

- ▶ به نام خداوند علم و بیان
- ▶ خداوند درمانگر جسم و جان
- ▶ خدای عیان و خدای نهان
- ▶ خدوند بخشنده مهربان

Upper extremity open fractures



(a)

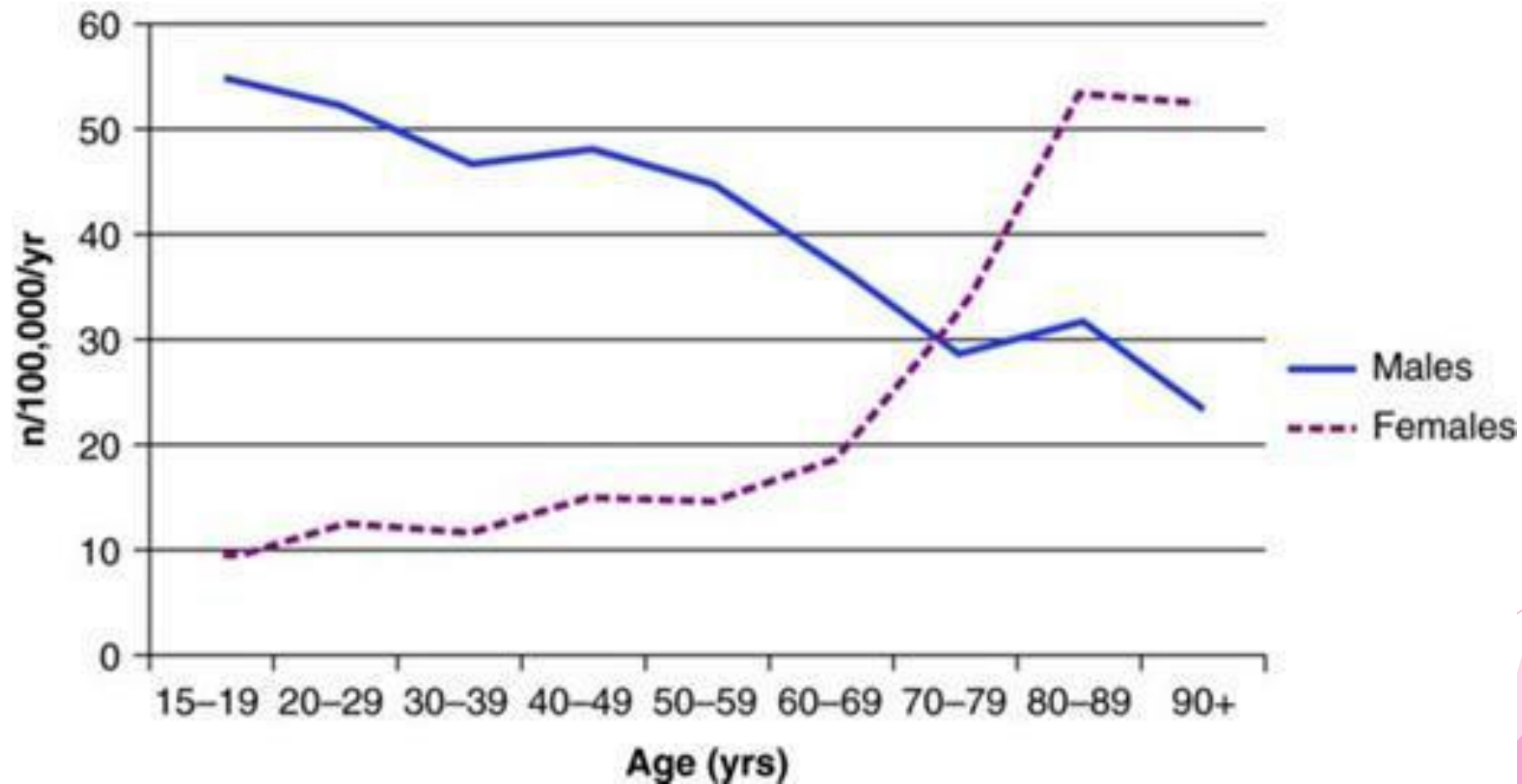
(b)



Open Fractures

- ▶ 1.9% of the fractures were open.
- ▶ Further analysis shows that 66% of the fractures were Gustilo type I
- ▶ 19.7% were Gustilo type II fractures
- ▶ 13.6% were Gustilo type III fractures

The age and gender distribution curves for open fractures



Pediatrics Upper extremity open fractures



© dreamstime.com



Overall Frequency of Fractures Percentage of children sustaining at least one fracture from 0-16 yrs of age

- ▶ Boys, 42-60%
- ▶ Girls, 27-40%
- ▶ Percentage of children sustaining a fracture in 1 yr: 1.6-2.1%
- ▶ Annual rate of fracture in childhood: 12-36/1,000 persons

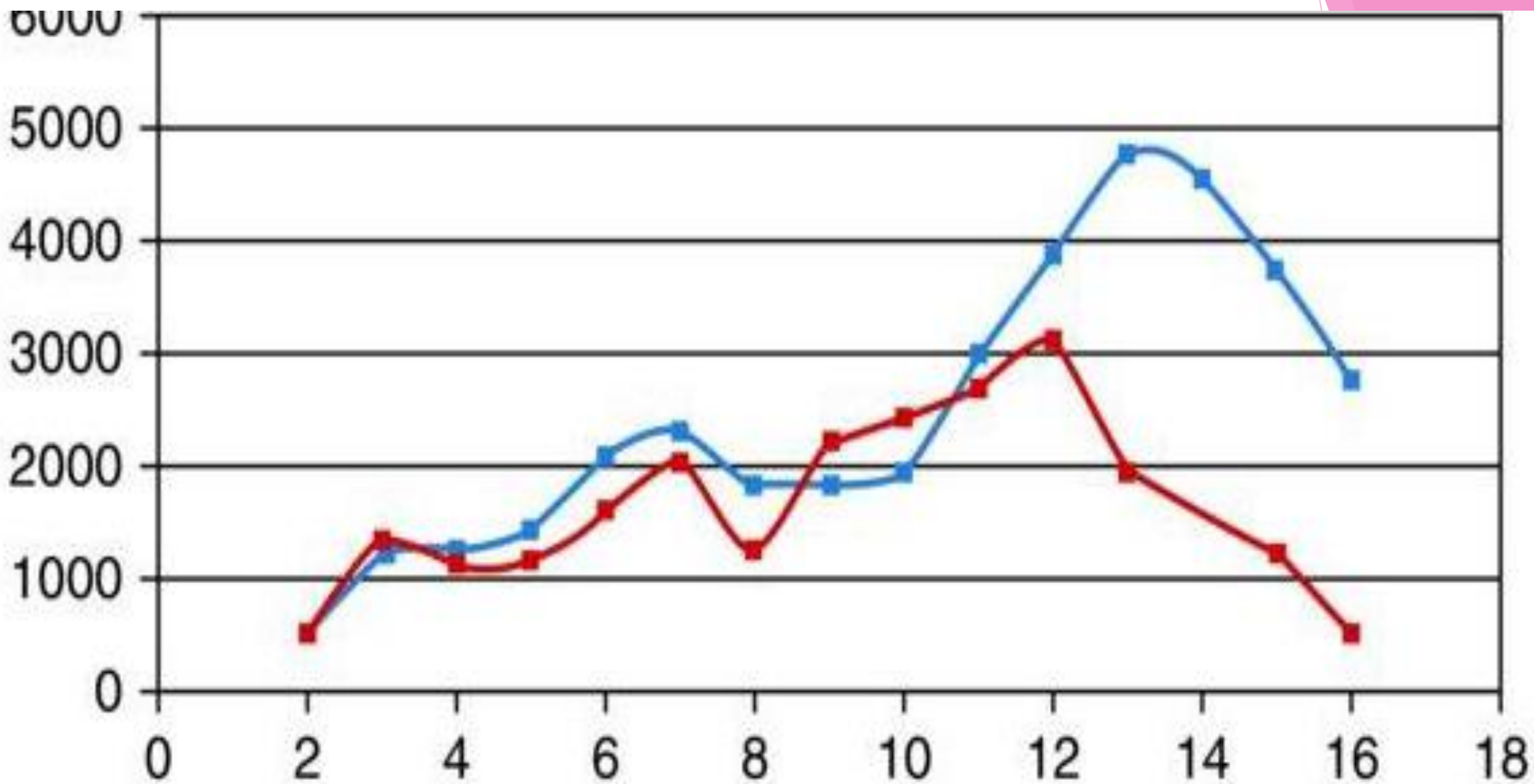
Incidence of Fractures in Long Bones %

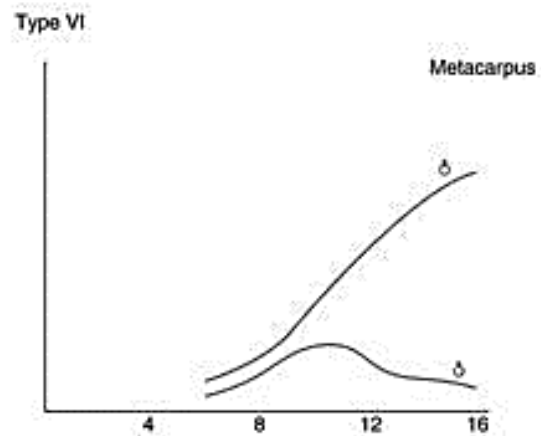
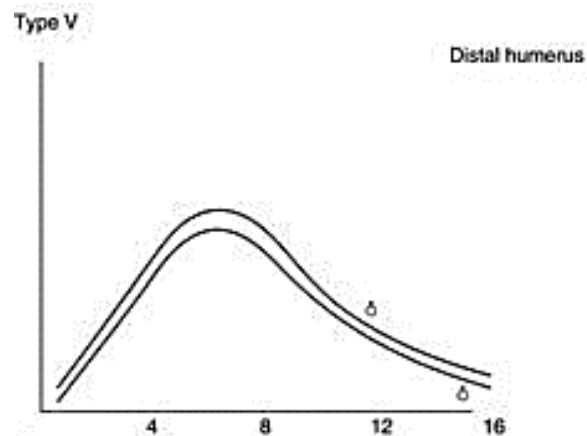
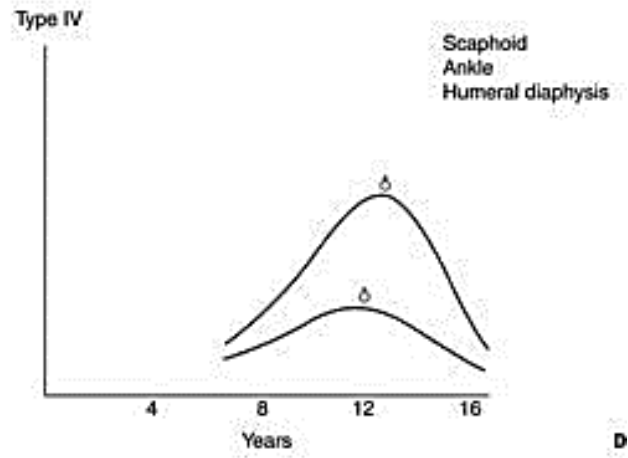
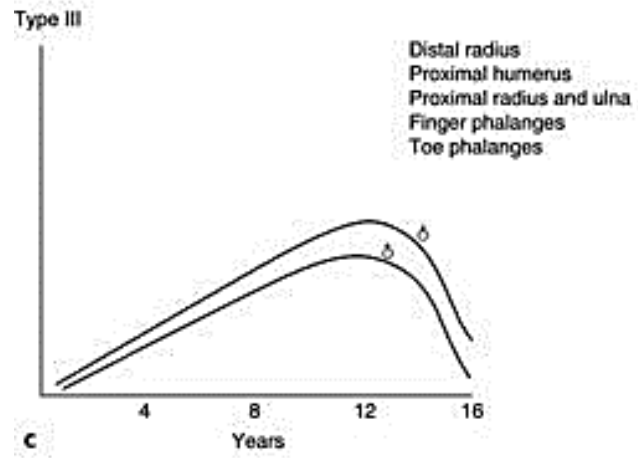
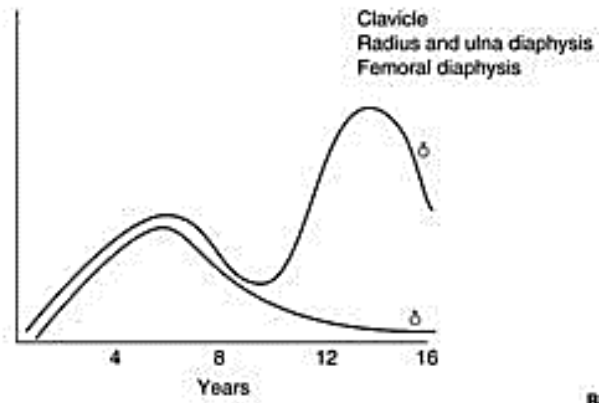
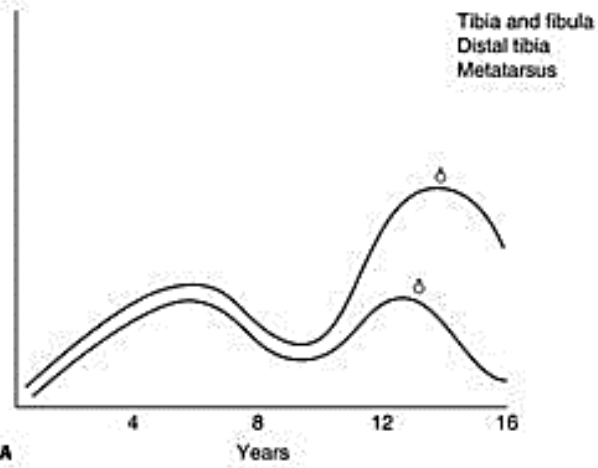
- ▶ Radius/ulna 59
- ▶ Humerus 21
- ▶ Tibia/fibula 15
- ▶ Femur 5

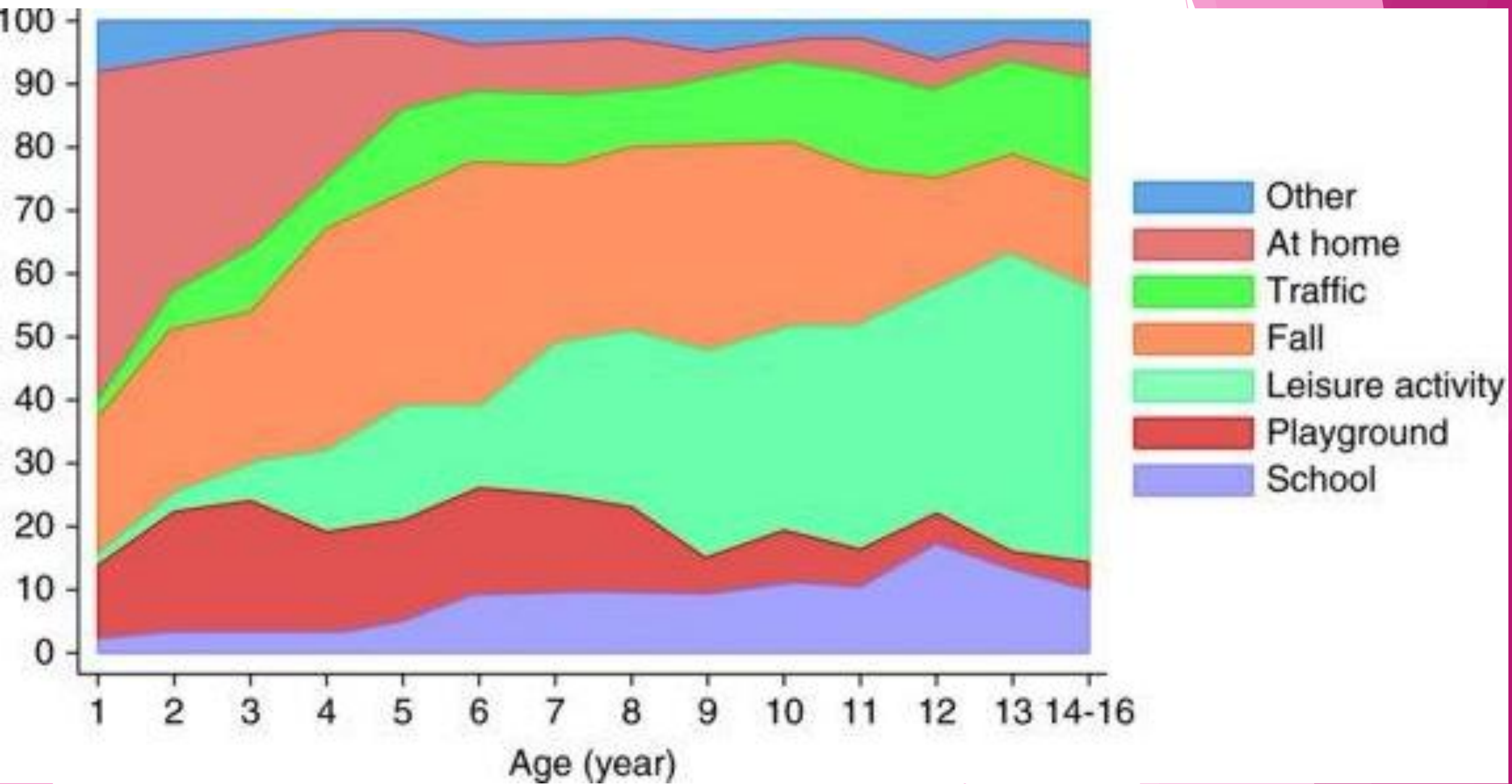
Physical Fractures

Open Fractures

- ▶ 14.8% to as high as 30%
- ▶ 1.5% to 2.6% in older series to 0.7% to 1% in recent reports.
- ▶ The incidence of open fractures was 9% in a report of patients admitted to an urban trauma center.







- ▶ Upper extremity open fractures in hospitalized road traffic accident patients: adult versus pediatric cases

J Orthop Surg Res. 2017; 12: 157

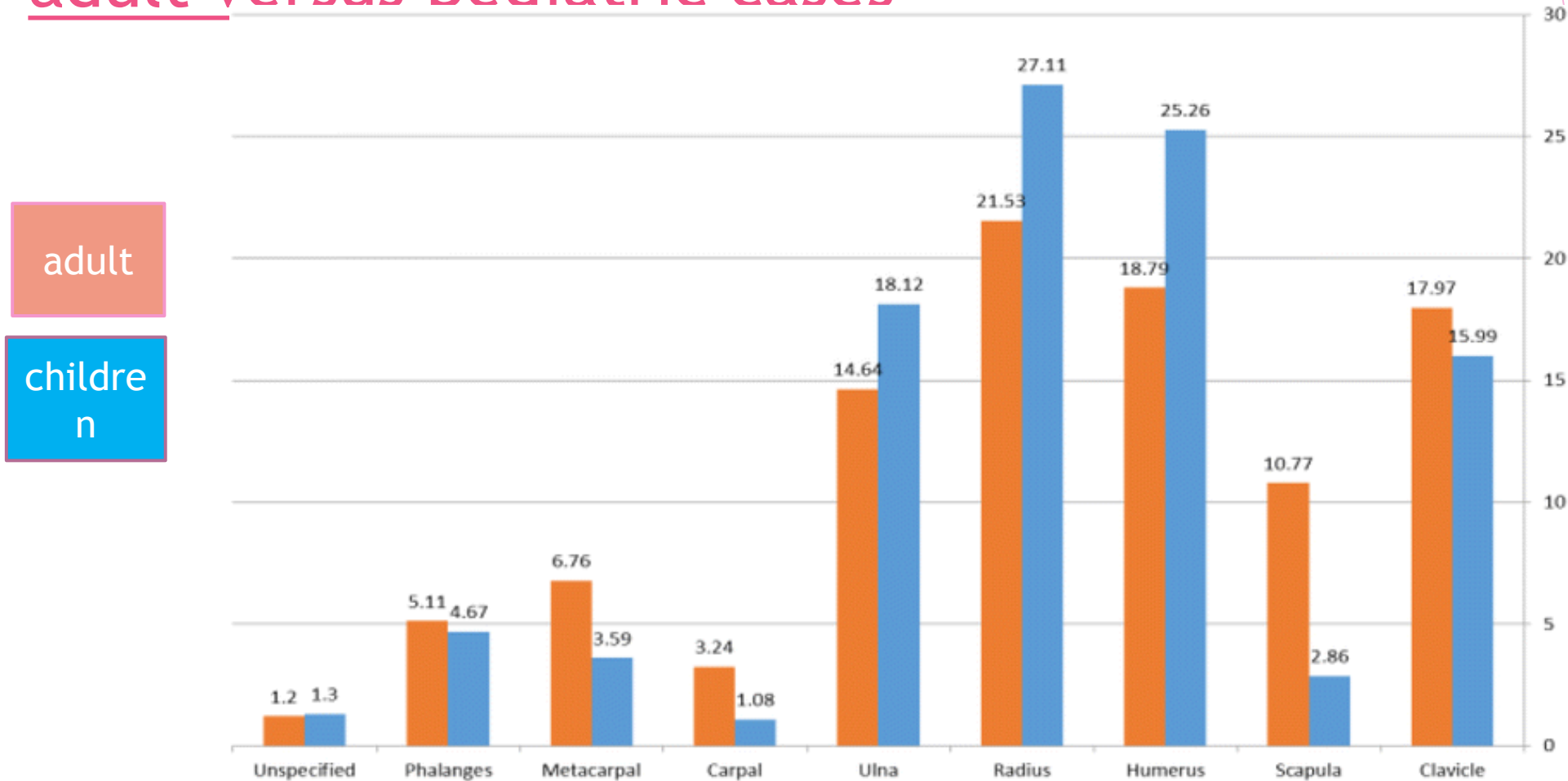
- ▶ 103,465 RTA cases . (73,087 adults. 30,378 pediatric)
- ▶ 17,263 (16.7%) had UEFs
- ▶ 73,087 adults, 13,237 (18.1%) included UEFs
- ▶ 30,378 pediatric cases, **4026 (13.2%) included UEFs** ($p < 0.0001$)
- ▶ **17,263 cases with UEFs, ..22,132 fractures with 2, 743 (12.4%) open fractures**
- ▶ **Adults had a greater risk for open fractures (2221, 13%) than the pediatric cases (522, 10.3%) ($p < 0.0001$)**
- ▶ Overall, of a total of 22,132 UEFs, most of the fractures were in the radius (22.8%), humerus (20.3%), clavicle (17.5%), and ulna (15.4%)
- ▶ The adult pedestrian group had a significantly higher risk for open UEFs than the pediatric group (11 vs 8%, $p = 0.0012$).

Table 1

Total number of patients and distribution of RTA type among UEF patients

	Car	Motorcycle	Bicycle	Pedestrian	Total
Total patients	47,176	13,087	16,319	26,883	103,465
No. 0-17 patients	6,842	1,192	10,350	11,994	30,378
No. 18+ patients	40,334	11,895	5,969	14,889	73,087
No. (%) UEFs patients	6,459 (37)	3,463 (20)	3,389 (20)	3,952 (23)	17,263
No. (%) UEFs 0-17	803 (20)	217 (6)	1,906 (47)	1,100 (27)	4,026
No. (%) UEFs 18+	5,656 (43)	3,246 (24)	1,483 (11)	2,852 (22)	13,237

Upper extremity open fractures in hospitalized road traffic accident patients: adult versus pediatric cases



Percent of open fracture among each type of fracture

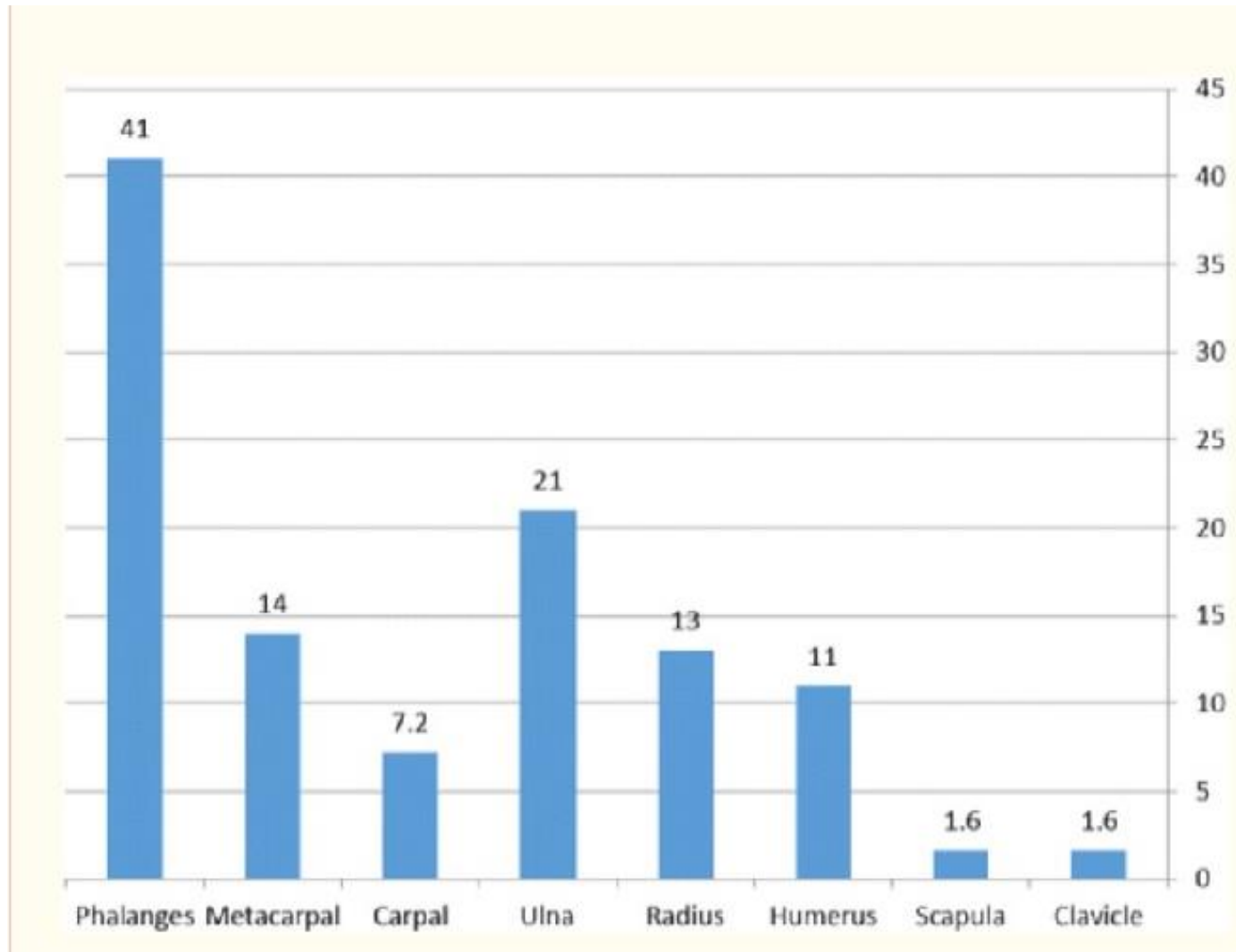


Table 2

Percent of patients with UEF from total patients in each type of RTA

	Car	Motorcycle	Bicycle	Pedestrian	Total
Total UEFs	8,339	4,646	4,324	4,823	22,132
No. (%) open UEFs	1,198 (14)	589 (13)	473 (11)	483 (10)	2,743 (12)
No. (%) 0-17 open UEFs	138 (13.5)	26 (9)	260 (10.5)	98 (8)	522 (10)
No. (%) 18+ open UEFs	1,060 (14.5)	563 (13)	213 (12)	385 (11)	2,221 (13)
<i>p</i> value 0-17 vs 18+	0.4237	0.0656	0.2182	0.0012	

Table 3 Distribution of fracture type among UEFs in each type of RTA

From: [Upper extremity open fractures in hospitalized road traffic accident patients: adult versus pediatric cases](#)

	Total fractures	Total open	Car				Motorcycle				Bicycle				Pedestrian			
			Total fractures	Total open	18+ open	0-17open	Total fractures	Total open	18+ open	0-17open	Total fractures	Total open	18+ open	0-17open	Total fractures	Total open	18+ open	0-17open
Clavicle	3877	63	1515	21	16	5	784	9	9	0	584	16	12	4	994	17	15	2
					2%	3.60%			2%	0			6%	2%			4%	2%
Scapula	1983	32	775	15	13	2	509	2	2	0	184	3	3	0	515	12	9	3
					1%	1.50%			0.40%	0			1%	0			2%	3%
Humerus	4486	508	1607	241	222	19	497	54	53	1	840	70	30	40	1542	143	111	32
					21%	14%			9%	4%			14%	15%			28%	33%
Radius	5049	673	1823	290	254	36	1183	162	153	9	1308	131	53	78	735	90	71	19
					24%	26%			27%	35%			25%	30%			18%	19%
Ulna	3417	723	1309	301	270	31	673	184	176	8	910	140	67	73	525	98	82	16
					25%	23%			31%	31%			32%	28%			21%	16%
Carpal	607	44	199	13	12	1	269	21	21	0	74	3	2	1	65	7	7	0
					1%	0.70%			4%	0			1%	0.40%			2%	0

Table 3 Distribution of fracture type among UEFs in each type of RTA

From: [Upper extremity open fractures in hospitalized road traffic accident patients: adult versus pediatric cases](#)

	Total fractures	Total open	Car				Motorcycle				Bicycle				Pedestrian			
			Total fractures	Total open	18+ open	0-17open	Total fractures	Total open	18+ open	0-17open	Total fractures	Total open	18+ open	0-17open	Total fractures	Total open	18+ open	0-17open
Carpal	607	44	199	13	12	1	269	21	21	0	74	3	2	1	65	7	7	0
					1%	0.70%			4%	0			1%	0.40%			2%	0
Metacarpal	1335	185	530	97	89	8	403	39	37	2	185	17	12	5	217	32	26	6
					8%	6%			7%	8%			6%	2%			7%	6%
Phalanges	1108	459	467	199	164	35	270	103	97	6	190	84	31	53	181	73	55	18
					15%	25%			17%	23%			15%	20%			14%	18%
Unspecified	270	56	114				58				49				49			
Total	22,132	2743	8339	1198	1060	138	4646	589	563	26	4324	473	213	260	4823	483	385	98

الهی ...

- ▶ .
- ▶ الهی دلی ده که جای تو باشد
- ▶ بده جانی از جنس جود وجودت
- ▶ نگاهی بده تا هر آنچه که بینم
- ▶ زبانی عطاکن که ذکر تو گویم
- ▶ به حق شنیدن به گوشم روا کن
- ▶ بده دستی مدیون بیمار و ناخوش
- ▶ رسان کسب و کاری که شادی رسانم
- ▶ خوش آن درد و رنجی که قسمت نمائی اگر نسخه ای از دواي تو باشد
- ▶ بده درک و فهمی که آرام گیرم
- ▶ من از هستی و عشق سهمی نخواهم مگر گوشه ای از صفای تو باشد
- ▶ خدایا مرا راهی جز خاکیان نیست
- ▶ نفس بندم از شوق احیای مستی
- ▶ خدایا اگر بیجوابم گذاری
- ▶ اگر دست ردم زنی راضیم از جزائی که تحت لوای تو باشد