1. No.
   2019G037

2. Title
   Assessment of cadmium exposure as a result of active and passive smoking

3. Period
   2019-2021

4. Summary
   Health effects associated with smoking or second-hand smoke may result from cadmium (Cd) exposure resulting from inhalation of tobacco smoke. Therefore, in order to clarify the relationship between smoking and Cd exposure, we conducted a home environment survey including the collection of environmental samples such as suspended particulate matter, house dust, soil, and food, and biological materials such as blood and urine, to determine heavy metal concentrations. Considering absorption in the gastrointestinal tract, some environmental samples were pretreated with artificial gastric acid solution, and the concentration of solubilized elements was also measured. When smoking habits were determined based on a self-administered questionnaire, no association was observed between blood Cd and smoking habits. However, when divided into a non-smoking group, a passive smoking group, and a smoking group by urinary cotinine, the blood Cd concentration was high in the smoking group, indicating that Cd exposure due to smoking was confirmed. Furthermore, we investigated sources of Cd exposure other than smoking, and found that when smokers lived together in the home, the Cd concentration of suspended particulate matter was high, but there were no association between Cd concentration in the environmental samples and Cd level in blood. Further studies were considered necessary to understand the source of Cd exposure.