

Supporting Videos

Video S1. Defecation of a dog, mass of 9 kg.

Video S2. Defecation of a warthog, mass of 71 kg.

Video S3. Defecation of a panda, mass of 112 kg.

Video S4. Defecation of an elephant, mass of 3837 kg.

Table S1. Duration of defecation, velocity of feces, and thickness of mucus.

Animal	Sex	Mass (kg)	Duration (s)	Source
Cat	F	3.3	25	YouTube, Wolff (2008)
Cat	-	4	27	YouTube, Wolff (2008)
Dog		9.1	2	Experiment at the local park
Beagle	M	10.2	13	YouTube, Buckby (2013)
Chesapeake Bay Retriever	F	27.2	20	YouTube, Sparano (1998)
Warthog	F	54	9	YouTube, Rodgers (1984)
Great Dane	-	64	14	YouTube, Fox (2013)
Warthog	F	71	3	Experiment at Zoo Atlanta
Mountain Gorilla	F	91	5	YouTube, Owen (2012)
Giant Panda	F	112	18	Experiment at Zoo Atlanta
Giant Panda	M	113	21	YouTube, Jenkins (2011)
Lion	F	124	21	YouTube, Radloff (2004)
Lion	M	188	18	YouTube, Radloff (2004)
Black Bear	-	360	7	YouTube, Frank (1999)
Zebra	-	360	9	YouTube, Danell (2006)
Zebra	F	450	5	YouTube, Danell (2006)
Hippopotamus	F	1361	10	YouTube, Shabel (2010)
White Rhino	M	2300	2	YouTube, Baggaley (2012)
White Rhino	M	2300	4	YouTube, Baggaley (2012)
White Rhino	M	2300	6	YouTube, Baggaley (2012)
White Rhino	M	2300	10	YouTube, Baggaley (2012)
Elephant	F	2850	17	YouTube, Fitzpatrick (2009)
Elephant	F	3837	20	Experiment at Zoo Atlanta

Animal	Sex	Mass (kg)	Velocity of feces (cm/s)	Source
Dog	F	9	3.43	Experiment at Zoo Atlanta
Warthog	F	71	11.67	Experiment at Zoo Atlanta
Panda	F	112	5.23	Experiment at Zoo Atlanta
Elephant	F	3837	12.58	Experiment at Zoo Atlanta

Animal	Sex	Mass (kg)	Mucus thickness (μm)	Source
Mouse	F	0.03	6.2	Experiment at Georgia Tech
Rat	F	0.27	4.5	Experiment at Georgia Tech
Rat	F	0.27	14.6	Experiment at Georgia Tech
Rabbit	F	3	29.7	Experiment at Georgia Tech
Rabbit	F	3	13.7	Experiment at Georgia Tech

Table S2. Density of feces.

Animal	Category	Mass (kg)	Density (g/mL)
Fossa	Carnivores	10	1.287
Sun Bear	Carnivores	89	1.583
Sun Bear	Carnivores	90	1.351
Sumatran Tiger	Carnivores	99	1.615
Lion	Carnivores	109	1.361
Sumatran Tiger	Carnivores	110	1.423
Lion	Carnivores	188	1.349
Nubian Goat	Hoofstock	57	0.479
Nubian Goat	Hoofstock	63	0.531
Lesser Kudu	Hoofstock	65	1.199
Yellow-Back Duiker	Hoofstock	67	0.840
Yellow-Back Duiker	Hoofstock	68	1.251
Warthog	Hoofstock	73	0.989
Lesser Kudu	Hoofstock	76	1.199
Nubian Goat	Hoofstock	80	0.430
Bongo	Hoofstock	257	1.118
Bongo	Hoofstock	317	0.900
Zebra	Hoofstock	361	0.784
Giraffe	Hoofstock	1200	1.161
Elephant	Elephant	3602	0.632
Red Kangaroo	Kangaroo	17	0.685
Red Kangaroo	Kangaroo	28	0.678
Red Kangaroo	Kangaroo	38	0.685
Black Rhino	Rhino	1118	0.978
Black Rhino	Rhino	1222	0.951
Giant Panda	Panda	105	0.584
Giant Panda	Panda	132	0.426
Golden Lion Tamarin	Primates	0.65	1.055
Lemur	Primates	3.42	1.290
Sumatran Orangutan	Primates	41	1.090
Gorilla	Primates	94	1.317
Gorilla	Primates	155	1.326
Hybrid Orangutan	Primates	105	1.488
Small Madagascar Hedgehog Tenrec	Rodents and Small Animals	0.15	0.495
Small Madagascar Hedgehog Tenrec	Rodents and Small Animals	0.17	0.495
Rat	Rodents and Small Animals	0.44	0.613
Chinchilla	Rodents and Small Animals	0.51	0.258
African Pygmy Hedgehog	Rodents and Small Animals	0.62	1.044
Ferret	Rodents and Small Animals	0.89	1.113
Prarie Dog	Rodents and Small Animals	1.13	0.497
LaPlata 3 banded Armadillo	Rodents and Small Animals	1.44	0.424
Rabbit	Rodents and Small Animals	1.51	0.603
Virginia Opossum	Rodents and Small Animals	3.43	0.892
Porcupine	Rodents and Small Animals	4.50	0.648
Kinkajou	Rodents and Small Animals	7.17	1.048
Red Panda	Rodents and Small Animals	8	1.089

Table S3. Daily feces and meal.

Animal	Mass (kg)	Daily feces (kg/day)	Source
Small Madagascar Hedgehog Tenrec	0.15	0.00612	Zoo Atlanta
Small Madagascar Hedgehog Tenrec	0.17	0.00579	Zoo Atlanta
Rat	0.44	0.00406	Zoo Atlanta
Chinchilla	0.51	0.00312	Zoo Atlanta
African Pygmy Hedgehog	0.62	0.00579	Zoo Atlanta
Ferret	0.89	0.05005	Zoo Atlanta
Prairie Dog	1.13	0.00497	Zoo Atlanta
LaPlata 3 banded Armadillo	1.44	0.00352	Zoo Atlanta
Rabbit	1.51	0.00411	Zoo Atlanta
Porcupine	4.50	0.00634	Zoo Atlanta
Kinkajou	7.17	0.0192	Zoo Atlanta
Red Panda	8	0.1812	Zoo Atlanta
Fossa	10	0.0142	Zoo Atlanta
Sun Bear	89	0.5	Zoo Atlanta
Sun Bear	90	0.5	Zoo Atlanta
Sumatran Tiger	99	0.9	Zoo Atlanta
Giant Panda	105	0.5	Zoo Atlanta
Lion	109	0.4	Zoo Atlanta
Sumatran Tiger	110	0.5	Zoo Atlanta
Giant Panda	132	0.6	Zoo Atlanta
Lion	188	0.9	Zoo Atlanta
African Elephant	3601	7.4	Zoo Atlanta

Animal	Mass (kg)	Daily meal (kg/day)	Source
Small Madagascar Hedgehog Tenrec	0.15	0.03	Zoo Atlanta
Small Madagascar Hedgehog Tenrec	0.17	0.03	Zoo Atlanta
Chinchilla	0.51	0.02	Zoo Atlanta
African Pygmy Hedgehog	0.62	0.02	Zoo Atlanta
Ferret	0.89	0.10	Zoo Atlanta
Prairie Dog	1.13	0.05	Zoo Atlanta
LaPlata 3 banded Armadillo	1.44	0.05	Zoo Atlanta
Rabbit	1.51	0.09	Zoo Atlanta
Porcupine	4.50	0.40	Zoo Atlanta
Kinkajou	7.17	0.30	Zoo Atlanta
Fossa	10	32.16	Zoo Atlanta
Sun Bear	89	1.20	Zoo Atlanta
Sun Bear	90	1.20	Zoo Atlanta
Sumatran Tiger	99	4.76	Zoo Atlanta
Giant Panda	105	22.92	Zoo Atlanta
Lion	109	4.98	Zoo Atlanta
Sumatran Tiger	110	4.76	Zoo Atlanta
Giant Panda	132	22.92	Zoo Atlanta
Lion	188	4.98	Zoo Atlanta

Table S4. Bibliography for animal masses.

Body masses of animals considered
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