National program for prevention and control of lifestyle-related diseases, Japan

Keiko Nakamura, MD, PhD
Professor and Chairman
Department of Global Health Entrepreneurship
Tokyo Medical and Dental University (TMDU)
WHO Collaborating Centre for Healthy Cities and Urban Policy Research
National program for prevention and control of lifestyle-related diseases, Japan

1. Health status, lifestyle-related diseases, lifestyles, Japan
2. Diabetes Mellitus:
   Disease management and control
   Professionals
3. Metabolic Syndrome:
   Health checkup and health consultation
   Professionals
4. Hypertension:
   Standards
   Management and control
HEALTH STATUS, LIFESTYLE-RELATED DISEASES, LIFESTYLES, JAPAN
## Health Indicators in Selected OECD Countries, 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>Life expectancy, Female (years)</th>
<th>Life expectancy, Male (years)</th>
<th>Infant Mortality, per 1000 live births</th>
<th>15-64 population (%) (2007)</th>
<th>&gt;65 population (%) (2007)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. Korea</td>
<td>84.1</td>
<td>77.2</td>
<td>3.2</td>
<td>72.0</td>
<td>9.9</td>
</tr>
<tr>
<td>Japan</td>
<td>86.4</td>
<td>79.6</td>
<td>2.3</td>
<td>65.0</td>
<td>21.5</td>
</tr>
<tr>
<td>Germany</td>
<td>83.0</td>
<td>78.0</td>
<td>3.4</td>
<td>66.3</td>
<td>20.2</td>
</tr>
<tr>
<td>France</td>
<td>84.7</td>
<td>78.0</td>
<td>3.6</td>
<td>65.2</td>
<td>16.4</td>
</tr>
<tr>
<td>UK</td>
<td>82.6</td>
<td>78.6</td>
<td>4.2</td>
<td>66.4</td>
<td>16.0</td>
</tr>
<tr>
<td>USA</td>
<td>81.1</td>
<td>76.2</td>
<td>6.1</td>
<td>67.3</td>
<td>–</td>
</tr>
<tr>
<td>Sweden</td>
<td>83.5</td>
<td>79.5</td>
<td>2.5</td>
<td>65.7</td>
<td>17.4</td>
</tr>
</tbody>
</table>

Source: OECD Health Data 2012
## Health Care Resources and Its Use, 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>Physicians per 1000 population</th>
<th>Nurses per 1000 population</th>
<th>MRI scanners per 1 million population</th>
<th>CT scanners per 1 million population</th>
<th>Per capita outpatient visits / year</th>
<th>Number of discharge per 1000 population/year</th>
<th>Average length (days) of hospital stay</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. Korea</td>
<td>2.0</td>
<td>4.6</td>
<td>19.9</td>
<td>35.3</td>
<td>12.9</td>
<td>168.9</td>
<td>14.2</td>
</tr>
<tr>
<td>Japan</td>
<td>2.2</td>
<td>10.1</td>
<td>43.1**</td>
<td>97.3**</td>
<td>13.1</td>
<td>107.1**</td>
<td>18.2</td>
</tr>
<tr>
<td>USA</td>
<td>2.4</td>
<td>11.0</td>
<td>31.6</td>
<td>40.7</td>
<td>3.9</td>
<td>131.0</td>
<td>4.9</td>
</tr>
<tr>
<td>UK</td>
<td>2.7</td>
<td>9.6</td>
<td>5.9</td>
<td>8.2</td>
<td>5.0</td>
<td>136.0</td>
<td>7.7</td>
</tr>
<tr>
<td>Germany</td>
<td>3.7</td>
<td>11.3</td>
<td>10.3 *</td>
<td>17.7</td>
<td>8.9</td>
<td>239.8</td>
<td>9.5</td>
</tr>
<tr>
<td>Denmark</td>
<td>3.5 *</td>
<td>15.4 *</td>
<td>15.4 *</td>
<td>27.6</td>
<td>4.6</td>
<td>171.5</td>
<td>4.6</td>
</tr>
<tr>
<td>Sweden</td>
<td>3.8 *</td>
<td>11.0 *</td>
<td>-</td>
<td>-</td>
<td>2.9</td>
<td>163.1</td>
<td>5.7</td>
</tr>
<tr>
<td>France</td>
<td>3.3</td>
<td>8.5</td>
<td>7.0</td>
<td>11.8</td>
<td>6.7</td>
<td>168.6</td>
<td>5.7</td>
</tr>
</tbody>
</table>

* 2009; ** 2008

Source: OECD Stat, 2012
“LIFESTYLE RELATED DISEASE”, JAPAN

- December 18, 1996
- Defined by the National Public Health Council, Japan
- The use of “lifestyle-related disease” is appropriate as “a cluster of diseases that lifestyles such as eating habits, physical activity, resting, smoking, and alcohol drinking, relate to development and progress of those diseases.”
- Examples of diseases: Type 2 diabetes, obesity, hyperlipidemia*, hyperuricemia, circulatory disease**, colon cancer*, squamous cell lung cancer, periodontal disease, chronic bronchitis, emphysema, alcoholic liver cirrhosis (excluding *familiar or **congenital diseases)
LIFESTYLE RELATED DISEASE, JAPAN COUNTERMEASURES

1. Primary prevention
2. Effective secondary prevention
3. Development of medical technology
4. Research development
5. Health promotion centers
6. Support system for people in communities; and community center functions
7. Improvement in health promotion interventions and capacity building of health professionals
Trends in prevalence of obesity, 1996 - 2010

Healthy Japan 21 (second phase) Target
20-60 y/o Male: 28%
40-60 y/o Female: 19%

[Source: 2010 National Health and Nutrition Survey, MHLW, Japan]
Trends in age-adjusted prevalence of people ≥ 20 y/o having regular physical exercise, 2004-2014

Having regular physical exercise (PA) : (PA ≥ 30 min.) ≥ twice per week, continuing 1 year or longer

[Source: 2014 National Health and Nutrition Survey, MHLW, Japan]
Trends in average number of steps per day, 1995 - 2011

[Source: 2011 National Health and Nutrition Survey, MHLW, Japan]
Trends in age-adjusted prevalence of people ≥ 20 y/o having regular drinking habits, 2004-2014

Having regular drinking habit:
- drinking ≥ 1 unit of alcohol drink (20g alcohol),
- ≥ 3 times per week,

1 unit of alcohol drink:
- “sake” 180ml; beer 500ml; wine 180ml
- distilled spirit (25⁰) 110ml

[Source: 2014 National Health and Nutrition Survey, MHLW, Japan]
Trends in age-adjusted prevalence of people ≥ 20 y/o having regular smoking habit, 2004-2014

Having regular smoking habit:
Smoke everyday or sometimes

[Source: 2014 National Health and Nutrition Survey, MHLW, Japan]
SMART-LIFE PROJECT
CAMPAIGN OF HEALTHY JAPAN 21

Appropriate exercise
For example ...
Plus 10 minutes walk, everyday

Appropriate eating habits
For example ...
Plus 1 dish of vegetable, everyday

Non-smoking
Achieving smoke-free environment

Health check-up
Regular health check-up and 3 actions for healthy longevity

http://www.smartlife.go.jp/
DIABETES MELLITUS
Development of prevention and control measures in accordance of stages of diabetes mellitus
(Japan Diabetes Outcome Intervention Trial: J-DOIT)

**DIABETES MELLITUS (DM)**

- **Normal**
  - Health checkup
  - Improved participation
  - Follow-up after the check-up

- **IGT**
  - 13,200,000
  - Prevention of DM
    - Diet, PA guidance
      - (Decline BWt 3 kg)

- **DM**
  - 8,900,000
  - Not-receiving treatment
    - 4,450,000
  - Receiving treatment
    - 4,450,000

- **High-risk of complications**
  - 5,000,000
  - (HbA1c ≥ 6.5%)

- **Uncontrolled**
  - 2,000,000
  - (HbA1c < 6.5%)

- **Not well-controlled**
  - 3,000,000

- **Improved quality of health care**
  - (evidence-based guideline)

- **Strategic treatment**
  - Improved quality of health care
  - (evidence-based guideline)

- **Encourage visits to doctors**

- **Detect High-risk group**
  - 200,000 – 680,000/year

(J-DOIT: Japan Diabetes Outcome Intervention Trial)

(Permission from Dr. Y. Iizuka, The University of Tokyo)
Estimated number of diabetes, ≥ 20 y/o, 1997-2007

Diabetes (strongly suspected): HbA1c ≥ 6.5% or “under treatment of diabetes”

Diabetes (potentially suspected): 6.5% > HbA1c ≥ 6.0% and “not categorized in diabetes (strongly suspected)"

[Source: 2007 National Health and Nutrition Survey, MHLW, Japan]  
Permission from Dr. Y. Iizuka, The University of Tokyo
Prevalence of diabetes (strongly suspected) by gender and age, ≥20 y/o, 2014

[Source: 2014 National Health and Nutrition Survey, MHLW, Japan]
Trends in age-adjusted prevalence of diabetes (strongly suspected), ≥ 20 y/o, 2006-2014

Diabetes (strongly suspected):
HbA1c (NGSP) ≥ 6.5% or “under treatment of diabetes”

[Source: 2014 National Health and Nutrition Survey, MHLW, Japan]
Percentage of under treatment among diabetes (strongly suspected) by gender, ≥ 20 y/o, 1997-2014

Diabetes (strongly suspected) HbA1c ≥ 6.5% or “under treatment of diabetes”

[Source: 2014 National Health and Nutrition Survey, MHLW, Japan]
Permission from Dr. Y. Iizuka, The University of Tokyo
### Trends of average HbA1c among patients with diabetes, 2002 – 2013

(JDDM multiple institutions collaborative study, registered patients)

<table>
<thead>
<tr>
<th>Year</th>
<th>(number of registered patients)</th>
<th>Type 1 diabetes</th>
<th>Type 2 diabetes</th>
<th>Type 1+2 diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>17,064</td>
<td>8.17</td>
<td>7.46</td>
<td>7.65</td>
</tr>
<tr>
<td>2003</td>
<td>24,866</td>
<td>8.21</td>
<td>7.47</td>
<td>7.60</td>
</tr>
<tr>
<td>2004</td>
<td>26,288</td>
<td>7.98</td>
<td>7.40</td>
<td>7.59</td>
</tr>
<tr>
<td>2005</td>
<td>33,820</td>
<td>7.96</td>
<td>7.46</td>
<td>7.58</td>
</tr>
<tr>
<td>2006</td>
<td>33,241</td>
<td>8.08</td>
<td>7.39</td>
<td>7.56</td>
</tr>
<tr>
<td>2007</td>
<td>40,144</td>
<td>7.91</td>
<td>7.28</td>
<td>7.55</td>
</tr>
<tr>
<td>2008</td>
<td>44,973</td>
<td>7.92</td>
<td>7.24</td>
<td>7.54</td>
</tr>
<tr>
<td>2009</td>
<td>50,150</td>
<td>7.80</td>
<td>7.19</td>
<td>7.53</td>
</tr>
<tr>
<td>2010</td>
<td>54,503</td>
<td>7.80</td>
<td>7.23</td>
<td>7.52</td>
</tr>
<tr>
<td>2011</td>
<td>55,881</td>
<td>7.78</td>
<td>7.18</td>
<td>7.51</td>
</tr>
<tr>
<td>2012</td>
<td>57,161</td>
<td>7.65</td>
<td>7.15</td>
<td>7.50</td>
</tr>
<tr>
<td>2013</td>
<td>56,997</td>
<td>7.60</td>
<td>7.09</td>
<td>7.49</td>
</tr>
</tbody>
</table>


Permission from Dr. Y. Iizuka, The University of Tokyo
Trends of average BMI among patients with diabetes, 2002 – 2013

(JDDM multiple institutions collaborative study, registered patients)


Permission from Dr. Y. Iizuka, The University of Tokyo
QUALIFIED HEALTH PROFESSIONALS TO HELP DIABETES PATIENTS, JAPAN

- Diabetes Physician – Certified Diabetologist (4,760)
- Diabetes Educator - CDEJ (Certified Diabetes Educator of Japan) (19,062)

- Nurses (8,895), registered dietitian (4,585), pharmacists (2,911), laboratory medical technologist (1,588), physical therapist (1,083) as of June 2, 2016

- Medical professional with advanced and broad-based professional knowledge, to help self-care by DM patients.

- Certificate system developed in 2000 by collaboration of “Japan Diabetes Society”, “Japan Academy of Diabetes Education and Nursing”, and “Japan Nutritional Pathology Association” by establishing “Certificate Board of Diabetes Educators in Japan”
Yawatahama City
A City of Prosperity with Mikan (Orange) and Fish
**Top Ten Causes of Medical Care Cost Spending in Yawatahama**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Disease</th>
<th>% to total spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Schizophrenia</td>
<td>11.5</td>
</tr>
<tr>
<td>2</td>
<td>Diabetes</td>
<td>7.4</td>
</tr>
<tr>
<td>3</td>
<td>Ischemic Heart Diseases</td>
<td>7.1</td>
</tr>
<tr>
<td>4</td>
<td>Hypertension</td>
<td>5.8</td>
</tr>
<tr>
<td>5</td>
<td>Renal Failure</td>
<td>4.1</td>
</tr>
<tr>
<td>6</td>
<td>Periodontal Diseases</td>
<td>3.2</td>
</tr>
<tr>
<td>7</td>
<td>Other Endocrine Disorders</td>
<td>3.1</td>
</tr>
<tr>
<td>8</td>
<td>Stroke</td>
<td>2.8</td>
</tr>
<tr>
<td>9</td>
<td>Other Oral Diseases</td>
<td>2.4</td>
</tr>
<tr>
<td>10</td>
<td>Digestive Organ Diseases</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td><strong>Total of top ten causes</strong></td>
<td><strong>49.6</strong></td>
</tr>
</tbody>
</table>

**Total Spending:** 335,961,464 JPY  
**National Health Insurance Data, 2011**
Prevention of Diabetes by Collaboration with Citizens and Health Care Professionals

From Health Check-up to Treatment

- Feedback of results of general health check up
- Recommendation to visit Health Center
- Specialist Doctor
- Examination
- Nutrition consultation

% not under treatment
Among diagnosed as diabetes

\[ \begin{align*}
\text{2011: } & 43.5 \\
\text{2013: } & 28.0
\end{align*} \]

% not under control
Among diabetes under treatment

\[ \begin{align*}
\text{2011: } & 48.4 \\
\text{2013: } & 32.0
\end{align*} \]
Yawatahama Approach To Improve Community Health Literacy in Diabetes

• In collaboration with Yawatahama Healthy Diet Promoters Group

1. Citizens attend special course on diabetes and improving individuals’ knowledge and skills

2. Citizens share knowledge with community members by holding and leading meetings in communities

3. Citizens get information of prevention of diabetes at a Citizens’ Forum
Special course on diabetes
Learning about low salt cooking
Measuring salt intake of daily meals

[Photo: Yawatahama City]
Citizens Forum

Diabetes Supporters

Dental Association

Healthy Diet Promotion Association

[Photo: Yawatahama City]
Management of Diabetes Project, since 2012 – to avoid progress of the disease

[Yawatahama City]

Health Center

Prevention, follow-up
Initial diabetes education
Management and control of complications

Hospital

Public Health Nurse

Dental clinic

Early detection, treatment
Medical-dental collaboration
Treatment Consultation about complications

Clinic

Doctors Nurses Pharmacists

Long term care Managers Home helpers Care takers Social workers

Specialist Doctor Diabetes Management Instructor
Metabolic Syndrome
Metabolic syndrome is the name for a group of risk factors that raises your risk for heart disease and other health problems, such as diabetes and stroke.

Following conditions are considered as metabolic risk factors:

- **A Large Waistline**
  - A waist measurement: > 35 inches (90 cm) or more (women) or > 40 inches (102 cm) or more (men)

- **A High Triglyceride Level**
  - TG > 150 mg/dL (or being on medicine to treat high triglycerides)

- **A Low HDL Cholesterol Level**
  - HDL cholesterol < 50 mg/dL (women) and < 40 mg/dL (men) (or being on medicine to treat low HDL cholesterol)

- **High Blood Pressure**
  - Blood Pressure > 130/85 mmHg (or being on medicine to treat high blood pressure)

- **High Fasting Blood Sugar**
  - A fasting blood sugar > 100 mg/dL or higher (or being on medicine to treat high blood sugar)
Metabolic syndrome is the medical term for a combination of diabetes, high blood pressure and obesity. It puts you at greater risk of heart disease, stroke and other conditions affecting blood vessels.

- A waist circumference > 37 inches (94 cm) (in European men); > 31.5 inches (80 cm) (in European and South Asian women); > 35.5 inches (90 cm) (in South Asian men)

- High levels of triglycerides and low levels of HDL ("good" cholesterol) in the blood, which can lead to atherosclerosis – where arteries become clogged up by fatty substances such as cholesterol

- High blood pressure that is consistently 140/90mmHg or higher

- An inability to control blood sugar levels (insulin resistance)

- An increased risk of developing blood clots, such as deep vein thrombosis (DVT)

- A tendency to develop inflammation (irritation and swelling of body tissue)
<table>
<thead>
<tr>
<th>Abdominal girth</th>
<th>Additional risks</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male ≥ 85cm</td>
<td>Two or more apply</td>
<td>Metabolic syndrome</td>
</tr>
<tr>
<td>Female ≥ 90cm</td>
<td>One applies</td>
<td>Potential</td>
</tr>
</tbody>
</table>

- i. blood glucose: fasting blood glucose level of 110 mg/dL or higher
- ii. lipids: neutral fat level of 150 mg/dL or higher and/or HDL cholesterol level of less than 40 mg/dL
- iii. blood pressure: Systolic blood pressure (BP) of 130 mmHg or higher and/or diastolic BP of 85 mmHg or higher
**Central Obesity: “waist circumference > ethnic specific values*” or BMI > 30 kg/m²**

**plus** an two of the following four factors:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raised triglycerides</td>
<td>≥ 150 mg/dL (1.7 mmol/L) or specific treatment for this lipid abnormality</td>
</tr>
<tr>
<td>Reduced HDL cholesterol</td>
<td>&lt; 40 mg/dL (1.03 mmol/L) in males &lt; 50 mg/dL (1.29 mmol/L) in females or specific treatment for this lipid abnormality</td>
</tr>
<tr>
<td>Raised blood pressure</td>
<td>systolic BP ≥ 130 or diastolic BP ≥ 85 mmHg or treatment of previously diagnosed hypertension</td>
</tr>
<tr>
<td>Raised fasting plasma glucose</td>
<td>(FPG) ≥ 100 mg/dL (5.6 mmol/L), or previously diagnosed type 2 diabetes If above 5.6 mmol/L or 100 mg/dL, OGTT is strongly recommended but is not necessary to define presence of the syndrome</td>
</tr>
</tbody>
</table>

**ethnic specific values for waist circumference**

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Europoid</th>
<th>South Asians</th>
<th>Chinese</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>≥ 94 cm</td>
<td>≥ 90 cm</td>
<td>≥ 90 cm</td>
<td>≥ 90 cm</td>
</tr>
<tr>
<td>Female</td>
<td>≥ 80 cm</td>
<td>≥ 80 cm</td>
<td>≥ 80 cm</td>
<td>≥ 80 cm</td>
</tr>
</tbody>
</table>
# Lifestyles by participation in health check-ups

<table>
<thead>
<tr>
<th>Lifestyles</th>
<th>Male/Female</th>
<th>Participated in health check-ups</th>
<th>Yes</th>
<th>No</th>
<th>*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current smoking</td>
<td>M</td>
<td>31.8 %</td>
<td>33.3 %</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>7.4 %</td>
<td>10.5 %</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Current not regularly do physical exercise</td>
<td>M</td>
<td>68.2 %</td>
<td>70.0 %</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>72.1 %</td>
<td>79.8 %</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Obesity</td>
<td>M</td>
<td>28.1 %</td>
<td>29.8 %</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>19.4 %</td>
<td>24.4 %</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Mean systolic blood pressure</td>
<td>M</td>
<td>134.0 mmHg</td>
<td>138.7 mmHg</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>128.4 mmHg</td>
<td>128.9 mmHg</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

Age-adjusted percentages and means.
* P < 0.05 by Cochran-Mantel-Haenszel test (for %) and ANOCOVA (for mean).

[Source: 2015 National Health and Nutrition Survey, MHLW, Japan]
Individual Health Insurers **must provide** “Specified Health Examination” and “Specified Health Guidance” to their members.

**SPECIFIED HEALTH EXAMINATION:**
ALL MEMBERS 40-74 Y/O
DETECTING METABOLIC SYNDROME SUSPECTS

**SPECIFIED HEALTH GUIDANCE:**
GUIDANCE TO HIGH RISK GROUPS
MOTIVATIONAL SUPPORT & PROACTIVE SUPPORT

Health Examination → Data Collection and Classifications → Notice of Results to Individuals → Awareness Raising

Selecting Target Subjects → Sending Invitation → Motivational Support → Proactive Support
**SPECIFIED HEALTH EXAMINATION AND SPECIFIED HEALTH GUIDANCE**

- **Target groups:** those between 40 and 74 years of age
- **Costs:** paid for by insurers of health insurance (except for a partial out-of-pocket contribution with some insurers)
- **Basic examination items:**

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>History of medication, smoking, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical measurement</td>
<td>Height, weight, BMI and abdominal girth</td>
</tr>
<tr>
<td>Blood pressure measurement</td>
<td></td>
</tr>
<tr>
<td>Physical screening</td>
<td>Physical examination</td>
</tr>
<tr>
<td>Urinalyses</td>
<td>Glucose and protein in urine</td>
</tr>
<tr>
<td>Blood tests</td>
<td>Lipids: neutral fat, HDL cholesterol and LDL cholesterol Blood glucose: fasting blood glucose or HbA1c Liver function: GOT, GPT and γ-GTP</td>
</tr>
</tbody>
</table>

*When the physician deems necessary, electrocardiogram, funduscopy and other examination(s)/test(s) may be conducted*
### Specified health guidance target group

<table>
<thead>
<tr>
<th>i. Abdominal girth &amp; BMI</th>
<th>Additional risks</th>
<th>v. history of smoking</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ii. blood glucose; iii. lipids; iv. blood pressure</td>
<td></td>
<td>age 40–64</td>
</tr>
<tr>
<td>Male ≥ 85cm</td>
<td>Two or more applicable</td>
<td></td>
<td>Proactive support</td>
</tr>
<tr>
<td>Female ≥ 90cm</td>
<td>One applicable</td>
<td>Yes</td>
<td>Motivational support</td>
</tr>
<tr>
<td>Above not applicable AND BMI ≥ 25 kg/m²</td>
<td>Three applicable</td>
<td></td>
<td>Proactive support</td>
</tr>
<tr>
<td></td>
<td>Two applicable</td>
<td>Yes</td>
<td>Motivational support</td>
</tr>
<tr>
<td></td>
<td>One applicable</td>
<td>Not</td>
<td>Motivational support</td>
</tr>
</tbody>
</table>
QUALIFICATION FOR SPECIFIED HEALTH GUIDANCE

- Medical Doctors
- Public Health Nurses
- Registered Dietitians
- Nurses with experiences of health guidance
- Professionals with knowledge and skills in nutritional guidance
  (Those who can attend the seminars: dentists, pharmacists, midwives, assistant nurses, dental hygienist, trained for total health promotion nutrition instructors*)
- Professionals with knowledge and practical skills in physical exercise
  (Those who can attend the seminars: dentists, pharmacists, midwives, assistant nurses, physical therapists, physical exercise instructors*)
HYPERTENSION
# Hypertension

## Guidelines for the Management of Hypertension, 2014

**Japanese Society for Hypertension**

<table>
<thead>
<tr>
<th>Blood pressure (BP) Categorization</th>
<th>Systolic BP (mmHg)</th>
<th>Diastolic BP (mmHg)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Normal range BP</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optimal BP</td>
<td>&lt; 120</td>
<td>and &lt; 80</td>
</tr>
<tr>
<td>Normal BP</td>
<td>120 - 129</td>
<td>and/or 80 – 84</td>
</tr>
<tr>
<td>High normal BP</td>
<td>130 – 139</td>
<td>and/or 85 – 89</td>
</tr>
<tr>
<td><strong>Hypertension (HT)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 1 HT</td>
<td>140 – 159</td>
<td>and/or 90 – 99</td>
</tr>
<tr>
<td>Stage 2 HT</td>
<td>160 – 179</td>
<td>and/or 100 – 109</td>
</tr>
<tr>
<td>Stage 3 HT</td>
<td>≥ 180</td>
<td>and/or ≥ 110</td>
</tr>
<tr>
<td>Isolated systolic HT</td>
<td>≥ 140</td>
<td>and &lt; 90</td>
</tr>
</tbody>
</table>

Developed by the Japanese Society of Hypertension and 14 liaison academic associations.
Cardiovascular disease mortality hazard ratio
EPOCH-JAPAN, 10 cohort, total 70,000 meta analysis, by age categories

Hazard ratio adjusted by age, gender, cohort, BMI, total cholesterol, smoking, and drinking.

[Guidelines for the Management of Hypertension, 2014]
Trends in age-adjusted systolic blood pressure, ≥ 20 y/o, 2004-2014

[Source: 2014 National Health and Nutrition Survey, MHLW, Japan]
Trends in age-adjusted percentage of population with systolic blood pressure ≥ 140 mmHg, ≥ 20 y/o, 2006-2014 (%)

[Source: 2014 National Health and Nutrition Survey, MHLW, Japan]
Trends in systolic blood pressure by gender and age groups, 1961-2010

[Source: NIPPON DATA80, NIPPON DATA90, NIPPON DATA2010]
Trends in prevalence of hypertension by gender and age groups, 1980-2010

(systolic BP ≥ 140mmHg or diastolic BP ≥ 90mmHg or taking antihypertensive medication)

[Source: NIPPON DATA2010]
Trends in percentage of hypertensive subjects under medication, 1980-2010

(Percentage of hypertensive subjects under antihypertensive medication among people diagnosed as hypertension)

[Source: NIPPON DATA2010]
Trends in percentage of patients with hypertensive medication under control, 1980-2010

(Percentage of patients with systolic BP < 140mmHg and diastolic BP < 90mmHg among those taking hypertensive medication)

<table>
<thead>
<tr>
<th>Ages</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-59</td>
<td>9.7%, 10.5%</td>
<td>13.4%, 14.1%</td>
</tr>
<tr>
<td>60-69</td>
<td>16.9%, 14.7%</td>
<td>12.7%, 19.2%</td>
</tr>
<tr>
<td>70-</td>
<td>22.5%, 19.8%</td>
<td>21.5%, 19.5%</td>
</tr>
</tbody>
</table>

Source: NIPPON DATA2010
Principles of target settings related to cardiovascular diseases
Healthy Japan 21 (second phase)

Decline of age-adjusted mortality of Cerebrovascular Disease
Male: 15.7%; Female 8.3%

Decline of age-adjusted mortality of Ischemic Heart Disease
Male: 13.7%; Female 10.4%

[By achieving reduction in 4 risk factors]

Hypertension
Systolic BP 4 mmHg

Lipid abnormality
Cholesterol 25%

Smoking
Non-smoking all > 40y/o wishing

Diabetes
Stabilize increase of morbidity

[By achieving improvements of 4 lifestyles]

[Reduction in systolic blood pressure]
2.3mmHg
1.5mmHg

Nutrition, diet
Salt intake;
Vegetable consumption;
Obesity

Physical activity & fitness
Number of steps;
Regularly exercise

Alcohol drinking
Excessive drinkers

Taking anti-hypertensive medication
10%

[Reduced risk factors]

[Improved lifestyles]
Trends in average salt intake among the Japanese, 1975 - 2012

(g/day)

[Source: 2012 National Health and Nutrition Survey, MHLW, Japan]
Trends in age-adjusted average salt intake, ≥ 20 y/o, 2006-2014

(g/day)

[Source: 2014 National Health and Nutrition Survey, MHLW, Japan]
Lessons learnt from Japanese nation-wide experiences in prevention and control of lifestyle-related diseases

1. **National** level planning and target settings, some guidelines and recommendations
2. **Local** level (prefectures and municipalities) planning and target settings
3. Monitoring and evaluation
4. Guidelines for disease management control lead by academic and professional groups
5. Program to involve health insurance
6. Involvement of **private sectors**: new products, pharmaceuticals, foods, active living, health information
7. Research development in both public and private sectors
8. **Capacity building and certifications** of all levels: special professionals, professionals general, health volunteers, and citizens