UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

DIVISION OF
CORPORATION FINANCE

November 6, 2014

Via E-mail
George W. Mahaffey
President and Chief Executive Officer
Neothetics, Inc.
9191 Towne Centre Drive, Suite 400
San Diego, CA 92122

Re: Neothetics, Inc.
Registration Statement on Form S-1
Filed October 17, 2014
File No. 333-199449

Dear Mr. Mahaffey:

We have reviewed your registration statement and have the following additional 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 amending your registration statement and providing the requested information. 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 any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

Use of Proceeds, page 60

1. We note your response to our prior comment 6 and revised disclosure on page 60. Please disclose the portion of proceeds you intend to allocate to each trial separately or advise us why you are unable to provide this estimate.

2. We note your response to our prior comment 7. You should disclose in this section that you currently expect the application of funds from this offering to enable you to complete each of your planned Phase 3 clinical trials.

Business
Company Overview, page 84

3. On page 84, you disclose that your Phase 2 data suggests that the efficacy results you observed persisted for at least 3 months post-treatment. We further note that the Phase 2 RESET trial involved a treatment period of 8 weeks. Please disclose the data indicating that the results lasted for at least 3 months post-treatment. In your revised disclosure, you should explain how you measured the durability of these results. Please also disclose if any follow-up with patients was conducted beyond the 3-month period and, if so, the results observed beyond 3 months.

Clinical Endpoint Tool Development, page 92

4. We note that the clinician photonumeric scale (CPnS) used in your trials is a six-point scale (0-5). Please advise us whether a scale with six grades is typical of the scales utilized by the FDA to measure aesthetic performance or if the FDA's Division of Dermatologic and Dental Products has applied a different scale, with more or less than six grades, in connection with its definition of treatment responders. We may have additional comments based on your response.

Phase 2 Clinical Trial: RESET, page 94

5. In addition to laser-guided manual tape, please advise us whether you employed any other objective measures of fat reduction in your RESET trial, such as magnetic resonance imaging. We may have additional comments based on your response.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;

- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and

- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Christine Torney at (202) 551-3652 or Jim Rosenberg at (202) 551-3679 if you have questions regarding comments on the financial statements and related matters. Please contact Austin Stephenson at (202) 551-3192, Dan Greenspan at (202) 551-3623, or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Daniel Greenspan for

Jeffrey P. Riedler
Assistant Director

cc: Via E-mail
Patrick O'Malley, Esq.
DLA Piper LLP