

# GBD PROFILE: FINLAND

## GLOBAL BURDEN OF DISEASES, INJURIES, AND RISK FACTORS STUDY 2010

The Global Burden of Disease Study 2010 (GBD 2010) is a collaborative project of nearly 500 researchers in 50 countries led by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. It is the largest systematic scientific effort in history to quantify levels and trends of health loss due to diseases, injuries, and risk factors. GBD serves as a global public good to inform evidence-based policymaking and health systems design.

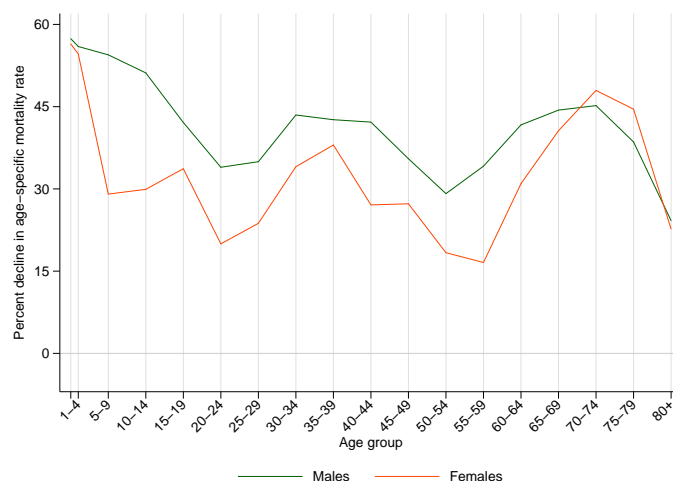
### PROFILE OVERVIEW

- In terms of the number of years of life lost (YLLs) due to premature death in Finland, ischemic heart disease, cerebrovascular disease, and Alzheimer's disease and other dementias were the highest ranking causes in 2010.
- Of the 25 most important causes of burden, as measured by disability-adjusted life years (DALYs), lower respiratory infections showed the largest decrease, falling by 63% from 1990 to 2010.
- The leading risk factor in Finland is dietary risks.

### ALL-CAUSE MORTALITY RATE

- This chart shows the decline in mortality rate at every age range. The higher points on the chart indicate that declines in mortality rates were faster in those age groups between 1990 and 2010.
- The greatest reductions in all-cause mortality rate were experienced by males aged <1 year (57%). Females aged 55-59 years saw the smallest decrease in mortality rate (17%).

Percent decline in age-specific mortality rate by sex from 1990-2010 in Finland



### CAUSES OF PREMATURE DEATH

Years of life lost (YLLs) quantify premature mortality by weighting younger deaths more than older deaths.

Ranks for top 25 causes of YLLs 1990-2010, Finland

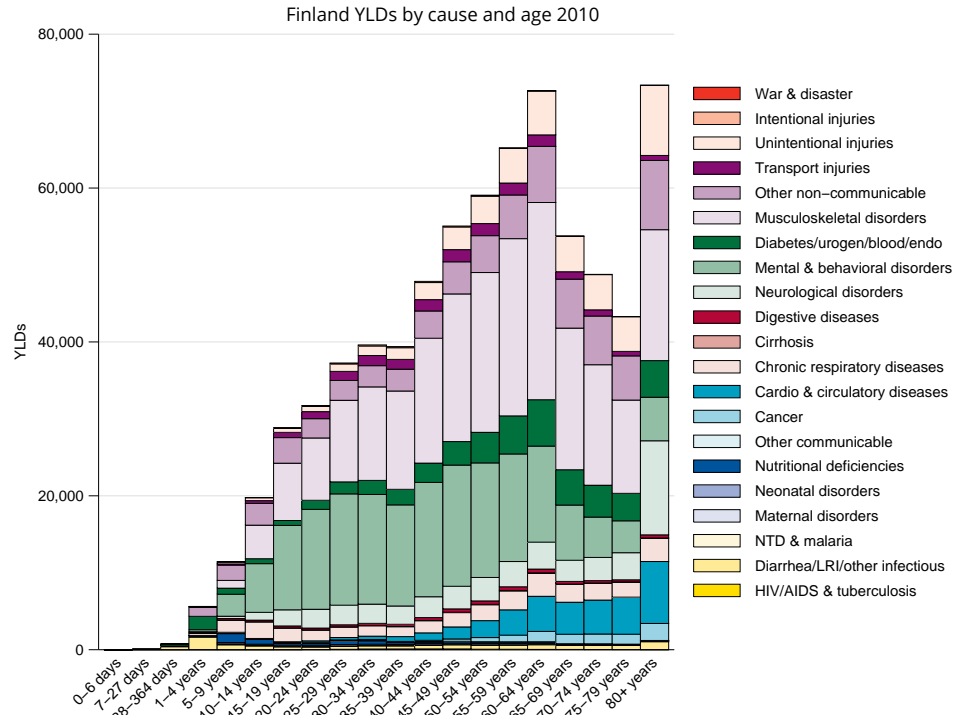
# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
234 (25.5%)	1 Ischemic heart disease	1 Ischemic heart disease	152 (19.8%)	-36
86 (9.3%)	2 Stroke	2 Stroke	55 (7.2%)	-37
69 (7.5%)	3 Self-harm	3 Alzheimers disease	43 (5.6%)	102
40 (4.4%)	4 Lung cancer	4 Self-harm	43 (5.6%)	-43
29 (3.2%)	5 Lower respiratory infections	5 Lung cancer	37 (4.8%)	-8
28 (3.1%)	6 Road injury	6 Cirrhosis	27 (3.5%)	66
22 (2.4%)	7 Alzheimers disease	7 Colorectal cancer	19 (2.5%)	16
19 (2.0%)	8 Cirrhosis	8 Falls	17 (2.2%)	9
18 (2.0%)	9 Breast cancer	9 Breast cancer	17 (2.2%)	-6
17 (1.9%)	10 COPD	10 Pancreatic cancer	17 (2.2%)	29
17 (1.8%)	11 Colorectal cancer	11 Alcohol use disorders	17 (2.3%)	443
17 (1.8%)	12 Congenital anomalies	12 COPD	15 (2.0%)	-12
16 (1.8%)	13 Falls	13 Road injury	15 (1.9%)	-50
16 (1.7%)	14 Stomach cancer	14 Cardiomyopathy	12 (1.6%)	12
13 (1.4%)	15 Pancreatic cancer	15 Lower respiratory infections	13 (1.7%)	-67
12 (1.3%)	16 Other cardio & circulatory	16 Other cardio & circulatory	12 (1.6%)	0
11 (1.2%)	17 Cardiomyopathy	17 Prostate cancer	11 (1.5%)	23
11 (1.2%)	18 Diabetes	18 Brain cancer	10 (1.3%)	11
11 (1.2%)	19 Poisonings	19 Stomach cancer	10 (1.3%)	-40
10 (1.0%)	20 Brain cancer	20 Drug use disorders	10 (1.3%)	1,220
9 (1.0%)	21 Non-Hodgkin lymphoma	21 Non-Hodgkin lymphoma	9 (1.1%)	-8
9 (1.0%)	22 Prostate cancer	22 Aortic aneurysm	8 (1.1%)	-4
9 (1.0%)	23 Aortic aneurysm	23 Kidney cancers	8 (1.1%)	15
8 (0.9%)	24 Interpersonal violence	24 Diabetes	8 (1.0%)	-29
8 (0.9%)	25 Leukemia	25 Leukemia	7 (1.0%)	-9
	29 Kidney cancers	27 Congenital anomalies		
	33 Alcohol use disorders	31 Interpersonal violence		
	64 Drug use disorders	45 Poisonings		

This chart shows the change in the top 25 causes of YLLs due to premature mortality from 1990 to 2010. Solid lines indicate a cause has moved up in rank or stayed the same. Broken lines indicate a cause has moved down in rank. The causes are color coded by blue for non-communicable diseases, green for injuries, and red for communicable, maternal, neonatal, and nutritional causes of death.

## YEARS LIVED WITH DISABILITY (YLDs)

Years lived with disability (YLDs) are estimated by weighting the prevalence of different conditions based on severity. The top five leading causes of YLDs in Finland are low back pain, major depressive disorder, neck pain, falls, and other musculoskeletal disorders.

The size of the colored portion in each bar represents the number of YLDs attributable to each cause. The height of each bar shows which age groups had the most YLDs in 2010. The causes are aggregated. For example, musculoskeletal disorders include low back pain and neck pain.

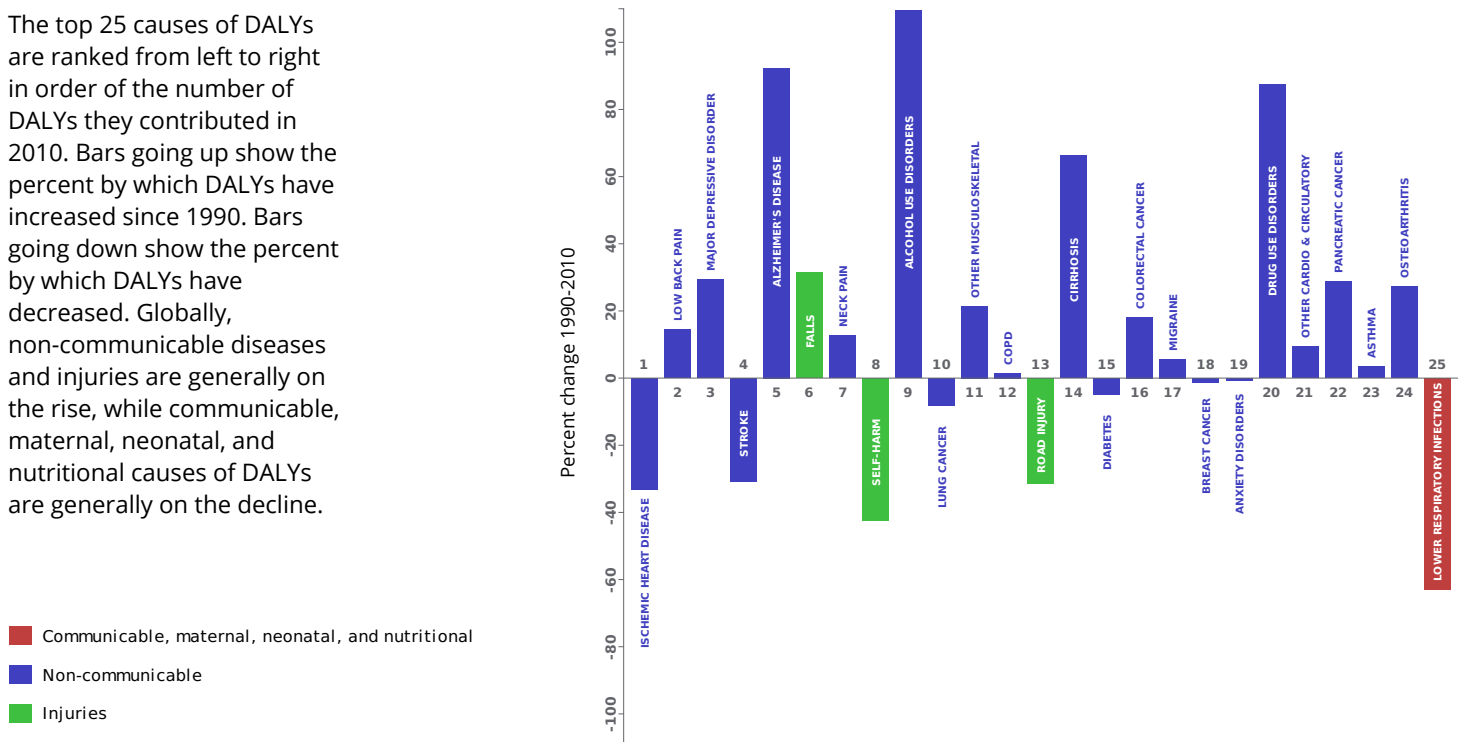


## DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Finland, the top three causes of DALYs in 2010 were ischemic heart disease, low back pain, and major depressive disorder. The only cause to appear in the 10 leading causes of DALYs in 2010 and not 1990 was alcohol use disorders.

The top 25 causes of DALYs are ranked from left to right in order of the number of DALYs they contributed in 2010. Bars going up show the percent by which DALYs have increased since 1990. Bars going down show the percent by which DALYs have decreased. Globally, non-communicable diseases and injuries are generally on the rise, while communicable, maternal, neonatal, and nutritional causes of DALYs are generally on the decline.

Leading causes of DALYs and percent change 1990 to 2010 for Finland

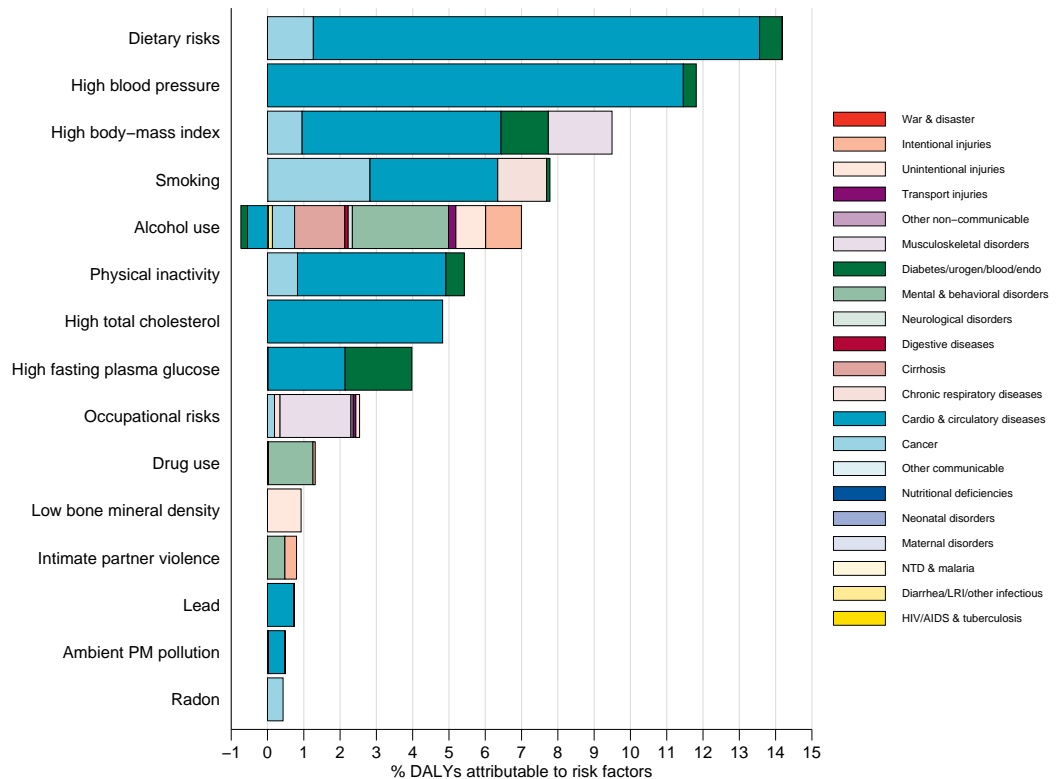


## RISK FACTORS

Overall, the three risk factors that account for the most disease burden in Finland are dietary risks, high blood pressure, and high body-mass index. The leading risk factors for children under 5 and adults aged 15-49 years were childhood underweight and alcohol use, respectively, in 2010.

The graph shows the top 15 risk factors for Finland. The colored portion of each bar represents the specific diseases attributable to that risk factor while bar size represents the percentage of DALYs linked to specific risk factors.

Burden of disease attributable to 15 leading risk factors in 2010, expressed as a percentage of Finland DALYs



## COUNTRY BENCHMARKING OF BURDEN OF DISEASE

Understanding the relative performance of Finland against other comparator countries provides key insight into public health successes and areas where Finland might be falling behind. The table identifies Finland's rank across 14 other comparator countries, selected and ordered by income per capita, for five metrics of interest, with 1 indicating the best rank and 15 indicating the worst rank.

- Age-standardized rates are used to make meaningful comparisons across time by adjusting for changes in population size and age structure.
- Life expectancy incorporates mortality, and health-adjusted life expectancy further incorporates years lived in less than ideal health.
- In 2010, Finland ranked 9th for age-standardized YLD rate and 13th for health-adjusted life expectancy.

Age-standardized death rates, YLL rates, YLD rates, and life expectancy at birth and health-adjusted life expectancy at birth for 1990 and 2010, both sexes combined																				
Country	Age-standardized death rate (per 100,000)				Age-standardized YLL rate (per 100,000)				Age-standardized YLD rate (per 100,000)				Life expectancy at birth				Health-adjusted life expectancy at birth			
	1990		2010		1990		2010		1990		2010		1990		2010		1990		2010	
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	LE	Rank	LE	Rank	HALE	Rank	HALE	Rank
Canada	558	5	422	7	12,079	3	8,546	7	10,806	4	10,845	4	77.2	3	80.6	6	67	3	69.6	5
Austria	622	8	418	6	13,732	9	8,401	5	11,052	6	11,381	11	75.7	8	80.6	7	65.8	7	69.1	8
Sweden	539	2	403	4	11,196	2	7,296	2	11,378	12	11,250	10	77.6	2	81.4	3	66.8	4	69.6	4
Denmark	656	12	504	13	14,383	11	9,592	12	11,209	10	11,456	13	75.2	11	78.9	12	65.3	11	67.9	12
Belgium	615	7	460	11	13,458	8	9,381	11	11,119	8	10,933	6	75.9	7	79.5	11	65.7	8	68.5	11
United Kingdom	638	9	455	10	13,452	7	8,949	9	11,453	13	11,435	12	75.7	9	79.9	10	65.4	9	68.6	10
Germany	644	10	433	8	14,032	10	8,512	6	11,165	9	11,015	7	75.4	10	80.2	8	65.3	10	69	9
<b>Finland</b>	<b>655</b>	<b>11</b>	<b>437</b>	<b>9</b>	<b>14,467</b>	<b>12</b>	<b>9,050</b>	<b>10</b>	<b>11,092</b>	<b>7</b>	<b>11,248</b>	<b>9</b>	<b>75.1</b>	<b>12</b>	<b>80.1</b>	<b>9</b>	<b>63.8</b>	<b>13</b>	<b>67.3</b>	<b>13</b>
Japan	469	1	352	1	9,658	1	6,827	1	9,406	1	9,094	1	79.1	1	82.6	1	70.1	1	73.1	1
France	549	3	408	5	12,717	6	8,666	8	11,358	11	11,194	8	77.1	4	80.9	5	66.5	6	69.5	7
Taiwan	723	13	481	12	16,396	13	10,440	13	10,592	3	9,639	2	73.7	13	78.8	13	64.8	12	69.5	6
Italy	561	6	389	2	12,202	4	7,485	3	11,038	5	10,907	5	77	5	81.5	2	66.7	5	70.2	3
The Bahamas	949	15	541	15	29,297	15	18,258	15	13,220	14	12,791	14	67.4	15	76	15	57.4	15	63.2	15
Spain	557	4	393	3	12,630	5	7,694	4	10,136	2	10,068	3	76.9	6	81.4	4	67.5	2	70.9	2
Bahrain	811	14	512	14	20,581	14	11,478	14	13,517	15	13,353	15	71.4	14	77.6	14	60.1	14	64.8	14

## COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of Finland relative to the same comparator countries for the leading causes of DALYs in 1990 (top) and 2010 (bottom).

- The columns are ordered by the absolute number of DALYs in Finland for that particular year, with greatest burden on the left.
- The numbers indicate the rank across countries for each cause in terms of age-standardized DALY rates, with 1 as the best performance and 15 as the worst.

Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 1990																									
Country	Ischemic heart disease	Low back pain	Stroke	Self-harm	Major depressive disorder	Falls	Road injury	Lung cancer	Neck pain	Alzheimer's disease	Lower respiratory infections	Other musculoskeletal	COPD	Diabetes	Breast cancer	Alcohol use disorders	Cirrhosis	Migraine	Congenital anomalies	Anxiety disorders	Colorectal cancer	Other cardio & circulatory	Stomach cancer	Asthma	Pancreatic cancer
Canada	7	8	1	7	4	1	5	12	8	13	5	15	10	7	10	7	3	7	6	7	10	1	1	11	10
Austria	10	10	11	12	6	14	10	8	12	4	2	11	9	8	11	9	14	8	11	9	11	7	11	3	11
Sweden	9	13	3	10	13	7	3	1	4	9	9	8	2	5	4	12	1	12	9	10	5	3	2	12	12
Denmark	12	14	6	13	5	13	6	14	5	10	4	12	15	9	14	15	8	6	13	8	15	2	3	7	13
Belgium	6	7	5	9	8	11	12	15	11	14	8	6	11	6	13	8	6	10	5	3	12	12	5	5	7
United Kingdom	13	12	7	4	3	8	2	13	7	8	12	4	13	2	15	6	2	13	4	12	13	4	7	14	8
Germany	11	15	4	8	10	12	7	10	9	6	6	9	8	10	12	11	12	5	7	11	14	11	10	9	9
<b>Finland</b>	<b>14</b>	<b>9</b>	<b>12</b>	<b>15</b>	<b>11</b>	<b>15</b>	<b>4</b>	<b>6</b>	<b>15</b>	<b>15</b>	<b>10</b>	<b>5</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>10</b>	<b>7</b>	<b>11</b>	<b>10</b>	<b>5</b>	<b>2</b>	<b>5</b>	<b>8</b>	<b>6</b>	<b>14</b>
Japan	1	4	10	6	1	3	1	2	6	2	11	14	1	3	2	3	5	1	3	1	7	9	15	8	6
France	3	11	2	14	12	10	9	9	10	12	3	10	4	1	7	13	9	4	2	14	9	13	4	10	4
Taiwan	2	3	15	11	2	5	14	4	2	1	14	2	14	13	1	5	15	2	1	6	3	8	12	2	1
Italy	5	6	9	2	9	9	8	11	14	7	1	7	5	11	9	1	10	15	8	4	8	6	13	4	5
The Bahamas	8	1	14	1	14	2	11	3	3	5	15	3	6	14	8	14	13	9	14	15	4	15	14	15	15
Spain	4	2	8	3	7	6	13	7	13	11	7	13	7	12	6	4	11	14	12	2	6	10	9	1	2
Bahrain	15	5	13	5	15	4	15	5	1	3	13	1	12	15	3	2	4	3	15	13	1	14	6	13	3
Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																									
Country	Ischemic heart disease	Low back pain	Major depressive disorder	Stroke	Alzheimer's disease	Falls	Neck pain	Self-harm	Alcohol use disorders	Lung cancer	Other musculoskeletal	COPD	Road injury	Cirrhosis	Diabetes	Colorectal cancer	Migraine	Breast cancer	Anxiety disorders	Drug use disorders	Other cardio & circulatory	Pancreatic cancer	Asthma	Osteoarthritis	Lower respiratory infections
Canada	9	7	5	2	14	1	13	8	6	13	15	9	4	3	10	7	7	10	4	13	2	6	12	11	7
Austria	12	11	11	5	5	14	11	10	11	8	6	11	9	13	9	4	8	8	7	12	10	13	3	5	2
Sweden	7	13	7	3	11	7	4	9	12	3	5	7	2	2	5	5	12	5	11	4	3	10	13	10	3
Denmark	8	14	12	11	10	11	5	7	14	15	12	15	7	10	12	15	6	13	8	9	5	14	9	4	9
Belgium	10	8	4	9	13	13	12	13	7	14	9	12	12	7	6	14	10	15	5	8	14	9	4	7	10
United Kingdom	11	12	3	8	8	9	7	4	8	11	11	14	3	9	1	11	13	14	13	15	7	5	15	9	11
Germany	13	15	10	4	6	10	9	6	10	10	8	8	5	12	7	10	5	9	12	5	13	12	7	6	8
<b>Finland</b>	<b>15</b>	<b>9</b>	<b>14</b>	<b>10</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>5</b>	<b>7</b>	<b>3</b>	<b>6</b>	<b>14</b>	<b>3</b>	<b>3</b>	<b>11</b>	<b>7</b>	<b>3</b>	<b>7</b>	<b>6</b>	<b>15</b>	<b>8</b>	<b>3</b>	<b>5</b>	
Japan	1	4	1	14	3	2	6	14	3	4	14	1	1	4	2	6	1	1	1	2	1	11	5	13	14
France	3	10	8	1	9	12	8	12	13	12	10	4	10	11	4	8	4	12	15	3	12	7	11	1	6
Taiwan	2	3	2	15	1	4	2	11	5	7	2	10	13	15	13	13	2	2	9	1	4	1	1	12	12
Italy	5	6	9	7	7	8	14	2	1	6	4	5	11	6	8	9	15	11	6	10	8	8	6	2	1
The Bahamas	6	1	13	13	4	5	3	1	9	1	3	2	15	5	14	2	9	4	10	14	15	2	14	14	15
Spain	4	2	6	6	12	6	10	3	4	9	13	6	8	8	11	12	14	6	2	11	9	3	2	8	4
Bahrain	14	5	15	12	2	3	1	5	2	2	1	13	14	1	15	1	3	3	14	6	11	4	10	15	13
Ranking Legend	1 - 3		4 - 7				8 - 11				12 - 15														