



February 27, 2012

Amanda Ravitz
Aslynn Hogue
Dennis Hult
Jay Webb
Division of Corporation Finance
United States Securities and Exchange Commission
450 Fifth Street, N.W., Mail Stop 3030
Washington, DC 20549

**Re: MRI Interventions, Inc. (the “Company”)
Amendment No. 1 to Registration Statement on Form 10
Filed February 9, 2012
File No. 000-54575**

Ms. Ravitz, Ms. Hogue, Mr. Hult and Mr. Webb:

We have enclosed for electronic filing via EDGAR pursuant to the Securities Exchange Act of 1934, as amended (the “*Exchange Act*”), Amendment No. 2 (“*Amendment No. 2*”) to the Company’s Registration Statement on Form 10 (the “*Registration Statement*”) originally filed with the Securities and Exchange Commission (the “*Commission*”) on December 28, 2011. The copy of Amendment No. 2 that is enclosed with the hard copy of this letter is marked to show changes from Amendment No. 1 to the Registration Statement filed with the Commission on February 9, 2012 (“*Amendment No. 1*”).

Amendment No. 2 is being filed in response to comments received from the staff of the Commission’s Division of Corporation Finance (the “*Staff*”) by letter dated February 23, 2012 to Kimble L. Jenkins (the “*Comment Letter*”) with respect to Amendment No. 1. The numbering of the paragraphs below corresponds to the numbering in the Comment Letter, the text of which we have incorporated in bold italics into this response letter for convenience. Page references in the text of our responses correspond to the page numbers of Amendment No. 2.

We have sent to your attention on February 27, 2012 courtesy copies of this letter and Amendment No. 2 (excluding exhibits) blacklined to show changes against Amendment No. 1.

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Management's Discussion and Analysis . . . page 55

1. Please expand your response to prior comment 11 with regard to your cash flows for the period ended September 30, 2011 and with regard to whether the legal settlement represents a known, material demand or commitment that will result in or that is reasonably likely to result in your liquidity decreasing in any material way.

In Amendment No. 2, the Company has revised the disclosure on page 61 to state that all but approximately \$71,000 of the amounts payable by the Company pursuant to the legal settlement were paid in 2011. The Company supplementally advises the Staff that the remaining amounts payable by the Company pursuant to the legal settlement, approximately \$71,000, were paid in February 2012. Based on the fact that only approximately \$71,000 remained payable as of December 31, 2011, and all of the Company's payment obligations under the legal settlement have now been satisfied, the Company does not believe the legal settlement represents a material commitment that will result in or that is reasonably likely to result in the Company's liquidity decreasing in any material way.

Liquidity and Capital Resources, page 62

2. Please expand your response to prior comment 13 to clarify the maturity date of the \$0.7 million in principal amount of the 10% senior unsecured convertible notes. If these notes mature two years from the March 2010 issuance date, as indicated in the second sentence of the third paragraph of this section, please tell us why you have not included these notes as notes payable in less than one year in your contractual obligations table on page 65.

The Company supplementally advises the Staff that the maturity dates of the \$0.7 million in principal amount of the 10% senior unsecured convertible notes which, as of January 31, 2012, had not agreed to conversion upon the effectiveness of the Registration Statement, occur in March 2012. The table of contractual obligations contained in Amendment No. 1 summarized the Company's outstanding future contractual obligations as of December 31, 2010, and, therefore, the Company disclosed its obligations with respect to all of the 10% senior unsecured convertible notes as notes payable between one and three years. The Company notes that it had interpreted Item 303(a)(5) of Regulation S-K to require disclosure of the Company's contractual obligations as of the date of the latest fiscal year end balance sheet in the audited financial statements included in the Registration Statement. In Amendment No. 2, the Company has revised the table on page 66 to disclose the Company's contractual obligations as of December 31, 2011, which is the latest fiscal year end balance sheet date. The Company supplementally advises the Staff that the Company has included all of the 10% senior unsecured convertible notes (principal and interest) in the table on page 66 as notes payable in less than one year.

3. Please expand your response to prior comment 14 to indicate the number of shares the holders of the \$0.7 million in principal amount of the 10% senior unsecured convertible notes would receive and the number of shares Brainlab would receive if conversion of their notes occurred today.

The Company supplementally advises the Staff that all holders of the 10% senior unsecured convertible notes amended their notes to provide for automatic conversion of the notes into shares of the Company's common stock upon the effectiveness of the Registration Statement. The Company has revised the disclosure on page 63 to state that all note holders agreed to automatic conversion of their notes upon the effectiveness of the Registration Statement and to provide the number of shares of common stock the note holders receive upon such conversion. The Company has also revised the disclosure on page 64 to indicate the number of shares Brainlab would have received upon conversion of its note as of February 23, 2012 based on a conversion price of \$0.60 per share.

Long-Term Equity Compensation, page 75

4. Please revise to discuss the factors considered by your compensation committee in determining not to award stock options in fiscal 2011 or to explain material decreases in long-term compensation. Refer to Regulation S-K Item 402(b)(2)(ix).

The Company has revised the disclosure on page 76 to state that, historically, the compensation committee has considered the grant of stock options to the named executive officers based on the recommendations made to the compensation committee by Mr. Jenkins, as the Company's Chief Executive Officer. The Company has further revised the disclosure on page 76 to state that Mr. Jenkins did not request the compensation committee to consider the grant of stock options to any of the named executive officers for 2011, based primarily on the limited number of shares available for issuance under the Company's equity compensation plans. The Company has further revised the disclosure on page 76 to indicate that the absence of stock option grants to the named executive officers for 2011 was not based on any evaluation or analysis by the compensation committee of the company's performance or the performance of any of the named executive officers.

Unaudited September 30, 2011 Financial Statements, page F-39

Condensed Balance Sheets, page F-39

5. We see the reclassification of \$698,384 Related Party Accrued Interest and \$3,414,223 Related Party BSC Convertible Notes Payable from current liabilities to long-term liabilities in your unaudited September 30, 2011 balance sheet as well as reclassifications of accrued interest in the audited financial statements for the years ended December 31, 2010 and 2009. We also see in your Subsequent Events Footnote on page F-61 that on February 2, 2012 the company entered into a loan modification with BSC wherein the maturity date of each of the BSC Notes was extended by three years through December 2014. Please explain to us the basis for the reclassification of the accrued interest and BSC Notes to long-term

liabilities in your September 30, 2011 and comparative December 31, 2010 Balance Sheets herein. Please specifically reference the authoritative literature you believe supports the referenced reclassifications. Also, revise the filing to disclose why the classification of the BSC Note and related accrued interest in each of your balance sheets is consistent with the Notes terms. Finally, tell us your consideration of whether the guidance at FASB ASC 250 impacts your financial statement disclosure requirements.

Pursuant to the loan modification agreement with BSC, the maturity dates of the BSC Notes (including the due dates of all accrued interest) were extended by three years from the original maturity dates, which were in October through December 2011. Following execution of the loan modification agreement, the Company applied the guidance in ASC 470-10-45-14, which states in pertinent part:

“A short-term obligation shall be excluded from current liabilities if the entity intends to refinance the obligation on a long-term basis . . . and the intent to refinance the short-term obligation on long-term basis is supported by an ability to consummate the refinancing demonstrated in either of the following ways:

. . .

b. Financing agreement. Before the balance sheet is issued or is available to be issued (as discussed in Section 855-10-25), the entity has entered into a financing agreement that clearly permits the entity to refinance the short-term obligation on a long-term basis on terms that are readily determinable, and all of the following conditions are met:

- 1. The agreement does not expire within one year . . . from the date of the entity’s balance sheet and during that period the agreement is not cancelable by the lender . . .*
- 2. No violation of any provision in the financing agreement exists at the balance sheet date and no available information indicates that a violation has occurred thereafter but before the balance sheet is issued or is available to be issued . . .*
- 3. The lender . . . is expected to be financially capable of honoring the agreement.”*

Under this guidance, in Amendment No. 1, the Company reflected the amounts related to the Company’s obligations under the BSC Notes (including accrued interest) for all reporting periods as long-term liabilities as the modification to the terms of the loan agreement (executed as of February 2, 2012) extended the due dates of both the accrued interest and principal by three years.

At the report date of the financial statements included in the Registration Statement originally filed by the Company on December 28, 2011 (the “**Original Filing**”), there was a loan

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extension agreement in place between the Company and BSC that extended the maturity dates of the BSC Notes until January 16, 2012. Therefore, the September 30, 2011 balance sheet included in the Original Filing appropriately reflected the principal and accrued interest under the BSC Notes as current liabilities. However, the comparative balance sheet in the Company's condensed financial statements included in the Original Filing incorrectly reflected the December 31, 2010 balances related to the principal and accrued interest of the BSC Notes as current liabilities. The December 31, 2010 balance sheet included in the audited financial statements of the Original Filing appropriately reflected the principal balance of the BSC Notes as long-term, but incorrectly classified the related accrued interest as a current liability. Relying on guidance in ASC 250, in Amendment No. 2 the Company has labeled its December 2010 balance sheet as "Restated," and the Company has disclosed in Note 14 to the financial statements the corrections to the classification of the amounts related to the BSC Notes as described in this paragraph.

As requested in the Comment Letter, the Company acknowledges that:

- the Company is responsible for the adequacy and accuracy of the disclosure in the Company's filing;
- Staff comments or changes to disclosure in response to Staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the Company may not assert Staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

We would very much appreciate the Staff's prompt review of Amendment No. 2. Should you have any additional questions, please call me at (901) 522-9344 or our counsel, Rob DelPriore, at (901) 577-8228.

Very truly yours,

MRI Interventions, Inc.

/s/ Oscar Thomas

Oscar L. Thomas
Vice President, Business Affairs

cc: Kim Jenkins
Robert J. DelPriore