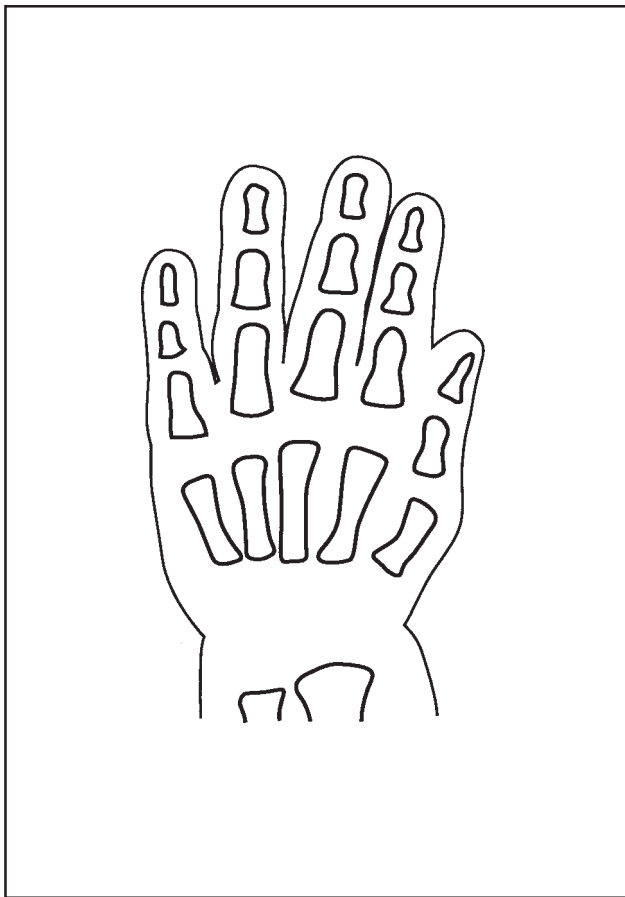


ACTIVITY 2I - THE AGING HAND STUDENT HANDOUT

“THE AGING HAND” ACTIVITY SHEET

Look at the following line drawings of the photographs of X-rays of the female hand as it ages. Drawings in frames 1 through 4 are taken from different females. Drawings in frames 5 and 6 are from the same woman. Girls are, on the average, more advanced in their skeletal development than boys of the same age. However, the changes in a healthy male or female would be similar. Answer the questions following the drawings on the Drawing Activity Sheet.

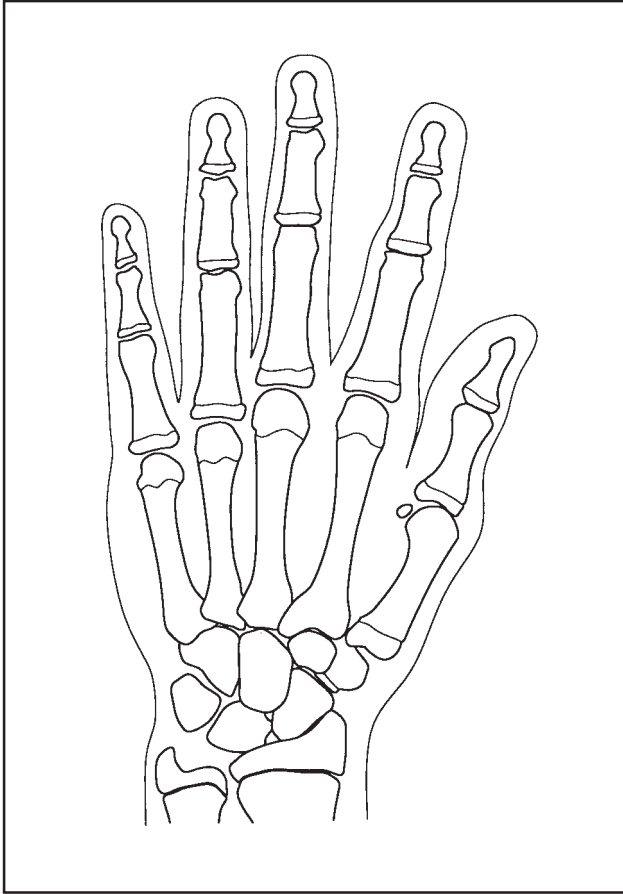


Frame 1 — Newborn

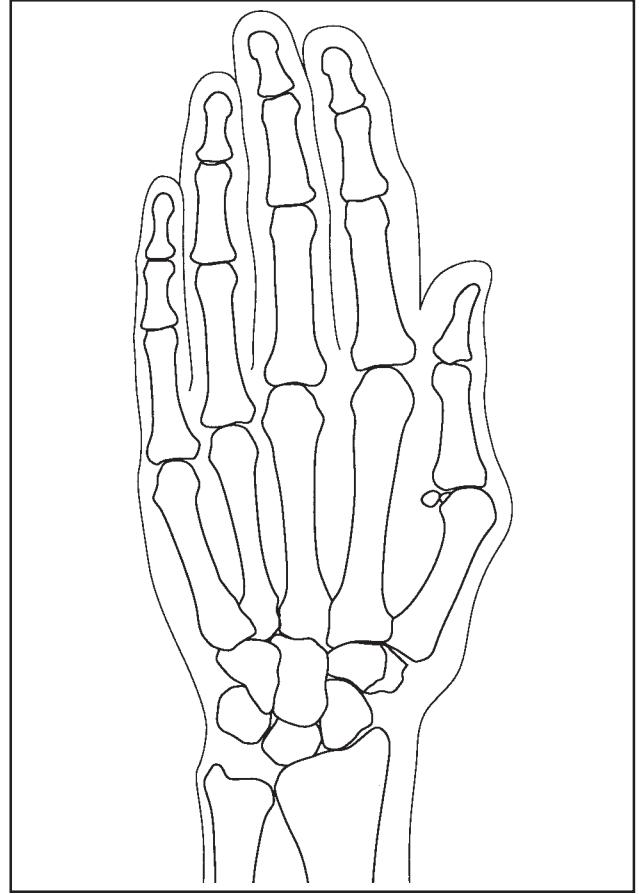


Frame 2 — 1 Year

ACTIVITY 21 - THE AGING HAND

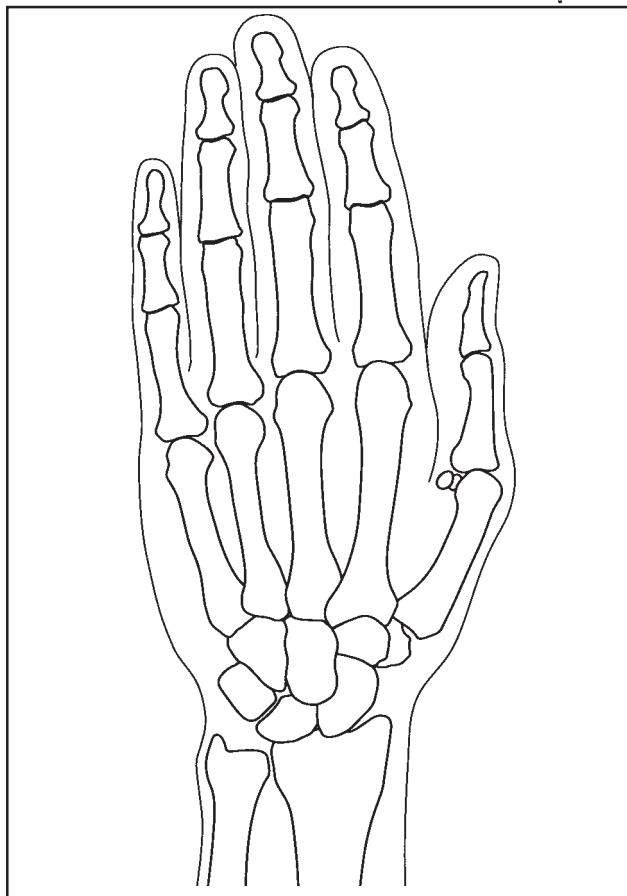


Frame 3 — 13 Years

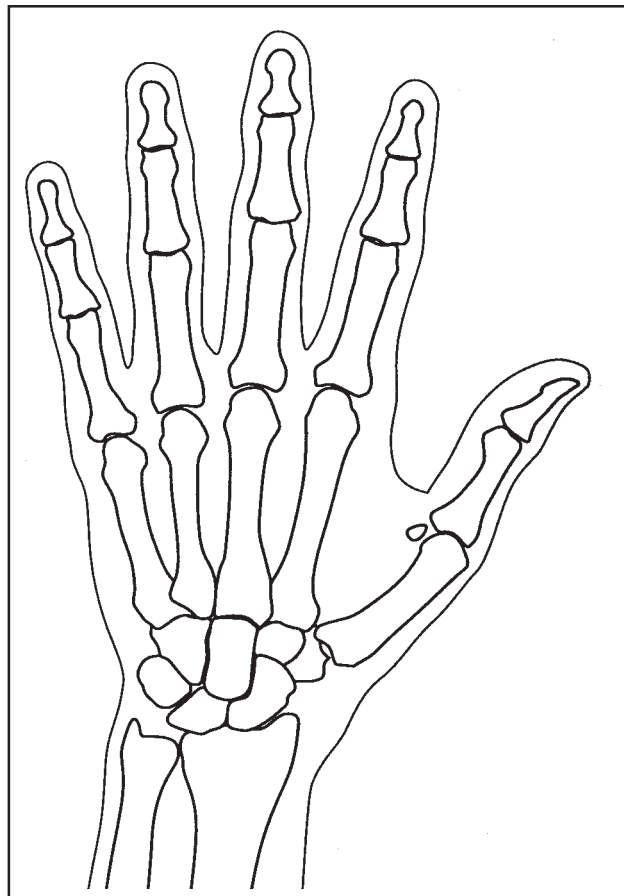


Frame 4 — 18 Years

ACTIVITY 2I - THE AGING HAND



Frame 5 — 28 Years



Frame 6 — 50 Years

ACTIVITY 2I - THE AGING HAND

“THE AGING HAND” ACTIVITY SHEET — INSTRUCTIONS

1. Label the **carpals**, **metacarpals**, **phalanges**, **radius**, and **ulna** in frame 6.
2. Observe frames 1 through 6. There are a group of bones that are completely absent at birth, but, gradually appear as the hand ages. In frame 1, circle where these bones are missing and label the missing bones.
3. Observe the spaces between the bones of the hand in frame 2. This space is where growth plates made of cartilage are found. Circle one of these areas in frame 2. Label this space a **growth plate**.
4. An ossification center (or epiphysis) where cartilage has changed to bone will gradually appear in the spaces at the ends of the phalanges, carpals, and metacarpals. Circle one of these ossification centers in frame 3. Label this an **ossification center**.
5. These ossification centers will fuse or join with the shaft of long parts of the bone. This fusion will be complete by the age of 18 and growth in length of the bone will end. An epiphyseal line will be all that remains from the growth plate changing into bone. Circle the line on a metacarpal that remains in frame 4. Label this line an **epiphyseal line**.
6. Can you tell which hand first appears in adult form where no major changes occur after this age? Circle the entire frame which shows the hand where no major changes occur after this.
7. Examine the drawing to the right and tell where you would place it among the other drawings based on changes you have observed occurring in the hand bones. Explain your answer.

