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Time Series Tables

Statistics of Scientific Procedures on Living Animals

GREAT BRITAIN
2009



Table 20 Scientific procedures by species of animal, 1988-2009

Species of animal	Thousands of procedures																					
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Mouse	1,850.5	1,744.9	1,636.3	1,698.9	1,449.0	1,457.3	1,475.0	1,454.9	1,502.1	1,517.9	1,590.8	1,641.9	1,607.0	1,657.7	1,720.3	1,816.9	1,919.1	1,961.0	2,067.1	2,221.9	2,418.6	2,628.6
Rat	860.4	882.3	891.5	881.7	833.0	819.7	755.9	694.4	688.8	636.7	575.9	567.0	535.0	500.2	509.6	498.4	484.7	424.5	406.2	385.7	355.4	333.9
All other rodents	184.1	171.8	162.5	152.0	131.5	138.2	141.1	134.2	125.2	103.3	83.1	81.4	71.5	61.6	60.0	48.1	37.5	41.5	37.6	37.3	34.5	25.7
Rabbit	131.8	113.4	89.8	81.5	79.5	70.5	68.8	61.2	53.6	45.0	37.5	41.4	39.7	33.7	30.3	25.3	21.7	22.8	20.4	19.6	17.1	16.6
Cats, dogs, ferrets and other carnivores	20.5	21.4	19.3	17.6	17.1	15.3	14.1	15.1	15.0	12.7	11.9	13.9	11.6	11.6	12.1	10.9	10.7	10.1	9.8	9.0	8.9	8.1
Ungulate	38.1	34.8	34.8	31.1	34.4	33.0	32.2	55.3	60.3	60.0	68.0	63.6	63.0	37.4	57.3	75.5	75.1	61.4	55.8	48.2	54.9	55.1
Primate	6.3	5.3	5.3	4.5	5.0	5.0	5.2	4.7	4.4	3.9	3.7	4.0	3.7	4.0	4.0	4.8	4.2	4.7	4.2	4.0	4.6	4.3
Other mammal	0.4	0.2	0.8	1.3	1.3	2.5	3.2	1.0	0.8	0.8	0.9	0.5	0.5	0.8	1.3	1.7	2.4	2.3	1.7	1.6	1.0	1.3
Bird	269.5	252.0	245.6	226.7	220.3	116.4	189.6	140.4	113.9	120.8	141.2	106.0	124.2	126.9	138.3	121.6	105.3	113.2	114.4	127.6	123.3	126.8
Reptile/Amphibian	11.3	11.6	13.1	15.0	19.0	17.7	17.2	17.2	17.3	15.3	14.4	14.6	15.6	17.5	17.6	16.6	19.5	21.8	20.8	19.0	32.8	21.2
Fish	107.5	77.5	108.0	132.0	138.3	152.1	139.9	131.1	135.2	119.6	122.3	122.4	243.0	171.1	182.0	174.0	194.6	232.9	274.1	327.6	605.2	398.1
Cephalopod ⁽¹⁾	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	3,480.3	3,315.1	3,207.1	3,242.4	2,928.3	2,827.7	2,842.4	2,709.6	2,716.6	2,636.0	2,659.7	2,656.8	2,714.7	2,622.4	2,732.7	2,791.8	2,854.9	2,896.2	3,012.0	3,201.5	3,656.1	3,619.5

(1) *Octopus vulgaris*, from 1 October 1993.

Table 21 Scientific procedures (toxicology) by type of legislation, 1995-2009

Great Britain	Thousands of procedures														
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
UK requirements only	42.3	25.4	21.9	39.2	37.3	26.2	24.5	23.2	19.8	18.0	15.1	10.5	9.0	4.0	6.0
Requirements of one EU country only (1999 onwards)				5.8	5.8	2.9	1.3	1.0	0.7	0.3	0.0	0.2	0.1	0.1	0.1
EU requirements	69.6	60.5	54.1	49.3	118.7	69.8	73.6	68.2	45.0	43.4	41.1	42.5	38.1	39.3	44.8
Requirements of non-EU Council of Europe country/ies					25.2	10.6	4.6	3.7	0.6	0.6	0.0	0.0	0.0	0.0	0.0
Other international requirements	48.0	38.2	24.5	25.7	33.9	29.2	30.6	30.5	22.6	14.0	8.6	6.8	4.5	4.7	3.2
Joint requirements (any combination of above)	399.9	441.1	415.0	355.5	247.5	242.1	255.1	295.0	284.8	300.1	275.8	301.9	308.5	295.3	297.1
Non-legislative purposes	117.5	155.0	109.6	94.8	74.7	74.1	65.7	64.2	74.3	59.1	52.5	58.6	56.2	140.8	86.8
Total	677.2	720.2	625.1	564.4	543.2	454.9	455.5	485.8	447.7	435.5	393.1	420.5	416.4	484.1	438.0

Table 22 Scientific procedures by use of anaesthesia, 1988-2009

Great Britain	Thousands of procedures																					
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
No anaesthesia throughout the procedure ⁽¹⁾	2,213.1	2,094.9	2,205.4	2,223.7	1,960.0	1,792.5	1,796.6	1,751.4	1,767.1	1,690.8	1,723.6	1,683.9	1,636.3	1,551.1	1,634.8	1,691.9	1,710.8	1,747.6	1,856.8	1,958.2	2,377.8	2,413.8
Anaesthesia, with recovery, for part of procedure ⁽²⁾	604.5	568.7	529.8	566.9	579.3	627.0	632.5	658.2	694.1	698.8	702.1	759.5	873.9	802.4	810.8	833.7	874.9	873.2	862.6	924.2	905.5	863.4
Terminal Anaesthesia ⁽³⁾	662.7	651.5	472.0	451.9	388.9	408.2	413.3	300.0	255.4	246.4	233.9	213.3	204.5	268.9	287.2	266.1	269.3	275.4	292.7	320.8	372.8	342.3
Total	3,480.3	3,315.1	3,207.1	3,242.4	2,928.3	2,827.7	2,842.4	2,709.6	2,716.6	2,636.0	2,659.4	2,656.8	2,714.7	2,622.4	2,732.7	2,791.8	2,854.9	2,896.2	3,012.0	3,203.2	3,656.1	3,619.5

- (1) Includes some experiments in which the subject of the study is the anaesthetic agent itself.
(2) May be local, regional or general anaesthesia.
(3) At end of procedure or for whole procedure.

Table 23 Scientific procedures by type of designated establishment, 1988-2009

Great Britain		Thousands of procedures																				
Type of designated establishment ⁽¹⁾	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Public health laboratories	56.4	58.4	73.2	60.2	63.1	51.5	49.2	45.1	35.1	20.0	19.7	25.2	18.4	15.7	16.6	16.3	16.3	18.1	24.7	18.8	15.7	11.7
Universities, medical schools	777.7	747.6	710.0	727.8	737.0	840.6	832.6	824.1	843.8	882.1	934.8	936.1	1,069.7	1,005.7	1,079.8	1,130.1	1,202.0	1,256.5	1,318.1	1,446.0	1,597.7	1,615.8
Polytechnics etc ⁽²⁾	36.0	29.0	38.1	26.3	32.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NHS hospitals	89.6	92.7	89.6	76.5	80.1	75.8	83.3	94.4	94.3	71.1	75.0	70.1	40.1	28.3	23.1	24.0	26.8	32.4	23.1	23.8	21.3	21.9
Government departments	65.9	58.7	68.7	72.6	65.1	78.1	62.6	78.6	94.2	81.5	86.2	91.8	100.5	84.6	94.1	72.0	69.8	75.7	115.2	77.4	99.2	92.7
Other public bodies	231.6	217.5	229.2	244.0	217.8	240.5	259.9	235.5	248.4	259.2	287.9	312.6	338.2	309.2	353.5	407.7	449.9	462.5	400.5	444.2	466.1	529.8
Non-profit making organisations	115.7	103.8	132.1	124.0	104.7	91.4	85.8	102.6	118.9	117.7	119.4	119.5	115.0	161.4	152.3	136.3	138.8	143.0	104.0	101.5	128.1	315.5
Commercial organisations	2,107.4	2,007.3	1,866.2	1,910.9	1,627.7	1,449.9	1,469.1	1,329.4	1,281.8	1,204.3	1,136.6	1,101.6	1,032.8	1,017.7	1,013.4	1,005.4	951.3	908.2	1,026.5	1,091.5	1,327.9	1,032.2
Total	3,480.3	3,315.1	3,207.1	3,242.4	2,928.3	2,827.7	2,842.4	2,709.6	2,716.6	2,636.0	2,659.4	2,656.8	2,714.7	2,622.4	2,732.7	2,791.8	2,854.9	2,896.2	3,012.0	3,203.2	3,656.1	3,619.5

(1) For 1988, recorded on the basis of the registered or designated place which the licensees regarded as their main place of work at the time the returns were issued. A licensee may have commenced procedures at more than one registered or designated place during the year. For 1989 onwards, recorded on the basis of the designated place of the project licence holder at the time the returns were issued.

(2) Polytechnics all became universities during 1992. From 1993 onwards combined figures are given.

Table 24 Scientific procedures (non-toxicology) by field of research, 1995-2009

Field of research	Thousands of procedures														
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Psychology	28.4	31.0	38.8	33.1	33.9	106.9	37.9	39.6	38.2	34.7	45.2	53.5	45.3	51.2	57.5
Pharmaceutical R&D	567.6	504.2	501.5	470.1	481.9	446.7	408.9	365.7	400.4	393.0	347.1	315.0	349.4	389.3	282.4
Cancer research	262.6	257.8	300.9	293.3	267.0	258.4	268.8	258.1	277.4	275.2	277.6	285.3	336.0	390.4	433.2
Ecology	14.5	15.2	11.9	13.7	9.1	12.6	19.8	22.1	32.0	35.8	54.0	69.4	90.4	27.2	89.4
Tobacco	-(1)	0.0	0.0	0.0	0.0	0.1	-(1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alcohol	3.2	2.2	1.9	0.4	1.2	3.1	3.1	2.3	1.5	0.9	1.3	0.7	0.2	0.2	0.5
Other	1,156.0	1,185.8	1,155.8	1,284.7	1,320.5	1,432.0	1,428.4	1,559.0	1,594.6	1,679.8	1,777.8	1,867.6	1,963.9	2,313.8	2,318.5
Total	2,032.4	1,996.4	2,010.8	2,095.3	2,113.6	2,259.8	2,167.0	2,246.9	2,344.1	2,419.4	2,503.1	2,591.5	2,785.2	3,172.0	3,181.5

(1) Fewer than 50 procedures

Table 25 Scientific procedures (toxicology) for safety evaluation, 1992-2009

Great Britain	Thousands of procedures																	
	1992	1993	1994	1995 ⁽¹⁾	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Protection of man, animal or the environment by toxicology or other safety evaluation:																		
Environmental pollution	59.2	62.9	51.8	35.7	35.7	27.6	34.0	32.3	35.0	38.2	38.2	32.8	29.1	16.6	19.2	17.8	11.0	15.8
Substances used in agriculture	77.0	67.3	68.6	65.6	68.8	53.8	55.8	48.1	35.3	41.0	57.8	40.1	28.3	32.8	22.5	17.0	17.1	19.0
Substances used in industry	91.8	80.2	65.9	85.1	80.4	76.2	58.8	57.6	53.9	52.7	42.3	36.1	33.7	23.9	28.7	28.9	23.5	18.4
Substances used in the household	2.1	2.2	1.4	1.7	2.6	2.0	1.5	0.3	1.2	0.6	1.0	0.2	0.3	-(3)	0.0	-(3)	0.1	0.0
Foodstuffs and food additives	6.1	7.6	8.2	7.4	3.8	7.5	4.0	4.9	6.0	3.5	5.4	8.1	0.9	6.6	11.5	9.1	8.0	8.9
Cosmetics and toiletries	2.2	3.8	3.5	1.9	2.8	1.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tobacco	0.2	0.0	0.03	-(2)	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Alcohol research	1.1	7.3	9.1	-(2)	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other safety evaluation	19.0	10.6	8.7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pharmaceutical - safety, efficacy, ADME and residue	..	..	..	333.2	365.8	311.2	284.4	269.6	203.8	204.8	220.1	202.3	211.8	207.1	204.8	223.0	267.0	232.6
Pharmaceutical - quality control	..	..	..	83.8	84.3	77.8	74.0	85.6	70.9	72.2	74.5	78.3	92.3	78.1	105.9	100.7	117.5	111.1
Other purposes	..	..	..	62.7	76.0	67.7	51.4	44.7	48.8	42.5	46.4	49.8	39.3	28.1	27.9	19.9	39.8	32.3
Total	258.6	242.0	217.2	677.2	720.2	625.1	564.4	543.2	454.9	455.5	485.8	447.7	435.5	393.1	420.5	416.4	484.1	438.0

.. No comparable figures are available.

(1) Where series have been discontinued or a new series started, it is because there is little or no direct comparability between figures from previous years and the current year.

(2) In previous years, research on tobacco and alcohol was included, for historical reasons, in the "safety" categories.

From 1995 onwards, they are in the non-toxicology tables.

(3) Fewer than 50 procedures

Table 26 Scientific procedures by primary purpose, 1995-2009

Great Britain	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Fundamental biological research	841.2	884.8	829.4	894.9	803.8	872.8	778.7	864.3	832.9	880.9	939.8	962.8	998.8
Applied studies human medicine or dentistry	1,073.3	1,012.2	945.4	847.3	836.2	739.0	689.9	669.9	693.7	671.9	625.0	634.3	685.2
Applied studies veterinary medicine	199.2	144.1	160.1	181.3	169.6	190.7	182.2	175.0	150.7	156.4	156.2	139.4	146.9
Protection of man, animals or the environment	209.2	219.7	201.0	170.4	153.3	161.2	153.6	185.6	151.4	114.1	103.8	121.5	150.6
Education	7.1	6.7	5.9	6.3	5.5	4.7	4.6	4.3	3.7	2.7	1.6	1.9	1.8
Training	1.7	1.7	1.6	1.6	1.4	1.3	1.2	1.0	0.9	0.9	0.9	0.9	0.7
Forensic enquiries	0.1	0.1	0.1	0.1	0.1	_(⁽¹⁾)	_(⁽¹⁾)	_(⁽¹⁾)	_(⁽¹⁾)	_(⁽¹⁾)	_(⁽¹⁾)	0.1	0.0
Direct diagnosis	65.0	55.8	55.5	52.0	47.8	45.3	34.5	41.3	55.8	45.3	41.7	49.5	48.0
Breeding	312.7	391.5	437.0	505.8	639.1	699.6	777.8	791.2	902.6	982.6	1,027.2	1,101.6	1,169.5
Total	2,709.6	2,716.6	2,636.0	2,659.7	2,656.8	2,714.7	2,622.4	2,732.7	2,791.8	2,854.9	2,896.2	3,012.0	3,201.5

(1) Fewer than 50 procedures

Table 27 Scientific procedures by primary purpose and genetic status, 1995-2009

Primary purpose of procedure	Thousands of procedures														
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Normal animal															
Fundamental biological research	713.1	724.8	656.2	664.1	621.5	653.2	560.9	584.7	563.4	560.2	585.8	567.8	540.2	680.5	623.5
Applied studies	1,219.2	1,101.1	1,043.8	969.4	937.9	857.7	810.5	780.6	779.7	756.4	716.4	708.3	757.2	829.6	713.1
Safety	208.9	219.0	200.8	170.1	153.3	161.1	153.5	185.4	151.3	114.0	103.6	121.5	150.5	83.4	72.8
Other uses	73.0	64.2	62.8	59.9	54.7	51.3	40.1	46.7	59.6	48.3	43.7	50.2	49.0	54.4	53.4
Breeding	53.5	72.2	83.0	89.2	126.7	152.8	179.8	165.5	194.9	194.5	201.2	202.3	239.3	247.0	259.8
Total	2,267.7	2,181.3	2,046.6	1,952.7	1,894.1	1,876.1	1,744.8	1,762.8	1,748.9	1,673.4	1,650.6	1,650.0	1,736.2	1,894.9	1,722.6
Animal with harmful genetic defect															
Fundamental biological research	53.8	43.9	43.3	57.5	55.1	54.5	46.8	63.8	47.7	68.7	74.1	83.9	70.1	70.7	76.9
Applied studies	40.7	41.0	50.1	42.7	42.9	50.8	44.6	37.7	40.7	46.6	39.7	41.7	52.4	71.2	44.3
Safety	0.2	0.7	0.3	0.0	0.0	0.0	-1	0.0	0.1	(1)	0.0	0.0	0.0	0.0	0.1
Other uses	-1	-1	0.2	-1	0.1	0.1	0.1	(1)	0.4	0.1	0.0	0.2	0.2	0.1	(1)
Breeding	131.9	148.0	142.8	159.1	152.9	151.5	155.3	158.4	190.0	152.2	174.3	200.9	192.8	283.7	261.6
Total	226.6	233.7	236.6	259.3	251.0	256.9	245.8	259.9	278.8	267.6	288.1	326.6	315.5	425.6	382.9
Genetically modified animal															
Fundamental biological research	74.3	116.2	129.9	173.2	127.2	165.1	171.0	215.8	221.9	252.0	279.9	311.2	387.7	419.5	473.9
Applied studies	12.7	14.2	11.7	16.5	24.9	21.2	17.0	26.6	24.0	25.4	25.1	23.8	22.6	54.4	26.3
Safety	0.1	0.0	0.0	0.3	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.0	0.1	0.2	0.0
Other uses	1.0	0.0	(1)	(1)	(1)	(1)	(1)	(1)	0.4	0.6	0.6	1.9	1.2	1.2	1.3
Breeding	127.2	171.2	211.1	257.6	359.5	395.4	442.7	467.3	517.7	635.9	651.7	698.4	738.1	860.2	1,012.6
Total	215.3	301.6	352.8	447.6	511.6	581.8	630.8	710.0	764.1	914.0	957.5	1,035.3	1,149.7	1,335.6	1,514.0
All animals															
Fundamental biological research	841.2	884.8	829.4	894.9	803.8	872.8	778.7	864.3	832.9	880.9	939.8	962.8	998.1	1,170.7	1,174.3
Applied studies	1,272.6	1,156.3	1,105.6	1,028.7	1,005.7	929.7	872.1	844.9	844.4	828.3	781.2	773.8	832.2	955.2	783.7
Safety	209.2	219.7	201.0	170.1	153.3	161.2	153.6	185.6	151.4	114.1	103.8	121.5	150.6	83.6	72.9
Other uses	74.0	64.2	63.0	59.9	54.9	51.4	40.3	46.7	60.4	49.0	44.3	52.4	50.4	55.8	54.7
Breeding	312.6	391.5	437.0	505.8	639.1	699.6	777.8	791.2	902.6	982.6	1,027.2	1,101.6	1,170.2	1,390.9	1,533.9
Total	2,709.6	2,716.6	2,636.0	2,659.7	2,656.8	2,714.7	2,622.4	2,732.7	2,791.8	2,854.9	2,896.2	3,012.0	3,201.5	3,656.1	3,619.5

(1) Fewer than 50 procedures