

# THE LANCET

## Global Health

### Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

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**APPENDIX 1. List of countries included in the analysis, by region.**

<b>Region (number of countries included in analysis)</b>	<b>Countries</b>
Central Asia, Middle East and North Africa (23)	Algeria, Armenia, Egypt, Georgia, Iran (Islamic Republic of), Iraq, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, Libya, Mongolia, Morocco, Oman, Qatar, Saudi Arabia, State of Palestine, Tajikistan, Tunisia, Turkey, United Arab Emirates, Uzbekistan
Central and Eastern Europe (17)	Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Ukraine
East and South East Asia (13)	Brunei Darussalam, Cambodia, China, Indonesia, Lao People's Democratic Republic, Malaysia, Maldives, Myanmar, Philippines, Sri Lanka, Thailand, Timor-Leste, Viet Nam
High-income Asia Pacific (3)	Japan, Republic of Korea, Singapore
High-income Western countries (24)	Andorra, Australia, Austria, Belgium, Canada, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States of America
Latin America and Caribbean (25)	Argentina, Bahamas, Barbados, Bermuda, Brazil, British Virgin Islands, Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, Grenada, Guatemala, Jamaica, Mexico, Paraguay, Saint Kitts and Nevis, Saint Lucia, Suriname, Trinidad and Tobago, Uruguay, Venezuela (Bolivarian Republic of)
Oceania (17)	American Samoa, Cook Islands, Fiji, French Polynesia, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu
South Asia (5)	Bangladesh, Bhutan, India, Nepal, Pakistan
Sub-Saharan Africa (41)	Benin, Botswana, Burkina Faso, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, São Tomé and Príncipe, Senegal, Seychelles, Sierra Leone, South Africa, Swaziland, Togo, Uganda, United Republic of Tanzania, Zambia, Zimbabwe

**APPENDIX 2: Data sources used in the analysis.**

Country	Year	Sample size	Questionnaire	Survey/Study	Age range	Rural, urban, or both	Coverage (where non national)
Algeria	2003	3916	GPAQ	STEPS	25-64	both	Sérif and Mostaganem
American Samoa	2004	2015	GPAQ	STEPS	25-64	both	
Andorra	2004	900	IPAQ	National Nutrition Survey	15-75	both	
Argentina	2005	41392	IPAQ	ENFR	18-99	both	
Argentina	2010	34517	IPAQ	ENFR	18-99	both	
Argentina	2013	32365	IPAQ	ENFR	18-98	both	
Armenia	2016	2279	GPAQ	STEPS	18-69	both	
Australia	2003	3022	IPAQ	International Prevalence Study	18-74	both	
Austria	2002	761	IPAQ	Eurobarometer 58.2	18-99	both	
Austria	2005	859	IPAQ	Eurobarometer 64.3	18-99	both	
Austria	2013	786	IPAQ	Eurobarometer 80.2	18-99	both	
Bahamas	2011	1626	GPAQ	STEPS	25-64	both	
Bangladesh	2003	5402	IPAQ	World Health Survey	18-99	both	
Bangladesh	2009	9275	GPAQ	STEPS	25-99	both	
Barbados	2007	1187	GPAQ	STEPS	25-99	both	
Barbados	2012	1234	RPAQ	Health Of the Nation Survey	25-99	both	
Belarus	2016	4985	GPAQ	STEPS	18-69	both	
Belgium	2001	8259	IPAQ	Health Interview Survey	15-99	both	
Belgium	2002	818	IPAQ	Eurobarometer 58.2	18-99	both	
Belgium	2004	5174	IPAQ	Health Interview Survey	15-99	both	
Belgium	2005	754	IPAQ	Eurobarometer 64.3	18-99	both	
Belgium	2008	5312	IPAQ	Health Interview Survey	15-99	both	
Belgium	2013	723	IPAQ	Eurobarometer 80.2	18-99	both	
Belgium	2013	4178	IPAQ	Health Interview Survey	15-99	both	
Benin	2007	2506	GPAQ	STEPS	25-64	urban	Cotonou
Benin	2008	6709	GPAQ	STEPS	25-64	both	
Benin	2015	4960	GPAQ	STEPS	18-69	both	
Bermuda	2014	1194	GPAQ	STEPS	18-99	both	
Bhutan	2007	2330	GPAQ	STEPS	25-74	urban	Thimphu
Bhutan	2014	2712	GPAQ	STEPS	18-69	both	

Country	Year	Sample size	Questionnaire	Survey/Study	Age range	Rural, urban, or both	Coverage (where non national)
Bosnia and Herzegovina	2003	1016	IPAQ	World Health Survey	18-99	both	
Botswana	2007	3218	GPAQ	STEPS	25-64	both	
Botswana	2014	3671	GPAQ	STEPS	15-69	both	
Brazil	2002	3119	IPAQ	PA trends study	20-99	urban	Pelotas
Brazil	2003	4804	IPAQ	World Health Survey	18-99	both	
Brazil	2006	2199	IPAQ	IPAQ Survey	30-99	urban	Ribeirão Preto
Brazil	2007	2969	IPAQ	PA trends study	20-99	urban	Pelotas
Brazil	2012	2868	IPAQ	PA trends study	20-99	urban	Pelotas
Brazil	2013	60214	Other	National Health Survey	18-99	both	
Brazil	2013	32641	GPAQ	PNAUM	15-99	both	
Brazil	2014	40853	Other	VIGITEL	18-99	urban	All capitals of states
Brazil	2015	54174	Other	VIGITEL	18-99	urban	All capitals of states
Brazil	2016	53210	Other	VIGITEL	18-99	urban	All capitals of states
British Virgin Islands	2009	1065	GPAQ	STEPS	25-64	both	
Brunei Darussalam	2015	3530	GPAQ	STEPS	18-69	both	
Bulgaria	2005	789	IPAQ	Eurobarometer 64.3	18-99	both	
Bulgaria	2013	859	IPAQ	Eurobarometer 80.2	18-99	both	
Burkina Faso	2003	4526	IPAQ	World Health Survey	18-99	both	
Burkina Faso	2013	3782	GPAQ	STEPS	25-64	both	
Cabo Verde	2007	1719	GPAQ	STEPS	25-64	both	
Cambodia	2010	5430	GPAQ	STEPS	25-64	both	
Cameroon	2003	7708	GPAQ	STEPS	18-99	urban	Four urban sentinel sites: Cité des Palmiers, Garoua Urban, Biyem Assi, and Bamenda health districts
Canada	2003	2635	IPAQ	International Prevalence Study	18-69	both	
Cayman Islands	2012	1266	GPAQ	STEPS	25-64	both	
Central African Republic	2010	3497	GPAQ	STEPS	25-64	urban	Bangui
Chad	2003	3842	IPAQ	World Health Survey	18-99	both	
Chad	2008	1622	GPAQ	STEPS	25-64	urban	N'Djamena
Chile	2007	1395	IPAQ	IPAQ study Temuco	35-74	urban	Temuco

Country	Year	Sample size	Questionnaire	Survey/Study	Age range	Rural, urban, or both	Coverage (where non national)
Chile	2009	5214	GPAQ	ENS	15-99	both	
China	2002	3928	IPAQ	World Health Survey	18-99	both	Jiangsu, Guandong (excluding Shenzen), Guangdong, Shanxi, Zheijiang, Hebei, Hubei, Sichuan, Gansu and Shaanxi
China	2007	47554	GPAQ	STEPS	18-69	both	
China	2008	14244	GPAQ	SAGE	18-99	both	Jiangsu, Guandong (excluding Shenzen), Guangdong, Shanxi, Zheijiang, Hebei, Hubei, Sichuan, Gansu and Shaanxi
China	2010	1466	IPAQ	IPAQ Survey Shanghai	20-75	urban	Shanghai
China	2013	18000	GPAQ	NCD Risk Factor Surveillance	18-99	both	
Colombia	2003	2945	IPAQ	International Prevalence Study	18-65	urban	Bogota DC
Colombia	2005	14228	IPAQ	ENSIN	18-64	both	
Colombia	2010	2421	GPAQ	STEPS	15-64	both	Department of Santander
Comoros	2003	1662	IPAQ	World Health Survey	18-99	both	Smaller islands were excluded
Comoros	2011	4643	GPAQ	STEPS	25-64	both	
Congo	2003	1372	IPAQ	World Health Survey	18-99	both	some rural areas excluded due to political situation
Cook Islands	2003	1819	GPAQ	STEPS	25-64	both	
Cook Islands	2012	1202	GPAQ	STEPS	18-64	both	
Costa Rica	2010	3648	GPAQ	Surveillance of CVD risk factors	20-99	both	
Costa Rica	2014	3648	GPAQ	Surveillance of CVD risk factors	20-99	both	
Cote d'Ivoire	2003	2513	IPAQ	World Health Survey	18-99	both	some rural areas excluded due to political situation
Cote d'Ivoire	2005	3692	GPAQ	STEPS	18-64	both	Health regions of lagunes 1 and 2 (Abidjan and surrounds)
Croatia	2003	975	IPAQ	World Health Survey	18-99	both	
Croatia	2005	486	IPAQ	Eurobarometer 64.3	18-99	both	
Croatia	2013	672	IPAQ	Eurobarometer 80.2	18-99	both	
Cuba	2010	7595	IPAQ	Third Risk Factor Survey	18-99	both	
Cyprus	2005	835	IPAQ	Eurobarometer 64.3	18-99	both	
Cyprus	2013	396	IPAQ	Eurobarometer 80.2	18-99	both	
Czech Republic	2003	926	IPAQ	World Health Survey	18-99	both	
Czech Republic	2005	398	IPAQ	Eurobarometer 64.3	18-99	both	

Country	Year	Sample size	Questionnaire	Survey/Study	Age range	Rural, urban, or both	Coverage (where non national)
Czech Republic	2011	1751	GPAQ	GPAQ study	18-90	both	
Czech Republic	2013	681	IPAQ	Eurobarometer 80.2	18-99	both	
Democratic Republic of the Congo	2005	1739	GPAQ	STEPS	18-86	both	Ville-Province de Kinshasa
Denmark	2002	804	IPAQ	Eurobarometer 58.2	18-99	both	
Denmark	2005	815	IPAQ	Eurobarometer 64.3	18-99	both	
Denmark	2013	735	IPAQ	Eurobarometer 80.2	18-99	both	
Dominica	2007	1041	GPAQ	STEPS	18-64	both	
Dominican Republic	2003	4391	IPAQ	World Health Survey	18-99	both	
Ecuador	2003	1935	IPAQ	World Health Survey	18-99	both	
Ecuador	2013	270	IPAQ	IPAQ survey Cuenca	18-99	urban	Cuenca
Egypt	2011	5038	GPAQ	STEPS	18-64	both	
Eritrea	2004	1584	GPAQ	STEPS	18-64	both	
Eritrea	2010	6114	GPAQ	STEPS	25-74	both	
Estonia	2003	985	IPAQ	World Health Survey	18-99	both	
Estonia	2005	740	IPAQ	Eurobarometer 64.3	18-99	both	
Estonia	2013	708	IPAQ	Eurobarometer 80.2	18-99	both	
Ethiopia	2003	4596	IPAQ	World Health Survey	18-99	both	
Ethiopia	2006	3879	GPAQ	STEPS	25-64	urban	Addis Ababa
Ethiopia	2015	9800	GPAQ	STEPS	15-69	both	
Fiji	2011	2325	GPAQ	STEPS	25-64	both	
Finland	2002	870	IPAQ	Eurobarometer 58.2	18-99	both	
Finland	2005	827	IPAQ	Eurobarometer 64.3	18-99	both	
Finland	2011	1869	GPAQ	COURAGE	18-99	both	
Finland	2013	669	IPAQ	Eurobarometer 80.2	18-99	both	
France	2002	835	IPAQ	Eurobarometer 58.2	18-99	both	
France	2005	732	IPAQ	Eurobarometer 64.3	18-99	both	
France	2005	4815	IPAQ	National Nutrition Barometer	18-69	both	
France	2006	3114	IPAQ	ENNS	18-74	both	
France	2008	3092	GPAQ	National Nutrition Barometer	18-75	both	
France	2013	708	IPAQ	Eurobarometer 80.2	18-99	both	

Country	Year	Sample size	Questionnaire	Survey/Study	Age range	Rural, urban, or both	Coverage (where non national)
French Polynesia	2010	3398	GPAQ	STEPS	18-64	both	
Gabon	2009	2452	GPAQ	STEPS	18-64	urban	Libreville and Owendo
Gambia	2010	3888	GPAQ	STEPS	25-64	both	
Georgia	2003	2556	IPAQ	World Health Survey	18-99	both	
Georgia	2010	6423	GPAQ	STEPS	18-64	both	
Georgia	2016	4135	GPAQ	STEPS	18-69	both	
Germany	2002	1451	IPAQ	Eurobarometer 58.2	18-99	both	
Germany	2005	1183	IPAQ	Eurobarometer 64.3	18-99	both	
Germany	2010	1953	GPAQ	DKV study	18-99	both	
Germany	2012	2957	GPAQ	DKV study	18-99	both	
Germany	2013	1196	IPAQ	Eurobarometer 80.2	18-99	both	
Germany	2014	3027	GPAQ	DKV study	18-99	both	
Germany	2016	2742	GPAQ	DKV study	18-99	both	
Ghana	2003	3658	IPAQ	World Health Survey	18-99	both	
Ghana	2009	4949	GPAQ	SAGE	18-99	both	
Greece	2001	3042	IPAQ	ATTICA Study	18-89	both	Greater metropolitan Athens area
Greece	2002	746	IPAQ	Eurobarometer 58.2	18-99	both	
Greece	2005	513	IPAQ	Eurobarometer 64.3	18-99	both	
Greece	2013	755	IPAQ	Eurobarometer 80.2	18-99	both	
Grenada	2011	1031	GPAQ	STEPS	25-64	both	
Guatemala	2003	1397	GPAQ	CAMDI	20-99	urban	Guatemala city
Guatemala	2003	4443	IPAQ	World Health Survey	18-99	both	
Guinea	2009	2151	GPAQ	STEPS	18-64	both	Conakry and lower Guinea
Hungary	2003	1384	IPAQ	World Health Survey	18-99	both	
Hungary	2005	892	IPAQ	Eurobarometer 64.3	18-99	both	
Hungary	2013	801	IPAQ	Eurobarometer 80.2	18-99	both	
India	2003	8330	IPAQ	World Health Survey	18-99	both	6 states: Assam, Karnataka, Maharashtra, Rajasthan, Utta Pradesh and West Bengal
India	2007	38060	GPAQ	STEPS	15-64	both	7 states: Andhra Pradesh, Kerala, Madhya Pradesh, Maharashtra, Mizoram, Tamil Nadu, Uttarkhand
India	2008	11106	GPAQ	SAGE	18-99	both	6 states: Assam, Karnataka, Maharashtra, Rajasthan, Utta Pradesh and West Bengal

Country	Year	Sample size	Questionnaire	Survey/Study	Age range	Rural, urban, or both	Coverage (where non national)
India	2009	14227	GPAQ	ICMR-INDIAB	20-99	both	4 regions: Tamilnadu, Maharashtra, Jharkhand, Chandigarh
India	2014	5127	GPAQ	STEPS	18-69	both	Punjab state
Indonesia	2006	1904	GPAQ	STEPS	25-64	both	Depok, West Java
Iran (Islamic Republic of)	2007	29990	GPAQ	STEPS	15-64	both	
Iran (Islamic Republic of)	2008	29772	GPAQ	STEPS	15-64	both	
Iran (Islamic Republic of)	2009	29885	GPAQ	STEPS	15-64	both	
Iran (Islamic Republic of)	2011	24000	GPAQ	STEPS	25-64	both	
Iraq	2006	4503	GPAQ	STEPS	25-65	both	
Iraq	2015	3974	GPAQ	STEPS	18-99	both	
Ireland	2002	814	IPAQ	Eurobarometer 58.2	18-99	both	
Ireland	2005	815	IPAQ	Eurobarometer 64.3	18-99	both	
Ireland	2010	8096	IPAQ	TILDA	50-99	both	
Ireland	2013	715	IPAQ	Eurobarometer 80.2	18-99	both	
Ireland	2015	7536	IPAQ	Healthy Ireland Survey	15-99	both	
Italy	2002	809	IPAQ	Eurobarometer 58.2	18-99	both	
Italy	2005	854	IPAQ	Eurobarometer 64.3	18-99	both	
Italy	2013	818	IPAQ	Eurobarometer 80.2	18-99	both	
Jamaica	2007	2494	IPAQ	Jamaica Health and Lifestyle Survey II	15-74	both	
Japan	2003	4823	IPAQ	International Prevalence Study	18-77	both	22 universities and 6 worksites from different regions, representing nearly all areas
Jordan	2004	3127	GPAQ	STEPS	18-99	both	
Jordan	2007	3624	GPAQ	STEPS	18-99	both	
Kazakhstan	2003	4406	IPAQ	World Health Survey	18-99	both	
Kenya	2004	4127	IPAQ	World Health Survey	18-99	both	
Kenya	2015	4372	GPAQ	STEPS	18-69	both	
Kiribati	2004	1546	GPAQ	STEPS	18-64	both	



Country	Year	Sample size	Questionnaire	Survey/Study	Age range	Rural, urban, or both	Coverage (where non national)
Kuwait	2006	2280	GPAQ	STEPS	20-64	both	
Kuwait	2010	3546	GPAQ	World Health Survey-Gulf Cooperation Council	18-99	both	
Kuwait	2014	3842	GPAQ	STEPS	18-69	both	
Kyrgyzstan	2013	2620	GPAQ	STEPS	25-64	both	
Lao People's Democratic Republic	2003	4817	IPAQ	World Health Survey	18-99	both	
Lao People's Democratic Republic	2008	3533	GPAQ	STEPS	25-64	urban	Vientiane
Lao People's Democratic Republic	2013	2457	GPAQ	STEPS	18-64	both	
Latvia	2005	665	IPAQ	Eurobarometer 64.3	18-99	both	
Latvia	2013	774	IPAQ	Eurobarometer 80.2	18-99	both	
Lebanon	2008	1982	GPAQ	STEPS	25-64	both	
Lesotho	2012	1778	GPAQ	STEPS	25-64	both	
Liberia	2011	2289	GPAQ	STEPS	25-64	both	
Libya	2009	3458	GPAQ	STEPS	25-64	both	
Lithuania	2003	2355	IPAQ	International Prevalence Study	18-88	both	10 rural districts and 5 largest cities
Lithuania	2005	657	IPAQ	Eurobarometer 64.3	18-99	both	
Lithuania	2010	1038	GPAQ	National Survey	15-74	both	
Lithuania	2013	711	IPAQ	Eurobarometer 80.2	18-99	both	
Luxembourg	2002	445	IPAQ	Eurobarometer 58.2	18-99	both	
Luxembourg	2005	396	IPAQ	Eurobarometer 64.3	18-99	both	
Luxembourg	2008	1379	IPAQ	ORISCAV-LUX	18-69	both	
Luxembourg	2013	355	IPAQ	Eurobarometer 80.2	18-99	both	
Madagascar	2005	3999	GPAQ	STEPS	25-64	both	Provinces of Antananarivo and Toliara
Malawi	2003	5075	IPAQ	World Health Survey	18-99	both	
Malawi	2009	4057	GPAQ	STEPS	25-64	both	
Malaysia	2003	5835	IPAQ	World Health Survey	18-99	both	
Malaysia	2005	2572	GPAQ	STEPS	25-64	both	

Country	Year	Sample size	Questionnaire	Survey/Study	Age range	Rural, urban, or both	Coverage (where non national)
Malaysia	2006	33948	GPAQ	National Health and Morbidity Survey	18-99	both	
Malaysia	2011	19145	IPAQ	National Health and Morbidity Survey	16-99	both	
Malaysia	2015	19700	IPAQ	National Health and Morbidity Survey	18-99	both	
Maldives	2011	1555	GPAQ	STEPS	18-64	urban	Male
Mali	2003	1592	IPAQ	World Health Survey	18-99	both	
Mali	2007	1579	GPAQ	STEPS	18-64	both	District de Bamako, Commune de Kati central, Commune de Ouéléssebouougou
Malta	2005	458	IPAQ	Eurobarometer 64.3	18-99	both	
Malta	2013	415	IPAQ	Eurobarometer 80.2	18-99	both	
Marshall Islands	2002	2592	GPAQ	STEPS	18-64	both	
Mauritania	2003	2886	IPAQ	World Health Survey	18-99	both	
Mauritania	2006	1292	GPAQ	STEPS	18-64	urban	Nouakchott
Mauritius	2003	3842	IPAQ	World Health Survey	18-99	both	
Mexico	2003	37850	IPAQ	World Health Survey	18-99	both	
Mexico	2008	2600	GPAQ	SAGE	18-99	both	
Mexico	2012	10594	IPAQ	ENSANUT	20-69	both	
Mexico	2016	7287	IPAQ	ENSANUT	20-69	both	
Micronesia (Federated States of)	2003	1447	GPAQ	STEPS	25-64	both	Pohnpei
Micronesia (Federated States of)	2008	6143	GPAQ	STEPS	18-64	both	
Micronesia (Federated States of)	2016	1803	GPAQ	STEPS	18-69	both	Chuuk
Mongolia	2005	2502	GPAQ	STEPS	18-64	both	
Mongolia	2009	5017	GPAQ	STEPS	18-64	both	
Mongolia	2013	5190	GPAQ	STEPS	18-64	both	
Morocco	2008	2609	IPAQ	IPAQ Survey	18-99	both	

Country	Year	Sample size	Questionnaire	Survey/Study	Age range	Rural, urban, or both	Coverage (where non national)
Mozambique	2005	3003	GPAQ	STEPS	25-64	both	
Myanmar	2003	4448	GPAQ	STEPS	25-74	both	
Myanmar	2003	5859	IPAQ	World Health Survey	18-99	both	
Myanmar	2009	7429	GPAQ	STEPS	15-64	both	
Myanmar	2014	13452	GPAQ	STEPS	25-64	both	
Namibia	2003	3663	IPAQ	World Health Survey	18-99	both	
Nauru	2004	1942	GPAQ	STEPS	18-64	both	
Nauru	2015	1342	GPAQ	STEPS	18-69	both	
Nepal	2003	8384	IPAQ	World Health Survey	18-99	both	
Nepal	2013	4007	GPAQ	STEPS	18-69	both	
Netherlands	2002	662	IPAQ	Eurobarometer 58.2	18-99	both	
Netherlands	2005	812	IPAQ	Eurobarometer 64.3	18-99	both	
Netherlands	2013	788	IPAQ	Eurobarometer 80.2	18-99	both	
New Zealand	2003	1484	IPAQ	International Prevalence Study	18-65	both	
New Zealand	2006	12488	NZ-PAQ	National Health Survey	15-99	both	
New Zealand	2012	13012	NZ-PAQ	National Health Survey	15-99	both	
New Zealand	2015	13784	NZ-PAQ	National Health Survey	15-99	both	
Niger	2007	2417	GPAQ	STEPS	18-64	both	All regions except Bilma
Nigeria	2011	954	IPAQ	PA Survey	20-82	urban	Metropolitan Maiduguri
Niue	2011	846	GPAQ	STEPS	18-99	both	
Norway	2003	1375	IPAQ	International Prevalence Study	18-65	both	
Norway	2014	2610	IPAQ	National PA Survey	18-85	both	
Oman	2010	4337	GPAQ	World Health Survey-Gulf Cooperation Council	18-99	both	
Pakistan	2003	5873	IPAQ	World Health Survey	18-99	both	
Pakistan	2014	7052	GPAQ	STEPS	18-69	both	
Palau	2016	1752	GPAQ	NCD Hybrid Survey	18-99	both	
Papua New Guinea	2007	2395	GPAQ	STEPS	18-64	both	some areas excluded due to political situation
Paraguay	2003	5054	IPAQ	World Health Survey	18-99	both	
Paraguay	2011	2540	GPAQ	STEPS	15-74	both	
Philippines	2003	9905	IPAQ	World Health Survey	18-99	both	
Philippines	2013	19560	GPAQ-modified	National Nutrition Survey	18-99	both	

Country	Year	Sample size	Questionnaire	Survey/Study	Age range	Rural, urban, or both	Coverage (where non national)
Philippines	2015	21635	GPAQ-modified	National Nutrition Survey	18-99	both	
Poland	2005	711	IPAQ	Eurobarometer 64.3	18-99	both	
Poland	2011	3855	GPAQ	COURAGE	18-99	both	
Poland	2013	648	IPAQ	Eurobarometer 80.2	18-99	both	
Portugal	2002	671	IPAQ	Eurobarometer 58.2	18-99	both	
Portugal	2005	755	IPAQ	Eurobarometer 64.3	18-99	both	
Portugal	2013	835	IPAQ	Eurobarometer 80.2	18-99	both	
Qatar	2012	2442	GPAQ	STEPS	18-64	both	
Republic of Korea	2009	7985	IPAQ	KNHANES	15-99	both	
Republic of Korea	2012	5573	IPAQ	KNHANES	19-99	both	
Republic of Korea	2013	5328	IPAQ	KNHANES	19-99	both	
Republic of Moldova	2013	4608	GPAQ	STEPS	18-69	both	
Romania	2005	498	IPAQ	Eurobarometer 64.3	18-99	both	
Romania	2013	776	IPAQ	Eurobarometer 80.2	18-99	both	
Russian Federation	2003	4343	IPAQ	World Health Survey	18-99	both	Central, North Western and Volga
Russian Federation	2008	4256	GPAQ	SAGE	18-99	both	
Rwanda	2012	6537	GPAQ	STEPS	18-64	both	
Saint Kitts and Nevis	2007	1405	GPAQ	STEPS	25-64	both	Saint Kitts
Saint Lucia	2012	1628	GPAQ	STEPS	25-64	both	
Samoa	2002	2692	GPAQ	STEPS	25-64	both	
Samoa	2013	1412	GPAQ	STEPS	18-64	both	
Sao Tome and Principe	2009	2261	GPAQ	STEPS	25-64	both	
Saudi Arabia	2003	971	IPAQ	International Prevalence Study	18-78	urban	Riyadh City
Saudi Arabia	2005	4590	GPAQ	STEPS	15-64	both	
Saudi Arabia	2010	8085	GPAQ	World Health Survey-Gulf Cooperation Council	18-99	both	
Senegal	2003	1681	IPAQ	World Health Survey	18-99	both	
Senegal	2015	5052	GPAQ	STEPS	18-69	both	

Country	Year	Sample size	Questionnaire	Survey/Study	Age range	Rural, urban, or both	Coverage (where non national)
Serbia	2006	8263	IPAQ	National Health Survey	15-99	both	
Seychelles	2004	1253	GPAQ	STEPS	25-64	both	
Seychelles	2013	1239	GPAQ	STEPS	25-64	both	
Sierra Leone	2009	2413	GPAQ	STEPS	25-64	both	
Singapore	2007	6929	GPAQ	National Health Survey	18-69	both	
Singapore	2010	4044	GPAQ	National Health Survey	18-69	both	
Singapore	2013	9337	GPAQ	National Health Survey	18-99	both	
Slovakia	2003	1643	IPAQ	World Health Survey	18-99	both	
Slovakia	2005	507	IPAQ	Eurobarometer 64.3	18-99	both	
Slovakia	2013	632	IPAQ	Eurobarometer 80.2	18-99	both	
Slovenia	2003	571	IPAQ	World Health Survey	18-99	both	
Slovenia	2005	701	IPAQ	Eurobarometer 64.3	18-99	both	
Slovenia	2013	674	IPAQ	Eurobarometer 80.2	18-99	both	
Solomon Islands	2006	2632	GPAQ	STEPS	18-64	both	3 out of 9 provinces: Honiara, Western, and Malaita
Solomon Islands	2015	2424	GPAQ	STEPS	18-69	both	
South Africa	2003	6909	GPAQ	DHS	15-99	both	
South Africa	2003	2093	IPAQ	World Health Survey	18-99	both	
South Africa	2009	3886	GPAQ	SAGE	18-99	both	
Spain	2002	1583	IPAQ	ENCAT	18-70	both	Catalonia
Spain	2002	758	IPAQ	Eurobarometer 58.2	18-99	both	
Spain	2003	6252	IPAQ	World Health Survey	18-99	both	
Spain	2005	731	IPAQ	Eurobarometer 64.3	18-99	both	
Spain	2009	1500	GPAQ	GPAQ study Madrid	15-74	urban	Madrid
Spain	2011	4530	GPAQ	COURAGE	18-99	both	
Spain	2011	15741	IPAQ	National Health Survey	18-69	both	
Spain	2013	772	IPAQ	Eurobarometer 80.2	18-99	both	
Sri Lanka	2003	6194	IPAQ	World Health Survey	18-99	both	
Sri Lanka	2006	11282	GPAQ	STEPS	18-64	both	
Sri Lanka	2014	5100	GPAQ	STEPS	18-69	both	
State of Palestine	2010	5105	GPAQ	STEPS	18-64	both	
Suriname	2013	4939	GPAQ	STEPS	18-64	both	
Swaziland	2003	1822	IPAQ	World Health Survey	18-99	both	

Country	Year	Sample size	Questionnaire	Survey/Study	Age range	Rural, urban, or both	Coverage (where non national)
Swaziland	2013	3016	GPAQ	STEPS	15-69	both	
Sweden	2002	870	IPAQ	Eurobarometer 58.2	18-99	both	
Sweden	2005	982	IPAQ	Eurobarometer 64.3	18-99	both	
Sweden	2013	668	IPAQ	Eurobarometer 80.2	18-99	both	
Switzerland	2012	15082	IPAQ	Swiss Health Survey	18-99	both	
Tajikistan	2016	2549	GPAQ	STEPS	18-69	both	
Thailand	2008	20223	GPAQ	National Health Examination Survey IV	15-99	both	
Thailand	2012	5648	GPAQ	Thailand Physical Activity Surveillance System	18-99	both	
Thailand	2013	5751	GPAQ	Thailand Physical Activity Surveillance System	18-99	both	
Thailand	2014	19468	GPAQ	National Health Examination Survey V	15-99	both	
Thailand	2014	5840	GPAQ	Thailand Physical Activity Surveillance System	18-99	both	
Thailand	2015	5954	GPAQ	Thailand Physical Activity Surveillance System	18-99	both	
Thailand	2016	6074	GPAQ	Thailand Physical Activity Surveillance System	18-99	both	
Timor-Leste	2014	2300	GPAQ	STEPS	18-69	both	
Togo	2011	3629	GPAQ	STEPS	18-64	both	
Tokelau	2005	521	GPAQ	STEPS	18-64	both	
Tokelau	2014	542	GPAQ	STEPS	18-69	both	
Tonga	2004	901	GPAQ	STEPS	18-64	both	
Tonga	2011	2422	GPAQ	STEPS	25-64	both	
Trinidad and Tobago	2011	2501	GPAQ	STEPS	18-64	both	
Tunisia	2003	4776	IPAQ	World Health Survey	18-99	both	
Turkey	2003	9730	IPAQ	World Health Survey	18-99	both	
Turkey	2005	791	IPAQ	Eurobarometer 64.3	18-99	both	
Tuvalu	2015	1144	GPAQ	STEPS	18-69	both	
Uganda	2014	3847	GPAQ	STEPS	18-69	both	

Country	Year	Sample size	Questionnaire	Survey/Study	Age range	Rural, urban, or both	Coverage (where non national)
Ukraine	2003	2132	IPAQ	World Health Survey	18-99	both	
United Arab Emirates	2003	1124	IPAQ	World Health Survey	18-99	both	
United Arab Emirates	2012	2467	GPAQ	World Health Survey-Gulf Cooperation Council	18-99	both	
United Kingdom	2002	1088	IPAQ	Eurobarometer 58.2	18-99	both	
United Kingdom	2005	1023	IPAQ	Eurobarometer 64.3	18-99	both	
United Kingdom	2012	28667	Other	Health Survey for England, Scotland, Wales	16-99	both	
United Kingdom	2013	984	IPAQ	Eurobarometer 80.2	18-99	both	
United Republic of Tanzania	2011	8100	GPAQ	STEPS	25-64	both	
United States of America	2003	5232	IPAQ	International Prevalence Study	18-95	both	
United States of America	2007-2008	6197	GPAQ	NHANES	18-99	both	
United States of America	2009-2010	6185	GPAQ	NHANES	18-99	both	
United States of America	2011-2012	5843	GPAQ	NHANES	18-99	both	
United States of America	2013-2014	6094	GPAQ	NHANES	18-99	both	
Uruguay	2003	2956	IPAQ	World Health Survey	18-99	both	
Uruguay	2006	1966	GPAQ	STEPS	25-64	both	
Uruguay	2013	2462	GPAQ	STEPS	15-64	both	
Uzbekistan	2014	3645	GPAQ	STEPS	18-64	both	
Vanuatu	2011	4457	GPAQ	STEPS	25-64	both	
Venezuela (Bolivarian Republic of)	2008	538	IPAQ	Maracaibo City MS Prevalence Study	18-99	urban	Maracaibo
Viet Nam	2003	3244	IPAQ	World Health Survey	18-99	both	
Viet Nam	2005	1888	GPAQ	STEPS	25-64	urban	Ho Chi Minh City
Viet Nam	2009	14220	GPAQ	STEPS	25-64	both	

Country	Year	Sample size	Questionnaire	Survey/Study	Age range	Rural, urban, or both	Coverage (where non national)
Viet Nam	2015	3653	GPAQ	STEPS	18-69	both	
Zambia	2003	3665	IPAQ	World Health Survey	18-99	both	
Zambia	2008	1410	GPAQ	STEPS	25-99	both	Lusaka district
Zimbabwe	2003	3749	IPAQ	World Health Survey	18-99	both	



**APPENDIX 3. List of countries with at least two comparable surveys from different years, using the same questionnaire.**

<b>Region (number of countries)</b>	<b>Countries with trend data</b>
Central Asia, Middle East and North Africa (8)	Georgia, Iran (Islamic Republic of), Iraq, Jordan, Kuwait, Mongolia, Saudi Arabia, Turkey
Central and Eastern Europe (11)	Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia
East and South East Asia (7)	China, Malaysia, Myanmar, Philippines, Sri Lanka, Thailand, Viet Nam
High-income Asia Pacific (2)	Republic of Korea, Singapore
High-income Western countries (20)	Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, United Kingdom, United States of America
Latin America and Caribbean (5)	Argentina, Brazil, Costa Rica, Mexico, Uruguay
Oceania (7)	Cook Islands, Micronesia (Federated States of), Nauru, Samoa, Solomon Islands, Tokelau, Tonga
South Asia (1)	India
Sub-Saharan Africa (4)	Benin, Botswana, Seychelles, South Africa

## APPENDIX 4. Detailed description of methodological approach.

### Objective

To produce comparable estimates for adult men and women aged 18+ years, and both sexes combined, for the years 2001-2016, for the prevalence of insufficient physical activity, defined as not meeting current WHO recommendations on physical activity for health (herein referred to as “WHO PA recs”)<sup>1</sup>, which is not meeting any of the following criteria:

- At least 150 minutes of moderate-intensity physical activity per week;
- At least 75 minutes of vigorous-intensity physical activity per week;
- A combination of moderate- and vigorous-intensity physical activity per week, accumulating at least 600 metabolic equivalent (MET)-minutes<sup>a</sup> per week.

We documented these estimates as recommended by the Guidelines for Accurate and Transparent Health Estimates Reporting (GATHER)<sup>2</sup>.

### Inclusion criteria

The criteria for data to be included in the comparable estimates on insufficient physical activity for adults were as follows:

- The definition of insufficient physical activity was:
  - Not meeting the “WHO PA recs”,
  - OR
  - Not meeting the former physical activity recommendations (herein referred to as the “former PA recs”), which is not meeting any of the following criteria:
    - At least 30 minutes of moderate-intensity activity or walking per day on at least 5 days per week; or
    - At least 20 minutes of vigorous-intensity activity per day on at least 3 days per week; or
    - Engaging in 5 or more days of any combination of walking, moderate- or vigorous-intensity activities achieving a minimum of at least 600 MET-minutes per week<sup>3-5</sup>.
- Survey questions had to capture physical activity across all domains of life, including work/household, transport and leisure time;
- Data had to be based on self-report, rather than objectively measured physical activity;
- Data had to be collected from the general adult population through random sampling, and be representative of a national or defined subnational population;
- Prevalence values had to be presented along with sample size, as well as a clear description of survey methodology;
- Survey sample size had to be at least n=200.

All data that met the inclusion criteria and that were provided before the end of September 2017 were included.

### Data search

Data were searched through:

- Existing WHO databases at HQ and Regional Offices;
- Communication with WHO Regional focal points;

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<sup>a</sup> MET is the ratio of a person’s working metabolic rate relative to the resting metabolic rate. One MET is defined as the energy spent when sitting quietly, and is equivalent to a caloric consumption of 1kcal/kg/hour.

- Analysis and verification of the results of the 2017 NCD Country Capacity Survey (CCS) [Survey question: Have surveys of risk factors (may be a single risk factor or multiple) been conducted in your country for any of the following: [...] Physical Inactivity. Was there a survey on adults? [...] When was the last survey conducted? [...]]<sup>6</sup>;
- An on-line country consultation from 31 July – 8 Sept 2017;
- A systematic literature search in Pubmed, using the following keywords: Physical activity, Exercise, Inactivity, Walking, Physical Activity Questionnaire, International Physical Activity Questionnaire, IPAQ, Global Physical Activity Questionnaire, GPAQ, STEPS surveys, [individual country name];
- Communication through personal networks.

## Data sources

In total, 358 surveys from 168 countries met the inclusion criteria, covering all World Bank Income Groups<sup>7</sup> (table 1). Data mainly derived from two questionnaires: the Global Physical Activity Questionnaire (GPAQ)<sup>3, 8</sup> and the International Physical Activity Questionnaire (IPAQ)<sup>5</sup>. GPAQ and IPAQ data derived mainly from five multi-country surveys: The World Health Survey (IPAQ)<sup>9</sup>, the International Prevalence Study (IPAQ)<sup>10</sup>, the Eurobarometer surveys 2002, 2005 and 2013 (IPAQ)<sup>11</sup>, the WHO Study on global AGEing and adult health (SAGE; GPAQ)<sup>12</sup>, the World Health Survey for the Gulf Cooperation Council countries (GPAQ)<sup>9</sup>, the COURAGE survey (GPAQ)<sup>13</sup>, and surveys based on the STEPwise approach to Noncommunicable disease risk factor surveillance (STEPS) (GPAQ)<sup>14</sup>. Additionally, GPAQ data from other surveys were included from Brazil, Chile, Costa Rica, Czech Republic, France, Germany, India, Lithuania, Malaysia, Singapore, South Africa, Spain, Thailand, and the United States of America, as well as IPAQ data from Andorra, Argentina, Belgium, Brazil, Chile, China, Ecuador, France, Greece, Ireland, Jamaica, Luxembourg, Malaysia, Mexico, Morocco, Nigeria, Republic of Korea, Serbia, Spain, Switzerland, and Venezuela (Bolivarian Republic of). Furthermore, data from New Zealand collected with the NZ-PAQ, data from the National Health Survey in Brazil and the Health Survey for England, Scotland and Wales were included.

**Table 1.** Distribution of data sources across World Bank income groups.

	All countries	World Bank income group	Low income	Middle income	High income
Total	231	215	31	109	75
With data	168	167	24	89	54
% with data	<b>72.7</b>	<b>77.7</b>	<b>77.4</b>	<b>81.7</b>	<b>72.0</b>

## Adjustment for definition

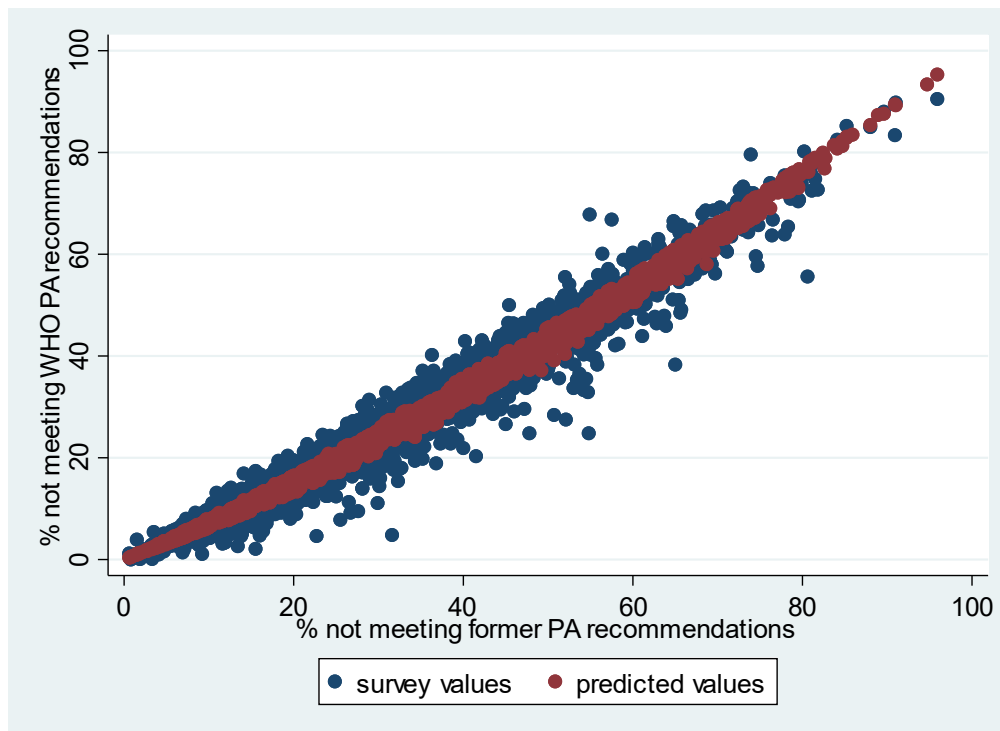
For surveys where only the definition of not meeting the “former PA recs” was available, an adjustment was made in order to estimate physical inactivity according to the target definition of not meeting “WHO PA recs”. This was done using results from surveys providing both definitions, with the following linear regression model:

$Y$  (Logit of the prevalence of not meeting “WHO PA recs”) =  $\beta_0 + \beta_1$ \*(Logit of the prevalence of not meeting “former PA recs”) +  $\beta_2$ \*(sex\_code) +  $\beta_3$ \*(mid\_age) +  $\beta_4$ \*(low\_income) +  $\epsilon$   
 where sex\_code was the gender, mid\_age was the midpoint of the age range in years of each of the observations, low income was a dichotomous variable containing information on the income status of each observation (based on World Bank groupings)<sup>7</sup> and  $\epsilon$  was the error term assumed normally distributed.

```
. regress fail_meet_recs_logit low_logit sex_code mid_age low_income
```

Source	SS	df	MS	Number of obs	=	1,983
Model	2410.55129	4	602.637823	F(4, 1978)	=	8548.68
Residual	139.438858	1,978	.070494873	Prob > F	=	0.0000
				R-squared	=	0.9453
				Adj R-squared	=	0.9452
Total	2549.99015	1,982	1.28657424	Root MSE	=	.26551

fail_meet_~t	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
low_logit	1.011376	.0063405	159.51	0.000	.9989413 1.023811
sex_code	-.0224934	.0122697	-1.83	0.067	-.0465564 .0015696
mid_age	.0028059	.0003309	8.48	0.000	.0021569 .0034549
low_income	-.1053493	.0166577	-6.32	0.000	-.1380178 -.0726807
_cons	-.4302864	.020624	-20.86	0.000	-.4707335 -.3898393



**Figure 1.** The prevalence of “not meeting former PA recs” against “not meeting WHO PA recs” and predicted values

## Adjustment for IPAQ over-reporting

Previous studies have described over-reporting of activity of the IPAQ, however, no adjustment factor has been determined<sup>15-18</sup>. To find an adjustment factor that could be applied to surveys that used the IPAQ instrument, information was used from countries where several surveys using different instruments had been undertaken - either IPAQ vs. GPAQ, or IPAQ vs. another similar all-domain questionnaire. Data were included if the above described inclusion criteria were met, if the coverage of the two surveys was similar (for example, both national and for the same country, or both urban and for the same country), if sex- and age-specific estimates were reported or could be calculated for the same groups in both surveys, and the difference in time between the two surveys was 5 years or less.

The following linear regression model was used for the adjustment of IPAQ survey data in order to predict prevalence of not meeting “WHO PA recs”:

$Y$  (Logit of the prevalence of not meeting “WHO PA recs”, GPAQ) =  $\beta_0 + \beta_1 * (\text{Logit of the prevalence of not meeting “WHO PA recs”, IPAQ}) + \beta_2 * (\text{sex\_code}) + \beta_3 * (\text{mid\_age}) + \epsilon$

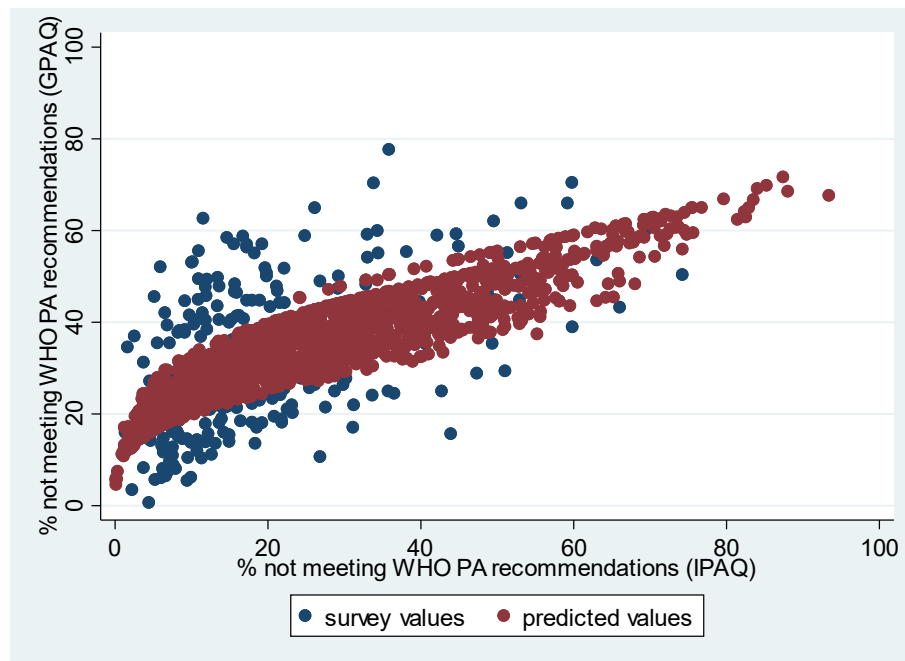
where sex\_code was the gender, mid\_age was the midpoint of the age range in years of each of the observations, and  $\epsilon$  was the error term assumed normally distributed.

```
. regress fail_meet_recs_gpaq_logit fail_meet_recs_ipaq_logit sex_code mid_age
```

Source	SS	df	MS	Number of obs	=	246
Model	51.084209	3	17.0280697	F(3, 242)	=	33.53
Residual	122.907332	242	.507881537	Prob > F	=	0.0000
Total	173.991541	245	.710169555	R-squared	=	0.2936
				Adj R-squared	=	0.2848
				Root MSE	=	.71266

fail_meet_recs_gpaq_logit	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
fail_meet_recs_ipaq_logit	.3534734	.0610697	5.79	0.000	.2331773 .4737694
sex_code	-.1842092	.0949523	-1.94	0.054	-.3712477 .0028294
mid_age	.0093879	.002786	3.37	0.001	.0038999 .0148758
_cons	-.6225711	.2022341	-3.08	0.002	-1.020935 -.2242073



**Figure 2.** The logit of the prevalence of not meeting “WHO PA recs”, IPAQ against the logit of the prevalence of not meeting “WHO PA recs”, GPAQ and predicted values

## Adjustment for coverage

150 out of the 168 countries reporting sex- and age-specific prevalence of insufficient physical activity had nationally representative data. Only subnational data including urban and rural areas were available from 12 countries, and urban data only were available for Cameroon, Central African Republic, Gabon, Maldives, Nigeria and Venezuela (Bolivarian Republic of). To derive a national estimate for these countries, the relationship between insufficient physical activity in urban versus rural areas was explored using information from surveys where estimates for both urban and rural areas existed, and by applying the following regression model:

$$Y \text{ (Logit of the prevalence of not meeting "WHO PA recs", rural)} = \beta_0 + \beta_1 * (\text{Logit of the prevalence of not meeting "WHO PA recs", urban}) + \beta_2 * (\text{sex\_code}) + \beta_3 * (\text{mid\_age}) + \beta_4 * (\text{year}) + \beta_5 * (\text{low\_income}) + \epsilon$$

where sex\_code was the gender, mid\_age was the midpoint of the age range in years of each of the observations, year was survey year, and low income was a dichotomous variable containing information on the income status of each observation (based on World Bank groupings)<sup>7</sup> and  $\epsilon$  was the error term assumed normally distributed.

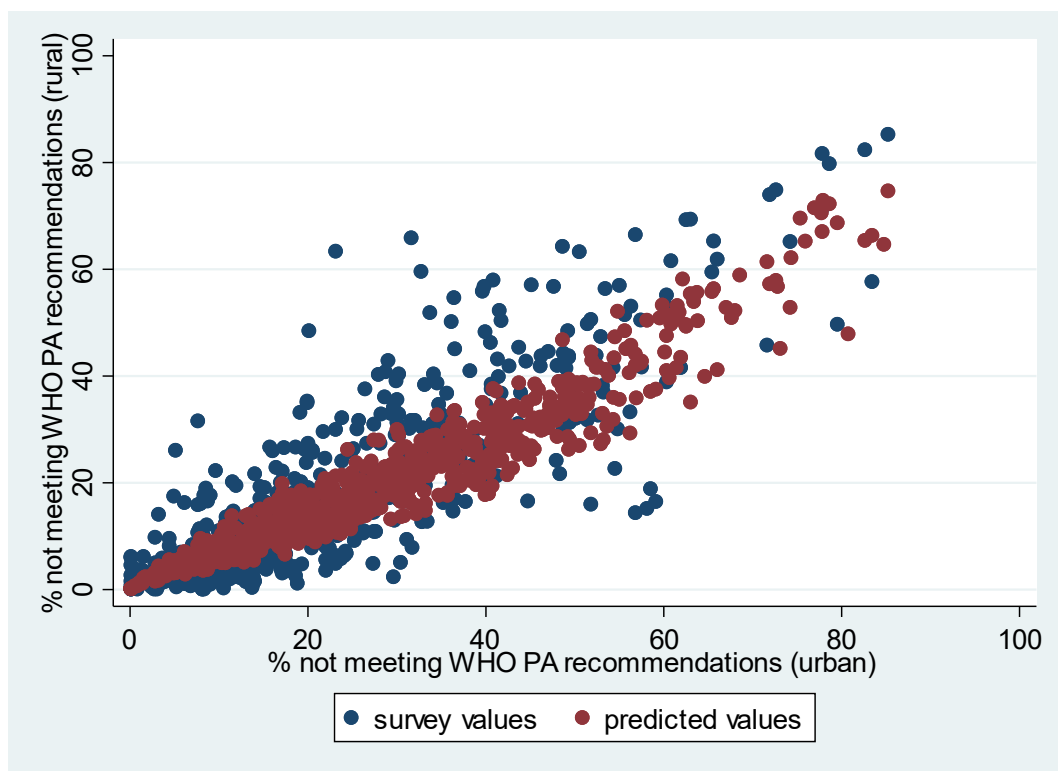
The resulting estimated prevalence values for insufficient physical activity in rural areas were combined with the urban figures, using estimates of percent of urban and rural populations from the United Nations Population Division for the respective survey year<sup>19</sup>.

```
. regress fail_meet_recs_rural_logit fail_meet_recs_urban_logit sex_code mid_age
year low_income
```

Source	SS	df	MS	Number of obs	=	527
Model	688.626143	5	137.725229	F(5, 521)	=	165.67
Residual	433.127084	521	.831337973	Prob > F	=	0.0000
				R-squared	=	0.6139
				Adj R-squared	=	0.6102
Total	1121.75323	526	2.1326107	Root MSE	=	.91178

fail_meet_recs_rural_logit	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
fail_meet_recs_urban_logit	.7474971	.0346259	21.59	0.000	.6794734	.8155207
sex_code	-.2141919	.0808398	-2.65	0.008	-.373004	-.0553798
mid_age	.0117989	.0023451	5.03	0.000	.007192	.0164059
year	.0279754	.0142052	1.97	0.049	.0000688	.055882
low_income	-.2570428	.1124156	-2.29	0.023	-.4778864	-.0361991
_cons	-57.32269	28.4736	-2.01	0.045	-113.2599	-1.385515



**Figure 3.** The prevalence of not meeting “WHO PA recs”, urban against the logit of the prevalence of not meeting “WHO PA recs”, rural and predicted values

### Adjustment for age coverage

To estimate prevalence values for countries where surveys did not cover the entire age range 18+ years, missing age groups were modelled using linear regressions. The first step in this process was to produce standard age ranges (18-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, and 80-100 years) for all countries for the ages covered in each survey. For example, for a survey that covered the age range 25-64 and reported prevalence by 10-year age groups, the prevalence value for 25-34 years was applied to the standard age ranges 25-29 and 30-34 years, while the standard age range 18-24 years was left blank.

The age range that was covered by all the surveys was 35-59 years, and an age standardized variable combining the 5-year age groups within this age range was created to be used in the linear regressions, using the WHO Standard Population<sup>20</sup>. Surveys only providing age groups of 20 years or larger were excluded from the regression models.

To estimate prevalence values for missing age groups, the following regression model was applied (example for 30-34 years):

$$Y (\text{Logit of the prevalence of not meeting "WHO PA recs", 30-34 years}) = \beta_0 + \beta_1 * (\text{Logit of the prevalence of not meeting "WHO PA recs", 35-59 years [age std]}) + \beta_2 * (\text{sex\_code}) + \epsilon$$

where sex\_code was the gender, and  $\epsilon$  was the error term assumed normally distributed.

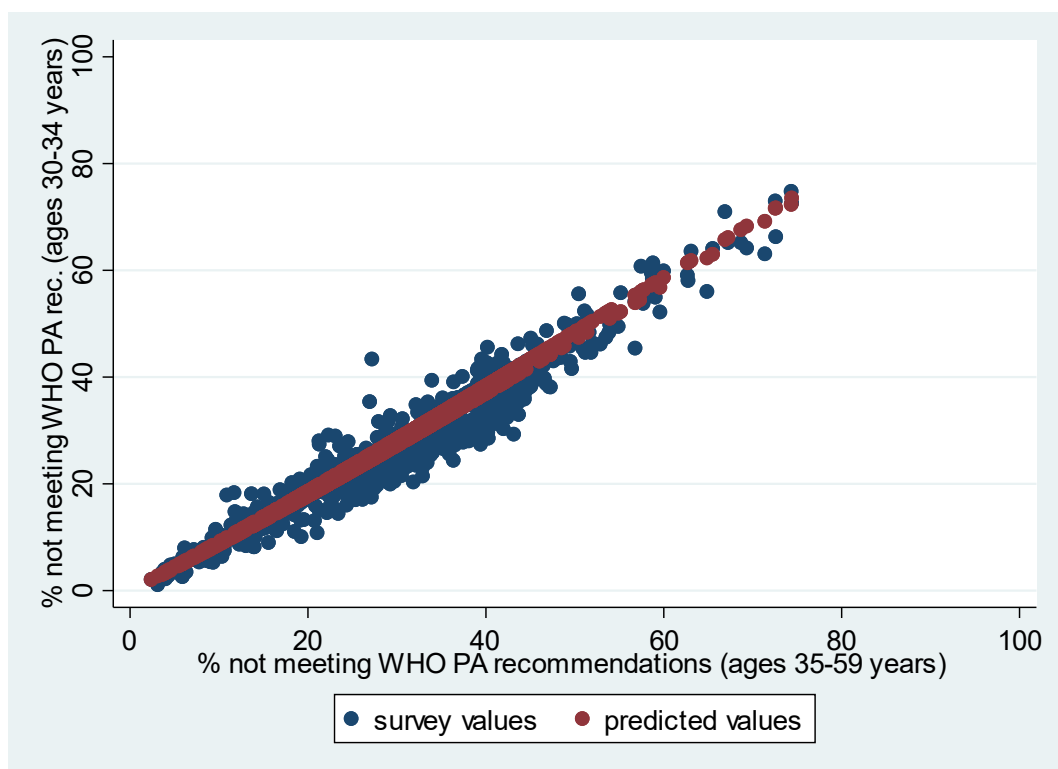
The regressions were run to estimate prevalence for the age ranges 18-24, 25-29, 30-34, 60-64, 65-69, 70-74, 75-79, and 80-100 years.

```
. regress logitprev3034_01 logitprev3559_01 sex_code if regress==1
```

Source	SS	df	MS	Number of obs	=	431
Model	267.317806	2	133.658903	F(2, 428)	=	5165.69
Residual	11.0742171	428	.025874339	Prob > F	=	0.0000
				R-squared	=	0.9602
				Adj R-squared	=	0.9600
Total	278.392023	430	.647423309	Root MSE	=	.16086

logitprev3034_01	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
logitprev3559_01	1.018233	.0103186	98.68	0.000	.9979511 1.038514
sex_code	-.0582245	.0158307	-3.68	0.000	-.0893401 -.027109
_cons	-.0617602	.0143312	-4.31	0.000	-.0899286 -.0335919



**Figure 4.** The prevalence of not meeting “WHO PA recs”, 35-59 years against the prevalence of not meeting “WHO PA recs”, 30-34 years and predicted values

### Time trends

Data included in the estimation process were from the years 2001–2016, with 92 of the 168 countries having two or more surveys from different years. This included countries with two or more surveys collecting data with the same questionnaire (n=65), but also with different questionnaires or coverage that was not comparable (for example, survey 1 in one city, survey 2 national) (n=27). Only those 65 countries that had at least two surveys with the same questionnaire and similar population coverage were used to predict trends.

To estimate prevalence values for missing years, the following multilevel mixed-effects linear regression model was applied:

$$Y \text{ (Logit of the prevalence of not meeting “WHO PA recs”) }_{ij} = \beta_0 + \beta_1(\text{year})_{ij} + \beta_2(\text{perc\_urban})_{ij} + \beta_3(\text{edu\_years})_{ij} + \beta_4(\text{region})_{ij} + \beta_5(\text{agegroup})_{ij} + u_{0j} + u_{1j}(\text{year})_{ij} + \varepsilon_{ij}$$

Where  $j$  = countries,  $i$  = years, perc\_urban was the percentage of urban population in each country at the respective years<sup>21</sup>, edu\_years were the mean years of education in a country<sup>22</sup>, region was a



variable combining countries into nine regions, as previously used in other, similar analysis<sup>23-24</sup>, agegroup was a broader age range (18-44, 45-69, 70+ years) that combined prevalence values for the smaller 5-year age groups,  $u_j$  were the random effects occurring at the country level, allowing for a random slope on year and for random intercepts, and  $\varepsilon_{ij}$  was the error term. The model was run for each gender separately (the example below is for men). Broad age groups that were previously fully estimated in the age regressions were not used, but predicted here instead.

```
mixed logit_fail_meet_recs year perc_urban edu_years i.region i.agegroup ||
whoname:year, covariance(unstructured)
```

Mixed-effects ML regression  
Group variable: **whoname**

Number of obs = **830**  
Number of groups = **168**

obs per group:  
min = **2**  
avg = **4.9**  
max = **21**

Log likelihood = **-533.28664**

wald chi2(13) = **891.74**  
Prob > chi2 = **0.0000**

logitcrude_fail_meet_recs	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
year	-.0259208	.0083119	-3.12	0.002	-.0422119	-.0096298
perc_urban	.0114683	.0023968	4.78	0.000	.0067707	.016166
edu_years	.0174929	.0264637	0.66	0.509	-.0343749	.0693607
BMI_superregion						
Central and Eastern Europe	-.3060047	.1890974	-1.62	0.106	-.6766289	.0646195
East and South East Asia	-.21691	.1998821	-1.09	0.278	-.6086718	.1748518
High-income Asia Pacific	-.2773576	.343872	-0.81	0.420	-.9513344	.3966192
High-income western countries	-.1321845	.1761642	-0.75	0.453	-.47746	.2130911
Latin America and Caribbean	.0569971	.1598686	0.36	0.721	-.2563396	.3703337
Oceania	-.1588727	.1876925	-0.85	0.397	-.5267433	.208998
South Asia	-.5129484	.3035483	-1.69	0.091	-1.107892	.0819953
Sub-Saharan Africa	-.5230631	.1791601	-2.92	0.004	-.8742105	-.1719157
agegroup						
45-69	.4738646	.0271413	17.46	0.000	.4206686	.5270605
70+	.8643126	.0327049	26.43	0.000	.8002122	.9284131
_cons	49.93717	16.61611	3.01	0.003	17.37018	82.50415

Random-effects Parameters	Estimate	Std. Err.	[95% Conf. Interval]	
whoname: Unstructured				
var(year)	.0039917	.0010269	.0024109	.006609
var(_cons)	16094.5	4138.109	9723.493	26639.91
cov(year,_cons)	-8.015212	2.061401	-12.05548	-3.97494
var(Residual)	.1170884	.0069097	.1042995	.1314453

## **Final country estimates**

To produce estimates for the total age group 18+ years for each country, the approach differed, depending on the available country data:

For the 65 countries with at least two comparable surveys from different years (using the same questionnaire and coverage) age-specific outputs (18-44, 45-69, 70+ years) of the time trends model were age adjusted, using the WHO Standard Population<sup>20</sup>, for all years 2001-2016.

For the 103 remaining countries, we applied a flat trend line (no change), based on the large variability across the 65 countries with trend information, and the fact that the average change in prevalence per year across these countries was below 0.01%. For countries with one survey only, the flat trend line represented that survey, and for countries with several, non-comparable surveys, this line was based on the average prevalence values across these surveys.

For countries with no survey, no estimate was produced.

## **Estimates for World Bank Income groups, regions, and the world**

To produce estimates for World Bank income groups, we used groupings for the year 2016<sup>7</sup>, and for regional estimates, we used previously defined country groupings used in similar analyses<sup>23-24</sup>. For all different groupings, age specific country estimates were first weighted by population size of each country, using country population figures as estimated by the United Nations Population Division (Revision 2016)<sup>25</sup>, and then age standardized using the WHO Standard Population<sup>20</sup>. Countries with no estimate were not taken into account.

## **Uncertainty intervals and significance of trends**

Uncertainty around the country estimates was computed using the predicted values and standard errors (combining standard errors of fixed and random effects) of the hierarchical trend models. For the estimates for World Bank Income groups, regions, and the world, confidence intervals were produced using the bootstrap methodology: for men and women separately, we ran the hierarchical trend model 1000 times, using a random 80% of all survey data each time. We then produced World Bank Income group, regional, and global prevalence estimates for each of the 1000 datasets. Of these 1000 results for each subgroup, gender and year, we took the 2.5<sup>th</sup> and the 97.5<sup>th</sup> percentile to form the confidence interval around the estimate. To test for significance of trends in those subgroups and globally, based on a previously described approach<sup>26</sup>, we calculated trends as the difference in prevalence between 2001 and 2016, and considered a change in prevalence over time to be statistically significant if fewer than 2.5% of draws showed a declining/increasing trend.

## **Consultation with WHO Member States**

A consultation with WHO Member States was carried out from 31 July to 8 September 2017. Data submitted by Member States during that period that met inclusion criteria were included in a re-run of the model during October 2017.

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**APPENDIX 5. Country prevalence of insufficient physical activity (95% CI), by sex, age standardised to the WHO Standard Population, 2016.**

<b>Country</b>	<b>% insufficient physical activity (95% CI), both sexes</b>	<b>% insufficient physical activity (95% CI), males</b>	<b>% insufficient physical activity (95% CI), females</b>
Algeria	33.6% (25.5-42.7)	26.9% (20.0-35.1)	40.2% (31.0-50.3)
American Samoa	53.4% (41.4-65.0)	49.3% (38.0-60.8)	57.5% (44.9-69.2)
Andorra	38.4% (30.8-46.6)	36.8% (29.7-44.6)	40.0% (32.0-48.5)
Argentina	41.6% (33.6-50.0)	37.6% (30.4-45.5)	45.3% (36.6-54.2)
Armenia	22.6% (16.4-30.5)	23.3% (17.3-30.7)	22.1% (15.6-30.3)
Australia	30.4% (23.7-37.9)	27.0% (21.1-34.0)	33.6% (26.3-41.9)
Austria	30.1% (24.1-36.8)	26.4% (21.2-32.3)	33.6% (26.8-41.1)
Bahamas	43.3% (34.9-51.9)	30.0% (23.0-38.1)	55.6% (46.0-64.7)
Bangladesh	27.8% (16.4-39.1)	16.1% (9.7-22.5)	39.5% (23.1-55.8)
Barbados	42.9% (34.1-51.7)	29.3% (21.3-37.3)	54.9% (45.4-64.5)
Belarus	14.1% (10.0-19.5)	13.7% (9.8-18.7)	14.4% (10.1-20.1)
Belgium	35.7% (29.3-42.8)	30.6% (25.0-36.8)	40.6% (33.3-48.4)
Benin	15.9% (12.1-20.6)	13.6% (10.5-17.5)	18.1% (13.7-23.6)
Bermuda	26.2% (19.2-34.6)	20.3% (14.7-27.3)	32.1% (23.7-41.8)
Bhutan	23.0% (18.4-27.5)	17.7% (14.8-20.6)	29.5% (22.8-36.1)
Bosnia and Herzegovina	25.5% (18.5-33.9)	22.8% (16.7-30.3)	28.0% (20.3-37.3)
Botswana	21.7% (16.9-27.5)	17.1% (13.3-21.7)	26.3% (20.5-33.1)
Brazil	47.0% (38.9-55.3)	40.4% (32.8-48.5)	53.3% (44.6-61.8)
British Virgin Islands	27.4% (20.9-34.9)	19.1% (14.1-25.2)	35.7% (27.6-44.7)
Brunei Darussalam	27.3% (18.5-38.3)	21.2% (14.0-30.6)	33.9% (23.3-46.4)
Bulgaria	38.6% (30.6-47.3)	35.6% (28.3-43.6)	41.4% (32.8-50.7)
Burkina Faso	20.3% (15.1-25.5)	17.7% (13.1-22.4)	22.7% (17.0-28.4)
Cabo Verde	19.7% (15.0-25.3)	14.1% (10.6-18.4)	25.0% (19.2-31.8)
Cambodia	10.5% (6.9-15.7)	9.8% (6.6-14.4)	11.1% (7.2-16.8)
Cameroon	28.5% (22.7-35.1)	21.8% (17.0-27.4)	35.2% (28.2-42.8)
Canada	28.6% (21.9-36.3)	25.7% (19.7-32.8)	31.4% (24.1-39.7)
Cayman Islands	29.1% (21.9-37.5)	20.2% (14.7-27.0)	38.1% (29.1-48.0)
Central African Republic	14.3% (10.9-18.5)	12.6% (9.7-16.3)	15.9% (12.1-20.7)
Chad	23.3% (16.6-30.0)	19.6% (13.6-25.6)	26.9% (19.5-34.4)
Chile	26.6% (19.6-33.6)	24.4% (18.2-30.6)	28.6% (20.9-36.4)
China	14.1% (10.1-19.4)	16.0% (11.7-21.4)	12.2% (8.5-17.3)
Colombia	44.0% (35.4-52.7)	38.8% (30.5-47.0)	48.9% (39.9-58.0)
Comoros	14.3% (10.7-17.9)	9.6% (7.4-11.9)	19.0% (14.1-23.9)
Congo	28.0% (21.6-35.5)	24.8% (18.9-31.7)	31.3% (24.3-39.2)
Cook Islands	18.5% (13.3-24.9)	9.8% (6.9-13.6)	27.2% (19.7-36.2)
Costa Rica	46.1% (37.9-54.4)	37.7% (30.3-45.7)	54.3% (45.5-62.9)
Cote d'Ivoire	33.1% (26.7-39.4)	29.1% (23.6-34.5)	37.3% (30.0-44.6)
Croatia	31.1% (24.1-39.0)	25.9% (20.0-32.7)	35.8% (27.9-44.7)
Cuba	36.9% (29.2-45.2)	30.9% (24.1-38.7)	42.8% (34.3-51.7)
Cyprus	44.4% (36.8-52.1)	38.4% (31.6-45.6)	50.5% (42.2-58.8)
Czech Republic	31.1% (24.2-38.8)	28.1% (22.0-35.1)	33.9% (26.3-42.4)
Democratic Republic of the Congo	23.8% (18.6-30.0)	20.8% (16.1-26.5)	26.8% (21.1-33.3)
Denmark	28.5% (22.7-35.0)	25.7% (20.7-31.5)	31.2% (24.8-38.4)
Dominica	21.6% (16.3-28.0)	13.4% (9.9-18.0)	29.8% (22.7-38.1)
Dominican Republic	39.0% (30.9-47.7)	34.4% (27.1-42.6)	43.4% (34.6-52.6)
Ecuador	27.2% (19.7-34.6)	24.6% (18.1-31.1)	29.7% (21.3-38.1)
Egypt	31.0% (23.6-39.5)	23.2% (17.3-30.5)	38.8% (29.9-48.5)
Eritrea	22.4% (18.8-25.9)	13.8% (11.6-15.9)	30.7% (25.8-35.7)

<b>Country</b>	<b>% insufficient physical activity (95% CI), both sexes</b>	<b>% insufficient physical activity (95% CI), males</b>	<b>% insufficient physical activity (95% CI), females</b>
Estonia	32.0% (25.1-39.8)	28.9% (22.8-35.8)	34.6% (27.0-43.1)
Ethiopia	14.9% (12.1-17.6)	11.3% (9.5-13.2)	18.3% (14.6-21.9)
Fiji	17.4% (12.5-23.6)	10.8% (7.7-15.1)	24.1% (17.5-32.2)
Finland	16.6% (12.9-21.0)	17.2% (13.6-21.5)	16.0% (12.2-20.6)
France	29.3% (23.5-35.9)	24.3% (19.4-29.9)	34.0% (27.3-41.4)
French Polynesia	17.9% (12.8-24.4)	13.5% (9.6-18.7)	22.5% (16.2-30.4)
Gabon	25.3% (18.5-33.5)	17.7% (12.6-24.2)	33.2% (24.6-43.1)
Gambia	21.1% (16.0-27.1)	16.0% (12.0-20.9)	25.9% (19.8-33.0)
Georgia	18.0% (12.8-24.6)	17.3% (12.6-23.1)	18.6% (12.9-25.9)
Germany	42.2% (35.5-49.2)	40.2% (34.0-46.7)	44.1% (36.9-51.6)
Ghana	21.8% (17.3-26.3)	18.6% (14.6-22.6)	24.8% (19.9-29.8)
Greece	37.7% (30.9-44.9)	33.9% (27.9-40.5)	41.1% (33.7-49.0)
Grenada	28.7% (21.4-37.2)	21.9% (16.0-29.1)	35.4% (26.8-45.1)
Guatemala	37.1% (27.9-47.4)	37.1% (28.4-46.7)	37.1% (27.5-47.9)
Guinea	14.5% (10.8-19.1)	10.6% (7.9-14.2)	18.4% (13.8-24.1)
Hungary	38.5% (30.9-46.8)	33.1% (26.4-40.6)	43.3% (34.8-52.2)
India	34.0% (22.3-47.7)	24.7% (15.8-36.3)	43.9% (29.2-59.7)
Indonesia	22.6% (16.0-30.9)	23.5% (16.9-31.6)	21.7% (15.0-30.2)
Iran (Islamic Republic of)	33.2% (25.9-41.4)	23.1% (17.4-29.8)	43.4% (34.3-52.9)
Iraq	52.0% (44.1-59.8)	39.5% (32.2-47.2)	64.6% (55.8-72.4)
Ireland	32.7% (26.5-39.5)	28.3% (23.0-34.2)	37.1% (30.1-44.7)
Italy	41.4% (34.3-48.8)	36.2% (29.9-42.9)	46.2% (38.4-54.2)
Jamaica	32.6% (25.2-40.8)	28.4% (21.9-35.9)	36.6% (28.5-45.6)
Japan	35.5% (20.5-53.8)	33.8% (20.1-50.9)	37.0% (21.0-56.5)
Jordan	11.9% (8.4-16.4)	10.3% (7.4-14.2)	13.5% (9.5-18.8)
Kazakhstan	27.5% (19.8-36.8)	26.1% (19.2-34.4)	28.7% (20.4-38.9)
Kenya	15.4% (13.1-17.8)	13.9% (11.8-16.0)	16.9% (14.3-19.5)
Kiribati	40.4% (31.2-50.2)	34.5% (26.3-43.7)	45.8% (35.8-56.2)
Kuwait	67.0% (58.6-74.3)	61.3% (52.8-69.2)	74.6% (66.6-81.3)
Kyrgyzstan	13.9% (9.1-20.5)	10.9% (7.2-16.0)	16.7% (10.9-24.8)
Lao People's Democratic Republic	16.3% (12.3-20.3)	11.7% (10.0-13.4)	20.6% (14.4-26.9)
Latvia	29.5% (22.8-37.3)	25.4% (19.6-32.1)	32.9% (25.3-41.5)
Lebanon	36.4% (28.3-45.4)	39.8% (31.5-48.7)	33.0% (25.0-42.0)
Lesotho	6.3% (4.5-8.6)	6.5% (4.9-8.7)	6.0% (4.2-8.6)
Liberia	25.1% (19.8-31.3)	21.7% (17.1-27.2)	28.5% (22.4-35.5)
Libya	36.4% (28.0-45.7)	31.2% (23.9-39.6)	41.5% (32.0-51.7)
Lithuania	26.5% (20.5-33.6)	23.2% (18.0-29.3)	29.2% (22.5-37.1)
Luxembourg	28.4% (22.7-34.9)	26.4% (21.3-32.3)	30.4% (24.1-37.6)
Madagascar	17.2% (13.2-22.0)	12.8% (9.8-16.6)	21.4% (16.5-27.3)
Malawi	15.6% (13.3-17.9)	13.0% (11.3-14.7)	18.2% (15.3-21.0)
Malaysia	38.8% (29.7-48.6)	34.6% (26.6-43.6)	42.8% (32.7-53.5)
Maldives	30.3% (22.0-40.1)	25.8% (18.5-34.6)	34.8% (25.4-45.5)
Mali	40.4% (33.6-47.3)	33.7% (27.6-39.8)	47.1% (39.5-54.7)
Malta	41.7% (33.6-50.3)	36.2% (28.9-44.2)	47.2% (38.3-56.4)
Marshall Islands	43.5% (33.8-53.7)	37.0% (28.3-46.7)	50.0% (39.3-60.8)
Mauritania	41.3% (33.4-49.2)	36.5% (29.2-43.9)	46.1% (37.7-54.4)
Mauritius	29.8% (22.8-37.8)	27.6% (21.2-35.1)	31.8% (24.3-40.5)
Mexico	28.9% (23.0-35.6)	25.5% (20.3-31.4)	32.2% (25.5-39.7)
Micronesia (Federated States of)	36.6% (28.2-46.0)	32.9% (25.3-41.6)	40.5% (31.2-50.5)
Mongolia	18.6% (13.9-24.4)	17.8% (13.6-22.9)	19.4% (14.3-25.8)
Morocco	26.2% (18.6-35.4)	20.7% (14.5-28.8)	31.4% (22.6-41.7)

<b>Country</b>	<b>% insufficient physical activity (95% CI), both sexes</b>	<b>% insufficient physical activity (95% CI), males</b>	<b>% insufficient physical activity (95% CI), females</b>
Mozambique	5.6% (4.1-7.6)	5.0% (3.7-6.8)	6.0% (4.4-8.2)
Myanmar	10.7% (7.5-15.0)	8.1% (5.8-11.3)	13.1% (9.2-18.5)
Namibia	33.4% (26.4-41.1)	28.9% (23.0-35.6)	37.4% (29.5-46.1)
Nauru	42.1% (31.7-53.3)	34.9% (25.8-45.3)	49.4% (37.6-61.3)
Nepal	13.4% (11.2-15.6)	12.0% (9.5-14.5)	14.6% (12.7-16.5)
Netherlands	27.2% (21.6-33.5)	25.3% (20.3-31.0)	29.0% (22.9-36.0)
New Zealand	42.4% (35.3-49.8)	39.3% (32.8-46.1)	45.3% (37.6-53.2)
Niger	22.4% (16.5-29.6)	19.7% (14.3-26.5)	25.0% (18.7-32.6)
Nigeria	27.1% (21.5-33.5)	24.7% (19.5-30.8)	29.6% (23.7-36.3)
Niue	6.9% (4.8-9.9)	7.8% (5.4-11.0)	6.0% (4.1-8.8)
Norway	31.7% (25.4-38.7)	29.6% (23.9-36.0)	33.8% (27.0-41.4)
Oman	32.9% (25.2-41.8)	30.0% (22.8-38.4)	40.2% (31.1-50.0)
Pakistan	33.7% (20.3-47.0)	24.4% (13.7-35.1)	43.3% (27.1-59.5)
Palau	40.9% (31.1-51.3)	28.3% (20.4-37.8)	53.5% (41.9-64.7)
Papua New Guinea	14.8% (9.7-21.9)	11.4% (7.5-17.0)	18.2% (11.8-26.9)
Paraguay	37.4% (28.9-45.9)	38.1% (29.6-46.5)	36.8% (28.2-45.3)
Philippines	39.7% (31.3-48.6)	30.1% (23.4-37.9)	49.1% (39.1-59.1)
Poland	32.5% (25.3-40.5)	31.5% (24.8-39.0)	33.4% (25.7-41.9)
Portugal	43.4% (35.0-52.2)	37.5% (29.8-46.0)	48.5% (39.5-57.6)
Qatar	36.8% (28.4-46.2)	33.2% (25.1-42.3)	48.7% (38.8-58.7)
Republic of Korea	35.4% (20.9-52.9)	29.5% (17.3-45.6)	41.0% (24.4-59.9)
Republic of Moldova	11.5% (8.1-16.0)	12.1% (8.7-16.7)	10.9% (7.6-15.4)
Romania	35.4% (27.8-43.7)	32.1% (25.3-39.7)	38.3% (30.0-47.4)
Russian Federation	17.1% (12.4-21.8)	16.6% (12.4-20.7)	17.6% (12.4-22.8)
Rwanda	14.6% (11.1-18.9)	11.0% (8.3-14.5)	17.6% (13.4-22.7)
Saint Kitts and Nevis	32.2% (24.3-41.2)	24.1% (17.8-31.9)	40.4% (30.9-50.6)
Saint Lucia	39.8% (30.3-49.9)	26.6% (19.2-35.6)	52.1% (40.8-63.3)
Samoa	12.6% (8.7-17.7)	8.2% (5.8-11.5)	17.2% (11.9-24.2)
Sao Tome and Principe	15.5% (11.7-20.2)	9.8% (7.3-13.0)	21.0% (16.0-27.1)
Saudi Arabia	53.1% (44.5-61.6)	44.9% (36.7-53.4)	65.1% (55.8-73.4)
Senegal	23.1% (18.7-27.5)	17.6% (14.7-20.4)	28.1% (22.3-34.0)
Serbia	39.5% (30.8-48.8)	34.8% (27.0-43.5)	43.8% (34.4-53.6)
Seychelles	18.8% (13.8-25.2)	17.7% (13.2-23.3)	20.0% (14.4-27.2)
Sierra Leone	14.3% (10.8-18.7)	10.1% (7.6-13.5)	18.3% (13.8-23.8)
Singapore	36.5% (21.7-54.3)	34.3% (20.8-50.9)	38.6% (22.6-57.5)
Slovakia	34.9% (27.6-43.0)	31.1% (24.6-38.5)	38.4% (30.3-47.1)
Slovenia	32.2% (25.2-40.1)	27.7% (21.7-34.6)	36.6% (28.7-45.4)
Solomon Islands	18.2% (13.0-24.8)	13.3% (9.5-18.2)	23.2% (16.5-31.5)
South Africa	38.2% (30.1-46.8)	28.5% (22.0-35.9)	47.3% (37.7-57.0)
Spain	26.8% (21.2-33.2)	22.9% (18.1-28.5)	30.5% (24.2-37.7)
Sri Lanka	28.9% (21.3-37.9)	20.2% (14.7-27.2)	36.7% (27.2-47.5)
State of Palestine	40.5% (32.5-49.0)	32.4% (25.4-40.4)	48.8% (39.8-57.8)
Suriname	44.4% (36.4-52.7)	38.1% (30.8-46.1)	50.6% (42.0-59.3)
Swaziland	28.0% (23.1-32.9)	23.8% (20.2-27.3)	32.1% (26.0-38.2)
Sweden	23.1% (18.2-28.9)	21.5% (17.1-26.6)	24.7% (19.3-31.1)
Switzerland	23.7% (18.2-30.3)	21.7% (16.7-27.8)	25.7% (19.7-32.7)
Tajikistan	29.3% (21.2-38.8)	19.9% (14.0-27.6)	38.7% (28.5-49.9)
Thailand	24.6% (18.2-32.3)	21.8% (16.3-28.5)	27.2% (20.0-36.0)
Timor-Leste	17.8% (12.3-25.0)	10.3% (6.9-15.0)	25.5% (17.7-35.2)
Togo	9.8% (7.4-12.8)	9.2% (7.0-12.0)	10.3% (7.8-13.6)
Tokelau	11.1% (7.5-16.1)	4.5% (3.0-6.7)	17.7% (11.9-25.4)

<b>Country</b>	<b>% insufficient physical activity (95% CI), both sexes</b>	<b>% insufficient physical activity (95% CI), males</b>	<b>% insufficient physical activity (95% CI), females</b>
Tonga	17.4% (12.4-23.6)	8.5% (5.9-11.9)	25.9% (18.6-34.8)
Trinidad and Tobago	38.2% (27.8-49.6)	27.2% (18.9-37.5)	48.6% (36.3-61.2)
Tunisia	30.4% (23.1-38.7)	26.4% (20.2-33.7)	34.1% (25.8-43.4)
Turkey	30.6% (23.3-38.8)	21.7% (16.3-28.4)	38.8% (29.9-48.5)
Tuvalu	27.3% (20.5-35.4)	17.5% (12.7-23.7)	37.2% (28.3-47.0)
Uganda	5.5% (4.0-7.6)	5.2% (3.8-7.1)	5.8% (4.2-8.0)
Ukraine	19.6% (14.2-26.4)	18.7% (13.7-24.9)	20.4% (14.7-27.6)
United Arab Emirates	41.4% (32.8-49.9)	39.0% (30.5-47.4)	49.3% (40.2-58.5)
United Kingdom	35.9% (29.4-42.9)	31.5% (25.8-37.8)	40.0% (32.8-47.7)
United Republic of Tanzania	6.5% (4.8-8.6)	5.8% (4.3-7.7)	7.1% (5.3-9.5)
United States of America	40.0% (33.0-47.3)	31.7% (25.8-38.3)	48.0% (40.1-56.1)
Uruguay	22.4% (16.9-29.0)	18.7% (14.2-24.3)	25.7% (19.4-33.3)
Uzbekistan	19.1% (13.2-26.7)	13.3% (9.2-18.9)	24.4% (16.9-33.9)
Vanuatu	8.0% (5.4-11.6)	7.2% (4.9-10.4)	8.8% (5.9-12.8)
Venezuela (Bolivarian Republic of)	31.4% (24.0-40.0)	29.5% (22.5-37.5)	33.3% (25.3-42.4)
Viet Nam	25.4% (18.9-33.1)	19.9% (14.8-26.1)	30.6% (22.8-39.6)
Zambia	22.1% (17.3-26.8)	19.1% (14.8-23.3)	25.0% (19.7-30.2)
Zimbabwe	26.8% (20.5-34.3)	22.8% (17.2-29.5)	30.7% (23.5-38.9)



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