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Mutation assumption wrong, according to an article in ScienceNOW 14 May 2004. Differences in DNA are often used to calculate evolutionary ages, on the assumption the mutations occur in DNA at a steady rate. However, not all differences in DNA are caused by mutations. DNA in chromosomes is inherited from both parents and with each generation there is mixing of segments of DNA from each parent. Therefore, differences in chromosomal DNA from each generation can be the result of recombination as well any mutations that may have occurred. However, small pieces of DNA found in mitochondria (cellular power plants) are only inherited from mothers but not from fathers and so there is no opportunity for mixing of maternal and paternal DNA. For this reason mitochondrial DNA has been used to calculate evolutionary ages, e.g. of different human populations, because it has always been assumed that any differences between mitochondrial DNA was due to mutations occurring since they parted company on the evolutionary tree.

These assumptions were first challenged two years ago when an individual was found who had inherited some paternal DNA. (See New England Journal of Medicine, 22 August 2002.) It was assumed that this was a rare mistake in a system that otherwise kept mitochondrial DNA strictly female, and there would be no cellular mechanism for mixing maternal and paternal DNA even if it did happen. A new study of this individual's mitochondrial DNA shows that there is regular recombination between the maternal and paternal mitochondrial DNA. This means mitochondrial DNA inheritance is not clear cut as evolutionary biologists assumed and many age estimates based on it, including the famous "mitochondrial Eve", may not be as reliable as first thought. Sanders Williams, a molecular biologist of Duke University, Durham, North Carolina, commented: "The implications are that this is going on all the time in our cells. Mitochondrial DNA's history is clearly not as clean as people had thought, or people had wished."

**Editorial Comment**: Inheritance of paternal mitochondrial DNA may be a rare glitch in the system. However, if it could happen once, it could have happened many times in human history, and this means differences in mitochondrial DNA cannot be put down to mutations alone. This finding exposes the difficulty of explaining the past based on evidence purely from the present. Ultimately, the best information about the past comes from reliable witnesses who were there. God is the only reliable witness who has been there since the beginning of the human race, and His record in the book of Genesis is the only reliable information we have about the origin and history of the human race. (Ref. mitochondria, DNA, mutation)