

## SUBSTANCE VERSUS REFINEMENT

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All of the people I interviewed for this article stated that they believed that those horses with no refining influences within three generations, the 'pure' warmblood or 'pure' Irish Draught, would have more bone and a bigger girth measurement than the refiners, the 100% Thoroughbreds or 100% Anglo-Arabs. They were fairly certain that the bone and girth measurements within a height category would decrease in inverse proportion to the degree of refining influences in the pedigree – the more refining influence the less bone and the smaller the girth measurement. They also thought that there would be a clear pattern. What do you think?

Finding a reasonable sample population took some work, but in the end, we have 100 stallions (56 based in Europe and 44 based in Canada) for comparison. They represent most of the major breeds and associations in Europe and three Canadian registries (CSHA, CWHBA and Canadian Trakehner). They vary from no refining influence (0% RI) in the first three generations to 100% RI for the Anglo-Arabs and Thoroughbreds. Some were international competitors, some sired international competitors, some were average competitors, some sired average competitors, some did not compete in sport, and the offspring of some are too young to categorize. The disciplines varied, and, because they are all stallions, there are no gender considerations. In other words, they provide an ample and fair sample.

*(E stands for European based and C stands for Canadian based)*

Horse	Height	Bone	Girth	% Refining Influence/ Breed
E 1	153	20	185	100% AA
E 2	161	21	191	25% KWPN
E 3	161.5	21.3	183	25% SWB

Three horses were under 16 hands. One was 100% AA (no purebred Arabian or purebred Thoroughbred within three generations), one was KWPN (25% RI) and the other was SWB (25% RI). The AA was 15 hands (153 cm), had 20 cm of bone and had a girth of 185cm. The KWPN was 15.3 ½ (161 cm), had 21 cm of bone and had a girth of 191 cm. The SWB was 15.3 ¾ (161.5 cm), had 21.3 cm of bone and a girth of 183 cm. No patterns emerged in this group.

Horse	Height	Bone	Girth	% Refining Influence/ Breed
C 1	162.5	19.7	188	0% KWPN
C 2	162.5	20.3	197	12.5% KWPN
C 3	162.5	21	190.5	12.5% KWPN
C 4	162.5	24.1	193	50% Freisen/TB
E 4	163	20.5	189	37.5% KWPN

E 5	163	20.5	194	75%	ISH
E 6	163	21.5	194	100%	TB
E 7	163	22	198	100%	TB
C 5	164	21.6	185.4	25%	OLD

From the eight horses in the 16-hand range (162.5 – 163 cm) we find that bone/girth varies from 19.7/188 cm (KWPN with 0% RI) to 22/198 cm (100% TB). The only horse at 164 cm (Oldenburg with 25% RI) had lots of bone (21.6 cm) yet had a smaller girth (185.4 cm). No patterns emerged in this group.

Horse	Height	Bone	Girth	% Refining Influence/ Breed
C 6	165	20.3	188	0% Trak
C 7	165	20.3	189	100% TB
C 8	165	21	190.5	12.5% Trak
C 10	165	21	191.8	100% TB
C 9	165	21	191.8	25% CSH
E 8	165	21.5	190	12.5% KWPN
C 11	165	21.6	182.9	0% HAN
C 12	165	21.6	190.5	25% KWPN
C 13	165	21.6	194.3	100% TB
C 14	165	21.6	198.1	0% SF
C 15	165	24.1	193	0% HAN

From the 11 horses in the 16.1-hand category (165 cm) bone ranges from 20.3 cm (Trakehner with 0% RI and a TB at 100% RI) to 24.1 (Hanoverian with 0% RI) while the second highest bone measurement, 21.6 cm was shared by a 100% TB and a Selle Francais with 0% RI. Girth measurements ranged from 188 cm (Trakehner with 0% RI and 20.3 cm of bone) to 198.1 cm (SF with 0% RI and 21.6 cm of bone), but the second smallest and the second largest girth measurements belonged to TBs at 189 and 194.3 respectively. No patterns emerged in this group.

Horse	Height	Bone	Girth	% Refining Influence/ Breed
E 9	166	20	193	100% TB
E 10	166	20.5	190	12.5% SF
E 11	166	21	186	0% BWP
E 12	166	21	188	100% AA
E 13	166	21	193	12.5% SF
E 14	166	22	185	25% SF
E 15	166	22	195	25% SF
E 16	166	22.5	192	0% BWP
E 17	166.5	21	188	100% TB
E 18	166.5	21	197	100% TB
C 44	166.5	25.4	200.7	0% HAN

The 11 horses measuring approximately 16.1 ½ hands (166 – 166.5 cm) provided bone measurements from 20 cm (100% TB) to 25.4 cm (Hanoverian with 0% RI) and girth measurements from 185 (SF with 25% RI) to 200.7 (Hanoverian with 0% RI). The TB with the smallest bone had a girth of 193 cm and the second largest girth measurement (197 cm) belonged to a TB with 21 cm of bone. The second smallest girth (188 cm) belonged to an Anglo-Arab with 21 cm of bone. No patterns emerged in this group.

Horse	Height	Bone	Girth	% Refining Influence/ Breed
E 19	167	20	180	12.5% Zang
E 20	167	22	196	100% TB
E 21	167.5	21.5	193	37.5% KWPN
C 16	167.5	21.6	189	25% Trak
C 17	167.5	21.6	200.7	50% CSH/TB
C 18	167.5	22.2	191.8	100% TB
C 19	167.5	22.9	193	0% BWP
C 20	167.5	22.9	195.6	100% TB

From the eight horses in the 16.2-hand range (167 to 167.5 cm) we get bone from 20 (Zang with 12.5% RI) to 22.9 cm (BWP with 0% RI and a 100% TB) and girths from 180 (Zang with 12.5% RI with 20 cm of bone) to 200.7 cm (CSH with 50% RI and 21.6 cm of bone). The TB with 22 cm of bone had the second largest girth (196 cm) and the third largest girth (195.6 cm) belonged to the TB with 22.9 cm of bone. No patterns emerged in this group.

Horse	Height	Bone	Girth	% Refining Influence/ Breed
C 21	168	20.3	172.7	0% Trak
C 22	168	20.3	172.7	12.5% SF/CSH
E 22	168	21	197	100% TB
E 23	168	21	198	100% TB
E 24	168	22.2	201	100% TB
E 25	168	22.6	203.2	100% TB
E 27	168	22.9	205	100% TB
E 26	168	23	172	12.5% WEST
E 28	168.5	22	190	100% TB
E 29	168.5	22	201	100% TB
E 30	169	20.4	181	25% ENCI
E 31	169	20.5	198	100% TB
E 32	169	21.7	189	12.5% HAN
E 33	169	22	197	0% DWB
E 34	169	22.5	194	12.5% HOL
E 35	169	23	195	50% ISH

A total of 16 horses fell into the 168 cm to 169 cm (approximately 16.2 ½) category. Bone measurements ranged from 20.3 cm (Trakehner with 0% RI and a SF/CSH with 12.5 % RI) to 23 cm (ISH with 50% RI and West with 12.5% RI) while girths ranged

from 172 cm (Westphalen with 12.5% RI and 23 cm of bone) to 205 (100% TB with 22.9 cm of bone). No patterns emerged in this group.

Horse	Height	Bone	Girth	% Refining Influence/ Breed
C 23	170	20.3	188	0% Trak
C 24	170	21	190.5	25% WEST
E 36	170	21	200	25% KWPN
E 37	170	21	208	100% AA
E 38	170	21.5	193	100% TB
C 25	170	21.6	194.3	100% TB
E 39	170	22	188	12.5% HOL
C 26	170	22.2	195.6	100% TB
E 40	170	22.2	195.6	100% TB
E 41	170	22.5	195	50% RID
C 27	170	22.9	193	25% SWB
C 28	170	22.9	196.3	0% KWPN
E 42	170	23	209	0% RID
C 29	170	23.5	195.6	0% SWB
E 43	170	24.1	198.1	12.5% RID
E 44	170.5	23.8	205	0% Zwei

There were 16 horses with a height of 16.3 (170 cm to 170.5 cm) and their bone measurements varied from 20.3 cm (Trakehner with 0% RI) to 24.1 cm (RID with 12.5% RI) while the girth measurements varied from 188 cm (Trakehner with 0% RI and 20.3 cm of bone and Holsteiner with 12.5 % RI and 22 cm of bone) to 209 cm (RID with 0% RI and 23 cm of bone). The second largest girth (208 cm) belonged to an AA with 21 cm of bone, the same bone measurement as a Westphalen (25% RI and 190.5 cm girth) and a KWPN (25% RI and 200 cm girth). The four Thoroughbreds in the group fell mid range (21.5 to 22.2 cm bone and 193 to 195.6 cm girth). The 0% RI horses populated both ends of the spectrum, representing both the smallest and largest bone and smallest and largest girth. No patterns emerged in this group.

Horse	Height	Bone	Girth	% Refining Influence/ Breed
E 45	171	21.5	190	12.5% OLD
E 46	171	22	197	12.5% OLD
E 47	171	22	197	25% HAN
E 48	171	22.5	193	37.5% Hess
E 49	171	22.8	208	12.5% SF
E 50	172	22.9	198.1	100% TB

The six horses ranging from 171 cm to 172 cm (approximately 16.3 ½) ranged in bone from 21.5 cm (Oldenburg with 12.5% RI and 190 cm girth) to 22.9 cm (100% TB with 198.1 cm girth) and from 190 cm (Oldenburg with 12.5% RI and 21.5 cm of bone) to 208 cm (SF with 12.5% RI and 22.9 cm of bone) in girth.

Horse	Height	Bone	Girth	% Refining Influence/ Breed
C 30	173	21	197	25% CSH
E 51	173	22	192	25% HOL
C 31	173	22.2	193	12.5% KWPN
C 32	173	22.2	195.6	0% KWPN
C 33	173	22.2	198.1	0% HAN
C 34	173	22.9	193	12.5% HAN
C 35	173	22.9	194.3	0% WEST
C 36	173	22.9	195.6	0% HAN
C 37	173	22.9	195.6	25% WEST/OLD
C 38	173	24.1	208.3	25% Arab/Hung
E 52	173	24.5	218	0% HAN
E 53	173	25	196	25% SF/ISH

The 12 horses measuring 17 hands (173 cm) ranged in bone from 21 cm (CSH with 25% RI and 197 cm girth) to 25 cm (SF/ISH cross with 196 cm of girth) and in girth from 192 cm (Holsteiner with 25% RI and 22 cm of bone) to 218 cm (Hanoverian with 0% RI and 24.5 cm of bone). There were no Anglo-Arabs or Thoroughbreds in this group. No patterns emerged in this group.

Horse	Height	Bone	Girth	% Refining Influence/ Breed
C 39	175	21.6	194.3	12.5% KWPN
C 40	175	22.9	200.7	0% KWPN
C 41	175	22.9	203.2	0% HAN
E 54	175	23	202	25% SF
C 42	175	23.3	197.4	0% Trak
C 43	175	23.5	203.2	12.5% HAN
E 55	175	23.5	220	25% ISH
E 56	176	23	203	12.5% BWP

There were eight horses over 17 hands (175 cm to 176 cm) and their bone measurements ranged from 21.6 cm (KWPN with 12.5% RI and 194.3 cm girth) to 23.5 cm (BWP with 12.5% RI and 203 cm girth) while their girths ranged from 194.3 cm (KWPN with 21.6 cm of bone) to 220 cm (ISH with 25% RI and 23.5 cm of bone). There were no Anglo-Arabs or Thoroughbreds in this group. No patterns emerged in this group.

% RI /# of horses	Height Range	Bone Range	Girth Range
0% / 24	162.5 – 175 cm	19.7 – 25.4 cm	182.9 – 218 cm
12.5% / 21	162.5 – 176	20 – 24.1	172 - 208
25% / 20	161 – 175	20.4 – 25	183 - 220
37.5% / 3	163 – 171	20.5 – 22.5	189 - 193
50% / 4	162.5 - 170	21.6 - 24.1	193 - 200.7
75% / 1	163 -	20.5 -	194 -
100% / 3 AA	152 - 170	20 - 21	185 - 208
100% / 24 TB	163 - 172	20 - 22.9	188 - 205

In general the amount of bone and the size of girth increased with height, but there were no correlations to degree of refining influence. Both the smallest and the largest bone measurements came from the 0% RI group. The 12.5% and the 50% groups each had maximum bone measurements of 24.1 cm. By bone range, the 50% RI and the 25% RI groups measured larger than the 12.5% RI group.

The largest girth measurement (220 cm) came from the 25% RI group, the 0% RI group had a maximum girth of 218, while both the 12.5% RI and the 100% AA groups had a maximum girth of 208. The 100% TB group had a maximum girth measure of 205 cm, which exceeded the maximums from both the 50% RI group and the 37.5% RI group. The smallest girth measure came from the 12.5% RI group.

Using the groups with 20 or more horses, we find that the height range in the 0% RI group was 12.5 cm, in the 12.5% RI group 13.5 cm, in the 25% RI group 14 cm and in the 100% TB group 9 cm.

The range of bone in the 0% RI group was 5.7 cm, in the 12.5% RI group 4.1 cm, in the 25% RI group 4.6 cm, in the 100% TB group 2.9 cm.

The girth range in the 0% RI group was 35.1 cm, in the 12.5% RI group 36 cm, in the 25% RI group 37 cm, in the 100% TB group 17 cm. In all three measurements the 100% TB group showed the least variance.

After being presented with the data, the interviewees admitted to some degree of surprise. Comments ranged from “Years ago there was more difference, but not so much now,” to “We’ve been looking at it from an historical perspective and got a bit blinkered.” One person said the penny dropped when she realized that “these Thoroughbreds were selected” for sport purposes. Indeed, *all* of these horses were selected for sport purposes – they were *all* inspected and approved - but the Thoroughbreds may not have been bred specifically for the sport disciplines.

Were you surprised?

*(Data sources: Canadian Sport Horse Association 2006 Stallion Directory and Irish Sport Horse Studbook 2004-2005 Breeders Annual)*