ABSTRACT. We construct isospectral pairs of Riemannian metrics on S^5 and on B^6 , thus lowering by three the minimal dimension of spheres and balls on which such metrics have been constructed previously $(S^{n\geq 8} \text{ and } B^{n\geq 9})$. We also construct continuous families of isospectral Riemannian metrics on S^7 and on B^8 . In each of these examples, the metrics can be chosen equal to the standard metric outside certain subsets of arbitrarily small volume.