



Figure 18. Reprogramming by Nuclear Transfer

During the lifetime of an individual, epigenetic modifications (mod) are acquired in different cell lineages (*left*). Nuclear transfer (NT) of a somatic cell reverses the process of terminal differentiation, eradicating the majority of epigenetic marks (mod); however, some modification that would also be present in the germ line (g-mod) cannot be removed. During neoplastic transformation (from a normal to tumor cell), caused by a series of genetic mutations (*red stars*), epigenetic lesions accumulate. The epigenetic lesions (mod), but not the mutations, can be erased through reprogramming upon NT. This approach evaluates the interplay between genetic and epigenetic contributions to tumorigenesis. (Figure adapted from R. Jaenisch.)