Cardiovascular risk charts for 182 countries: application of laboratory-based and office-based risk scores to global populations

Authors: Peter Ueda (PhD)[1], Mark Woodward (PhD)[2-4], Yuan Lu (ScD) [5], Kaveh Hajifathalian (MD)[6], Rihab Al-Wotayan (MD)[7*], Carlos A Aguilar-Salinas (PhD)[8*], Alireza Ahmadvand (MD)[9-11*], Fereidoun Azizi (MD)[12*], James Bentham (PhD)[10*], Renata Cifkova (MD)[13*], Mariachiara Di Cesare (PhD)[9,10*], Louise Eriksen (MSc)[14*], Farshad Farzadfar (MD)[15, 16*], Trevor S Ferguson (DM)[17*], Nayu Ikeda (PhD)[18*], Davood Khalili (PhD)[19*], Young-Ho Khang (MD)[20*], Vera Lanska (PhD)[21*], Luz León-Muñoz (PhD)[22*], Dianna Magliano (PhD)[23*], Paula Margozzini[24*], Kelias P Msyamboza (PhD)[25*], Gerald N Mutungi (PhD)[26*], Kyungwon Oh (PhD)[27*], Sophal Oum (DrPH) [28*], Fernando Rodríguez-Artalejo (MD)[22*], Rosalba Rojas-Martinez (PhD)[29*], Gonzalo Valdivia[30*], Rainford Wilks (DM)[17*], Jonathan E Shaw (MD)[23*], Gretchen A Stevens (DSc)[31*], Janne Tolstrup (PhD)[14*], Bin Zhou (MSc)[9,10*], Joshua A Salomon (PhD)[1], Majid Ezzati (FMedSci)[9,10,32,33], Goodarz Danaei (ScD)[1,34]

* These authors have made equal contributions and are listed alphabetically.

Affiliations:
1. Department of Global Health and Population, Harvard School of Public Health, Boston, MA, USA
2. The George Institute for Global Health, University of Oxford, Oxford, UK
3. The George Institute for Global Health, University of Sydney, Sydney, Australia
4. Department of Epidemiology, Johns Hopkins University, Baltimore, MD, USA
5. Yale/ Yale-New Haven Hospital, Center for Outcomes Research and Evaluation (CORE), New Haven, CT, USA
6. Department of Internal Medicine, Cleveland Clinic, Cleveland, OH, USA
7. Central Department of Primary Health Care, Ministry of Health, Kuwait
8. Department of Endocrinology and Metabolism, Instituto Nacional de Ciencias Médicas y Nutrición, “Salvador Zubirán”, Mexico City, Mexico
9. MRC-PHE Centre for Environment and Health, Imperial College London, London, UK
10. Department of Epidemiology and Biostatistics, School of Public Health, Imperial College London, London, UK

11. Non-Communicable Diseases Research Center, Tehran University of Medical Sciences, Tehran, Iran
12. Endocrine Research Center, Research Institute for Endocrine Sciences, Shahid Beheshti University of Medical Sciences, Tehran, Iran
13. Center for Cardiovascular Prevention, Charles University in Prague, First Faculty of Medicine and Thomayer Hospital, Prague,Czech Republic
14. National Institute of Public Health, University of Southern Denmark, Copenhagen, Denmark
15. Non-Communicable Diseases Research Center, Endocrinology and Metabolism Population Sciences Institute, Tehran University of Medical Sciences, Tehran, IR Iran
16. Endocrinology and Metabolism Research Center, Endocrinology and Metabolism Research Institute, Tehran University of Medical Sciences, Tehran, IR Iran
17. Epidemiology Research Unit, Tropical Medicine Research Institute, The University of the West Indies, Kingston, Jamaica
18. Center for International Collaboration and Partnership, National Institute of Health and Nutrition, National Institutes of Biomedical Innovation, Health and Nutrition, Tokyo, Japan
19. Prevention of Metabolic Disorders Research Center, Research Institute for Endocrine Sciences, Shahid Beheshti University of Medical Sciences, Tehran, Iran
20. Institute of Health Policy and Management, Seoul National University College of Medicine, Seoul, South Korea
21. Statistical Unit, Institute for Clinical and Experimental Medicine, Prague, Czech Republic
22. Department of Preventive Medicine and Public Health, School of Medicine, Universidad Autónoma de Madrid/Idipaz, and CIBER of Epidemiology and Public Health, Madrid, Spain
23. Baker IDI Heart and Diabetes Institute, Melbourne, Australia
24. Department of Public Health, Faculty of Medicine, Pontifical Catholic University of Chile, Santiago, Chile
25. World Health Organization, Malawi Country Office, Lilongwe, Malawi
26. Non-communicable Diseases Prevention and Control Program at the Ministry of Health, in Kampala, Uganda
27. Division of Health and Nutrition Survey, Korea Centers for Disease Control and Prevention, Cheongwon-gun, South Korea
28. University of Health Sciences, Phnom Penh, Cambodia

29. Centro de Investigación en Salud Poblacional, Instituto Nacional de Salud Publica, Mexico
30. Pontificia Universidad Católica de Chile, División Salud Pública y Medicina Familiar, Chile
31. Department of Information, Evidence and Research, WHO, Geneva, Switzerland
32. WHO Collaborating Centre on NCD Surveillance and Epidemiology, Imperial College London, London, UK
33. Wellcome Trust Centre for Global Health Research, London, UK
34. Department of Epidemiology, Harvard School of Public Health, Boston, MA, USA

Address correspondence to:

Goodarz Danaei

Department of Global Health and Population

655 Huntington Avenue

Boston, Massachusetts 02115

Phone: +1-617-4342-5722

Fax: +1-617-432-6733

gdanaei@hsph.harvard.edu

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Background: Treatment of cardiovascular risk factors based on risk is an effective strategy for prevention of cardiovascular diseases (CVD). Worldwide implementation of risk-based CVD prevention requires risk prediction tools that are contemporarily recalibrated for the target country, and can be used where laboratory measurements are unavailable. We present two cardiovascular risk scores, with and without laboratory-based measurements; and the corresponding risk charts for 182 countries to predict 10-year risk of fatal and non-fatal cardiovascular disease.

Methods: We used data from eight prospective studies to estimate coefficients of the risk equations using proportional hazard regressions. The laboratory-based risk score included smoking, blood pressure, diabetes and total cholesterol. In the non-laboratory (office-based) risk score, we replaced diabetes and total cholesterol with body mass index. We recalibrated risk scores for each sex and age-group in each country using average risk factor levels and CVD rates. We used recalibrated risk scores and data from national surveys to estimate proportion of the population at different levels of CVD risk in an illustrative subset of 10 countries. We estimated proportion of men and women who were similarly categorized as high-risk or low-risk by the two risk scores.

Findings: Predicted risks for the same risk factor profile were lower in high-income countries than in low- and middle-income countries (LMICs), with the highest risks in countries in Central and Southeast Asia, and Eastern Europe. In the national health surveys, the proportion of people aged 40-64 years at high-risk of CVD ranged from 1% for South Korean women to 41% for Czech men in high-income countries using ≥10% risk to define high-risk, and from 2% in Uganda to 13% in Iranian men in LMICs using a ≥20% risk threshold. More than 80% of adults were similarly classified as low- or high-risk by the laboratory-based and office-based risk scores. However, the office-based model substantially underestimated the risk among diabetes patients.

Interpretation: Our risk charts address a major technical bottleneck for worldwide implementation of risk-based CVD prevention by providing risk assessment tools that are recalibrated for each country, and by making the estimation of CVD risk possible without using laboratory-based measurements.

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Introduction

Cardiovascular diseases (CVDs) are the leading cause of death and disability worldwide, and over three quarters of CVD deaths occur in low- and middle-income countries (LMICs).[1] An effective strategy for CVD prevention is to provide lifestyle counselling to people at high risk of an event, and/or prescribing treatment to lower blood pressure and serum cholesterol. As part of the global response to non-communicable diseases (NCDs), countries have agreed to a target of 50% coverage of counselling and treatment for people who are at high risk of CVDs, including ischemic heart disease (IHD) and stroke.[1,2]

The risk-based approach to CVD prevention requires identifying high-risk people, for example those with a 30% or more risk of having a cardiovascular event in 10 years,[2,3] which is done using risk prediction equations (often presented as risk charts). A risk prediction equation estimates a person's risk of CVD during a specific period using their levels of CVD risk factors and a set of weights, usually log hazard ratios, that quantify the proportional effect of each risk factor on CVD risk. Risk equations developed in one population cannot be applied to other populations, or even used in the same population years after they were developed, because average CVD risk and CVD risk factor levels vary across populations and over time.[4,5] This challenge can be dealt with by recalibrating the risk prediction equation, i.e. resetting the average risk factor levels and disease risks to current levels for the target population.[6–8] Such recalibration is, however, rarely done because most countries do not have the information, and current risk equations are difficult to recalibrate.[9] A previous set of risk charts published by the World Health Organization (WHO) only provided predicted CVD risk for regions and not countries.[3] This lack of reliable contemporary risk charts for all countries presents a major obstacle for worldwide implementation of risk-based prevention. A second obstacle to worldwide implementation is that most risk prediction equations require measurements of blood glucose and lipids which makes the assessment too costly or impractical in resource-poor settings.

We previously presented a novel approach for risk prediction in global populations (GLOBORISK) and applied the methods to predict 10-year risk of fatal CVD.[9] In this paper, we use the same methods to estimate the risk of fatal-and-nonfatal CVD and recalibrate the models using updated data for 182 countries. We also estimate an alternative model and corresponding risk charts using only risk factors that do not require blood tests. We then evaluate a two-stage strategy using a combination of the two risk scores to identify high-risk individuals while limiting the number of patients who need laboratory tests.

Methods

Coefficients of risk prediction equations

As described in detail elsewhere,[9] we generated the risk prediction equation using data from eight cohort studies in the Unites States and a sex-and-cohort-stratified Cox proportional hazards model that used age as the time scale.[10] We allowed the coefficients of risk factors to vary with age because CVD hazard ratios often decrease by age.[11] We also included interaction terms between sex and diabetes and sex and smoking, based on prior evidence.[12,13]

In the office-based model, we replaced total cholesterol and diabetes with body mass index (BMI) as there is a strong correlation between BMI and diabetes/cholesterol both due to the direct effect of excess weight on these mediating physiological traits[14] and because common factors such as poor diet and physical inactivity increase body weight, blood glucose and serum cholesterol. As supported by previous research,[15] an interaction term between sex and BMI did not improve risk prediction, and was therefore not included.

We validated the models by assessing the ability of the risk score to assign a higher risk to individuals with shorter time to event (discrimination) using Harrell's C statistics and by comparing the predicted and observed 10-year risk by deciles of risk (calibration) (Appendix p 2 and Appendix Figure 1). We compared proportion of participants who went on to develop CVD during that was categorized as high-risk by the two risk scores (sensitivity) as well as proportion of the participants who were free of CVD at end of the follow-up who were categorized as low-risk (specificity) using 10, 20 and 30% 10-year CVD risk as thresholds for high-risk. Finally, we validated the model in three cohorts that had not been used to estimate the risk prediction equation.

Recalibration of the risk scores

The recalibration procedure is described in detail elsewhere.[9] Briefly, we replaced average risk factor levels and CVD event rates in each 5-year age-group and by gender with the best current estimates of these quantities for the target country. Age-and-sex-specific estimates of mean risk factor levels were taken from global analyses of health examination surveys.[16–20] We estimated fatal-and-nonfatal IHD and stroke rates for each country and age-sex-group by dividing the IHD and stroke death rates, from WHO,[21] by case fatality rates.

We used two properties of case fatality to obtain its estimates. First, case fatality varies by region and is higher in LMICs than high-income countries.[22,23] We used previously published estimates of 28-day case fatality rates for IHD[22] and stroke.[23] We converted these to one-year case fatality rates using methods explained in the Appendix (Appendix pp 3-6 and Appendix Table 2). The second property of case-fatality is that they increase with age. To convert all-age case fatality rates from above to age-specific ones, we used the relative age pattern of one-year case fatality rates observed in nationwide Swedish registries (Appendix pp 3-6, Appendix Figures 3 and 4).

The total (fatal-and-nonfatal) CVD rate in each age-sex-country group was calculated as:

$$CVD = fatal\ IHD + fatal\ Stroke + [1 - (1 - nonfatal\ IHD) * (1 - nonfatal\ Stroke)\quad .$$

This formula allows for the potential overlap between nonfatal IHD and stroke (e.g. a stroke event in the same person following a nonfatal IHD), which tends to happen where non-fatal IHD and stroke rates are higher (e.g. in older ages), therefore reducing the potential bias when simply adding non-fatal IHD and stroke rates. In the 8 US cohorts, adding non-fatal IHD and stroke rates would overestimate the observed CVD rates by 3 to 31 per 1000 person-years, whereas the above method reduces the bias by up to 63%. Once fatal-and-nonfatal CVD rates were estimated, they were projected for 9 years (i.e. 2016-2024) using trends from 2000 to 2015 and a log-linear model.

We used the recalibrated risk scores to generate risk charts for 182 (of the 193) WHO member states for which we had data on CVD death rates. We limited prediction to those aged 40 to 74 years because this range is commonly considered for primary prevention of CVD, and CVD death rates in ages 85 and older are less reliable.

Application in national surveys

We used the recalibrated laboratory-based risk score and individual-level data from nationally representative surveys to estimate the proportion of population at different CVD risk levels in 10 countries with recent (2007 or later) surveys (Appendix Table 3). For each country, we compared the average 10-year risk of fatal CVD from the previously published Globorisk model that we revised to update the average risk factor and cardiovascular event rates with 10-year fatal-and-nonfatal CVD risk predicted by the office-based and the laboratory-based risk scores. We also used scatter plots to compare predicted risks for each individual and estimated the proportion of men and women who were similarly categorized as low- or high-risk by the two risk scores. We considered three different thresholds to define high-risk: 10% for high-income countries, and 20% in LMICs based on recent guidelines;[3,24–26] and 30% as the threshold used in the global NCD target.[2]

We also evaluated a two-stage strategy to identify high-risk individuals, which could be useful in resource-poor settings. In this strategy, patients would be first assessed using the office-based risk score and those with a borderline predicted risk which is just below the threshold for high-risk (i.e. potential false negatives) would be referred for further laboratory-testing. We estimated proportion of those at high-risk who were identified by the office-based risk score and determined the range of office-based risk levels that needed further laboratory tests to identify 95% of those at high laboratory-based risk.

Analyses were done with Stata 12.0. The study protocol was approved by the institutional review board at the Harvard T.H. Chan School of Public Health (Boston, MA, USA).

Role of the funding source

The funders of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the paper. PU, KH, and GD had full access to all the data in the study and GD had final responsibility for the decision to submit for publication.

Results

The coefficients for the risk scores are shown in Table 1. Both scores performed well (Appendix p 2 and Appendix Figure 1). In internal validation, the C statistic was 0.71 (95% confidence interval = 0.70-0.72) for the laboratory-based model, and 0.69 (0.68-0.70) for the office-based model. In external validation (using Tehran Lipid and Glucose Study, Scottish Heart Health Extended Cohort, and The Australian Diabetes, Obesity and Lifestyle Study), the C-statistic ranged from 0.73 to 0.78 for the laboratory-based model and from 0.70 to 0.77 for the office-based model. (Appendix Figure 2) Both models predicted risks that were close to those observed ones in internal and external validation. (Appendix Figure 1 and Appendix Figure 2)

The average 10-year risk of fatal-and-nonfatal CVD was similar in the two risk scores and were expectedly higher than risk of fatal CVD (Table 2). In the pooled cohorts and using 10% as the risk threshold, the laboratory-based risk score categorized 1,956 (65.1% [95% Confidence Interval 64.2 - 65.9%], and the office-based risk score categorized 1,881 (62.6% [61.7 - 63.5] of the 3,005 participants who later had a CVD event as high-risk (Appendix Table 4).

At any age and risk factor level, 10-year risk of CVD varied considerably across countries for both models. Overall, predicted risks in the country risk charts were lower in high-income countries than in LMICs, with the highest risks estimated for the same risk profile in Southeast and Central Asia, and Eastern Europe (Appendix Figures 8 and 9). For example, for some of the most populous countries presented in Figure 1, the predicted 10-year CVD risk for a non-smoking 65-year-old man with diabetes, SBP of 160 mmHg, and a total cholesterol of 6 mmol/L spanned from 21% in Japan and United States to 53% in China, and the predicted risks for the same profile for a smoker ranged from 26% in Japan to 62% in China. The complete set of risk charts and a risk calculator is available online at www.globorisk.org.

Distribution of 10-year risk of CVD, using laboratory-based model varied substantially across countries (Figure 2). The share of population with a ≥10% CVD risk in four high-income countries ranged from 7% for men and 1% for women in South Korea to 41% for men and 15% for women in Czech Republic. In four middle-income countries, the percentage of population at ≥20% CVD risk ranged from 3% for men and 2% for women in Jamaica to 13% for men and 11% for women in Iran. In the two low-income countries, percentage who were at ≥20% risk in both men and women was <2% in Uganda and 9% in Cambodia.

When using a 10% risk threshold for high-risk in high income countries, the two risk scores assigned the same risk status to between 85 and 93% of men, and 89 and 95% of women in each country. The corresponding percentages using a 20% threshold for middle-income countries were 90% to 96% in men and 89 to 95% in women; and for low-income countries 94-95% to 99% for both men and women (Table 3 and Appendix Figure 10). The largest differences between the risks estimated using the two models were seen among people with diabetes (Figure 3 and Appendix Figure 10) where the office-based model underestimated risk by 23% to 75% in various ages across the 10 countries. Accordingly, the proportion of the population correctly categorized as low- or high-risk using the office-based model was lower in countries with a high diabetes prevalence (Table 3).

In the four high-income countries, percentage of individuals at high-risk (≥10% laboratory-based CVD risk) who were correctly identified by the office-based risk score ranged from 66 to 82% among men and from 36 to 71% among women (Table 4). In these countries, between 14 and 61% of the population who had a borderline risk would need further laboratory tests to identify 95% of those at high-risk. In low- and middle-income countries, the proportion of high-risk (≥20% CVD risk) individuals who were correctly identified by the office-based risk score varied from 33 to 83%, and the percentage of the population that would need laboratory tests to correctly identify 95% of those at high-risk, ranged from 11 to 50%.

Discussion

We developed CVD risk charts for predicting fatal-and-nonfatal CVD, with and without laboratory-based measurements, for 182 countries. These risk charts support worldwide implementation of risk-based prevention by providing healthcare professionals with risk assessment tools that are recalibrated for each country and can be used in settings without access to laboratory-based measurements. The predicted risk for the same risk factor profile tended to be lower in high-income countries than in LMICs, a pattern that was also observed in the Prospective Urban and Rural Epidemiological study.[27] When risk scores were applied to data from national health surveys, prevalence of high CVD risk varied substantially by country and sex and was generally lower in high-income countries compared with LMICs.

Our risk scores and risk charts will be particularly useful in LMICs because most of these countries lack locally-developed risk scores. In addition, the office-based risk score allows for risk prediction in environments where access to a laboratory is limited, such as during home care visits. Similar to previous research,[28] more than 80% of adults were similarly classified as low- or high-risk by laboratory-based and office-based risk scores. Nonetheless, we noted that the office-based risk score substantially underestimates the risk among diabetics.

In several LMICs (e.g. Uganda, China, and Jamaica), a two-stage strategy using the 20% risk threshold for high-risk seemed efficient because only a small proportion of individuals with borderline office-based risk would need further laboratory tests to detect 95% of high-risk individuals. In contrast, half of women in Cambodia and men in Mexico would need further laboratory tests. Further developments of strategies to use office-based risk scores should apply country-specific risk thresholds and balance the benefits of reducing costs with the possibility of missing truly high-risk individuals. Where a difference was observed among the laboratory-based and office-based score, it was mostly among diabetes patients, highlighting the importance of including diagnosis of diabetes in the risk score if laboratory measurements are available. In addition, including diabetes in the laboratory-based risk score would further motivate screening for diabetes which remains largely undiagnosed in LMICs.[29] Therefore, integrating diabetes diagnosis into CVD risk stratification programs will improve early detection and management of diabetes and risk-based CVD prevention.

Most existing risk scores have been developed for specific populations.[30,31] WHO developed regional risk charts in 2007,[3] but coefficients of the risk score were not derived from the same regression model or even from a consistent set of epidemiological studies. Moreover, risk charts were only presented for regions and not for each country, although CVD risk differs between countries in the same region. The only other country-specific risk score, the Systematic Coronary Risk Evaluation

(SCORE), provides risk charts for European countries. However, the charts only predict risk of fatal CVD[32], which disfavors younger individuals who have a proportionally higher risk of non-fatal CVD. Moreover, SCORE risk charts do not include diabetes which is an important predictor of CVD.

In addition to providing a unified risk score and risk charts that can be used for all countries, our risk charts can be easily updated as new national data on average risk factor levels and CVD rates become available. Our risk scores also include interactions between age and risk factors. The age-interactions improve risk prediction, and, because they are negative, help highlight the need for intervention in younger individuals with increased risk factors levels whose lifetime risk of CVD is high.[33] In fact, as evident in the risk charts, the predicted risks for individuals with high levels of multiple risk factors do not substantially increase with age. Other strengths of the study are the use of multiple high-quality prospective cohorts to estimate risk score coefficients, and application of the risk score to individual-level, national data from countries in different world regions to estimate prevalence of high CVD risk, as opposed to summary statistics used in the 2007 WHO report[3] which ignore correlation between different CVD risk factors in each country.

Our study has some limitations. First, because national CVD incidence rates are not available for most countries, we estimated fatal-and-nonfatal CVD rates using national IHD and stroke death rates from WHO, and estimates of case fatality rates by age, sex and region.[22,23] Our estimated CVD rates were close to those observed in nationwide studies and health registries in several high-income countries (Appendix Figures 4 to 6). This estimation, however, had a few limitations: (1) WHO death rates in countries with incomplete vital registration are estimated using partial information and demographic and epidemiological methods[34]; (2) we used the age-pattern of case fatality from Sweden, where high-quality data was available from more than one million events in registries because age-specific case fatality rates were not available from other countries. As Appendix Figures 5, 6 and 7 show for several countries, the estimated event rates are quite close to the observed ones; (3) the estimated CVD rates that we used for recalibration underestimate the overlap between non-fatal events and therefore overestimate the non-fatal CVD rate as there is a positive correlation between non-fatal IHD and stroke rates because they share risk factors. Empirical data to quantify this correlation for all countries is not available. The scarcity of data on CVD rates underscores the need for monitoring. Second, although the coefficients of the risk scores were derived from eight high-quality cohorts including diverse ethnic origins, all cohorts were from US and Puerto Rico. Evidence from cohort pooling show that the proportional effects of risk factors are similar in Western and Asian populations, and over time in the same populations.[11,35] Future research should include pooling studies across different regions. Third, in our application of the risk score in country surveys, we did not account for patients with a previous CVD event who are at high risk of a future event and should receive treatment. Fourth, we used 10, 20 and 30% as thresholds to define high-risk based on national and international guidelines for CVD prevention.[3,24–26] However, the threshold above which a patient is considered high-risk and eligible for counseling and treatment depends on the priorities set for disease control in each country. The threshold also changes the sensitivity and specificity of the risk score which also varies across countries. Finally, we presented 10-year CVD risk as this is most commonly used in risk scores and risk charts. However, 10-year risks underestimates lifetime risk and may therefore lead to under-treatment especially in younger individuals.

Risk-based prevention of CVD is now a major strategy proposed by national and international guidelines.[3,24,25] The risk charts presented here can be used to predict

10-year risk of fatal-and-nonfatal CVD in 182 countries worldwide, removing a major obstacle in applying risk-based prevention strategies both for individuals and populations. Further research is required to identify the most cost-effective interventions for high-risk individuals. There are ongoing trials to establish whether the efficacy of multi-drug therapy and lifestyle advice in LMICs is similar to those observed in high-income countries. There is also ongoing research on whether non-physician clinicians, aided by new information technologies such as risk charts, can identify and manage high-risk individuals, especially if regular contact leads to better adherence.

Research in context

Evidence before this study

We searched PubMed for articles related to cardiovascular disease risk prediction in global populations using the following key terms: cardiovascular disease, risk prediction, risk score, risk equation, developing countries, low-and-middle-income countries, global. We reviewed the 209 articles retrieved from this search to include risk prediction equations that could be applied to more than one country. Only three risk prediction equations qualified for our review and each had major limitations. WHO presented regional risk charts in 2007. However, the coefficients of the risk score were not derived from the same regression model or even from the same set of epidemiological studies, and cardiovascular risk patterns might differ between countries in the same sub-region. The Systematic Coronary Risk Evaluation (SCORE) provided separate risk charts for European countries but the risk charts only predict risk of fatal cardiovascular disease and did not include diabetes which is an important predictor of cardiovascular disease. Finally, the INTERHEART Modifiable Risk score was developed from a multi-country case-control study, unlike other models that are based on prospective cohorts, and did not include stroke as an outcome.

Added value of this study

We provided risk scores, with and without laboratory-based measurements, for predicting 10-year risk of fatal and non-fatal cardiovascular disease and recalibrated the risk score to produce risk charts for 182 countries. The two risk scores are designed in a way that allows and necessitates updating as new data on average risk factor levels and cardiovascular disease rates become available.

Implications of all the available evidence

Our risk charts support worldwide implementation of risk-based prevention by providing healthcare professionals with risk assessment tools that are recalibrated for each country and can be used in settings without access to laboratory-based measurements.

Contributions

GD, ME, and MW conceived the study. RAW, CAAS, AA, FA, JB, RC, MDC, LE, FF, TSF, NI, DK, YK, VL, LLM, DM, PM, KPM, GNM, KO, SO, FRA, RRM, GV, RW, JES, GAS, JT, and BZ collected and managed risk factor, survey or external cohort data. PU, KH and YL analysed cohort and survey data and prepared results. PU, GD, ME and MW wrote the manuscript with input from all other co-authors. GD and ME oversaw the research. GD is the study guarantor.

Declaration of interests

MW reports fees from Amgen for being a research project consultant. All other authors report no competing interests.

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Table 1: Coefficients and hazard ratios (HR) from the Cox proportional hazard models for laboratory-based and office-based risk scores

Risk prediction equation	**Coefficients (log HRs)**		**HR (95% CI)†**
Laboratory-based*	**Main effect**	**Age interaction term****	
Systolic blood pressure (per 10 mmHg)	0.3070 (0.2298, 0.3842)	-0.0022 (-0.0034, -0.0011)	1.18 (1.16, 1.19)
Total cholesterol (per 1mmol/L)	0.6149 (0.4631, 0.7667)	-0.0069 (-0.0092, -0.0045)	1.19 (1.16, 1.22)
Diabetes	1.4753 (0.9921, 1.9585)	-0.0132 (-0.0205, -0.0059)	1.88 (1.71, 2.06)
Diabetes and female	0.4050 (0.2523, 0.5578)	-	1.50 (1.29, 1.75)
Smoking	1.8467 (1.4192, 2.2741)	-0.0221 (-0.0289, -0.0152)	1.55 (1.44, 1.66)
Smoking and female	0.3254 (0.1893, 0.4614)	-	1.38 (1.21, 1.59)
Office-based			
Systolic blood pressure (per 10 mmHg)	0.3037 (0.2264, 0.3811)	-0.0021 (-0.0033, -0.0009)	1.18 (1.17, 1.20)
Body mass index (per 5 kg/m^2)	0.3245 (0.1288, 0.5201)	-0.0030 (-0.006, 0)	1.14 (1.11, 1.17)
Smoking	1.7951 (1.3651, 2.2251)	-0.0215 (-0.0284, -0.0146)	1.52 (1.42, 1.64)
Smoking and female	0.3528 (0.2170, 0.4886)	-	1.42 (1.24, 1.63)

HR=hazard ratio; CI=confidence interval
*Previously presented elsewhere[13] and reported here for comparison
**We included an interaction term between age and all risk factors because the HRs for effects on cardiovascular disease decrease with age;[15–17] therefore the HR at any age depends on the main effect and interaction terms.
†HRs for systolic blood pressure, total cholesterol, diabetes, smoking, and body mass index are shown at median age of CVD event, which is 64 years in the included cohorts; HRs for smoking and diabetes are for men, and their interaction with sex shows the additional risk among women.

Table 2: Laboratory-based and office-based 10-year risk of fatal-and-nonfatal CVD and 10-year risk of fatal CVD in country surveys in ages 40-64 years

	Men			Women		
	Laboratory-based fatal-and-nonfatal CVD	Office-based fatal-and-nonfatal CVD	Laboratory-based fatal CVD	Laboratory-based fatal-and-nonfatal CVD	Office-based fatal-and-nonfatal CVD	Laboratory-based fatal CVD
Cambodia	11.0	11.2	2.6	9.7	9.3	2.3
China	9.4	8.4	4.4	8.0	7.1	3.8
Czech Republic	10.3	9.4	4.8	5.6	5.0	2.0
Iran	11.2	11.6	5.7	9.0	8.5	4.7
Jamaica	6.4	6.1	3.6	4.2	3.9	2.0
Mexico	7.4	6.6	2.4	4.6	4.2	1.4
South Korea	4.6	4.3	1.4	1.8	1.5	0.6
Spain	5.9	5.6	1.5	2.2	2.0	0.4
Uganda	5.3	6.0	2.6	4.2	4.8	2.4
USA	8.5	7.6	2.7	4.8	4.2	1.2

Table 3: Percentage of population in national health surveys, categorized as "high" or "low" risk by the office-based and laboratory-based risk scores at three different threshold levels to define high-risk.

10-year CVD risk cut-off for "high risk"		10%				20%				30%			
Office-based risk score		Low risk		High risk		Low risk		High risk		Low risk		High risk	
Laboratory-based risk score		Low risk	High risk	Low risk	High risk	Low risk	High risk	Low risk	High risk	Low risk	High risk	Low risk	High risk
Uganda	Men	82.8	2.4	5.4	9.4	98.3	0.7	0.6	0.4	99.6	0.1	0.3	0.0
	Women	85.7	1.0	5.4	7.8	97.6	0.7	0.3	1.4	98.9	0.0	0.7	0.4
Cambodia	Men	48.4	4.3	5.5	41.8	87.8	2.5	2.8	6.8	96.0	1.2	1.1	1.7
	Women	63.0	4.4	5.2	27.4	88.4	3.6	2.1	5.8	95.4	2.5	0.6	1.4
China	Men	50.6	5.8	2.3	41.3	75.2	3.8	2.2	18.7	88.2	3.0	1.5	7.3
	Women	57.9	4.8	3.6	33.8	78.7	4.7	2.6	14.0	89.1	4.4	1.7	4.8
Spain	Men	71.6	6.7	4.4	17.3	96.3	1.9	0.6	1.3	99.5	0.4	0.0	0.1
	Women	88.7	3.3	2.3	5.7	98.1	1.3	0.2	0.4	99.7	0.3	0.0	0.0
South Korea	Men	83.1	5.0	2.0	9.9	98.3	1.2	0.1	0.4	99.7	0.3	0.0	0.0
	Women	89.4	2.4	2.4	5.8	97.7	1.7	0.2	0.4	99.4	0.5	0.1	0.0
Czech Republic	Men	52.2	7.5	6.1	34.3	88.6	5.8	1.6	4.1	96.9	2.4	0.4	0.2
	Women	82.2	6.4	2.9	8.6	96.5	2.2	0.4	0.9	99.0	0.8	0.0	0.2
USA	Men	65.6	8.8	5.8	19.8	95.3	2.6	0.0	2.1	98.2	1.2	0.1	0.6
	Women	83.6	8.5	3.1	4.9	97.5	1.6	0.8	0.1	99.6	0.4	0.0	0.0
Mexico	Men	65.6	8.9	5.4	20.0	91.3	3.9	1.2	3.7	97.6	1.6	0.3	0.4
	Women	75.3	6.3	5.3	13.2	92.0	4.2	1.1	2.8	96.7	2.4	0.0	0.9
Iran	Men	44.2	6.0	11.5	38.3	83.5	5.7	3.9	6.9	96.1	2.1	0.7	1.0
	Women	59.9	7.2	10.3	22.6	85.5	7.3	3.6	3.6	94.8	3.7	0.7	0.7
Jamaica	Men	66.1	4.3	3.5	26.1	90.7	2.9	1.2	5.2	97.6	1.0	0.3	1.1
	Women	74.3	6.1	4.1	15.5	90.7	4.7	2.4	2.2	97.5	1.5	0.1	0.9

Proportion of population correctly categorized by office-based risk score	
(dark green)	>=95%
(light green)	>=90 to <95%
(yellow)	>=85 to <90%
(orange)	>=80 to <85%

Countries are ordered by increasing diabetes prevalence. The surveys for Cambodia, Czech Republic, Iran, and Uganda include people aged between 40 and 64 years, and the remaining surveys include people aged between 40 and 74 years

Table 4: Percentage of population in national health surveys categorized as high CVD risk by the laboratory-based risk score, percentage of these correctly identified by the office-based risk score, and the range of borderline office-based risk levels (in % ten-year CVD risk categories) that will require further laboratory tests to correctly identify 95% of "high risk" individuals.

10-year CVD risk threshold for high-risk			10%			20%		
Country income level	Country	Sex	Percentage of population at high-risk	Percentage of those at high-risk identified by the office-based score	Range of office-based CVD risk to refer to lab (% of population in the risk range)	Percentage of population at high-risk	Percentage of those at high-risk identified by the office-based score	Range of office-based CVD risk to refer to lab (% of population in the risk range)
High	Spain	Men	24.0	72.2	6 to <10 (29.5)	3.2	40.7	11 to <20 (16.0)
		Women	9.0	63.5	5 to <10 (16.4)	1.7	24.5	10 to <20 (7.4)
	South Korea	Men	14.9	66.4	5 to <10 (30.9)	1.6	24.2	7 to <20 (22.7)
		Women	8.2	71.0	4 to <10 (13.9)	2.1	20.1	10 to <20 (7.6)
	Czech Republic	Men	41.7	82.1	7 to <10 (19.5)	9.9	41.2	11 to <20 (28.5)
		Women	14.9	57.4	4 to <10 (35.5)	3.1	30.0	8 to <20 (17.3)
	USA	Men	28.6	69.1	6 to <10 (40.6)	4.7	45.1	9 to <20 (32.3)
		Women	13.4	36.4	3 to <10 (61.1)	1.7	7.2	9 to <20 (10.0)
Middle	China	Men	47.2	87.7	7 to <10 (11.5)	22.5	83.0	13 to <20 (14.2)
		Women	38.6	87.6	6 to <10 (16.6)	18.6	74.9	9 to <20 (23.7)
	Mexico	Men	29.0	69.1	6 to <10 (27.0)	7.5	48.7	6 to <20 (47.6)
		Women	19.5	67.6	4 to <10 (31.3)	6.9	39.8	8 to <20 (20.6)
	Iran	Men	44.3	86.5	8 to <10 (16.7)	12.6	54.6	11 to <20 (32.5)
		Women	29.7	75.9	4 to <10 (34.1)	10.9	33.1	8 to <20 (34.4)
	Jamaica	Men	30.4	85.7	8 to <10 (10.5)	8.0	64.5	12 to <20 (16.7)
		Women	21.6	71.6	5 to <10 (19.9)	6.9	32.5	6 to <20 (30.4)
Low	Uganda	Men	11.8	79.4	7 to <10 (13.9)	1.1	37.9	11 to <20 (10.7)
		Women	8.9	88.3	6 to <10 (12.2)	2.0	67.3	5 to <20 (28.5)
	Cambodia	Men	46.1	90.7	8 to <10 (13.9)	9.4	73.0	11 to <20 (31.4)
		Women	31.8	86.1	6 to <10 (25.1)	9.5	61.6	6 to <20 (49.7)

	Percentage of those at high-risk identified by the office-based score	Proportion of population in the risk range for laboratory testing.
	>=90%	<10%
	>=80 to <90%	>=10 to <25%
	>=70 to <80%	>=25 to <50%
	<70%	>50%

Countries are ordered by income (World Bank groups) and diabetes prevalence. The surveys for Cambodia, Czech Republic, Iran, and Uganda include people aged 40 to 64 years, and the remaining surveys include people aged 40 to 74 years.

Figure 1: Laboratory-based country risk charts for 10-year risk of cardiovascular disease. To establish a person's risk, identify the column that represents the person's sex, smoking, and diabetes status. Then identify the closest cell that represents the person's age, total cholesterol and systolic blood pressure.

Figure 2: Distributions of 10-year risk of cardiovascular disease by country and sex in ages 40 to 64 years. Countries are ranked by average risk in the population.

Figure 3 Scatter plot for risks predicted using the office-based vs laboratory-based model in ages 40-74 years in China by diabetes status.

Table Laboratory-based and office-based 10-year risk of fatal-and-nonfatal CVD and 10-year risk of fatal CVD estimated using the three risk prediction models in country surveys in ages 40-64 years.

	Men			Women		
	Laboratory-based fatal-and-nonfatal	Office-based fatal-and-nonfatal	Fatal	Laboratory-based fatal-and-nonfatal	Office-based fatal-and-nonfatal	Fatal
Cambodia	11.0	11.2	2.6	9.7	9.3	2.3
China	9.4	8.4	4.4	8.0	7.1	3.8
Czech Republic	10.3	9.4	4.8	5.6	5.0	2.0
Iran	11.2	11.6	5.7	9.0	8.5	4.7
Jamaica	6.4	6.1	3.6	4.2	3.9	2.0
Mexico	7.4	6.6	2.4	4.6	4.2	1.4
South Korea	4.6	4.3	1.4	1.8	1.5	0.6
Spain	5.9	5.6	1.5	2.2	2.0	0.4
Uganda	5.3	6.0	2.6	4.2	4.8	2.4
USA	8.5	7.6	2.7	4.8	4.2	1.2

Brazil

Women

Systolic blood pressure (mmHg) by total cholesterol (mmol/L)

		Non-Diabetic										Diabetic									
		Non-smoker					Smoker					Non-smoker					Smoker				
AGE	SBP	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7
70-74	180	12	13	15	16	17	19	21	22	24	26	27	29	31	34	36	40	42	45	48	51
	160	10	10	11	12	13	15	16	18	19	21	21	23	25	27	29	32	34	37	40	42
	140	7	8	9	10	10	12	13	14	15	16	17	18	20	21	23	26	28	30	32	34
	120	6	6	7	7	8	9	10	11	12	13	13	14	15	17	18	20	22	24	25	28
65-69	180	9	10	11	13	14	16	17	19	22	24	21	24	26	29	32	35	39	42	47	51
	160	7	8	9	10	11	12	13	15	17	19	16	18	20	23	25	28	31	34	37	41
	140	5	6	7	7	8	9	10	11	13	14	13	14	16	18	20	21	24	26	29	33
	120	4	4	5	6	6	7	8	9	10	11	10	11	12	13	15	16	18	21	23	25
60-64	180	7	8	9	11	12	13	15	18	20	23	17	20	23	26	30	32	36	41	46	51
	160	5	6	7	8	9	10	11	13	15	18	13	15	17	20	23	24	28	32	36	41
	140	4	4	5	6	7	7	8	10	11	13	10	11	13	15	17	18	21	24	28	32
	120	3	3	4	4	5	5	6	7	8	10	7	8	10	11	13	14	16	18	21	24
55-59	180	5	6	8	9	11	11	14	16	19	23	14	17	20	24	28	29	34	40	46	53
	160	4	5	5	7	8	8	10	12	14	17	10	13	15	18	21	22	26	31	36	42
	140	3	3	4	5	6	6	7	9	10	12	8	9	11	13	16	16	19	23	27	32
	120	2	2	3	3	4	4	5	6	7	9	6	7	8	10	11	12	14	17	20	24
50-54	180	4	5	7	8	10	10	13	16	20	24	13	16	19	23	28	29	35	42	49	57
	160	3	4	5	6	7	7	9	11	14	17	9	11	14	17	21	21	26	31	38	45
	140	2	3	3	4	5	5	7	8	10	12	6	8	10	12	15	15	19	23	28	34
	120	1	2	2	3	4	4	5	6	7	9	5	6	7	9	11	11	14	17	20	25
45-49	180	3	4	5	7	9	9	11	14	18	23	10	13	17	21	27	26	33	40	49	58
	160	2	3	4	5	6	6	8	10	13	16	7	9	12	15	19	19	24	30	37	45
	140	2	2	3	3	4	4	5	7	9	12	5	6	8	11	13	13	17	21	27	33
	120	1	1	2	2	3	3	4	5	6	8	3	4	6	7	9	9	12	15	19	24
40-44	180	3	4	5	6	8	8	11	14	18	24	9	12	16	20	26	26	33	41	51	62
	160	2	2	3	4	6	5	7	10	13	17	6	8	11	14	19	18	23	30	38	47
	140	1	2	2	3	4	4	5	7	9	11	4	6	7	10	13	12	16	21	27	35
	120	1	1	1	2	3	2	3	4	6	8	3	4	5	7	9	8	11	15	19	25

Men

		Non-Diabetic										Diabetic									
		Non-smoker					Smoker					Non-smoker					Smoker				
AGE	SBP	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7
70-74	180	18	19	21	22	24	20	22	24	26	28	26	28	31	33	35	30	32	35	37	40
	160	14	15	16	18	19	16	17	19	20	22	21	23	24	26	28	24	26	28	30	32
	140	11	12	13	14	15	12	13	15	16	17	16	18	19	21	23	19	20	22	24	26
	120	8	9	10	11	12	10	10	11	12	13	13	14	15	16	18	15	16	17	19	20
65-69	180	14	16	17	19	22	18	20	22	25	27	22	25	28	31	34	28	31	35	38	42
	160	11	12	13	15	17	14	15	17	19	21	17	19	22	24	27	22	24	27	30	33
	140	8	9	10	11	13	10	12	13	15	16	13	15	17	18	21	17	19	21	24	26
	120	6	7	8	9	10	8	9	10	11	12	10	11	13	14	16	13	14	16	18	20
60-64	180	11	13	15	17	20	16	18	21	24	28	19	22	25	29	33	27	31	35	40	45
	160	8	10	11	13	15	12	14	16	18	21	14	17	19	22	25	20	23	27	31	35
	140	6	7	8	10	11	9	10	12	14	16	11	12	14	17	19	15	18	20	23	27
	120	5	5	6	7	8	6	8	9	10	12	8	9	11	12	14	11	13	15	18	20
55-59	180	9	11	13	16	19	15	17	21	25	29	17	20	24	28	33	26	31	36	42	49
	160	7	8	10	12	14	11	13	15	18	22	13	15	18	21	25	20	23	28	32	38
	140	5	6	7	8	10	8	9	11	13	16	9	11	13	16	19	14	17	21	24	29
	120	3	4	5	6	7	6	7	8	10	12	7	8	10	11	14	11	13	15	18	21
50-54	180	8	10	12	15	18	13	17	20	25	30	15	19	23	28	33	26	31	38	45	52
	160	5	7	8	10	13	10	12	15	18	22	11	13	17	20	25	19	23	28	34	40
	140	4	5	6	7	9	7	8	10	13	16	8	10	12	15	18	14	17	20	25	30
	120	3	3	4	5	6	5	6	7	9	11	5	7	8	10	13	10	12	15	18	22
45-49	180	6	7	10	12	15	11	14	18	23	29	12	16	20	25	31	23	29	36	44	53
	160	4	5	7	9	11	8	10	13	16	21	9	11	14	18	22	17	21	26	33	40
	140	3	4	5	6	8	5	7	9	12	15	6	8	10	13	16	12	15	19	24	30
	120	2	2	3	4	5	4	5	6	8	10	4	5	7	9	11	8	10	13	17	21
40-44	180	4	5	7	9	12	9	12	15	20	26	9	12	16	21	27	20	25	32	41	50
	160	3	4	5	6	9	6	8	11	14	18	6	8	11	14	19	14	18	23	30	37
	140	2	2	3	4	6	4	5	7	10	13	4	6	8	10	13	9	12	16	21	27
	120	1	2	2	3	4	3	4	5	6	9	3	4	5	7	9	6	8	11	15	19

Total cholesterol (mmol/L)

>=50 %
40-49 %
30-39 %
20-29 %
10-19 %
5-9 %
<5 %

China

Systolic blood pressure (mmHg)

Women

Systolic blood pressure	Non-Diabetic, Non-smoker 3	4	5	6	7	Non-Diabetic, Smoker 3	4	5	6	7	Diabetic, Non-smoker 3	4	5	6	7	Diabetic, Smoker 3	4	5	6	7	AGE
180	38	40	43	45	48	53	56	59	62	65	67	70	73	76	79	83	85	88	90	92	
160	30	32	35	37	40	44	46	49	52	55	57	60	63	66	70	74	77	80	83	85	
140	24	26	28	30	32	36	38	41	43	46	48	51	54	57	60	65	68	71	74	77	70-74
120	19	21	22	24	26	29	31	33	35	38	39	42	45	47	50	55	58	61	64	67	
180	27	30	33	36	40	43	47	51	55	60	55	59	64	68	72	76	80	84	87	90	
160	21	23	26	29	32	34	38	41	45	49	45	49	53	57	62	65	70	74	78	82	
140	16	18	20	22	25	27	30	33	36	40	36	40	43	47	51	55	59	64	68	72	65-69
120	12	14	16	17	19	21	23	26	29	32	28	31	35	38	42	45	49	53	57	62	
180	19	22	25	29	32	35	39	44	49	54	44	49	54	60	65	68	73	79	84	88	
160	15	17	19	22	25	27	30	34	39	44	34	39	43	49	54	57	62	68	73	79	
140	11	13	14	17	19	20	23	27	30	34	27	30	34	39	43	46	51	56	62	68	60-64
120	8	9	11	12	14	15	18	20	23	26	20	23	26	30	34	36	41	46	51	56	
180	12	15	17	21	24	25	30	35	40	46	32	37	42	48	55	57	63	70	77	83	
160	9	11	13	15	18	19	22	26	31	36	24	28	33	38	44	45	51	58	65	72	
140	7	8	9	11	13	14	17	20	23	27	18	21	25	29	34	35	40	46	53	60	55-59
120	5	6	7	8	10	10	12	14	17	20	13	16	18	22	25	27	31	36	42	48	
180	8	10	13	15	19	19	23	28	34	41	23	28	34	40	47	48	56	64	72	80	
160	6	7	9	11	14	14	17	21	25	31	17	21	25	30	36	37	44	51	59	67	
140	4	5	6	8	10	10	12	15	18	22	12	15	18	22	27	28	33	40	47	54	50-54
120	3	4	5	6	7	7	9	11	13	16	9	11	13	16	20	20	25	30	36	42	
180	6	7	9	12	15	15	19	24	29	36	17	22	27	34	41	41	50	59	68	77	
160	4	5	6	8	10	10	13	17	21	26	12	16	20	25	31	30	37	45	54	64	
140	3	3	4	6	7	7	9	12	15	19	9	11	14	18	22	22	27	34	41	50	45-49
120	2	2	3	4	5	5	6	8	11	13	6	8	10	12	16	16	20	25	31	38	
180	5	6	8	10	14	13	17	22	29	37	15	19	25	32	40	39	49	59	70	80	
160	3	4	5	7	9	9	12	16	20	26	10	13	18	23	29	28	36	45	55	66	
140	2	3	4	5	6	6	8	11	14	18	7	9	12	16	21	20	26	33	42	51	40-44
120	1	2	2	3	4	4	6	7	10	13	5	6	8	11	14	14	18	24	30	38	

Men

AGE	Systolic blood pressure	Non-Diabetic, Non-smoker 3	4	5	6	7	Non-Diabetic, Smoker 3	4	5	6	7	Diabetic, Non-smoker 3	4	5	6	7	Diabetic, Smoker 3	4	5	6	7
	180	46	49	51	54	58	51	54	57	60	63	62	65	68	71	74	67	70	73	76	79
	160	37	40	43	45	48	42	44	47	50	53	52	55	58	61	65	57	60	64	67	70
70-74	140	30	32	35	37	40	34	36	39	41	44	43	46	49	52	55	48	51	54	57	60
	120	24	26	28	30	32	27	29	31	34	36	35	38	40	43	45	39	42	45	48	51
	180	34	37	41	45	49	41	45	49	53	58	50	54	59	63	67	59	64	68	72	77
	160	27	30	33	36	39	33	36	40	44	48	41	45	48	53	57	49	53	58	62	66
65-69	140	21	23	26	28	31	26	29	32	35	38	32	36	39	43	47	40	43	47	51	56
	120	16	18	20	22	24	20	22	25	27	30	26	28	31	34	38	31	35	38	42	46
	180	23	26	30	34	38	31	35	40	45	50	38	42	47	52	58	49	54	60	65	71
	160	18	20	23	26	30	24	27	31	35	40	29	33	37	42	47	39	44	49	54	60
60-64	140	13	15	17	20	23	18	21	24	27	31	22	26	29	33	37	30	34	39	43	49
	120	10	11	13	15	17	14	16	18	21	24	17	19	22	25	29	23	27	30	34	39
	180	14	16	19	23	27	21	25	29	33	39	25	29	33	39	44	36	42	48	54	61
	160	10	12	14	17	20	16	18	22	25	30	18	22	25	30	34	27	32	37	43	49
55-59	140	7	9	10	12	15	11	14	16	19	22	14	16	19	22	26	21	24	28	33	38
	120	5	6	8	9	11	8	10	12	14	17	10	12	14	17	20	15	18	21	25	29
	180	8	10	12	14	18	13	16	20	24	29	15	18	22	27	33	25	30	36	43	50
	160	6	7	8	10	13	10	12	14	18	21	11	13	16	20	24	18	22	27	33	39
50-54	140	4	5	6	7	9	7	8	10	13	16	8	10	12	14	18	13	16	20	24	29
	120	3	3	4	5	6	5	6	7	9	11	6	7	8	10	13	10	12	14	18	21
	180	5	6	8	10	12	9	12	15	18	23	10	13	16	20	25	19	24	29	36	44
	160	3	4	5	7	9	6	8	10	13	17	7	9	11	14	18	13	17	21	26	33
45-49	140	2	3	4	5	6	4	6	7	9	12	5	6	8	10	13	9	12	15	19	24
	120	2	2	3	3	4	3	4	5	6	8	3	4	5	7	9	6	8	11	13	17
	180	3	4	6	8	10	7	9	12	16	21	7	10	13	17	22	16	21	26	34	42
	160	2	3	4	5	7	5	6	8	11	15	5	7	9	12	15	11	14	19	24	31
40-44	140	1	2	3	3	5	3	4	6	8	10	3	5	6	8	10	7	10	13	17	22
	120	1	1	2	2	3	2	3	4	5	7	2	3	4	5	7	5	7	9	12	15

Total cholesterol (mmol/L)

- >=50 %
- 40-49 %
- 30-39 %
- 20-29 %
- 10-19 %
- 5-9 %
- <5 %

Egypt

Systolic blood pressure (mmHg) by Total cholesterol (mmol/L)

Women

AGE	SBP	Non-Diabetic, Non-smoker					Non-Diabetic, Smoker					Diabetic, Non-smoker					Diabetic, Smoker				
		3	4	5	6	7	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7
70-74	180	32	34	36	39	41	45	48	51	54	57	59	62	65	68	71	76	79	82	84	87
	160	25	27	29	31	33	37	40	42	45	48	50	53	56	59	62	67	70	73	76	79
	140	20	22	23	25	27	30	32	34	37	39	41	44	46	49	52	57	60	63	66	69
	120	16	17	18	20	21	24	26	28	30	32	33	36	38	40	43	47	50	53	56	59
65-69	180	20	22	25	28	30	33	36	40	44	47	43	47	51	55	60	63	68	72	76	80
	160	16	17	19	21	24	26	29	32	35	38	35	38	42	45	49	53	57	62	66	70
	140	12	13	15	17	18	20	22	25	27	30	27	30	33	37	40	43	47	51	55	60
	120	9	10	11	13	14	16	17	19	21	24	21	24	26	29	32	35	38	42	45	49
60-64	180	13	15	17	19	22	24	27	31	35	39	30	35	39	44	49	51	57	63	68	74
	160	9	11	13	14	17	18	20	23	27	30	23	27	30	34	39	41	46	51	57	63
	140	7	8	9	11	13	13	15	18	20	23	18	20	23	27	30	32	36	41	46	51
	120	5	6	7	8	9	10	12	13	15	18	13	15	18	20	23	25	28	32	36	41
55-59	180	9	10	13	15	18	19	22	26	30	36	23	27	32	37	43	45	51	58	65	72
	160	6	8	9	11	13	14	16	19	23	27	17	20	24	28	33	35	40	46	53	60
	140	5	6	7	8	10	10	12	14	17	20	13	15	18	21	25	26	31	36	42	48
	120	3	4	5	6	7	7	9	10	12	15	9	11	13	16	19	19	23	27	32	37
50-54	180	7	9	11	13	17	17	21	25	30	36	20	25	30	36	43	43	51	59	67	75
	160	5	6	8	10	12	12	15	18	22	27	15	18	22	27	32	33	39	46	54	62
	140	4	4	6	7	8	9	11	13	16	20	11	13	16	20	24	24	29	35	42	49
	120	3	3	4	5	6	6	8	9	12	14	8	9	12	14	17	18	22	26	32	38
45-49	180	5	6	8	11	13	13	17	21	26	33	16	20	25	30	37	37	45	54	63	73
	160	4	4	6	7	9	9	12	15	19	24	11	14	18	22	27	27	34	41	50	59
	140	2	3	4	5	7	6	8	11	13	17	8	10	12	16	20	20	25	31	38	46
	120	2	2	3	4	5	4	6	7	9	12	5	7	9	11	14	14	18	22	28	34
40-44	180	4	5	7	9	11	11	14	19	24	31	12	16	21	27	35	34	42	52	63	73
	160	3	3	4	6	8	8	10	13	17	22	9	11	15	19	25	24	31	39	48	59
	140	2	2	3	4	5	5	7	9	12	15	6	8	10	13	17	17	22	28	36	45
	120	1	2	2	3	4	3	5	6	8	11	4	5	7	9	12	12	15	20	25	33

Men

AGE	SBP	Non-Diabetic, Non-smoker					Non-Diabetic, Smoker					Diabetic, Non-smoker					Diabetic, Smoker				
		3	4	5	6	7	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7
70-74	180	30	32	35	37	39	34	36	39	41	44	43	46	49	52	55	48	51	54	57	60
	160	24	26	28	30	32	27	29	31	33	36	35	37	40	43	45	39	42	45	47	50
	140	19	21	22	24	26	22	23	25	27	29	28	30	32	35	37	32	34	36	39	42
	120	15	16	17	19	20	17	18	20	21	23	22	24	26	28	30	25	27	29	31	34
65-69	180	20	22	25	28	30	25	28	31	34	38	32	35	38	42	46	39	43	47	51	55
	160	16	17	19	21	24	20	22	24	27	30	25	27	30	33	37	31	34	37	41	45
	140	12	13	15	17	18	15	17	19	21	23	19	21	24	26	29	24	27	30	33	36
	120	9	10	11	13	14	11	13	14	16	18	15	16	18	20	23	19	21	23	26	28
60-64	180	15	17	20	22	26	21	24	27	31	35	25	29	32	37	42	34	39	44	49	54
	160	11	13	15	17	19	16	18	21	24	27	19	22	25	28	32	26	30	34	39	44
	140	8	9	11	13	15	12	13	15	18	21	14	16	19	22	25	20	23	26	30	34
	120	6	7	8	9	11	9	10	12	13	15	11	12	14	16	19	15	17	20	23	26
55-59	180	12	14	17	20	24	19	22	26	31	36	22	26	31	36	41	33	39	45	51	58
	160	9	10	13	15	18	14	17	20	23	28	16	19	23	27	32	25	30	35	40	47
	140	6	8	9	11	13	10	12	14	17	21	12	14	17	20	24	19	22	26	31	36
	120	5	6	7	8	10	7	9	11	13	15	9	10	12	15	18	14	16	19	23	27
50-54	180	10	13	16	19	24	18	22	27	32	39	20	25	30	36	43	34	40	47	55	64
	160	7	9	11	14	17	13	16	20	24	29	15	18	22	27	32	25	30	36	43	51
	140	5	7	8	10	12	9	11	14	17	21	11	13	16	20	24	18	22	27	32	39
	120	4	5	6	7	9	7	8	10	12	15	7	9	11	14	17	13	16	20	24	29
45-49	180	7	9	12	15	19	14	18	22	28	35	15	19	24	30	37	28	35	43	51	60
	160	5	7	8	11	14	10	13	16	20	25	11	14	17	22	27	20	26	32	39	47
	140	4	5	6	7	9	7	9	11	14	18	8	10	12	16	20	15	18	23	29	35
	120	2	3	4	5	7	5	6	8	10	13	5	7	9	11	14	10	13	16	21	26
40-44	180	4	6	8	10	13	9	12	16	21	27	10	13	17	22	28	21	26	34	42	52
	160	3	4	5	7	9	6	8	11	15	19	7	9	12	15	20	14	19	24	31	39
	140	2	3	3	5	6	4	6	8	10	13	5	6	8	10	14	10	13	17	22	28
	120	1	2	2	3	4	3	4	5	7	9	3	4	5	7	9	7	9	12	15	20

Total cholesterol (mmol/L)

>=50 %
40-49 %
30-39 %
20-29 %
10-19 %
5-9 %
<5 %

Germany

Systolic blood pressure (mmHg) by Total cholesterol (mmol/L)

Women

Non-Diabetic — Non-smoker

AGE	Systolic blood pressure (mmHg)	3	4	5	6	7
70-74	180	16	17	18	20	21
	160	12	13	14	16	17
	140	10	10	11	12	13
	120	7	8	9	9	10
65-69	180	8	8	9	11	12
	160	6	6	7	8	9
	140	4	5	5	6	7
	120	3	4	4	5	5
60-64	180	5	5	6	7	9
	160	3	4	5	5	6
	140	3	3	3	4	5
	120	2	2	3	3	3
55-59	180	4	4	5	6	8
	160	3	3	4	5	6
	140	2	2	3	3	4
	120	1	2	2	2	3
50-54	180	3	3	4	5	7
	160	2	2	3	4	5
	140	1	2	2	3	3
	120	1	1	1	2	2
45-49	180	2	2	3	4	5
	160	1	1	2	2	3
	140	1	1	1	2	2
	120	1	1	1	1	1
40-44	180	1	1	2	2	3
	160	1	1	1	2	2
	140	<1	1	1	1	1
	120	<1	<1	1	1	1

Non-Diabetic — Smoker

AGE	Systolic blood pressure (mmHg)	3	4	5	6	7
70-74	180	24	26	28	30	32
	160	19	20	22	24	25
	140	15	16	17	19	20
	120	12	13	14	15	16
65-69	180	13	14	16	18	20
	160	10	11	12	14	15
	140	8	8	9	11	12
	120	6	6	7	8	9
60-64	180	9	11	12	14	17
	160	7	8	9	11	13
	140	5	6	7	8	9
	120	4	4	5	6	7
55-59	180	8	10	12	14	17
	160	6	7	8	10	12
	140	4	5	6	7	9
	120	3	4	4	5	6
50-54	180	7	8	10	13	16
	160	5	6	7	9	11
	140	3	4	5	6	8
	120	2	3	4	5	6
45-49	180	5	6	7	9	12
	160	3	4	5	7	8
	140	2	3	4	5	6
	120	1	2	2	3	4
40-44	180	3	4	6	7	10
	160	2	3	4	5	7
	140	1	2	3	3	4
	120	1	1	2	2	3

Diabetic — Non-smoker

AGE	Systolic blood pressure (mmHg)	3	4	5	6	7
70-74	180	33	35	38	40	43
	160	27	29	31	33	35
	140	21	23	24	26	28
	120	17	18	19	21	22
65-69	180	18	20	22	24	27
	160	14	15	17	19	21
	140	10	12	13	15	16
	120	8	9	10	11	12
60-64	180	12	14	16	19	22
	160	9	11	12	14	16
	140	7	8	9	11	12
	120	5	6	7	8	9
55-59	180	10	12	15	18	21
	160	7	9	11	13	15
	140	5	6	8	9	11
	120	4	5	6	7	8
50-54	180	8	10	13	16	19
	160	6	7	9	11	14
	140	4	5	6	8	10
	120	3	4	5	6	7
45-49	180	5	7	9	11	14
	160	4	5	6	8	10
	140	3	3	4	5	7
	120	2	2	3	4	5
40-44	180	4	5	6	8	11
	160	2	3	4	6	7
	140	2	2	3	4	5
	120	1	1	2	3	3

Diabetic — Smoker

AGE	Systolic blood pressure (mmHg)	3	4	5	6	7
70-74	180	47	50	53	56	59
	160	39	41	44	47	50
	140	31	34	36	38	41
	120	25	27	29	31	33
65-69	180	30	33	36	40	43
	160	23	26	28	31	35
	140	18	20	22	25	27
	120	14	15	17	19	21
60-64	180	23	27	31	35	39
	160	18	20	23	27	31
	140	13	15	18	20	23
	120	10	11	13	15	18
55-59	180	22	26	30	35	41
	160	16	19	23	27	31
	140	12	14	17	20	24
	120	9	10	12	15	17
50-54	180	19	24	29	34	41
	160	14	17	21	26	31
	140	10	12	15	19	23
	120	7	9	11	13	16
45-49	180	14	18	22	28	35
	160	10	13	16	20	25
	140	7	9	11	14	18
	120	5	6	8	10	13
40-44	180	11	14	18	23	30
	160	7	10	13	16	21
	140	5	6	9	11	15
	120	3	4	6	8	10

Men

Non-Diabetic — Non-smoker

AGE	Systolic blood pressure (mmHg)	3	4	5	6	7
70-74	180	21	23	25	27	29
	160	17	18	20	21	23
	140	13	14	15	17	18
	120	10	11	12	13	14
65-69	180	13	15	17	18	21
	160	10	11	13	14	16
	140	8	9	10	11	12
	120	6	6	7	8	9
60-64	180	10	12	14	16	18
	160	8	9	10	12	14
	140	6	7	8	9	10
	120	4	5	6	7	8
55-59	180	8	10	12	14	17
	160	6	7	9	10	12
	140	4	5	6	8	9
	120	3	4	4	5	7
50-54	180	6	8	10	12	15
	160	5	6	7	9	11
	140	3	4	5	6	8
	120	2	3	4	4	5
45-49	180	4	5	7	9	11
	160	3	4	5	6	8
	140	2	3	3	4	5
	120	1	2	2	3	4
40-44	180	2	3	4	5	7
	160	2	2	3	4	5
	140	1	1	2	2	3
	120	1	1	2	2	2

Non-Diabetic — Smoker

AGE	Systolic blood pressure (mmHg)	3	4	5	6	7
70-74	180	24	26	28	31	33
	160	19	21	23	24	26
	140	15	16	18	19	21
	120	12	13	14	15	16
65-69	180	17	19	21	23	26
	160	13	14	16	18	20
	140	10	11	12	14	15
	120	7	8	9	11	12
60-64	180	15	17	20	23	26
	160	11	13	15	17	20
	140	8	9	11	13	15
	120	6	7	8	9	11
55-59	180	13	16	19	22	26
	160	10	11	14	16	20
	140	7	8	10	12	14
	120	5	6	7	9	10
50-54	180	11	14	17	21	26
	160	8	10	12	15	19
	140	6	7	9	11	14
	120	4	5	6	8	10
45-49	180	8	10	13	17	21
	160	6	7	9	12	15
	140	4	5	6	8	10
	120	3	3	4	6	7
40-44	180	5	7	9	12	15
	160	3	5	6	8	10
	140	2	3	4	5	7
	120	2	2	3	4	5

Diabetic — Non-smoker

AGE	Systolic blood pressure (mmHg)	3	4	5	6	7
70-74	180	32	34	36	39	42
	160	25	27	29	32	34
	140	20	22	23	25	27
	120	16	17	18	20	21
65-69	180	21	24	26	29	32
	160	16	18	20	23	25
	140	13	14	16	18	20
	120	10	11	12	13	15
60-64	180	18	21	24	27	31
	160	13	15	18	21	24
	140	10	12	13	15	18
	120	7	9	10	12	13
55-59	180	15	18	22	26	30
	160	11	13	16	19	23
	140	8	10	12	14	17
	120	6	7	9	10	12
50-54	180	13	16	19	24	29
	160	9	11	14	17	21
	140	7	8	10	12	15
	120	5	6	7	9	11
45-49	180	9	11	14	18	23
	160	6	8	10	13	16
	140	4	5	7	9	11
	120	3	4	5	6	8
40-44	180	5	7	9	12	16
	160	4	5	6	8	11
	140	2	3	4	6	7
	120	2	2	3	4	5

Diabetic — Smoker

AGE	Systolic blood pressure (mmHg)	3	4	5	6	7
70-74	180	36	38	41	44	47
	160	29	31	33	36	38
	140	23	25	27	29	31
	120	18	19	21	23	25
65-69	180	27	30	33	36	40
	160	21	23	26	29	32
	140	16	18	20	22	25
	120	12	14	15	17	19
60-64	180	25	29	33	37	42
	160	19	22	25	29	33
	140	14	16	19	22	25
	120	11	12	14	16	19
55-59	180	24	28	33	39	45
	160	18	21	25	29	34
	140	13	15	18	22	26
	120	9	11	14	16	19
50-54	180	22	27	32	39	46
	160	16	20	24	29	35
	140	11	14	17	21	26
	120	8	10	12	15	19
45-49	180	17	21	27	33	40
	160	12	15	19	24	30
	140	8	11	13	17	21
	120	6	7	9	12	15
40-44	180	11	15	19	25	32
	160	8	10	13	18	23
	140	5	7	9	12	16
	120	4	5	6	8	11

Total cholesterol (mmol/L)

- >=50 %
- 40-49 %
- 30-39 %
- 20-29 %
- 10-19 %
- 5-9 %
- <5 %

India

Women

AGE	Systolic blood pressure (mmHg)	Non-Diabetic										Diabetic									
		Non-smoker					Smoker					Non-smoker					Smoker				
	Total cholesterol (mmol/L)	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7
70-74	180	25	27	29	32	34	37	40	43	46	49	50	53	56	59	63	67	70	74	77	80
	160	20	22	23	25	27	30	32	35	37	40	41	44	47	50	53	57	61	64	67	70
	140	16	17	18	20	21	24	26	28	30	32	33	36	38	41	44	48	51	54	57	60
	120	12	13	14	16	17	19	20	22	24	26	27	29	31	33	35	39	42	45	48	51
65-69	180	20	23	25	28	31	33	37	41	44	49	44	48	52	56	61	64	69	73	78	82
	160	16	17	19	22	24	26	29	32	36	39	35	38	42	46	50	54	58	63	67	72
	140	12	13	15	17	19	20	23	25	28	31	27	30	34	37	41	44	48	52	57	61
	120	9	10	11	13	14	16	17	19	22	24	21	24	26	29	32	35	39	42	46	51
60-64	180	18	20	23	27	31	33	37	42	47	52	41	46	52	57	63	66	71	77	82	86
	160	13	15	18	20	23	25	29	32	37	42	32	36	41	46	51	54	60	65	71	77
	140	10	12	13	15	18	19	22	25	28	32	25	28	32	36	41	43	49	54	60	65
	120	7	9	10	12	13	14	16	19	22	25	19	22	25	28	32	34	38	43	49	54
55-59	180	14	17	20	24	28	29	34	39	45	52	36	41	47	54	61	63	70	76	82	88
	160	10	12	15	18	21	22	25	30	35	40	27	32	37	43	49	50	57	64	71	78
	140	8	9	11	13	15	16	19	22	26	31	20	24	28	33	38	40	46	52	59	66
	120	5	7	8	9	11	12	14	17	20	23	15	18	21	25	29	30	35	41	47	54
50-54	180	11	13	16	20	24	25	30	36	42	50	29	35	42	49	57	58	66	74	82	88
	160	8	9	12	14	18	18	22	27	32	38	22	26	32	38	45	46	53	61	69	77
	140	5	7	8	10	13	13	16	19	24	29	16	19	23	28	34	35	41	49	56	65
	120	4	5	6	7	9	9	11	14	17	21	11	14	17	21	25	26	31	37	44	52
45-49	180	8	10	13	16	20	20	25	31	38	47	23	29	36	44	52	52	61	71	80	87
	160	5	7	9	11	14	14	18	23	28	35	17	21	26	32	40	40	48	57	66	76
	140	4	5	6	8	10	10	13	16	20	25	12	15	19	24	29	29	36	44	53	62
	120	3	3	4	5	7	7	9	11	14	18	8	10	13	17	21	21	26	33	40	48
40-44	180	6	8	11	14	19	18	23	30	38	47	20	26	33	42	52	50	61	72	81	90
	160	4	6	7	10	13	12	16	21	27	35	14	18	24	30	38	37	47	57	68	78
	140	3	4	5	7	9	9	11	15	19	25	10	13	17	21	28	27	34	43	53	64
	120	2	3	3	5	6	6	8	10	13	17	7	9	11	15	19	19	24	31	40	49

Men

AGE	Systolic blood pressure (mmHg)	Non-Diabetic										Diabetic									
		Non-smoker					Smoker					Non-smoker					Smoker				
	Total cholesterol (mmol/L)	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7
70-74	180	27	29	31	33	36	31	33	35	38	41	39	42	45	48	51	44	47	50	53	56
	160	21	23	25	27	29	24	26	28	30	33	32	34	36	39	42	36	38	41	44	47
	140	17	18	20	21	23	19	21	22	24	26	25	27	29	31	34	29	31	33	36	38
	120	13	14	15	17	18	15	16	18	19	21	20	21	23	25	27	23	25	27	29	31
65-69	180	23	25	28	31	35	29	32	35	39	43	36	39	43	47	52	44	48	52	57	61
	160	18	20	22	24	27	22	25	28	31	34	28	31	34	38	42	35	39	42	47	51
	140	14	15	17	19	21	17	19	22	24	27	22	24	27	30	33	27	30	34	37	41
	120	10	12	13	15	16	13	15	17	19	21	17	19	21	23	26	21	24	26	29	33
60-64	180	20	23	27	31	35	28	32	36	41	46	34	38	43	48	54	45	51	56	62	68
	160	15	18	20	23	27	21	25	28	32	37	26	30	34	38	43	35	40	45	51	56
	140	11	13	15	18	20	16	19	21	25	28	20	23	26	30	34	27	31	36	40	45
	120	9	10	11	13	15	12	14	16	19	22	15	17	20	23	26	21	24	27	31	36
55-59	180	18	22	25	30	35	28	33	38	44	51	32	38	43	50	57	47	54	61	68	75
	160	13	16	19	22	27	21	25	29	34	39	24	29	33	39	45	36	42	48	55	62
	140	10	12	14	17	20	15	18	22	26	30	18	21	25	30	35	28	32	38	44	50
	120	7	8	10	12	15	11	13	16	19	23	13	16	19	22	26	21	24	29	34	39
50-54	180	16	20	24	29	35	27	33	40	47	55	31	37	44	51	59	49	57	65	73	81
	160	12	14	18	22	26	20	25	30	36	43	23	27	33	40	47	37	44	52	60	68
	140	8	10	13	16	19	15	18	22	27	32	16	20	24	30	36	28	33	40	47	55
	120	6	7	9	11	14	10	13	16	19	24	12	14	18	22	26	20	25	30	36	43
45-49	180	14	17	22	27	34	26	32	39	47	56	28	34	42	50	59	48	57	66	76	84
	160	10	12	15	20	24	18	23	29	35	43	20	25	31	38	46	36	44	52	62	71
	140	7	9	11	14	17	13	16	21	26	32	14	18	22	28	34	26	32	40	48	57
	120	5	6	8	10	12	9	11	15	18	23	10	12	16	20	25	19	24	29	36	44
40-44	180	10	14	18	23	30	22	28	35	44	54	23	29	37	46	56	44	54	64	75	84
	160	7	9	12	16	21	15	20	25	32	41	16	21	26	34	42	32	40	50	60	71
	140	5	6	8	11	15	10	14	18	23	30	11	14	19	24	31	23	29	37	46	56
	120	3	4	6	8	10	7	9	12	16	21	7	10	13	17	22	16	21	26	34	42

Total cholesterol (mmol/L)

>=50 %
40-49 %
30-39 %
20-29 %
10-19 %
5-9 %
<5 %

Japan

Women

AGE	Systolic blood pressure (mmHg)	Non-Diabetic										Diabetic									
		Non-smoker					Smoker					Non-smoker					Smoker				
	Total cholesterol (mmol/L)	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7
70-74	180	11	11	12	13	15	16	18	19	21	22	23	25	27	29	31	34	37	39	42	45
	160	8	9	10	10	11	13	14	15	16	17	18	20	21	23	25	28	30	32	34	37
	140	6	7	7	8	9	10	11	12	13	14	14	16	17	18	20	22	24	25	27	29
	120	5	5	6	6	7	8	8	9	10	11	11	12	13	14	15	17	19	20	22	23
65-69	180	6	7	8	9	10	11	12	13	15	17	15	16	18	20	23	25	27	30	33	37
	160	5	5	6	7	7	8	9	10	11	13	11	13	14	16	17	19	21	24	26	29
	140	3	4	4	5	6	6	7	8	9	10	9	10	11	12	13	15	16	18	20	23
	120	3	3	3	4	4	5	5	6	7	7	6	7	8	9	10	11	13	14	16	18
60-64	180	4	4	5	6	7	7	9	10	12	14	10	12	13	15	18	19	22	25	29	33
	160	3	3	4	4	5	6	6	7	9	10	7	9	10	12	13	14	17	19	22	25
	140	2	2	3	3	4	4	5	6	6	7	5	6	7	9	10	11	12	14	17	19
	120	2	2	2	2	3	3	3	4	5	6	4	5	5	6	7	8	9	11	12	14
55-59	180	3	4	4	5	6	6	8	9	11	13	8	10	12	14	17	18	21	25	29	34
	160	2	3	3	4	4	5	6	7	8	10	6	7	9	10	12	13	15	18	22	26
	140	2	2	2	3	3	3	4	5	6	7	4	5	6	8	9	9	11	14	16	19
	120	1	1	2	2	2	2	3	4	4	5	3	4	4	5	7	7	8	10	12	14
50-54	180	2	3	4	5	6	6	7	9	11	14	7	9	11	13	17	17	21	25	30	37
	160	2	2	3	3	4	4	5	6	8	10	5	6	8	10	12	12	15	18	22	27
	140	1	1	2	2	3	3	4	4	6	7	4	4	5	7	8	9	11	13	16	20
	120	1	1	1	2	2	2	3	3	4	5	2	3	4	5	6	6	8	9	12	14
45-49	180	2	2	3	4	5	5	6	8	10	12	5	7	9	11	15	14	18	23	29	36
	160	1	2	2	2	3	3	4	5	7	9	4	5	6	8	10	10	13	16	21	26
	140	1	1	1	2	2	2	3	4	5	6	3	3	4	6	7	7	9	12	15	19
	120	1	1	1	1	2	2	2	3	3	4	2	2	3	4	5	5	6	8	10	13
40-44	180	1	2	2	3	4	4	5	7	9	12	4	6	8	10	14	13	17	22	29	36
	160	1	1	2	2	3	3	4	5	6	8	3	4	5	7	9	9	12	16	20	26
	140	1	1	1	1	2	2	2	3	4	6	2	3	4	5	6	6	8	11	14	18
	120	<1	1	1	1	1	1	2	2	3	4	1	2	2	3	4	4	5	7	10	13

Men

AGE	Systolic blood pressure (mmHg)	Non-Diabetic										Diabetic									
		Non-smoker					Smoker					Non-smoker					Smoker				
	Total cholesterol (mmol/L)	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7
70-74	180	17	18	20	21	23	19	21	23	24	26	26	27	30	32	34	29	31	33	36	39
	160	13	14	16	17	18	15	17	18	19	21	20	22	23	25	27	23	25	27	29	31
	140	10	11	12	13	14	12	13	14	15	16	16	17	19	20	22	18	20	21	23	25
	120	8	9	9	10	11	9	10	11	12	13	12	13	15	16	17	14	15	17	18	19
65-69	180	12	13	15	17	19	15	17	19	21	24	19	22	24	27	30	24	27	30	33	37
	160	9	10	11	13	14	12	13	15	16	18	15	17	19	21	23	19	21	23	26	29
	140	7	8	9	10	11	9	10	11	12	14	11	13	14	16	18	14	16	18	20	23
	120	5	6	7	7	8	7	7	8	9	11	9	10	11	12	14	11	12	14	15	17
60-64	180	10	11	13	15	18	14	16	19	21	25	17	20	23	26	30	24	27	31	36	40
	160	7	8	10	11	13	10	12	14	16	19	13	15	17	20	23	18	21	24	27	31
	140	5	6	7	8	10	8	9	10	12	14	9	11	13	15	17	13	16	18	21	24
	120	4	5	5	6	7	6	7	8	9	10	7	8	9	11	13	10	12	14	16	18
55-59	180	9	10	12	15	18	14	16	19	23	27	16	19	23	27	31	25	29	34	40	46
	160	6	8	9	11	13	10	12	14	17	20	12	14	17	20	23	18	22	26	30	35
	140	5	5	7	8	9	7	9	10	12	15	9	10	12	15	17	13	16	19	23	27
	120	3	4	5	6	7	5	6	8	9	11	6	7	9	11	13	10	12	14	17	20
50-54	180	7	8	10	13	16	12	14	18	22	26	13	16	20	24	29	23	27	33	40	47
	160	5	6	7	9	11	8	10	13	16	19	9	12	14	18	22	16	20	25	30	36
	140	3	4	5	6	8	6	7	9	11	14	7	8	10	13	16	12	15	18	22	27
	120	2	3	4	5	6	4	5	6	8	10	5	6	7	9	11	8	10	13	16	19
45-49	180	5	6	8	10	13	9	12	15	19	24	10	13	16	20	26	19	24	30	37	45
	160	3	4	5	7	9	6	8	10	13	17	7	9	11	14	18	14	17	22	27	33
	140	2	3	4	5	6	4	6	7	9	12	5	6	8	10	13	9	12	15	19	24
	120	2	2	3	3	4	3	4	5	6	8	3	4	6	7	9	7	8	11	14	17
40-44	180	3	4	5	7	9	7	9	11	15	19	7	9	12	16	20	15	19	25	32	40
	160	2	3	4	5	6	4	6	8	10	13	5	6	8	11	14	10	13	17	22	29
	140	1	2	2	3	4	3	4	5	7	9	3	4	6	7	10	7	9	12	16	20
	120	1	1	2	2	3	2	3	4	5	6	2	3	4	5	7	5	6	8	11	14

- >=50 %
- 40-49 %
- 30-39 %
- 20-29 %
- 10-19 %
- 5-9 %
- <5 %

Mexico

Women

		Non-Diabetic										Diabetic									
		Non-smoker					Smoker					Non-smoker					Smoker				
AGE	Systolic blood pressure (mmHg)	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7
70-74	180	19	21	22	24	26	29	31	33	36	38	40	42	45	48	51	56	59	62	65	68
70-74	160	15	16	18	19	21	23	25	27	29	31	32	34	37	39	42	46	49	52	55	58
70-74	140	12	13	14	15	16	18	20	21	23	25	26	28	30	32	34	38	40	43	46	49
70-74	120	9	10	11	12	13	14	15	17	18	19	20	22	24	25	27	30	33	35	38	40
65-69	180	13	15	17	18	21	23	25	28	31	34	30	33	37	40	44	47	52	56	60	65
65-69	160	10	11	13	14	16	17	19	22	24	27	24	26	29	32	35	38	42	46	50	54
65-69	140	8	9	10	11	12	13	15	17	18	21	18	20	23	25	28	30	33	37	40	44
65-69	120	6	7	7	8	9	10	11	13	14	16	14	16	17	19	22	24	26	29	32	35
60-64	180	9	10	12	14	16	17	20	22	26	29	22	25	29	33	37	40	44	50	55	61
60-64	160	7	8	9	10	12	13	15	17	19	22	17	19	22	25	29	31	35	39	44	50
60-64	140	5	6	7	8	9	10	11	13	15	17	13	15	17	19	22	24	27	31	35	39
60-64	120	4	4	5	6	7	7	8	9	11	13	9	11	13	15	17	18	21	24	27	31
55-59	180	6	7	8	10	12	12	15	18	21	25	16	19	22	26	31	32	37	43	49	56
55-59	160	4	5	6	7	9	9	11	13	15	18	12	14	16	19	23	24	28	33	38	44
55-59	140	3	4	4	5	6	7	8	9	11	13	8	10	12	14	17	18	21	25	29	34
55-59	120	2	3	3	4	5	5	6	7	8	10	6	7	9	10	13	13	16	18	22	26
50-54	180	4	5	7	8	10	10	13	16	19	24	13	16	19	23	28	29	35	41	49	57
50-54	160	3	4	5	6	7	7	9	11	14	17	9	11	14	17	21	21	26	31	37	44
50-54	140	2	3	3	4	5	5	7	8	10	12	6	8	10	12	15	15	19	23	28	34
50-54	120	2	2	2	3	4	4	5	6	7	9	5	6	7	9	11	11	14	17	20	25
45-49	180	3	4	5	6	8	8	11	13	17	21	10	12	16	20	25	25	31	38	46	55
45-49	160	2	3	3	4	6	6	7	9	12	15	7	9	11	14	18	18	22	28	34	42
45-49	140	1	2	2	3	4	4	5	7	8	11	5	6	8	10	12	12	16	20	25	31
45-49	120	1	1	2	2	3	3	4	5	6	7	3	4	5	7	9	9	11	14	18	22
40-44	180	2	3	4	6	8	7	10	13	17	21	8	11	14	19	24	23	30	38	47	57
40-44	160	2	2	3	4	5	5	7	9	11	15	6	7	10	13	17	16	21	27	35	43
40-44	140	1	1	2	3	3	3	4	6	8	10	4	5	7	9	12	11	15	19	25	32
40-44	120	1	1	1	2	2	2	3	4	5	7	3	3	5	6	8	8	10	13	17	22

Men

		Non-Diabetic										Diabetic									
		Non-smoker					Smoker					Non-smoker					Smoker				
AGE	Systolic blood pressure (mmHg)	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7
70-74	180	25	27	29	31	34	29	31	33	36	38	37	40	42	45	48	41	44	47	50	53
70-74	160	20	22	23	25	27	23	25	26	29	31	30	32	34	37	39	34	36	39	41	44
70-74	140	16	17	18	20	21	18	19	21	23	24	24	26	27	29	32	27	29	31	33	36
70-74	120	12	13	14	16	17	14	15	16	18	19	19	20	22	23	25	21	23	25	27	29
65-69	180	19	21	23	26	28	24	26	29	32	35	30	33	36	39	43	36	40	44	48	52
65-69	160	14	16	18	20	22	18	20	23	25	28	23	26	28	31	34	29	32	35	38	42
65-69	140	11	12	14	15	17	14	16	17	19	22	18	20	22	24	27	22	25	28	30	34
65-69	120	8	9	11	12	13	11	12	13	15	17	14	15	17	19	21	17	19	21	24	26
60-64	180	13	15	17	20	23	18	21	24	28	32	22	26	29	33	38	31	35	40	44	50
60-64	160	10	11	13	15	17	14	16	18	21	24	17	20	22	26	29	24	27	31	35	40
60-64	140	7	8	10	11	13	10	12	14	16	18	13	15	17	19	22	18	21	24	27	31
60-64	120	5	6	7	8	10	8	9	10	12	14	10	11	13	15	17	13	15	18	21	24
55-59	180	10	12	15	17	21	16	19	23	27	31	19	22	26	31	36	29	34	39	45	52
55-59	160	7	9	11	13	15	12	14	17	20	24	14	17	20	23	27	21	25	30	35	41
55-59	140	5	6	8	9	11	9	10	12	15	17	10	12	14	17	20	16	19	22	26	31
55-59	120	4	5	6	7	8	6	7	9	11	13	7	9	11	13	15	12	14	17	20	23
50-54	180	8	10	13	16	19	15	18	22	27	32	16	20	24	30	36	28	33	40	47	55
50-54	160	6	7	9	11	14	10	13	16	19	24	12	14	18	22	26	20	25	30	36	43
50-54	140	4	5	6	8	10	7	9	11	14	17	8	10	13	16	19	15	18	22	27	32
50-54	120	3	4	5	6	7	5	6	8	10	12	6	7	9	11	14	10	13	16	20	24
45-49	180	7	9	11	14	17	13	16	21	26	32	14	18	22	28	34	26	32	40	48	57
45-49	160	5	6	8	10	12	9	12	15	18	23	10	13	16	20	25	19	24	29	36	44
45-49	140	3	4	5	7	9	6	8	10	13	17	7	9	11	14	18	13	17	21	26	33
45-49	120	2	3	4	5	6	4	6	7	9	12	5	6	8	10	13	9	12	15	19	24
40-44	180	5	6	8	11	14	10	13	18	23	29	11	14	18	24	30	22	29	36	45	55
40-44	160	3	4	6	7	10	7	9	12	16	21	7	10	13	17	22	16	20	26	33	42
40-44	140	2	3	4	5	7	5	6	8	11	14	5	7	9	11	15	11	14	18	24	30
40-44	120	1	2	3	3	5	3	4	6	7	10	3	4	6	8	10	7	10	13	17	22

Total cholesterol (mmol/L)

>=50 %
40-49 %
30-39 %
20-29 %
10-19 %
5-9 %
<5 %

Nigeria

Women

AGE	Systolic blood pressure (mmHg)	Non-Diabetic Non-smoker 3	4	5	6	7	Non-Diabetic Smoker 3	4	5	6	7	Diabetic Non-smoker 3	4	5	6	7	Diabetic Smoker 3	4	5	6	7
70-74	180	46	49	52	55	58	63	66	69	72	75	77	80	82	85	87	90	92	94	95	96
	160	38	41	43	46	49	53	56	59	63	66	67	70	74	76	79	83	86	88	90	92
	140	31	33	35	38	40	44	47	50	53	56	58	61	64	67	70	75	78	80	83	86
	120	25	26	28	30	32	36	39	41	44	47	48	51	54	57	60	65	68	71	74	77
65-69	180	33	36	40	44	47	51	55	60	64	68	63	68	72	76	80	83	87	90	92	95
	160	26	29	32	35	38	41	45	49	53	58	53	57	62	66	70	74	78	82	85	89
	140	20	22	25	28	30	33	36	40	44	48	43	47	51	55	60	64	68	72	76	80
	120	16	17	19	21	24	26	29	32	35	38	35	38	42	45	49	53	57	62	66	70
60-64	180	22	26	29	33	37	39	44	49	55	60	49	55	60	66	71	74	79	84	88	92
	160	17	19	22	25	29	31	35	39	44	49	39	44	49	54	60	63	68	74	79	84
	140	13	15	17	19	22	24	27	31	35	39	31	35	39	44	49	51	57	63	68	74
	120	10	11	13	15	17	18	21	23	27	30	24	27	30	34	39	41	46	51	57	62
55-59	180	15	18	21	25	29	30	35	41	47	54	37	43	49	56	63	65	71	78	84	89
	160	11	13	16	19	22	23	27	31	37	42	29	33	39	44	51	52	59	66	73	79
	140	8	10	11	14	16	17	20	24	28	32	21	25	30	34	40	41	47	54	61	68
	120	6	7	8	10	12	12	15	18	21	25	16	19	22	26	31	32	37	43	49	56
50-54	180	11	13	16	20	24	24	29	35	42	49	29	35	42	49	57	58	66	74	81	88
	160	8	9	12	14	17	18	22	26	32	38	21	26	31	38	44	45	53	61	69	77
	140	5	7	8	10	13	13	16	19	23	28	16	19	23	28	34	34	41	48	56	64
	120	4	5	6	7	9	9	11	14	17	21	11	14	17	21	25	25	31	37	44	51
45-49	180	7	9	12	15	19	19	24	30	36	44	22	28	34	42	50	50	59	68	77	85
	160	5	7	8	11	14	13	17	21	27	33	16	20	25	31	38	38	46	55	64	73
	140	4	5	6	7	9	9	12	15	19	24	11	14	18	22	28	28	34	42	50	59
	120	2	3	4	5	7	7	8	11	14	17	8	10	13	16	20	20	25	31	38	46
40-44	180	5	6	9	11	15	14	19	24	31	39	16	21	27	34	43	42	51	62	72	82
	160	3	4	6	8	10	10	13	17	22	28	11	14	19	24	31	30	38	47	58	68
	140	2	3	4	5	7	7	9	12	15	20	8	10	13	17	22	21	28	35	44	54
	120	2	2	3	4	5	5	6	8	10	14	5	7	9	12	15	15	19	25	32	40

Men

AGE	Systolic blood pressure (mmHg)	Non-Diabetic Non-smoker 3	4	5	6	7	Non-Diabetic Smoker 3	4	5	6	7	Diabetic Non-smoker 3	4	5	6	7	Diabetic Smoker 3	4	5	6	7
70-74	180	43	46	49	51	54	48	51	54	57	60	59	62	65	68	71	64	67	70	73	76
	160	35	37	40	43	45	39	42	44	47	50	49	52	55	58	61	54	57	60	64	67
	140	28	30	32	35	37	32	34	36	39	41	40	43	46	49	52	45	48	51	54	57
	120	22	24	26	28	30	25	27	29	31	34	33	35	38	40	43	37	39	42	45	48
65-69	180	31	34	37	41	44	37	41	45	49	53	46	50	54	58	63	55	59	63	68	72
	160	24	26	29	32	35	30	33	36	40	43	37	40	44	48	52	45	49	53	57	62
	140	19	21	23	25	28	23	26	28	31	35	29	32	35	39	42	36	39	43	47	51
	120	14	16	18	20	22	18	20	22	25	27	23	25	28	31	34	28	31	34	38	42
60-64	180	22	25	29	33	37	30	35	39	44	49	36	41	46	51	57	48	54	59	65	71
	160	17	19	22	25	29	23	27	30	35	39	28	32	36	41	46	38	43	48	54	59
	140	13	15	17	19	22	18	20	23	27	30	22	25	28	32	36	30	34	38	43	48
	120	9	11	13	14	17	13	15	18	20	23	16	19	21	25	28	23	26	30	34	38
55-59	180	18	21	25	29	34	27	32	37	43	49	31	37	42	49	55	46	52	59	66	73
	160	13	16	18	22	26	20	24	28	33	38	24	28	33	38	44	35	41	47	54	61
	140	10	11	14	16	19	15	18	21	25	29	18	21	25	29	34	27	31	37	42	49
	120	7	8	10	12	14	11	13	16	18	22	13	15	18	22	26	20	24	28	33	38
50-54	180	14	17	21	25	31	24	29	35	41	49	27	32	38	45	53	43	50	58	67	75
	160	10	12	15	19	23	17	21	26	31	37	19	24	29	34	41	32	39	46	53	62
	140	7	9	11	13	16	12	15	19	23	28	14	17	21	26	31	24	29	35	41	49
	120	5	6	8	10	12	9	11	13	17	20	10	12	15	19	23	17	21	26	31	37
45-49	180	10	13	16	21	26	19	24	30	37	45	21	26	32	40	48	37	45	54	64	73
	160	7	9	11	15	18	14	17	22	27	33	15	19	23	29	36	27	34	41	50	59
	140	5	6	8	10	13	10	12	15	19	24	10	13	17	21	26	20	25	31	38	46
	120	3	4	6	7	9	7	8	11	14	17	7	9	12	15	19	14	18	22	28	34
40-44	180	6	9	11	15	19	14	18	23	30	38	14	19	24	31	39	29	37	46	57	67
	160	4	6	8	10	13	9	12	16	21	27	10	13	17	22	28	21	27	34	43	53
	140	3	4	5	7	9	6	9	11	15	19	7	9	12	15	20	14	19	24	31	39
	120	2	3	4	5	6	4	6	8	10	13	5	6	8	11	14	10	13	17	22	28

Total cholesterol (mmol/L)

- >=50 %
- 40-49 %
- 30-39 %
- 20-29 %
- 10-19 %
- 5-9 %
- <5 %

Russian Federation

Women

Systolic blood pressure (mmHg) by Total cholesterol (mmol/L)

AGE	Systolic blood pressure (mmHg)	Non-Diabetic, Non-smoker					Non-Diabetic, Smoker					Diabetic, Non-smoker					Diabetic, Smoker				
		3	4	5	6	7	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7
70-74	180	37	40	42	45	48	52	55	58	61	64	66	69	72	75	78	82	85	87	89	91
	160	30	32	34	37	39	43	46	49	52	55	57	60	63	66	69	73	76	79	82	85
	140	24	26	28	30	32	35	38	40	43	46	47	50	53	56	59	64	67	70	73	76
	120	19	20	22	24	25	28	30	33	35	37	39	41	44	47	50	54	57	60	63	67
65-69	180	22	24	27	30	33	36	39	43	47	51	46	50	54	59	63	67	71	75	79	83
	160	17	19	21	23	26	28	31	34	38	41	37	41	45	49	53	56	61	65	69	74
	140	13	15	16	18	20	22	24	27	30	33	30	33	36	39	43	46	50	55	59	63
	120	10	11	12	14	15	17	19	21	23	26	23	26	28	31	34	37	41	45	49	53
60-64	180	14	16	19	22	25	26	30	34	39	43	34	38	43	48	54	56	62	68	73	79
	160	11	12	14	16	19	20	23	26	30	34	26	30	34	38	43	45	51	56	62	68
	140	8	9	11	12	14	15	17	20	23	26	20	23	26	30	34	36	40	45	51	56
	120	6	7	8	9	10	11	13	15	17	20	15	17	20	23	26	28	31	36	40	45
55-59	180	10	12	14	17	20	21	25	29	34	40	26	31	36	41	48	49	56	63	70	77
	160	7	9	10	12	15	15	18	22	26	30	19	23	27	32	37	38	44	51	58	65
	140	5	6	8	9	11	11	13	16	19	23	14	17	20	24	28	29	34	40	46	52
	120	4	5	5	7	8	8	10	12	14	17	10	13	15	18	21	22	26	30	35	41
50-54	180	8	10	12	14	18	18	22	27	32	39	22	27	32	38	45	46	54	62	70	78
	160	5	7	8	10	13	13	16	20	24	29	16	19	24	29	34	35	42	49	57	65
	140	4	5	6	7	9	9	11	14	17	21	11	14	17	21	26	26	31	38	45	52
	120	3	3	4	5	6	7	8	10	12	15	8	10	12	15	19	19	23	28	34	40
45-49	180	5	6	8	10	13	13	16	20	25	32	15	19	24	29	36	36	44	53	62	71
	160	3	4	5	7	9	9	11	14	18	23	10	13	17	21	26	26	33	40	48	57
	140	2	3	4	5	6	6	8	10	13	16	7	9	12	15	19	19	24	29	36	44
	120	2	2	3	3	4	4	5	7	9	11	5	6	8	11	13	13	17	21	27	33
40-44	180	3	4	6	8	10	10	13	17	23	29	11	15	19	25	32	31	40	49	60	71
	160	2	3	4	5	7	7	9	12	16	21	8	10	13	18	23	22	29	36	45	56
	140	2	2	3	4	5	5	6	8	11	14	5	7	9	12	16	15	20	26	33	42
	120	1	1	2	2	3	3	4	6	7	10	4	5	6	8	11	11	14	18	24	30

Men

AGE	Systolic blood pressure (mmHg)	Non-Diabetic, Non-smoker					Non-Diabetic, Smoker					Diabetic, Non-smoker					Diabetic, Smoker				
		3	4	5	6	7	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7
70-74	180	49	52	55	58	61	54	57	60	64	67	65	69	72	75	78	71	74	77	80	82
	160	41	43	46	49	52	45	48	51	54	57	56	59	62	65	68	61	64	67	70	74
	140	33	35	38	40	43	37	39	42	45	47	46	49	52	55	58	51	54	58	61	64
	120	26	28	30	32	35	30	32	34	36	39	38	41	43	46	49	42	45	48	51	54
65-69	180	31	34	38	41	45	38	42	45	49	54	46	50	55	59	63	55	60	64	68	73
	160	24	27	30	33	36	30	33	36	40	44	37	41	45	49	53	45	49	53	58	62
	140	19	21	23	26	28	24	26	29	32	35	30	33	36	39	43	36	40	44	48	52
	120	15	16	18	20	22	18	20	23	25	28	23	26	28	31	34	29	32	35	38	42
60-64	180	20	23	27	30	35	28	32	36	41	46	34	38	43	48	54	45	50	56	62	68
	160	15	18	20	23	27	21	25	28	32	37	26	30	34	38	43	35	40	45	51	56
	140	11	13	15	18	20	16	19	21	25	28	20	23	26	30	34	27	31	36	40	45
	120	8	10	11	13	15	12	14	16	19	21	15	17	20	23	26	21	24	27	31	36
55-59	180	16	19	23	27	32	25	29	34	40	46	29	34	39	46	52	43	49	56	63	70
	160	12	14	17	20	24	19	22	26	31	36	22	26	30	35	41	33	38	44	51	58
	140	9	10	12	15	18	14	16	19	23	27	16	19	23	27	31	25	29	34	40	46
	120	6	7	9	11	13	10	12	14	17	20	12	14	17	20	23	18	22	26	30	36
50-54	180	13	16	19	24	29	22	27	32	39	46	25	30	36	43	50	40	47	55	64	72
	160	9	11	14	17	21	16	19	24	29	35	18	22	27	32	38	30	36	43	51	59
	140	6	8	10	12	15	11	14	17	21	26	13	16	19	24	29	22	27	32	39	46
	120	5	6	7	9	11	8	10	12	15	19	9	11	14	17	21	16	20	24	29	35
45-49	180	9	12	15	19	24	18	22	28	34	42	19	24	30	37	45	35	42	51	60	70
	160	6	8	10	13	17	12	16	20	25	31	13	17	21	27	33	25	31	38	47	56
	140	4	6	7	9	12	9	11	14	18	22	9	12	15	19	24	18	23	28	35	43
	120	3	4	5	6	8	6	8	10	13	16	7	8	11	14	17	13	16	20	25	32
40-44	180	6	8	10	14	18	13	17	22	28	36	13	17	23	29	37	27	35	44	54	64
	160	4	5	7	9	12	9	12	15	20	25	9	12	16	20	26	19	25	32	40	50
	140	3	4	5	6	8	6	8	10	14	18	6	8	11	14	19	13	17	23	29	37
	120	2	2	3	4	6	4	5	7	9	12	4	6	7	10	13	9	12	16	21	27

Total cholesterol (mmol/L)

- >=50 %
- 40-49 %
- 30-39 %
- 20-29 %
- 10-19 %
- 5-9 %
- <5 %

United States of America

Systolic blood pressure (mmHg) by Total cholesterol (mmol/L)

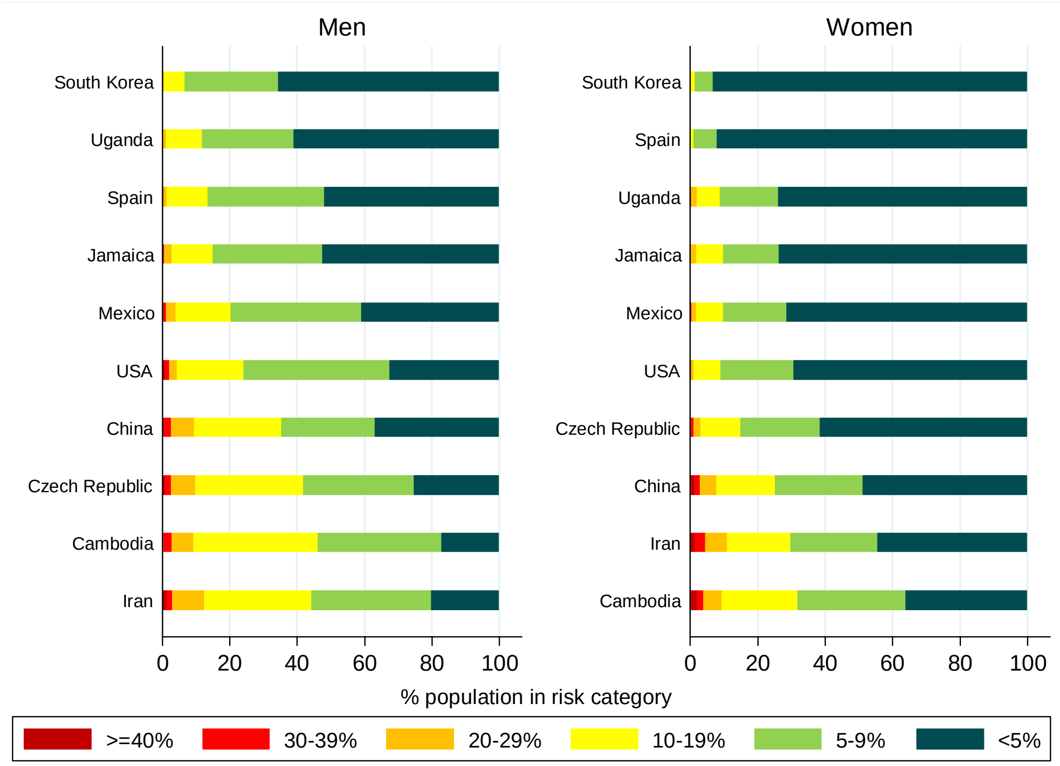
Women

AGE	Systolic blood pressure (mmHg)	Non-Diabetic										Diabetic									
		Non-smoker					Smoker					Non-smoker					Smoker				
	Total cholesterol (mmol/L)	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7
70-74	180	11	11	12	14	15	17	18	19	21	23	23	25	27	29	32	35	38	40	43	46
70-74	160	8	9	10	11	11	13	14	15	17	18	18	20	22	23	25	28	30	33	35	38
70-74	140	6	7	7	8	9	10	11	12	13	14	14	16	17	18	20	22	24	26	28	30
70-74	120	5	5	6	6	7	8	8	9	10	11	11	12	13	14	16	17	19	21	22	24
65-69	180	7	8	9	10	12	13	14	16	18	20	18	20	22	24	27	30	33	36	40	44
65-69	160	6	6	7	8	9	10	11	12	14	16	13	15	17	19	21	23	26	29	32	35
65-69	140	4	5	5	6	7	7	8	9	11	12	10	11	13	14	16	18	20	22	25	28
65-69	120	3	4	4	4	5	6	6	7	8	9	8	9	10	11	12	14	15	17	19	21
60-64	180	6	6	8	9	10	11	13	15	17	20	14	17	19	22	26	27	31	35	40	45
60-64	160	4	5	6	7	8	8	9	11	13	15	11	12	14	17	19	21	24	27	31	36
60-64	140	3	4	4	5	6	6	7	8	9	11	8	9	11	13	15	16	18	21	24	27
60-64	120	2	3	3	4	4	4	5	6	7	8	6	7	8	9	11	12	13	16	18	21
55-59	180	5	6	7	8	10	10	13	15	18	21	13	16	19	22	27	28	32	38	44	51
55-59	160	3	4	5	6	7	8	9	11	13	16	10	12	14	17	20	20	24	29	34	39
55-59	140	2	3	4	4	5	5	7	8	10	11	7	8	10	12	14	15	18	21	25	30
55-59	120	2	2	3	3	4	4	5	6	7	8	5	6	7	9	11	11	13	16	19	22
50-54	180	4	6	7	9	11	11	13	16	20	25	13	16	20	24	29	30	36	43	51	59
50-54	160	3	4	5	6	8	8	9	12	15	18	9	12	14	18	22	22	27	32	39	46
50-54	140	2	3	3	4	5	5	7	8	10	13	7	8	10	13	16	16	19	24	29	35
50-54	120	2	2	2	3	4	4	5	6	7	9	5	6	7	9	11	11	14	17	21	26
45-49	180	4	5	6	8	10	10	13	17	21	26	12	15	19	24	30	30	37	45	54	64
45-49	160	3	3	4	6	7	7	9	12	15	19	8	11	14	17	22	22	27	34	41	50
45-49	140	2	2	3	4	5	5	6	8	10	13	6	7	9	12	15	15	19	24	30	38
45-49	120	1	2	2	3	3	3	4	6	7	9	4	5	7	8	11	11	14	17	22	27
40-44	180	3	4	5	7	9	9	12	16	21	27	10	14	18	23	30	29	36	45	56	66
40-44	160	2	3	4	5	6	6	8	11	14	19	7	9	12	16	21	20	26	33	42	52
40-44	140	1	2	2	3	4	4	6	7	10	13	5	6	8	11	15	14	18	24	30	39
40-44	120	1	1	2	2	3	3	4	5	7	9	3	4	6	8	10	10	13	17	22	28

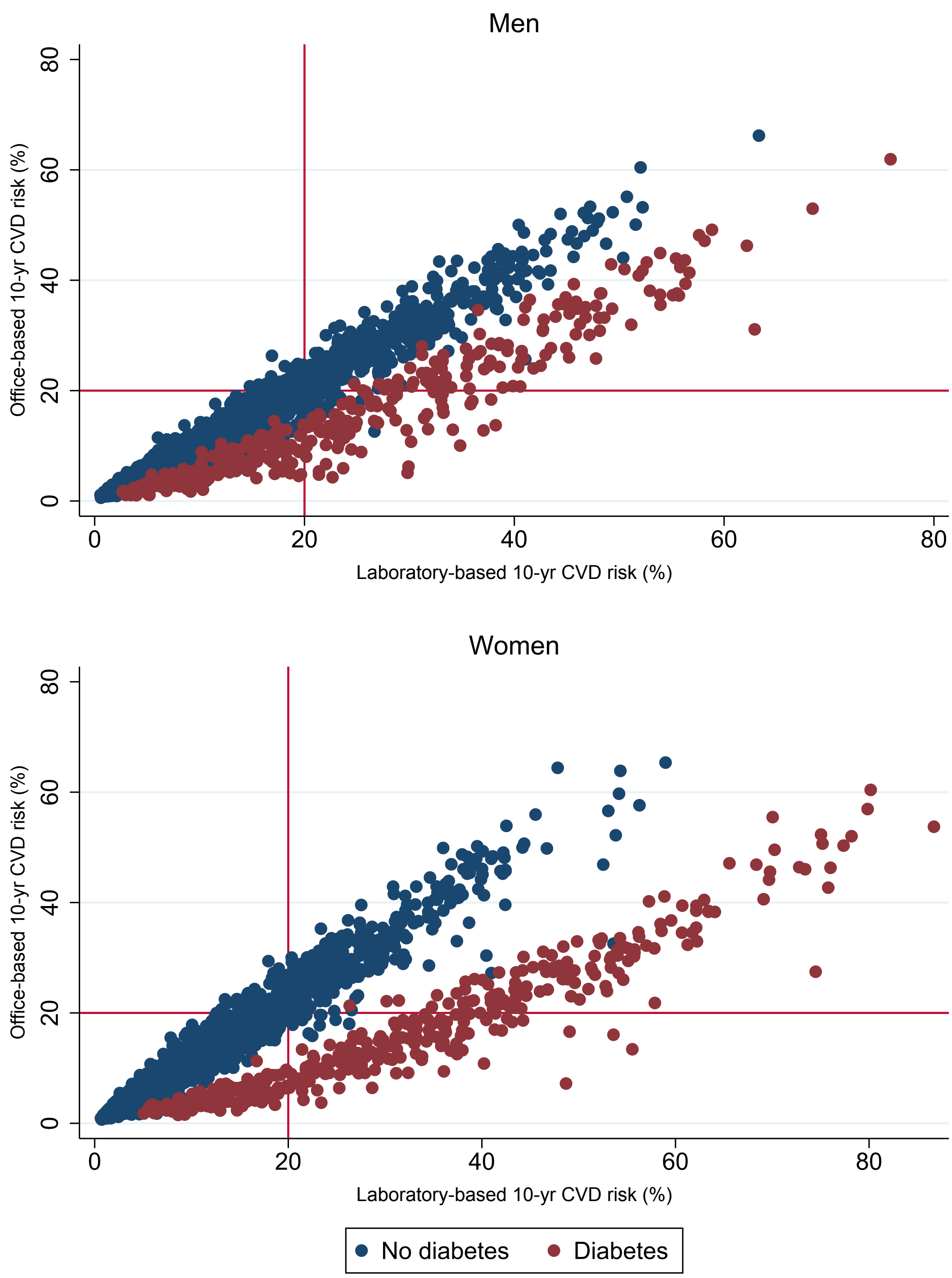
Men

AGE	Systolic blood pressure (mmHg)	Non-Diabetic										Diabetic									
		Non-smoker					Smoker					Non-smoker					Smoker				
	Total cholesterol (mmol/L)	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7	3	4	5	6	7
70-74	180	14	16	17	18	20	17	18	20	21	23	22	24	26	28	30	25	28	30	32	35
70-74	160	11	12	13	14	16	13	14	15	17	18	17	19	20	22	24	20	22	24	26	28
70-74	140	9	9	10	11	12	10	11	12	13	14	13	15	16	17	19	16	17	19	20	22
70-74	120	7	7	8	9	9	8	9	9	10	11	10	11	12	13	15	12	13	14	16	17
65-69	180	12	13	15	17	19	15	17	19	21	24	19	21	24	27	30	25	27	31	34	38
65-69	160	9	10	11	13	14	12	13	15	16	18	15	16	18	21	23	19	21	24	27	30
65-69	140	7	8	9	10	11	9	10	11	13	14	11	13	14	16	18	14	16	18	20	23
65-69	120	5	6	6	7	8	7	7	8	9	11	8	10	11	12	14	11	12	14	16	18
60-64	180	11	12	14	17	19	15	18	20	23	27	18	21	25	28	32	26	30	34	39	44
60-64	160	8	9	11	12	14	11	13	15	18	20	14	16	19	21	25	20	23	26	30	34
60-64	140	6	7	8	9	11	8	10	11	13	15	10	12	14	16	19	15	17	20	23	26
60-64	120	4	5	6	7	8	6	7	8	10	11	8	9	10	12	14	11	13	15	17	20
55-59	180	10	12	14	17	21	16	19	23	27	32	19	22	26	31	36	29	34	39	46	52
55-59	160	7	9	11	13	15	12	14	17	20	24	14	16	19	23	27	21	25	30	35	41
55-59	140	5	6	8	9	11	8	10	12	15	18	10	12	14	17	20	16	19	22	27	31
55-59	120	4	5	5	7	8	6	7	9	11	13	7	9	10	13	15	12	14	17	20	24
50-54	180	9	11	14	17	20	15	19	23	28	34	17	21	26	31	38	29	36	42	50	58
50-54	160	6	8	10	12	15	11	14	17	21	25	12	15	19	23	28	22	26	32	38	46
50-54	140	4	5	7	8	11	8	10	12	15	18	9	11	14	17	21	16	19	23	29	35
50-54	120	3	4	5	6	7	6	7	9	11	13	6	8	10	12	15	11	14	17	21	26
45-49	180	7	9	12	15	19	14	18	22	28	34	15	19	24	30	37	28	35	43	51	61
45-49	160	5	6	8	10	13	10	12	16	20	25	11	13	17	21	27	20	25	31	39	47
45-49	140	3	4	6	7	9	7	9	11	14	18	7	9	12	15	19	14	18	23	28	35
45-49	120	2	3	4	5	6	5	6	8	10	13	5	7	8	11	14	10	13	16	20	26
40-44	180	5	7	9	11	15	11	14	18	24	30	11	15	19	25	32	23	30	38	47	57
40-44	160	3	4	6	8	10	7	10	13	17	22	8	10	13	17	22	16	21	27	35	43
40-44	140	2	3	4	5	7	5	7	9	11	15	5	7	9	12	16	11	15	19	25	32
40-44	120	2	2	3	4	5	3	4	6	8	10	3	5	6	8	11	8	10	13	17	23

- >=50 %
- 40-49 %
- 30-39 %
- 20-29 %
- 10-19 %
- 5-9 %
- <5 %



Men
Women
South Korea
Uganda
Spain
Jamaica
Mexico
USA
China
Czech Republic
Cambodia
Iran
South Korea
Spain
Uganda
Jamaica
Mexico
USA
Czech Republic
China
Iran
Cambodia
0
20
40
60
80
100
0
20
40
60
80
100
% population in risk category
>=40%
30-39%
20-29%
10-19%
5-9%
<5%



Men
Office-based 10-yr CVD risk (%)
Laboratory-based 10-yr CVD risk (%)
0
20
40
60
80
Women
Office-based 10-yr CVD risk (%)
Laboratory-based 10-yr CVD risk (%)
No diabetes
Diabetes