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Central Statistics Office

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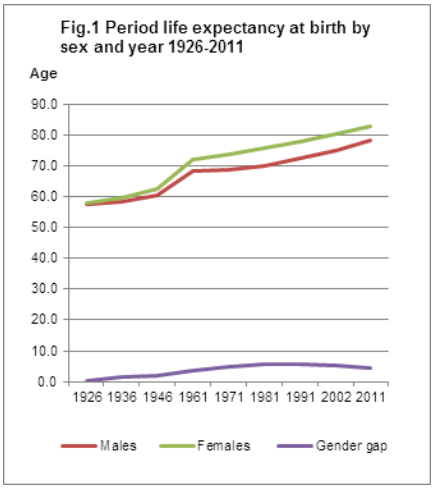
Irish Life Tables

2010-2012

Age	Males	Females	Gender Gap
0	78.4	82.8	4.4
65	17.7	20.6	2.9



Irish Life Tables No. 16

2010-2012

Life expectancy continues to rise for both men and women

In the period 2010-2012, life expectancy at birth was 78.4 years for males and 82.8 years for females. *(See table above and tables 1, 2, 3 and fig.1).*

• In the five years between 2006 and 2011 life expectancy increased by 1.6 years for males and 1.2 years for females.
• The gender gap now stands at 4.4 years, compared with the 4.8 years recorded in 2006.
• In 1926 male life expectancy was 57.4 years while it was slightly higher for females at 57.9 years. This gender gap of 0.5 years continued to increase until 1986 when it stood at 5.7 years and has been decreasing gradually since.

In 2011, the highest life expectancy at birth for males among EU member states was reported in Sweden (79.9 years). For females, France reported the highest life expectancy of 85.7 years. *(See table 4).*
• In 2011, Irish male life expectancy ranked in joint 10th place with Germany while Irish female life expectancy ranked 17th.
• Females had a longer life expectancy than males across all EU member states.
• The largest difference in male and female life expectancies was in Lithuania at 11.2 years while the smallest was in the Netherlands at 3.7 years.
In 2011 in Ireland a 65 year old male could expect to live another 17.7 years, an increase of 1.1 years since 2006. A 65 year old female could expect to live another 20.6 years, an increase of 0.8 years over the same period. The highest life expectancy at this age for both sexes was reported in France at 19.3 years for males and 23.8 years for females. *(See tables 3, 4 and 5).*

Significant improvements in life expectancy for both males and females over the past 85 years

Life expectancy at birth has increased significantly for both men and women since the first official life table was compiled in 1926. Over the 85 year period to 2011, male life expectancy increased by 21.0 years (36.6%), while female life expectancy increased by 24.9 years (43.0%).

The improvements have been as a direct result of decreasing mortality rates, particularly infant mortality rates over the period. While there has been a continual increase in life expectancy for both males and females, with increases occurring between each set of life tables, the greatest rate of improvement occurred in the 20 year period between 1946 and 1966 (8.1 years for males and 10.5 years for females). Strong gains have also been seen over the last 20 years with increases of 6.1 years for males and 4.9 years for females. *(See table 3).*

The Life tables for the period 2010-2012 are based on a revised methodology (Cubic Spline model). A paper, giving the theoretical basis for this methodology, will Statistician. A link to this paper will be made available on the CSO website, www.cso.ie, in due course.

NOTE: This is an amended version of the original release and contains minor revisions to tables 1 and 2. These revisions (effective from 01 September, 2015) are d the release. Tables were further updated on the 19\02\2016 due to changes in the calculation of the life expectancy at ages 99 years and above.

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Table 1 Irish Life Table No. 16, male period life expectancy by age, 2010 - 2012

Age x[1]	l_x[1]	d_x[1]	p_x[1]	q_x[1]	L_x[1]	T_x[1]	e^0x[1,2]	Age x
0	100,000	379	0.9962099	0.00379014	99,810	7,837,042	78.37	0
1	99,621	35	0.9996508	0.00034918	99,604	7,737,231	77.67	1
2	99,586	11	0.9998916	0.00010843	99,581	7,637,627	76.69	2
3	99,575	7	0.9999264	0.00007365	99,572	7,538,047	75.70	3
4	99,568	8	0.9999177	0.00008227	99,564	7,438,475	74.71	4
5	99,560	10	0.9998974	0.00010263	99,555	7,338,911	73.71	5
6	99,550	11	0.9998880	0.00011196	99,544	7,239,356	72.72	6
7	99,539	11	0.9998914	0.00010860	99,533	7,139,812	71.73	7
8	99,528	10	0.9999019	0.00009812	99,523	7,040,279	70.74	8
9	99,518	9	0.9999135	0.00008653	99,514	6,940,756	69.74	9
10	99,509	8	0.9999220	0.00007805	99,505	6,841,243	68.75	10
11	99,502	8	0.9999246	0.00007543	99,498	6,741,737	67.76	11
12	99,494	8	0.9999181	0.00008186	99,490	6,642,239	66.76	12
13	99,486	10	0.9998955	0.00010451	99,481	6,542,749	65.77	13
14	99,476	16	0.9998435	0.00015650	99,468	6,443,269	64.77	14
15	99,460	23	0.9997670	0.00023301	99,448	6,343,801	63.78	15
16	99,437	33	0.9996713	0.00032866	99,420	6,244,353	62.80	16
17	99,404	44	0.9995598	0.00044020	99,382	6,144,932	61.82	17
18	99,360	56	0.9994389	0.00056113	99,332	6,045,550	60.84	18
19	99,305	68	0.9993177	0.00068233	99,271	5,946,217	59.88	19
20	99,237	79	0.9992067	0.00079329	99,197	5,846,947	58.92	20
21	99,158	88	0.9991161	0.00088386	99,114	5,747,749	57.97	21
22	99,070	94	0.9990541	0.00094587	99,024	5,648,635	57.02	22
23	98,977	96	0.9990255	0.00097449	98,929	5,549,611	56.07	23
24	98,880	96	0.9990312	0.00096877	98,832	5,450,683	55.12	24
25	98,785	92	0.9990686	0.00093142	98,738	5,351,850	54.18	25
26	98,692	86	0.9991319	0.00086807	98,650	5,253,112	53.23	26
27	98,607	79	0.9992012	0.00079885	98,567	5,154,462	52.27	27
28	98,528	76	0.9992251	0.00077489	98,490	5,055,895	51.31	28
29	98,452	78	0.9992044	0.00079558	98,413	4,957,405	50.35	29
30	98,373	81	0.9991724	0.00082761	98,333	4,858,992	49.39	30
31	98,292	85	0.9991367	0.00086332	98,250	4,760,660	48.43	31
32	98,207	89	0.9990970	0.00090302	98,163	4,662,410	47.48	32
33	98,118	93	0.9990529	0.00094708	98,072	4,564,248	46.52	33
34	98,025	98	0.9990041	0.00099589	97,977	4,466,176	45.56	34
35	97,928	103	0.9989501	0.00104990	97,876	4,368,199	44.61	35
36	97,825	109	0.9988904	0.00110961	97,771	4,270,322	43.65	36
37	97,717	115	0.9988244	0.00117560	97,659	4,172,552	42.70	37
38	97,602	122	0.9987515	0.00124849	97,541	4,074,893	41.75	38

39	97,480	130	0.9986710	0.00132901	97,415	3,977,352	40.80	39
40	97,350	138	0.9985820	0.00141796	97,281	3,879,937	39.86	40
41	97,212	147	0.9984838	0.00151623	97,138	3,782,656	38.91	41
42	97,065	158	0.9983752	0.00162485	96,986	3,685,517	37.97	42
43	96,907	169	0.9982551	0.00174493	96,823	3,588,531	37.03	43
44	96,738	182	0.9981222	0.00187776	96,647	3,491,709	36.09	44
45	96,556	196	0.9979752	0.00202476	96,459	3,395,062	35.16	45
46	96,361	211	0.9978125	0.00218754	96,255	3,298,603	34.23	46
47	96,150	228	0.9976321	0.00236788	96,036	3,202,348	33.31	47
48	95,922	246	0.9974322	0.00256781	95,799	3,106,311	32.38	48
49	95,676	267	0.9972104	0.00278959	95,543	3,010,512	31.47	49
50	95,409	290	0.9969642	0.00303577	95,264	2,914,970	30.55	50
51	95,120	315	0.9966908	0.00330920	94,962	2,819,705	29.64	51
52	94,805	343	0.9963869	0.00361308	94,633	2,724,743	28.74	52
53	94,462	373	0.9960490	0.00395103	94,276	2,630,110	27.84	53
54	94,089	407	0.9956729	0.00432707	93,885	2,535,834	26.95	54
55	93,682	445	0.9952542	0.00474576	93,460	2,441,949	26.07	55
56	93,237	486	0.9947878	0.00521218	92,994	2,348,489	25.19	56
57	92,751	532	0.9942679	0.00573206	92,485	2,255,495	24.32	57
58	92,220	582	0.9936882	0.00631181	91,929	2,163,009	23.45	58
59	91,638	638	0.9930414	0.00695864	91,319	2,071,081	22.60	59
60	91,000	699	0.9923194	0.00768060	90,650	1,979,762	21.76	60
61	90,301	766	0.9915132	0.00848676	89,918	1,889,112	20.92	61
62	89,535	840	0.9906128	0.00938724	89,114	1,799,194	20.09	62
63	88,694	922	0.9896066	0.01039338	88,233	1,710,079	19.28	63
64	87,772	1011	0.9884821	0.01151787	87,267	1,621,846	18.48	64
65	86,761	1108	0.9872251	0.01277488	86,207	1,534,579	17.69	65
66	85,653	1215	0.9858197	0.01418025	85,046	1,448,372	16.91	66
67	84,438	1330	0.9842484	0.01575163	83,773	1,363,327	16.15	67
68	83,108	1455	0.9824913	0.01750868	82,381	1,279,553	15.40	68
69	81,653	1590	0.9805267	0.01947326	80,858	1,197,172	14.66	69
70	80,063	1735	0.9783303	0.02166966	79,196	1,116,314	13.94	70
71	78,328	1890	0.9758752	0.02412482	77,383	1,037,119	13.24	71
72	76,439	2054	0.9731315	0.02686850	75,412	959,735	12.56	72
73	74,385	2227	0.9700664	0.02993361	73,271	884,323	11.89	73
74	72,158	2407	0.9666436	0.03335637	70,955	811,052	11.24	74
75	69,751	2593	0.9628235	0.03717654	68,455	740,097	10.61	75
76	67,158	2783	0.9585623	0.04143771	65,767	671,643	10.00	76
77	64,375	2973	0.9538126	0.04618738	62,889	605,876	9.41	77
78	61,402	3161	0.9485227	0.05147726	59,822	542,987	8.84	78
79	58,241	3341	0.9426367	0.05736325	56,571	483,166	8.30	79
80	54,900	3508	0.9360944	0.06390562	53,146	426,595	7.77	80
81	51,392	3657	0.9288311	0.07116888	49,563	373,449	7.27	81
82	47,734	3782	0.9207783	0.07922174	45,844	323,886	6.79	82
83	43,953	3874	0.9118632	0.08813676	42,016	278,042	6.33	83
84	40,079	3927	0.9020100	0.09799000	38,115	236,027	5.89	84
85	36,152	3935	0.8911396	0.10886036	34,184	197,912	5.47	85
86	32,216	3893	0.8791713	0.12082873	30,270	163,728	5.08	86
87	28,323	3795	0.8660231	0.13397686	26,426	133,458	4.71	87
88	24,529	3640	0.8516141	0.14838593	22,709	107,032	4.36	88
89	20,889	3429	0.8358652	0.16413475	19,175	84,323	4.04	89
90	17,460	3166	0.8187025	0.18129754	15,878	65,148	3.73	90
91	14,295	2858	0.8000588	0.19994125	12,866	49,271	3.45	91
92	11,437	2517	0.7798775	0.22012245	10,178	36,405	3.18	92
93	8,919	2157	0.7581164	0.24188361	7,841	26,227	2.94	93
94	6,762	1794	0.7347512	0.26524880	5,865	18,386	2.72	94
95	4,968	1442	0.7097812	0.29021876	4,247	12,521	2.52	95
96	3,526	1117	0.6832348	0.31676523	2,968	8,274	2.35	96
97	2,409	831	0.6551755	0.34482447	1,994	5,306	2.20	97
98	1,579	580	0.6324683	0.36753170	1,288	3,312	2.10	98
99	998	350	0.6491586	0.35084135	823	2,024	2.03	99
100	648	196	0.6968287	0.30317131	550	1,200	1.85	100
101	452	172	0.6197644	0.38023555	366	650	1.44	101
102	280	204	0.2727366	0.72726337	178	285	1.02	102
103	76	40	0.4811619	0.51883813	57	107	1.40	103
104	37	5	0.8630853	0.13691468	34	50	1.36	104
105	32	32	0.9595670	0.04043304	16	16	0.50	105

[1]See below and background notes.

x the exact age of the person, that is on his or her birthday.

l_x the number of persons surviving to exact age x out of the original 100,000 aged 0.

d_x the number of deaths in the year of age x to x+1 out of l_x persons who enter that year.

p_x the probability of surviving a year, or the ratio of the number completing the year of age x to x+1 to the number entering on the year.

q_x the rate of mortality, the probability of dying in a year, or the ratio of the number of deaths in the year of age x to x+1 to the number entering on the year.

L_x the population to be expected according to the Life Table aged between x and x+1 years, assuming deaths occur evenly over the year.

T_x the expected number of person years to be lived by the survivors at age x.

$^2e^0x$ life expectancy at age x for each person surviving, or the total future life time in years which will on average be passed through by persons aged exactly x.

Table 2 Irish Life Table No. 16, female period life expectancy by age, 2010 - 2012

Age x[1]	l_x[1]	d_x[1]	p_x[1]	q_x[1]	L_x[1]	T_x[1]	e^0x[1,2]	Age x
0	100,000	329	0.9967098	0.00329021	99,835	8,275,177	82.75	0
1	99,671	68	0.9993223	0.00067768	99,637	8,175,342	82.02	1
2	99,603	9	0.9999110	0.00008903	99,599	8,075,705	81.08	2
3	99,595	6	0.9999373	0.00006267	99,591	7,976,106	80.09	3
4	99,588	7	0.9999338	0.00006623	99,585	7,876,514	79.09	4
5	99,582	8	0.9999236	0.00007639	99,578	7,776,929	78.10	5
6	99,574	7	0.9999278	0.00007218	99,571	7,677,351	77.10	6

7	99,567	6	0.9999424	0.00005760	99,564	7,577,781	76.11	7
8	99,561	5	0.9999505	0.00004953	99,559	7,478,217	75.11	8
9	99,556	5	0.9999524	0.00004755	99,554	7,378,658	74.12	9
10	99,552	5	0.9999499	0.00005006	99,549	7,279,104	73.12	10
11	99,547	6	0.9999433	0.00005671	99,544	7,179,555	72.12	11
12	99,541	7	0.9999321	0.00006790	99,538	7,080,011	71.13	12
13	99,534	8	0.9999157	0.00008434	99,530	6,980,474	70.13	13
14	99,526	11	0.9998933	0.00010669	99,520	6,880,944	69.14	14
15	99,515	13	0.9998651	0.00013494	99,508	6,781,423	68.14	15
16	99,502	17	0.9998325	0.00016755	99,493	6,681,915	67.15	16
17	99,485	20	0.9997995	0.00020048	99,475	6,582,422	66.16	17
18	99,465	23	0.9997730	0.00022696	99,454	6,482,947	65.18	18
19	99,443	24	0.9997613	0.00023867	99,431	6,383,493	64.19	19
20	99,419	23	0.9997671	0.00023288	99,407	6,284,062	63.21	20
21	99,396	22	0.9997807	0.00021928	99,385	6,184,655	62.22	21
22	99,374	21	0.9997916	0.00020844	99,363	6,085,270	61.24	22
23	99,353	21	0.9997908	0.00020925	99,343	5,985,907	60.25	23
24	99,332	23	0.9997679	0.00023206	99,321	5,886,564	59.26	24
25	99,309	28	0.9997183	0.00028166	99,295	5,787,243	58.27	25
26	99,281	30	0.9997017	0.00029827	99,267	5,687,948	57.29	26
27	99,252	24	0.9997548	0.00024517	99,240	5,588,681	56.31	27
28	99,227	23	0.9997668	0.00023316	99,216	5,489,442	55.32	28
29	99,204	25	0.9997440	0.00025599	99,192	5,390,226	54.33	29
30	99,179	28	0.9997127	0.00028726	99,165	5,291,035	53.35	30
31	99,150	32	0.9996784	0.00032159	99,134	5,191,870	52.36	31
32	99,118	36	0.9996408	0.00035920	99,101	5,092,736	51.38	32
33	99,083	40	0.9995997	0.00040035	99,063	4,993,635	50.40	33
34	99,043	44	0.9995547	0.00044528	99,021	4,894,572	49.42	34
35	98,999	49	0.9995057	0.00049429	98,975	4,795,551	48.44	35
36	98,950	54	0.9994523	0.00054769	98,923	4,696,576	47.46	36
37	98,896	60	0.9993942	0.00060581	98,866	4,597,653	46.49	37
38	98,836	66	0.9993310	0.00066900	98,803	4,498,787	45.52	38
39	98,770	73	0.9992623	0.00073767	98,733	4,399,984	44.55	39
40	98,697	80	0.9991878	0.00081224	98,657	4,301,251	43.58	40
41	98,617	88	0.9991068	0.00089320	98,573	4,202,594	42.62	41
42	98,529	97	0.9990189	0.00098106	98,480	4,104,021	41.65	42
43	98,432	106	0.9989236	0.00107639	98,379	4,005,540	40.69	43
44	98,326	116	0.9988201	0.00117985	98,268	3,907,161	39.74	44
45	98,210	127	0.9987079	0.00129214	98,147	3,808,893	38.78	45
46	98,083	139	0.9985859	0.00141406	98,014	3,710,746	37.83	46
47	97,945	151	0.9984535	0.00154649	97,869	3,612,732	36.89	47
48	97,793	165	0.9983096	0.00169041	97,710	3,514,863	35.94	48
49	97,628	180	0.9981531	0.00184695	97,538	3,417,153	35.00	49
50	97,447	197	0.9979827	0.00201734	97,349	3,319,615	34.07	50
51	97,251	214	0.9977970	0.00220300	97,144	3,222,266	33.13	51
52	97,037	233	0.9975945	0.00240550	96,920	3,125,122	32.21	52
53	96,803	254	0.9973733	0.00262665	96,676	3,028,202	31.28	53
54	96,549	277	0.9971315	0.00286847	96,411	2,931,526	30.36	54
55	96,272	302	0.9968667	0.00313326	96,121	2,835,116	29.45	55
56	95,970	329	0.9965764	0.00342364	95,806	2,738,995	28.54	56
57	95,642	358	0.9962574	0.00374259	95,463	2,643,189	27.64	57
58	95,284	390	0.9959065	0.00409351	95,089	2,547,726	26.74	58
59	94,894	425	0.9955197	0.00448027	94,681	2,452,637	25.85	59
60	94,469	464	0.9950927	0.00490733	94,237	2,357,956	24.96	60
61	94,005	506	0.9946202	0.00537978	93,752	2,263,719	24.08	61
62	93,499	552	0.9940965	0.00590350	93,223	2,169,966	23.21	62
63	92,947	603	0.9935148	0.00648522	92,646	2,076,743	22.34	63
64	92,345	659	0.9928673	0.00713274	92,015	1,984,097	21.49	64
65	91,686	720	0.9921449	0.00785509	91,326	1,892,082	20.64	65
66	90,966	788	0.9913373	0.00866270	90,572	1,800,756	19.80	66
67	90,178	863	0.9904323	0.00956770	89,746	1,710,184	18.96	67
68	89,315	945	0.9894158	0.01058422	88,842	1,620,438	18.14	68
69	88,370	1036	0.9882713	0.01172873	87,851	1,531,596	17.33	69
70	87,333	1137	0.9869795	0.01302048	86,765	1,443,744	16.53	70
71	86,196	1248	0.9855180	0.01448204	85,572	1,356,980	15.74	71
72	84,948	1371	0.9838601	0.01613991	84,262	1,271,408	14.97	72
73	83,577	1506	0.9819747	0.01802525	82,823	1,187,146	14.20	73
74	82,070	1656	0.9798252	0.02017484	81,242	1,104,322	13.46	74
75	80,414	1820	0.9773679	0.02263211	79,504	1,023,080	12.72	75
76	78,594	2000	0.9745515	0.02544851	77,594	943,576	12.01	76
77	76,594	2197	0.9713149	0.02868506	75,496	865,981	11.31	77
78	74,397	2412	0.9675857	0.03241428	73,191	790,485	10.63	78
79	71,986	2643	0.9632775	0.03672246	70,664	717,294	9.96	79
80	69,342	2892	0.9582954	0.04170456	67,896	646,630	9.33	80
81	66,450	3153	0.9525514	0.04744857	64,874	578,734	8.71	81
82	63,297	3421	0.9459559	0.05404413	61,587	513,860	8.12	82
83	59,877	3687	0.9384176	0.06158239	58,033	452,273	7.55	83
84	56,189	3942	0.9298475	0.07015253	54,218	394,240	7.02	84
85	52,247	4171	0.9201629	0.07983711	50,162	340,022	6.51	85
86	48,076	4361	0.9092936	0.09070642	45,896	289,860	6.03	86
87	43,715	4494	0.8971883	0.10281166	41,468	243,964	5.58	87
88	39,221	4557	0.8838228	0.11617723	36,943	202,496	5.16	88
89	34,664	4534	0.8692074	0.13079261	32,397	165,554	4.78	89
90	30,130	4417	0.8533959	0.14660408	27,922	133,156	4.42	90

91	25,713	4204	0.8364927	0.16350730	23,611	105,235	4.09	91
92	21,509	3900	0.8186587	0.18134133	19,559	81,623	3.79	92
93	17,608	3520	0.8001149	0.19988514	15,849	62,065	3.52	93
94	14,089	3083	0.7811427	0.21885730	12,547	46,216	3.28	94
95	11,005	2618	0.7620805	0.23791952	9,696	33,669	3.06	95
96	8,387	2153	0.7433158	0.25668423	7,311	23,973	2.86	96
97	6,234	1713	0.7252739	0.27472613	5,378	16,662	2.67	97
98	4,521	1318	0.7084032	0.29159681	3,862	11,285	2.50	98
99	3,203	983	0.6930682	0.30693179	2,711	7,422	2.32	99
100	2,220	718	0.6767526	0.32324744	1,861	4,711	2.12	100
101	1,502	521	0.6531123	0.34688766	1,242	2,850	1.90	101
102	981	378	0.6142550	0.38574501	792	1,608	1.64	102
103	603	272	0.5495238	0.45047618	467	816	1.35	103
104	331	148	0.5540559	0.44594407	257	349	1.05	104
105	184	184	0.8898570	0.11014299	92	92	0.50	105

x the exact age of the person, that is on his or her birthday.
l_x the number of persons surviving to exact age x out of the original 100,000 aged 0.
d_x the number of deaths in the year of age x to x+1 out of l_x persons who enter that year.
p_x the probability of surviving a year, or the ratio of the number completing the year of age x to x+1 to the number entering on the year.
q_x the rate of mortality, the probability of dying in a year, or the ratio of the number of deaths in the year of age x to x+1 to the number entering on the year.
L_x the population to be expected according to the Life Table aged between x and x+1 years, assuming deaths occur evenly over the year.
T_x the expected number of person years to be lived by the survivors at age x.
$^2e^0x$ life expectancy at age x for each person surviving, or the total future life time in years which will on average be passed through by persons aged exactly x.

Table 3 Period life expectancy at various ages, 1871-2011

Years

Irish Life Table No.	Period	Age in years 0	5	10	15	20	25	35	45	55	65	75
							Males					
	1870-72	49.6	..	..	46.8	..	39.0	31.8	24.4	17.5	11.1	6.5
	1881-83	49.4	..	..	46.0	..	38.1	30.7	23.4	16.7	10.8	6.3
	1890-92	49.1	..	..	45.8	..	37.8	30.6	23.4	16.5	10.5	5.8
	1900-02	49.3	..	..	46.2	..	38.2	31.0	23.8	16.9	10.8	5.8
	1910-12	53.6	..	..	49.2	..	41.0	33.5	25.9	18.9	13.0	8.0
1	1925-27	57.4	59.5	55.2	50.7	46.4	42.4	34.4	26.5	19.1	12.8	7.7
2	1935-37	58.2	60.1	55.8	51.2	46.8	42.7	34.4	26.3	18.8	12.5	7.9
3	1940-42	59.0	60.7	56.3	51.6	47.2	43.1	34.8	26.5	18.8	12.3	7.3
4	1945-47	60.5	61.5	56.9	52.2	47.8	43.5	34.9	26.4	18.6	12.0	6.9
5	1950-52	64.5	63.6	58.8	54.0	49.3	44.8	35.8	27.0	19.0	12.1	6.8
6	1960-62	68.1	65.7	60.8	56.0	51.1	46.4	37.0	27.8	19.5	12.6	7.1
7	1965-67	68.6	65.7	60.8	56.0	51.2	46.4	36.9	27.7	19.3	12.4	7.3
8	1970-72	68.8	65.5	60.6	55.7	51.0	46.3	36.8	27.6	19.3	12.4	7.3
9	1978-80	69.5	65.7	60.8	55.9	51.1	46.4	36.9	27.7	19.3	12.4	7.1
10	1980-82	70.1	66.1	61.3	56.4	51.6	46.9	37.3	28.1	19.6	12.6	7.3
11	1985-87	71.0	66.8	61.9	57.0	52.2	47.4	37.9	28.5	19.8	12.6	7.3
12	1990-92	72.3	68.0	63.1	58.2	53.4	48.6	39.2	29.7	20.9	13.4	7.8
13	1995-97	73.0	68.6	63.6	58.7	53.9	49.3	39.8	30.4	21.5	13.8	8.0
14	2001-03	75.1	70.7	65.7	60.8	56.0	51.3	41.8	32.3	23.4	15.4	8.9
15	2005-07	76.8	72.2	67.2	62.3	57.5	52.8	43.3	33.8	24.8	16.6	9.8
16	2010-12	78.4	73.7	68.8	63.8	58.9	54.2	44.6	35.2	26.1	17.7	10.6
							Females					
	1870-72	50.9	..	..	47.7	..	39.8	32.4	25.0	17.7	11.2	6.6
	1881-83	49.9	..	..	46.2	..	38.3	31.0	23.7	16.7	10.7	6.3
	1890-92	49.2	..	..	45.5	..	37.7	30.5	23.2	16.2	10.3	5.9
	1900-02	49.6	..	..	46.2	..	38.3	30.9	23.7	16.7	10.6	5.9
	1910-12	54.1	..	..	49.4	..	41.4	33.8	26.4	19.2	13.4	8.2
1	1925-27	57.9	59.2	54.9	50.5	46.4	42.4	34.7	27.0	19.6	13.4	8.4
2	1935-37	59.6	60.4	56.1	51.6	47.3	43.2	35.2	27.2	19.6	13.1	8.4
3	1940-42	61.0	61.4	56.9	52.4	48.0	44.0	35.8	27.6	19.8	13.2	8.1
4	1945-47	62.4	62.5	57.9	53.2	48.8	44.7	36.3	28.0	20.1	13.1	7.7
5	1950-52	67.1	65.4	60.6	55.8	51.2	46.6	37.7	28.9	20.6	13.3	7.6
6	1960-62	71.9	69.0	64.1	59.2	54.3	49.5	39.9	30.7	22.1	14.4	8.1
7	1965-67	72.9	69.6	64.8	59.8	54.9	50.1	40.4	31.1	22.4	14.7	8.4
8	1970-72	73.5	70.0	65.1	60.2	55.3	50.5	40.8	31.4	22.7	15.0	8.5
9	1978-80	75.0	71.0	66.1	61.1	56.2	51.4	41.6	32.1	23.3	15.4	8.8
10	1980-82	75.6	71.5	66.6	61.7	56.8	51.9	42.1	32.6	23.7	15.7	9.1
11	1985-87	76.7	72.4	67.5	62.5	57.6	52.7	42.9	33.3	24.3	16.2	9.5
12	1990-92	77.9	73.5	68.6	63.6	58.7	53.8	44.0	34.5	25.4	17.1	10.2
13	1995-97	78.5	74.1	69.1	64.2	59.3	54.4	44.6	35.0	25.8	17.4	10.4
14	2001-03	80.3	75.7	70.8	65.8	60.9	56.0	46.2	36.6	27.4	18.7	11.2
15	2005-07	81.6	76.9	72.0	67.0	62.1	57.2	47.4	37.7	28.5	19.8	12.1
16	2010-12	82.8	78.1	73.1	68.1	63.2	58.3	48.4	38.8	29.5	20.6	12.7

1871-1911 data from the Report on the Commission on Emigration and other Population Problems 1948-1954.
..Data not available.

Table 4 Period life expectancy in 2011 by sex, age and country

Years

	Age							
	0	15	30	45	55	65	75	85
				Males				
SE Sweden	79.9	65.2	50.6	36.2	27.0	18.5	11.1	5.7
IT Italy	79.7	65.1	50.5	36.1	26.9	18.5	11.2	6.0
ES Spain	79.5	64.9	50.2	35.8	26.9	18.8	11.7	6.5
NL Netherlands	79.4	64.8	50.1	35.7	26.5	18.1	10.9	5.9
CY Cyprus	79.3	64.7	50.2	35.9	26.8	18.2	10.8	5.3
UK United Kingdom	79.0	64.5	49.9	35.7	26.7	18.5	11.5	6.3
FR France	78.7	64.1	49.7	35.6	27.0	19.3	12.2	6.9
MT Malta	78.6	64.2	49.7	35.3	26.1	17.7	10.6	6.0
LU Luxembourg (Grand-Duché)	78.5	64.0	49.4	34.8	25.8	17.8	10.9	5.6
DE Germany (including ex-GDR from 1991)	78.4	63.8	49.2	34.9	26.0	18.2	11.3	6.7
IE Ireland	**78.4**	**63.8**	**49.4**	**35.2**	**26.1**	**17.7**	**10.6**	**5.5**
AT Austria	78.3	63.7	49.3	34.9	26.0	18.1	11.2	6.1
BE Belgium	78.0	63.4	49.0	34.7	25.8	18.0	11.1	6.1
GR Greece	78.0	63.4	49.0	34.9	26.1	18.2	11.2	6.2
DK Denmark	77.8	63.2	48.5	34.2	25.3	17.3	10.5	5.6
PT Portugal	77.3	62.7	48.2	34.2	25.7	17.8	10.8	5.9
FI Finland	77.3	62.7	48.3	34.2	25.5	17.7	10.9	5.9
SL Slovenia	76.8	62.2	47.6	33.4	24.6	16.9	10.4	5.8
CZ Czech Republic	74.8	60.2	45.7	31.5	22.9	15.6	9.6	5.2
HR Croatia	73.8	59.3	44.9	30.8	22.2	15.1	9.0	5.0
PL Poland	72.5	58.1	43.8	30.1	22.1	15.4	9.8	5.7
SK Slovak Republic	72.3	57.9	43.5	29.6	21.4	14.5	8.9	5.2
EE Estonia	71.4	56.8	42.7	29.4	21.4	14.8	9.4	5.5
HU Hungary	71.2	56.7	42.2	28.1	20.4	14.3	9.2	5.7
RO Romania	70.8	56.9	42.6	28.8	21.1	14.5	9.0	5.2
BG Bulgaria	70.7	56.7	42.4	28.5	20.5	14.0	8.5	4.8
LV Latvia	68.6	54.3	40.2	27.1	19.6	13.4	8.7	5.4
LT Lithuania	68.1	53.7	39.8	27.1	19.8	14.0	9.1	5.3
				Females				
FR France	85.7	71.1	56.3	41.8	32.6	23.8	15.5	8.8
ES Spain	85.6	71.0	56.1	41.5	32.1	23.0	14.5	7.9
IT Italy	84.8	70.2	55.3	40.7	31.2	22.2	14.0	7.5
AT Austria	83.8	69.2	54.4	39.8	30.5	21.7	13.6	7.3
PT Portugal	83.8	69.2	54.4	39.8	30.5	21.6	13.4	7.2
FI Finland	83.8	69.1	54.4	39.8	30.5	21.7	13.6	7.1
SE Sweden	83.8	69.1	54.3	39.6	30.2	21.3	13.3	6.8
GR Greece	83.6	69.0	54.2	39.6	30.2	21.2	12.8	6.7
LU Luxembourg (Grand-Duché)	83.6	68.9	54.2	39.5	30.2	21.6	13.5	7.3
BE Belgium	83.3	68.7	53.9	39.3	30.2	21.6	13.6	7.4
SL Slovenia	83.3	68.6	53.8	39.2	29.9	21.1	13.1	7.0
DE Germany (including ex-GDR from 1991)	83.2	68.6	53.8	39.2	29.9	21.2	13.2	7.0
NL Netherlands	83.1	68.5	53.6	39.1	29.8	21.2	13.3	7.1
CY Cyprus	83.1	68.4	53.6	38.9	29.5	20.3	11.9	5.8
UK United Kingdom	83.0	68.4	53.6	39.1	29.8	21.1	13.3	7.3
MT Malta	83.0	68.8	54.0	39.4	29.9	21.0	12.8	6.9
IE Ireland	**82.8**	**68.1**	**53.4**	**38.8**	**29.5**	**20.6**	**12.7**	**6.5**
DK Denmark	81.9	67.3	52.5	37.8	28.6	20.1	12.5	6.8
EE Estonia	81.3	66.7	52.0	37.7	28.6	20.1	12.4	6.8
CZ Czech Republic	81.1	66.4	51.6	37.1	27.8	19.2	11.7	6.2
PL Poland	81.1	66.5	51.8	37.3	28.2	19.9	12.4	6.9
HR Croatia	80.4	65.8	51.0	36.4	27.2	18.6	10.9	5.7
SK Slovak Republic	79.8	65.3	50.6	36.0	27.0	18.4	10.9	5.8
LT Lithuania	79.3	64.8	50.1	36.1	27.3	19.2	11.7	6.3
LV Latvia	78.8	64.4	49.7	35.5	26.7	18.7	11.5	6.3
HU Hungary	78.7	64.3	49.5	35.0	26.3	18.3	11.2	6.2
RO Romania	78.2	64.1	49.4	35.0	26.1	17.8	10.6	5.7
BG Bulgaria	77.8	63.6	48.9	34.7	25.7	17.3	10.0	5.1

Table 5 Period life expectancy by sex, age, country and year

Years

	Age = 0					Age 65				
	1980	1990	2002	2006	2011	1980	1990	2002	2006	2011
Males										
EU15 European Union (15 countries)	70.5	72.8	75.8	..	..	13.4	14.6	16.3	..	..
EU28 European Union (28 countries)	..	..	..	..	77.3	..	..	..	..	17.8
SE Sweden	72.8	74.8	77.7	78.8	79.9	14.3	15.3	16.9	17.7	18.5
IT Italy[2]	70.6	73.9	77.4	78.1	79.7	13.3	15.1	17.0	17.5	18.5
ES Spain	72.3	73.4	76.3	77.7	79.5	14.6	15.5	16.9	17.9	18.8
NL Netherlands	72.7	73.8	76.0	77.7	79.4	14.0	14.4	15.6	16.8	18.1
CY Cyprus	72.3	74.1	76.4	78.8	79.3	14.5	15.8	16.3	17.7	18.2
UK United Kingdom	70.2	72.9	76.0	77.2	79.0	12.6	14.0	16.2	17.2	18.5
FR France	70.2	72.8	75.7	77.3	78.7	14.0	15.5	17.0	18.2	19.3
MT Malta	68.0	73.7	76.3	77.0	78.6	10.7	15.4	15.3	16.1	17.7
LU Luxembourg (Grand-Duché)	69.1	72.4	74.6	76.8	78.5	12.3	14.3	15.9	17.0	17.8
DE Germany[1]	69.6	72.0	75.7	77.2	78.4	12.8	14.0	16.2	17.2	18.2
IE Ireland	**70.1**	**72.3**	**75.1**	**76.8**	**78.4**	**12.6**	**13.4**	**15.4**	**16.6**	**17.7**
AT Austria	69.0	72.3	75.8	77.2	78.3	12.9	14.4	16.3	17.3	18.1
BE Belgium	69.9	72.7	75.1	76.6	78.0	12.9	14.3	15.8	17.0	18.0
GR Greece	73.0	74.7	76.2	77.2	78.0	15.2	15.7	16.6	17.5	18.2
DK Denmark	71.2	72.0	74.8	76.1	77.8	13.6	14.0	15.4	16.2	17.3
PT Portugal	67.9	70.6	73.8	75.5	77.3	13.1	14.0	15.7	16.6	17.8
FI Finland	69.2	71.0	74.9	75.9	77.3	12.5	13.8	15.8	16.9	17.7
SL Slovenia	67.4	69.8	72.6	74.5	76.8	12.6	13.3	14.5	15.8	16.9
CZ Czech Republic	66.9	67.6	72.1	73.5	74.8	11.2	11.7	13.9	14.8	15.6
HR Croatia	..	..	..	..	73.8	..	..	..	..	15.1
PL Poland	66.9	66.3	70.3	70.9	72.5	12.4	12.4	13.9	14.5	15.4
SK Slovak Republic	66.7	66.7	69.8	70.4	72.3	12.0	12.3	13.2	13.3	14.5
EE Estonia	64.1	64.7	65.3	67.4	71.4	11.4	12.0	12.8	13.2	14.8
HU Hungary	65.5	65.2	68.3	69.2	71.2	11.6	12.1	13.2	13.6	14.3
RO Romania	66.6	66.7	67.3	69.2	70.8	12.5	13.2	12.9	13.6	14.5
BG Bulgaria	68.4	68.0	68.8	69.2	70.7	12.6	12.7	13.0	13.2	14.0
LV Latvia	63.6	64.3	64.7	65.4	68.6	..	12.1	12.5	12.7	13.4
LT Lithuania	65.4	66.5	66.2	65.3	68.1	13.4	13.3	13.3	13.0	14.0
Females										
EU15 European Union (15 countries)	77.2	79.4	81.6	..	..	17.1	18.4	19.9	..	..
EU28 European Union (28 countries)	..	..	..	..	83.1	..	..	..	..	21.3
FR France	78.4	80.9	83.0	84.4	85.7	18.2	19.8	21.3	22.6	23.8
ES Spain	78.4	80.6	83.2	84.4	85.6	17.8	19.3	21.0	22.0	23.0
IT Italy[2]	77.4	80.4	83.2	83.7	84.8	17.1	18.9	21.0	21.3	22.2
AT Austria	76.1	79.0	81.7	82.8	83.8	16.3	18.1	19.8	20.7	21.7
PT Portugal	74.9	77.5	80.6	82.3	83.8	16.1	17.1	19.2	20.2	21.6
FI Finland	77.6	79.0	81.6	83.1	83.8	16.5	17.8	19.8	21.2	21.7
SE Sweden	79.0	80.5	82.1	83.1	83.8	18.1	19.1	20.1	20.9	21.3
GR Greece	77.5	79.5	81.1	81.9	83.6	17.0	18.0	18.7	19.4	21.2
LU Luxembourg (Grand-Duché)	75.9	78.7	81.5	81.9	83.6	16.0	18.5	20.0	20.3	21.6
BE Belgium	76.7	79.5	81.2	82.3	83.3	16.8	18.8	19.7	20.6	21.6
SL Slovenia	75.2	77.8	80.5	82.0	83.3	15.9	17.1	19.0	20.0	21.1
DE Germany[1]	76.2	78.5	81.3	82.4	83.2	16.3	17.7	19.6	20.5	21.2
NL Netherlands	79.3	80.2	80.7	82.0	83.1	18.5	19.1	19.3	20.3	21.2
CY Cyprus	77.0	78.6	81.0	82.4	83.1	16.5	17.5	19.0	19.7	20.3
UK United Kingdom	76.2	78.5	80.6	81.5	83.0	16.6	17.9	19.2	19.9	21.1
MT Malta	72.8	78.1	81.3	81.9	83.0	12.8	18.0	19.1	19.5	21.0
IE Ireland	**75.6**	**77.9**	**80.3**	**81.6**	**82.8**	**15.7**	**17.1**	**18.7**	**19.8**	**20.6**
DK Denmark	77.3	77.8	79.4	80.7	81.9	17.6	17.9	18.2	19.2	20.1
EE Estonia	74.1	75.0	77.0	78.6	81.3	15.6	15.8	17.3	18.3	20.1
CZ Czech Republic	74.0	75.5	78.7	79.9	81.1	14.4	15.3	17.3	18.3	19.2
PL Poland	75.4	75.3	78.8	79.7	81.1	16.4	16.2	18.0	18.8	19.9
HR Croatia	..	..	..	..	80.4	..	..	..	..	18.6
SK Slovak Republic	74.4	75.7	77.7	78.4	79.8	15.2	16.0	16.9	17.3	18.4
LT Lithuania	75.4	76.3	77.5	77.0	79.3	16.6	17.0	17.8	17.6	19.2
LV Latvia	74.2	74.6	76.0	76.3	78.8	..	15.8	17.0	17.3	18.7
HU Hungary	72.8	73.8	76.7	77.8	78.7	14.7	15.4	17.0	17.7	18.3
RO Romania	71.9	73.1	74.7	76.2	78.2	14.2	15.2	15.7	16.5	17.8
BG Bulgaria	73.9	74.7	75.5	76.3	77.8	14.6	15.2	15.7	16.3	17.3

[1]DEW Federal Republic of Germany (excluding ex-GDR) for 1980.

[2]Figures for 2006 relate to 2005.

..Data not available.

Background Notes

Life Tables presented here are period life expectancies. Period expectation of life at a given age for 2010-12 is the average number of years a person would live if he or she experienced age-specific mortality rates for that time period throughout his or her life. It is therefore not the number of years someone of that age could actually expect to live because death rates are likely to change in the future.

The basic assumption is that a given cohort of births, (100,000), start in a given year. The mortality rates for each age are used to calculate how many of the cohort will reach each year of age until eventually all members of the cohort have died. This enables the total number of years lived by the cohort to be calculated. When this total is divided by the number of persons in the cohort, (100,000), the result is the average number of years lived in the cohort, or the mean expectation of life at birth. The total number of years lived by the cohort from any given age can also be calculated and, when divided by the number of survivors in the cohort entering upon that year of age, the figure obtained is the expectation of life in years for those persons.

Life Tables were constructed for males and females which are representative of the mortality experience in Ireland in 2011 by using the 2010, 2011 and 2012 estimates and census of population (usually resident) and deaths registered in the three years. The life table should reflect the normal mortality conditions at about the time of the Census.

Glossary of technical terms

x the exact age of the person, that is, on his or her birthday.
l_x the number of persons surviving to exact age x out of the original 100,000 aged 0.
d_x the number of deaths in the year of age x to x+1 out of l_x persons who enter that year.
p_x the probability of surviving a year, or the ratio of the number completing the year of age x to x+1 to the number entering on the year.
q_x the rate of mortality, the probability of dying in a year, or the ratio of the number of deaths in the year of age x to x+1 to the number entering on the year.
L_x the population to be expected according to the Life Table aged between x and x+1 years, assuming deaths occur evenly over the year.
T_x the expected number of person years to be lived by the survivors at age x.
e^0_x life expectancy at age x for each person surviving, or the total future life time in years which will on average be passed through by persons aged exactly x.

Examples

Figures from the Male Irish Life Table No. 16 are used in the examples below. Please note that totals may not add up due to rounding.

The first column of the life table, l_x equals the number of persons surviving in the life table at each exact age x, in other words the January population. l_0 represents the life table population of new born children or those aged exactly zero. If we let l_0 equal 100,000 then for example, l_5 is the number of persons surviving on their fifth birthday, which in this case equals 99,560.

The second column of the life table, d_x equals the expected number of deaths of persons aged age x in the life table.

equation 1

$$d_x = l_x - l_{x+1}$$

Equation 1 tells us that the number of deaths equals the number of persons surviving at age x less the number of persons surviving at age x+1.

e.g. for males aged 5

$$d_5 = l_5 - l_6$$

$$= 99{,}560 - 99{,}550$$

$$= 10$$

The third column of the life table, p_x equals the probability of surviving from exact age x to x+1. This is simply the ratio of those completing the year of age x to x+1 to the number entering the year. For example, p_5 is the probability of surviving ones fifth year, which in this case equals 0.99990.

equation 2

$$p_x = l_{(x+1)} / l_x$$

Rewriting equation 2 where age x = 10, we see the number of persons surviving to their eleventh birthday equals the number of persons at their tenth birthday multiplied by the probability of their surviving to their eleventh, the remainder having of course died. Migration is ignored in a life table as the population if closed.

$$l_{11} = l_{10}.p_{10}$$

$= 99,509 \times 0.99992$

$= 99,502$

The fourth column of the life table, q_x equals the probability of dying between one birthday and the next. This may also be called the risk of dying in a life table year, in other words the risk of dying at a particular age. The probability of dying and the probability of survival equal unity. In other words one can only be alive or dead.

equation 3

$p_x + q_x = 1$

From equations 1, 2 and 3:

equation 4

$q_x = d_x / l_x$

So the probability of dying is the ratio of the number of deaths at exact age x divided by the number of persons surviving at that exact age. Hence we say the life table is based on 'current mortality rates only and that no assumptions are made about future changes'.

The fifth column of the life table, L_x equals the number of years survived by the life table cohort between the ages x and x+1, in other words the July population. Assuming a uniform distribution of deaths over a year of age and using equation 1 we find:

equation 5

$L_x = l_x - (d_x / 2)$

$= l_x - ((l_x - l_{x+1}) / 2)$

$= (l_x + l_{x+1}) / 2 \qquad (x>0)$

e.g. for age 1 this means

$L_1 = l_1 - (d_1 / 2) = 99,621 - 35/2 = 99,604$

or

$L_1 = (l_1 + 1_2) / 2 = (99,621 + 99,586)/2 = 99,604$

This cannot be used at age 0 as infant deaths are not evenly distributed (i.e. they are non-linear over a year). For example, in 2011 34% of all infant deaths occurred on their first day of life.

The sixth column of the life table, T_x equals the total number of years which will be survived at age x, l_x. So if L_x is person years, then T_x is cumulated person years , i.e.

equation 6

$T_x = \sum_{x}^{105} L_x$

e.g. $T_{102} = L_{102} + L_{103} + L_{104} + L_{105}$

The final column of the life table, e^0_x is the life expectancy in years

equation 7

$e^0_x = T_x / l_x$

e^0_0 represents life expectancy at birth and it is broadly used to express the level of mortality. Life expectancy is the average number of additional years a person would live if current mortality trends were to continue. The expectation of life at birth represents the mean length of life of individuals who are subjected since birth to current mortality trends. Life expectancy is usually compiled on the basis of a life table showing the probability of dying at each age for a given population according to the age specific death rates prevailing in a given period.

Further information

From equation 3 we see the link between the probability of surviving with that of dying, therefore we can make assumptions on the probability of surviving

from the probability of dying. This is what is referred to in population projections as the mortality assumption.

$S_x = L_x / L_{x-1}$

The survivorship ratio at age x, S_x, equals the ratio of those surviving between ages x and x+1 and those surviving between the ages of x-1 and x, e.g. the ratio of those aged 5 – 9 surviving to age 10 -14 is calculated as follows:

$S_{10-14} = {}_{10}\Sigma^{14} L_x / {}_{5}\Sigma^{9} L_x$

Similarly, the probability of a man aged 20 dying before his 50th birthday is calculated as follows:

$q_x = 1 - p_x$

$= 1 - (l_{x+1}) / (l_x)$

$= (l_x - l_{x+1}) / l_x$

therefore

$q_{20-50} = (l_{20} - l_{50}) / l_{20}$

$= (99{,}237 - 95{,}409) / 99{,}237$

$= 0.039 = 3.9\%$