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

DIVISION OF
CORPORATION FINANCE

June 1, 2022

Mark Hilz
Chief Executive Officer
Heart Test Laboratories, Inc.
550 Reserve St.
Suite 360
Southlake, Texas 76092

**Re: Heart Test Laboratories, Inc.**
**Registration Statement on Form S-1**
**Filed May 17, 2022**
**File No. 333-265024**

Dear Mr. Hilz:

We have reviewed your 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 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.

Registration Statement on Form S-1 filed May 17, 2022

Previous FDA de Novo Submission, page 87

1. We note your response to our prior comment 3. It is still not clear why you believe the results are "important to an understanding of [y]our company and device" and why it is appropriate to include them in your prospectus. We note that you concluded that you were required to conduct a new pivotal validation study at institutions different than those that collected the original patient data "after feedback and subsequent interactions with the FDA." Please remove these results, or otherwise address the concerns regarding these results by providing more detail on the feedback and interactions with the FDA and explaining how you considered those interactions when you concluded that a new clinical validation study at different institutions was necessary. If the FDA specifically indicated

that a new clinical validation study at different institutions was necessary, revise your disclosure to specifically state so. Please also explain in the prospectus why the previous de novo submission results are important to an understanding of your company and device and how investors should and should not consider and evaluate the results in the context of the FDA's requirement for a new clinical validation study. Your disclosure should prominently indicate that the results from the prior clinical validation study will not be considered by the FDA and should not be used to predict the results from your ongoing validation study.

Clinical Studies, page 95

2. We note your revisions to our prior comment 7 and reissue in part. We continue to note your statement that "Conventional methods for Left Ventricular Dysfunction, or LVD, screening (ARIC score, BNP testing, and standard ECG analysis) had inferior screening capabilities." Please revise to clarify whether the "Machine Learning of ECG Waveforms to Improve Selection for Testing for Asymptomatic Left Ventricular Dysfunction Prompt" study was conducted as a head-to-head trial against these conventional methods. To the extent that this is not a head-to-head trial, please remove the statement or include balancing disclosure that clearly states that no head-to-head trials have compared MyoVista to these conventional methods and that you cannot guarantee that such a trial would show similar results.

We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

Refer to Rules 460 and 461 regarding requests for acceleration. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Tara Harkins at 202-551-3639 or Kevin Kuhar at 202-551-3662 if you have questions regarding comments on the financial statements and related matters. Please contact Jordan Nimitz at 202-551-5831 or Suzanne Hayes at 202-551-3675 with any other questions.

Sincerely,

Division of Corporation Finance
Office of Life Sciences

cc: Steve Jacobs, Esq.