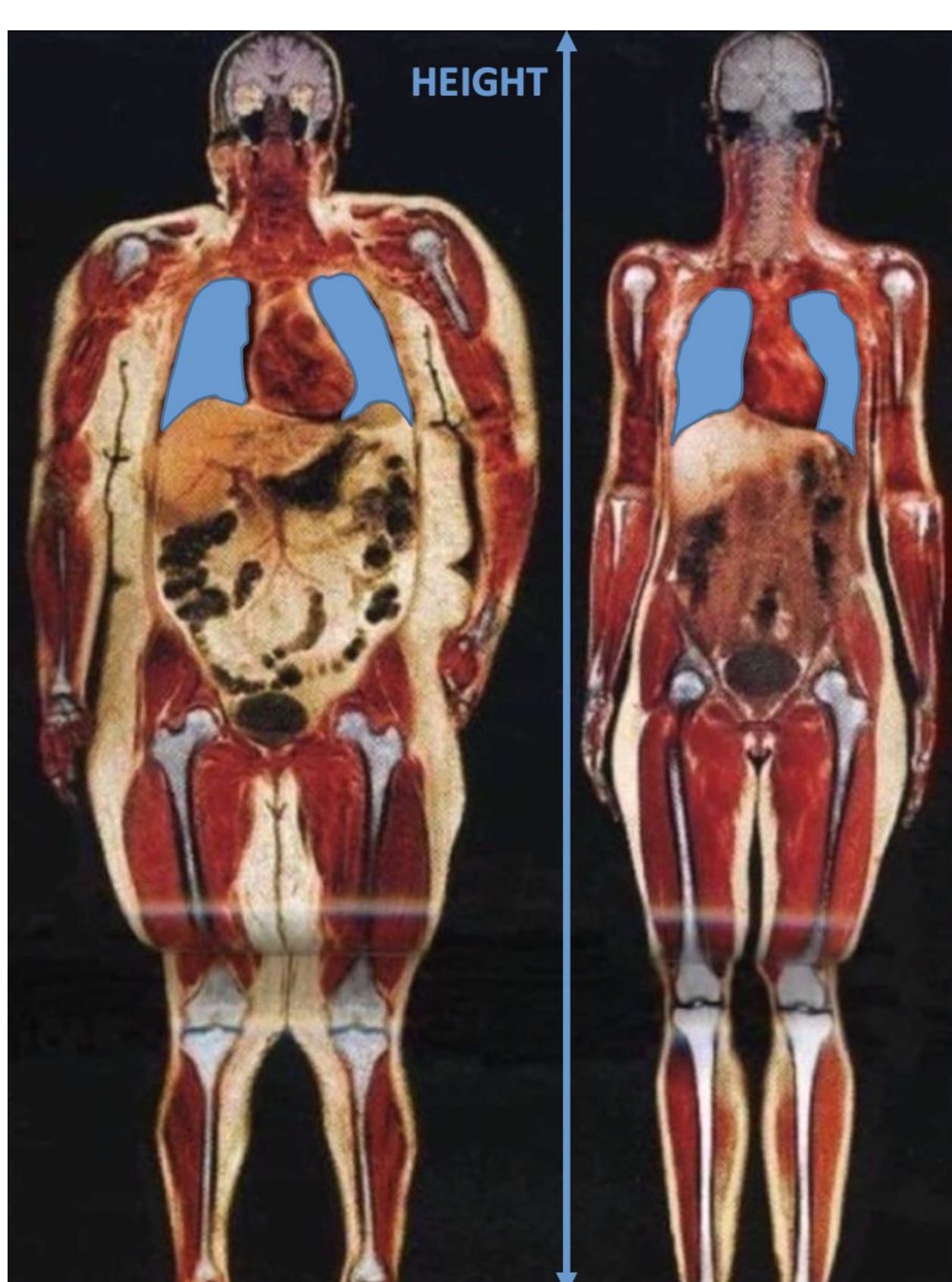


First step of protective ventilation is the calculation of Predicted Body Weight (PBW)

○ To initiate protective ventilation and adjust the tidal volume, the first step is to calculate the Predicted Body Weight (PBW) in kg, using the following formula¹.

$\text{PBW (male)} = 50 + 0.91 \times (\text{height in cm} - 152.4)$ $\text{PBW (female)} = 45.5 + 0.91 \times (\text{height in cm} - 152.4)$

The determination of height is a major parameter during mechanical ventilation, it enables the calculation of the Predicted Body Weight. Indeed, the volume of the lungs depends on height and gender, therefore on the Predicted Body Weight rather than on the actual weight². Visual estimation of the height is not reliable with significant deviations, especially in the smallest patients³.



Predicted Body Weight allows the determination of tidal volume according to the pathology: usually 6 mL/kg_{PBW} (from 4 to 8) in case of acute respiratory distress syndrome (ARDS)^{1,4-6} and 8 mL/kg_{PBW} (from 6 to 10) in the absence of ARDS⁷⁻¹¹.

Tidal volume according to patient's height and gender

FEMALE								
HEIGHT (cm)	PBW (kg)	V _T 4 mL/kg	V _T 5 mL/kg	V _T 6 mL/kg	V _T 7 mL/kg	V _T 8 mL/kg	V _T 9 mL/kg	V _T 10 mL/kg
145	39	155	194	233	271	310	349	388
147	41	162	203	244	284	325	365	406
149	42	170	212	254	297	339	382	424
151	44	177	221	265	310	354	398	442
153	46	184	230	276	322	368	414	460
155	48	191	239	287	335	383	431	479
157	50	199	248	298	348	397	447	497
159	52	206	258	309	361	412	464	515
161	53	213	267	320	373	427	480	533
163	55	221	276	331	386	441	496	551
165	57	228	285	342	399	456	513	570
167	59	235	294	353	412	470	529	588
169	61	242	303	364	424	485	545	606
171	62	250	312	375	437	499	562	624
173	64	257	321	385	450	514	578	642
175	66	264	330	396	462	529	595	661
177	68	272	339	407	475	543	611	679
179	70	279	349	418	488	558	627	697
181	72	286	358	429	501	572	644	715
183	73	293	367	440	513	587	660	733
185	75	301	376	451	526	601	676	752
187	77	308	385	462	539	616	693	770
189	79	315	394	473	552	630	709	788
191	81	323	403	484	564	645	726	806
193	82	330	412	495	577	660	742	824
195	84	337	421	506	590	674	758	843
197	86	344	430	517	603	689	775	861
199	88	352	440	527	615	703	791	879
201	90	359	449	538	628	718	808	897

MALE								
HEIGHT (cm)	PBW (kg)	V _T 4 mL/kg	V _T 5 mL/kg	V _T 6 mL/kg	V _T 7 mL/kg	V _T 8 mL/kg	V _T 9 mL/kg	V _T 10 mL/kg
145	43	173	216	260	303	346	389	433
147	45	180	225	271	316	361	406	451
149	47	188	235	281	328	375	422	469
151	49	195	244	292	341	390	439	487
153	51	202	253	303	354	404	455	505
155	52	209	262	314	367	419	471	524
157	54	217	271	325	379	433	488	542
159	56	224	280	336	392	448	504	560
161	58	231	289	347	405	463	520	578
163	60	239	298	358	418	477	537	596
165	61	246	307	369	430	492	553	615
167	63	253	316	380	443	506	570	633
169	65	260	326	391	456	521	586	651
171	67	268	335	402	468	535	602	669
173	69	275	344	412	481	550	619	687
175	71	282	353	423	494	565	635	706
177	72	290	362	434	507	579	651	724
179	74	297	371	445	519	594	668	742
181	76	304	380	456	532	608	684	760
183	78	311	389	467	545	623	701	778
185	80	319	398	478	558	637	717	797
187	81	326	407	489	570	652	733	815
189	83	333	417	500	583	666	750	833
191	85	341	426	511	596	681	766	851
193	87	348	435	522	609	696	783	869
195	89	355	444	533	621	710	799	888
197	91	362	453	544	634	725	815	906
199	92	370	462	554	647	739	832	924
201	94	377	471	565	660	754	848	942

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