

## Health-Care Center

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### General Summary

The most outstanding event was Dr. Wada's winning a prize for an excellent article in 2013 from the Japanese Society of Health Evaluation and Promotion. The article was entitled "Of the three classifications of healthy lifestyle habits, which one is the most closely associated with the prevention of high blood pressure?" (HEP 2013; 40: 457-463). We have investigated the proper guidance and extraction of problems in specific health guidance with the support of a Health and Labour Sciences Research Grant.

### Research Activities

#### *Healthy lifestyle habits and prevention of high blood pressure*

A healthy lifestyle often prevents high blood pressure. To date 3 kinds of simple healthy lifestyle mottoes for everyone, reported proposed by Breslow's 7 items, Morimoto's 8 items, and Ikeda's 6 items, have been reported. However, to our knowledge, no study had investigated the association between the incidence of high blood pressure and the practice of these health habits. The objective of the present study was to determine which of the 3 classifications of Breslow, Morimoto and Ikeda is most closely associated with the prevention of high blood pressure. The cumulative 9-year incidence of high blood pressure was calculated and compared among these classifications using the log-rank test adjusted for age in the present open retrospective cohort study. A total of 5,884 subjects undergoing medical checkups and answering a self-administered questionnaire about the above healthy lifestyle habits were divided into poor, moderate, and favorable lifestyle groups. High blood pressure was defined as a systolic blood pressure  $\geq 130$  mm Hg, a diastolic blood pressure  $\geq 85$  mm Hg, or treatment with antihypertensive agents during follow-up.

For Breslow's habits, the incidence of high blood pressure was higher in the favorable group than in the poor and moderate lifestyle groups for males. For Morimoto's habits, there were no significant differences in the incidence among the 3 lifestyle groups. For Ikeda's habits, the incidence of high blood pressure in the poor lifestyle group was significantly higher than in the favorable and moderate lifestyle groups for males, although the habits were not predictive for females. Our results suggest that Ikeda's healthy habits decrease the risk of high blood pressure.

#### *Significance of visual field tests in medical checkups*

The purpose of the present study was to investigate the potential benefits of visual field tests over standard noncontact measurements of intraocular pressure commonly used in

medical checkups to detect glaucoma. From April 2010 through March 2011, we screened 6,453 individuals who underwent annual medical checkups. Thirty-four subjects (0.5%) were found to have an intraocular pressure of 22 mm Hg or higher. Seven of these subjects (0.1%) had previously been found to have glaucoma, while another 2 subjects (0.03%) were newly found to have glaucoma. Of the 683 subjects (10.6%) found to have visual field abnormalities, 309 (4.8%) had previously been found to have glaucoma. The remaining 374 subjects (5.8%) without glaucoma were followed up until March 2012. During follow-up, 66 subjects (1.0% of the total medical checkup subjects) were newly found to have glaucoma, and 63 subjects (1.0%) were found to have other eye diseases. Forty-eight subjects (27% of the subjects who visited an ophthalmologist) exhibited no abnormalities during follow-up, but we had no information about 197 subjects who did not visit an ophthalmologist or undergo any further comprehensive examination. This study found a significantly higher percentage of newly diagnosed glaucoma cases with the visual field test (1.0%) than with noncontact measurement of intraocular pressure (0.03%). Our results demonstrate the importance of adding a visual field test to the standard eye examinations used in medical checkups.

## Publications

**Katoh S, Peltonen M, Wada T, Zeniya M, Sakamoto Y, Utsunomiya K, Tuomilehto J.** Fatty liver and serum cholinesterase are independently correlated with HbA1c levels: cross-sectional analysis of 5384 people. *J Int Med Res.* 2014; **42**: 542-53. Epub 2014 Mar 4.

**Harada K, Hsu M, Ikeda H, Zeniya M, Nakanuma Y.** Application and validation of a new histologic staging and grading system for primary biliary cirrhosis. *J Clin Gastroenterol.* 2013; **47**: 174-81.

**Yamamoto K, Miyake Y, Ohira H, Suzuki Y, Zeniya M, Onji M, Tsubouchi H; Intractable Liver and Biliary Diseases Study Group of Japan.** Prognosis of autoimmune hepatitis showing acute presentation. *Hepatol Res.* 2013; **43**: 630-8.

**Oikawa T, Kamiya A, Zeniya M, Chikada H, Hyuck AD, Yamazaki Y, Wauthier E, Tajiri H, Miller LD, Wang XW, Reid LM, Nakauchi H.** Sal-like protein 4 (SALL4), a stem cell biomarker in liver cancers. *Hepatology.* 2013; **57**: 1469-83.

**Nishida S, Koido S, Takeda Y, Homma S, Komita H, Takahara A, Morita S, Ito T, Morimoto S, Hara K, Tsuboi A, Oka Y, Yanagisawa S, Toyama Y, Ikegami M, Kitagawa T, Eguchi H, Wada H, Nagano H, Nakata J, Nakae Y, Hosen N, Oji Y, Tanaka T, Kawase I, Kumano-goh A, Sakamoto J, Doki Y, Mori M, Ohkusa T, Tajiri H, Sugiyama H.** Wilm's tumor gene (WT1) peptide-based cancer vaccine combined with gemcitabine for patients with advanced pancreatic

cancer. *J Immunother.* 2014; **37**: 105-14.

**Koido S, Homma S, Okamoto M, Namiki Y, Takakura K, Uchiyama K, Kajihara M, Arihiro S, Imazu H, Arakawa H, Kan S, Komita H, Ito M, Ohkusa T, Gong J, Tajiri H.** Fusions between dendritic cells and whole tumor cells as anticancer vaccines. *Oncoimmunology.* 2013; **2**: e24437.

**Koido S, Homma S, Okamoto M, Namiki Y, Takakura K, Takahara A, Tsukinaga S, Yukawa T, Mitobe J, Matsudaira H, Nagatsuma K, Kajihara M, Kamata Y, Ito M, Hara E, Ohkusa T, Gong J, Tajiri H.** Augmentation of antitumor immunity by fusions of ethanol-treated tumor cells and dendritic cells stimulated via dual TLRs through TGF- $\beta$ 1 blockade and IL-12p70 production. *PLoS One.* 2013; **8**: e63498.

**Koido S, Homma S, Okamoto M, Namiki Y, Takakura K, Takahara A, Odahara S, Tsukinaga S, Yukawa T, Mitobe J, Matsudaira H, Nagatsuma K, Uchiyama K, Kajihara M, Arihiro S, Imazu H, Arakawa H, Kan S, Komita H, Ito M, Ohkusa T, Gong J, Tajiri H.** Combined TLR2/4-activated dendritic/tumor cell fusions induce augmented cytotoxic T lymphocytes. *PLoS One.* 2013; **8**: e59280.

**Wada T, Hasegawa Y, Osaki T, Ban H' ('Hiatachi).** Of the three classifications of healthy lifestyle habits, which one is the most closely associated with the prevention of high blood pressure? *Sogo Kenshin.* 2013; **40**: 457-63.