We would like to thank Cox and colleagues for their comments on our article (1). They assert that the only demonstration of value of MRI screening is in genetically high-risk populations, who develop early, aggressive cancers, presumably referring to patients with BRCA1/2 mutations. However, the American Cancer Society guidelines recommend MRI screening for women with a risk of greater than 20% based on family history, a much broader population than just BRCA1/2 mutation carriers. The intent of our study was to investigate the potential for using single-nucleotide polymorphism (SNP) data to refine estimates of risk for women who are not BRCA1/2 carriers but who are at intermediate to high risk based on the Gail test.

Cox and colleagues also state that MRI screening has been shown to have little benefit after the age of 60 years. This is in part due to the fact that younger women tend to have high breast density, so that mammograms are less effective in younger women. In fact, our model does include breast density as a function of age and includes a breast density effect on the sensitivity of mammography, so that the benefits of MRI screening are greater relative to mammography in younger women. Our base case analysis initiates genetic testing and MRI screening at the age 40 years, before menopause, when average breast density is still relatively high. In our sensitivity analysis, we varied the start age to 50 years, and found that in this case the results were much less favorable, indicating that much of the benefit is gained between the ages of 40 and 50 years. In light of this finding and the comments by Cox and colleagues, an interesting analysis for future work would be to evaluate the effect of discontinuing MRI screening at different ages.

Finally, Cox and colleagues point out that while we only consider seven SNPs, more than 70 have now been published. We chose to focus on these seven SNPs because, at least at the time of our study, these were the only seven for which there was a commercially available genetic test. Our cost assumption was based on the real cost of this commercial test at the time of the study. Clearly, both the technology and the costs of genetic testing are rapidly advancing and we intend to continue to update our model with newer data as it becomes available.

Disclosure of Potential Conflicts of Interest
No potential conflicts of interest were disclosed.

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Reference
Cost-Effectiveness of a Genetic Test for Breast Cancer Risk—Response

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