DIFFERENCES BETWEEN MONOZYGOTIC TWINS

Each cell of our body is subject to a huge number of mutations. We have, however, a very complex and efficient repair systems which correct the vast majority of them. Some mutations, however, escape repairing. As a consequence, differences among different cells accumulate as these differences start at the formation of the embryo. The Stefansson's group (Nature Genetics) took advantage of the very early embryo mutations to analyze the formation of monozygotic twins. In order to be sure that the mutations originated from the early embryo, the study analyzed the genomes of identical twins, their parents, their children, and their spouses.
They measured the shared/specific point mutations (average difference 5.2 mutations), inferring how the twins originated. The more uneven the split, the greater was the difference between the twins. The authors observed "instances where a twin was formed from a single cell lineage in the pre-twinning cell mass and instances where a twin was formed from several cell lineages".