5.4 Reproductive Ducts

The differentiation of reproductive ducts that carry gonadal and sometimes urinary products is also complex in vertebrates. While mammals have separate ducts for gametes and kidneys, other vertebrates such as fish and amphibians males have only one duct, while females have two. Along with a bipotential gonad, embryos initially produce two sets of ducts (the Wolffian duct and the Mullerian duct), and typically only one set is kept in males and females. The Wolffian duct is preserved in males and goes on to become the vas deferens, ductus deferens or archinephric duct, while the Mullerian duct is preserved in females and goes on to become the oviduct. However, it is often the case that either parts or whole reproductive ducts are preserved and not regressed in individuals of any sex. Persistent mullerian duct syndrome results in the formation of female reproductive organs such as the uterus and uterine horns in XY males. In females, persistence of Wolffian ducts can lead to cysts and tumors, though these remnants are often benign.

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