Skin Senses
Skin Senses

- Used to identify objects, communicate feelings, and protect us from injury (touch, pressure, temperature)
- There are about 6 different receptors in the skin as well as different patterns of the receptors
  - The receptors determine how/what we feel
Skin Senses

- Receptors send information to spinal cord, and then to the somatosensory cortex where your sensations are processed (touch, pressure, temperature, pain)
  - It is only after this process that you become aware of where and how hard you have been touched
Skin Senses

• Touch (Tactile Sense)
  – Most pleasurable of all the senses
  – Identify objects
    • Accurately
    • Quickly
Skin Senses

• Touch
  – Social Attachments
    • Lover
    • Parent/child relationship (very serious)
      – Psychosocial Dwarfism
      – Premature infant study
  – Express intimate feelings
    • Love, comfort, reassurance, motivation
Touch

• Certain areas of the skin are more sensitive
• Sensitivity to touch is greatest where you need it the most
  – Lips
  – Tongue
  – Hand
  – Face
• The more sensitive the area of skin - the larger representation on somatosensory cortex
  – Two-Point Threshold
    • Toothpick test
Pain

• Why don’t we feel it sometimes?
  – Stress induced analgesia
    • Prevents us from feeling pain when for survival purposes is it best for us to ignore injuries
Different Types of Pain

- **Visceral Pain**
  - Pain inside (organs)

- **Somatic Pain**
  - Skin, muscles, tendons, joints
  - 2 forms
    - Sharp, fast pain
    - Dull, ache pain
Pain

- Protects us from injury, even death
- Lose sense of pain, may harm yourself
  - Children can die easily from this disease (congenital analgesia)
    - Infection, tissue damage
Factors of Pain

• Phantom Limb Pain
  – Pain in limbs that are no longer there due to traumatic injury to nerves during amputation
  • 2 out of 3 (50%-80%) of combat veterans with amputated limbs experience this
    – Activation of nerves of the stump
    – Activation of neural circuits that have stored memories connected with the missing limb
Factors of Pain

• Cultural Attitudes
  – Expressions of pain
  – Chinese value silence- women endure pain of childbirth and do not engage in loud and highly emotional responses for fear they will dishonor themselves and their families
  – Pakistani women believe the greater their suffering and louder their responses to the pain, the more caring their husbands will be.
Factors of Pain

• Gender Roles
  – Women have a 20% lower pain tolerance than men
  – Men endure discomfort rather than risk losing face by showing vulnerability…why?
How we respond/ react to pain reveals a lot about our psychological state than the actual intensity of the pain stimulus.

Thus…. pain is, “all in our head”
Factors of Pain

• Gate Control Theory
  – Pain impulses pass through the spinal cord which provides a “gate for pain impulses”
  – Either inhibit or transmit…only so many can enter the gate at one time
  – Large fast conducting nerve fibers carry other sensory messages from the body
    • These tie up traffic at the gate and cause it to close
      – Rub finger on toe
      – Put ice or heat on painful area
Factors of Pain

• Pain gate is affected by neural messages that originate in the brain
  – Example: Wounded soldiers that return home from battle need less morphine than civilians with similar wounds...Why??? They think of their wounds as tickets away from the battlefield
Factors of Pain

• Example: Stomach hurts…someone who is unhappy at work may find it unbearable, while someone energized/happy at work may feel it is merely annoying
Pain Relief

• Over $40 billion spent on treatments for pain

• Drugs- Morphine
  – Most popular approach
  – Sugar pills (placebo)
Pain Relief

• Acupuncture
  – Insertions of fine needles into the body
    • Needles cause a release of Naloxone (opiate that blocks pain)

• Transcutaneous electrical nerve stimulation
  – (TENS)
  – Electrical stimulation of sites on the body
    • Dental pain, facial pain
Pain Relief

• Hypnosis
  – Burn victims, women in labor

• Distracting thoughts or stimuli
  – Watch TV, listen to music
  – This is why dentists play music
  – Counter-irritation
    • Irritate one area of body in order to mask pain in another area
      – Ice pack, heat, message
Pain Relief

- Endorphins
  - Block Substance P in spinal cord
  - Produce a feeling of well-being
  - Released when you are injured, when you experience stress, pain, when you laugh, cry, or exercise