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

DIVISION OF
CORPORATION FINANCE

September 9, 2010

Robert B. Stockman
Chief Executive Officer
REVA Medical, Inc.
5751 Copley Drive, Suite B
San Diego, CA 92111

Re: REVA Medical, Inc.
Registration Statement on Form S-1
Filed August 13, 2010
File No. 333-168852

Dear Mr. Stockman:

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.

Calculation of Registration Fee

1. Please register the CHESS Depositary Interests which you are offering.

Prospectus

2. Please confirm that any preliminary prospectus you circulate will include all non-Rule 430A information. This includes the price range and related information based on a bona fide estimate of the public offering price within that range, and other information that was left blank throughout the document.

Prospectus Cover Page

3. Given your disclosure that you engaged a placement agent in connection with the offering outside the United States to non-U.S. residents, tell us:
   - why you are registering the offering in the United States, and
   - why the placement agent for your offering registered in the United States is not a broker-dealer registered in the United States.

4. We note your statement that there is a minimum offering amount to be raised in the offering but that the placement agent is not required to sell any specific number or dollar amount of CDIs. Please revise to clarify whether these securities are being offered on a minimum/maximum basis and, if so, revise to disclose the date the offering will end, any minimum purchase requirements, and any arrangements to place the funds in an escrow, trust, or similar account. See Item 501(b)(8)(iii) of Regulation S-K.

Prospectus Summary, page 1

Our Company, page 1

5. Please revise to state prominently that your product has not yet been approved by regulatory authorities for sale anywhere and indicate that the approval process will take several years, if at all.

Limitations of Current Technology, page 2

6. We note your statement on page 2 that no bioresorbable stents have been approved for sale in Europe or the United States and your discussion under "Limitations for the Development of Bioresorbable Stents" here and on page 51 regarding the "historical" failure of bioresorbable stents in clinical trials. Please balance these disclosures with a brief description of other bioresorbable stents that are currently being tested in clinical trials, the scope of these clinical trials and the level of success of the bioresorbable stents in these trials. In this regard, we note your discussion on pages 50 and 60 of the development of bioresorbable stents by Abbott Laboratories and Biotronik.

Our Solution, page 2

7. Given the development and regulatory status of your product and the fact that you have completed few, if any, human clinical trials to support your claims that your product has been designed to "overcome many of the limitations associated with" metal and drug-eluting stents currently on the market, tell us why you believe it is appropriate to include the discussion on pages 2-3 and 52-53 describing your "solution" in which you compare your product favorably to existing products and technologies that have been approved by regulatory agencies.

8. The disclosure in the summary should not conflict with other disclosure in the filing. For example, you refer to the "intended key benefits" of your product as decreasing risk of adverse effect, having potential to provide patients with "better" therapeutic outcomes and physicians with "more effective and efficient clinical tools," and "potentially reducing costs for health care providers;" however, this conflicts with the disclosure on page 15 that there is a lack of long-term data regarding the safety and efficacy of your product. Please revise accordingly. Please also balance your disclosure by briefly discussing the disadvantages of your product relative to other treatment options.

Risk Factors, page 9

9. Please include risk factors discussing the risks both you and investors in the offering face as a result of :
    - provisions in the agreements with Boston Scientific as disclosed in exhibits 10.6 and 10.7 relating to your potential acquisition by Boston Scientific if the offering is not completed before December 7, 2010, and
    - the registration rights provision of the investor rights agreement filed as exhibit 4.2 to the registration statement.

We have limited sales, marketing and distribution experience…, page 13

10. Please expand this risk factor to discuss the risk arising from the provision of your distribution option agreement with Boston Scientific that prohibits you from granting more favorable terms to another distributor in the event you are unable to agree on terms for a distribution agreement with Boston Scientific.

We cannot predict the outcome…, page 14

11. To illustrate better the risk presented in this caption, please expand to discuss briefly the results of your first human clinical trials in 2007 and quantify the significant funding that was required to address the issues you mention here.

Use of Proceeds, page 27

12. We note the first sentence of the third paragraph. While you may reserve the right to change the allocation of proceeds, in order to do so you must disclose the specific contingencies that would give rise to a change. See Instruction 7 to Item 504 of Regulation S-K. Please revise to discuss specifically the contingencies and the alternative use of proceeds in the event a contingency occurs.

Business, page 47

Overview, page 47

13. Given your statement in the second paragraph under this heading that you believe you are positioned to determine the efficacy of your device, please tell us the basis of your claim that the technology will potentially reduce costs for health care providers. Provide us any independent, objective data that you have that supports the claim.

14. Please provide copies of the industry publications, surveys, and other sources of statistics which you cite in this registration statement, clearly marking the relevant sections of these reports. For each report, please also tell us:
    - how you confirmed that the data reflects the most recent available information;
    - whether the data is publicly available;
    - whether the data was prepared for use in the registration statement;
    - whether the authors of the data consented to your use of it in the registration statement; and
    - whether you paid for the compilation of the data and, if you were affiliated with the preparation of the data in these two studies, please ensure that your disclosure clearly indicates the nature of all such affiliations.

Efficacy Testing, page 54

15. Where you describe the efficacy of your product, please indicate the nature and size of the studies or trials on which you base your claims. For instance, we note the tests cited under this heading as support your statements of efficacy relate to preclinical studies involving animals.

16. We note your discussion in this section of preclinical animal tests undertaken to assess stent functionality as compared to commercial metal stents. Here and throughout your document, as appropriate, please revise to balance your disclosure of the efficacy of your product by discussing the outcome of the 25 patient human clinical study in Brazil and Germany in 2007 as mentioned on pages 14 and 57. Please also expand your disclosure on page 57 to discuss in greater detail the outcome of the human clinical study. For example, discuss the extent to which you observed the adverse clinical issues you discuss on page 14 and revise your disclosure on page 57 and elsewhere as necessary to balance your statements that your product has been shown to be “safe and effective in animals.”

Human Clinical Trial, page 57

17. Please revise to discuss the steps you have taken in commencing the 50 patient pilot clinical trial in Brazil and Germany that you hope to commence in the first quarter of 2011. For example, please revise to discuss whether you have applied for the approvals from the relevant regulatory bodies to begin these clinical trials.

Intellectual Property, page 61

18. Please revise to clarify whether any of the 250 patents you discuss are patents issued by different jurisdictions for the same technology. Please also revise to disclose the duration of your issued patents.

Material Agreements, page 62

19. Please discuss terms of all material agreements, such as the agreements that govern:

- the licensing of your technology to third parties for use in two non-coronary applications discussed on page 53;
- the manufacturing processes that are currently completed by external parties in FDA registered facilities and
- your relationships with your consultants who helped invent your design-related technologies.

Please also file all material agreements as exhibits.

Boston Scientific Agreements, page 62

20. We note your statement that the amendment to the Agreement and Plan of Merger with Boston Scientific suspended covenants regarding the conduct of your business. However, it appears from Exhibit 10.7 that the amended agreement still requires you to meet certain covenants. Please revise your disclosure to discuss the covenants to which you are subject.

21. Please revise your disclosure to discuss the term of the Agreement and Plan of Merger, such as when the Agreement and Plan of Merger will terminate in the event you do not close an initial public offering covering a sale of securities resulting in aggregate net cash proceeds to the company of at least $50,000,000 prior to December 7, 2010.

22. We note your disclosure that you are required to negotiate the terms of a distribution agreement with Boston Scientific Corporation upon the attainment of certain clinical milestones. Please revise to discuss the clinical milestones that must be achieved for the distribution option to be terminated. Please also revise to describe the known terms of any distribution agreement you may enter with Boston Scientific, such as the minimum five year term and the transfer price of any products subject to the potential distribution agreement. Quantify the amount of any discount, if material. Finally, please describe the provisions of section 2.3(b) of exhibit 10.10 which prohibit you from granting more favorable terms to any other distributor than those offered to Boston Scientific, in the

event you are unable to agree upon the terms of a definitive distribution agreement with Boston Scientific.

Rutgers License Agreement, page 62

23. Please provide disclosure regarding Rutgers' exclusive, worldwide license with right of sublicense discussed in section 2.3 of the agreement.

24. Please revise to provide the material terms of the milestone payments and the development, regulatory, commercialization and change of control milestones. Please also revise to disclose the approximate year the last to expire patents under the agreement are set to expire. Please provide similar disclosure with respect to the patents licensed to you under the Integra License agreement.

Third-Party Reimbursement, page 63

25. Please revise to provide a description of third-party reimbursement in the EU and Australia given that these will be your first and second target commercial markets, respectively. Please also revise to provide a more thorough description of government regulation of your company and your proposed product in the EU and Australia and the effect these regulations have on your company. For example, please address the process for obtaining CE Marking in Europe. In this regard, we note your discussion under "International" on page 66.

Scientific Advisory Board, page 68

26. With a view to disclosure, please tell us how members of the scientific advisory board are appointed, the terms of their appointments, how long they have served, and whether you have any agreements with them. With respect to your consulting arrangement with Dr. Stone, tell us whether you have a consulting agreement with him, the material terms of your agreement, and the amounts paid to him to date.

Board of Directors Leadership Structure, page 71

27. We note your statement that the current structure of your board of directors in which one person serves in a combined role of chairman and chief executive officer "does not comply with Australian Stock Exchange corporate governance principles" and that you do not currently intend to separate these positions. We further note your statement on page 75 that characterizes the separation of these roles as a "recommendation" of the stock exchange. Please revise to clarify the nature of the restriction on board structure, and indicate the consequence, if any, of your decision not to comply. Add risk factor disclosure as appropriate.

Compensation Discussion and Analysis, page 76

28. We note that your compensation discussion and analysis relates to compensation of your named executive officers for fiscal year 2010. Please expand your disclosure to provide discussion and analysis of the compensation awarded to your named executive officers in fiscal year 2009, to which the information contained in the tables and elsewhere in this section relates. Refer to Instruction 2 to Item 402(b) of Regulation S-K.

CHESS Depository Interests or CDIs, page 95

29. Please reconcile your statement in the second paragraph under this heading that the shares of common stock underlying the CDIs will be quoted and traded on the Australian Securities Exchange with your statement on page 96 that you intend to apply to have your shares in the form of CDIs listed on the Australian Securities Exchange. Please revise or clarify your disclosure as appropriate.

30. Please revise this discussion to state why the issuance of depositary interests is necessary. Specifically, please state that you have authorized CHESS Depositary Nominees Pty Ltd to act as the depositary of the shares and have directed them to issue the depositary interests underlying the common stock.

31. We note your statement that the relationship between you, the depositary CDN, and holders of CDIs is governed "in part" by the settlement rules of ASX Settlement and Transfer Corporation Pty Ltd ACN 008 504 532. Please file these rules and any other document that governs the depositary interests or the relationship between or among you, the depositary, and/or holders of CDIs as an exhibit to the registration statement.

Conversion, page 96

32. Please expand your disclosure to describe the process by which CDI holders will be able to convert their CDIs to common stock.

Voting, page 96

33. Please expand your disclosure to explain the process by which CDI holders will be able to instruct CDN on how CDN should vote with respect to the common shares underlying the CDIs. Also explain whether CDN is bound by these instructions and how it will vote shares for which no instruction by a CDI holder was provided. Finally, please also expand your disclosure to clarify whether any information other than a notice of stockholder meeting will be provided to CDI holders and whether you or CDN will provide the notice and any additional information to CDI holders.

Australian Securities Exchange, page 96

34. Tell us the status of any application for listing of your CDIs on the Australian Stock Exchange and revise your disclosure to clarify your anticipated timeframe for the submission of an application and the receipt of approval. For instance, your disclosure on the cover page implies that you will obtain approval for listing prior to the offering by indicating that "each CDI will be listed and admitted to trading on the Australian Securities Exchange," but your disclosure on page A-9 indicates that you intend to apply for listing and admission "no later than seven days after the date of this Prospectus." Add appropriate risk factor disclosure relating to the timing of your application and receipt of approval for listing.

Financial Statements, page F-1

35. Please update the financial statements when required by Rule 3-12 of Regulation S-X.

Consolidated Statements of Cash Flows, page F-6

36. Please reconcile the cash receipt from the sale of preferred stock in 2010 with the amounts presented on the statement of stockholders' equity. In that regard, please provide clear disclosure of the cash and non-cash aspects of financing and investing activities pursuant to FASB ASC 230-10-50-3 through 50-6.

Part II

Signatures, page II-4

37. Please revise the text in the paragraph above the registrant's signature to comply with the requirement of Form S-1. We note the statement to which Robert B. Stockman attested to in the signature block. Please revise this statement to comply with the signature requirements of Form S-1.

Index to Exhibits, page II-5

38. We note your request for confidential treatment. We will review and provide comments on your request separately. Comments on your request must be resolved before we may accelerate the effectiveness of this registration statement.

39. Please include an updated accountant's consent with any amendment to the filing.

40. Please ensure that the exhibits filed on EDGAR reflect the executed versions of those agreements. For instance, we note that Appendix A in Exhibit 10.12 as filed on EDGAR does not appear to be the executed version of the agreement.

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 Praveen Kartholy at (202) 551- 3778 or Gary Todd, Accounting Reviewer, at (202) 551-3605 if you have questions regarding comments on the financial statements and related matters. Please contact Allicia Lam at (202) 551- 3316 or Mary Beth Breslin, Senior Attorney, at (202) 551-3625 with any other questions.

Sincerely,

Russell Mancuso
Branch Chief

cc (by facsimile): Jeffrey C. Thacker, Esq. – DLA Piper LLP