

# Introducing the Ultragenyx LC-FAOD Disease Monitoring Program:

Our Commitment to Advancing LC-FAOD Research Globally

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# Introductions



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# Today's Webinar

## About Ultragenyx

- Our commitment to people living with long-chain fatty acid oxidation disorders (LC-FAOD)

## How the LC-FAOD community is helping to advance research at Ultragenyx

## Overview of the LC-FAOD Disease Monitoring Program (DMP)

- Study goals, design, and key program details
- Vision to advance research for the entire LC-FAOD community
- Next steps

## Q&A

# About Ultragenyx

Ultragenyx is a **biopharmaceutical company** committed to bringing patients novel products for the treatment of **rare and ultra-rare diseases, including LC-FAOD**

Headquartered in **Novato, California**, with US offices in San Francisco Bay Area and Massachusetts, and global offices in Europe and Latin America, and a presence in Canada

**Founded by Emil Kakkis, MD, PhD**, in 2010, who began his work developing an enzyme replacement therapy for mucopolysaccharidosis (MPS) type I in partnership with the Ryan Foundation

More than **900 employees**



# Patient Advocacy and Patient Engagement at Ultragenyx

## OUR PURPOSE

Advance global rare disease advocacy through inclusive patient engagement and partnership.



### Learn From People Living With Rare Diseases and Partner With Organizations

- Build **long-term relationships** with patient organizations
- **Understand experiences, challenges, and unmet needs** of patients and families
- Focus on **ensuring diverse voices and perspectives**



### Incorporate Community Perspectives Into Our Programs and Decisions

- Collaborate with cross-functional teams at Ultragenyx to:
  - **Establish framework for how patient and caregiver input is consistently incorporated** at all stages of development
  - Transparently **share with external communities the impact of their input**



### Address the Unmet Needs of Rare Communities

- **Support the vital work** of patient organizations
- Develop **education, resources, and programs** that meet the needs of patient communities
- Provide information and engage with the rare disease community at [UltraRareAdvocacy.com](https://ultrarareadvocacy.com) and on **Facebook**



# Ultragenyx and the Community: Partners in Advancing Research

Ultragenyx is committed to:

- **Advancing research** to better understand the science/treatment of LC-FAOD since 2013
- **Engaging with patients**, caregivers, and family members as partners across the continuum of LC-FAOD interventional and observational research
- **Supporting the research** interests of scientists and clinicians who are focused on globally generating evidence to improve our understanding of LC-FAOD and its disease management

This commitment includes:



Fostering  
partnerships to elevate  
the patient voice



Uncovering and  
addressing unmet  
patient needs



Empowering patients to  
successfully navigate the  
health care system



Developing research  
programs based on patient  
and caregiver insights

# Patients and Caregivers Shape Ultragenyx LC-FAOD Research Goals



**Ultragenyx convenes forums such as the LC-FAOD Patient Leadership Council (PLC) and advisory boards to generate insights that aim to guide company decision-making**

- Understand what is most important to people living with LC-FAOD
- Allow for open and transparent dialogue that helps determine appropriate ways to support the community

## LC-FAOD Patient Leadership Council (PLC)

The PLC, established in 2017, aims to provide a bridge between the LC-FAOD community and the company, to support open and transparent dialogue and to determine appropriate avenues for partnership and ways to support the community

## Patient and caregiver advisory boards

Ultragenyx has held 5 advisory boards between 2015 and 2021 to generate insights that help inform strategy, planning, and decision-making, from research and development to commercialization

# The LC-FAOD DMP Aims to Address Research Questions of Critical Importance to the Patient Community

Examples of key insights from 2015 to 2021 that have informed the development of Ultragenyx LC-FAOD DMP studies

Support patients in answering question that matters most:  
**“How am I doing?”**

Understand natural history of how LC-FAOD **progresses and may change** over time

Impact of LC-FAOD on a person’s ability to perform some **daily living activities**

**Understand differences** among the 6 types of LC-FAOD

Impact of **disease management** on LC-FAOD



# Introducing the Ultragenyx LC-FAOD Disease Monitoring Program: Our Commitment to Advancing LC-FAOD Research Globally

**Laura Pisani-Betancourt, MD**  
Medical Director, Global Clinical Development  
Ultragenyx Pharmaceutical Inc.



# Agenda

Overview of Ultragenyx  
LC-FAOD Research

What Is a Disease Monitoring Program (DMP)?

LC-FAOD DMP

Next Steps and Q&A

# Our Long-term Commitment to Advancing LC-FAOD Research



Our commitment to the LC-FAOD community continues beyond conducting interventional clinical trials to improve disease management

# What Is a Disease Monitoring Program (DMP)?



## A unique vision that is different from a traditional registry:

- Long-term prospective, observational outcomes study to collect information for at least 10 years among adult and pediatric patients living with a rare disease



## A DMP is designed to:

- Monitor disease manifestations in patients, regardless of their disease management
- Ensure consistent collection, ownership sharing, and governance of data
- Characterize the clinical presentation, progression of the disease, and impact of disease management



## Ultragenyx developed this concept of a DMP to:

- Overcome some of the challenges related to developing and managing orphan drug and rare disease patient registries
- Improve transparent data sharing between academic and commercial stakeholders
- Be a public-private partnership (in the preferred model)

## Ultragenyx LC-FAOD DMP

With the LC-FAOD DMP, Ultragenyx **has a vision to go above and beyond to exceed expectations** in ways that are meaningful for patients and caregivers

The LC-FAOD DMP is a novel approach to conducting a **global, long-term observational study** of patients who manage their disease using different approaches—no intervention is provided as part of a DMP

The LC-FAOD DMP will be **fully sponsored by Ultragenyx** and build on earlier research findings in larger, more diverse populations

# In-Clinic and Online LC-FAOD DMP Studies



UX007-CL401

## **LC-FAOD In-Clinic DMP**

- Primary objective is to assess the long-term safety, including pregnancy, infant, and lactation outcomes, of patients with LC-FAOD who are enrolled in the DMP
- ~300 adult and pediatric participants globally, starting with the United States and Canada
- Will involve visits to study sites and interactions with health care providers

## **LC-FAOD Online DMP**

- Objectives are to characterize the disease impact, disease management, and resource utilization, and provide benefits to the LC-FAOD community, by use of a convenient online platform for participants (or caregivers) to self-report information
- Will not involve in-clinic visits and will include limited virtual interaction with health care providers
- No limit on the number of participants
- Adult and pediatric patients (and caregivers) worldwide are eligible



UX007-CL402



# LC-FAOD DMP Key Features

1

Intentionally designed to be different from traditional post-marketing commitment studies

2

Built to be a resource for the LC-FAOD community, not just Ultragenyx

3

The Ultragenyx LC-FAOD DMP is different, because the research questions are designed to understand how patients manage their condition, regardless of the type of treatment that they may be receiving

- Aims to identify ways to support the entire LC-FAOD community

4

Will be the largest, longest, and broadest study for LC-FAOD ever conducted and is open to anyone living with LC-FAOD

5

Participants will continue to have access to their own physicians and care teams outside the study

# Community Engagement Is Central to the LC-FAOD DMP

## LC-FAOD DMP goals are directly informed by the LC-FAOD community

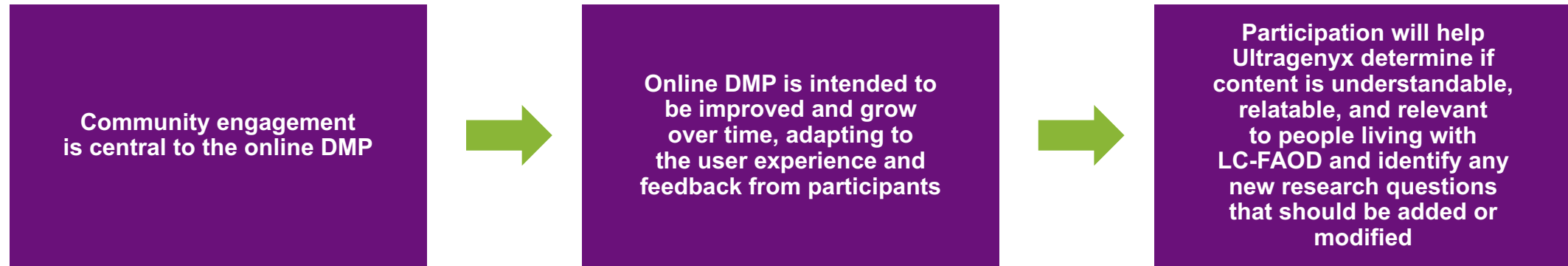
- Patients and families living with LC-FAOD have shaped the research topics the DMP will study by sharing their feedback at advisory boards and on the Ultragenyx PLC
- We have learned that is a desire for participants to have access to the data that they contribute when participating in research studies

## Once the DMP is launched, Ultragenyx will continue to identify opportunities to seek feedback from patients, family members, and advocates in order to:

- Capture feedback to help guide Ultragenyx's decision-making to implement any changes that may help to improve the DMP experience for participants
- Ensure DMP participants have an overall positive experience and that the online DMP is easy to use
- Ensure that online DMP survey questions are relevant, meaningful, and understandable

# Unique Characteristics of UX007-CL402 (Online DMP)

## Iterative and continuous improvement process



## Why is this important to know?

- Approximately a 10-year study
- We want to set expectations so the community understands that the online DMP will evolve over time based on community participation and feedback
- Voices will be heard
- Currently assessing opportunities to collect feedback and understand the user experience

# The DMP Is Designed to Better Understand LC-FAOD

**The goal of the DMP, as informed by the LC-FAOD community, is to better understand the disease—including the burden of disease on patients and their use of healthcare resources—as well as the impact of disease management, including its safety and effectiveness.**

## Specific outcomes of interest include:



Frequency and duration of LC-FAOD–related major clinical events (MCEs) and rates and duration of hospitalizations

- MCEs are metabolic crises: Rhabdomyolysis, cardiomyopathy, hypoglycemia



Signs, symptoms, management, comorbidities, and long-term complications



How the disease may change over time



Tracking of nutritional interventions over time



Impact of LC-FAOD on patients and families

- Impact of symptoms, MCEs, and quality of life
- Ability for patients to participate in social and physical activities
- Impact of LC-FAOD on school, work, relationships, and emotional and mental health
- Impact of LC-FAOD on the entire family



Incidence of all gastrointestinal adverse events reported for all patients with LC-FAOD

# Overview of Key Information the DMP Will Collect and Study

## Metabolic Crises

- Frequency and duration of MCEs, including rhabdomyolysis, cardiomyopathy, hypoglycemic episodes
- Frequency and duration of all hospitalizations over time

Real-world data to understand economic burden of disease, specifically hospitalizations, length of stay in intensive care unit, and emergency department visits

Incidence and cause of death

Distance walked as measured by 12-minute walk test (12MWT)

Change in signs, symptoms, impact of disease management, and disease manifestations of LC-FAOD over time

Health-related quality of life and patient-reported outcomes (PROs)

# The DMP Aims to Better Understand LC-FAOD in Newborns

DMP provides an opportunity to follow newborns from diagnosis and understand the use and impact of disease management over a long-term period

DMP hopes to enroll families that may have more than 1 affected child

Collection of key information on infant outcomes from pregnancy through the first year of life



# The DMP Also Aims to Better Understand the Health of Pregnant Women and Their Infants

## The in-clinic DMP will include a pregnancy safety study

- Assess long-term safety and pregnancy outcomes of patients with LC-FAOD
- Collect information about the patient's health and their infant's health

## Pregnancy safety study will include 2 key groups

- Pregnant LC-FAOD women carrying unaffected fetuses
- Unaffected pregnant women carrying fetuses with LC-FAOD

## Key features

- Safety information collected mid-pregnancy and within 1 month of the estimated due date
- Postpartum safety information on the mother collected every 6 months

# The DMP Will Advance LC-FAOD Science Through Data Sharing



The DMP will be a resource for the LC-FAOD community, not just the company



The DMP will provide benefit across the healthcare ecosystem, including value to rare disease patients, patient advocacy groups, health care providers, reimbursement authorities, and researchers



DMP participants will be able to readily access their data, and privacy is paramount

- Only relevant, de-identified data will be communicated to researchers, physicians, payers, and regulators, to help guide decision-making and generate future research



The DMP will provide an opportunity for long-term engagement of patients through sharing of meaningful, real-world data

# A Steering Committee Will Play a Critical Role in Advancing the Goals of the LC-FAOD DMP

## The steering committee will include:

Disease area experts in North America, Latin America, and/or European Union who have significant knowledge of LC-FAOD and experience managing this group of conditions

Members of the LC-FAOD community who represent and advocate for the interests of the patient, family, and advocacy communities

Internal Ultragenyx employees who will be tasked with strategic, technical, and operational management of the DMP

# The Role of the LC-FAOD DMP Steering Committee

The steering committee will have a broad scope of functions

**Provides strategic advice on DMP governance of:**

- **Research proposals**, including requests to study new domains, conduct sub-studies and other projects with scientific merit
- **Data-sharing requests**, such as requests for permission to view data, such as number of DMP participants and prevalence of diagnoses among them, impact of symptoms and/or complications on work or school
- **Publication review and finalization process**
- **Analysis planning and review**

**Help determine ways to share publications with the patient and family community**

**Any member of the steering committee can present proposals to the committee for consideration**


# Similar Ultragenyx DMPs

## GNE Myopathy Disease Monitoring Program (GNEM DMP)





- Established in partnership with TREAT-NMD
- Online registry open to patients with GNE myopathy of any age who are clinically diagnosed or genetically confirmed
- Anonymous data systematically gathered and made accessible to medical and research community, patients, families, and patient advocacy organizations in the form of scientific papers or reports
- Provided disease insights and helps drive patient-focused clinical research questions
- Governed by steering committee and ethics committee

## Similar DMPs in

- X-linked hypophosphatemia (XLH)
- Mucopolysaccharidosis VII (MPS VII)



The GNEM DMP logo is at the top, with 'gnem' in grey, 'DMP' in large blue and red letters, and 'DISEASE MONITORING PROGRAM' in smaller grey text below. Below the logo are the logos for Newcastle University, Ultragenyx pharmaceutical, and TREAT-NMD Neuromuscular Network.

Why should I sign up?			
For You The Patient	For Your Doctor	For Treatment Development	For The World
			
Help you track your health	To help clinicians better manage and support a patient's understanding of GNE myopathy	To help researchers design (and recruit for) clinical trials more quickly	To help improve the standard of care for all people with GNE myopathy
Access reports showing disease dynamics		To develop potential treatments	
Anonymously compare yourself to a deidentified group of patients with GNE myopathy			

# In Conclusion: Key LC-FAOD DMP Features to Remember

## DMP will include 2 different studies

- **In clinic:** Will aim to enroll approximately 300 adult and pediatric patients with LC-FAOD globally, starting with the United States and Canada
- **Online:** Will be open to all adult and pediatric patients with LC-FAOD living worldwide

## There is no intervention provided as part of the DMP

- Participants will directly contribute to research advances, regardless of disease management

## Fully sponsored study that is good clinical practice (GCP) compliant and regulatory appropriate

- All doctor and patient costs covered

## Anyone who is diagnosed with LC-FAOD can participate

- You can participate, regardless of how you treat or manage your disease, or age
- Before birth through death

## Participants will continue to have access to their own physicians and care teams outside the study



# Anticipated Timelines

## Aim to launch the DMP in 2021

- Likely in-clinic will begin first; United States to start
- Online DMP will launch after the in-clinic study opens



## Iterative process

- Particularly for the online DMP; community participation and feedback will help to inform development of new research questions and identify important trends over time

# The DMP and the LC-FAOD Odyssey Study: Two Ways to Contribute to Ultragenyx Research

	LC-FAOD DMP led by Ultragenyx	LC-FAOD medical record study in partnership with PicnicHealth
STUDY DESIGN	<ul style="list-style-type: none"> <li>Long-term <b>prospective outcomes study</b> for up to 10 years</li> <li><b>Regular collection of a broad range of measures</b> at specific time points over 10 years</li> </ul>	<ul style="list-style-type: none"> <li><b>7 years+ retrospective data and 12 months+ prospective data</b></li> <li>Observational with <b>no specific visits/tests required</b></li> <li><b>Baseline and quarterly PROs</b></li> </ul>
DATA COLLECTION	<ul style="list-style-type: none"> <li><b>In clinic</b> with study sites</li> <li><b>Online</b> (web-based)</li> </ul>	<ul style="list-style-type: none"> <li><b>Online</b> (web-based)</li> </ul>
ROLE OF MEDICAL RECORDS	<ul style="list-style-type: none"> <li><b>Retrospective</b> 18 months or birth (whichever is earlier) for LC-FAOD biomarkers, major event/hospitalization assessment, additional disease manifestations during MCEs</li> <li><b>Prospective</b> Medical data captured via various surveys as part of study protocol</li> </ul>	<ul style="list-style-type: none"> <li><b>Retrospective</b> Ability to capture at least 7 years of comprehensive deidentified data from all HCPs</li> <li><b>Prospective</b> Same ability for as long as study continues</li> </ul>
PATIENT PARTICIPATION	<ul style="list-style-type: none"> <li><b>In clinic: ~300 patients; globally, starting in the United States and Canada</b></li> <li><b>Online: No limit</b> to number of patients/caregivers who can participate; global</li> </ul>	<ul style="list-style-type: none"> <li><b>~100 patients; United States only</b></li> </ul>

# How You Can Stay Informed About the LC-FAOD DMP

1

Stay in touch with your metabolic geneticist

2

Ultragenyx will share information with MitoAction and INFORM once we have more information about the DMP studies

3

Visit [www.ultrarareadvocacy.com](http://www.ultrarareadvocacy.com) to stay in touch with the Patient Advocacy team and access information about LC-FAOD

# Any questions?



# Thank You!



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pharmaceutical