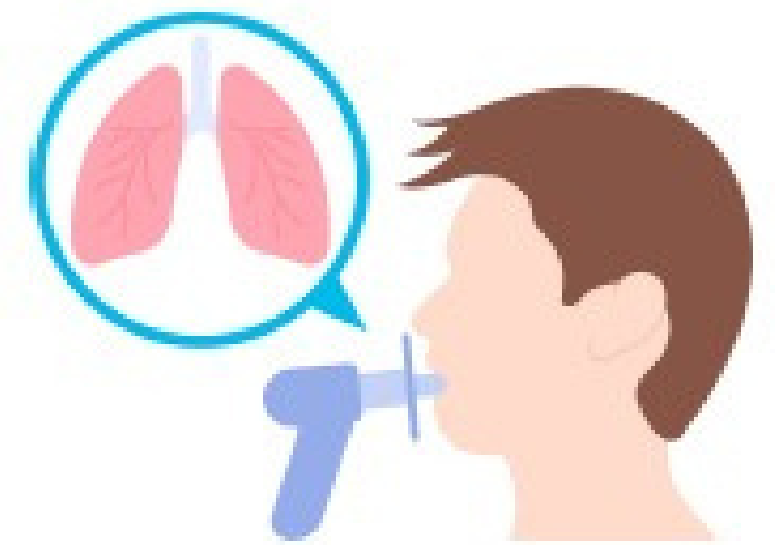
Examples of Biomarkers



Blood, Urine, and CSF



Mobile recording app



Spirometer

How do your biomarkers contribute to ALS research?

Expand knowledge of ALS

Identifying biomarkers for ALS may accelerate diagnostic time, which allows for earlier access to care, increases quality of life, and potentially slows progression. Participating in research may lead to the discovery of new biomarkers of ALS, and accelerate future research. Each tube of biofluid and every metric of progression expands knowledge of ALS which is used to develop new drugs and discover breakthroughs in treatment.

For more information:
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Improve Understanding of Drug Efficacy & Accelerate Drug Development

Collecting samples at multiple stages of a clinical trial can help determine the effectiveness of a study drug, also known as drug efficacy.

Pharmacokinetic studies refer to the examination of a drug as it moves through the body and breaks down. By following the drug's pathway towards its target, researchers can assess if the drug is achieving its intended effect and how much of the drug is needed. Once the drug has reached its target, pharmacodynamic studies assess how the drug is affecting the body. For example, if a drug aims to decrease the amount of a protein, levels of that protein would serve as a pharmacodynamic biomarker.

Understanding the efficacy of a study drug with the help of biomarkers accelerates further drug development.



Benefit future people with ALS (pALS)

Your participation in research contributes to improved healthcare for everyone with the disease. Your biomarkers provide researchers with valuable information about ALS, and allow for advancements in drug development and quality care.

We thank you for partnering with us to help find answers. Your participation is an incredible act of altruism (ALS-truism!) for generations to come.

THANK YOU

Stay Connected to ALS Research

Join the MGH ALS Link to Stay Connected to Research:



<https://lp.constantcontactpages.com/su/saTzwlp/ALSLink>

*Lumbar Puncture Brochure



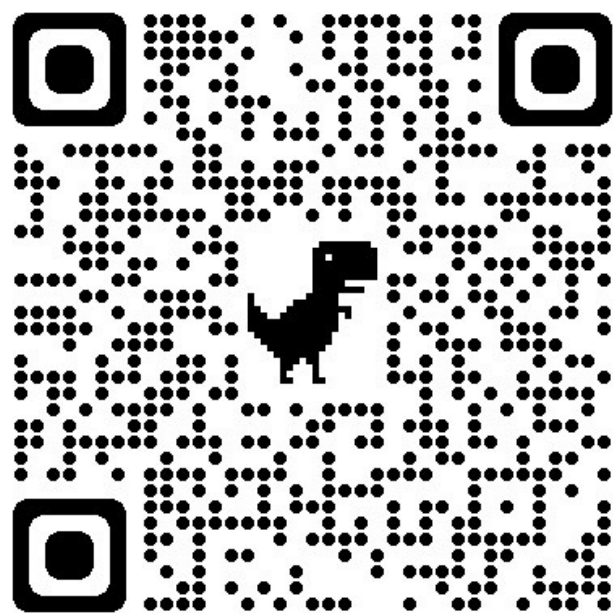
<https://www.massgeneral.org/assets/mgh/pdf/neurology/als/platformtrial.lumbarpuncture.pdf>

Lumbar Puncture Video



<https://www.youtube.com/watch?v=3oml0Enl8o>

Learn about current Clinical Research Opportunities at the Healey Center:



<https://www.massgeneral.org/neurology/als/research/als-clinical-trials>