

December 9, 2021

Joshua B. Cohen, Justin B. Klee
Co-Chief Executive Officers
Amylyx Pharmaceuticals, Inc.
43 Thorndike St.
Cambridge, Massachusetts 02141

Re: Amylyx

Pharmaceuticals, Inc.

Amendment No. 2 to

Draft Registration Statement on Form S-1

Submitted November

24, 2021

CIK No, 0001658551

Dear Mr. Cohen:

We have reviewed your amended draft registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

Amendment No. 2 to Draft Registration Statement submitted November 24, 2021

Summary
Overview, page 2

1. With reference to the disclosure on page 144 concerning the PEGASUS trial, please balance the discussion on page 2 regarding topline results to explain that no differences were seen in the primary or secondary efficacy endpoints.

Joshua B. Cohen, Justin B. Klee
FirstName LastName Joshua B. Cohen, Justin B. Klee
Amylyx Pharmaceuticals, Inc.
Comapany9,
December NameAmylyx
2021 Pharmaceuticals, Inc.

December
Page 2 9, 2021 Page 2
FirstName LastName
Clinical Development of AMX0035 for AD, page 144

2. We note your revised disclosures on page 144 presenting the topline results from the PEGASUS trial. Please revise to identify the primary safety and tolerability endpoints and the trial results. Also revise to present the primary efficacy endpoint as well as the additional cognition, function, and imaging endpoints. Present the efficacy trial results so they can be compared to the established endpoints. Also, explain the newly developed composite outcome of cognitive, functional, and imaging measures. You may contact Al Pavot at 202-551-3738 or Christine Torney at 202-551-3652 if you

have questions regarding comments on the financial statements and related matters. Please contact Daniel Crawford at 202-551-7767 or Joe McCann at 202-551-6262 with any other questions.

Sincerely,

Division of

Office of Life

Corporation Finance

Sciences

cc: Benjamin K. Marsh, Esq.