MetS was 28.7% in the males and 15.7% in the females and the percentage of subjects with no MetS components was 23.9% in the males and 36.3% in the females. The CCA-IMT was measured on the left and right sides separately; although, the left-right difference could not be recognized in the trend analysis. This study was with the approval of the institutional review board at Ota General Hospital, Gunma Prefecture, Japan (July 17, 2010).

As presented in Table 1, the unadjusted and adjusted mean CCA-IMT was significantly and positively associated with the number of MetS components among males. However, there was no significant association among the females. Hartley et al[1] recommend a larger population study, especially for females, and a longitudinal analysis. I agree with their proposal, as understanding of the gender-specific mechanisms underlying these results will help in concluding whether a significant association between the number of MetS components and the CCA-IMT might exist only among females.

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Authors' Response

To the Editor:

We thank Dr Kawada[1] for his interest in our recent article,[2] in which we reported a positive association between metabolic syndrome (MetSyn) and carotid intima media thickness (IMT) in female police officers. In his letter, Dr Kawada raised the question as to whether this association could be related to occupational factors. This is certainly an interesting proposal; yet, answering this question is complex as it requires consideration of numerous factors.

In our study, we cite the work of others who have reported results similar to our study.[3–6] Kawada states that the age and occupation of the subjects in these studies were varied and raises the question regarding the potential effect of occupational factors. The studies by Iglseder et al (age range, 40 to 65), Nishida et al (age range, 40 to 59), and Lin et al (age range, 15 to 87) have cohorts with similar age ranges as our study population (age range, 21 to 66).[3,5,6] Regarding occupation, these four studies were large community-based studies without focus on occupation, which is different from our study.

Participants in our study were all active duty police officers serving a large urban area in the northeastern United States. To some degree, all participants were exposed to various workplace factors, some of which are unique to policing including psychological stress, shift work, long work hours, the potential for violent confrontations, and environmental contaminants (eg, particulate matter, firearm cleaning solvents, noise from radio transmissions). To suggest that the positive relationship found between MetSyn and carotid IMT in female police officers in our study is due to occupational factors is difficult to discern since it cannot be tested statistically and was not a central focus of our study. Yet, we did raise this in our discussion as one potential mechanism for the positive association in female police officers with the caveat that future research is necessary to examine the effects of occupational factors.

In his letter, Kawada presented data that showed a positive association between MetSyn and carotid IMT in men but not in women. Participants in his study included 669 men and 102 women who completed an intensive health examination at the Ota General Hospital, Gunma Prefecture, Japan. Kawada stated that he used the same analytic approach that we used in our study. However, there are some differences between Kawada's study and ours, which may limit direct comparisons between these two studies.

First, in Kawada's study, 97% of the male participants and 78% of the female participants had income-generating jobs yet more importantly, "the type of job could not be specified" for the study participants. Therefore, it would be incorrect to make assumptions regarding the occupational composition of his study participants. Without this critical information, it is difficult to address the question regarding the potential effects of occupation on the differences in study findings.

Second, no information was provided in Kawada's letter regarding how the sample for his study was derived, so we know nothing about inclusion or exclusion criteria. In addition, ethnicity of the study population was not provided, although given the study location we assume that the majority are of Japanese descent. The Japanese culture is likely different from the culture of the northeastern US police officers. This is important because culture has been shown to influence key cardiovascular disease risk factors like diet and exercise, which tend to be more favorable in native Japanese than Japanese-Americans.[7] Also, in our study we controlled for smoking status and low-density lipoprotein-cholesterol levels based on associations shown in the literature and with our key study variables. Kawada followed our analytic approach by also controlling for these variables in his adjusted models; however, he does not provide a profile of these variables in his study population.

Third, the male participants in Kawada's study had a lower prevalence of MetSyn (28.7%) and a higher percent with zero MetSyn components (23.9%) than our male police officers (32.2% and 17.8%, respectively). Kawada did not specify which criteria were used to define MetSyn. Because of the varying definitions used for MetSyn, it is difficult to make comparisons of the MetSyn prevalence without using the same definition. MetSyn, in our study, was defined using the 2003 National Cholesterol Education Program—Adult Treatment Panel III (NCEP-ATP III) guidelines with modifications from the American Heart Association and National Heart, Lung, and Blood Institute (AHA/NHLBI) in 2005. Our study was somewhat unique as we were able to include current component-specific medication use as specified in the AHA/NHLBI definition for four of the five MetSyn components. Furthermore, it has been suggested

We declare that we do not have any conflicts of interest regarding this study.

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that the criteria for enlarged waist circumference be modified for Asians from the 102 cm or more for men and 88 cm or more for women in the AHA/NHLBI definition to 85 cm or more for men and 90 cm or more for women.[8]

Finally, regarding the measurement of the common carotid IMT, Kawada provides data on the left and right sides separately but does not mention which artery wall (near or far) was used or whether one or multiple interrogation angles were used. In our study, common carotid IMT was calculated on the basis of data for the left and right sides of the near and far arterial walls at three interrogation angles. A recent study by Dogan et al cites the value in terms of reproducibility and precision in using multiple interrogation angles and both the near and far artery wall.[9]

In summary, Kawada raises an interesting question regarding the potential effect of occupational factors on the relationship between MetSyn, a clustering of CVD risk factors, and carotid IMT, a subclinical measure of CVD. Unfortunately, this question cannot be addressed with a direct comparison of findings from these two studies. A cohort study including participants from varying occupational groups would be most appropriate to address this intriguing research question.

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