CIRCADIAN RHYTHMS & WORK SCHEDULES

1. **24/7 Work Schedules**
   - work world is now 24 hrs. long
   - conflict with our diurnal activity pattern
   - contributing factors:
     - “industrial/technology/information” age jobs that never stop
     - global economy
     - machines that never stop
     - artifical light (freed from the sun’s cycle)
   - shiftworkers (1986 data)
     - 22% of population doing shiftwork (1 in 5+)
     - 16% full-time, 47% part-time
     - these #s have increased over the last 15+ years

2. **Information of Shiftworkers**
   - these workers frequently report being unhappy with their work schedules
   - report significant sleep disruption
   - report significant sleepiness during work hours
     - e.g. survey of 1000 train drivers

3. **History of Start of Shiftwork Schedules**
   - prior to 1883 most work confined to daylight hours
     - winter – worked 8 to 10 hours/24 (e.g. 9am to 5pm)
     - summer – worked 12 to 14 hours/24 (e.g. 7am to 7pm)
     - adjusted work hours to the sun’s cycle, with seasonal changes
   - **1883, Edison invented the electric lightbulb**
     - by early 1900’s, industrial America had begun to consider working at night…because it could
     - more work --- more product--- more sales --- more profit…
     - But at what cost? And at whose cost?
   - **1910 American steel mills**
     - worked round-the-clock schedules
     - rotated day vs. night shifts every two weeks
     - 12/7 schedules, 1 day off/4 weeks
3. **History of Shiftwork** (cont.)
   1914, Henry Ford
   1920, Interchurch World Movement report
   1923, steelworkers strike, major union victory
   1932, Walsh-Healey Act
   1938, Fair Labor Standards Act
   1940’s, World War II

   by 1982 in USA, 26% of adult males + 16% of adult females did full-time shiftwork on “graveyard”, reversed days and nights

4. **Recommendations for Surviving Shiftwork**
   1969, Stanford University Sleep Clinic

   **recommendations** based on contemporary sleep research:
   Do not do shiftwork!
   But, if you must…
      a. stay on a consistent S/W schedule 24/7
      b. if you must change schedules, do so slowly/infrequently
      c. if you must change schedules, do so in the delayed direction
      d. modify the bedroom environment (esp. light & sound)
      e. exercise after the last sleep period (“morning”)
      f. eat major meal(s) after last sleep period and/or in middle of “day”; no just before sleep onset
      g. workplace must be brightly lit (intensity of sunlight)
      h. worker must avoid bright light when workshift ends

5. Why are Shiftwork **Recommendations Difficult to Follow**?
   Why isn’t this a simple as it looks?

6. What’s Happening **Outside the USA**?

7. **Future Predictions**