

Daily Energy Requirements for Dogs

■ Adult

The daily energy requirement for adult dogs is based on the resting energy requirement multiplied by a factor that takes into account whether the dog is intact or neutered. Neutering decreases the activity level and thus decreases the daily energy requirement. The daily energy requirements for intact adult dogs can be found in Table 4.1. For intact adult dogs, the daily energy requirement is calculated by the formula $DER = 1.8 \times RER$. The daily energy requirements for neutered adult dogs can be found in Table 4.2. For neutered adult dogs, the daily energy requirement is calculated by the formula $DER = 1.6 \times RER$.

Table 4.1. Daily energy requirements (DER) for intact adult dogs.^a

BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal
1	70	53	1370	105	2288	157	3094
2	117	54	1389	106	2304	158	3108
3	159	55	1409	107	2321	159	3123
4	197	56	1428	108	2337	160	3138
5	233	57	1447	109	2353	161	3153
6	267	58	1466	110	2369	162	3167
7	300	59	1485	111	2385	163	3182
8	332	60	1504	112	2401	164	3197
9	362	61	1522	113	2417	165	3211
10	392	62	1541	114	2434	166	3226
11	421	63	1560	115	2449	167	3240
12	450	64	1578	116	2465	168	3255
13	478	65	1597	117	2481	169	3269
14	505	66	1615	118	2497	170	3284
15	532	67	1633	119	2513	171	3298
16	558	68	1652	120	2529	172	3313
17	584	69	16700	121	2545	173	3327
18	610	70	1688	122	2560	174	3342
19	635	71	1706	123	2576	175	3356
20	660	72	1724	124	2592	176	3370

Table 4.1. (cont.)

BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal
21	684	73	1742	125	2608	177	3385
22	709	74	1760	126	2623	178	3399
23	733	75	1778	127	2639	179	3413
24	756	76	1795	128	2654	180	3428
25	780	77	1813	129	2670	181	3442
26	803	78	1831	130	2685	182	3456
27	826	79	1848	131	2701	183	3470
28	849	80	1866	132	2716	184	3485
29	872	81	1883	133	2732	185	3499
30	894	82	1901	134	2747	186	3513
31	916	83	1918	135	2763	187	3527
32	938	84	1935	136	2778	188	3541
33	960	85	1953	137	2793	189	3555
34	982	86	19700	138	2808	190	3570
35	1004	87	1987	139	2824	191	3584
36	1025	88	2004	140	2839	192	3598
37	1046	89	2021	141	2854	193	3612
38	1068	90	2038	142	2869	194	3626
39	1089	91	2055	143	2884	195	3640
40	1109	92	2072	144	2900	196	3654
41	1130	93	2089	145	2915	197	3668
42	1151	94	2106	146	2930	198	3682
43	1171	95	2122	147	2945	199	3696
44	1192	96	2139	148	2960	200	3710
45	1212	97	2156	149	2975	205	3779
46	1232	98	2173	150	2990	210	3848
47	1252	99	2189	151	3005	215	3916
48	1272	100	2206	152	3020	220	3984
49	1292	101	2222	153	3034	225	4052
50	1312	102	2239	154	3049	230	41200
51	1331	103	2255	155	3064	240	4253
52	1351	104	2272	156	3079	250	4385

BW, body weight.

^aDER = 1.8 × RER (resting energy requirement).

Table 4.2. Daily energy requirements (DER) for neutered adult dogs.^a

BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal
1	62	53	1218	105	2034	157	2750
2	104	54	1235	106	2048	158	2763
3	141	55	1252	107	2063	159	2776
4	175	56	1269	108	2077	160	2789
5	207	57	1286	109	2092	161	2802
6	238	58	1303	110	2106	162	2815
7	267	59	1320	111	2120	163	2828
8	295	60	1337	112	2135	164	2841
9	322	61	1353	113	2149	165	2854
10	349	62	1370	114	2163	166	2867
11	374	63	1386	115	2177	167	2880
12	400	64	1403	116	2192	168	2893
13	424	65	1419	117	2206	169	2906
14	449	66	1436	118	2220	170	2919
15	473	67	1452	119	2234	171	2932
16	496	68	1468	120	2248	172	2945
17	519	69	1484	121	2262	173	2958
18	542	70	1500	122	2276	174	2970
19	564	71	1517	123	2290	175	2983
20	586	72	1532	124	2304	176	2996
21	608	73	1548	125	2318	177	3009
22	630	74	1564	126	2332	178	3021
23	651	75	1580	127	2346	179	3034
24	672	76	1596	128	2359	180	3047
25	693	77	1612	129	2373	181	3060
26	714	78	1627	130	2387	182	3072
27	734	79	1643	131	2401	183	3085
28	755	80	1659	132	2415	184	3098
29	775	81	1674	133	2428	185	3110
30	795	82	1690	134	2442	186	3123
31	815	83	1705	135	2456	187	3135
32	834	84	1720	136	2469	188	3148
33	854	85	1736	137	2483	189	3160
34	873	86	1751	138	2496	190	3173

Table 4.2. (cont.)

BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal
35	892	87	1766	139	2510	191	3185
36	911	88	1781	140	2523	192	3198
37	930	89	1797	141	2537	193	3210
38	949	90	1812	142	2550	194	3223
39	968	91	1827	143	2564	195	3235
40	986	92	1842	144	2577	196	3248
41	1005	93	1857	145	2591	197	3260
42	1023	94	1872	146	2604	198	3273
43	1041	95	1887	147	2618	199	3285
44	1059	96	1902	148	2631	200	3297
45	1077	97	1916	149	2644	205	3359
46	1095	98	1931	150	2657	210	3420
47	1113	99	1946	151	2671	215	3481
48	1131	100	1961	152	2684	220	3542
49	1148	101	1975	153	2697	225	3602
50	1166	102	1990	154	2710	230	3662
51	1183	103	2005	155	2724	240	3781
52	1201	104	2019	156	2737	250	3898

BW, body weight.

^aDER = 1.6 × RER (resting energy requirement).

■ Weight Loss

For weight loss to occur, energy expenditure must be greater than the energy intake. The daily requirements for adult dogs that need to lose weight can be found in Table 4.3. The daily energy requirement for adult dogs that need to lose weight is calculated by the formula $DER = 1.0 \times RER$.

■ Moderate and Heavy Work

Activity level has a significant impact on the daily energy requirement. Short bouts of exercise have a minimal impact on daily energy requirement, but dogs that regularly participate in strenuous exercise

Table 4.3. Daily energy requirements (DER) for weight loss in dogs.^a

BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal
1	39	53	761	105	1271	157	1719
2	65	54	772	106	1280	158	1727
3	88	55	783	107	1289	159	1735
4	110	56	793	108	1298	160	1743
5	130	57	804	109	1307	161	1751
6	149	58	814	110	1316	162	1760
7	1677	59	825	111	1325	163	1768
8	184	60	835	112	1334	164	1776
9	201	61	846	113	1343	165	1784
10	218	62	856	114	1352	166	1792
11	234	63	867	115	1361	167	1800
12	2500	64	877	116	1370	168	1808
13	265	65	887	117	1379	169	1816
14	280	66	897	118	1387	170	1824
15	295	67	907	119	1396	171	1832
16	310	68	918	120	1405	172	1840
17	324	69	928	121	1414	173	1848
18	339	70	938	122	1422	174	1856
19	353	71	948	123	1431	175	1864
20	366	72	958	124	1440	176	1872
21	380	73	968	125	1449	177	1880
22	394	74	978	126	1457	178	1888
23	407	75	988	127	1466	179	1896
24	420	76	997	128	1475	180	1904
25	433	77	1007	129	1483	181	1912
26	466	78	1017	130	1492	182	1920
27	459	79	1027	131	1500	183	1928
28	472	80	1037	132	1509	184	1936
29	484	81	1046	133	1518	185	1944
30	497	82	1056	134	1526	186	1952
31	509	83	1066	135	1535	187	1960
32	521	84	1075	136	1543	188	1967
33	534	85	1085	137	1552	189	1975
34	546	86	1094	138	1560	190	1983

Table 4.3. (cont.)

BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal
35	558	87	1104	139	1569	191	1991
36	570	88	1113	140	1577	192	1999
37	581	89	1123	141	1586	193	2007
38	593	90	1132	142	1594	194	2014
39	605	91	1142	143	1602	195	2022
40	616	92	1151	144	1611	196	2030
41	628	93	1160	145	1619	197	2038
42	639	94	1170	146	1628	198	2045
43	651	95	1179	147	1636	199	2053
44	662	96	1188	148	1644	200	2061
45	673	97	1198	149	1653	205	2099
46	684	98	1207	150	1661	210	2138
47	696	99	1216	151	1669	215	2176
48	707	100	1225	152	1678	220	2214
49	718	101	1235	153	1686	225	2251
50	729	102	1244	154	1694	230	2289
51	740	103	1253	155	1702	240	2363
52	750	104	1262	156	1711	250	2436

BW, body weight.

^aDER = $1 \times$ RER (resting energy requirement).

require significantly higher levels of daily energy to meet their energy needs. Dogs that may have increased energy requirements include those that regularly participate in performance events such as agility or flyball or dogs that are routinely used for hunting. The daily energy requirements for adult dogs undergoing moderate work or heavy work can be found in Tables 4.4 and 4.5, respectively. The daily energy requirement for adult dogs undergoing moderate work is calculated by the formula $DER = 3 \times RER$. The daily energy requirement for adult dogs undergoing heavy work is calculated by the formula $DER = 4 \times RER$. Some dogs undergoing very strenuous activity, such as sled dogs in training and racing in long races, may have a daily energy requirement up to eight times the resting energy requirement ($DER = 8 \times RER$).

Table 4.4. Daily energy requirements (DER) for adult dogs undergoing moderate work.^a

BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal
1	116	53	2284	105	3813	157	5156
2	196	54	2316	106	3840	158	5181
3	265	55	2348	107	3868	159	5205
4	329	56	2380	108	3895	160	5230
5	389	57	2412	109	3922	161	5254
6	446	58	2443	110	3949	162	5279
7	500	59	2475	111	3976	163	5303
8	553	60	2506	112	4002	164	5328
9	604	61	2537	113	4029	165	5352
10	654	62	2569	114	4056	166	5376
11	702	63	2600	115	4082	167	5401
12	750	64	2630	116	4109	168	5425
13	796	65	2661	117	4136	169	5449
14	841	66	2692	118	4162	170	5473
15	886	67	2722	119	4189	171	5497
16	930	68	2753	120	4215	172	5521
17	973	69	2783	121	4241	173	5545
18	1016	70	2813	122	4267	174	5569
19	1058	71	2843	123	4294	175	5593
20	1099	72	2873	124	4320	176	5617
21	1140	73	2903	125	4346	177	5641
22	1181	74	2933	126	4372	178	5665
23	1221	75	2963	127	4398	179	5689
24	1261	76	2992	128	4424	180	5713
25	1300	77	3022	129	4450	181	5737
26	1339	78	3051	130	4476	182	5760
27	1377	79	3081	131	4501	183	5784
28	1415	80	3110	132	4527	184	5808
29	1453	81	3139	133	4553	185	5832
30	1490	82	3168	134	4579	186	5855
31	1527	83	3197	135	4604	187	5879
32	1564	84	3226	136	4630	188	5902
33	1601	85	3254	137	4655	189	5926

Table 4.4. (cont.)

BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal
34	1637	86	3283	138	4681	190	5949
35	1673	87	3312	139	4706	191	5973
36	1709	88	3340	140	4731	192	5996
37	1744	89	3369	141	4757	193	6020
38	1779	90	3397	142	4782	194	6043
39	1814	91	3425	143	4807	195	6066
40	1849	92	3453	144	4833	196	6090
41	1884	93	3481	145	4858	197	6113
42	1918	94	3510	146	4883	198	6136
43	1952	95	3537	147	4908	199	6159
44	1986	96	3565	148	4933	200	6183
45	2020	97	3593	149	4958	205	6298
46	2053	98	3621	150	4983	210	6413
47	2087	99	3649	151	5008	215	6527
48	2120	100	3676	152	5003	220	6641
49	2153	101	3704	153	5057	225	6754
50	2186	102	3731	154	5082	230	6866
51	2219	103	3759	155	5107	240	7089
52	2251	104	3786	156	5132	250	7309

BW, body weight.

^aDER = 3 × RER (resting energy requirement).

Table 4.5. Daily energy requirements (DER) for adult dogs undergoing heavy work.^a

BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal
1	155	53	3045	105	5084	157	6875
2	261	54	3088	106	5121	158	6908
3	353	55	3130	107	5157	159	6940
4	438	56	3173	108	5193	160	6973
5	518	57	3215	109	5229	161	7006
6	594	58	3258	110	5265	162	7038
7	667	59	3300	111	5301	163	7071
8	737	60	3342	112	5336	164	7104
9	805	61	3383	113	5372	165	7136

Table 4.5. (cont.)

BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal
10	872	62	3425	114	5408	166	7168
11	936	63	3466	115	5443	167	7201
12	999	64	3507	116	5479	168	7233
13	1061	65	3548	117	5514	169	7265
14	1122	66	3589	118	5549	170	7298
15	1181	67	3630	119	5585	171	7330
16	1240	68	3670	120	5620	172	7362
17	1298	69	3711	121	5655	173	7394
18	1355	70	3751	122	5690	174	7426
19	1411	71	3791	123	5725	175	7458
20	1466	72	3831	124	5760	176	7490
21	1521	73	3871	125	5795	177	7522
22	1575	74	3911	126	5829	178	7554
23	1628	75	3950	127	5864	179	7585
24	1681	76	3990	128	5899	180	7617
25	1733	77	4029	129	5933	181	7649
26	1785	78	4068	130	5968	182	7681
27	1836	79	4107	131	6002	183	7712
28	1887	80	4146	132	6036	184	7744
29	1937	81	4185	133	6071	185	7775
30	1987	82	4224	134	6105	186	7807
31	2036	83	4262	135	6139	187	7838
32	2085	84	4301	136	6173	188	7870
33	2134	85	4339	137	6207	189	7901
34	2182	86	4377	138	6241	190	7932
35	2230	87	4416	139	6275	191	7964
36	2278	88	4454	140	6309	192	7995
37	2325	89	4491	141	6342	193	8026
38	2372	90	4529	142	6376	194	8057
39	2419	91	4567	143	6410	195	8088
40	2465	92	4604	144	6443	196	8120
41	2511	93	4642	145	6477	197	8151
42	2557	94	4679	146	6510	198	8182
43	2603	95	4717	147	6544	199	8213

Table 4.5. (cont.)

BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal	BW (lb)	Daily kcal
44	2648	96	4754	148	6577	200	8244
45	2693	97	4791	149	6610	205	8398
46	2738	98	4828	150	6644	210	8551
47	2782	99	4865	151	6677	215	8703
48	2827	100	4902	152	6710	220	8854
49	2871	101	4938	153	6743	225	9005
50	2915	102	4975	154	6776	230	9155
51	2958	103	5012	155	6809	240	9451
52	3002	104	5048	156	6842	250	9745

BW, body weight.

^aDER = 4 × RER (resting energy requirement).

■ Growth

Growing puppies require more daily energy than do adult dogs to support bone, muscle, and tissue growth. Puppies who weigh up to about 50% of their adult body weight have the highest energy requirement, as a considerable amount of growth is occurring during this period. The daily energy requirement for puppies up to 50% of their adult body weight is calculated by the formula $DER = 3 \times RER$. As puppies get older, the rate of growth slows, and the daily energy requirement starts to decrease. The daily energy requirement for puppies that are 50%–80% of their adult body weight is calculated by the formula $DER = 2.5 \times RER$. Older puppies are still growing, but at a much slower rate. The daily energy requirement for puppies that are 80%–100% of their adult body weight is calculated by the formula $DER = 2 \times RER$. The daily energy requirements for puppies up to 50% of their adult body weight, for puppies 50%–80% of their adult body weight, and for puppies 80%–100% of their adult body weight can be found in Tables 4.6, 4.7, and 4.8, respectively.

For growing puppies, it is important to evaluate body condition on a weekly basis and to adjust dietary energy intake accordingly. Energy intake should be moderated, especially in puppies of large breeds. Maximal growth is not necessarily optimal growth. Rapid growth leads to abnormal skeletal development. A slower growth rate reduces