



DIVISION OF  
CORPORATION FINANCE

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

February 23, 2012

Via E-mail

Kimble L. Jenkins  
Chief Executive Officer  
MRI Interventions, Inc.  
One Commerce Square, Suite 2550  
Memphis, TN 38103

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

Dear Mr. Jenkins:

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 within ten business days by amending your registration statement, by providing the requested information or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances or do not believe the 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.

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.

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.

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.

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).

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.

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 Exchange Act of 1934 and all applicable Exchange 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.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;

Kimble L. Jenkins  
MRI Interventions, Inc.  
February 23, 2012  
Page 3

- 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.

You may contact Dennis Hult at (202) 551-3618 or Jay Webb, Accounting Reviewer, at (202) 551-3603 if you have questions regarding comments on the financial statements and related matters. You may contact Aslynn Hogue at (202) 551-3841 or me at (202) 551-3528 with any other questions.

Sincerely,

/s/ Amanda Ravitz

Amanda Ravitz  
Assistant Director

cc (via e-mail): Robert J. DelPriore, Esq.  
Baker, Donelson, Bearman, Caldwell & Berkowitz, PC