I will discuss joint work with Oscar Randal-Williams, in which we compute the rational cohomology of the Torelli spaces of highly-connected high-dimensional manifolds in a stable range. These Torelli spaces are the classifying spaces of the subgroup of the topological group of diffeomorphisms consisting of those path components which act by the identity on homology, and bring us one step closer to understanding the rational homotopy type of diffeomorphism groups.