

# COLORECTAL CANCER (CRC) SCREENING IN IBARAKI PREFECTURE, JAPAN. THE COMPARISON WITH MALES AND FEMALES USING A TWO-DAY SAMPLING METHOD

Y. Saito\*<sup>1,2</sup>, H. Suzuki<sup>3</sup>, I. Hyodo<sup>2,3</sup>, M. Kaneko<sup>4</sup>

1)Ibarakiken Medical Center, Mito,

2)Sub-committee for Colorectal Cancer, Ibaraki Prefectural Council for  
Controlling and Preventing Life Style-related Disease,

3)Department of Gastroenterology, University of Tsukuba, Tsukuba,

4)Research committee of mass screening for gastroenterological cancer in  
Ibaraki Health Service Association, Mito, Japan

1

## Introduction

- In Japan, CRC screening has been a national policy for both sexes over 40 years old since 1992.
- A two days sampling method through fecal immunochemical blood test (FIT) has been widely accepted for CRC annual screening program.
  - In Ibaraki prefecture, population-based screening program from 2007 to 2012, (FIT) participants over 40 years of age were screened with 2 samples of stool measured by the OC-SENSOR (Eiken, Japan) with a cut-off value of 100ng/mL(20μg Hb/g stool).
- The government aims the participation rate will be 40%.
  - Until 2005, the participation rate was only 10%.
  - The current participation rate is about 35%.

2

## Goal of the study

- Cancer detection rates and PPV for FIT are lower for females than for males.
  - Concern that the test was failing to find CRC in females and some proposed that cut off should be changed in females.
- Is the performance of FIT in females a reflection of less cancer or the characteristics of the test?
- **Should a cut-off value for determining a positive FIT be changed between males and females for more efficient CRC screening?**

3

## AIMS and METHOD

- The purpose of this study is to evaluate FIT positivity, cancer detection rates with intra-mucosal cancers, positive predictive values(PPV) with intra-mucosal cancers, invasive cancer detection rates, invasive cancer PPV, and Dukes classification for males and females.
- The data were assessed based on the  $\chi^2$  test.
- The difference between two groups was judged to be statistically significant when p-value was less than 0.05.

4

## THE LOCATION OF IBARAKI PREFECTURE IN JAPAN

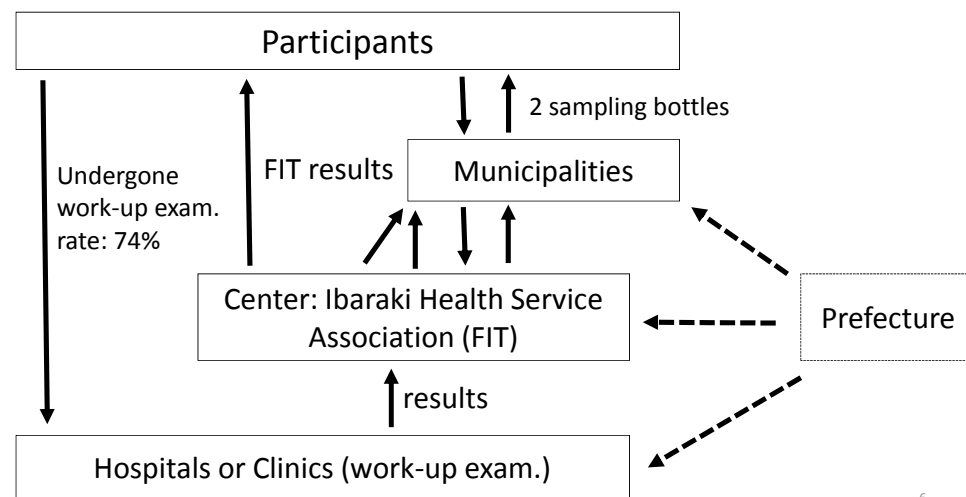


Population: 3.0 million  
Area: 6,000km<sup>2</sup>  
Capital: Mito



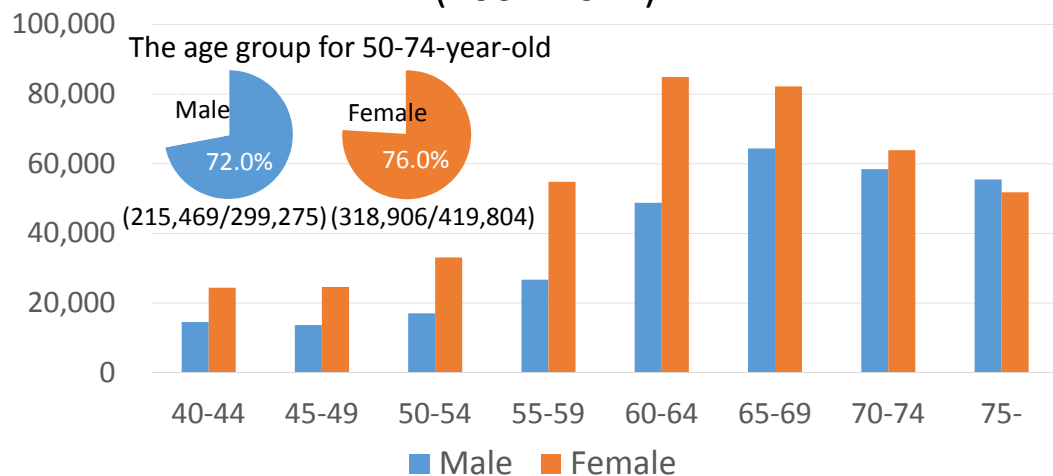
5

## Population-based CRC Screening System in Ibaraki Prefecture



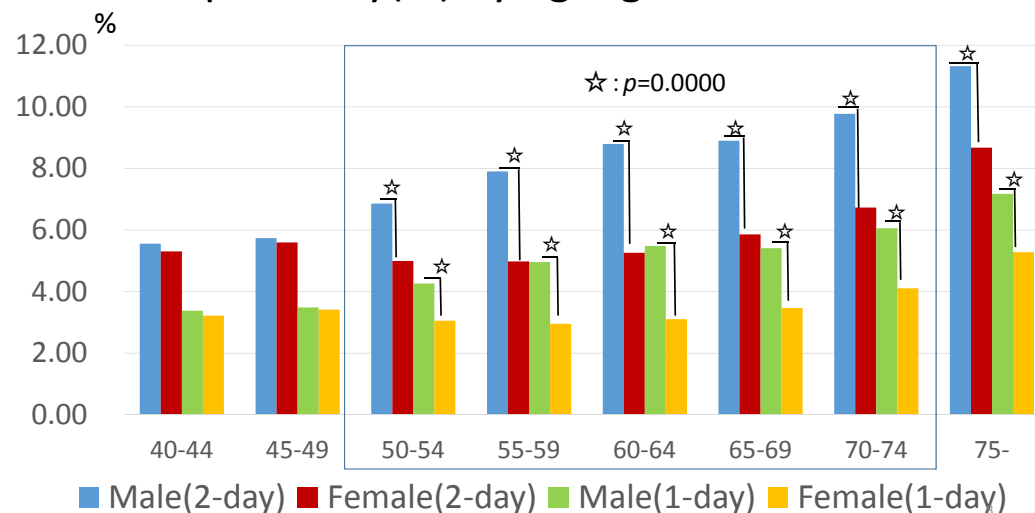
6

## The number of participants by gender and age for 5 years (2007-2012)

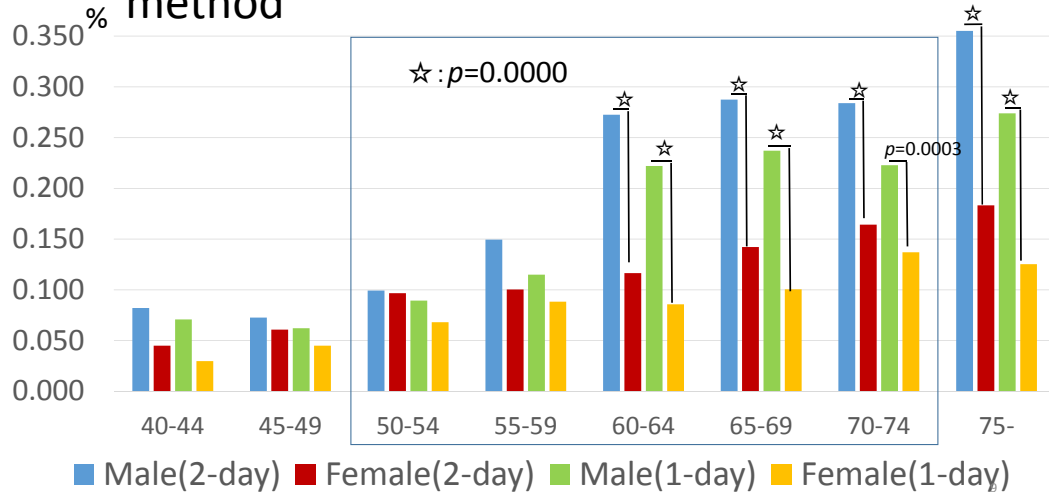


7

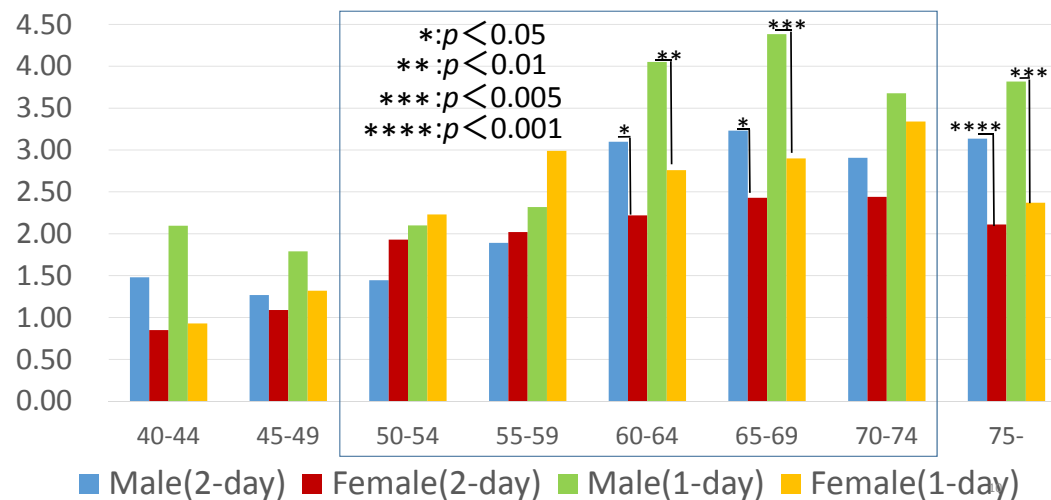
## The FIT positivity (%) by age, gender and method



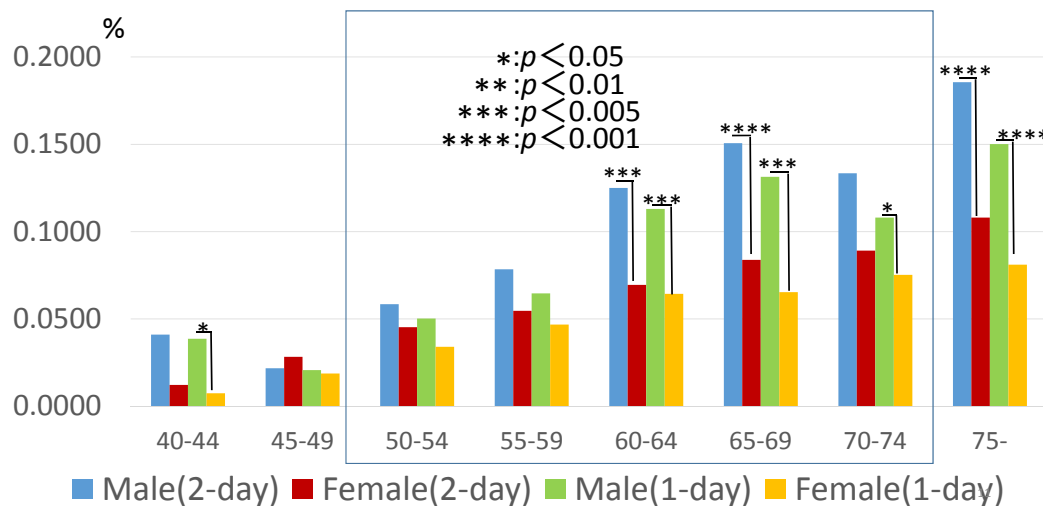
### Cancer Detection rates(%) by age, gender and method



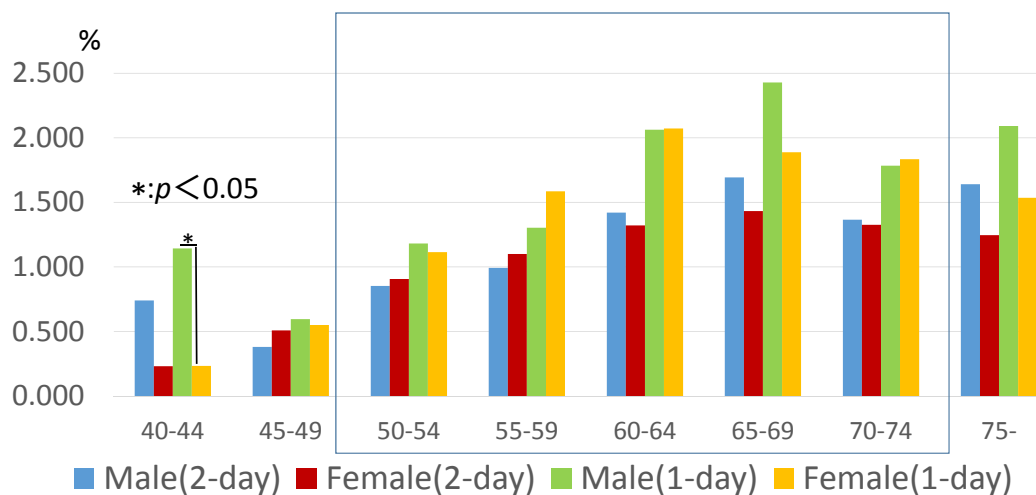
### PPV(%) by age, gender and method



### Invasive Cancer Detection rates(%) by age, gender and method



### Invasive Cancer PPV(%) by age, gender and method



## Dukes classification by gender

Dukes	Male	%		Female	%
A intra mucosal CRC	273	50.5	p<0.05	178	43.6
Invasive CRC	266	49.2	p<0.05	230	56.4
A	139			119	
B	61			46	
C	60			50	
D	6		p<0.05	15	
unknown	2			0	
total	541			408	

13

## CONCLUSIONS

- The positivity was lower in females than in males.
- The incidence of total cancers was lower in females > 60 years than in males > 60 years of age.
- The incidence of invasive cancers was lower in females than in males at the age group of sixties.
- The PPV for all cancers was lower in females than in males at the age group of sixties.
- The PPV for invasive cancers was the same between females and males.
- The proportion of invasive cancers was higher in females than in males.
- Therefore, a cut-off value should not be changed between males and females.

14

