



Chest Expansion in Normal Subjects

Reference values by age and sex. Measurements are shown in centimetres.

Table I Normal circumferential chest expansion, by sex and age

Age (years)	15-24		25-34		35-44		45-54		55-64		65-74		75+	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
No. subjects	23	31	15	12	12	27	16	26	24	16	13	19	8	20
Mean (cm)	7.01	5.55	7.37	5.46	6.56	4.57	6.00	4.82	5.51	3.77	4.00	3.76	2.81	2.45
S.D.	2.00	1.62	1.56	1.63	2.07	0.99	2.14	1.29	1.94	1.39	1.27	1.29	0.73	0.88
Range	4.00	3.60	4.30	3.00	3.40	2.70	2.70	2.60	1.70	1.00	2.00	1.10	2.00	1.10
	10.00	9.50	9.50	7.60	11.80	7.10	10.70	7.50	9.20	5.90	5.70	6.30	4.10	4.20

Table II Normal antero-posterior chest expansion, by sex and age

Age (years)	15-24		25-34		35-44		45-54		55-64		65-74		75+	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
No. subjects	23	31	15	12	12	27	16	26	24	16	13	19	8	20
Mean (cm)	2.53	2.13	3.17	2.08	2.50	1.77	2.34	1.94	2.17	1.72	1.61	1.53	1.78	1.40
S.D.	0.76	0.63	1.12	0.61	0.85	0.66	0.85	0.47	0.78	0.55	0.43	0.64	0.51	0.49
Range	1.00	1.50	1.50	1.00	1.25	0.50	1.25	1.50	1.25	1.00	1.00	0.50	1.00	0.50
	4.00	4.50	5.75	3.00	4.50	3.75	4.50	3.00	4.00	3.25	2.25	2.75	2.50	2.25

Table III Normal transverse chest expansion, by sex and age

Age (years)	15-24		25-34		35-44		45-54		55-64		65-74		75+	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
No. subjects	23	31	15	12	12	27	16	26	24	16	13	19	8	20
Mean (cm)	2.64	2.33	2.98	2.66	2.96	2.41	2.58	2.33	2.27	1.83	1.73	1.85	1.47	0.96
S.D.	0.73	0.76	0.86	0.78	1.25	0.67	0.82	0.81	1.08	0.66	0.74	0.77	0.74	0.53
Range	1.50	1.50	1.50	1.50	0.00	1.25	1.25	0.75	1.00	0.00	0.25	0.25	0.00	0.50
	5.00	4.00	4.75	4.25	4.25	4.25	4.25	4.00	4.50	2.50	2.25	3.00	2.25	2.00

Source: Moll J.M.H. and Wright V. An objective clinical study of chest expansion.
Annals of the Rheumatic Diseases. 1972;31:1-8. doi:10.1136/ard.31.1.1