

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

Post-Effective Amendment
to
FORM S-1

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

MRI INTERVENTIONS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
Incorporation or organization)

3841
(Primary Standard Industrial
Classification Code Number)

58-2394628
(I.R.S. Employer
Identification No.)

**5 Musick
Irvine, California 92618
(949) 900-6833**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive office)

**Harold A. Hurwitz
Chief Financial Officer
5 Musick
Irvine, California 92618
(949) 900-6833**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:
**Richard F. Mattern, Esq.
Bass Berry & Sims PLC
100 Peabody Place, Suite 1300
Memphis, TN 38103
(901) 543-5933**

Approximate date of commencement of proposed sale to the public: This post-effective amendment withdraws from registration all shares of common stock that remain unsold under Registration Statement No. 333-209009.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (check one)

Large Accelerated filer Accelerated filer
Non-accelerated filer (Do not check if a smaller reporting company) Smaller reporting company

DEREGISTRATION OF SECURITIES

On April 29, 2016, MRI Interventions, Inc. (the "Company") filed with the Securities and Exchange Commission (the "SEC") a registration statement (as amended, the "Registration Statement") on Form S-1 (Registration No. 333-211007), which was declared effective by the SEC on June 20, 2016. The Registration Statement registered the resale by the selling securityholder identified in the prospectus included in the Registration Statement of 168,827 shares of common stock of the Company, consisting of 99,310 outstanding shares of common stock and 69,517 shares of common stock issuable upon the exercise of outstanding warrants.

The Company has no further obligation to maintain effectiveness of the Registration Statement. In accordance with an undertaking made by the Company in the Registration Statement to remove by means of a post-effective amendment any securities that remain unsold at the termination of the offering, this Post-Effective Amendment is being filed to terminate the effectiveness of the Registration Statement and to remove from registration all securities registered but not sold under the Registration Statement.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, MRI Interventions, Inc. has duly caused this Post-Effective Amendment to the Registration Statement to be signed on its behalf by the undersigned, hereunto duly authorized.

Date: April 4, 2017

MRI Interventions, Inc.

By: /s/ Harold A. Hurwitz

Harold A. Hurwitz
Chief Financial Officer
