

# A 2-part, randomized, double-blind, placebo-controlled study in participants with Duchenne muscular dystrophy amenable to exon 45 skipping to evaluate the safety and efficacy of ENTR-601-45 (ELEVATE-45)

<b>Submission date</b> 28/12/2024	<b>Recruitment status</b> Recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 30/05/2025	<b>Overall study status</b> Ongoing	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 01/07/2025	<b>Condition category</b> Nervous System Diseases	<input type="checkbox"/> Individual participant data <input checked="" type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

The study aims to determine if ENTR-601-45 is safe, identify any side effects, and see how well it works on DMD by possibly increasing dystrophin protein production. Dystrophin helps muscles function properly. ENTR-601-45 is an investigational medication, meaning it has not been approved by the Medicines and Healthcare products Regulatory Agency (MHRA), the health authority that gives approval for new medications in the United Kingdom.

### Who can participate?

This study is for ambulatory minors and adults aged 4 to 20 years old, inclusive, who were assigned male at birth, have a confirmed diagnosis of Duchenne muscular dystrophy, and have a genetic variant of the dystrophin gene that allows ENTR-601-45 to skip exon 45. People cannot take part if they have another ongoing disease or condition affecting the kidneys.

### What does the study involve?

Participants will receive either ENTR-601-45 or a placebo (a substance with no active ingredients). At the end of the 25 weeks of the study, all participants (including those who received a placebo) may be able to receive ENTR-601-45 in a long-term study. All participants will be screened to confirm eligibility for participation. This involves providing biological samples (e.g., blood and urine) and undergoing additional physical procedures at study visits. Participants will have two muscle biopsies over the course of the study. Muscle biopsies are important because they allow researchers to compare whether there have been changes in the muscle as a result of the study drug. The study requires regular health check visits, which will be completed according to a schedule. During these visits, various tests will be conducted, including physical exams, heart rate, temperature, blood pressure, electrocardiogram, echocardiogram, and muscle function tests.

What are the possible benefits and risks of participating?

Participants may or may not benefit from this study. Participation could help increase knowledge about DMD and the study medication. The possible benefit of receiving ENTR-601-45 for participants is dystrophin production may increase and improve muscle function, but there is no guarantee this will happen. This is the first study of ENTR-601-45 in humans; therefore, there is no previous information on possible benefit in humans.

Similarly, this is the first study with the medication in humans, there is no previous information on side effects in humans. There have been studies done in laboratories on animals, and there have been studies with similar medicines. From this research, possible side effects might include issues with kidney function, blood clotting, blood cell count, and liver enzymes. There could also be side effects from the medication administration and muscle biopsies. However, researchers do not know all the side effects that could happen.

Where is the study run from?

Entrada Therapeutics, Inc. (USA)

When is the study starting and how long is it expected to run for?

December 2024 to March 2029

Who is funding the study?

The Sponsor, Entrada Therapeutics, Inc., is providing financial support and materials for this study. The study site is being paid by the Sponsor to do this study. Otherwise, the site staff including the study doctor have no financial ties to the Sponsor.

Who is the main contact?

clinicaltrials@entradatx.com

## Contact information

### Type(s)

Scientific

### Contact name

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### Contact details

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### Type(s)

Principal investigator

### Contact name

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### Contact details

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### **Type(s)**

Public, Scientific

### **Contact name**

Dr Entrada Therapeutics Clinical Trials

### **Contact details**

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clinicaltrials@entradatx.com

## **Additional identifiers**

### **Clinical Trials Information System (CTIS)**

2024-517499-39

### **Integrated Research Application System (IRAS)**

1010846

### **ClinicalTrials.gov (NCT)**

Nil known

### **Protocol serial number**

ENTR-601-45-201, CPMS 66105

## **Study information**

### **Scientific Title**

A 2-part, randomized, double-blind, placebo-controlled study in participants with Duchenne muscular dystrophy amenable to exon 45 skipping with an initial multiple ascending dose part A to assess the safety, tolerability, pharmacokinetics and pharmacodynamics of ENTR-601-45, followed by part B to evaluate the safety and efficacy of ENTR-601-45 (ELEVATE-45)

### **Acronym**

ELEVATE-45

### **Study objectives**

Key Objectives (Part A):

1. To evaluate the safety and tolerability of ENTR-601-45 in participants with Duchenne muscular

dystrophy (DMD)

2. To characterize the pharmacokinetics of ENTR-601-45 in participants with DMD
3. To characterize the pharmacodynamics of ENTR-601-45 in participants with DMD
4. To evaluate the immune response to ENTR-601-45 in participants with DMD

### **Ethics approval required**

Old ethics approval format

### **Ethics approval(s)**

Approved 19/03/2025, London – Brent Research Ethics Committee (2 Redman Place, Stratford, London, E20 1JQ, UK; Tel: N/A; brent.rec@hra.nhs.uk), ref: 25/LO/0074

### **Study design**

Interventional double-blind randomized parallel group placebo-controlled trial

### **Primary study design**

Interventional

### **Study type(s)**

Safety, Efficacy

### **Health condition(s) or problem(s) studied**

Duchenne muscular dystrophy

### **Interventions**

Experimental: ENTR-601-45.

Participants will receive a fixed number of doses at one of three dose levels. One dose will be given every 6 weeks.

Drug: ENTR601-45. Given by IV infusion as specified under Participant Group/Arm.

Placebo Comparator Arm: ENTR-601-45 matching placebo

Participants will receive a fixed number of placebo doses matched to ENTR-601-45 doses. One dose will be given every 6 weeks.

Drug: ENTR-601-45 – Matching Placebo: Given by IV infusion as specified under Participant Group /Arm.

### **Intervention Type**

Drug

### **Phase**

Phase I/II

### **Drug/device/biological/vaccine name(s)**

ENTR-601-45

### **Primary outcome(s)**

1. Overall safety and tolerability of ENTR-601-45, measured using:
  - 1.1. Incidence and severity of treatment-emergent adverse events (TEAEs)
  - 1.2. Changes in vital sign measurements
  - 1.3. Clinical laboratory results
  - 1.4. Electrocardiogram (ECG) parameters

1.5. Physical examination findings  
From baseline through the End of Study visit

**Key secondary outcome(s)**

1. Plasma, muscle, and urine concentration of ENTR-601-45 and its final metabolite at prespecified timepoints during the study
2. Change from baseline in dystrophin by Western blot from muscle biopsy at the End of Study
3. Change from baseline in dystrophin expression and localization from muscle biopsy at the End of Study
4. Percent change from baseline in exon 45 skipping measured in muscle biopsy at the End of Study
5. Anti-drug antibody (ADA) and anti-dystrophin antibody in serum at prespecified timepoints during the study

**Completion date**

01/03/2029

**Eligibility**

**Key inclusion criteria**

1. Genetic diagnosis of DMD and confirmed pathologic variant in the dystrophin gene amenable to exon 45 skipping as reviewed by a central genetic counselor
2. Assigned male at birth with clinical signs compatible with Duchenne muscular dystrophy as determined by the investigator
3. Part A: 4-20 years of age, inclusive
4. Ambulatory Status Part A: ambulatory with a Performance of the Upper Limb v2.0 (PUL 2.0) Entry as per protocol at Screening
5. Adequate muscle for obtaining tissue biopsy as assessed by the investigator
6. Other protocol-defined criteria apply

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Mixed

**Lower age limit**

4 years

**Upper age limit**

20 years

**Sex**

Male

**Key exclusion criteria**

1. Any significant concomitant medical condition that might interfere with the ability to comply with protocol requirements.
2. Has an acute illness within 4 weeks prior to the first dose of study drug which may interfere with study measurements or jeopardize the participant's safety
3. Use of the following medications:
  - 3.1. Prior treatment with any exon skipping therapy at any time
  - 3.2. Prior or current treatment with any gene therapy at any time
  - 3.3. Use of anti-coagulants, anti-thrombotics, or anti-platelet agents
  - 3.4. Use of an immunosuppressant for a non-DMD condition from 30 days prior to screening until the end of the study
  - 3.5. Has taken or is currently taking a histone deacetylase (HDAC) inhibitor, including (but not limited to) givinostat from at least 30 days prior to the start of the screening period until the end of the study
4. Laboratory abnormalities
5. Daytime ventilator dependence or any use of invasive mechanical ventilation via tracheostomy
6. Has an abnormal electrocardiogram (ECG) reading assessed as clinically significant by the investigator, and/or a QT interval with Fridericia correction method (QTcF) >450 msec at Screening or prior to the first dose of study drug on Day 1
7. Received any experimental or investigational drug, etc within 3 months prior to first dose or within 5 half-lives (whichever is longer)
8. Other protocol-defined criteria apply

**Date of first enrolment**

30/09/2025

**Date of final enrolment**

03/08/2028

## **Locations**

**Countries of recruitment**

United Kingdom

England

Belgium

Italy

Netherlands

Spain

**Study participating centre**

**UZ Leuven**

Belgium

-

**Study participating centre**  
**University Hospital Gent**  
Belgium

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**Study participating centre**  
**Centre Hospitalier Régional de la Citadelle**  
Belgium

-

**Study participating centre**  
**IRCCS Ospedale San Raffaele**  
Italy

-

**Study participating centre**  
**Fondazione Policlinico Universitario A. Gemelli IRCCS - Università Cattolica del Sacro Cuore**  
Italy

-

**Study participating centre**  
**Ospedale Pediatrico Bambino Gesù**  
Italy

-

**Study participating centre**  
**Hospital Sant Joan de Deu**  
Spain

-

**Study participating centre**  
**Hospital Universitario Vall d'Hebron**  
Spain

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**Study participating centre**  
**Stichting Radboud Universitair Medisch Centrum**  
Netherlands  
-

**Study participating centre**  
**Leids Universitair Medisch Centrum**  
Netherlands  
-

**Study participating centre**  
**Great Ormond Street Hospital for Children**  
Great Ormond Street  
London  
United Kingdom  
WC1N 3JH

**Study participating centre**  
**Alder Hey Children's NHS Foundation Trust**  
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Eaton Road  
West Derby  
Liverpool  
United Kingdom  
L12 2AP

**Study participating centre**  
**Leeds General Infirmary**  
Great George Street  
Leeds  
United Kingdom  
LS1 3EX

**Study participating centre**  
**Royal Manchester Children's Hospital**  
Hospital Road  
Pendlebury  
Swinton  
Manchester  
United Kingdom  
M27 4HA

**Study participating centre**  
**Oxford University Hospitals NHS Foundation Trust**  
John Radcliffe Hospital  
Headley Way  
Headington  
Oxford  
United Kingdom  
OX3 9DU

## Sponsor information

**Organisation**  
Entrada Therapeutics, Inc.

## Funder(s)

**Funder type**  
Industry

**Funder Name**  
Entrada Therapeutics

**Alternative Name(s)**  
Entrada Therapeutics, Inc.

**Funding Body Type**  
Government organisation

**Funding Body Subtype**  
For-profit companies (industry)

**Location**  
United States of America

## Results and Publications

### Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are not expected to be made available due to the data's high commercial sensitivity.

**IPD sharing plan summary**

Not expected to be made available