

Human development

1. What broad scientific questions guide much developmental research?

- *Explore the four issues that guide developmental research.*
 - Nature V Nurture: Heredity versus environment; how much do they interact?
 - Sensitive and critical periods: Are some experiences especially important at a certain age (Sensitive periods are optimal times for learning, development is still possible if experiences occur later in life. Critical periods are times in which experiences must occur in order for development/learning to occur)?
 - Continuity V Discontinuity: Is development continuous and gradual (like a growing tree), or discontinuous and distinctly staged (e.g. caterpillar, to cocoon, to butterfly).
 - Stability V Change: Do our characteristics remain consistent as we age?

2. How do genes and the environment affect prenatal development?

- *Understand that development starts in the womb*

Infants are shown to be able to recognise and respond to familiar sounds and voices in their last six weeks of gestation. They are also responsive to touch and temperature.
- *Describe how genes influence sex determination*

A mother's egg has 23 chromosomes (22 autosomes, 1 sex chromosome-X-) as does a father's sperm (22 autosomes, 1 sex chromosome-X or Y). When two X chromosomes are paired, this creates a female. An XY combination creates a male.

At around six to eight weeks, the Y chromosome (TDF gene) initiates the development of testes, which will then secrete androgen, to continue male organ pattern development. In its absence (XX combination), inherent female organ pattern ensues. Thus, six-eight weeks of gestation is a critical period.
- *Explain the effect of different teratogens in prenatal development*

Teratogens are external agents that cause abnormal prenatal development. Some examples of which are:

 - Rubella: Causes blindness, deafness, heart defects and mental retardation.
 - STIs: For example, syphilis, will cause infant death.
 - Alcohol: Facial abnormalities, stunted brain growth, mental and social retardation, or FASD (Foetal Alcohol Spectrum Disorders)/FAS (Foetal Alcohol Syndrome).
 - Nicotine: May cause miscarriage, low birth weight, or respiratory problems.
 - Illicit drugs: May cause withdrawal symptoms in infants after birth.

3. How do infants and children develop physically, cognitively, socially and emotionally?

- *Be able to explain how perception introduces the world*

Newborns have poor vision at birth. A few days after birth, infants can begin to perceive some blurry forms.

Perceptions are how we interpret different stimuli, thus conditioning and memories of various stimuli introduce us to the world. Our conditioning can be manipulated, but is nonetheless how we develop schemas.