BIO1300 The Human Animal
Topic 4: The brain, emotions and drugs
Key Words

Large brain size
Chimp brain
Human brain
Frontal lobe
Large forehead
Narrow pelvis
Bipedalism
Tool use
Birth canal
Wide heads
Risk getting stuck
Immature brain
Soft spots
Unfused skull
Squishy head
Conehead
Helpless babies
Dependent young
Independent young animals
Horse fawn walking
Humans born immaturely
Allometric growth
Proportion of body size
Brain growth outside of womb
Rapid development
Adult size in infants
Brain tissue
Metabolically expensive
Developmentally expensive
Glucose consumption
Brain:body ratio
Subcutaneous fat
Baby fat
Other mammals
Nature vs. nurture
Genes vs. environment
Interaction between the two
Genetic contribution
Developmental schedule
Anatomy
Structure
Environmental effect
Fine-tune
Sculpting
Determines functions
Acorn to oak tree
Requires water
Nutrients
Light
Children need environmental factors
Synaptic pruning
Brain growth
Auditory areas
Visual areas
Language areas
Prefrontal cortex
Overproduction of brain cells
Trimming to retain useful connections
Neuronal wiring
Proper brain development
Nutrition
Physical security
Emotional nurturing
Evolved mechanisms
Crying babies
Establish security
Parental response
Oxytocin
Attachment relationship
Pursuit of closeness
Mechanism to protect from helplessness
Important to brain development
Infant mental health
Psychology of parents
Quality of interactions
Stress
Anxiety
Happiness
Body language
Pupil dilation
Tension
Parental nurturing
Good mood-related chemical
Serotonin
Oxytocin
Harmful chemicals

Cortisol
Vasopressin
Hippocampus shrinkage
Psychological stress
Physiological stress
Opioid attachment-reward system
Dopaminergic incentive-motivation system
Self-regulation via PFC
Body-brain system
Stress-response mechanism
Opioid attachment system
Happy relationships
Emotional interactions
Feelings of love, pleasure
Pain relief
Attachment
Stunting effect from stress
Painful emotional experiences
Trauma
Endorphins
Physical pain relief
Emotional pain relief
Emotional bonds
Social bonds
Intense pleasure
Being social humans
Dopamine system
Incentive-motivation
Stable relationships
Social-emotional stimulation
Initiates activities
Learning behaviours
Desires
Motivation
Food foraging
Sexual activities
Exploration
Limbic system
Dopamine and endorphins
Processes feelings and emotions
Initiates activities
Ventral Tegument Apparatus VTA
Nucleus Accumbens NA
Caged rats overstimulate
Proximal separation
Emotional absence
Neglect
Stress
Anxiety
Body mechanisms are overwhelmed
Homeostasis
Threshold response
Easily triggered
More anxious
More distressed
Brain-body response
Stress hormones
Adrenaline
Cortisol
Readiness for threats
Fight or flight
Emotional threats