



**FIGURE 85e-9** Possible approaches for prevention of mitochondrial DNA (mtDNA) disease. **A.** No intervention: offspring's mutant mtDNA load will vary greatly. **B.** Oocyte donation: currently permitted in some constituencies but limited by the availability of oocyte donors. **C.** Preimplantation genetic diagnosis: available for some mtDNA diseases (reliable in determining background nuclear genomic haplotype risk). **D.** Nuclear transfer: research stage, including initial studies in nonhuman primates. Red represents mutant mtDNA, pink and white represent successively higher proportions of normal mtDNA. Blue represents genetic material from an unrelated donor. (Adapted with permission from J Poulton et al: Preventing transmission of maternally inherited mitochondrial DNA diseases. *Br Med J* 338:b94, 2009.)