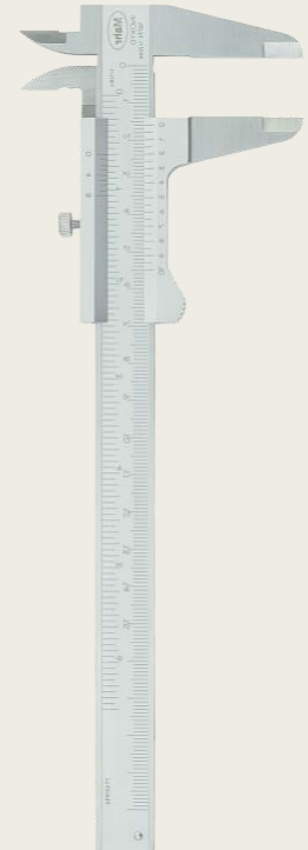
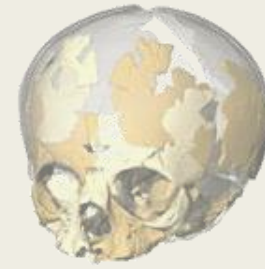
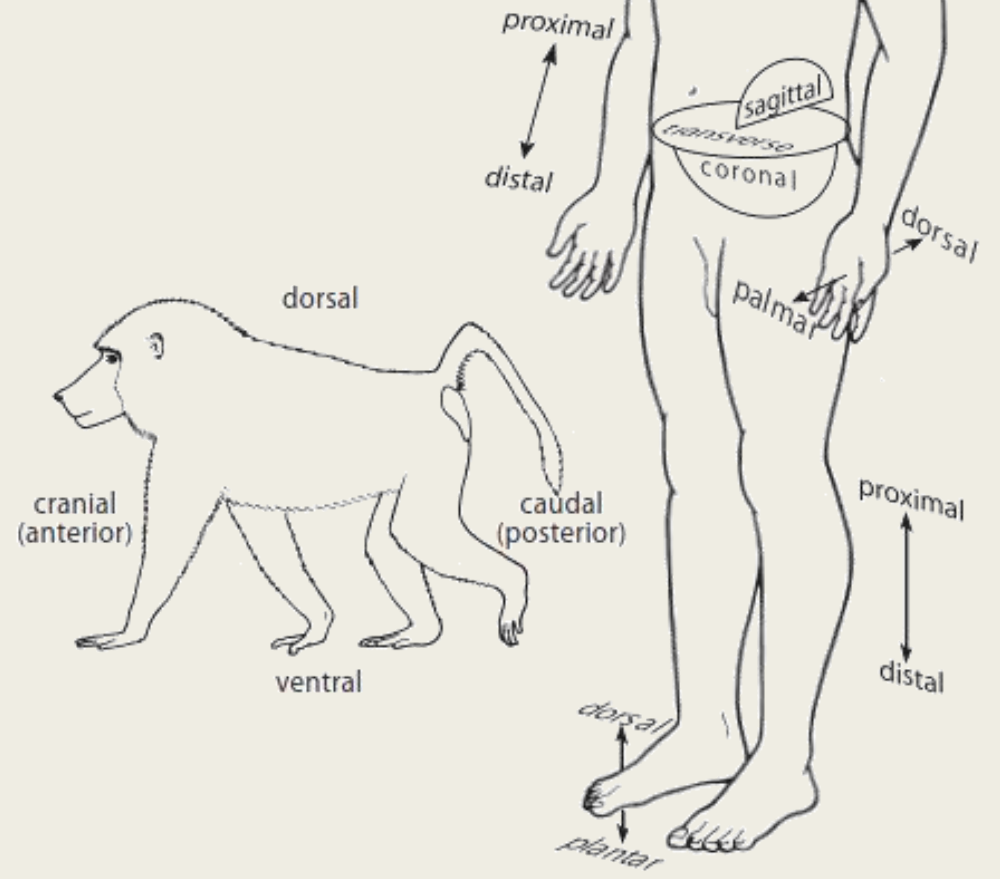
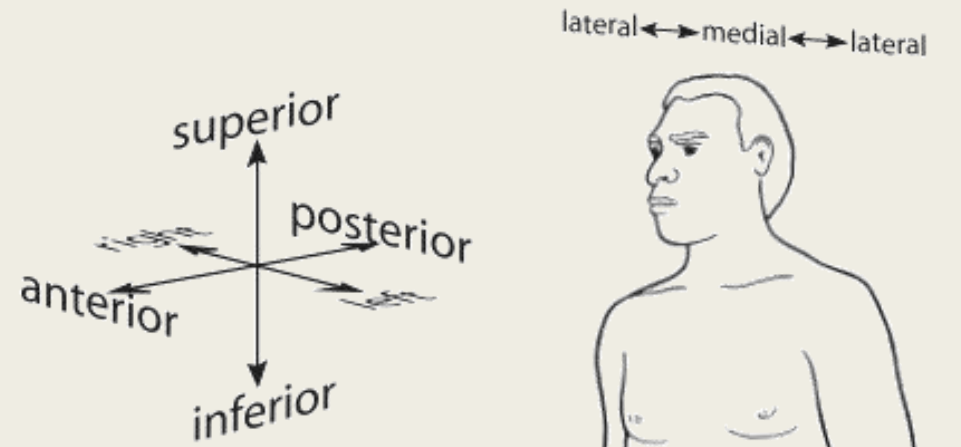


Metodologie in Antropologia fisica



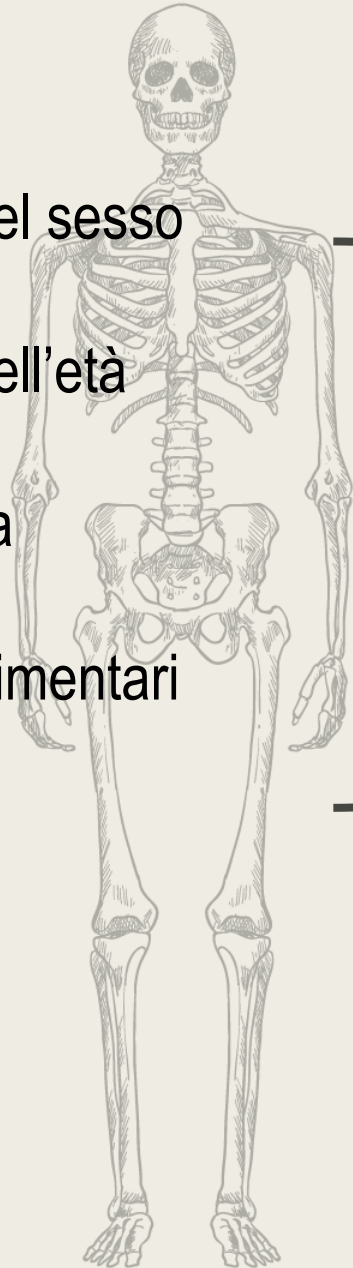
Università
degli Studi
di Ferrara

Julie Arnaud
julie.arnaud@unife.it



Metodologie tradizionale

- Determinazione del sesso
- Determinazione dell'età
- Stima della statura
- Comportamenti alimentari
- Stato di salute

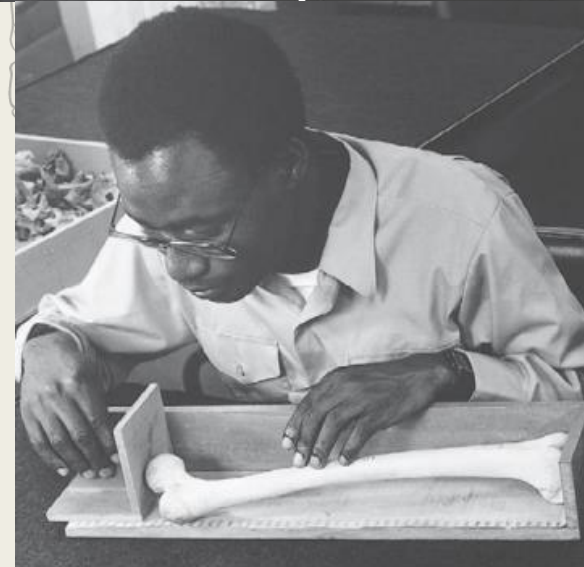
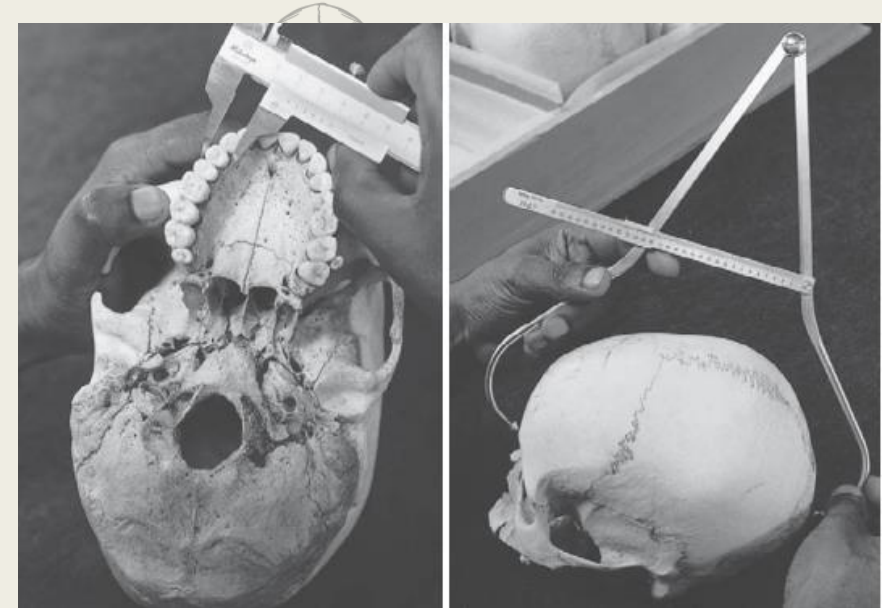


Profilo biologico: Studiare gli individui o popolazioni in una prospettiva biologica



Metodologie tradizionale

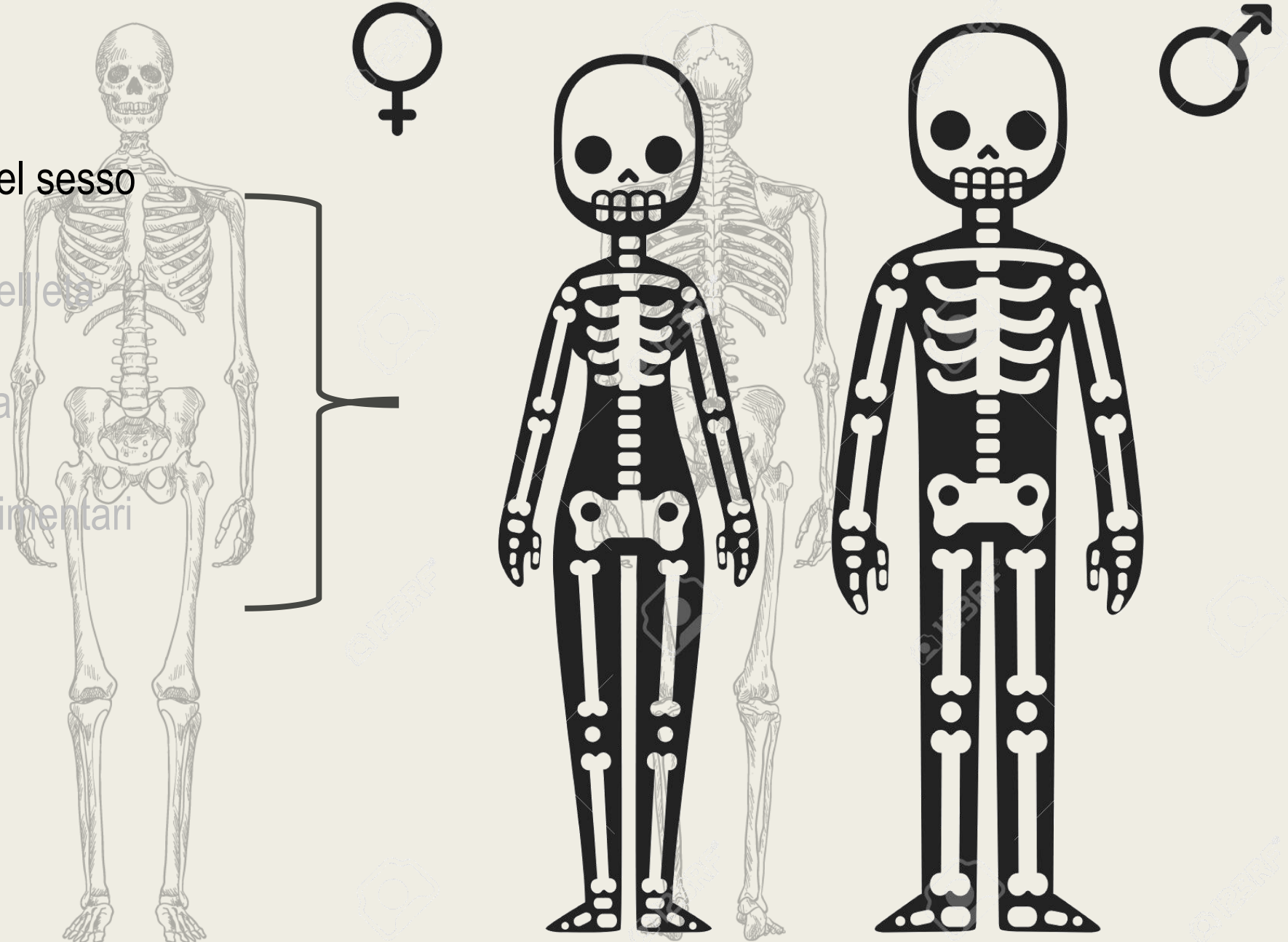
- Determinazione del sesso
- Determinazione dell'età
- Stima della statura
- Comportamenti alimentari
- Stato di salute

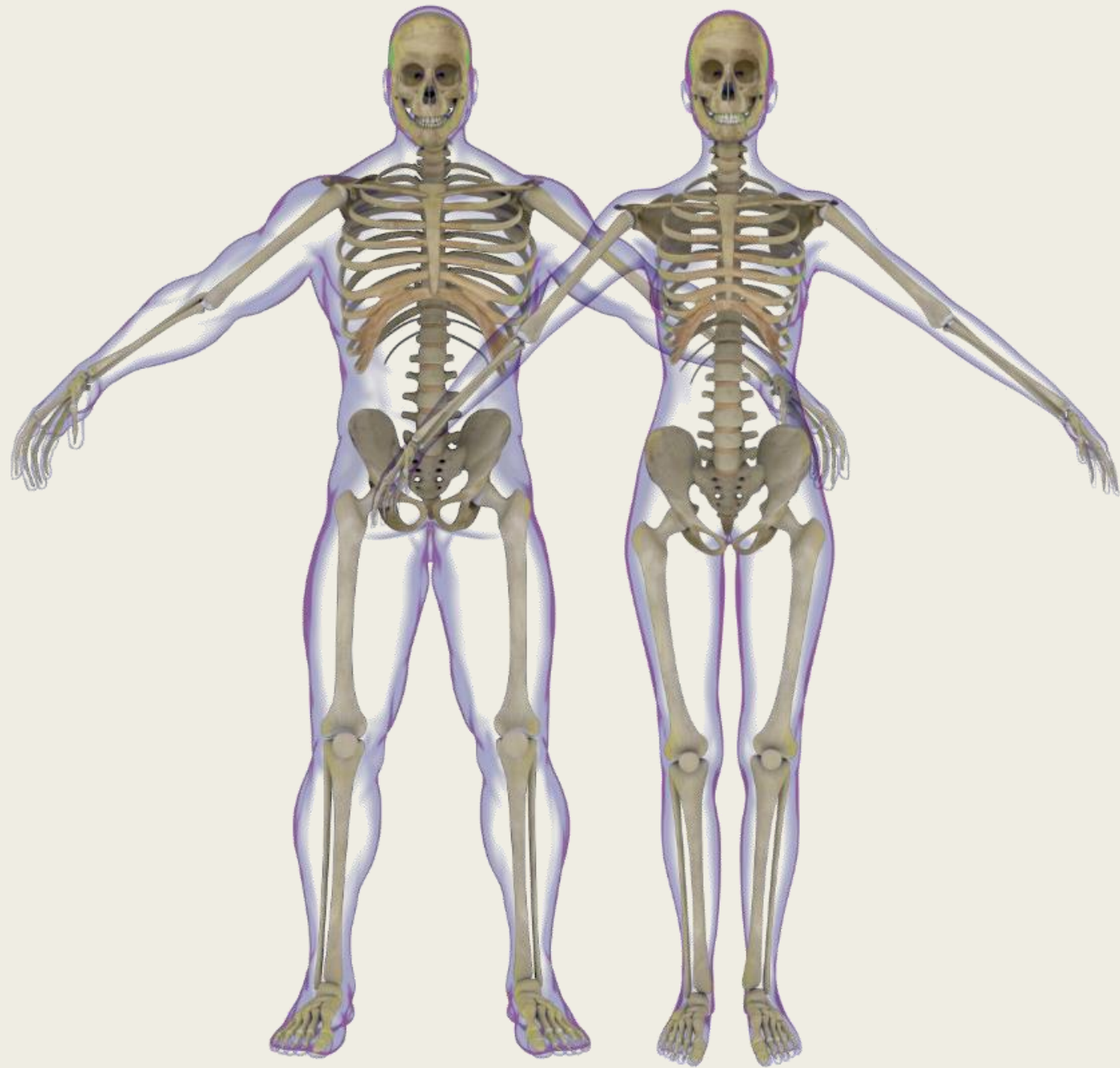


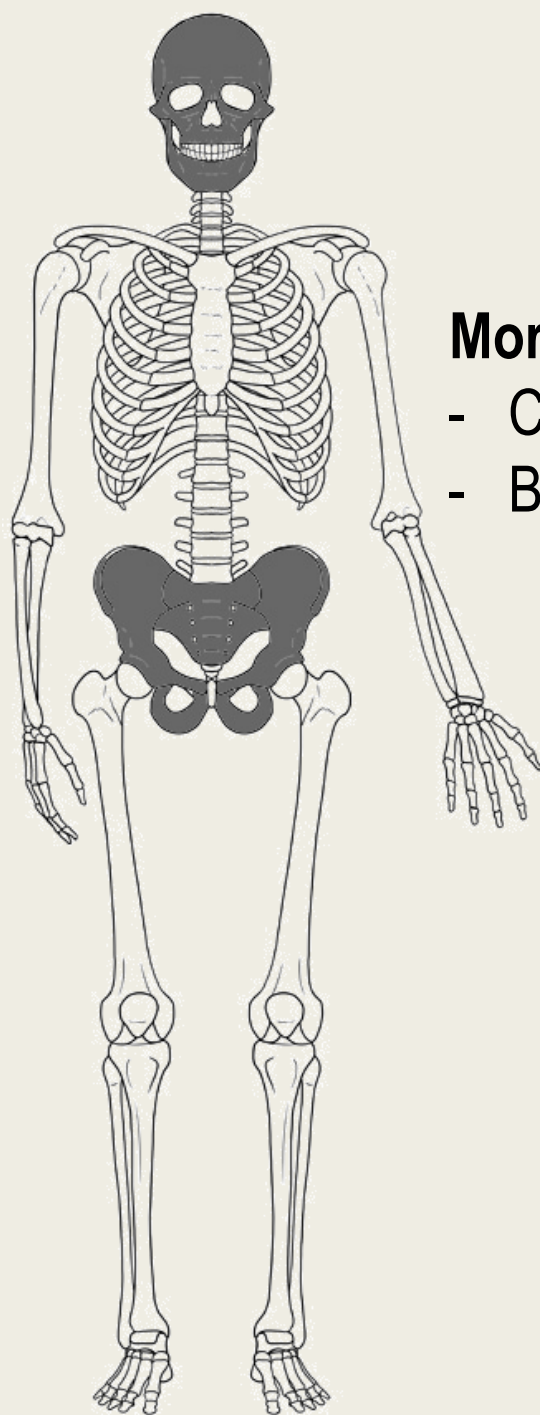
White, 2005

Metodologie tradizionale

- Determinazione del sesso
- Determinazione dell'età
- Stima della statura
- Comportamenti alimentari
- Stato di salute

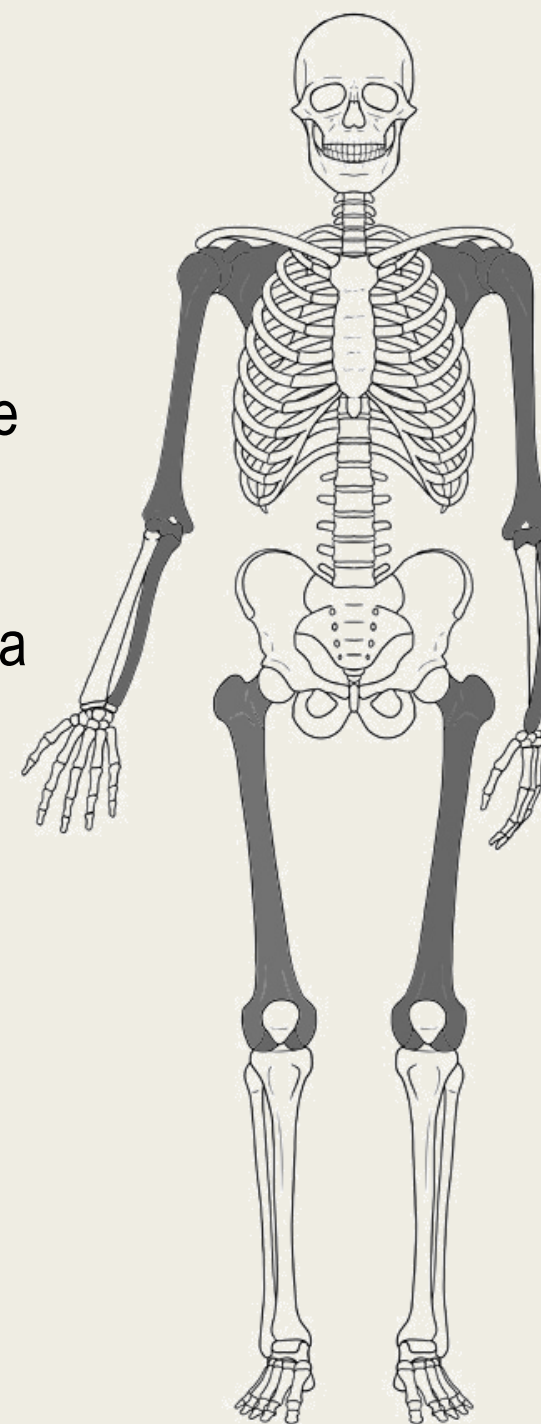






Morfologia

- Cranio
- Bacino



Metrica

- Femore
- Omero
- Radio
- Scapola







Glabella



Margine sovraorbitario





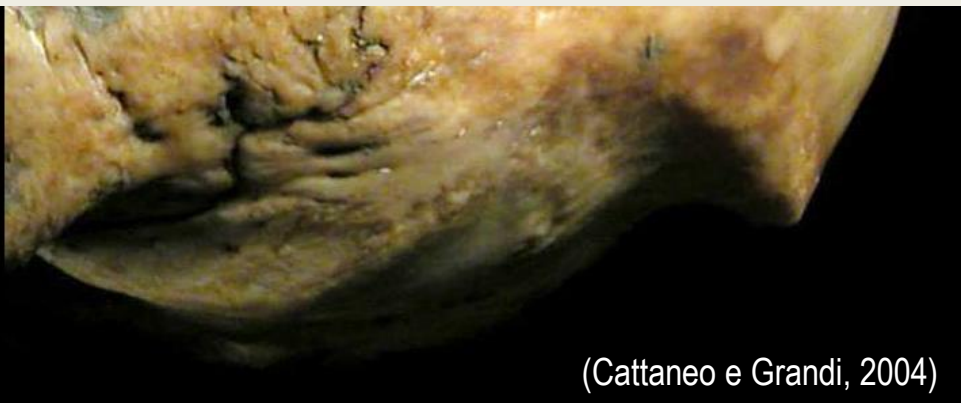
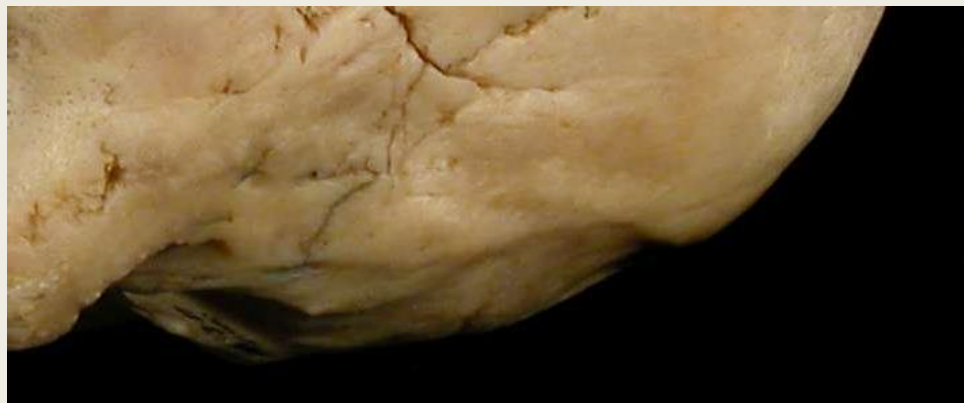
Processo zigomatico
dell'osso temporale



Processi mastoidei



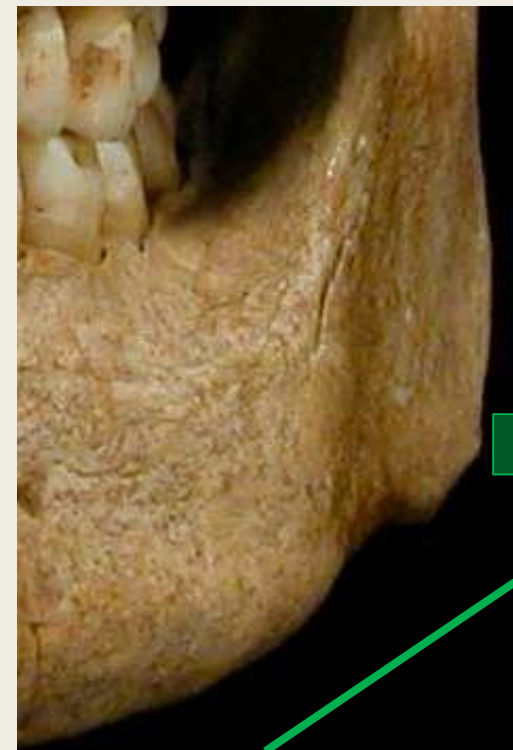
Cresta nucale



♀

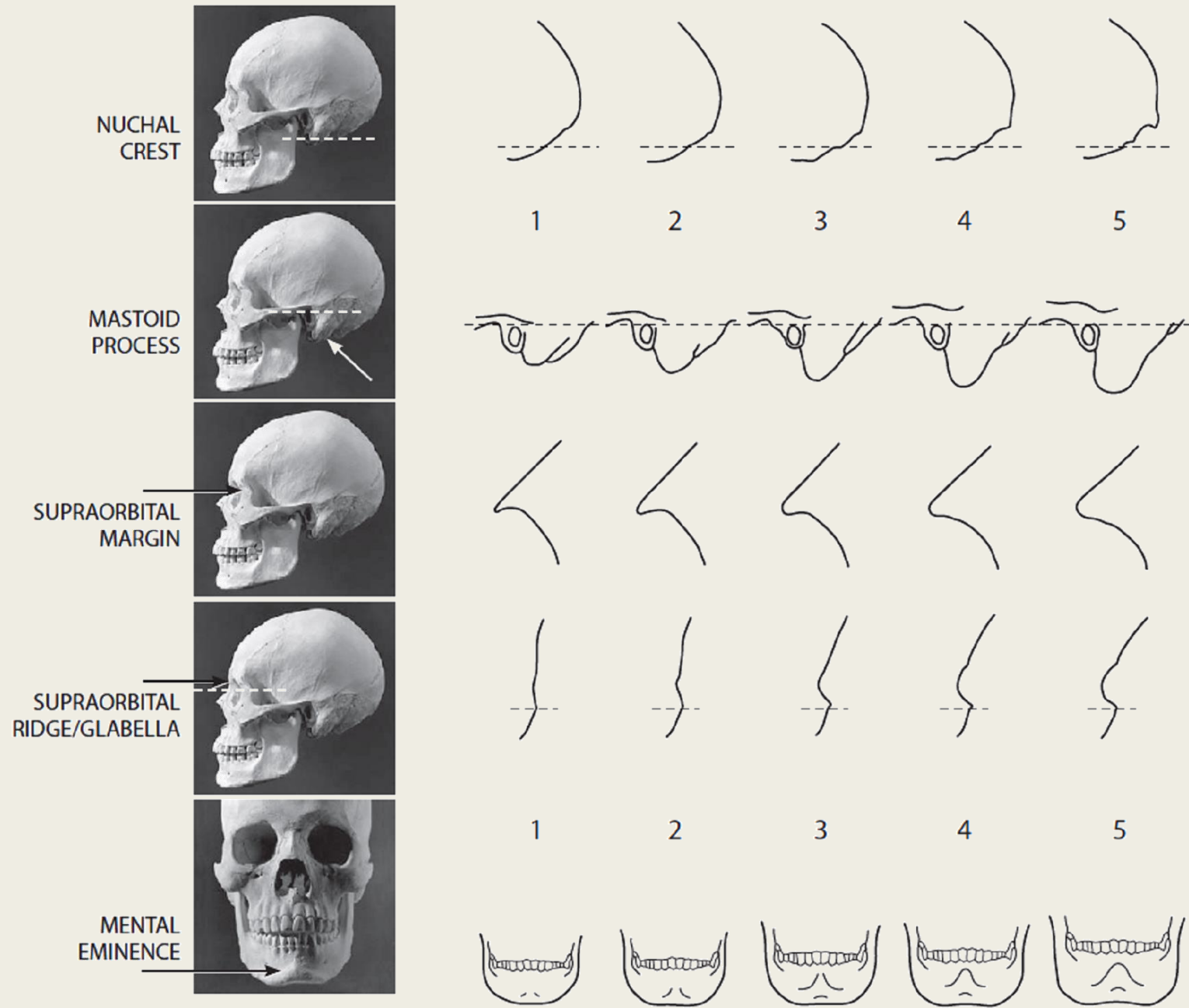
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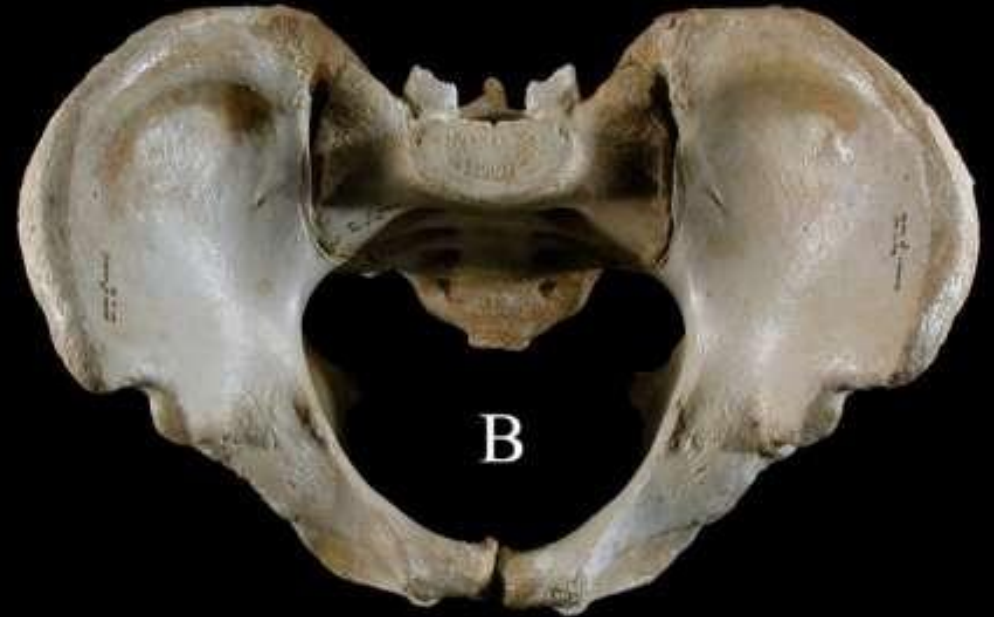
Morfologia del *gonion*



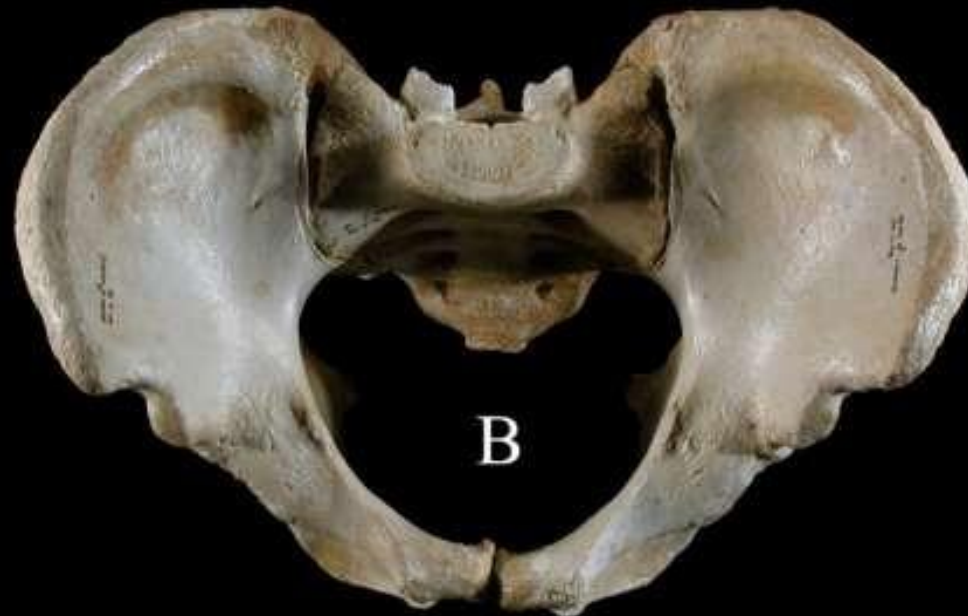
Forma della mandibola



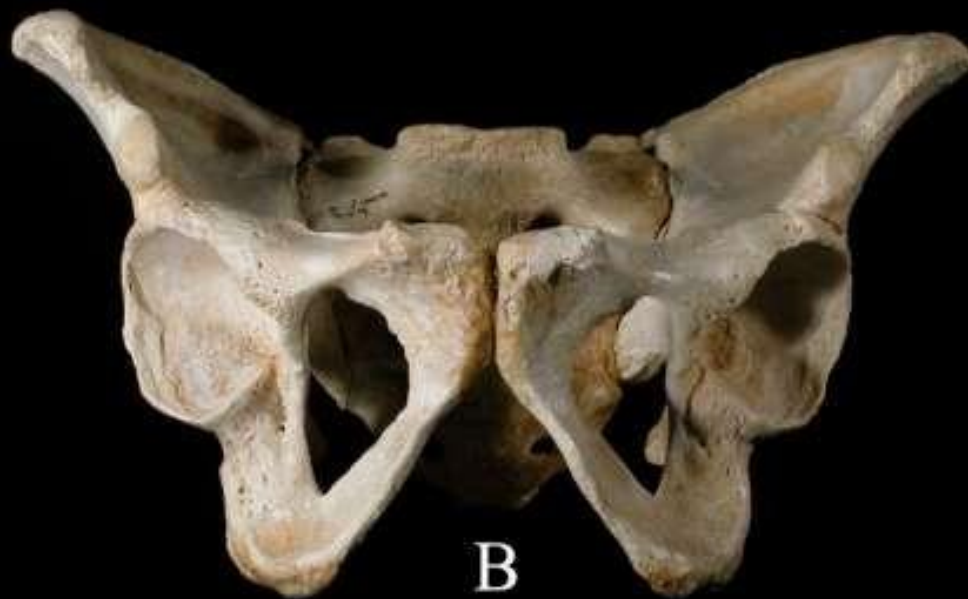




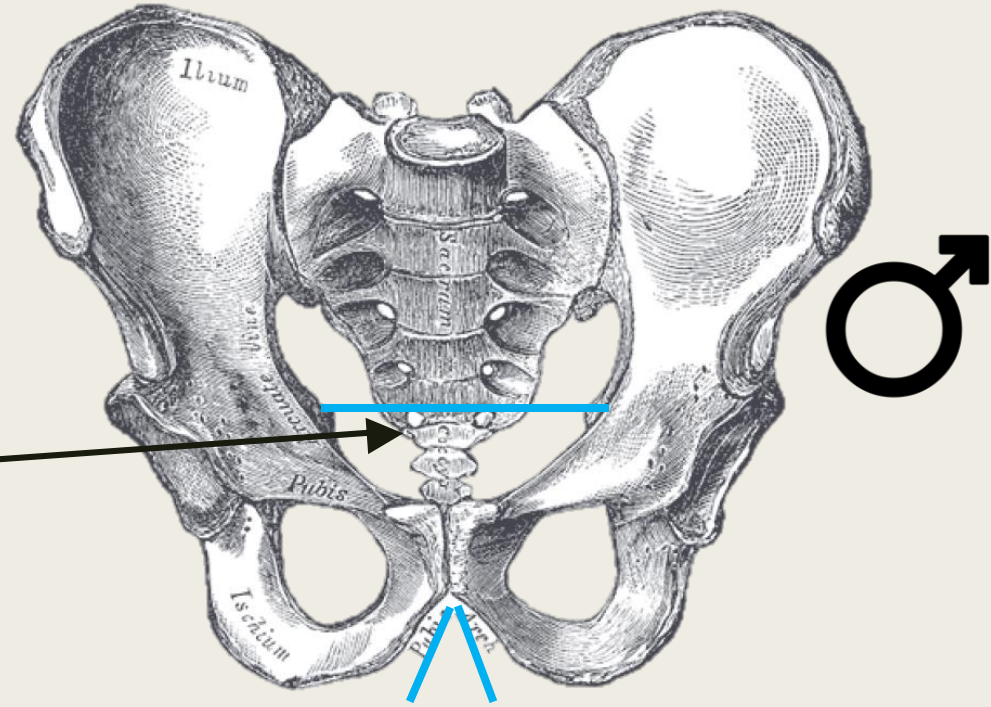
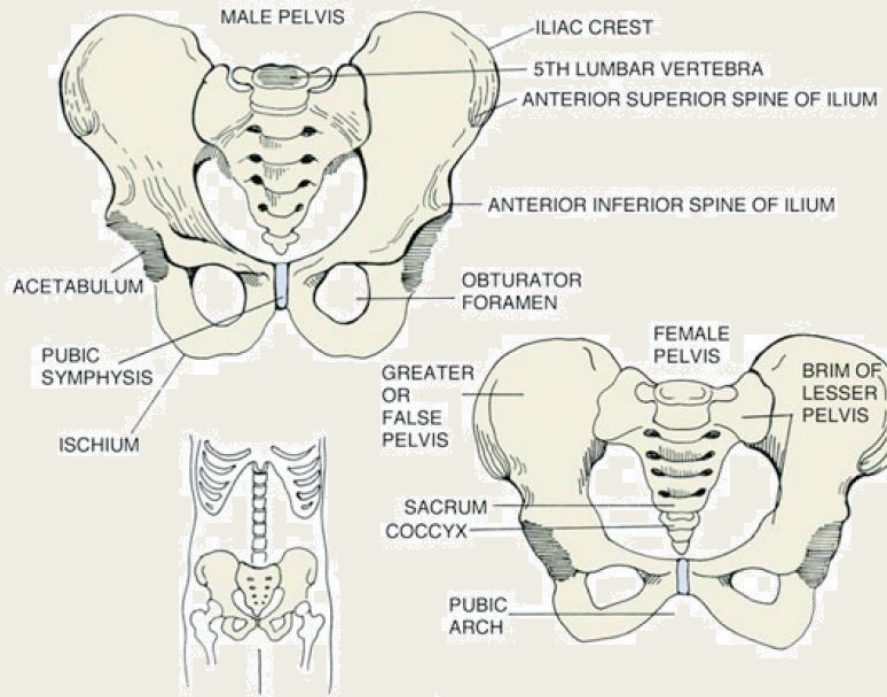
♀



♂

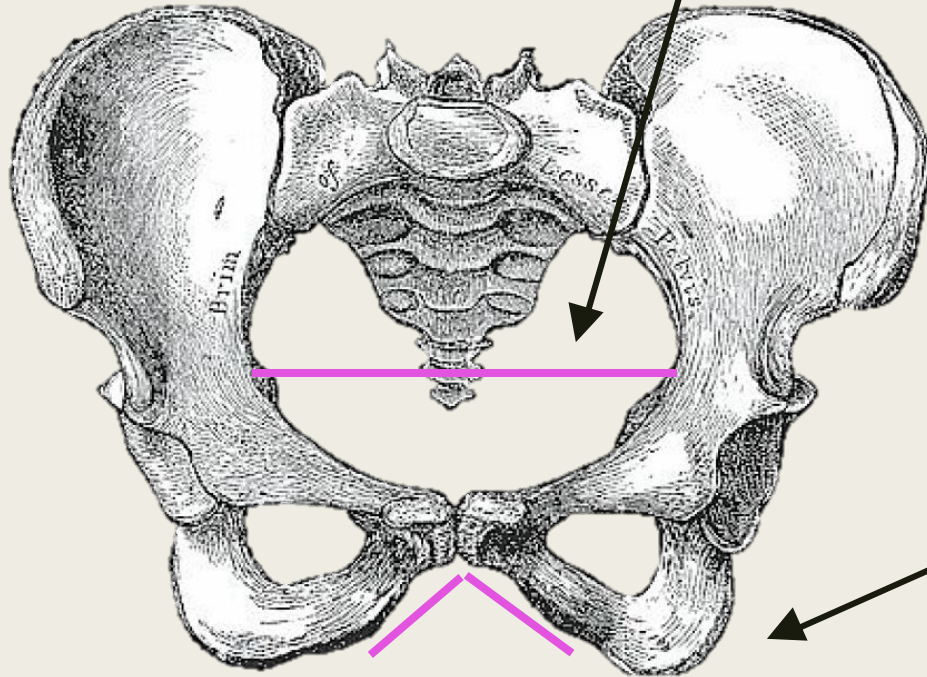


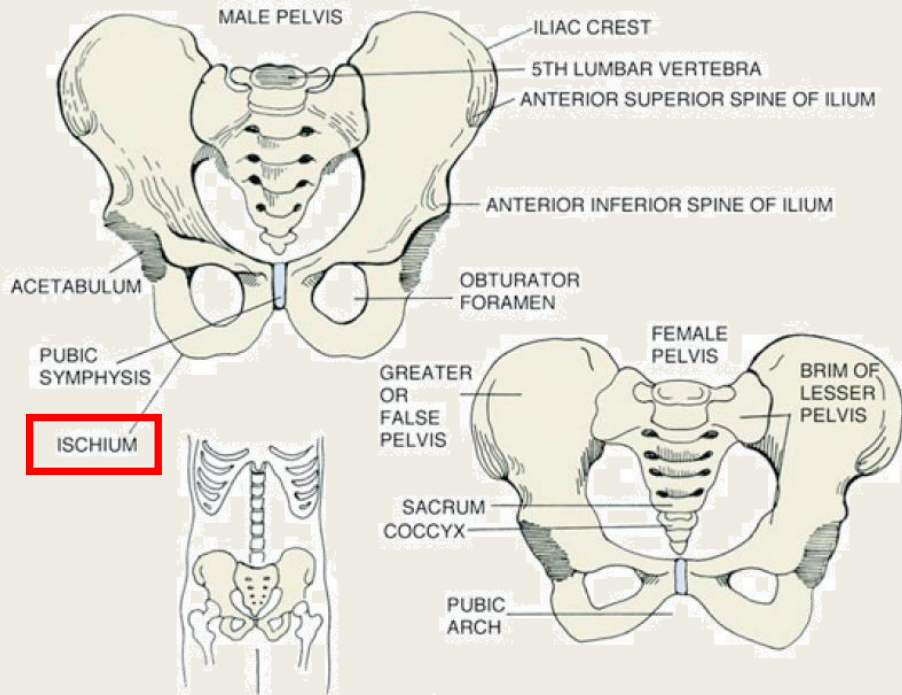
(White, 1991)



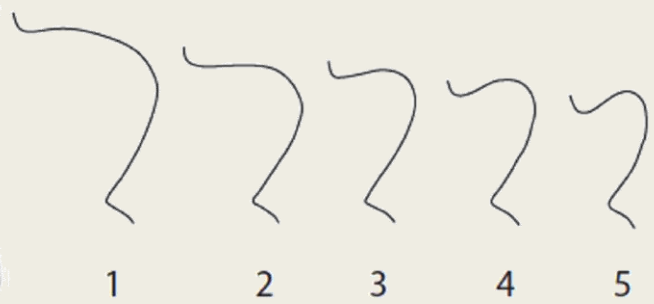
Scavo pelvico

Angolo sottopubico

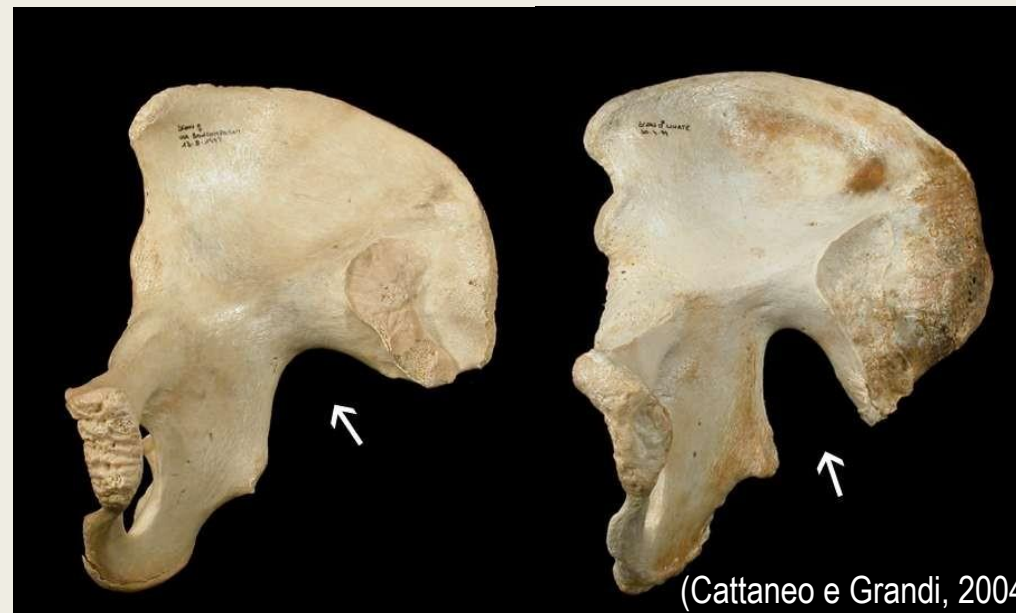




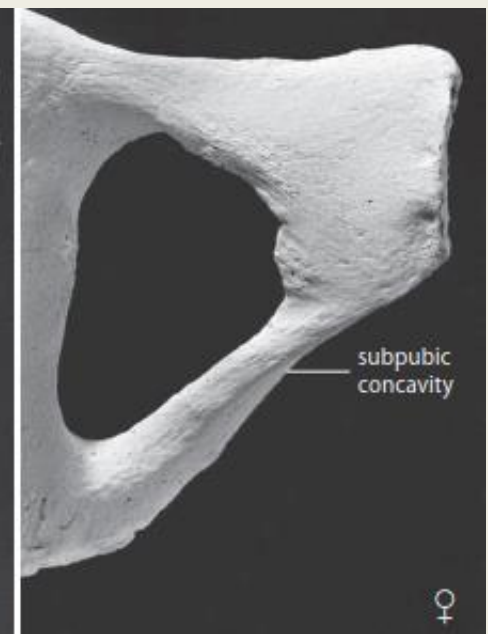
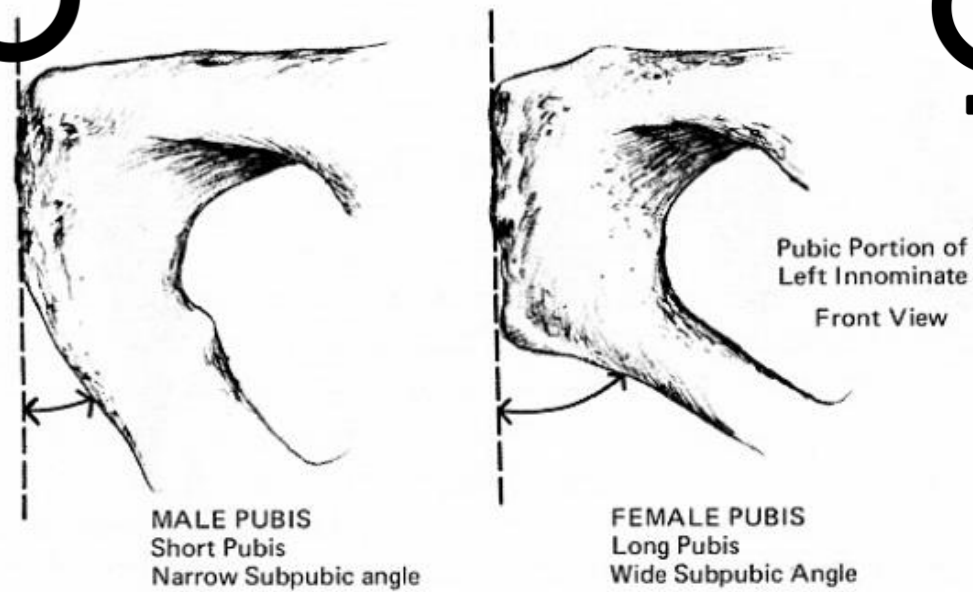
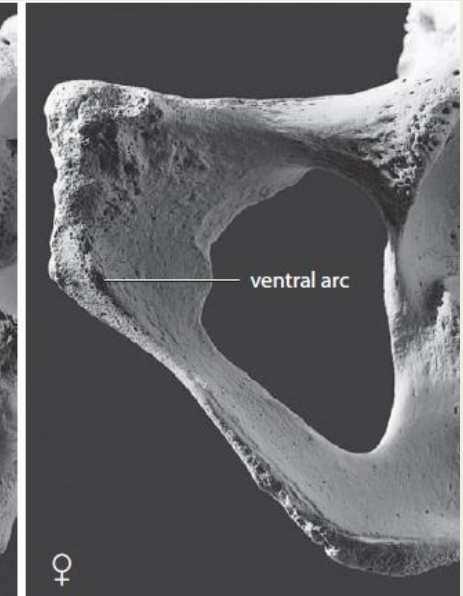
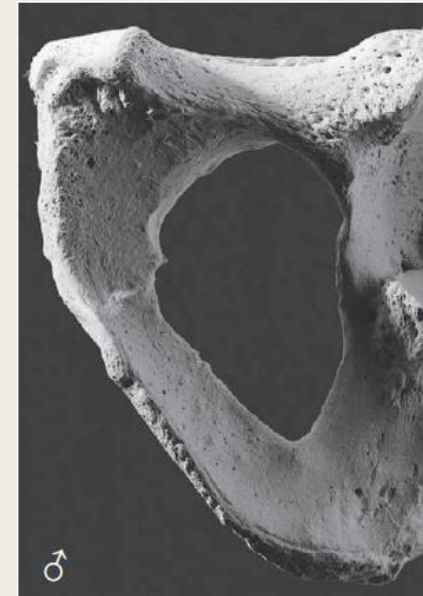
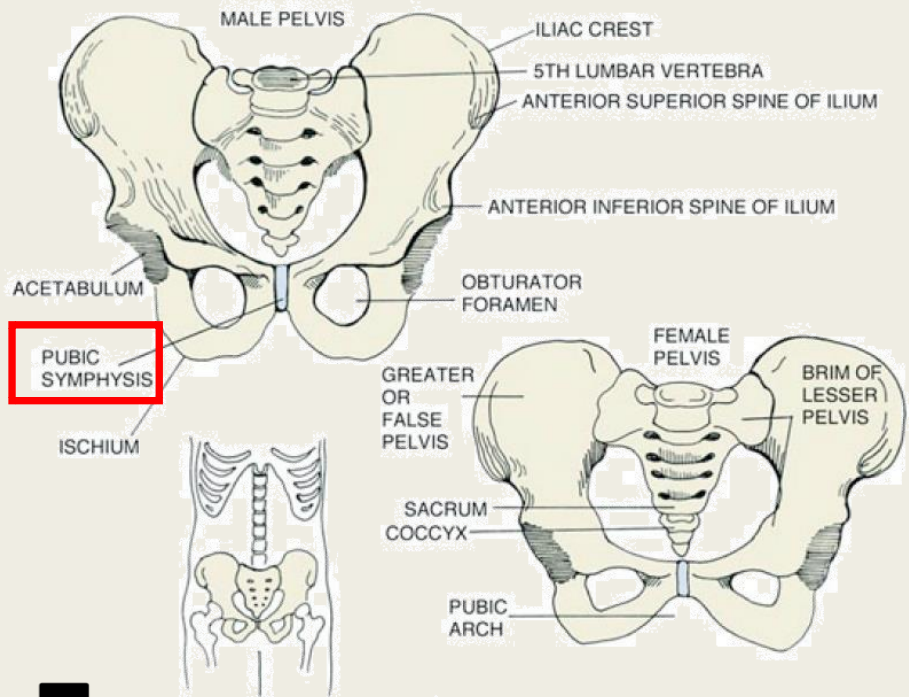
Incisura ischiatica



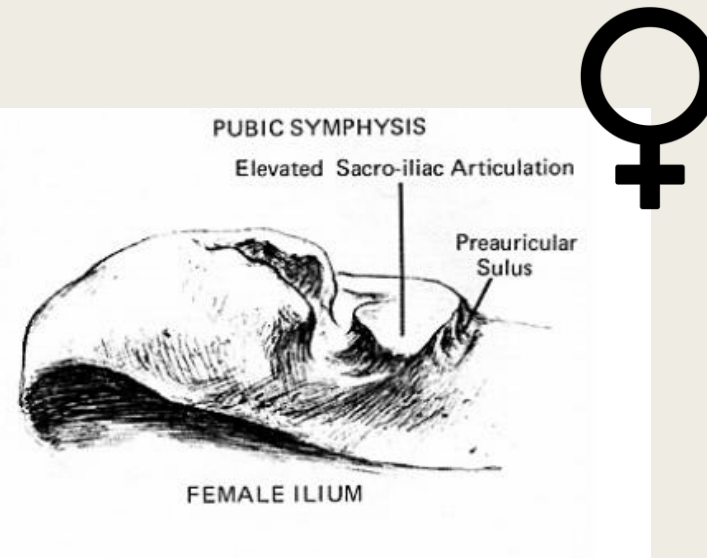
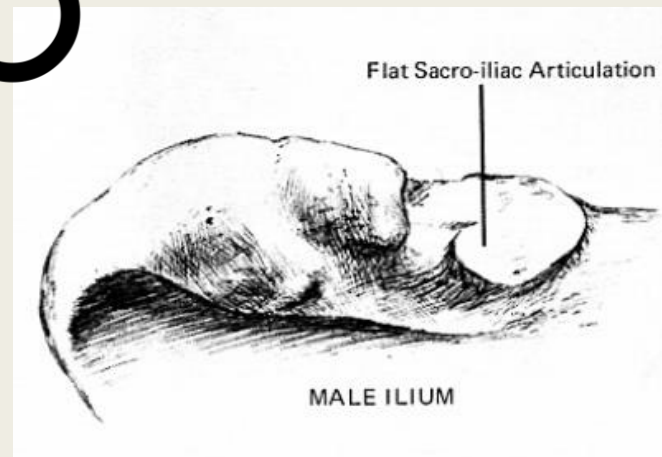
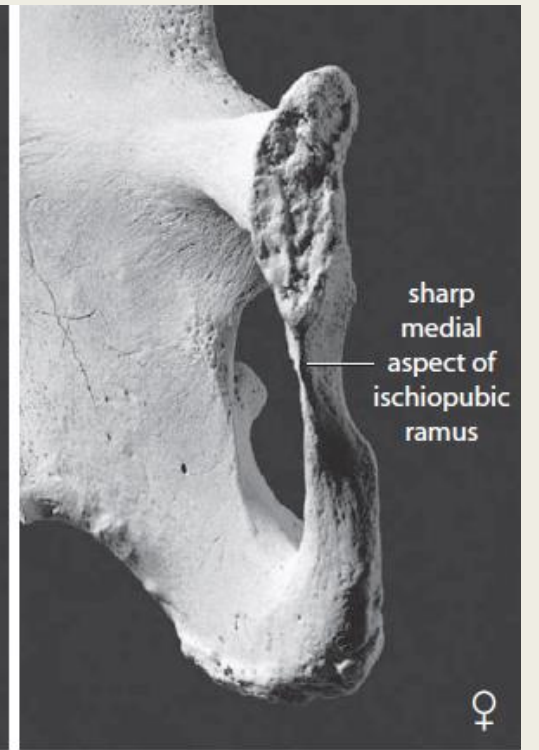
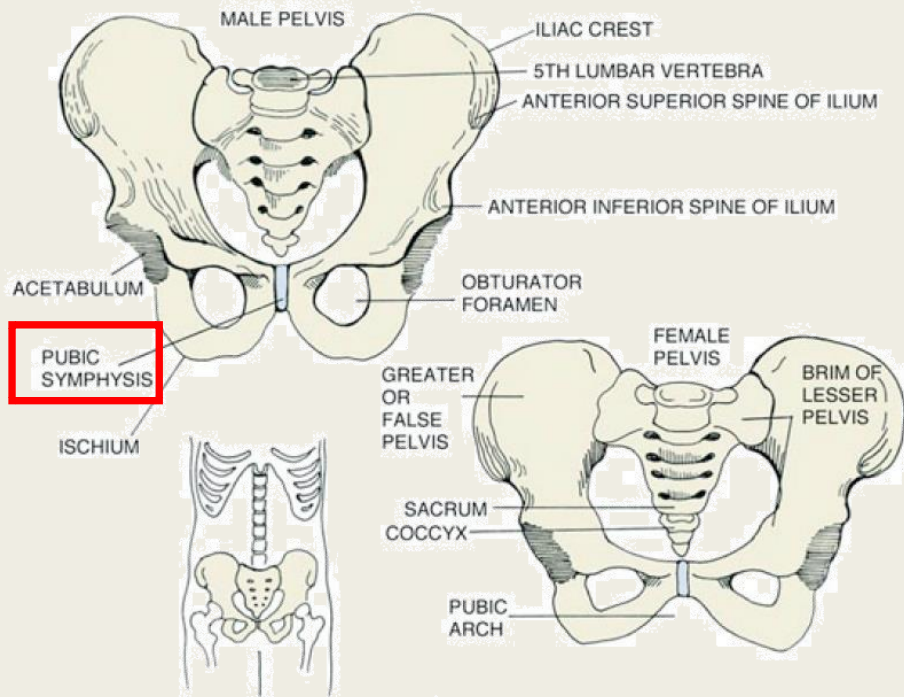
Solco preauricolare

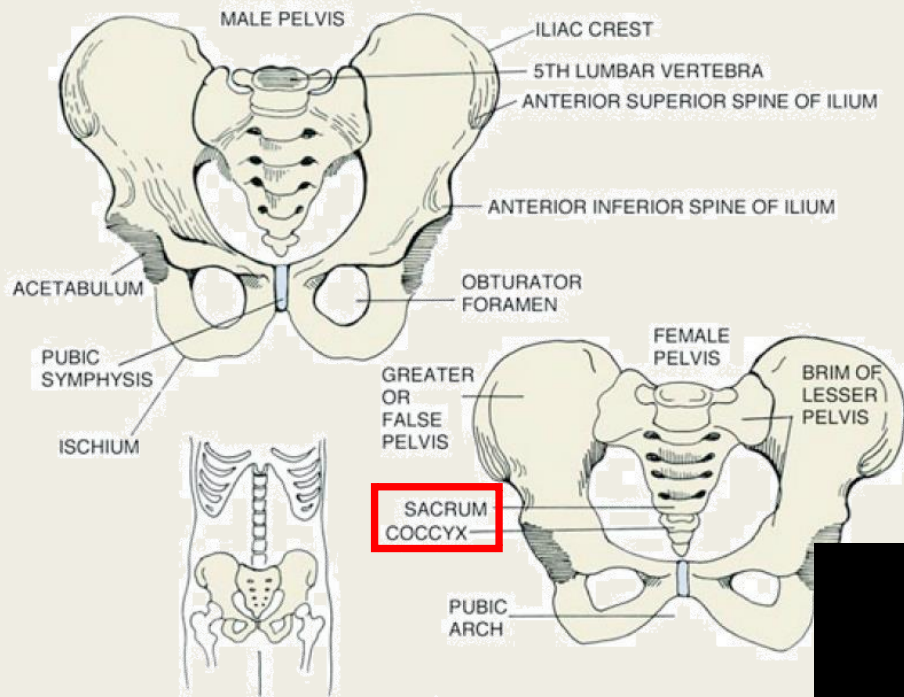


(Cattaneo e Grandi, 2004)

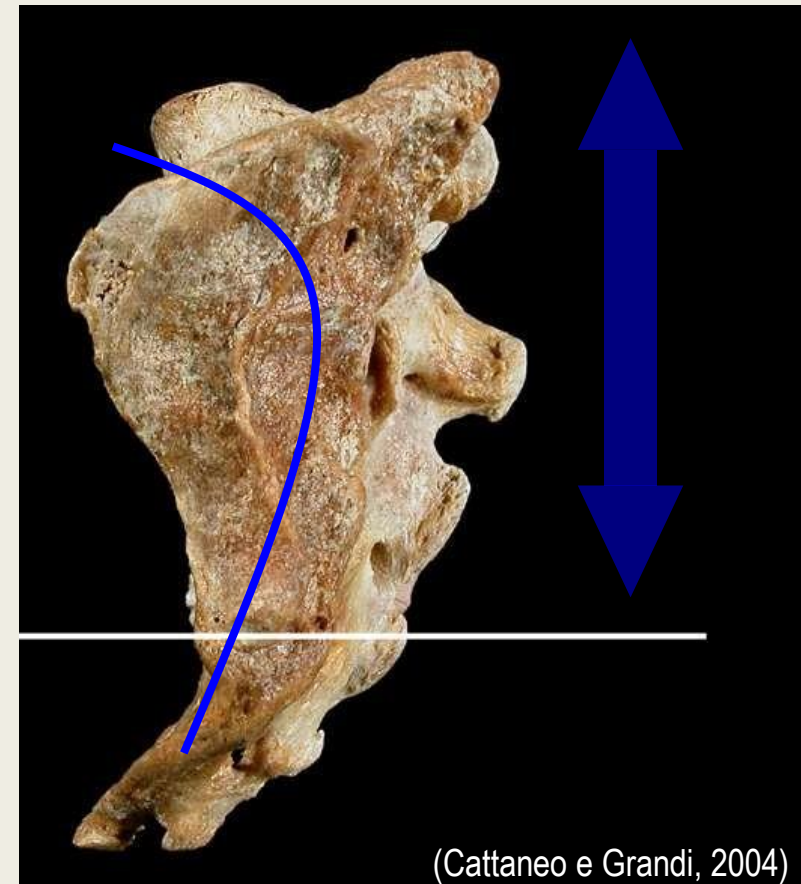
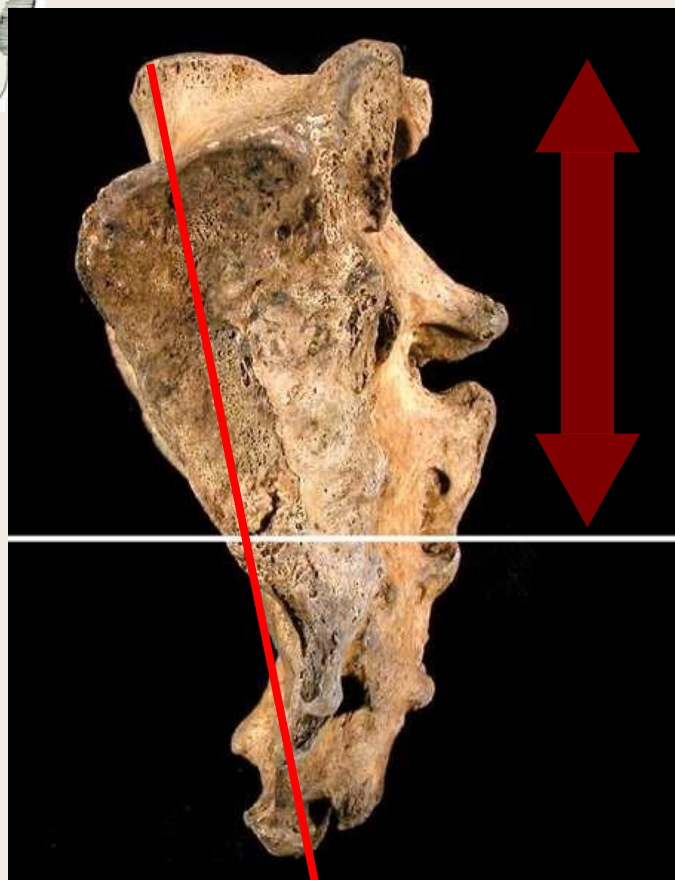


(White, 1991)



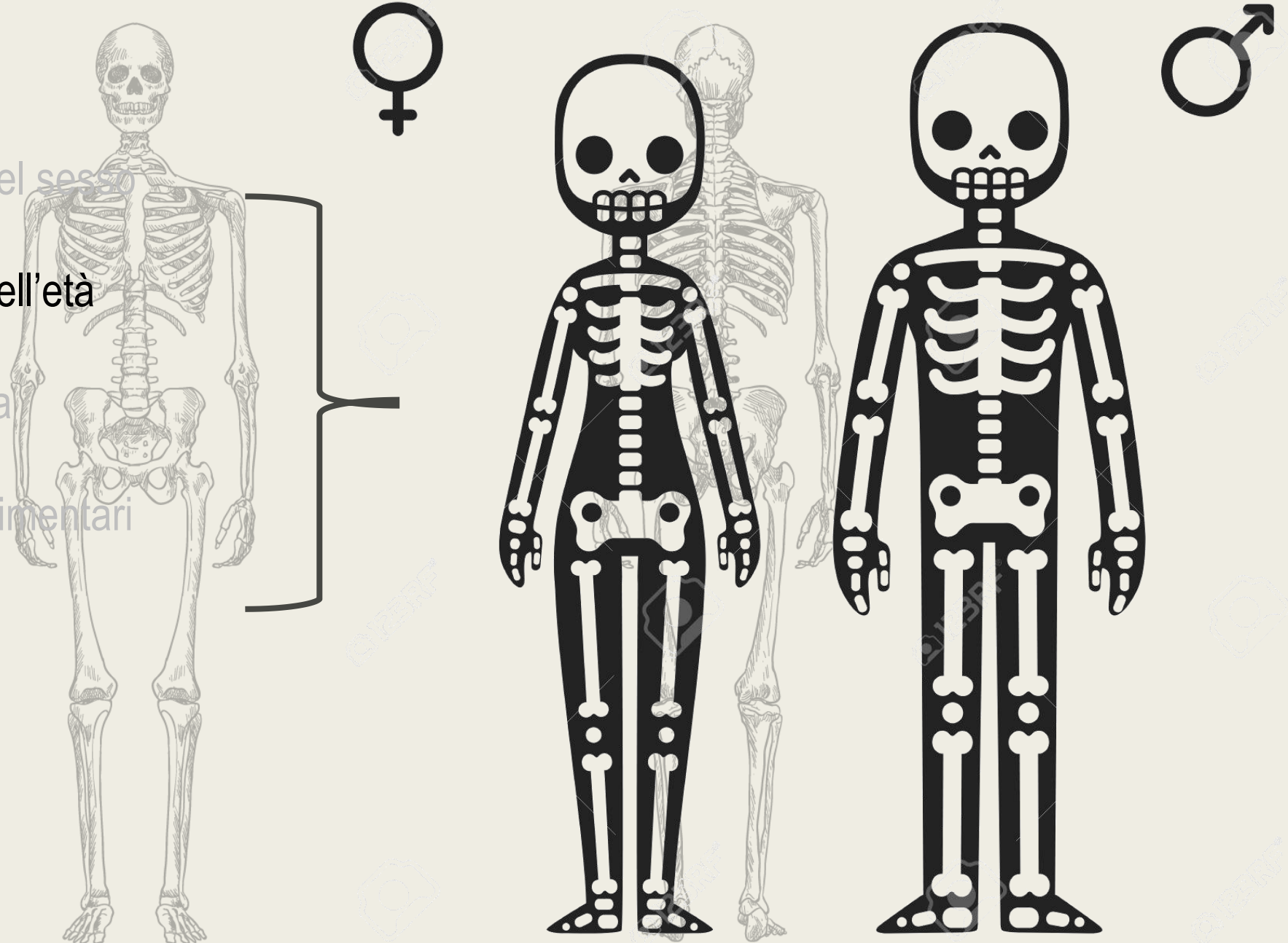


Concavità anteriore e lunghezza



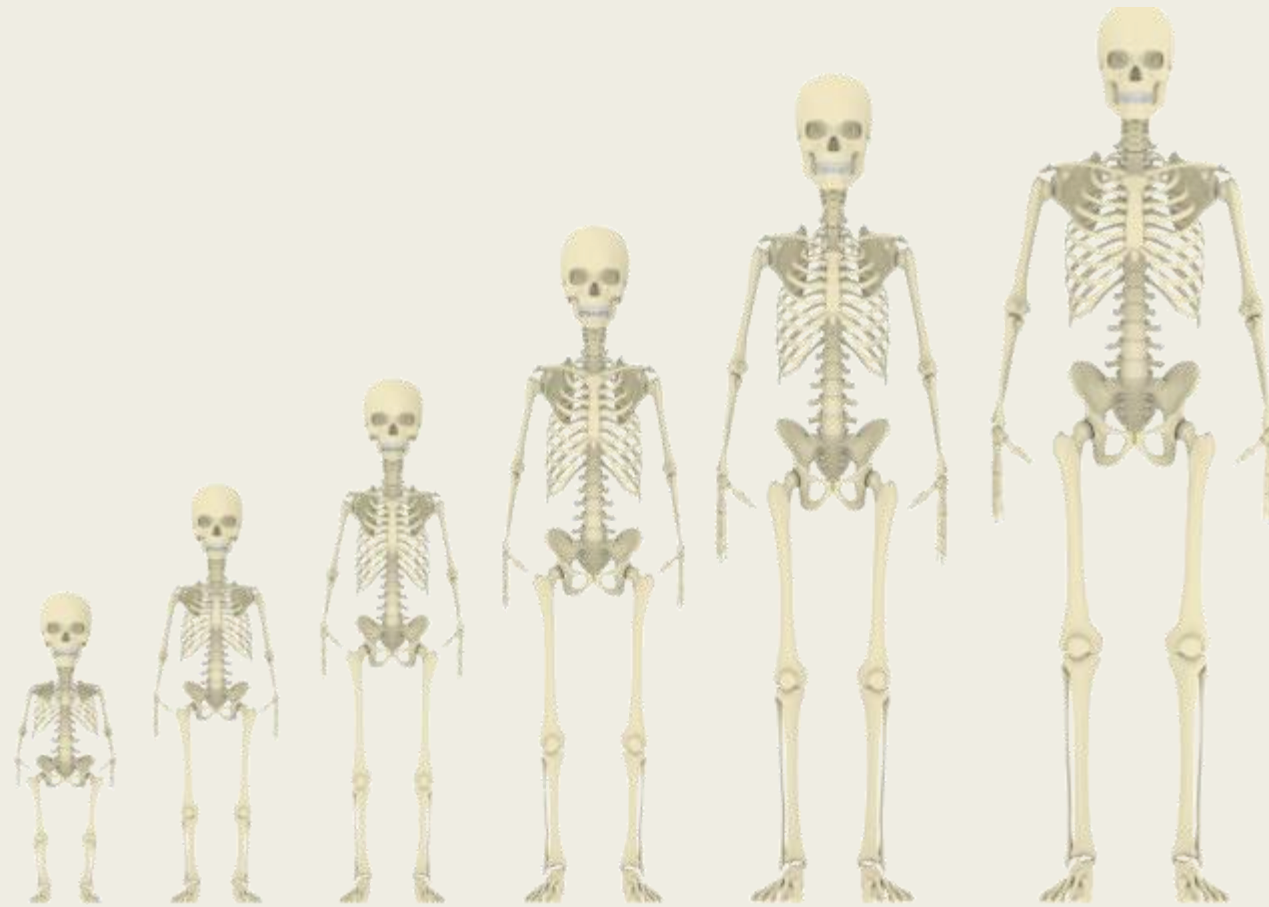
Metodologie tradizionale

- Determinazione del sesso
- Determinazione dell'età
- Stima della statura
- Comportamenti alimentari
- Stato di salute



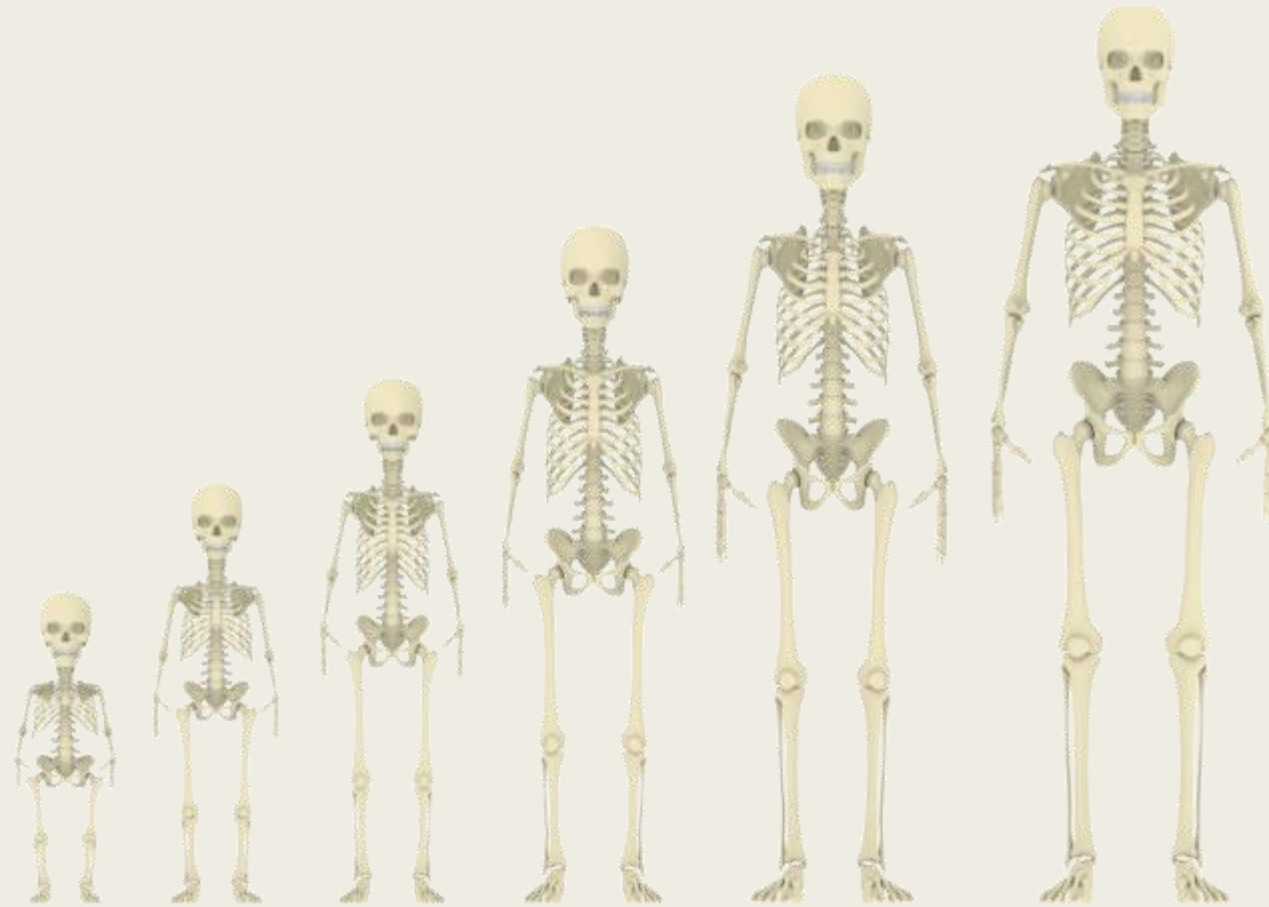
Classi di età (Buikstra & Ubelaker, 1994)

- **Fetal** : prima della nascita
- **Infants** : 0 a 3 anni
- **Children** : 3-12 anni
- **Adolescents** : 12-20 anni
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- **Middle adults** : 35-50 anni
- **Old adults** : >50 anni



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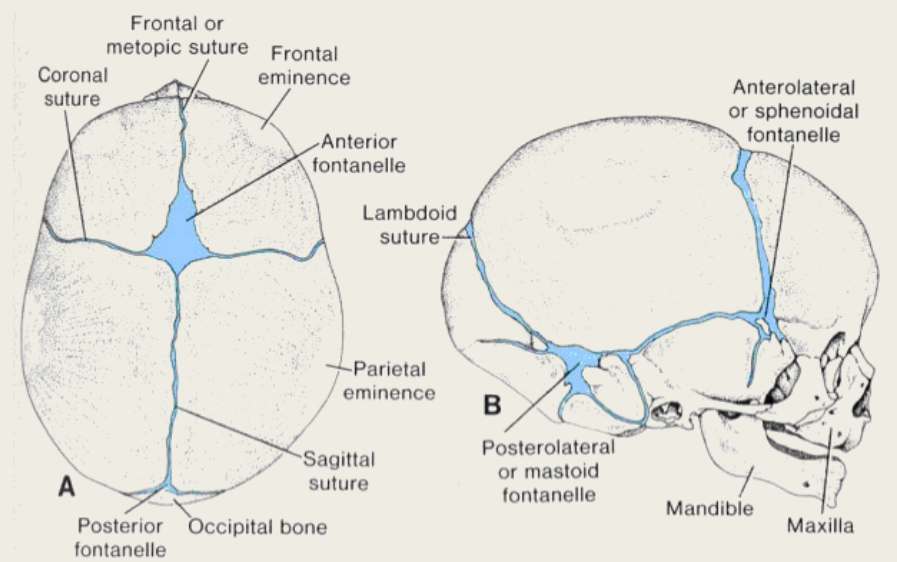




newborn

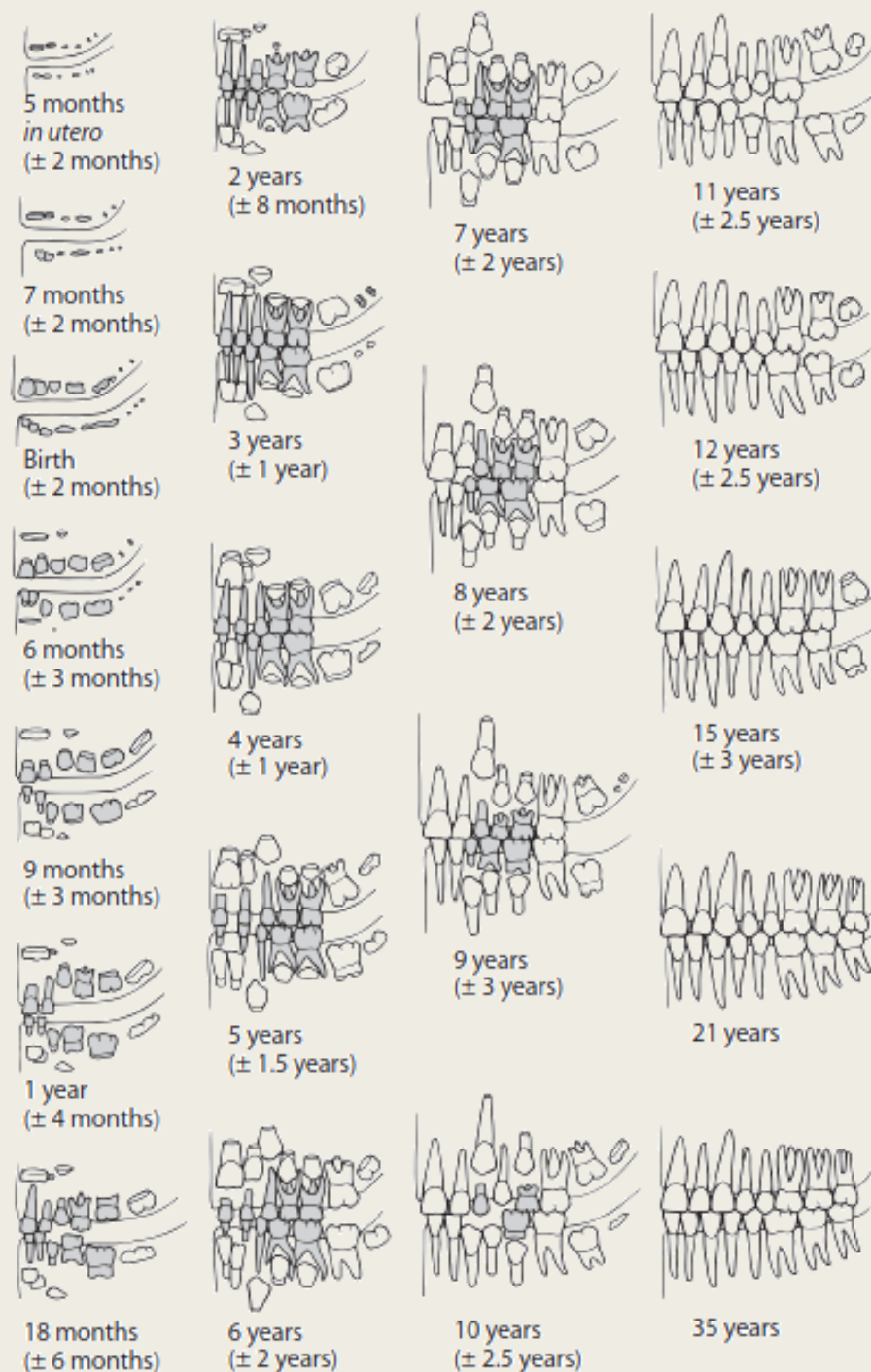


three years



(White, 1991)

six years

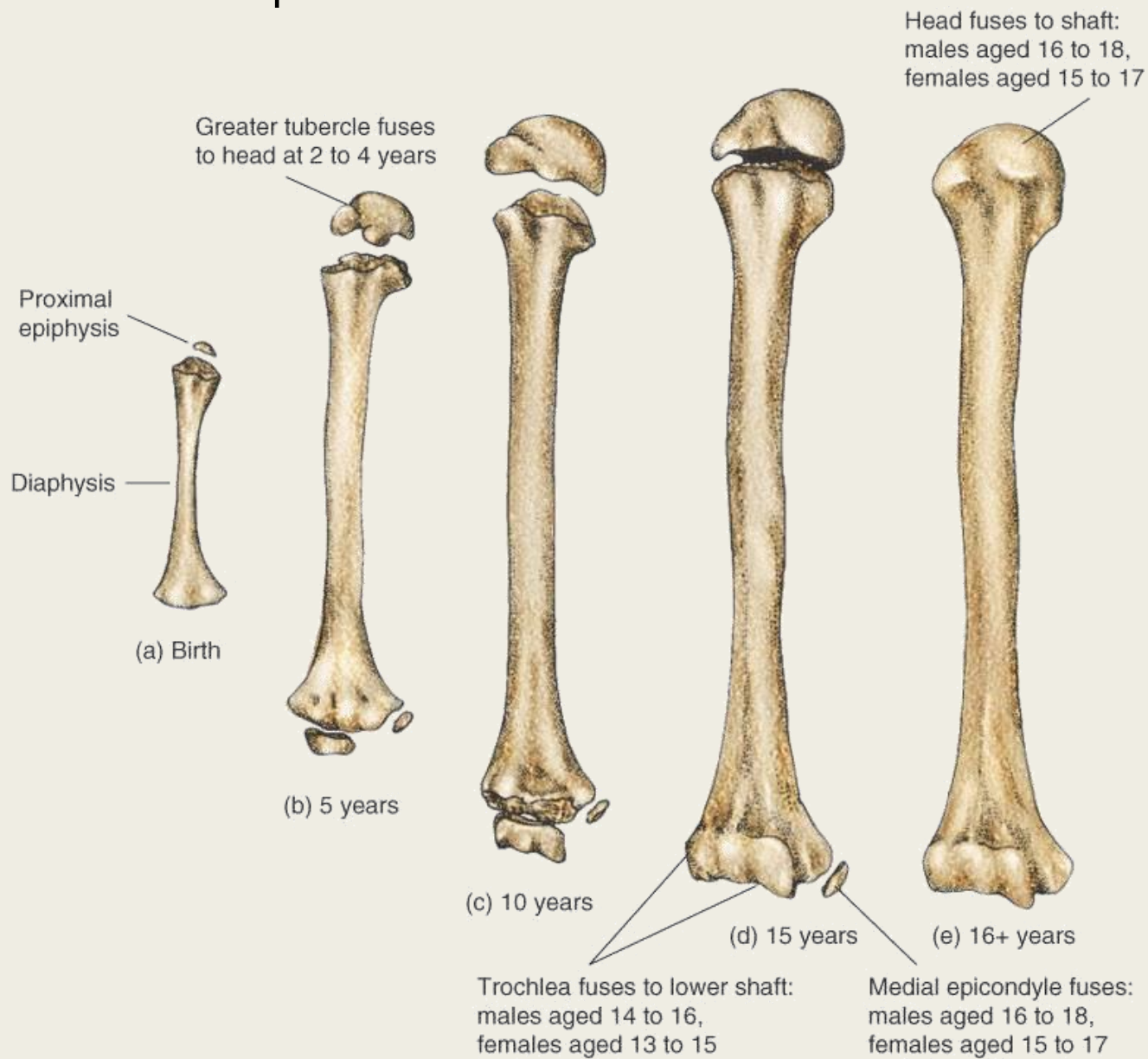


	di1	di2	dc	dm1	dm2	I1	I2	C	P3	P4	M1	M2	M3
A. MALES													
Ci Cusp initiation	—	—	—	—	—	—	—	0.6	2.1	3.2	0.1	3.8	9.5
Cco Cusp coalescence	—	—	—	—	—	—	—	1.0	2.6	3.9	0.4	4.3	10.0
Coc Crown outline complete	—	—	—	—	—	—	—	1.7	3.3	4.5	0.8	4.9	10.6
Cr ½ Crown one half	—	—	—	—	—	—	—	2.5	4.1	5.0	1.3	5.4	11.3
Cr ¾ Crown three-quarters	—	—	—	—	—	—	—	3.4	4.9	5.8	1.9	6.1	11.8
Cre Crown complete	0.15	0.2	0.7	0.4	0.7	—	—	4.4	5.6	6.6	2.5	6.8	12.4
Ri Root initiated	—	—	—	—	—	—	—	5.2	6.4	7.3	3.2	7.6	13.2
Rcl Root cleft present	—	—	—	—	—	—	—	—	—	—	4.1	8.7	14.1
R ¼ Root one-quarter	—	—	—	—	—	—	5.8	6.9	7.8	8.6	4.9	9.8	14.8
R ½ Root one-half	—	—	—	—	—	5.6	6.6	8.8	9.3	10.1	5.5	10.6	15.6
R ⅔ Root two-thirds	—	—	—	—	—	6.2	7.2	—	—	—	—	—	—
R ¾ Root three-quarters	—	—	—	—	—	6.7	7.7	9.9	10.2	11.2	6.1	11.4	16.4
Rc Root complete	1.5	1.75	3.1	2.0	3.1	7.3	8.3	11.0	11.2	12.2	7.0	12.3	17.5
A ½ Root apex half closed	—	—	—	—	—	7.9	8.9	12.4	12.7	13.5	8.5	13.9	19.1

	di1	di2	dc	dm1	dm2	I1	I2	C	P3	P4	M1	M2	M3
B. FEMALES													
Ci Cusp initiation	—	—	—	—	—	—	—	0.6	2.0	3.3	0.2	3.6	9.9
Cco Cusp coalescence	—	—	—	—	—	—	—	1.0	2.5	3.9	0.5	4.0	10.4
Coc Crown outline complete	—	—	—	—	—	—	—	1.6	3.2	4.5	0.9	4.5	11.0
Cr ½ Crown one half	—	—	—	—	—	—	—	2.5	4.0	5.1	1.3	5.1	11.5
Cr ¾ Crown three-quarters	—	—	—	—	—	—	—	3.5	4.7	5.8	1.8	5.8	12.0
Cre Crown complete	0.15	0.2	0.7	0.3	0.7	—	—	4.3	5.4	6.5	2.4	6.6	12.6
Ri Root initiated	—	—	—	—	—	—	—	5.0	6.1	7.2	3.1	7.3	13.2
Rcl Root cleft present	—	—	—	—	—	—	—	—	—	—	4.0	8.4	14.1
R ¼ Root one-quarter	—	—	—	—	—	4.8	5.0	6.2	7.4	8.2	4.8	9.5	15.2
R ½ Root one-half	—	—	—	—	—	5.4	5.6	7.7	8.7	9.4	5.4	10.3	16.2
R ⅔ Root two-thirds	—	—	—	—	—	5.9	6.2	—	—	—	—	—	—
R ¾ Root three-quarters	—	—	—	—	—	6.4	7.0	8.6	9.6	10.3	5.8	11.0	16.9
Rc Root complete	1.5	1.75	3.0	1.8	2.8	7.0	7.9	9.4	10.5	11.3	6.5	11.8	17.7
A ½ Root apex half closed	—	—	—	—	—	7.5	8.3	10.6	11.6	12.8	7.9	13.5	19.5

* The data are from Smith's (1991) compilation of published studies.

Fusione delle epifisi



4 y

♀



15 y

♀



Birth



2-4 months



3-5 months



1-2.5 years



2-3.5 years



3-4 years



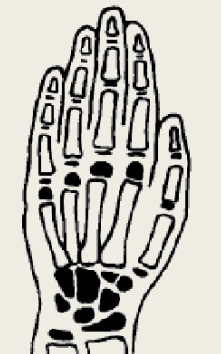
4-5 years



5-6 years



6-7 years



8-9 years



9-10 years



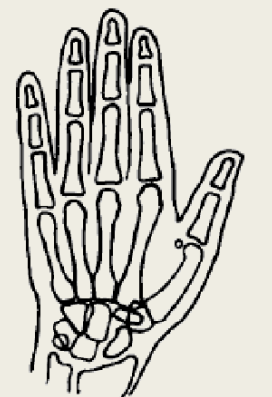
11-12 years



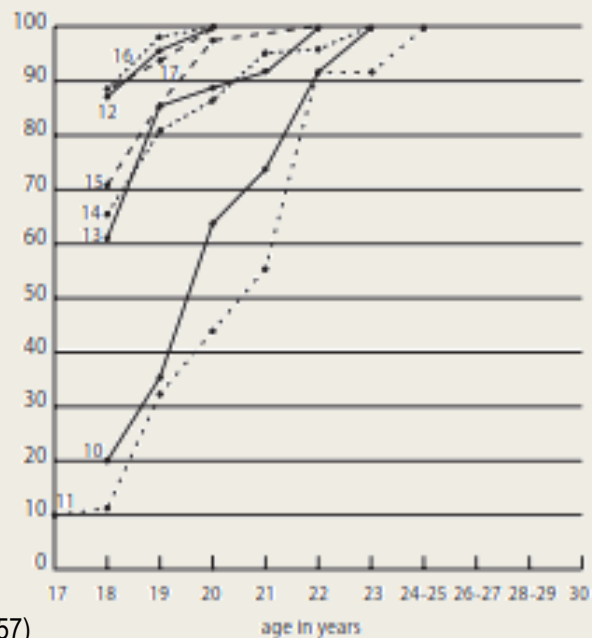
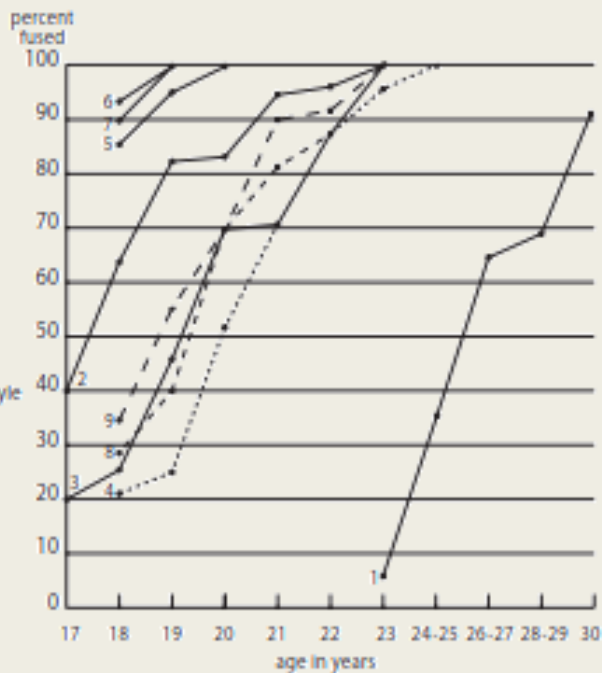
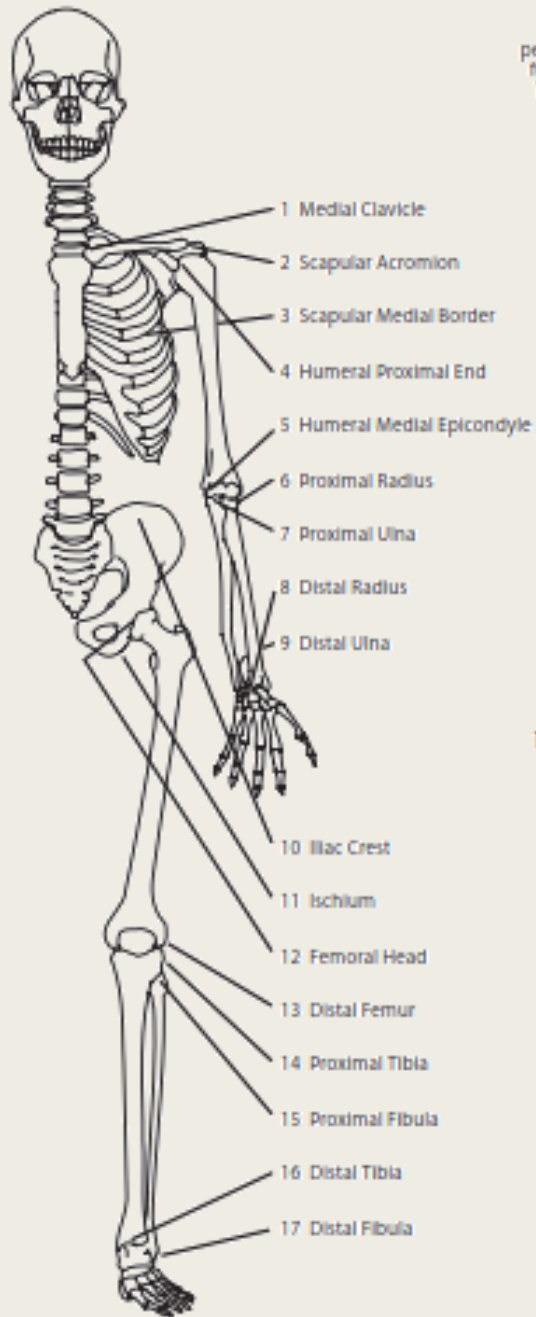
12-13 years



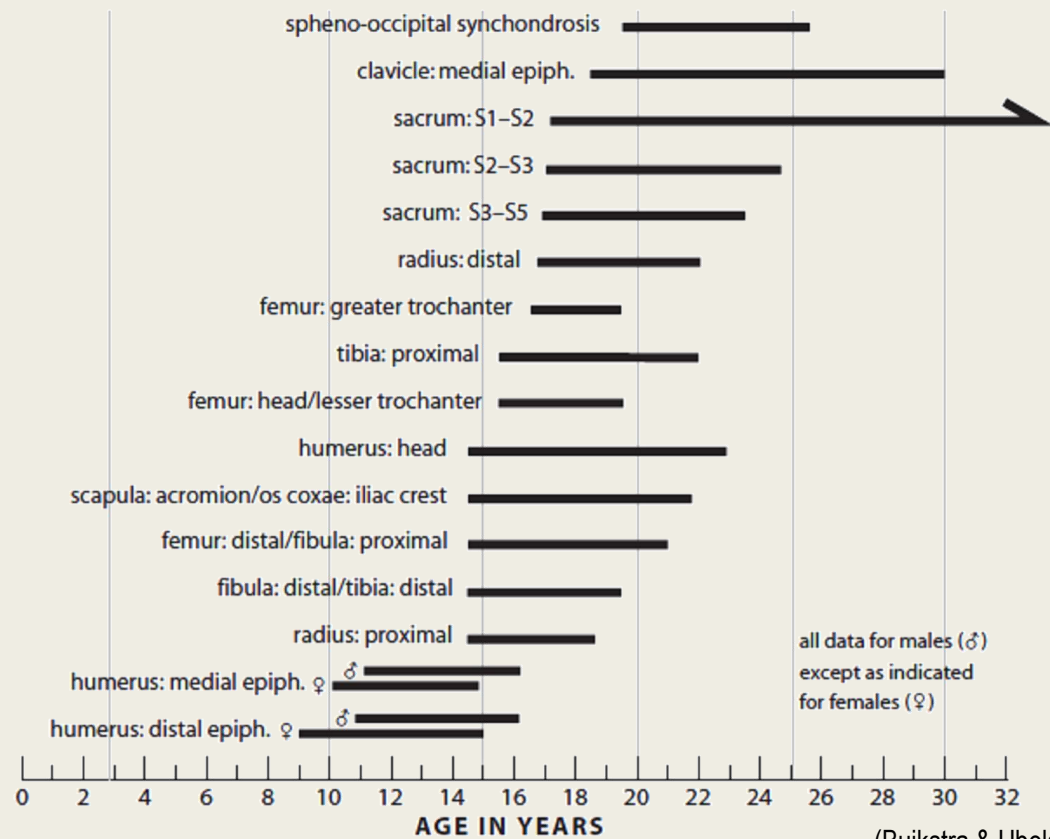
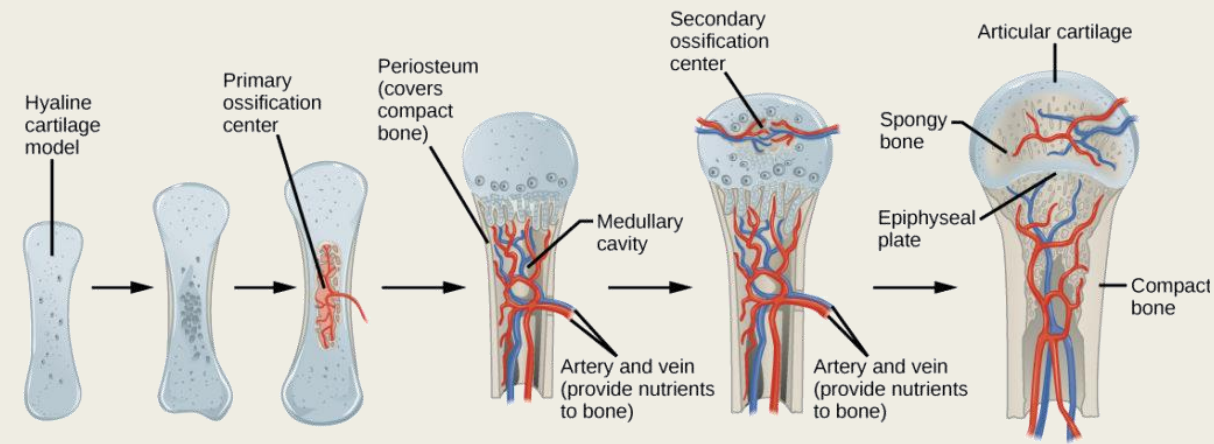
13-14 years



14-14.5 years (girls)
16-16.5 years (boys)



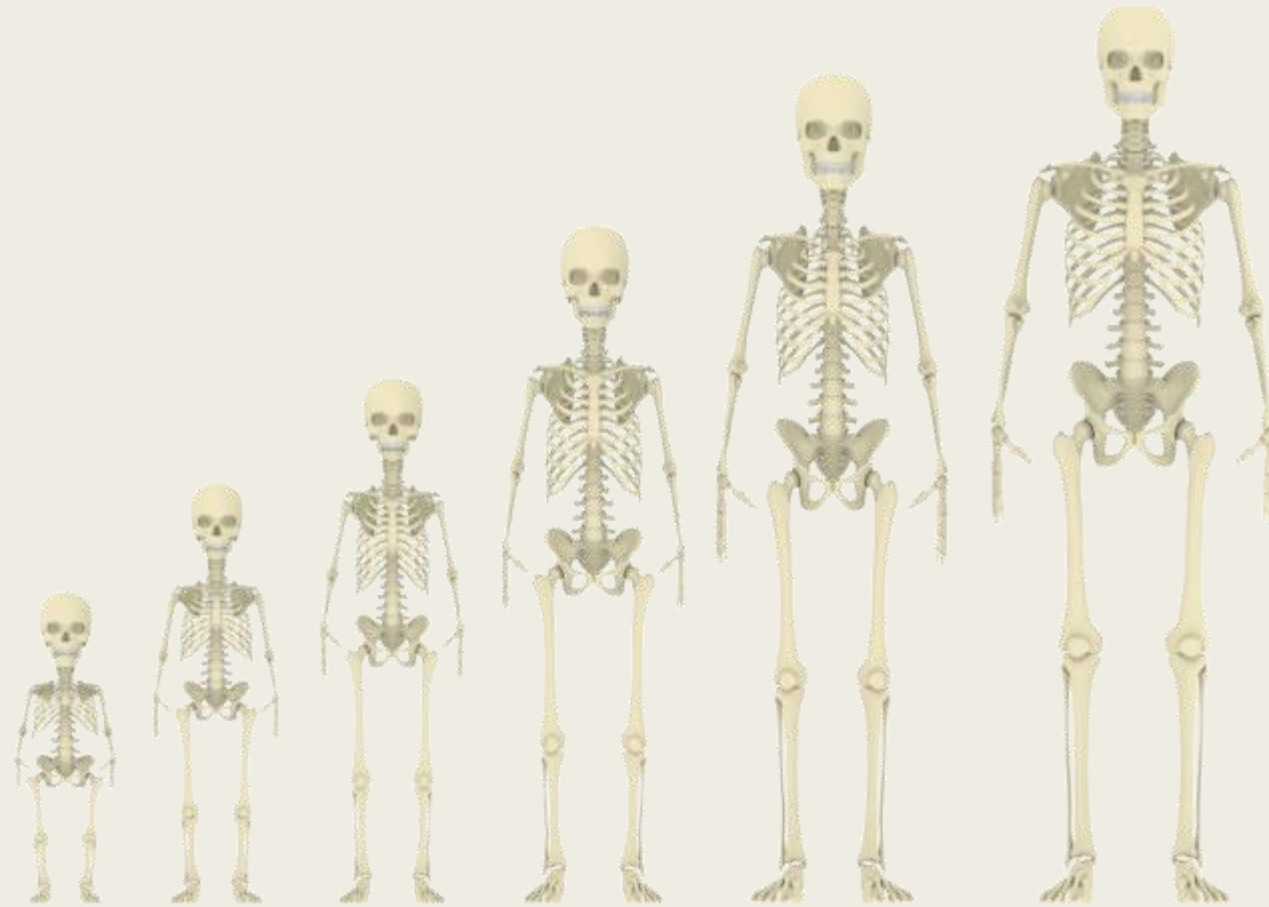
(McKern and Stewart, 1957)



(Buikstra & Ubelaker, 1994)

Classi di età (Buikstra & Ubelaker, 1994)

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- **Old adults** : >50 anni



Fusione delle suture craniche



Ad ogni sito viene associato un grado di fusione

0	Suture aperte
1	Grado minimo di chiusura
2	Grado importante di chiusura
3	Suture completamente obliterate, fusione completa

Per stimare l'età, si sommano gli punti per ogni gruppo di sito

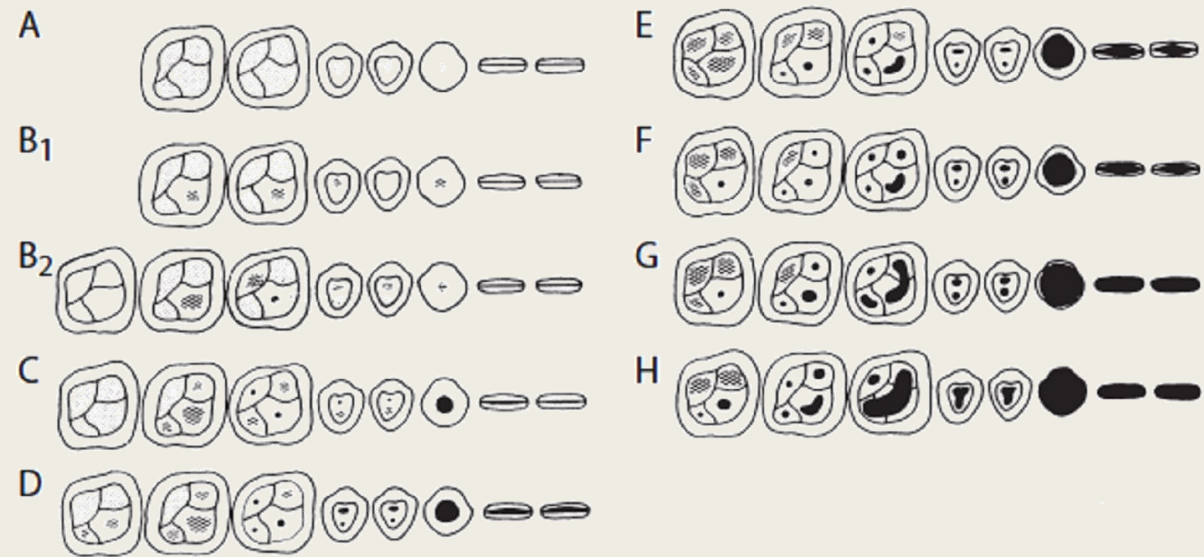
Meindl and Lovejoy (1985) "vault" sutural ages (add scores for sites 1-7).

Composite Score	Mean Age	Standard Deviation
0	—	—
1-2	30.5	9.6
3-6	34.7	7.8
7-11	39.4	9.1
12-15	45.2	12.6
16-18	48.8	10.5
19-20	51.5	12.6
21	—	—

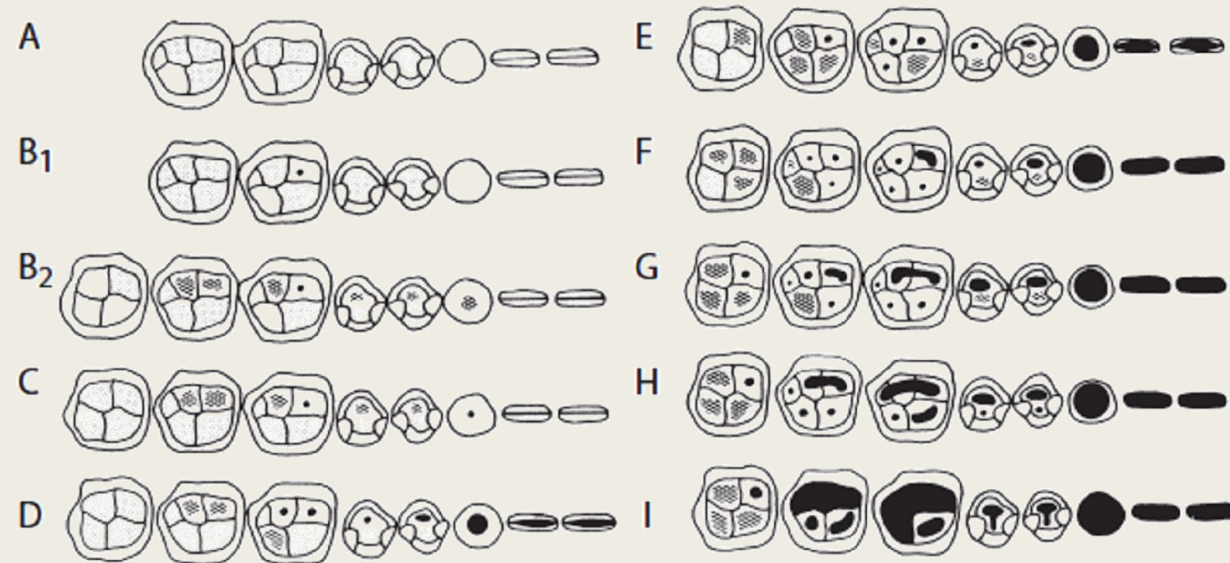
Meindl and Lovejoy (1985) "lateral-anterior" sutural ages (add scores for sites 6-10).

Composite Score	Mean Age	Standard Deviation
0	—	—
1	32.0	8.3
2	36.2	6.2
3-5	41.1	10.0
6	43.4	10.7
7-8	45.5	8.9
9-10	51.9	12.5
11-14	56.2	8.5
15	—	—

Grado di attrizione dentaria



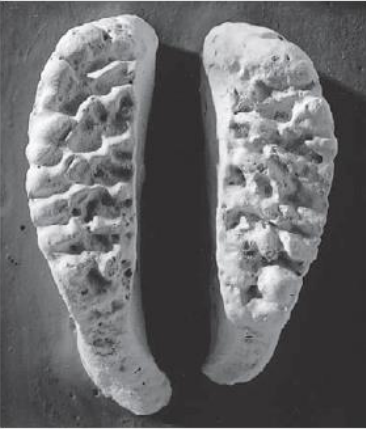
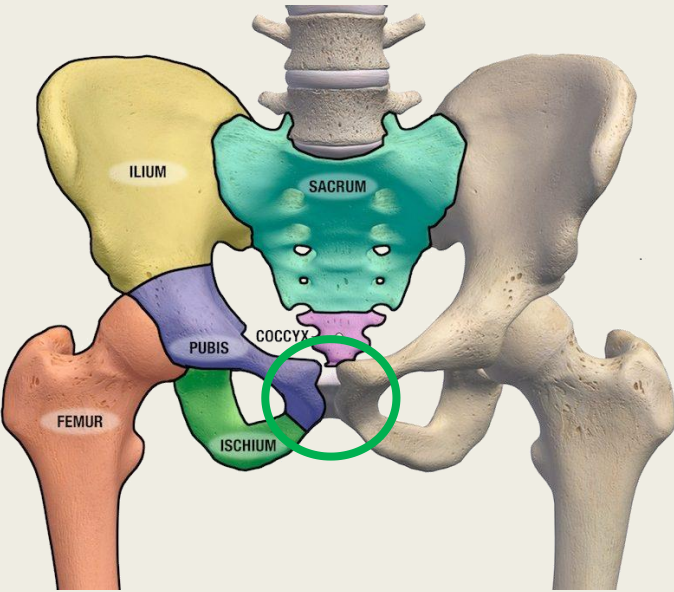
Maxillary Attrition



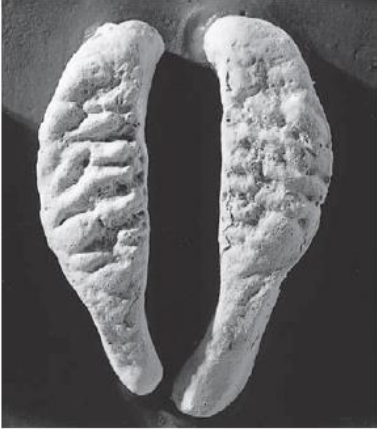
Mandibular Attrition



Sinfisi pubica



I 18-19 years



II 20-21 years



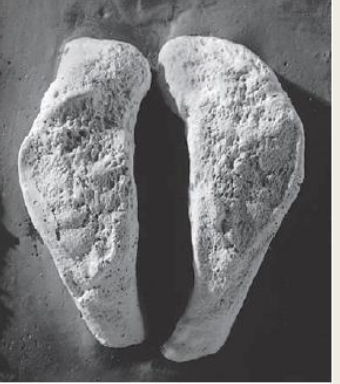
III 22-24 years



IV 25-26 years



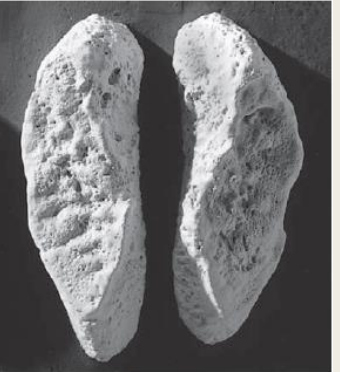
V 27-30 years



VI 30-35 years



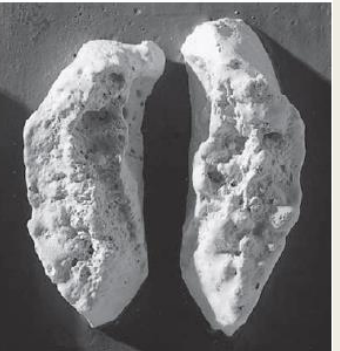
VII 35-39 years



VIII 39-44 years



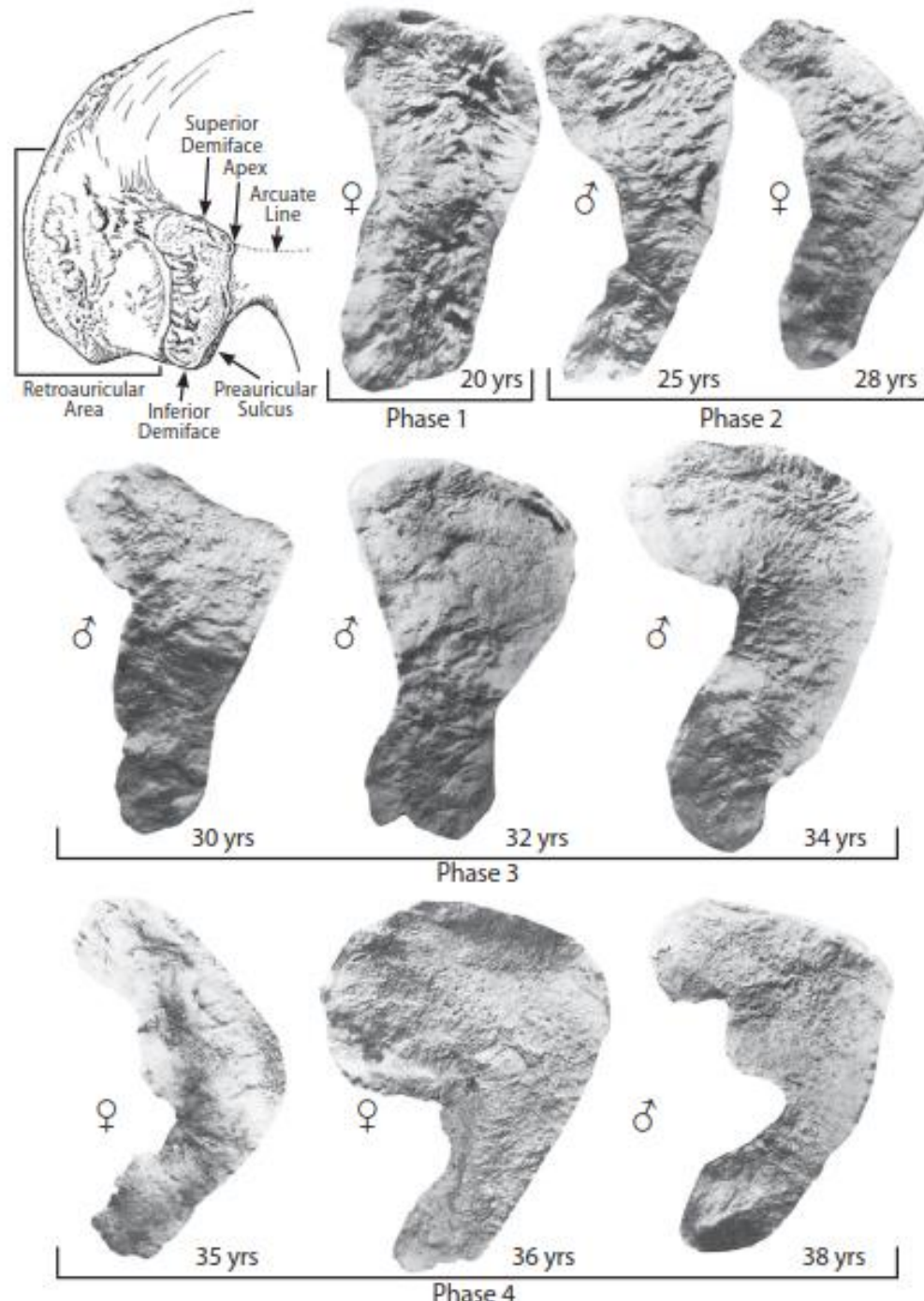
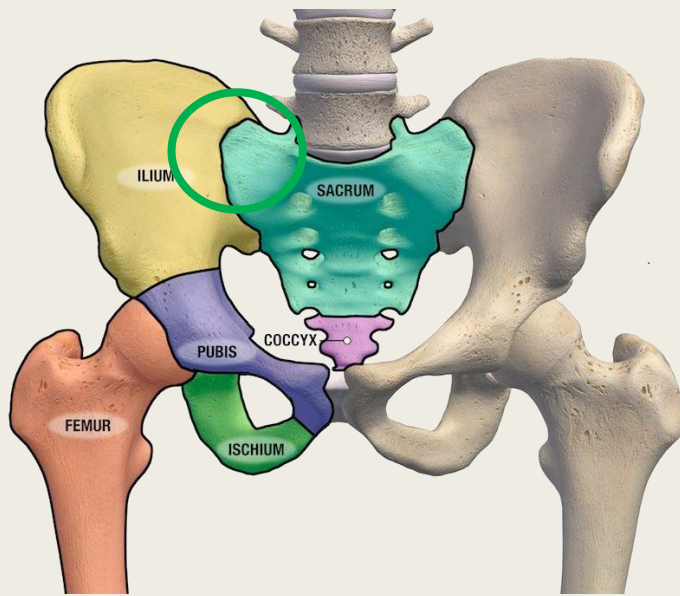
IX 44-50 years



X 50+ years

(White, 1991)

Superficie auricolare dell'ilio

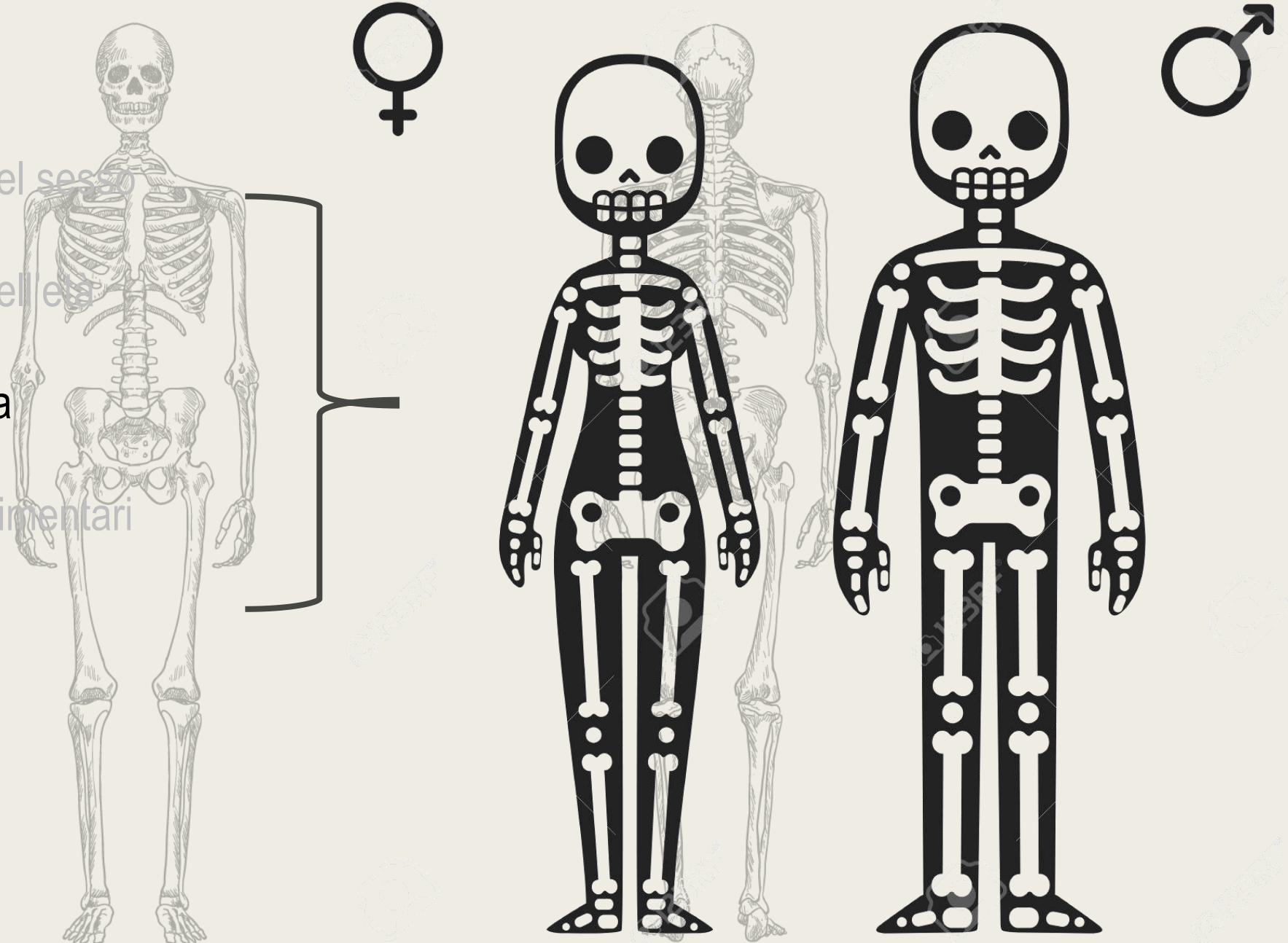


Morfologia a cresta e granulosità

Riduzione delle strie e erosioni

Metodologie tradizionale

- Determinazione del sesso
- Determinazione dell'età
- **Stima della statura**
- Comportamenti alimentari
- Stato di salute



Esiste una correlazione tra la lunghezza delle ossa lunghe e la statura
 Dipende dalla popolazione

Equations Used to Estimate Stature, in Centimeters, with Standard Error, from the Long Bones of Various Groups of Individuals between 18 and 30 Years of Age^a

White Males		Black Males	
3.08 Hum	+ 70.45 ± 4.05	3.26 Hum	+ 62.10 ± 4.43
3.78 Rad	+ 79.01 ± 4.32	3.42 Rad	+ 81.56 ± 4.30
3.70 Uln	+ 74.05 ± 4.32	3.26 Uln	+ 79.29 ± 4.42
2.38 Fem	+ 61.41 ± 3.27	2.11 Fem	+ 70.35 ± 3.94
2.68 Fib	+ 71.78 ± 3.29	2.19 Fib	+ 85.65 ± 4.08
White Females		Black Females	
3.36 Hum	+ 57.97 ± 4.45	3.08 Hum	+ 64.67 ± 4.25
4.74 Rad	+ 54.93 ± 4.24	2.75 Rad	+ 94.51 ± 5.05
4.27 Uln	+ 57.76 ± 4.30	3.31 Uln	+ 75.38 ± 4.83
2.47 Fem	+ 54.10 ± 3.72	2.28 Fem	+ 59.76 ± 3.41
2.93 Fib	+ 59.61 ± 3.57	2.49 Fib	+ 70.90 ± 3.80
East Asian Males		Mexican Males	
2.68 Hum	+ 83.19 ± 4.25	2.92 Hum	+ 73.94 ± 4.24
3.54 Rad	+ 82 ± 4.60	3.55 Rad	+ 80.71 ± 4.04
3.48 Uln	+ 77.45 ± 4.66	3.56 Uln	+ 74.56 ± 4.05
2.15 Fem	+ 72.57 ± 3.80	2.44 Fem	+ 58.67 ± 2.99
2.40 Fib	+ 80.56 ± 3.24	2.50 Fib	+ 75.44 ± 3.52

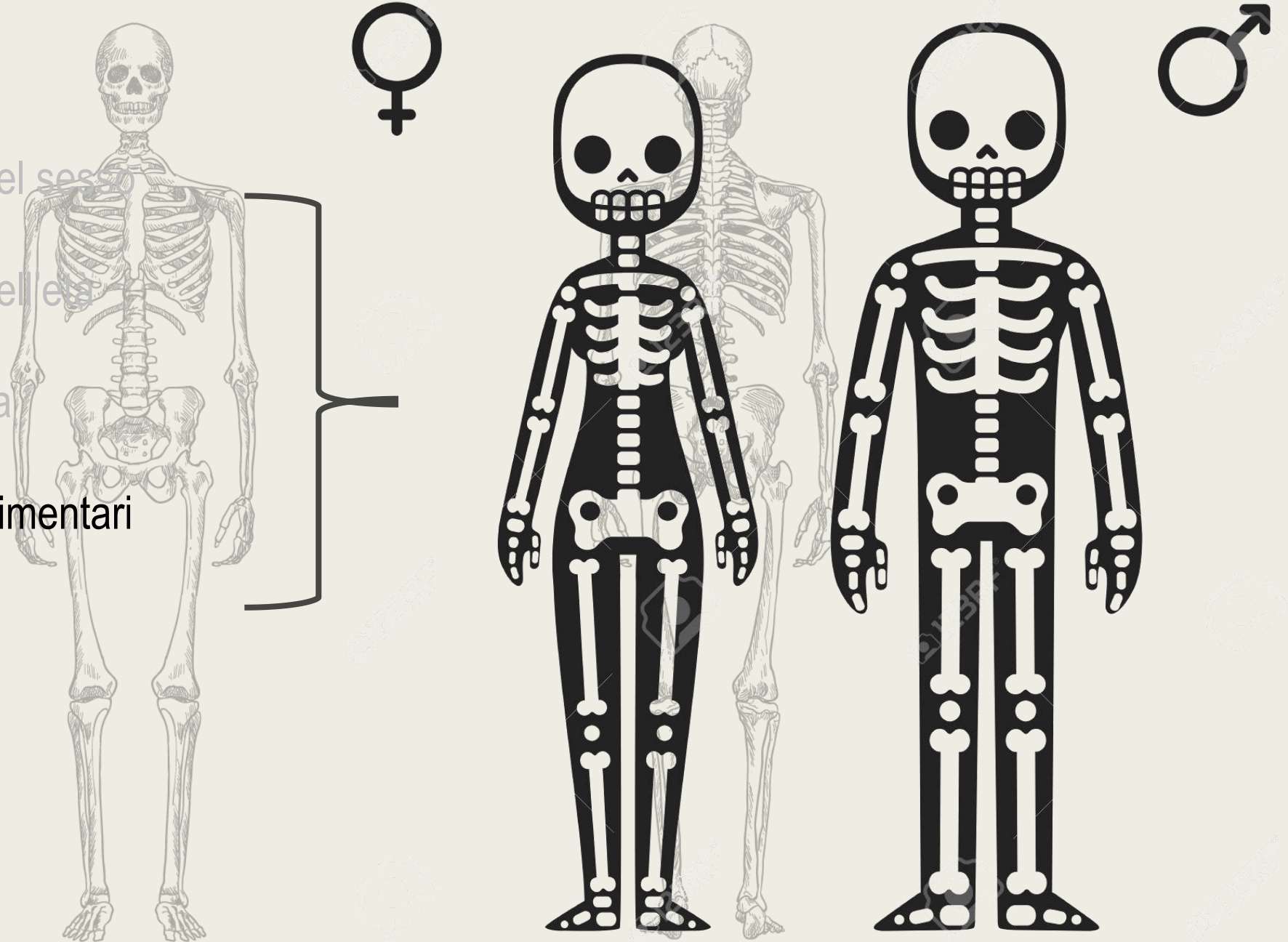
^aTo estimate stature of older individuals, subtract 0.06 (age in years, 30) cm, to estimate cadaver stature, add 2.5 cm. From Trotter (1970). The tibia is not included; see text for rationale.

Limiti: La variabilità



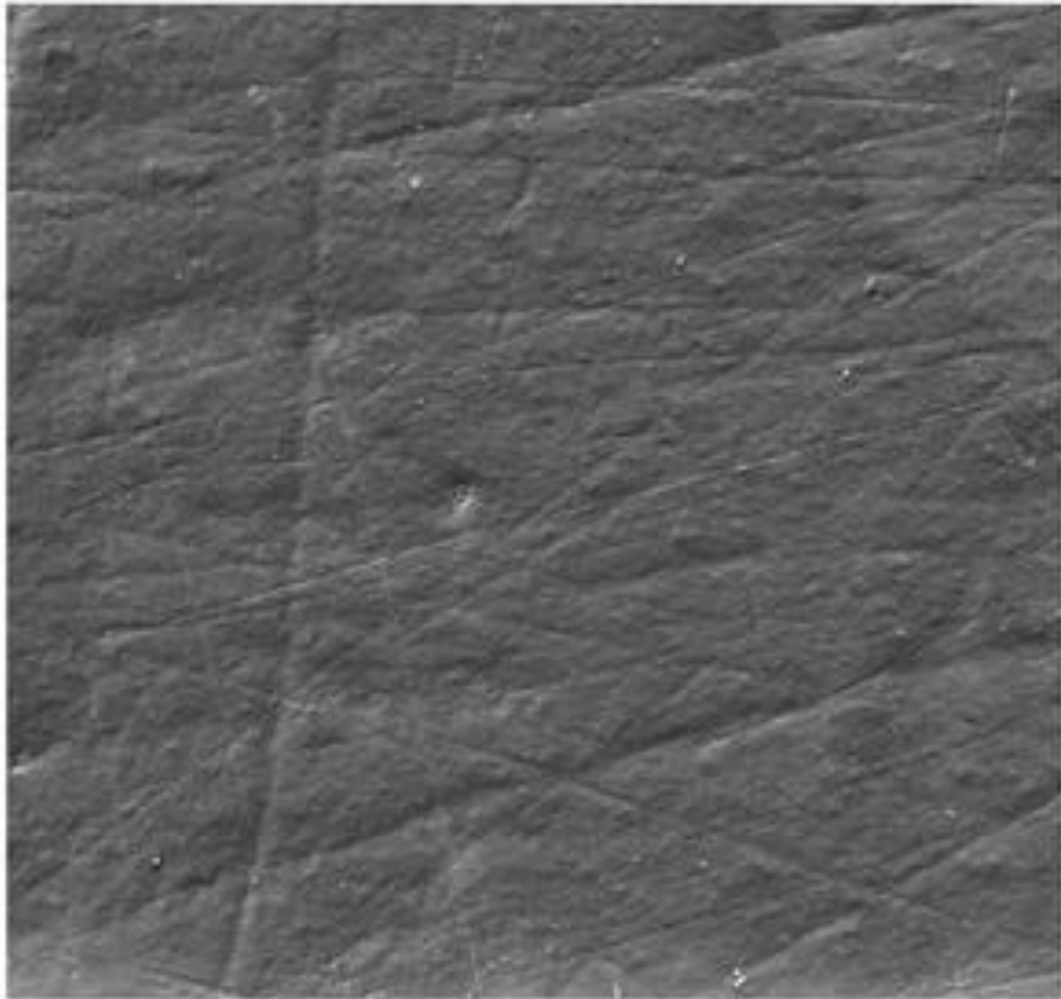
Metodologie tradizionale

- Determinazione del sesso
- Determinazione dell'età
- Stima della statura
- **Comportamenti alimentari**
- Stato di salute

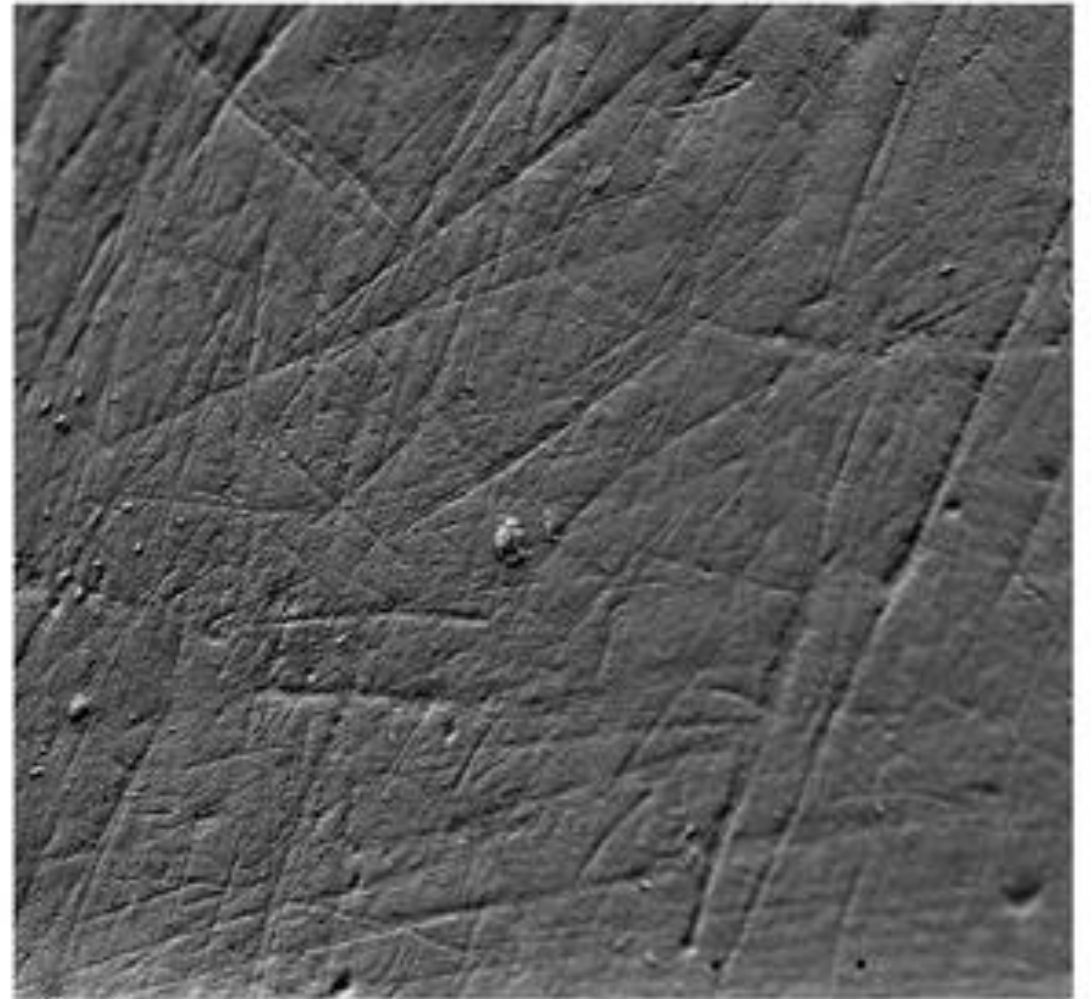


Analisi delle micro-usure dentarie

Low ← Dietary abrasiveness → High



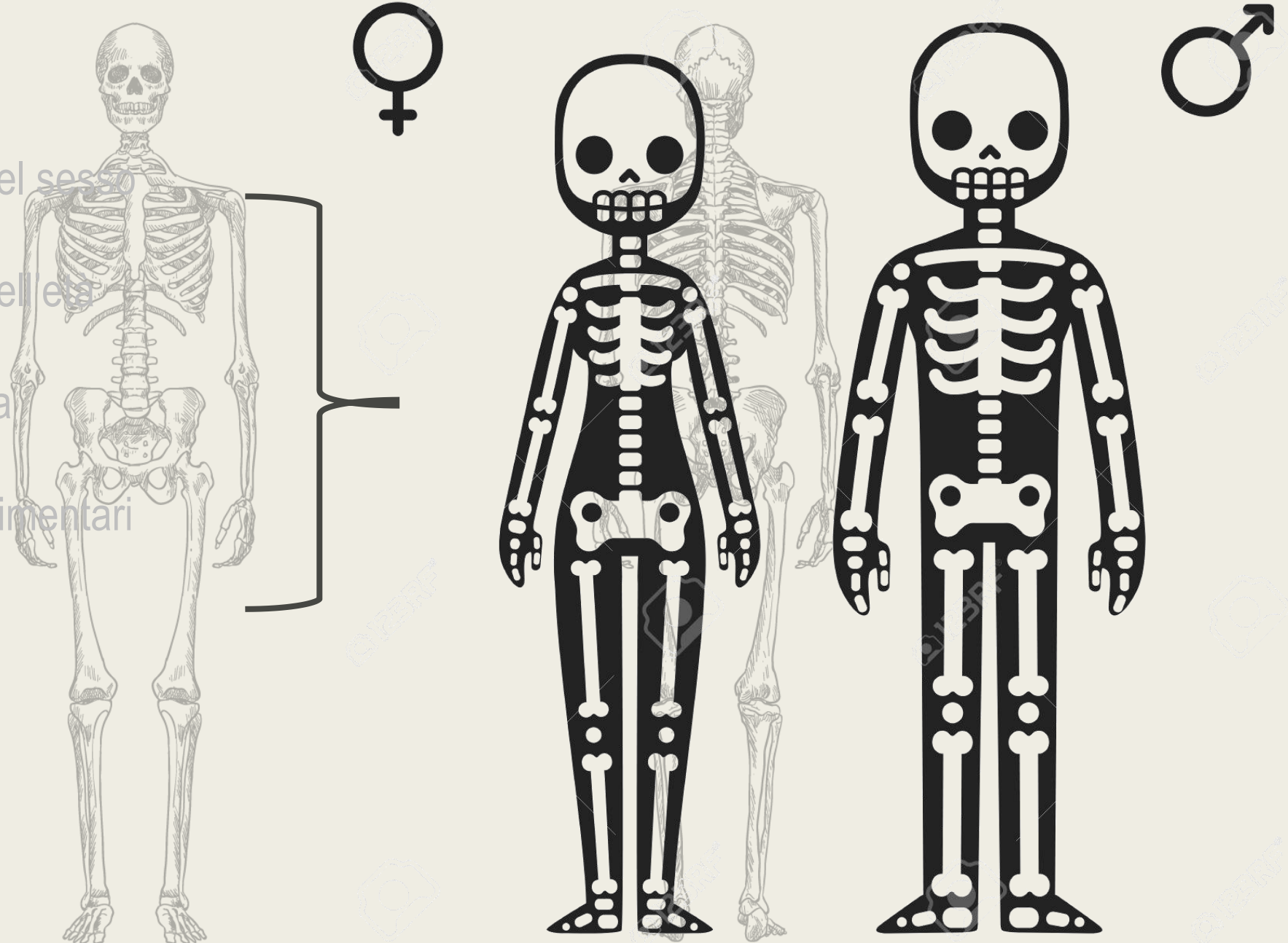
Pygmy-forager



Bantu-farmer

Metodologie tradizionale

- Determinazione del sesso
- Determinazione dell'età
- Stima della statura
- Comportamenti alimentari
- Stato di salute



Malattie infettive



Tubercolosi



Lebbra



Sifilide

Patologie dentarie



Ipoplasia dello smalto

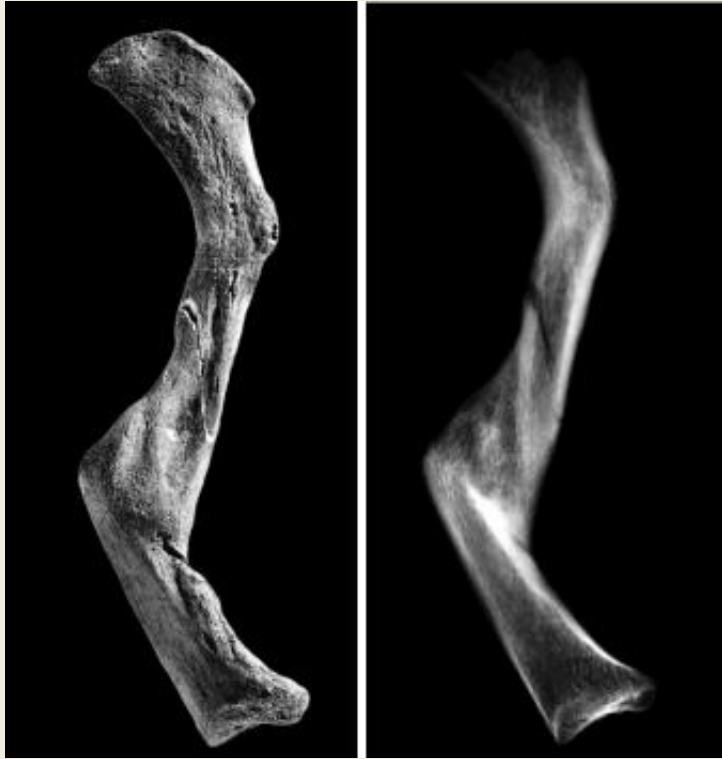


Usura

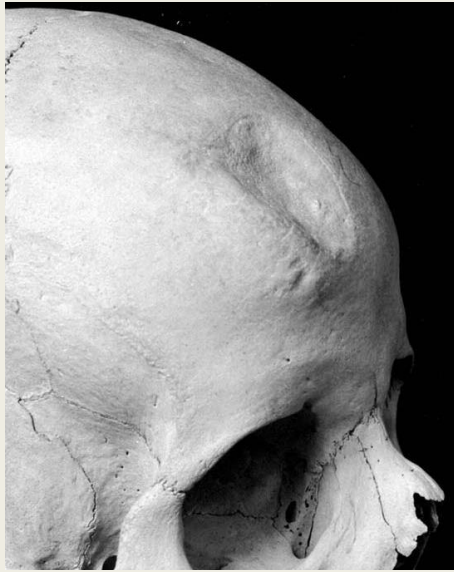


Carie e accesso

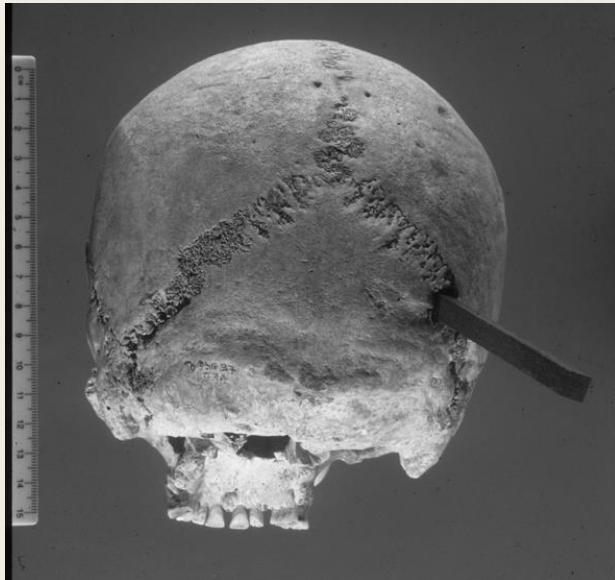
Fratture



Violenza interpersonale



Osso parietale con lama incorporata



Frattura multiple