

# **Patient and Caregiver-Reported Outcomes of Patients in Clinical Trials of Eteplirsen for Treatment of Duchenne**



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**Peripheral and Central Nervous System Drugs Advisory Committee**

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# Background

- **FDASIA § 1137** requires FDA to: “solicit the views of patients during the medical product development process and consider the perspectives of patients during regulatory discussions.”
- **Multiple meetings with the FDA over the past 4 years**
- **Discussed eteplirsen-treated patients reporting new skills they did not possess prior to taking the drug**

# Timeline of FDA Meetings

- **April 2013: meets Dr. Woodcock & CDER to discuss experiences of patients on eteplirsen**
  - CDER requests video & other evidence to support patient experiences
- **June 2013: presents patient evidence to CDER**
  - CDER asks for quantitative information on outcomes important to patients
- **July 2015: presents results of interviews**
  - CDER indicated they would include this PRO in the review of the eteplirsen NDA

# Interview Goals

- **Spontaneous Falls**
- **Walking After Fractures**
- **Fatigue**
- **Ability to Participate in Life, including Activities of Daily Living (ADLs)**

# Methods

- **Contacted all 12 participants in Study 202**
  - 8 of 12 agreed to be interviewed
    - Included two boys that lost ambulation early in trial
    - Interviews took place 3 years after start of trial
    - In decline phase of ambulation and  $\geq 7$  years old
- **Also interviewed 3 boys in Study 204 (limited-ambulation trial)**
- **In total, 11 boys participated in the PRO**
  - Parent caregivers rated their boys' function, ADLs, and quality of life

# Example of a Spontaneous Duchenne Fall



VIDEO

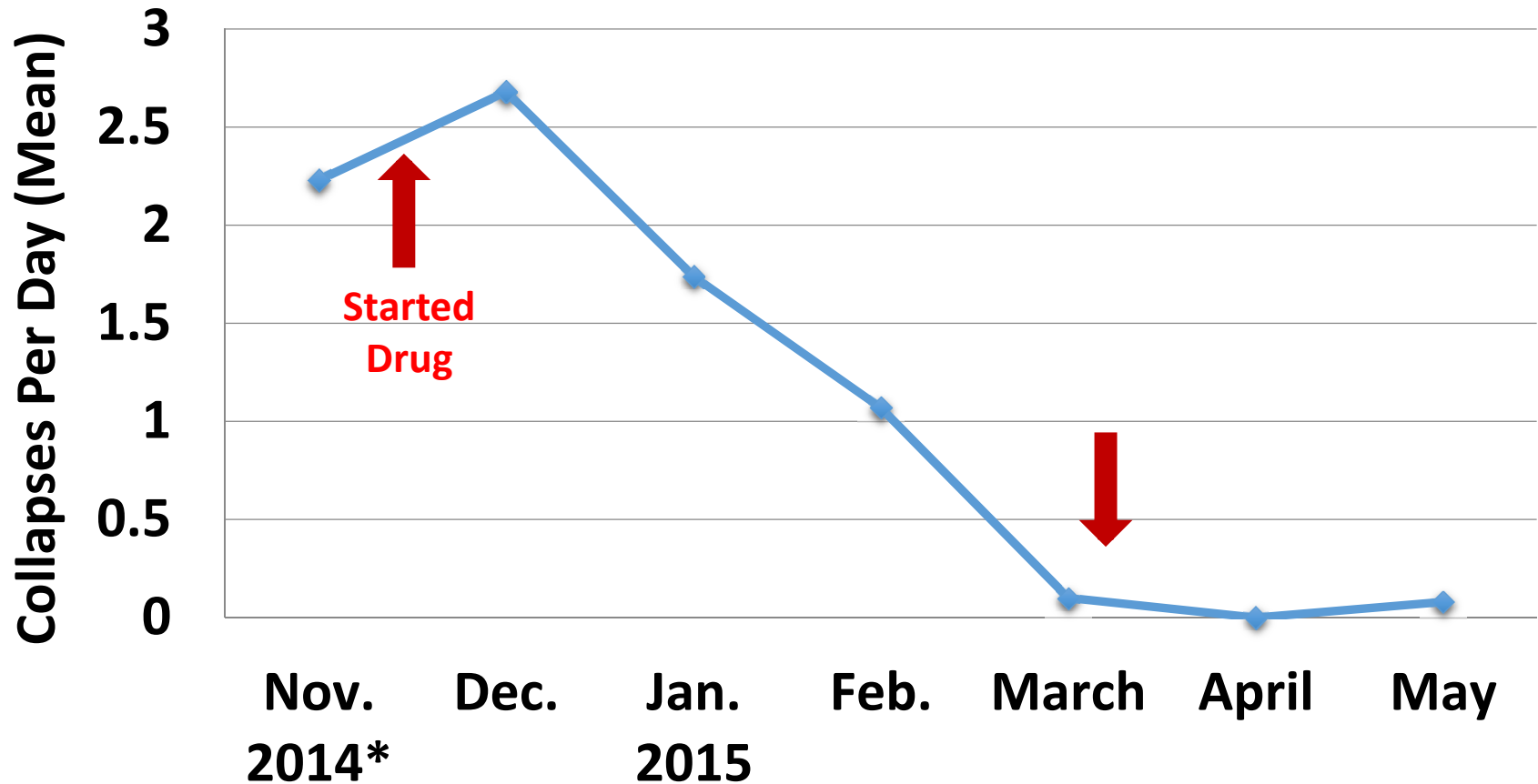
# Study 204: Patient C's Experience with Falls Before and After Eteplirsen Treatment



VIDEO

Age 11

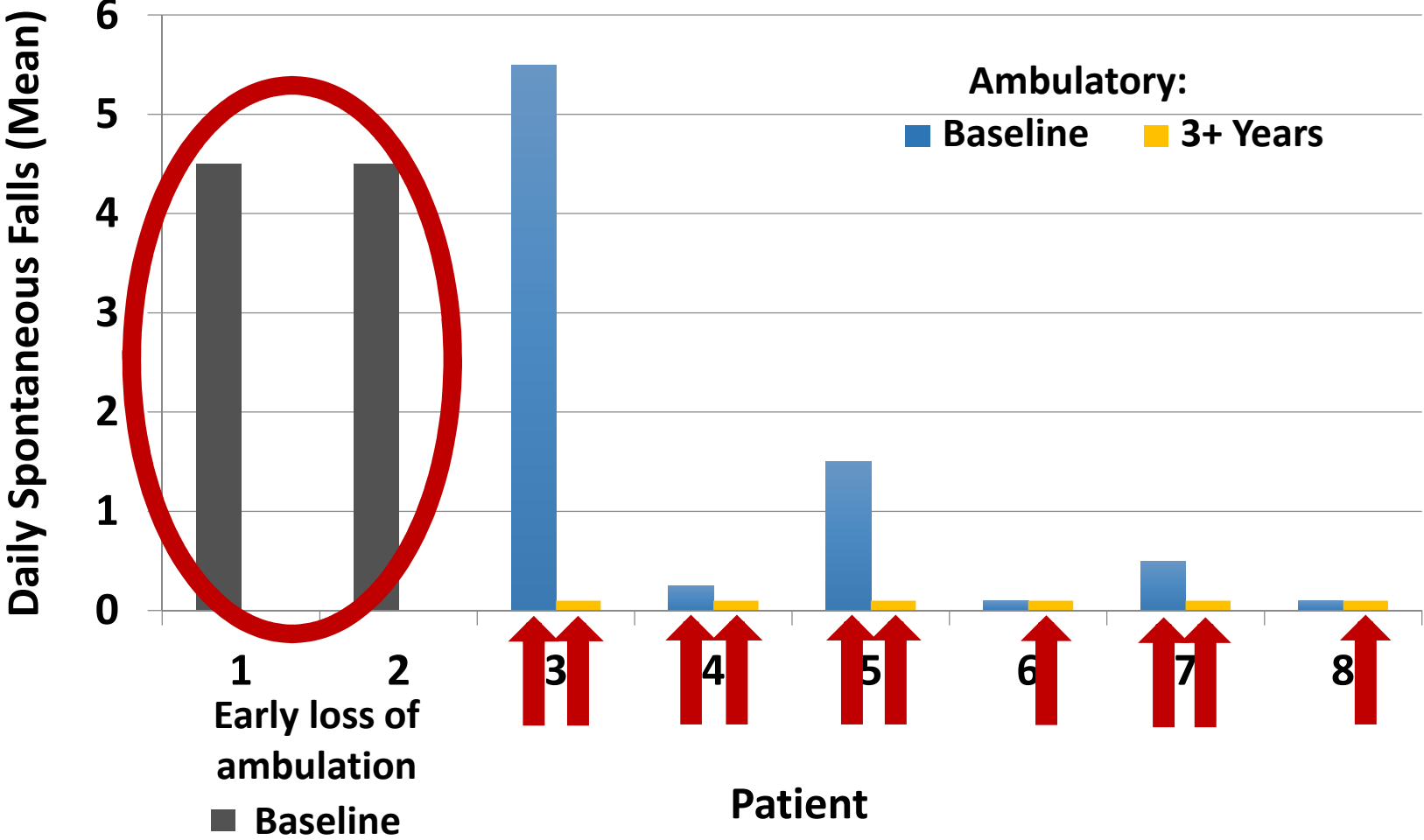
# Study 204: Daily Diary of Patient C Spontaneous Collapses



\*Began in Study 204 eteplirsen safety trial in mid-November 2014



# Study 202: Daily Spontaneous Falls



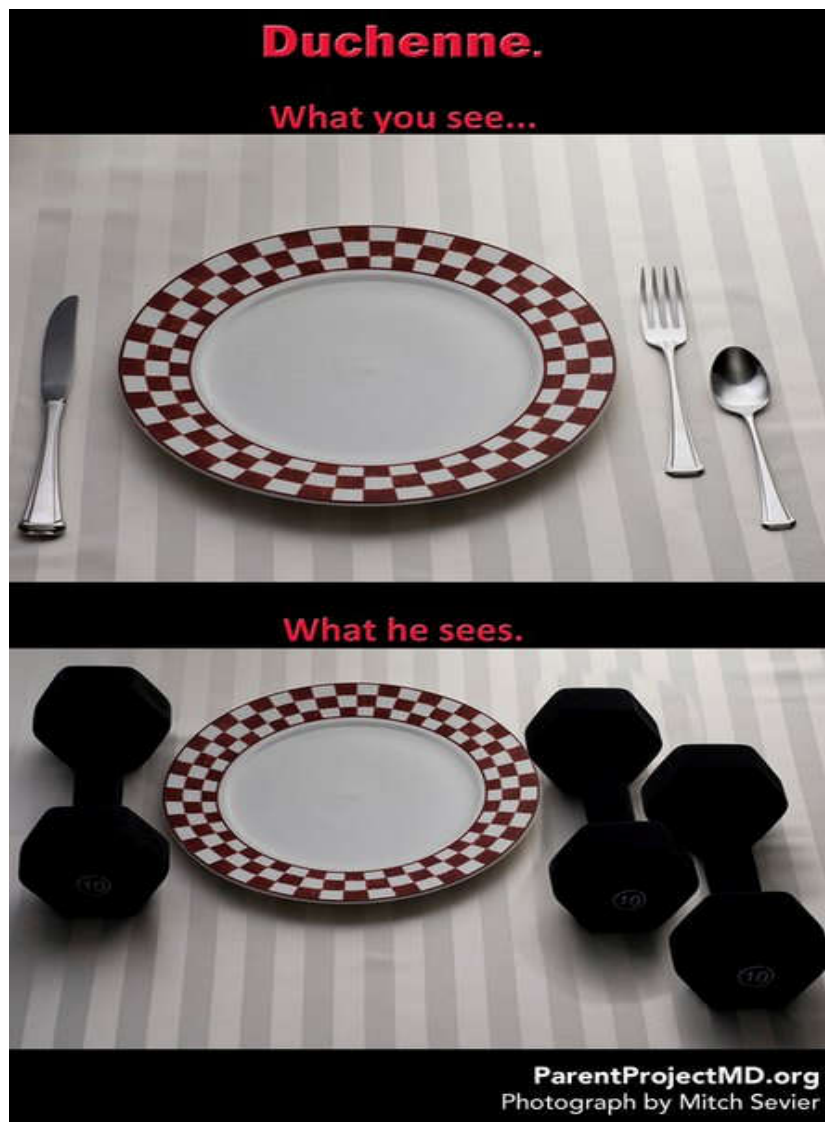
# Walking After Fractures

- **“If you’re 10 or 11 or 12 and you break a leg, I’m shocked if you would walk again...I would say 9 times out of 10 that’s the end of your walking,” - Linda Pax Lowes, PhD, PT, Assistant Professor of Neurology, Nationwide Children’s Hospital, Ohio State University**
- **Four ambulatory boys suffered fractures during the trial**
- **All four boys regained the ability to walk**

# Study 202: DMD-Related Fatigue<sup>†</sup>

- 2 boys decreased levels of fatigue
- 3 boys' fatigue remained stable
- 3 boys increased levels of fatigue
  - 2 boys lost ambulation early in trial
  - 1 boy that broke tibia during trial

<sup>†</sup> DMD-related fatigue = feeling of tiredness or exhaustion, or a need to rest because of lack of energy



# Study 202: Patient 3's Experience



VIDEO

Age 13

# 6MWT Doesn't Tell the Whole Story

- **Patient 3's experience (at 13 years old):**
  - **Six-minute walk test stabilized**
  - **Stopped falling**
  - **Decreased level of fatigue, so he can walk all day at school**

## **Eteplirsen Maintains ADLs in Non-Ambulatory Patients**

- **The 2 non-ambulatory boys retained ability to perform ADLs not requiring ambulation**
- **Included:**
  - **Using a computer**
  - **Feeding oneself**
  - **Brushing teeth**
  - **Holding a cell phone**

# Summary

- **Overall results:**
  - **A Decrease in Spontaneous Falls**
  - **Walking after Fractures**
  - **Stabilization or Improvement in Fatigue**
  - **Maintenance of ADLs in Non-Ambulatory Boys**



# Conclusion

## Type 2 Error:

**There is a human cost to making a conclusion that a drug doesn't work when it really does**